
**THE IMPACT OF INSTITUTIONAL QUALITY ON THE ATTRACTION OF
FOREIGN DIRECT INVESTMENT: DOES COUNTRIES' PRODUCTIVE
STRUCTURE MATTER?**

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Abstract

Foreign Direct Investment (FDI) is often associated to high level transfer of technology, international trade promotion and sustainable economic development. Thus, FDI attraction has been a key target of public policy authorities both in developed and developing countries. Among the several initiatives countries have been developing aiming to attract further FDI flows stands the improvement of institutions. Although it is widely accepted that institutional quality is an important booster of FDI inflows there is scarce and not clear-cut evidence on these matters.

Recent studies suggest that countries' productive structure may act as an important mediating factor for the relation between institutional quality and FDI attraction. This dissertation analyses the impact of institutional quality on the attraction of FDI according to countries' productive profile, specifically the share of industry value added in terms of the gross domestic product (GDP). The current study performed regarding this issue is relevant, once investigators have been focusing their attention on the research of the impact of institutional quality on FDI attraction, without considering the mediating effect of countries' productive profile in this relation. In fact, to the best of our knowledge, there are no empirical studies that analyse this issue, which demonstrates the existence of a literature gap related to this matter.

Resorting to dynamic panel data models (system generalized method of moments) on a data set which includes 161 countries over the period between 1970 and 2019, and considering three different proxies of institutional quality encompassing the regulative, normative and political dimensions, we found that (i) regardless the proxy for institutional quality, an improvement in institutional quality measures generates an increase of FDI inflows, being higher for the regulative or normative dimensions and lower for the political dimension; and (ii) when splitting the sample into groups of less and more industrialized countries (below and above the average of the weight of industry value added in total GDP), the impact of institutional quality is higher for the more industrialized group of countries, especially when institutional quality is measured by the regulative and normative dimension (the latter to a less extent).

Keywords: Foreign Direct Investment (FDI); institutional quality; productive profile; System GMM; FDI determinants.

Resumo

O Investimento Direto Estrangeiro (IDE) está constantemente associado à transferência de tecnologia de *high level*, à promoção do comércio internacional e ao desenvolvimento económico sustentável. Assim, a captação de IDE tem sido um fator-chave por parte das autoridades de políticas públicas, tanto nos países desenvolvidos como nos países em desenvolvimento. Entre as várias iniciativas que os países têm vindo a desenvolver com o objetivo de atrair um maior fluxo de IDE, destaca-se a melhoria das instituições. Embora seja amplamente aceite que a qualidade institucional é um importante impulsionador dos fluxos de IDE, as provas empíricas sobre este assunto são escassas e pouco claras.

Os mais recentes estudos nesta matéria, sugerem que a estrutura produtiva dos países pode atuar como um importante fator mediador da relação entre a qualidade institucional e a atração de IDE. Desta forma, esta dissertação analisa o impacto da qualidade institucional na atração de IDE, de acordo com o perfil produtivo dos países, especificamente a contribuição da indústria para o valor acrescentado em termos do produto interno bruto (PIB). O presente estudo realizado sobre esta questão é bastante relevante, uma vez que os investigadores têm concentrado a sua atenção no impacto da qualidade institucional na atração do IDE, sem considerar o efeito mediador do perfil produtivo dos países nesta relação. De facto, tanto quanto sabemos, não existem estudos empíricos que analisem esta questão, demonstrando a existência de uma lacuna bibliográfica relativamente a este assunto.

Recorrendo a modelos dinâmicos com dados em painel sobre um conjunto de dados que inclui 161 países durante o período entre 1970 e 2019, e considerando três *proxies* diferentes de qualidade institucional que abrangem as dimensões reguladora, normativa e política, constatamos que (i) independentemente do indicador de qualidade institucional, uma melhoria das medidas de qualidade institucional gera um crescimento dos influxos de IDE, sendo este crescimento superior para as dimensões reguladora e normativa e inferior para a dimensão política; e (ii) ao separar a amostra em grupos de países menos e mais industrializados (abaixo e acima da média do peso do valor acrescentado da indústria no PIB total), o impacto da qualidade institucional é maior para o grupo de países mais industrializados, especialmente quando a qualidade institucional é medida pela dimensão reguladora e normativa (esta última em menor medida).

Palavras-chave: Investimento Direto Estrangeiro (IDE); qualidade institucional; perfil produtivo; System GMM; determinantes do IDE.

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1. Introduction

Foreign direct investment (FDI) is considered a relevant driver of countries' economic growth mainly through enhanced productivity, job creation, technology advancement and international business activities around the globe (Nielsen, Asmussen & Weatherall, 2017; Peres, Ameer & Xu, 2018). In the report by UNCTAD (2020) it is established that the international production, mostly driven by firms that perform FDI, plays a significant role in economic growth, development and job creation. In this sense, for countries, especially for the developing ones, the attraction of FDI remains as an important policy objective to pursue, and therefore, countries put efforts to persuade international firms to execute FDI in their homeland (UNCTAD, 2020). To corroborate this, OECD (2020) highlights that FDI is a key element to build a channel capable of: (i) incentive the transfer of technology, (ii) promote the international trade, and (iii) to leverage economic development.

In the last decades, the scientific community focused its attention on researching the key factors that determine a country's degree of FDI attractiveness, with institutional quality standing as one of these key determinants (Bailey, 2018; Hayat, 2019). In fact, empirical studies such as Ali, Fiess & MacDonald (2010) and Buchanan, Le & Rishi (2012), covering a large panel of countries, demonstrate that institutional quality plays a relevant role in determining the level of FDI and the volatility of its inflows.

Although it is widely accepted the idea that institutional quality significantly and positively impacts FDI inflows (see Hayat, 2019), in a recent meta-analysis, Bailey (2018) evidenced that the impact of the institutional quality on FDI inflows is modest. The author further suggests that given the large amount of heterogeneity between effect sizes, more context is needed to fully capture the relationship between institutional quality and FDI attraction. In particular, Bailey (2018) contends that one needs to consider economic related factors, namely countries' productive structure as mediating factors.

Despite the high-quality contributions, the extant literature on FDI determinants have not yet addressed the issue of structural change, that is, the evolution of a country's productive profile on FDI attraction. Most of the studies that has focused the structural change in general referred it being influenced by rather than a cause for FDI (see Damijan, Kostevc & Rojec, 2013; Irandoust, 2016; Muehlen & Escobar, 2019; Mamba, Gniniguè & Ali, 2020). Additionally, although Paul & Jadhav (2020) highlight the importance of the sector's

structure in attracting FDI inflows, suggesting that the different dimensions of institutional quality impact differently on FDI depending on countries' sectoral composition, to the best of our knowledge, no study has yet analyzed the mediating effect of countries' productive profile on the relation between institutional quality and FDI.

The current study aims at filling in this literature gap by analyzing the impact of institutional quality on the attraction of FDI according to countries' productive profile, specifically the share of industry value added in terms of the gross domestic product (GDP).

To undertake such task, we resort to panel data dynamic model estimations, which consider the endogeneity that pave models that include macroeconomic variables such as ours, on a large sample of countries in the last five decades.

This dissertation is structured as follow. In Section 2, we present the literature review on the determinants of FDI, focusing the institutional quality and other relevant determinants. Then, in Section 3, we describe the methodology. Section 4 details and discusses the empirical results. In Conclusions, we summarize the study's main findings and contributions, as well as its limitations.

2. Literature review

2.1. The determinants of Foreign Direct Investment

2.1.1. Institutional related determinants

The institutional theory helps to identify the reasons for the existence of multinational corporations, in general, and the determinants of FDI inflows, in particular (Paul & Feliciano-Cestero, 2020). In this regard, it must be recognized in that there are several variants of the institutional theory since the concept of institutions has been defined in diverse ways with substantial variations among approaches (Scott, 1987).

The definition of institutions has been widely studied by the scientific community, with two names being recognized for their important contributions, Douglass North and Olivier Williamson.

North (1991, pp. 97) states that “institutions are the humanly devised constraints that structure political, economic and social interaction” that are constituted of: 1) Formal institutions, which encompass rules formulated in an official and formal way by society that confers rights and property rights, but also regulatory requirements and obligations, through laws, legislations, rules and others; the formal contexts cover courts and other legal arenas used for the clarifications, enforcement and compensations for infringement of legal rights (see Tadesse, Shukralla & Fayissa, 2019); and 2) Informal institutions that are characterized as non-codified systems of shared values and collective understanding, which shape cohesion and coordination among people in a society; North (1991) includes here sanctions, customs, traditions, taboos and codes of conduct; other authors such as DiMaggio & Powell (1983) and Garrone, Piscitello & D'Amelio (2019) mention also culture, norms, conventions, beliefs, values and practices as informal institutions.

North (1991) describes institutions as the ‘rules of the game’. Williamson (1998) complements North’s view by approaching institutions from a transaction cost economics perspective, in short, institutions as the ‘play of the game’.

For Williamson (1998) institutions are organized at the society level into four categories: 1) Informal institutions that encompasses mainly the referred above in North’s (1991) view; 2) Institutional environment that consists in formal institutions also mentioned above in North’s (1991) view; 3) Governance, defined as the constitution of agreements and contracts between firms or individuals in order to lower conflicts and create benefits (the ‘play of the

game'), referred as transaction costs economics; and 4) Resource allocation and employment, where firms are described as a production function where institutions format the operation of an organization.

Williamson (1998) focuses on the second (institutional environment - formal institutions), and third (governance and interactions of players within transaction cost economics) categories.

The institutional environment is the definition of the 'rules of the game' and the product of the politics, where economic activity is inserted and in which government's judiciary, polity and bureaucracy are located, including the laws of property rights (Williamson, 1998). For Williamson (1998), from the variety of factors that rule the institutional environment, the economics of property rights supports the vast majority of it – since the modern institutional economics centers its attention on the institution of property and its respective norms that rule the transfer and also the acquisition of property rights –, because a private system is not able to work without property rights. In this sense, Williamson (1998) affirms that it is necessary a legal system that defines property rights and arbitrates the existing conflicts and property rights are, therefore, seen as a mechanism to unlock economic organization's problems and to better stimulate economic performance. However, the study of property needs further deepening with the study of the contract, emerging the subject of governance of contractual relations (Williamson, 1998).

In this context, the institutions of governance urge to manage transaction cost economics. Since firms must perform multiple decisions in their business operations and management that requires transactions costs, the latter will shape the relevant governance actions to be carried out (Williamson, 1998). In brief, although the existing normal costs of firms to perform their activity, they also must deal with transaction costs – costs associated to a determined firm's transaction or decision –, that might be critical to shape firm's governance (Williamson, 1998).

Offering an encompassing framework for studying institutions, Scott (1995) proposes three pillars for institutions that manage human interaction and influence organizational decision-making: 1) Regulative, associated with regulatory processes namely with the activities of monitoring, rule-setting and sanctioning, through which institutions constrain and regulate behavior, involving the establishment of rules, inspections and manipulation of sanctions – rewards or punishments –, with the aim to influence future behaviors; 2) Normative, viewed

as a prescriptive and obligatory dimension into social life, comprising values – known as conceptions of the desirable or preferred with the standards to which existing behaviors can be assessed and compared – and norms – that define legitimate means to pursue valued ends –, defined goals and objectives; and 3) Cultural-Cognitive, conceptions that compose the nature of social reality and create the frames through which meaning is made, shared among individuals.

In the context of the first pillar, the **regulative dimension**, consisting of a country’s government policies and its coercive power (see Trevino, Thomas & Cullen, 2008; Donnelly & Manolova, 2020), it is suggested that economic institutions are a crucial element because they are capable of shaping behaviors of stakeholders and economic actors (Sabir, Rafique & Abbas, 2019). The regulative component of a country’s institutional structure is composed by existing laws, rules, regulations, and sanctions (see Figure 1) that shape behaviors and restricts certain actions, where a solid enforcement of them can monitor and secure confidence for companies to invest in FDI (Trevino et al., 2008).

Summing up, countries with a solid well-secured property-rights and, therefore, good institutions, tend to attract foreign firms (FDI inflows), as poor institutions or not well-secured property right systems increase the cost of contracts, making investors unwilling to concretize FDI in countries where there is more difficulties on perform business (Sabir, Rafique & Abbas, 2019).

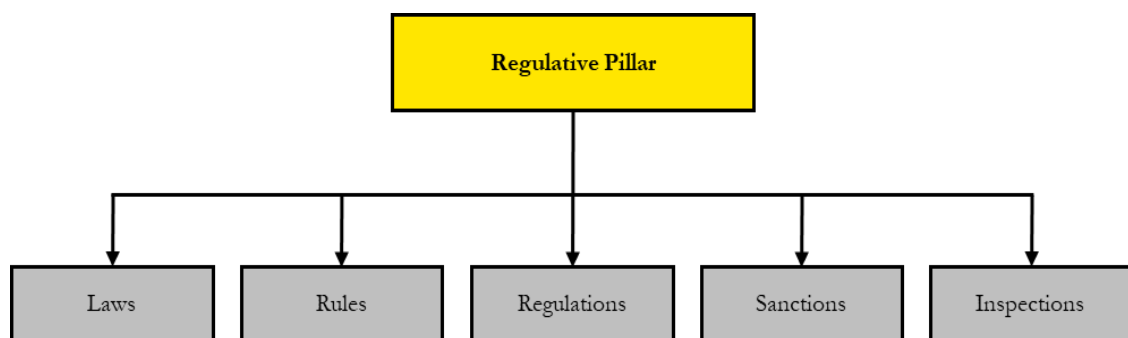


Figure 1: Regulative components of the Institutional Theory

Source: Own elaboration.

The second pillar, the **normative dimension**, defined as “value systems” (Trevino et al., 2008, pp. 121), comprises essentially, accordingly to Kostova (1997), social norms, beliefs,

values, assumptions and behaviors socially shared between and prosecuted by humans (see Figure 2). Trevino et al. (2008, pp. 121) describes this dimension as a component able to define what it is and what it is not appropriate and the “right thing” for individuals in a determined society.

In short, institutions can influence the actions of firms and individuals with the normative processes by determining the ‘correct’ approach of behavior, mainly through the educational systems, religion or even government policies, influencing in this way the decision of a firm to perform FDI into a given country or region (Trevino et al., 2008; Donnelly & Manolova, 2020).

According to Francis, Zheng & Mukherji (2009), the probability of firms to perform FDI increases when there is a strong similarity of normative pressures between their origin and the host country. Overall, it is expected that strong or solid norms in multiple levels will increase the intensity of FDI (Francis et al., 2009).

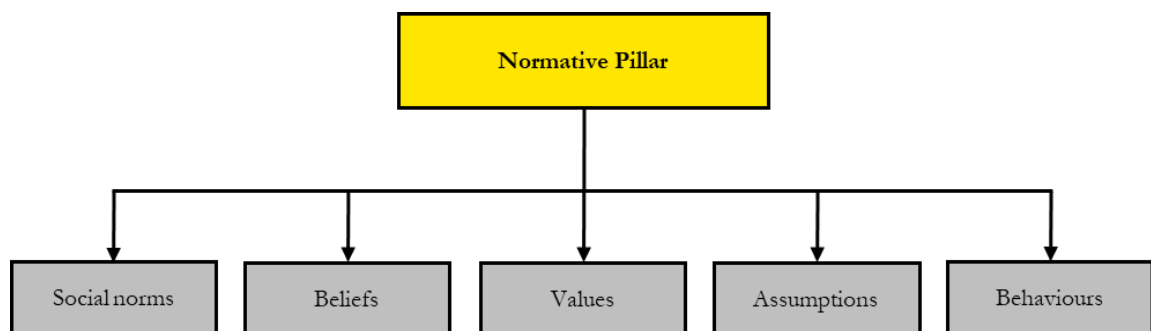


Figure 2: Normative components from the Institutional Theory

Source: Own elaboration.

The last pillar, **cultural-cognitive dimension**, emphasizes social knowledge and perceptions generally shared between actors of what it is typically taken for granted by them and which guides and influences firms and individuals’ behaviors (Trevino et al., 2008; Donnelly & Manolova, 2020). Kostova (1997) refers that cognitive programs, through frames, schemes, representations and inferential sets, influence behaviors as people observe, react and interpret stimuli. Trevino et al. (2008) also refer that institutions’ cognitive component drives to a set of identical and similar activities that motivates the imitation of activities’ patterns that detain a cultural support characterized as strong.

The components of the cognitive-cultural pillar (see Figure 3) are likely to be associated with the level of FDI inflows since cultural distance – defined as differences between home and host countries – is an important driver to internationalization strategies of firms (Trevino et al., 2008; Sjoerd, Kostova, Kunst, Spadafora & Essen, 2018). In fact, according to Sjoerd et al. (2018) companies start to expand its business to more culturally close countries, moving afterwards to more culturally distance countries as they gain experience from abroad experiences. Therefore, it is implicit that cultural distance motivates difficulties for companies because of the lack of knowledge on how host countries perform, creating barriers to collaboration and cooperation with these countries (Sjoerd et al., 2018; Bailey, 2018).

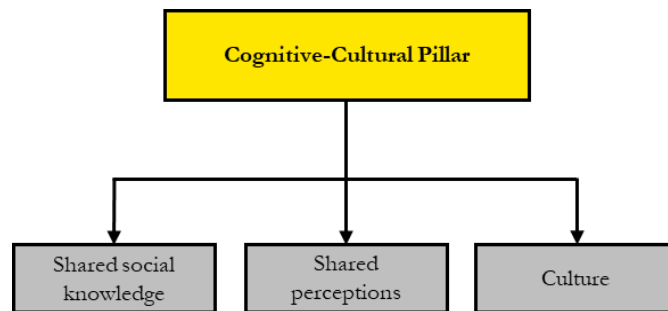


Figure 3: Cognitive-Cultural components from the Institutional Theory

Source: Own elaboration.

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To conclude, a vast number of authors argue that the institutional theory is the most applicable paradigm to explain the role of institutions in attracting FDI, affirming that the three pillars of institutional theory provide the adequate foundation to argue that institutions matter to encourage or discourage FDI and also to the process of internationalization of firms (Trevino et al., 2008; Francis et al., 2009).

The first pillar – the regulative one – focuses on how companies respond to country-level institutions mechanisms generally formed by governments; the second pillar – normative – focuses on how firms respond to social norms, beliefs, values, assumptions and behaviors socially shared between and prosecuted by humans, generally formed between societies; and

the third pillar – cognitive-cultural – responds to how companies behave within a certain cultural distance between host and home countries, also formed between societies (Trevino et al., 2008; Francis et al., 2009; Sjoerd et al., 2018).

Thus, the literature review previously performed evidences that the regulative, normative and cognitive-cultural dimensions may have a direct impact on attracting FDI, being an important endeavor to empirically test that relation.

Based on the above, we conjecture that:

H1: Institutional quality fosters FDI inflows.

2.1.2. Other key determinants of inward FDI and their underlying theories

In the last decades, a vast literature on the determinants of FDI was developed (Okafor, Piesse & Webster, 2017). In spite the intensive study about the determinants of FDI, currently there is not a general theory of factors that critically influence FDI (Villaverde & Maza, 2015).

Notwithstanding, several theoretical approaches identify, in a complementary way, the reasons for the existence of multinational corporations, in general, and the determinants of FDI inflows, in particular (Calvet, 1981; Faeth, 2009; Paul & Feliciano-Cestero, 2021): (i) the neoclassical trade theory; (ii) the imperfect competition theory; (iii) the Ownership, Location and Internalization advantage (OLI) framework; and (iv) the institutional theory (see Figure 4).

The neoclassical trade theory, namely the Heckscher-Ohlin model, assumes that there are two factors of production – labour and capital – that differ in terms of abundancy within two countries, forcing each country to specialize in the production of the good that requires the relative factor of production intensity in which each country is abundant, leading to factor price differentiation (Dornbusch, Fischer & Samuelson, 1980). In this sense, a relative capital-abundant country will export its capital-intensive good or move its capital to foreign countries with scarce capital (Faeth, 2009). In the latter country, returns to capital are higher, which means that the payments on the investments made are higher, and returns in labour are lower, representing lower costs in salaries and other personal expenses, until factor price equalizes (Faeth, 2009; Villaverde & Maza, 2015). Therefore, according to this theory, the country that presents lower returns in labour will benefit with a higher degree of FDI inward

from the capitalized countries to exploit the labour cost advantages (Faeth, 2009). In brief, the differences in returns of capital and the costs of labour explain the attraction of FDI (Faeth, 2009; Villaverde & Maza, 2015).

Criticisms to the neoclassical theory arose, with arguments that FDI cannot be adequately explained in a perfect competition context (Calvet, 1981; Faeth, 2009; Villaverde & Maza, 2015). The perfect mobility of factors underlying the model is described by critics as a utopia, given that markets, in general, are imperfect or far from perfect competition (Villaverde & Maza, 2015). Thus, factor prices may not equalize their marginal productivities or returns (Faeth, 2009). Two conditions must be fulfilled to explain FDI (Calvet, 1981): 1) foreign firms must have an advantage over local firms in order to make their investments feasible and; 2) the market where such investments are made must be imperfect.

In this sense, studies related to imperfect competition theory establish that foreign firms in order to be able to impact on demand and prices, competing fairly with local firms and motivating firms to move across borders, need to have ownership advantages, namely through managerial expertise, product differentiation (characterized as imperfect good market), new technologies and patents (defined as imperfect factor markets), the existence of economies of scale, or the existence of government interference that balances out the disadvantages of entering a foreign market (Calvet, 1981; Faeth, 2009; Okafor et al., 2017).

Under imperfect competition, several theoretical approaches were put forward focusing on different advantages, behaviours and characteristics of firms and markets (Calvet, 1981; Faeth, 2009; Paul & Feliciano-Cestero, 2020) including (i) the monopolistic theory, (ii) the oligopolistic theory, (iii) the behavioral theory, (iv) the product life cycle theory, (v) the diversification theory, (vi) the appropriability theory, and (vii) the internalization theory (see Figure 4).

Through the exploration of the monopolistic theory, Caves (1971) argues that imperfect competition drives firms to differentiate its products, transforming differentiation factor into a monopolistic advantage. According to Caves (1971, pp. 5), “[a] differentiated product is a collection of functionally similar goods produced by competing sellers, but with each seller’s product distinguishable from its rivals by minor physical variations, brand name and subjective distinctions created by advertising, or differences in the ancillary terms and conditions of sale”, that provides advantage in the market. A company that manufactures a differentiated product has the advantage to control the knowledge about how to serve the

market and this knowledge can further be transferred to other markets locations (foreign) by export, licensing or direct investment (Caves, 1971). Export and licensing are preferred to FDI when managerial skills are employed in product differentiation and FDI is preferred when knowledge is engaged (Caves, 1971; Faeth, 2009).

According to Head, Mayer & Ries (2002) and Faeth (2009), in the theory of oligopolistic reaction, active firms in imperfectly competitive markets that invest overseas, namely through FDI, raise competing firms' incentives to invest in the same country, as a result of a 'follow-the-leader' strategy by reacting to strategy moves of competitors or even in reaction to foreign firms investing in their home country.

The behavioural theory concerns foreign investment decisions of firms and explains FDI as a step in an investment decision-making process (Faeth, 2009). Such process generally comes from an outside force that causes a decision to look abroad, creating an investigation process, through which decision makers accumulate initiatives and, particularly, commitments toward other organizations and individuals (Aharoni, Tihanyi & Connelly, 2011). The more committed the decision maker becomes, there is a higher probability for him to proceed with the decision to perform an investment (Aharoni, et al., 2011). It should be noted, however, that if the force that caused the motivation to look abroad is strong, the final approval to invest abroad is just a formality and the investigation process may concentrate only on minimizing the size of the investment and the risks involved (Aharoni, et al., 2011). In brief, this process of decision-making comprises the main decision to search abroad, the investigation and negotiation processes, the commitment to invest and the review and refinement processes (Faeth, 2009; Aharoni, et al., 2011).

FDI can also be explained by Vernon's product life cycle theory based on historical trends (Faeth, 2009). Vernon (1966) assumes that products' life is divided in three phases: 1) the new phase, where product's research and development and early stages of its production are located in the home country (generally advanced economies) in order to provide inputs to better improve the product and when demand is still low; 2) the mature phase, where demand for the product expands, a standardization process starts to take place and it starts to consider a shift of production locations; and 3) the standardization phase, where the less developed countries may offer competitive advantages as a production location to reduce the price.

In the context of the diversification theory, several studies demonstrate that investors may reduce the total level of risk borne by investing and holding an internationally diversified

portfolio, since imperfect competitive markets can deter advantages, because of controls on capital flows, different trading costs, tax structures and other factors for multinational firms to seize (Hughes, Logue & Sweeney, 1975; Michel & Shaked, 1986). In its empirical study, Hughes et al. (1975) concluded that multinational firms have lower systematic and unsystematic risk and, therefore, lower total risk, when compared to domestic firms, confirming that investors perceive the diversification benefits of multinational firms. In brief, empirical studies demonstrate that risk factors could determine FDI, motivating firms to invest in an internationally diversified portfolio (Faeth, 2009).

The appropriability theory suggests that the most important consideration for multinationals is the possibility of losing its own technology innovation to its rivals or to imitators and, therefore, is more efficient and safe to transfer the referred technology internationally inside firms (between the same multinational group), instead of transfer it through the market, once there is a less probability of being imitated or even stolen by other players if it stays under the control of a single firm (Magee, 1981). In this sense, Magee (1981) affirms that in order to avoid and combat effectively this imitation or stealing problem, the solution lies on possessing subsidiaries in different regions or markets to control the operations, since licensee firms are less available to spend funds to stop this problem, because there is no benefit from this expenditure, or even the licensees firms themselves might try to ‘steal’ the technology. Furthermore, it is also believed that the appropriability theory can predict phases two and three of Vernon’s product life cycle theory, where firms start to consider a shift of production locations and start to move into less developed economies that offer competitive advantage, respectively, in order to achieve profit-maximization (Magee, 1981).

According to Rugman, Verbeke & Nguyen (2011), the existence of FDI can be explained by the internalization theory, where firm’s flows of FDI are caused by efficiency properties, such as the capacity to reduce transaction costs by replacing an inefficient process from the market by an internal process to be performed inside the firm, namely in shifting intermediate outputs. Since the market approach was inefficient due to market failure, firms were better off internalizing transactions (Faeth, 2009). According to Buckley (1988), the internalization theory comprises two factors: 1) firms choose the least cost location for each activity they practice; 2) firms grow by internalizing markets until benefits of further internalization are outweighed by costs. Summing up, any market imperfection distorting the market provides

an incentive to internalize productions, leading to the investment in FDI to least cost locations (Buckley, 1988; Faeth, 2009).

In order to explain the option of firms to operate internationally, Dunning (1977) proposed the eclectic paradigm of FDI, the OLI framework. This approach defends an integrated international economic involvement based on three specific endowments: 1) Ownership advantages, already addressed in the related theories of imperfect competition, which gives a (multinational) firm competitive advantage over competitors; 2) Location advantages, where firms will engage in foreign production whenever they perceive that it is of their best interest to produce within a particular location; such advantage is normally associated to the availability and cost of resources (natural or not) that generally are immobile, requiring FDI in that specific location to be fully used and guarantee advantage or even through the existence of tariff barriers, high transport costs, investment incentives, institutions, among others; 3) Internalization advantages, also addressed in the related theories of imperfect competition, where market imperfection characteristics gives motivations for firms to internalize processes (Dunning, 1988).

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To conclude, it is important to mention that there is not a specific theory that explains FDI and its determinants, instead there is a variety of theoretical models and empirical studies that try to explain why firms perform the outward and inward FDI (Faeth, 2009). The different theoretical approaches encompass distinct perspectives (see Figure 4 and Table 1), with some focusing mainly on the company's perspective (e.g., the neoclassical trade theory and the imperfection competition theory), others on the countries' perspective (the institutional theory), and others on a combination of companies' and countries' perspectives (the OLI framework).

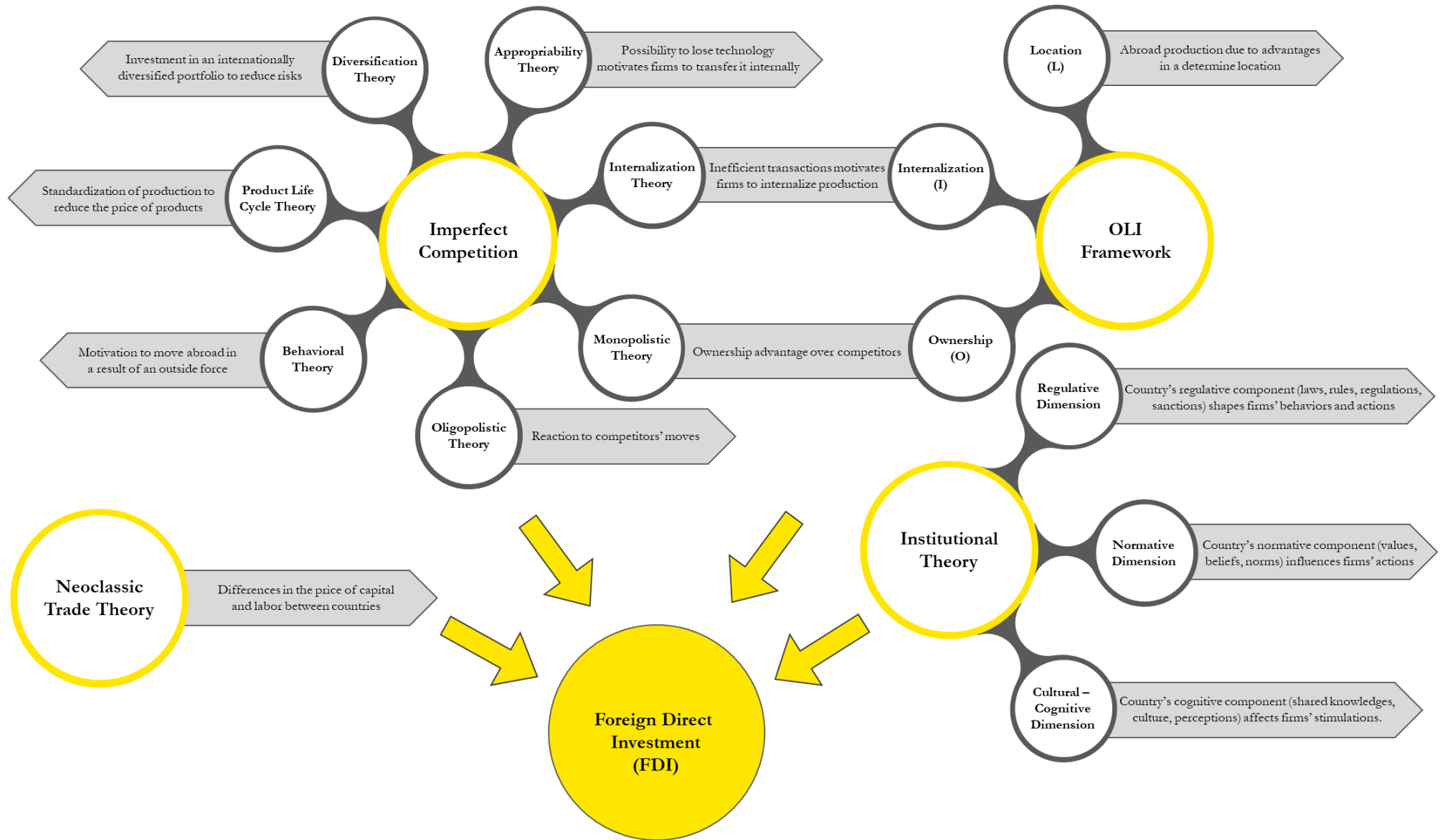


Figure 4: Main determinants of FDI – a synthesis of the relevant theories and mechanisms

Source: Own elaboration.

Table 1: Main theoretical approaches explaining the determinants of FDI inflows

Theoretical Models		Determinants of FDI	Short explanations	Sources
Neoclassical Trade Theory (Heckscher-Ohlin Model)		Price factor	The price of factors of production differ in different countries because of its abundancy, resulting in differences on returns of capital and labor. Higher returns in capital in countries with capital scarce and low costs in labor attracts FDI.	Dornbusch, Fischer & Samuelson (1980); Faeth (2009); Villaverde & Maza (2015)
Imperfection Competition Theory	Monopolistic theory	Ownership factor	Foreign firms need ownership advantages such as product differentiation, managerial expertise, new technologies and patents in order to compete with local firms and motivate FDI.	Caves (1971); Faeth (2009)
	Oligopolistic theory	Reaction factor	Firms invest in FDI as a result of reacting to strategy moves of competitors.	Head, Mayer & Ries (2002); Faeth (2009)
	Behavioral theory	Outside force factor	An outside force that causes a decision from firm to look abroad and perform FDI.	Faeth (2009); Aharoni, Tihanyi & Connelly (2011)
	Product life cycle theory	Price factor	Product life achieves a determine phase where standardization is key for product's price reduction, where production is located to countries that offer competitive advantages, resulting in FDI.	Vernon (1966); Faeth (2009)
	Diversification theory	Risk factor	Firms perform FDI in order to investment in an internationally diversified portfolio with the main objective to reduce risk.	Hughes, Logue & Sweeney (1975); Michel & Shaked (1986); Faeth (2009)
	Appropriability theory	Technology secure factor	The risk of technology innovation being imitated or even stolen motivates firms to execute FDI in order to transfer it internally.	Magee (1981)
	Internalization theory	Efficiency factor	Inefficient processes and transactions in a firm due to market inefficiencies, motivates them to internalize production leading to the investment in FDI to least cost locations.	Buckley (1988); Faeth (2009); Rugman, Verbeke & Nguyen (2011)
OLI framework		Ownership factor	Foreign firms need ownership advantages such as product differentiation, managerial expertise, new technologies and patents in order to compete with local firms and motivate FDI.	Dunning (1977); Dunning, (1988)
		Efficiency factor	Inefficient processes and transactions in a firm due to market inefficiencies, motivates them to internalize production leading to the investment in FDI to least cost locations.	
		Location factor	Firms engage in foreign production whenever there are advantages to produce within a location. The advantages are normally associated to the availability and cost of resources that are immobile, requiring FDI in that location to ensure advantage.	
Institutional theory		Regulative components factor	Laws, rules, regulations and sanctions shape behaviors and restricts certain actions, where a solid enforcement of them can monitor and secure confidence for companies to invest in FDI.	Scott (1987); Scott (1995); Kostova (1997); Trevino, Thomas & Cullen (2008); Sabir, Rafique & Abbas (2019); Donnelly & Manolova (2020)
		Normative components factor	Social norms, beliefs, values, assumptions and behaviors socially shared can influence the actions of firms, which can influence the decision to perform FDI into a determine country or region.	
		Cognitive-Cultural components factor	Social knowledge and perceptions generally shared between actors of what it is typically taken for granted and culture affects behaviors as people notice and interpret stimuli, influencing the FDI inward.	

2.2. The impact of institutional quality on FDI inflows, and the mediating role of the host country's productive structure: theoretical mechanisms

Structural change or structural transformation is often defined as the reallocation of resources – of any type – from a given sector (e.g., primary) to another sector (e.g., industry or services). Positive / virtuous structural change processes entail the reallocation of resources from the least productive sectors to the most productive ones, involving a change in the weight of given industries in terms of product, employment or value added (Mamba et al., 2020).

Several studies have analyzed the relation between structural change and FDI (see Damijan, Kostevc & Rojec, 2013; Irandoust, 2016; Muehlen & Escobar, 2019; Mamba, Gniniguè & Ali, 2020). Virtually all of them suggest FDI is a significant determinant of (host) countries' structural change processes. According to these studies, FDI contributes to increase productivity and promote positive structural change in the host country, by improving the allocation of resources and enhancing trade.

Additionally, it is implicitly suggested that such structural change further contributes to attract additional and more specialized FDI, demonstrating that FDI is a key determinant of structural change, but that structural change itself might trigger more and new FDI inflows, even of a different type or more specialized, based on countries' productive profile (Damijan et al., 2013; Muehlen & Escobar, 2019).

What is not yet explicitly well analyzed is the fact that this effect of structural change on FDI can be further amplified or mitigated depending on the level of institutional quality of the destination country, as indicated by Bailey (2018), since these studies have not yet concretely analyzed the mediating effect of structural change on the impact of institutional quality with FDI.

Based on the above, we conjecture that:

H2: The industrial profile mediates the impact of institutional quality on FDI inflows.

2.3. Impact of institutional quality on FDI: empirical evidence

Based on the diverse literature and its different empirical studies, institutional quality is measured either through a composite index (Globerman & Shapiro, 2002; Peres et al., 2018;

Gnangnon, 2020b) or considering its separated dimensions (Chen, Nie & Ge, 2018; Paul & Jadhav, 2020; Contractor, Dangol, Nuruzzaman & Raghunath, 2020) – see Table 3.

Regarding the measure using a composite index, the empirical study provided by Gnangnon (2020b) with the purpose to investigate if trade policy space influences FDI flows to countries with a panel data set of 158 countries over 1995-2015, measures the institutional quality variable on this relationship through an index of World Bank Governance Indicators developed by Kaufman, Kraay and Mastruzzi who calculated it based on a “weighted average of five indicators: (i) measure of voice and accountability; (ii) measure of political stability and absence of violence/terrorism; (iii) regulatory quality index; (iv) index of rules of law index; (v) index of government effectiveness index and index of corruption” (Gnangnon, 2020b, pp. 341). These five indicators from the World Bank Governance Indicators index that composes the institutional quality, reflect the regulative and normative dimension described on Section 2.1.1. Gnangnon (2020b) concludes that a better institutional quality is positively and significantly associated with FDI inflows.

Peres et al.’s (2018) empirical study estimates the impact of institutional quality on FDI using a panel data set of 110 countries over the period 2002-2012. In this study, the authors utilize two indicators to represent the institutional quality variable: (i) control of corruption; and (ii) rule of law. Peres et al. (2018) state that the high correlation between these two variables might cause multicollinearity and reduce the extent to which the relevance of each individual indicator can be measured; the solution founded was to group the variables into one aggregate component that captures similar dimensions, summing up weighted average index of the each indicators as an aggregate component. In this sense, the aggregate component was measured using World Bank Governance Indicators developed by Kaufmann, Kraay & Mastruzzi, representing the regulative dimension (characterized earlier in Section 2). These scholars found that the institutional quality component has a positive and significant impact on FDI inflow due to the stability of the rule of law, political stability and the effective control of corruption (Peres et al., 2018).

The examination of the effects of governance structure – composed by the political, institutional and legal environment – on FDI flows was empirically studied by Globerman & Shapiro (2002). In this study the governance structure is measured by six indicators estimated by “World Bank Governance Indicators developed by Kaufmann, Kraay & Mastruzzi: (i) political instability; (ii) rule of law; (iii) graft; (iv) regulatory burden; (v) voice and political freedom; (vi) government effectiveness” (Globerman & Shapiro, 2002, pp. 1903, 1907). Since the indices are highly correlated with each other, it is very difficult to use

them all in a single equation, so, therefore, it was created an aggregate measure as the principal component of the six indices – the governance structure index (Globerman & Shapiro, 2002). Regarding the results for this variable, it was clear that governance structure is important for FDI flows, which respond positively to good governance as a great political governance is defined by policies that promote competition at a domestic and also at an international level, by an open and transparent legal and regulatory regime, and by an effective delivery of government services, reflecting the regulative and normative dimensions depicted on the literature review section.

Another study developed by Gnanon (2020a) that aims to evaluate the effect of volatility on FDI volatility in aid recipient countries, measures institutional quality proxied by the degree of democratization of a country, based on the index extracted from the Polity IV Database, that “represents the degree of democracy based on the competitiveness of political participation, the openness and competitiveness of executive recruitment and constraints on the chief executive” (Gnanon, 2020a, pp. 214), reflecting the normative and cognitive dimensions of the institutional theory described in Section 2.1.1. This measure of institutional quality – level of democratization – is negatively associated with FDI volatility, where Gnanon (2020a) affirms that there is empirical evidence that democratized countries tend to experience greater FDI volatility than less democratized ones, since changes in governments affects economic policies that might not meet foreign investors’ expectations. In brief, better institutional quality, in this specific case, are negatively and significantly associated with FDI volatility (Gnanon, 2020a).

Despite the use of a composite index to measure institutional quality, other empirical studies apply different dimensions to measure this component, such as the study by Contractor et al. (2020) that examine which host country’s regulatory factors influence inward FDI. In order to measure institutional quality through regulatory factors, the study separates regulatory variables based on different stages of a firm’s lifecycle indicators (Contractor et al., 2020): (i) starting a business regulation; (ii) enforcement of contracts; (iii) resolving insolvency regulation; (iv) trade across border regulation; reflecting the regulative dimension of the institutional theory. The results show that starting a business and resolving insolvency regulations have an insignificant impact on FDI inflows, while trade across borders regulations and contract enforcement is positively and have a significant impact on FDI inflows, because firms are more likely to move to a country where it is more easier to acquire or register properties easily, where there are less regulatory impediments to move products, capital and human capital across borders and where firms prefer to invest in countries in

which profits can be higher by reducing risks and costs of enforcing contracts (Contractor et al., 2020).

Another study that uses different dimensions to measure institutional quality is the one from Chen et al. (2018) that analyses the impact of policy uncertainty on FDI. Institutional quality is measured by political stability and rule of law, both sourced from The Worldwide Governance Indicators database (WGI) and by election for political uncertainty, sourced by Database of Policy Institutions, that encompasses the three dimensions of the institutional theory – regulative, normative and cultural-cognitive (Chen et al., 2018). The results demonstrate that political uncertainty caused by elections have a significantly negative impact on FDI inflows whereas political stability and the rule of law have, in general, significant and positive impact regardless the degree of democratization and political system (Chen et al., 2018).

Exploring the role of institutional determinants of FDI in emerging markets, Paul & Jadhav (2020) utilize different dimensions to measure institutional quality: (i) governance index, from the Worldwide Governance Indicators of World Bank; (ii) business environment, (iii) trade cost and (iv) corruption from the Index of Economic Freedom of the Heritage Foundation (Paul & Jadhav, 2020, pp. 251); these different indicators encompass the regulative dimension of the institutional theory. The results demonstrate that trade costs have a significantly negative impact on FDI inflows, while good governance is positively associated (Paul & Jadhav, 2020). The other two variables did not reveal a significant impact on FDI inflows (Paul & Jadhav, 2020).

3. Methodology

3.1. Aims of the study and methodological option

The present study has a twofold aim. First, to assess the impact of institutional quality on FDI inflows; and second, to scrutinize the extent to which such impact varies according to countries' productive structure. In other words, whether countries' productive structure mediates the impact of institutional quality on FDI inflows. The extant literature does not analyze the mediating effect of countries' productive profile on FDI. However, the sector-based empirical study developed by Paul & Jadhav (2020) highlights the importance of the sector's structure effect in attracting FDI inflow.

To pursue this endeavor, in line with the relevant literature (see Table 3), it was resorted to quantitative, econometric methods. Given that our data involve observations about different cross sections across time, we will resort to panel data methodologies. Specifically, we will use dynamic panel data models, most notably the generalized method of moments (GMM) framework (Arellano & Bond, 1991). This methodology is already used by a reasonable number of studies that aimed to assess the determinants of FDI, such as Gngangnon (2020b), Peres, Ameer & Xu (2018), and Paul & Jadhav (2020). Among its many advantages, namely vis-à-vis more traditional static panel models, one can mention the fact that dynamic panel models enable to overcome endogeneity issues.

3.2. Econometric specification

To investigate the impact of institutional quality on FDI inflows and the mediating effect of countries' productive profile, a set of control variables defined by macroeconomic determinants of FDI inflows were included in the econometric model based on the relevant literature (see Table 3), which encompasses the host-country's market size, trade openness degree, the human capital level, inflation, and fiscal policy.

Following the above, an econometric model was constructed:

$$FDI_{it}^j = \beta_1^j + \beta_2^j IQ_{it}^j + \beta_3^j SC_{it}^j + \beta_4^j \mathbf{X}_{it}^j + \mu_{it}^j$$

i represents the country.

j represents the category of industry profile (1: industry value added in total GDP below the average; 2: industry value added in total GDP above the average).

t represents the year/ time period

FDI : the inflows of FDI in total GDP

IQ : the proxy of institutional quality

SC : the proxy of structural change, that is, for the evolution of the industrial profile

\mathbf{X} : vector of control variables including the proxies of domestic market size, human capital level and trade openness

μ : random error term

If the estimate of β_2^j is positive and significant, that means that our hypothesis 1 (H1: “Institutional quality fosters FDI inflows”) is validated. Moreover, if β_2^j are significant and $\beta_2^2 > or < \beta_2^1$, this means that for more (less) industrialized countries the impact of higher institutional quality on FDI attraction comes enhanced. In short, the hypothesis 2 (H2: “The industrial profile mediates the impact of institutional quality on FDI inflows”) is validated.

The control variables are mainly represented by the Eclectic Paradigm of FDI, known as OLI paradigm (Ownership, Location and Internalization) from Dunning (1977 and 1988). According to Dornean, Isan & Oanea (2012), based on Dunning (1977 and 1988), location sub-paradigm of countries, a firm that detains ownership advantages is more likely to invest in countries that offer a location advantage. The location decision of a firm is part of a set of decisions that are affected or influenced by the conditions and characteristics faced in local markets where companies pretend to operate (Buettner and Ruf, 2007). The location advantages might be summed up to the size of the market, openness degree, human capital level, inflation rate, and taxes.

The size of the market is one of the approached location advantages, since an increase in the size of the market of a determined country will increase the level of FDI, leading to a higher expected profitability (Dunning, 1977; Dunning, 1988; Dornean et al., 2012). Therefore, the host-country’s market size is considered an important determinant for FDI inflows and usually identified in most of the studies (Globerman & Shapiro, 2002; Peres et al., 2018; Chen, et al. 2018; Gnanngnon, 2020a; Gnanngnon, 2020b). As referred, there is a theoretical linkage to the location advantage, where a larger market also implies lower distribution costs

when production or distribution facilities are situated in a market where a big number of customers is located (Globerman & Shapiro, 2002). Additionally, an economy with a large market allows efficiency in scales of production, concretely with economies of scale, leveraging the attraction of FDI inflows (Peres, et al., 2018; Gnanon, 2020a).

Trade openness – the openness of an economy – is considered an important element that defines to which extent the exports and imports relations of a determine country will have with another one (Kumari & Sharma, 2017). It can be crucial not only for exportation matters, but also for imports since a lot of firms that decide to perform FDI in host countries, require the importation of raw materials and other intermediate products necessary for production or commercial activities (Kumari & Sharma, 2017). Ghergina, Simionescu & Hudea (2019) affirm that openness empowers the efficiency of goods' production and services' provision through the allocation of productions and shared service centers in other countries, which means that more openness translates into higher FDI inflows. Trade openness is, according to Kumari & Sharma (2017) and Gnanon (2020a) in the last decades, approached in many empirical studies as one of the determinants that have a positive and significant impact on the host-country's FDI inflows. Indeed, the higher the level of trade policy space (trade openness), the higher is the amount of FDI inflows (Gnanon, 2020a).

The human capital level is also considered by Globerman & Shapiro (2002), Gnanon (2020b) and Contractor et al. (2020) to be an important driver of FDI inflows, since higher education levels in the host country means more labor quality and therefore highly skilled workers. In fact, for Kumari & Sharma (2017) the human capital reflects the physical, social and economic contexts of a society, where investments in it help to develop skilled employees and employers. However, some authors studies identified that levels of human capital might not affect FDI inflows (Noorbakhsh, Paloni & Youssef, 2001; Kumari & Sharma, 2017).

The inflation rate is characterized by the IMF (2021) as an economic indicator that measures how much more expensive a group of goods and services has become over a determined period of time. It can also indicate internal economic tension and the lack of ability of governments and central banks to control the supply of money and budget's balance (Buchanan, Le & Rishi, 2012). Generally, an inflation rate that is low (but not too low) means stability, positive economic growth and that a given economy is strong (Kumari & Sharma,

2017). For Sayek (2009), inflation means tax on labor supply and domestic investment in the home country and tax on FDI in the host country, affirming that home and host inflation influences both foreign and domestic investment. An increase in the home country inflation rate increases FDI, since it causes an increase in domestic consumption which, therefore, has a reflection on the opportunity cost of investment in host (foreign) countries (Sayek, 2009; Bauchnan et al., 2012). This relation is reciprocal, meaning that an increase in the inflation rate in the host country translates into a disincentive for FDI and an incentive to invest domestically (Sayek, 2009; Bauchnan et al., 2012). In this sense, the higher the inflation rate, the lower the FDI will be.

Fiscal policy is considered an important tool in spending and taxation for governments in order to influence economies with the distribution of income, resources' allocation, demand and economic activity and enabling them to control macroeconomic variables such as GDP, public debt or FDI (Gondor & Nistor, 2012; Dornean & Oanea, 2014). In this context, it is of major interest for policymakers and economists the role and effectiveness of the fiscal policy, since it can be used to stimulate economies (Wierzbowska & Shibamoto, 2018). Benassy-Quere, Fontagne & Lahreche-Revil (2005) affirm that there was always a feeling in the academic community that FDI is influenced by corporate taxation, referring that location decisions to perform FDI depend on taxation in host countries, which can influence the amount of FDI inflows. Notwithstanding, studies developed in the last decades demonstrate a controversy in the relationship between taxation and FDI (Bellak & Leibrecht, 2009; Baccini & Mirkina, 2014; Munongo, Akanbi & Robison, 2017). According to Bellak et al. (2009) and Baccini & Mirkina (2014), while the majority of studies indicate that there is a negative relation between taxation and FDI inflows – the higher the tax burden the lower the FDI inflows –, other studies indicate that there is no relation between them such as the study of Jensen (2012). Indeed, fiscal policy variables differ across the various studies, which can indicate a certain degree of inconsistency in results, but it is often found that corporate tax income significantly reduces FDI or the activity of multinational corporations (Baccini & Mirkina, 2014).

Finally, as extensively detailed in the literature review section (Section 2), institutional quality is important to the promotion and attraction of FDI inflows. Therefore, it is expected that better quality of institutions will have a positive impact on FDI inflows.

3.3. Data, variables, and proxies

Following Jensen (2003), Ahlquist (2006) and other studies (see Ullah & Khan, 2017; Bahri, Nor & Nor, 2018; Saini & Singhania, 2018; Mitra & Abedin, 2020), the dependent variable “FDI inflows” represents a given host country’s FDI net inflows in percentage of GDP. This variable is a measure of the change in the position of foreign investors in a country, being considered by Jensen (2003) the best measure to examine a country’s ability to attract FDI and, according to Kurul & Yalta (2017), allows to control for the scale effects.

For the proxy of institutional quality, it is considered three different indicators: (i) one for the regulative dimension; (ii) another for the normative dimension; (iii) and the last for the political dimension.

Regarding the *regulative dimension*, we use the ‘Rule of Law’ (RL) indicator from the Worldwide Governance Indicators of The World Bank database. It “measures the extent to which agents have confidence in and follow the rule of law, specifically the quality of contract and enforcement, property rights, the courts, and the police and the likelihood of crime and violence” (Peres, et al., 2018, pp. 630; Data Bank World Development Indicators, 2021). This indicator is, accordingly to Wang, Li & Zhong (2019), generally used to represent formal institutions – that encompasses rights, obligations, and regulatory requirements, property rights, through laws, legislations, rules and others –, being used as a proxy for institutional quality in a variety of studies such as Wang, Li & Zhong (2019), Sabir, Rafique & Abbas (2019), Bhasin & Garg (2020). The RL estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution ranging approximately from -2.5 to 2.5, with the lower values being associated with “worse” RL (meaning lower institutional quality) and the higher values being associated with “better” RL (higher institutional quality).

Concerning the *normative dimension*, we resort to the Corruption Perception Index (CPI) from the Transparency International. This index is constructed based on surveys that include questions that range from the frequency of corruption in various contexts to the common occurrence of bribery to politicians, senior civil servants and judges (Robertson & Watson, 2004), being able to represent the values, social norms, beliefs behaviors within a society. The CPI ranks countries on a scale of 0 to 100, whereas 0 indicates a highly corrupt country (lower institutional quality) and a country with an index score of 100 is considered very clean (higher institutional quality). Prior to 2012, the index used to score the countries was on a

scale from 0 to 10, but in order not to have a dataset with two different ratings, data for the period before 2012 was multiplied by 10.

For the *political dimension*, the institutionalized democracy indicator ('Democ') is used, sourced from the Polity5 dataset. This indicator is used in a vast number of empirical studies such as Asiedu & Lien (2011), Mathur & Singh (2013), Jawaid, Abbas & Saleem (2017) and Gossel (2018) and it is defined based on three interdependent elements: (i) the presence of institutions and procedures through which citizens can express effective preferences about alternative policies and leaders; (ii) the existence of institutionalized constraints on the exercise of power by the executive; and (iii) the guarantee of civil liberties to all citizens in their daily lives and in acts of political participation. This indicator is an additive eleven-point scale (0 to 10), whereas 0 represents a non-democratic country (lower institutional quality) and 10 represents a very democratic country (higher institutional quality).

The industry profile is measured by the weight of the industry ('Industry weight') in terms of total value-added. The evolution of this indicators reflects the process of structural change. In line with the contributions of Damijan et al. (2013), Mijiyawa (2017), and Mamba et al. (2020), we resorted to the industry value added in percentage of GDP.

To measure the host-country's market size it is generally used two variables (Gnangnon, 2020b; Peres et al., 2018) – (i) GDP per capita; and (ii) total population – that reflect country's current and future market potential (Lucke & Eichler, 2015), through the average income per person and the potential number of consumers (Pereira, Jalles & Andresen, 2011).

The trade openness is measured by the sum of exports and imports of goods and services as a percentage of GDP (Asiedu & Lien, 2004; Pereira, Jalles & Andresen, 2011; Iamsiraroj & Ulubasoglu, 2015; Iamsiraroj, 2016; Kumari & Sharma, 2017). This indicator is used because it translates the involvement of countries in the international economy by quantifying representation of the exports and imports, that necessarily involves international trade, on all the finished goods and services produced within a country (Pereira, Jalles & Andresen, 2011).

Human capital level is measured, following a vast number of studies (Li & Liu, 2005; Mastromarco & Ghosh, 2009; Wang & Wong, 2009), by the average number of years of education of people aged 25 and older (Barro & Lee, 2013). These estimates of educational attainment are considered a good proxy of human capital, preferable to enrollment rates (which are flows) and illiteracy rates (Kheng, Sun & Anwar, 2017).

Inflation rate is the variation of the consumer price index (in percentage), in line with the relevant empirical studies (Naude & Krugell, 2007; Xaypanya, Rangkakulnuwat & Paweenawat, 2015; Rashid, Looi & Wong, 2017; Kumari & Sharma, 2017; Gnanngnon, 2020a) in this area.

Corporate income tax (CIT) rates proxy fiscal policy, being a simple and visible indicator of a corporate tax regime and which tends to influence the will of investors (Bellak & Leibrecht, 2009; Klemm & Van Parys, 2012; Boly, Coulibaly & Kere, 2020).

Table 2 summarizes all variables and respective proxies, explicitly referring the metrics and source of the data.

Table 2: Data and variables description

	Variable	Definition	Source
Dependent	FDI	FDI inflows, in percentage of GDP.	World Development Indicators (WDI) - World Bank
Core independent variables	Democ	The Democracy index expresses the effective preferences about alternative policies and leaders, the existence of institutionalized constraints on the exercise of power by the executives, the guarantee of civil liberties to all citizens in their daily lives and in acts of political participation and other aspects such as systems of checks and balances, freedom of the press, and so on are means to, or specific manifestations of, these general principles. The Democracy index is an additive eleven-point scale (0-10).	Polity Dataset
	RL	“Rule of Law that captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution ranging approximately from -2.5 to 2.5, with the lower values being associated with “worse” rule of Law and the higher values being associated with “better” rule of Law” (Peres, et al., 2018, pp. 630).	World Governance Indicators (WGI) from the World Bank produced by Kaufmann, Kraay & Mastruzzi.
	Norm	Corruption Perception Index (CPI) aggregates data from a number of different sources that provide perceptions by business, people and country experts of the level of corruption in the public sector. The CPI ranks countries on a scale of 0 to 100, whereas 0 indicates a highly corrupt country and a country with an index score of 100 is considered very clean. Prior to 2012, the index used to score the countries was on a scale of 1 to 10, but in order not to have a dataset with two different ratings, data for the period before 2012 was multiplied by 10.	Transparency International
	Industry weight	Industry (including constructing) value added, in percentage of GDP.	WDI from the World Bank
Control variables	GDP pc	GDP per capita (constant 2010 US dollars).	WDI from the World Bank
	Population	Total population.	
	HC	Average number of years of education received by people ages 25 and older, converted from education attainment levels using official durations of each level.	United Nations developed by Barro & Lee
	Trade openness	Sum of imports and exports, in percentage of GDP.	WDI from the World Bank
	Inflation	Inflation consumer prices annual percentage.	

Table 3: Synthesis of the empirical studies on the relevance of institutional quality for inward FDI

Authors (year)	No of countries	Period	Proxy for the FDI inflows	Independent variable – Institutional quality		Other independent variables		Methodology of analysis
				Proxy	Result	Proxy	Result	
Gnangnon (2020b, pp.341)	158	1995-2015	Inward FDI, in percentage of the GDP	Institutional quality and governance – Index of a weighted average of five indicators “(measure of voice and accountability; a measure of political stability and absence of violence/terrorism; a regulatory quality index; an index of rules of law index; an index of government effectiveness index an index of corruption)”	+++	Host-country’s market size	---	Dynamic panel model
						GDP per capita (constant 2010 US\$)	---	
						GDP growth (annual %)	+++	
						Total population	0	
						Financial openness – “capital account openness, index computed by Chinn and Ito (2006)”	0	
						Human capital development - Education level in host countries	+++	
						Multilateral trade liberalization – “Average trade policy of the rest of the World. For a given country, this variable has been calculated as the average trade freedom score of the rest of the world.”	+++	
Financial development – “Domestic credit to the private sector by banks (% of GDP)”	0							
Peres, Ameer & Xu (2018, pp. 630-632)	110	2002-2012	FDI, “measured as net inflows (B.o.P. current U.S.\$) divided by the G.D.P. deflator, with 2002 as the base year”	Governance – “Control of corruption; rule of law (World Governance Indicators developed by Kaufmann, Kraay, & Mastruzzi, 2007)”	+++	“Host-country’s market size”:	++	Dynamic panel model
						“GDP per capita growth”	++	
						Population	+++	
						“Infrastructure in the host country – number of telephone lines per 100 inhabitants”	++	
						Geographical forces on FDI – “World Trade Organization membership (W.T.O.)”	0	
Financial Crisis – “dummy variable where the years of crises are getting the value 1 while for the non-financial crisis years are assigned the value 0.”	--							
Globerman & Shapiro (2002, pp. 1903, 1907)	144	1995-1997	“FDI inflows in \$US, averaged 1995–97”	Governance Infrastructure Index (GII) – “political instability; rule of law; graft; regulatory burden; voice and political freedom; government effectiveness (estimated by Kaufmann et al. (1999) for the World Bank)”	++	Host-country’s market size - real gross domestic product	+++	Fixed effect regression model
						Human Development Index (HDI) – “combines GDP per capita; Education - measured by a combination of adult literacy and gross primary, secondary and tertiary enrolment; Life expectancy at birth.”	0	
						Environmental Sustainability Index (ESI) – “22 factors that contribute to: environmental sustainability including air quality, public health, and environmental regulation.”	0	
Gnangnon (2020a, pp. 214)	117	1981-2016	“Volatility of real FDI inflows. FDI inflows (% of GDP) x real GDP (in constant US\$ 2010 prices)”	Degree of democratization – “Index extracted from the Polity IV Database (Marshall et al., 2018). Degree of democracy based on the competitiveness of political participation, the openness and competitiveness of executive recruitment and constraints on the chief executive”	---	“Trade openness – share of the sum of exports and imports of goods and services in GDP.”	---	Dynamic panel model
						“Financial openness - de jure financial openness, computed by Chinn & Ito (2006), updated July 2019.”	-	
						Inflation volatility – “annual inflation rate (%), based on the consumer price index.”	0	
						Economic volatility – “annual growth rate of real GDP.”	+++	
						Real per capita income (constant 2010 US\$)	0	
						Host-country’s market size - Population size - Total population size	---	

Authors (year)	No of countries	Period	Proxy for the FDI inflows	Independent variable – Institutional quality		Other independent variables		Methodology of analysis
				Proxy	Result	Proxy	Result	
Contractor, Dangol, Nuruzzaman & Raghunath (2020)	189	“over the last 15 years”	FDI inflows (billions of US dollars)	Ease of doing a business		Annual GDP Growth	+++	Fixed effects regression model
				Starting business regulation;	0	GDP Per Capita	+++	
				Contract enforcement	+++	Registration of Property	+	
				Resolving insolvency regulations	0	Human Development Index (HDI Index)	0	
				Trade across border regulation	+++	Obtaining Credit	0	
Chen, Nie & Ge (2018, pp. 421-422)	126	1996-2015	“FDI inflows represented in logarithm current US dollar”	“Political stability - sourced from The Worldwide Governance Indicators database (WGI)”	+	“Real GDP”	+	Fixed effects regression model
						“GDP growth”	+++	
				“Rule of law - sourced from The Worldwide Governance Indicators database (WGI)”	++	“Trade openness”	+++	
						“Real interest rate”	0	
		“Election for political uncertainty - Database of Policy Institutions (DPI)”	-	Host-country’s market size - Total population	0			
Paul & Jadhav (2020, pp. 251)	24	2003-2015	Sectoral FDI inflows (billions of US dollars from Investment Map, International Trade Centre)	“ Governance index - Worldwide governance indicators (World Bank)”	+	“ Infrastructure index - electricity consumption, internet user and air travel”	0	Dynamic panel model
				“ Business environment - overall indicator of government regulation of business (Index of Economic Freedom, Heritage Foundation)”	0			
				“ Trade cost - Tariff and non-tariff barriers (Index of Economic Freedom, Heritage Foundation)”	---			
				“ Corruption - Freedom of corruption (Index of Economic Freedom, Heritage Foundation)”	0			

Notes: +++(++)[+]/ ---(--)[-]: positive / negative and statistically significant at 1% (5%)[10%]; 0 – not significant.

4. Empirical analysis

4.1. Descriptive account

The data set has a relative wide ranging, since it is composed by many countries (161) over a long period (1970-2019). It includes countries with different income levels and located in different regions, allowing a consistent and diverse panel data set.

The list of countries used in this study is detailed in Annex A1. The summary statistics can be found in Table 4, while further information regarding these statistics segmented by income level and regions is presented in Annex A2.¹

Table 4: Descriptive statistics

	Variable	Number of observations	Mean	Std. Dev.	Min	Max
Dependent variable	FDI	7111	3.42	11.69	-40.41	449.08
	Democ	7300	4.53	4.17	0.00	10
Institutional quality	RL	3867	-0.02	0.98	-2.32	2.10
	Norm	3137	43.79	21.60	4.00	100
Industrial profile	Industry weight	6241	27.53	12.23	0.96	90.51
	GDP pc	7134	10737.22	14992.69	164.46	92556.32
Control variables	Population	8047	33600000	124000000	51151	1400000000
	HC	7301	6.53	3.33	0.00	14.2
	Trade openness	6852	77.54	48.74	0.02	442.62
	Inflation	7299	34.76	426.95	-31.90	26765.86

The dependent variable foreign direct investment (FDI), measured as net inflows in percentage of GDP, presents a mean of 3.4% of the GDP, ranging between a minimum of -40.4% (Hungary, 2018) and a maximum of 449.1% (Malta, 2007). In the period of analysis and for the whole set of countries, FDI inflows increased up to 2008 (world financial crisis) decreasing thereafter (Figure 5). When splitting the sample of countries between those years-countries that present a weight of industry value added (in total GDP) below and above the average (27.5%), we find that countries that have an industry weight above the average observe a less pronounced decrease in FDI inflows after 2008.

¹ In the case of human capital original data are available in 5-year periods. We interpolate the values within the 5-year period. In some few years for which data was missing for the variables Rule of Law, we also use linear interpolation. Additionally, for some countries, the variation of the Consumer Price Index was not available, thus we used instead the variation of the GDP deflator.

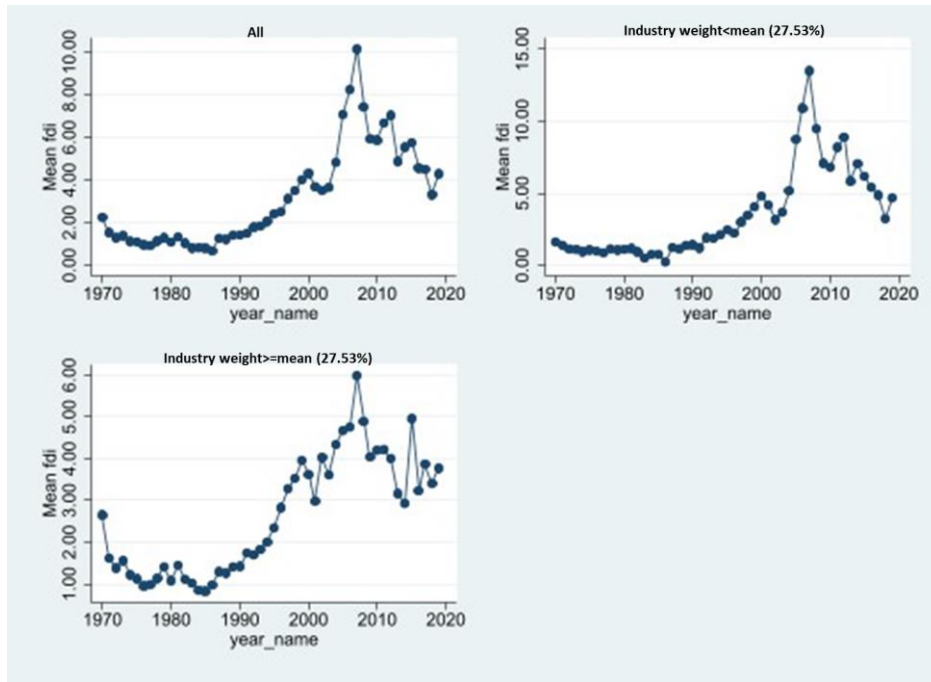


Figure 5: The evolution of FDI inflows, 1970 to 2019

Regarding the core independent variable for the political dimension of institutional quality (Democ) that is measured by the democracy index, ranging from 0 to 10, it presents a score mean of 4.53. Figure 6 shows that for the whole set of countries in the period under analysis, the democracy index increased constantly, experiencing an exponential growth in the late 1980s, with the exception of the last five years (2014-2019) which recorded a slight decrease.

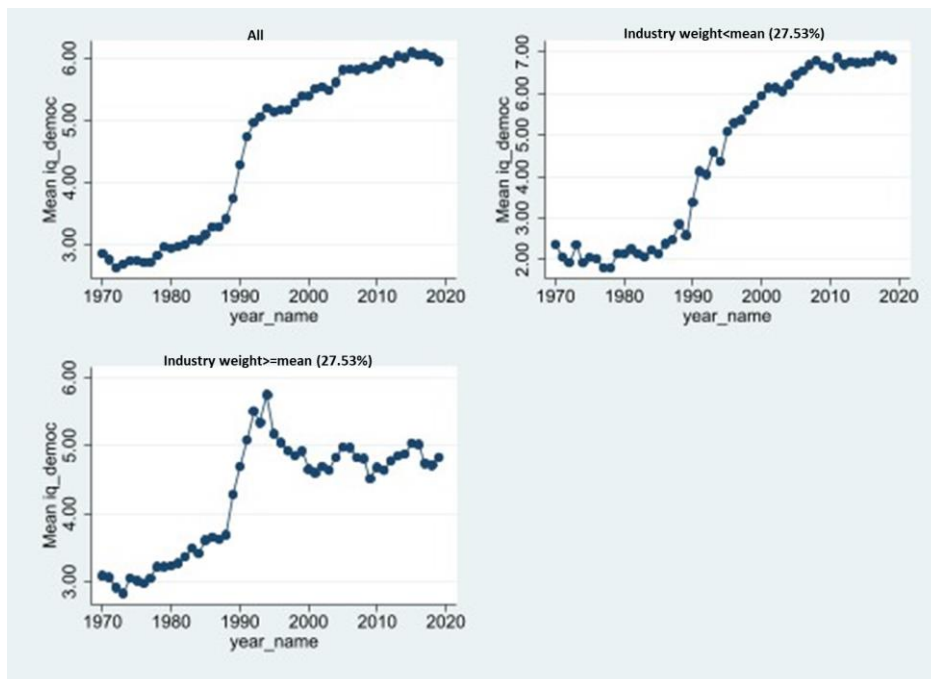


Figure 6: Evolution of the institutional quality based on the democracy index, 1970-2019

Moreover, when analyzing the sample of countries between those years-countries that present a weight of industry value added (in total GDP) below and above the average (27.5%), countries with an industry weight below the average present a larger increase the democracy index, while countries with an industry weight above the average demonstrate an unstable evolution.

The core independent variable that represents the regulative dimension of institutional quality is measured by the Rule of Law (RL), with a mean of -0.02, ranging between a minimum of -2.32 (Venezuela, 2018 and 2019) and a maximum of 2.10 (Denmark, 2014; Finland, 2014). During the period under analysis and for the countries as whole, RL has been decreasing over time, having experienced significant growth in 2014, but returning again to the downward trend in the following years (see Figure 7).

Countries between those years-countries with an industry weight above the average have a significantly better RL than those with an industry weight below the average. Interestingly, the trend in recent years is for a deterioration of RL in countries with an above average industry weight and an improvement for countries with a below average industry weight.

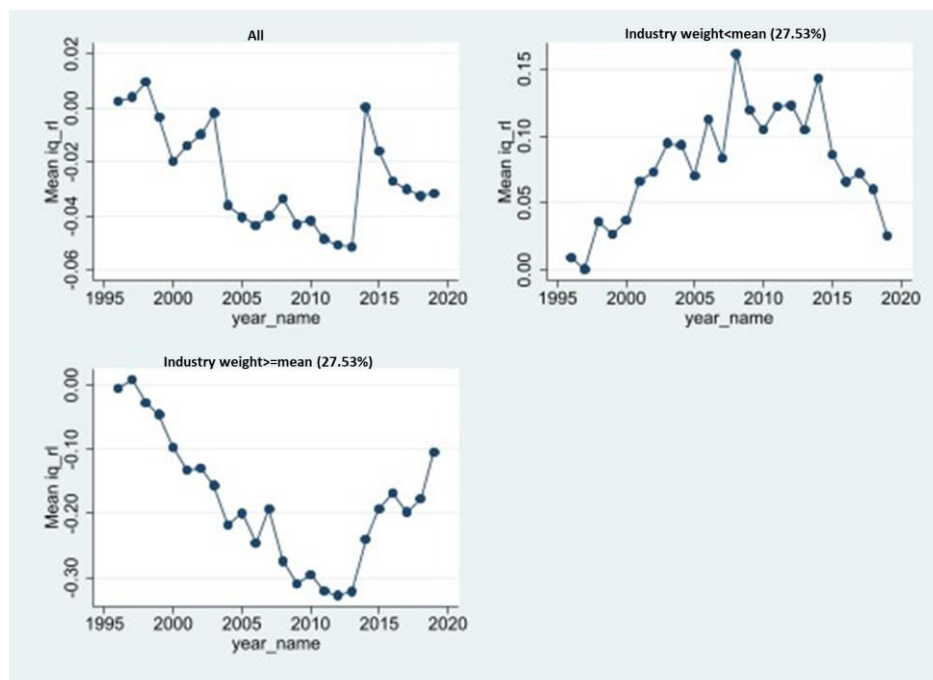


Figure 7: Evolution of the institutional quality based on the rule of law, 1970-2019

The normative dimension of institutional quality (Norm), measured by the Corruption Perception Index, has a score mean of 43.8, with a maximum of 100 (Denmark, 1998 and 1999; Finland, 2000) and a minimum of 4 (Bangladesh, 2001). Observing Figure 8, we find that during the period under analysis and considering all countries, there has been a negative evolution of this indicator, reflecting a decrease in average institutional quality.

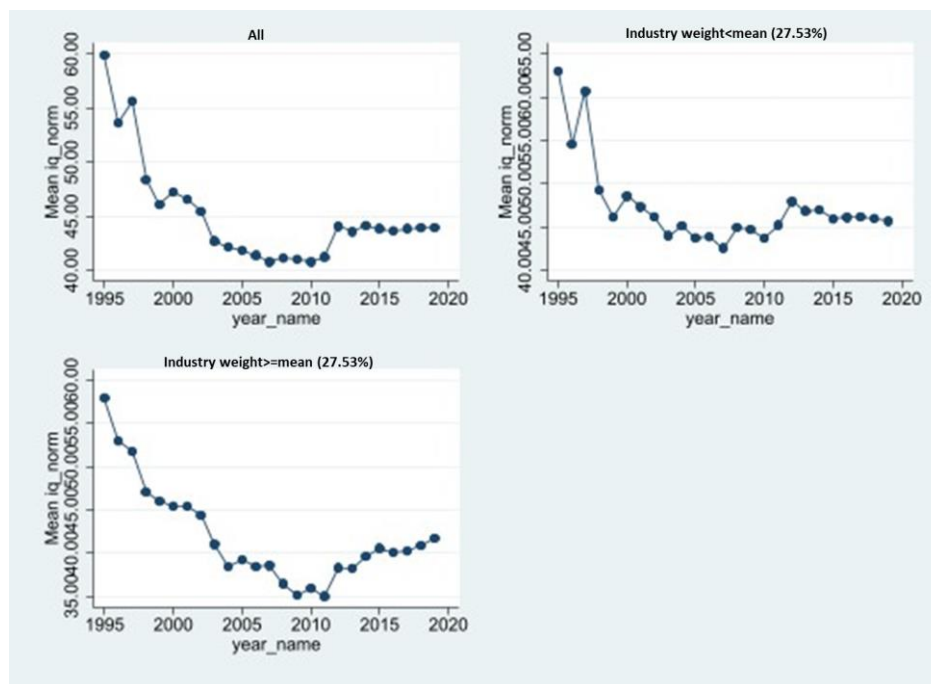


Figure 8: Evolution of the institutional quality based on the transparency index, 1970-2019

Separating the sample of countries between those years-countries that present a weight of industry value added (in total GDP) below and above the average, we can affirm that, despite the downward trend in both situations, countries with an industry weight below the average scored better in this dimension.

In what concerns the variable that proxy countries' industry profile, the industry weight in terms of value added (in total GDP), the mean is 27.53%, with a minimum of 0.96% (Sudan, 2019) and a maximum of 90.51% (Brunei Darussalam, 1974). Figure 9 depicts a downward trend in the share of industry value added in GDP over the relevant period.

Although the group of countries-years with an industry share below and above the mean revealed a similar trend, the less industrialized countries-years evidence a less pronounced decline and after 2010 (Figure 9).

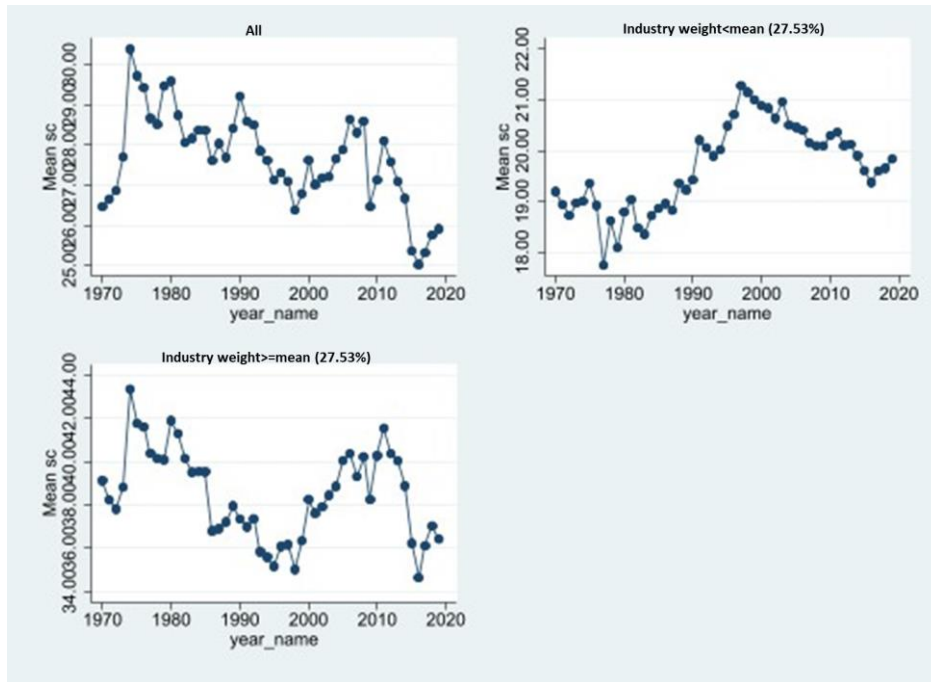


Figure 9: Evolution of the weight of industry value added in total GDP, 1970-2019

Regarding the control variables, trade openness presents a mean of 77.54%, evidencing an upward trend for the whole sample and for each industrial profile group (see Figure 10). The means for GDP per capita, the population, and human capital are, respectively 10737 dollars, 34 million people, and 6.53 years of education. All these variables' means increased in the last fifty years, in the group of countries-years with an above the mean average industry share. The mean of the inflation rate is 34.76%, experiencing a disinflation trend after the end of the 1990s. The population average has been also declining markedly.

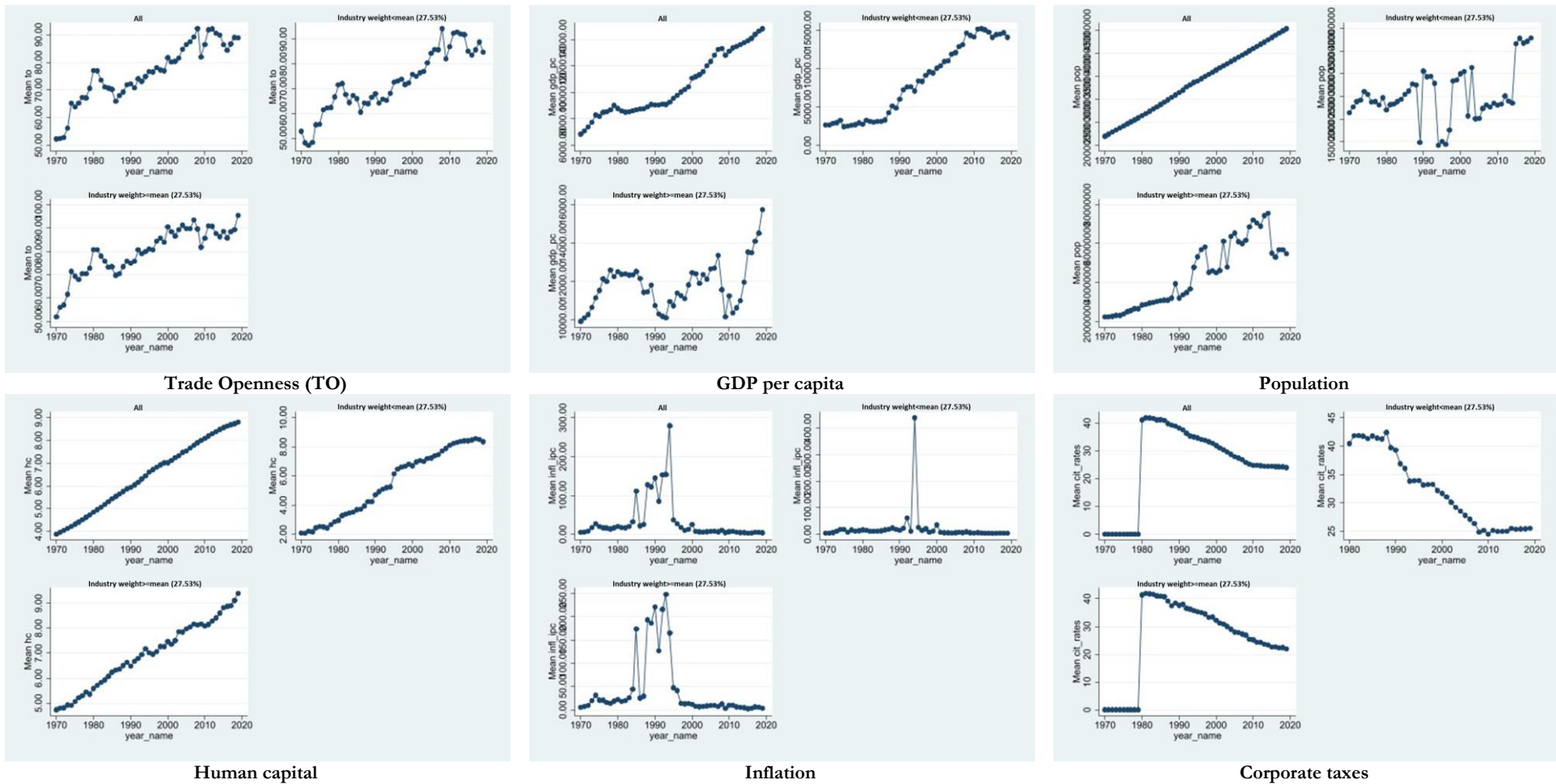


Figure 10: Evolution of the proxies for the control variables, 1970-2019

4.2. Econometric analysis

To assess the extent to which institutional quality fosters FDI inflows (H1) and whether countries' industrial profile mediates the impact of institutional quality on FDI inflows (H2) we estimate 9 models resorting to dynamic panel data models (see Table 5). The original econometric specification (see Section 3) included the variable corporate tax rate. As the number of available observations for this variable is small, we decided to present and discuss the results based on the estimations which exclude this variable.²

The diagnosis tests, namely the Breusch–Pagan and the Variance Inflation Factor (VIF) indicate that the residuals are not homoscedastic (i.e., do not have equal variance, rejecting the null hypothesis of the Breusch-Pagan test) and that no multicollinearity issues are present (VIF are, in general, lower than 5).³ Thus, estimations were performed with robust errors for correcting for the heteroscedasticity problems.

The models estimated present, in general, a reasonable fit. The results demonstrate that the system GMM estimations are satisfactory and also robust, since the first-order serial correlation test with AR(1) residuals show that null hypothesis of the absence of first-order serial correlation are rejected (Teixeira and Barros, 2020). The AR(2) shows that none of the estimates (at 5% significance) have second-order serial correlation problems.

We estimated 3 models for the complete sample of countries, one for each proxy of institutional quality – democracy index (Democ), Rule of Law (RL), Corruption Perception index (Norm) -, and the same 3 models for the groups of less industrialized countries (industry value added share below the global mean (27.5%)) and of more industrialized countries (industry value added share above the global mean).

The results for the whole sample are relatively robust. Regardless the proxy for the institutional quality, we found that for a significance level of 10% an improvement of the institutional quality measures in 1% generates, on average, and all the remaining factors being held constant, an increase of 0.063%-0.266% in FDI inflows. The impact of institutional quality of FDI attraction is higher when we use the rule of law (RL) or the corruption

² Although the overall goodness of fit of the models that include the variable corporate tax rate is lower, the main results concerning the core variables (institutional quality and industrial profile) do not differ substantially from the results presented and discussed here.

³ The correlation matrix in Annex A3 provide complementary information on the issue of multicollinearity. It also provides the bi-variate correlation between the dependent variable and the remaining variables of the model.

perception index /CPI) as proxy for the institutional quality. Thus, countries where the quality of contract and enforcement, property rights, the courts, and the police is higher and there is more transparency (higher CPI), FDI inflows in percentage of the GDP are higher. In a nutshell our hypothesis 1, (“Institutional quality fosters FDI inflows”) is validated.

In accordance with the extensively discussion performed in Section 2, it is demonstrated that the results for the hypothesis 1 are consistent with the literature review. In fact, as shown in the previously performed evidence from the literature (Trevino et al., 2008; Francis et al., 2009; Sabir, Rafique & Abbas, 2019; Donnelly & Manolova, 2020), the regulative and normative pillars retrieved from the institutional theory have a significant impact on FDI inflows.

The industry share also emerges as an important direct determinant of FDI attraction specially when the CPI is used as proxy for the institutional quality. Indeed, an 1% increase in the share of the industry value added leads, *ceteris paribus*, to an average increase of 0.42% (p-value<0.05) in FDI inflows. Moreover, trade openness, the inflation rate and population (increased inflation and population may reflect high demand dynamics) stood also as critical factors for FDI attraction. Surprisingly, human capital (years of schooling of adult population) did not emerge as a significant determinant of FDI inflows.

Estimating the models according to the groups of less and more industrialized countries, we found that the impact of institutional quality is higher when for the more industrialized group, especially when institutional quality is measured by the rule of law and to a less extent by the CPI. In the more industrialized group, an improvement of quality of contract and enforcement/ property rights/ the courts in 1% produces, on average, and all the remaining factors being held constant, an increase in FDI inflows of 0.858% (0.350% in the case of transparency improvements). Thus, the hypothesis 2, “The industrial profile mediates the impact of institutional quality on FDI inflows”, is validated by our data. Such result confirms Bailey’s (2018) suggestion that the modest global impact of the institutional quality on FDI inflows reflects to some extent countries’ heterogeneity namely regarding their productive structure or profiles.

It is interesting to note that industry share has a significant and positive direct influence on FDI inflows in the more industrialized group, but no influence is found in the less industrialized group. Trade openness is a critical booster of FDI inflows in both less and more industrialized countries.

Table 5: Determinants of FDI (dependent variable: FDI in GDP) – dynamic panel data estimations (System GMM).

		All countries			Industry weight below the average (27.5%)			Industry weight above the average (27.5%)		
		Democ	RL	Norm	Democ	RL	Norm	Democ	RL	Norm
Lagged FDI		0.286** (0.113)	0.236** (0.095)	0.232*** (0.081)	0.353*** (0.105)	0.279*** (0.107)	0.236** (0.098)	0.343*** (0.130)	0.245** (0.108)	0.224*** (0.074)
Institutional quality		0.063* (0.033)	0.266* (0.144)	0.256* (0.145)	-0.012 (0.031)	0.237 (0.196)	0.250* (0.142)	0.048 (0.032)	0.858** (0.386)	0.350** (0.143)
Industry weight		0.156 (0.113)	0.112* (0.059)	0.422** (0.208)	-0.113 (0.104)	0.046 (0.045)	0.116 (0.104)	0.238** (0.107)	0.292* (0.172)	0.402** (0.159)
Control variables	GDP pc	0.031 (0.025)	-0.046 (0.069)	-0.103 (0.092)	0.063* (0.033)	0.067 (0.068)	0.071 (0.070)	0.001 (0.036)	-0.197** (0.098)	-0.124** (0.059)
	Population	0.044* (0.023)	0.095*** (0.031)	-0.025 (0.035)	0.066*** (0.015)	0.059* (0.033)	0.010 (0.051)	0.036** (0.016)	0.023 (0.029)	-0.013 (0.035)
	HC	-0.109** (0.051)	0.054 (0.054)	0.148 (0.196)	-0.084 (0.055)	-0.107 (0.148)	-0.162 (0.182)	-0.009 (0.087)	0.350 (0.218)	0.237 (0.163)
	Trade openness	0.258*** (0.057)	0.208*** (0.046)	0.351*** (0.127)	0.251*** (0.045)	0.188*** (0.067)	0.151** (0.069)	0.179*** (0.041)	0.220* (0.116)	0.132 (0.102)
	Inflation	0.067* (0.035)	0.067*** (0.024)	0.046 (0.185)	0.094* (0.053)	0.076** (0.032)	0.144** (0.069)	0.050 (0.037)	0.151 (0.108)	0.127 (0.090)
No. Obs.		4998	3416	2900	2865	2153	1773	2133	1263	1127
No. countries		142	155	155	120	118	115	107	93	87
No. of instruments		144	886	74	144	885	888	144	73	74
Teste Breusch-Pagan/ Cook-Weisberg		32.24 (0.000)	37.20 (0.000)	34.65 (0.000)	26.72 (0.000)	27.34 (0.000)	24.02 (0.000)	8.03 (0.001)	6.52 (0.011)	5.11 (0.023)
VIF Mean [Max VIF]		1.79 [2.70]	2.27 [4.55]	2.40 [5.15]	1.98 (3.27)	2.64 [5.91]	2.89 [6.92]	1.55 [1.82]	2.06 [3.78]	2.05 [3.84]
AR(1) – p-value		0.024	0.006	0.030	0.054	0.026	0.030	0.143	0.155	0.178
AR(2) – p-value		0.662	0.544	0.551	0.489	0.365	0.364	0.269	0.314	0.237

Note: All variables are in natural logarithms. Robust errors in brackets. ***(**)[*] statistically significant at 1% (5%) [10%]. Estimations using Stata 16[®].

5. Conclusions

The aim of this dissertation was twofold: 1) assess whether institutional quality matter for FDI attraction; and 2) investigate the extent to which countries industrial profile enhanced or inhibited the impact institutional quality has on FDI inflows.

To pursue these goals, we estimated several models using dynamic panel data, which permit to address endogeneity issues that are common when using macroeconomic variables, based on a large set of countries (about 160) and a wide period (fifty years, 1970-2019).

The results of this study demonstrate that countries with higher institutional quality are capable of attract more FDI inflows and that this positive impact is enhanced in case countries have above the average industry shares. In other words, in more industrialized setting the impact of better contract enforcement and more transparent procedures on FDI inflows comes amplified.

The main contribution of this study is the filling of the literature gap mentioned by Bailey (2018), who highlighted that the impact of the institutional quality on FDI inflows was modest and suggested that, given the large amount of heterogeneity across effect sizes, more context was needed to fully capture the relationship between institutional quality and FDI attraction. The author referred that it was necessary to consider economic related factors, namely productive structure of countries as a mediating factor. In this context, the present study contributed to perceive if the mediating role of countries' productive profile has an active impact on the relation between institutional quality and FDI inflows. Moreover, this study serves as empirical evidence for economists, politicians, and investigators to understand how countries should proceed to attract FDI inflows. In line with this, we believe that in terms of political implications, this study can help and provide a certain assurance to governments wishing to pursue economic public policies based on the attraction of FDI, since it can boost economic growth mainly through enhanced productivity and job creation. If so, to attract more FDI and move forward with this type of economic policies, the results of the study suggest that it would be important for nations to proceed with an industrialization process, since this industrialization itself may attract a greater inflow of FDI and will, in some way, leverage the positive effect that institutional quality has on attracting FDI inflows. Thus, institutional quality attracts FDI, but it attracts more the more

industrialized the country is. Greater effort and investment in the industrialization of countries could be a solution for attracting FDI inflows.

The main limitation of the study is related to the fact that the estimated models do not consider the cognitive-cultural dimension of the institutional theory, which, as referred in the literature review, also has something to say in the impact that it has on the attraction of FDI inflows. This dimension was not considered due to the lack of data that the indicators that could represent it present. In fact, regarding this matter there is a very lack of information for such a large set of countries and for a wide period of five decades. The explored indicators did not have sufficient information to proceed with the calculation of the models incorporating this dimension. By incorporating, it would have limited the study significantly, biasing and perhaps generating unrealistic empirical evidence.

Future research might rely on studying how the mediating role of a specific sector or even a specific sector in a determined country can influence the impact of institutional quality on the attraction of FDI inflows, instead of considering, as it was done in this study, only the secondary sector (industry). This type of research might possibly show which specific sectors influence more the attraction FDI inflows in the world, in a given continent, region or a specific country.

References

- Aharoni, Y., Tihanyi, L. & Connelly, B.L. (2011). Managerial decision-making in international business: A forty-five-year retrospective. *Journal of World Business*, 46(2), 135-142.
- Ahlquist, J.S. (2006). Economic policy, institutions and capital flows: portfolio and direct investment flows in developing countries. *International Studies Quarterly*, 50(3), 681-704.
- Ali, F. A., Fiess, N. & MacDonald, R. (2010). Do institutions matter for foreign direct investment? *Open Economics Review*, 21(2), 201-219.
- Alonso, J.A., Garcimartin, C. & Kvedaras, V. (2020). Determinants of institutional quality: an empirical exploration. *Journal of Economic Policy Reform*, 23(2), 229-247.
- Arellano, M. & Bond, S. (1991). Some tests of specification for panel data – Monte-Carlo evidence and an application to employment equations. *Review of Economic Studies*, 58(2), 277-297.
- Asiedu, E. & Lien, D. (2004). Capital controls and foreign direct investment. *World Development*, 32(3), 479-490.
- Asiedu, E. & Lien, D. (2011). Democracy, foreign direct investment and natural resources. *Journal of International Economics*, 84(1), 99-111.
- Baccini, L. & Mirkina, I. (2014). Corporate tax cuts and foreign direct investment. *Journal of Policy Analysis and Management*, 33(4), 977-1006.
- Bahri, E.N.A., Nor, A.S.M. & Nor, N.H.H.M. (2018). The role of financial development on foreign direct investment in Asean-5 countries: panel cointegration with cross-sectional dependency analysis. *Asian Academy of Management Journal of Accounting and Finance*, 14(1), 1-23.
- Bailey, N. (2018). Exploring the relationship between institutional factors and FDI attractiveness: A meta-analytic review. *International Business Review*, 27(1), 139-148.
- Barro, R. J. & Lee, J. W. (2013). A new data set of educational attainment in the world, 1950-2010. *Journal of Development Economics*, 104, 184-198.

- Bellak, C. & Leibrecht, M. (2009). Do low corporate income tax rates attract FDI? – Evidence from central and east European countries. *Applied Economics*, 41(21), 2691-2703.
- Benassy-Quere, A., Fontagne, L. & Lahreche-Revil, A. (2005). How does FDI react to corporate taxation? *International Tax and Public Finance*, 12(5), 583-603.
- Bhasin, N. & Garg, S. (2020). Impact of institutional environment on inward FDI: a case of select emerging market economies. *Global Business Review*, 21(5), 1279-1301.
- Boly, A., Coulibaly, S. & Kere, E.N. (2020). Tax policy, foreign direct investment and spillover effects in Africa. *Journal of African Economies*, 29(3), 306-331.
- Bond, S., Hoeffler, A. & Temple, J. (2001). GMM estimation of empirical growth models. Economics Papers 2001-W21, Economics Group, Nuffield College, University of Oxford.
- Buchanan, B. G., Le, Q. V. & Rishi, M. (2012). Foreign direct investment and institutional quality: some empirical evidence. *International Review of Financial Analysis*, 21, 81-89.
- Buckley, P.J. (1988). The limits of explanation: testing the internalization theory of the multinational enterprise. *Journal of International Business Studies*, 19(2), 181-193.
- Buettner, T. & Ruf, M. (2007). Tax incentives and the location of FDI: evidence from a panel of German multinationals. *International Tax and Public Finance*, 14(2), 151-164.
- Calvet, A. L. (1981). A synthesis of foreign direct investment theories and theories of the multinational firm. *Journal of International Business Studies*, 12(1), 43-59.
- Caves, R. (1971). International corporations: the industrial economics of foreign investment. *Economica*, 38(149), 1-27.
- Chen, K., Nie, H. & Ge, Z. (2019). Policy uncertainty and FDI: Evidence from national elections. *Journal of International Trade & Economic Development*, 28(4), 419-428.
- Contractor, F.J., Dangol, R., Nuruzzaman, N. & Raghunath, S. (2020). How do country regulations and business environment impact foreign direct investment (FDI) inflows? *International Business Review*, 29(2), 101640.

- Damijan, J., Kostevc, C. & Rojec, M. (2013). FDI, structural change and productivity growth: global supply chains at work in Central and Eastern European countries. Zagreb. IRMO Occasional Papers, Institute for Development and International Relations.
- DiMaggio, P. J. & Powell, W. W. (1983). The iron cage revisited – institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147-160.
- Donnelly, R. & Manolova, T.S. (2020). Foreign location decisions through an institutional lens: a systematic review and future research agenda. *International Business Review*, 29(4), 101690.
- Dornbusch, R., Fischer, S. & Samuelson, P.A. (1980). Heckscher-Ohlin trade theory with continuum of goods. *Quarterly Journal of Economics*, 95(2), 203-224.
- Dornean, A., Isan, V. & Oanea, D. (2012). The impact of the recent global crisis on foreign direct investment. Evidence from Central and Eastern European countries. *International Conference on Emerging Markets Queries in Finance and Business*, 3, 1012-1017.
- Dornean, A. & Oanea, D. (2014). The impact of fiscal policy on FDI in the context of the crisis. Evidence from Central and Eastern European Countries. *International Conference on Emerging Markets Queries in Finance and Business*, 15, 406-413.
- Dunning, J.H. (1977). Trade, Location of Economic Activity and the MNE: A Search for an Eclectic Approach. In: Ohlin, B., Hesselborn, P.O. and Wijkman, P.M., Eds., *The International Allocation of Economic Activity*, MacMillan, London, pp. 395-418.
- Dunning, J.H. (1988). The eclectic paradigm of international production – a restatement and some possible extensions. *Journal of International Business Studies*, 19(1), 1-31.
- Faeth, I. (2009). Determinants of foreign direct investment – a tale of nine theoretical models. *Journal of Economic Surveys*, 23(1), 165-196.
- Francis, Z., Zheng, C. & Mukherji, A. (2009). An institutional perspective on foreign direct investment: a multi-level framework. *Management International Review*, 49(5), 565-583.
- Garrone, P., Piscitello, L. & D'Amelio, M. (2019). Multinational enterprises and the provision of collective goods in developing countries under formal and informal institutional

- voids. The case of electricity in sub-Saharan Africa. *Journal of International Management*, 25(2), 100650.
- Gherghina, C.S., Simionescu, L.N. & Hudea, O.S. (2019). Exploring foreign direct investment-economic growth nexus-empirical evidence from central and eastern European countries. *Sustainability*, 11(19), 5421.
- Globerman, S. & Shapiro, D. (2002). Global foreign direct investment flows: the role of governance infrastructure. *World Development*, 30(11), 1899-1919.
- Gnangnon, S.K. (2020a). Effect of volatility of development aid on volatility of foreign direct investment inflows. *Review of International Business and Strategy*, Forthcoming, Article publication date: 26 November 2020.
- Gnangnon, S.K. (2020b). Trade policy space and foreign direct investment inflows. *Review of International Business and Strategy*, 30(3), 323-343.
- Gondor, M. & Nistor, P. (2012). Fiscal policy and foreign direct investment: evidence from some emerging EU economies. *8th International Strategic Management Conference*, 58, 1256-1266.
- Gossel, S.J. (2018). FDI, democracy and corruption in Sub-Saharan Africa. *Journal of Policy Modeling*, 40(4), 647-662.
- Hayat, A. (2019). Foreign direct investments, institutional quality, and economic growth. *The Journal of International Trade & Economic Development*, 28(4), 561-579.
- Head, K., Mayer, T. & Ries, J. (2002). Revisiting oligopolistic reaction: are decisions on foreign direct investment strategic complements? *Journal of Economics & Management Strategy*, 11(3), 453-472.
- Hughes, J.S., Logue, D.E. & Sweeney, R.J. (1975). Corporate international diversification and market assigned measures of risk and diversification. *The Journal of Financial and Quantitative Analysis*, 10(4), 627-637.
- Iamsiraroj, S. (2016). The foreign direct investment – economic growth nexus. *International Review of Economics & Finance*, 42, 116-133.
- Iamsiraroj, S. & Ulubasoglu, M.A. (2015). Foreign direct investment and economic growth: a real relationship or wishful thinking? *Economic Modelling*, 51, 200-213.

- IMF (2021, May 2). Inflation: prices on the rise [Web page]. Retrieved from <https://www.imf.org/external/pubs/ft/fandd/basics/30-inflation.htm>
- Irandoost, M. (2016). Structural changes, FDI, and economic growth: evidence from the Baltic states. *Journal of Economic Structures*, 5, 14.
- Jawaid, S.T., Abbas, S. & Saleem, S.M. (2017). Democracy and international financial integration in Pakistan. *Indian Growth and Development Review*, 10(1), 16-31.
- Jensen, N.M. (2003). Democratic governance and multinational corporations: political regimes and inflows of foreign direct investment. *International Organization*, 57(3), 587-616.
- Jensen, N.M. (2012). Fiscal policy and the firm: do low corporate tax rates attract multinational corporations? *Comparative Political Studies*, 45(8), 1004-1026.
- Kheng, V., Sun, S. Z. & Anwar, S. (2017). Foreign direct investment and human capital in developing countries: a panel data approach. *Economic Change and Restructuring*, 50(4), 341-365.
- Klemm, A. & Van Parys, S. (2012). Empirical evidence on the effects of tax incentives. *International Tax and Public Finance*, 19(3), 393-423.
- Kostova, T. (1997). Country institutional profile: concept and measurement. *Academy of Management Best Paper Proceedings*, 1997(1), 180-189.
- Kumari, R. & Sharma, A.K. (2017). Determinants of foreign direct investment in developing countries: a panel data study. *International Journal of Emerging Markets*, 12(4), 658-682.
- Kurul, Z. & Yalta, A.Y. (2017). Relationship between institutional factors and FDI flows in developing countries: new evidence from dynamic panel estimation. *Economies*, 5(2), 17.
- Li, X.Y. & Liu, X.M. (2005). Foreign direct investment and economic growth: an increasingly endogenous relationship. *World Development*, 33(3), 393-407.
- Lucke, N. & Eichler, S. (2015). Foreign direct investment: the role of institutional and cultural determinants. *Applied Economics*, 48(11), 935-956.
- Magee, S.P. (1981). The appropriability theory of the multinational-corporation. *Annals of the American Academy of Political and Social Science*, 458, 123-125.

- Mamba, E., Gniniguè, M. & Ali, E. (2020). Effect of foreign direct investment on structural transformation in West African Economic and Monetary Union (WAEMU) countries. *Cogent Economics & Finance*, 8(1), 1783910.
- Mastromarco, C. & Ghosh, S. (2009). Foreign capital, human capital and efficiency: a stochastic frontier analysis for developing. *World Development*, 37(2), 489-502.
- Mathur, A. & Singh, K. (2013). Foreign direct investment, corruption and democracy. *Applied Economics*, 45(8), 991-1002.
- Michel, A. & Shaked, I. (1986). Multinational-corporations vs Domestic corporations – Financial performance and characteristics. *Journal of International Business Studies*, 17(3), 89-100.
- Mijiyawa, A.G. (2017). Drivers of structural transformation: the case of the manufacturing sector in Africa. *World Development*, 99, 141-159.
- Mitra, R. & Abedin, M.T. (2020). Population ageing and FDI inflows in OECD countries: a dynamic panel cointegration analysis. *Applied Economics Letters*, Forthcoming, Published Online: 27 Jul 2020.
- Muehlen, H. & Escobar, O. (2019). The role of FDI in structural change: evidence from Mexico. *World Economy*, 43(3), 557-585.
- Munongo, S., Akanbi, O.A. & Robinson, Z. (2017). Do tax incentives matter for investment? A literature review. *Business and Economic Horizons*, 13(2), 152-168.
- Naude, W.A. & Krugell, W.F. (2007). Investigating geography and institutions as determinants of foreign direct investment in Africa using panel data. *Applied Economics*, 39(10-12), 1223-1233.
- Nielsen, B.B., Asmuseen, C.G. & Weatherall, C.D. (2017). The location choice of foreign direct investments: empirical evidence and methodological challenges. *Journal of World Business*, 52(1), 62-82.
- Noorbakhsh, F., Paloni, A. & Youssef, A. (2001). Human capital and FDI inflows to developing countries: new empirical evidence. *World Development*, 29(9), 1593-1610.
- North, D. C. (1991). Institutions. *Journal of Economic Perspectives*, 5(1), 97-112.

- OECD (2020, January 9). Foreign Direct Investment (FDI) [Web page]. Retrieved from https://www.oecd-ilibrary.org/finance-and-investment/foreign-direct-investment-fdi/indicator-group/english_9a523b18-en#:~:text=FDI%20is%20a%20key%20element%20in%20international%20economic,can%20be%20an%20important%20vehicle%20for%20economic%20development.
- Okafor, G., Piesse, J. & Webster, A. (2017). FDI determinants in least recipient regions: the case of Sub-Saharan Africa and MENA. *Africa Development Review*, 29(4), 589-600.
- Paul, J. & Feliciano-Cestero, M. M. (2021). Five decades of research on foreign direct investment by MNEs: an overview and research agenda. *Journal of Business Research*, 124, 800-812.
- Paul, J. & Jadhav, P. (2020). Institutional determinants of foreign direct investment inflows: evidence from emerging markets. *International Journal of Emerging Markets*, 15(2), 245-261.
- Pereira, A. S., Jalles, J. T. & Andresen, M.A. (2011). Structural change and foreign direct investment: globalization and regional economic integration. *Portuguese Economic Journal*, 11(1), 35-82.
- Peres, M., Ameer, W. & Xu, H. (2018). The impact of institutional quality on foreign direct investment inflows: evidence for developed and developing countries. *Economic Research-Ekonomska Istrazivanja*, 31(1), 626-644.
- Rashid, M., Loid, X.H., Wong, S.J. (2017). Political stability and FDI in the most competitive Asia Pacific countries. *Journal of Financial Economic Policy*, 9(2), 140-155.
- Robertson, C.J. & Watson, A. (2004). Corruption and change: the impact of foreign direct investment. *Strategic Management Journal*. 25(4), 385-396.
- Rugman, A.M., Verbeke, A. & Nguyen, Q.T.K. (2011). Fifty years of international business theory and beyond. *Management International Review*, 51(6), 755-786.
- Sabir, S., Rafique A. & Abbas, K. (2019). Institutions and FDI: evidence from developed and developing countries. *Financial Innovation*, 5(1), art. 8.

- Saini, N. & Singhania, M. (2018). Determinants of FDI in developed and developing countries: a quantitative analysis using GMM. *Journal of Economic Studies*, 45(2), 348-382.
- Sayek, S. (2009). Foreign direct investment and inflation. *Southern Economic Journal*, 76(2), 419-443.
- Scott, W.R. (1987). The adolescence of institutional theory. *Administrative Science Quarterly*, 32(4), 493-511.
- Scott, W.R. (1995). *Institutions and Organizations*. Los Angeles. SAGE.
- Sjoerd, B., Kostova, T., Kunst, V.E., Spadafora, E. & Essen, M. (2018). Cultural distance and firm internationalization: a meta-analytical review and theoretical implications. *Journal of Management*, 44(1), 89-130.
- Tadesse, B., Shukralla, E. & Fayissa, B. (2019). Institutional quality and effectiveness of aid trade. *Applied Economics*, 51(39), 4233-4254.
- Teixeira, A.A.C. & Barros, D. (2021). Technology balance of payments and countries' international competitiveness. A dynamic panel data analysis of OECD countries, 2000-2017, *Applied Economics Letters*, 27(12), 992-996
- Trevino, L.J., Thomas, D.E., Cullen, J. (2008). The three pillars of institutional theory and FDI in Latin America: an institutionalization process. *International Business Review*, 17(1), 118-133.
- Ullah, I. & Khan, M.A. (2017). Institutional quality and foreign direct investment inflows: evidence from Asian countries. *Journal of Economics Studies*, 44(6), 1030-1050.
- UNCTAD (2020). *World Investment Report 2020 – International Production Beyond The Pandemic*. Geneve. United Nations Publication
- Vernon, R. (1966). International investment and international trade in the product cycle. *Quarterly Journal of Economics*, 80(2), 190-207.
- Villaverde, J. & Maza, A. (2015). The determinants of inward foreign direct investment: evidence from the European regions. *International Business Review*, 24(2), 209-223.

- Wang, C., Li, Z. & Zhong, T. (2019). Social trust, rule of law, and economic exchange: evidence from China and its major trading partners. *Emerging Markets Finance and Trade*, 55(14), 3134-3150.
- Wang, M. & Wong, M.C.S. (2009). Foreign direct investment and economic growth: the growth accounting perspective. *Economic Inquiry*, 47(4), 701-710.
- Williamson, O.E. (2000). The new institutional economics: taking stock, looking ahead. *Journal of Economic Literature*, 38(3), 595-613.
- Williamson, O.E. (1998). Transaction cost economics: how it works, where it is headed. *Economist*, 146(1), 23-58.
- Wierzbowska, A. & Shibamoto, M. (2018). Cross-country evidence on determinants of fiscal policy effectiveness: the role of trade and capital flows. *Applied Economics*, 50(32), 3495-3514.
- Xaypanya, P., Rangkakulnuwat, P. & Paweenawat, S.W. (2015). The determinants of foreign direct investment in ASEAN: the first differencing panel data analysis. *International Journal of Social Economics*, 42(3), 239-250.

Annex

A1. List of countries used in the panel data

No.	Country	No.	Country
1	Albania	30	China
2	Algeria	31	Colombia
3	Argentina	32	Comoros
4	Armenia	33	Congo, Dem. Rep.
5	Australia	34	Congo, Rep.
6	Austria	35	Costa Rica
7	Azerbaijan	36	Cote d'Ivoire
8	Bahamas, The	37	Croatia
9	Bahrain	38	Cyprus
10	Bangladesh	39	Czech Republic
11	Barbados	40	Denmark
12	Belarus	41	Dominica
13	Belgium	42	Dominican Republic
14	Belize	43	Ecuador
15	Benin	44	Egypt, Arab Rep.
16	Bolivia	45	El Salvador
17	Botswana	46	Estonia
18	Brazil	47	Eswatini
19	Brunei Darussalam	48	Fiji
20	Bulgaria	49	Finland
21	Burkina Faso	50	France
22	Burundi	51	Gabon
23	Cabo Verde	52	Gambia, The
24	Cambodia	53	Germany
25	Cameroon	54	Ghana
26	Canada	55	Greece
27	Central African Republic	56	Grenada
28	Chad	57	Guatemala
29	Chile	58	Guinea

No.	Country	No.	Country
59	Guinea-Bissau	90	Malawi
60	Guyana	91	Malaysia
61	Haiti	92	Maldives
62	Honduras	93	Mali
63	Hong Kong SAR, China	94	Malta
64	Hungary	95	Mauritania
65	Iceland	96	Mauritius
66	India	97	Mexico
67	Indonesia	98	Moldova
68	Iran, Islamic Rep.	99	Mongolia
69	Iraq	100	Morocco
70	Ireland	101	Mozambique
71	Israel	102	Namibia
72	Italy	103	Nepal
73	Jamaica	104	Netherlands
74	Japan	105	New Zealand
75	Jordan	106	Nicaragua
76	Kazakhstan	107	Niger
77	Kenya	108	Nigeria
78	Kiribati	109	North Macedonia
79	Korea, Rep.	110	Norway
80	Kuwait	111	Oman
81	Kyrgyz Republic	112	Pakistan
82	Lao PDR	113	Panama
83	Latvia	114	Papua New Guinea
84	Lebanon	115	Paraguay
85	Lesotho	116	Peru
86	Libya	117	Philippines
87	Lithuania	118	Poland
88	Macao SAR, China	119	Portugal

No.	Country	No.	Country
89	Madagascar	120	Qatar
121	Romania	142	Tanzania
122	Russian Federation	143	Thailand
123	Rwanda	144	Togo
124	Saudi Arabia	145	Tonga
125	Senegal	146	Trinidad and Tobago
126	Seychelles	147	Tunisia
127	Sierra Leone	148	Turkey
128	Singapore	149	Turkmenistan
129	Slovak Republic	150	Uganda
130	Slovenia	151	Ukraine
131	Solomon Islands	152	United Kingdom
132	South Africa	153	United States
133	Spain	154	Uruguay
134	Sri Lanka	155	Uzbekistan
135	St. Lucia	156	Vanuatu
136	St. Vincent and the Grenadines	157	Venezuela, RB
137	Sudan	158	Vietnam
138	Sweden	159	Yemen, Rep.
139	Switzerland	160	Zambia
140	Syrian Arab Republic	161	Zimbabwe
141	Tajikistan		

A2. Summary descriptive statistics by group of countries income level

High income level					
Variable	Obs.	Mean	Std. Dev.	Min	Max
FDI	1743	5.46	22.27	-40.41	449.08
Democ	1623	8.18	3.63	0	10
RL	1012	1.20	0.60	-1.92	2.10
Norm	948	69.59	16.88	19	100
Industry weight	1273	28.72	13.47	3.72	90.51
GDP pc	1698	33265.44	15208.98	5796.18	92556.32
Population	1764	25700000	49900000	91359	328000000
HC	1737	9.60	2.50	1.88	14.20
Trade openness	1700	95.78	69.65	10.76	442.62
Inflation	1748	5.33	14.71	-31.90	373.22

Upper middle income level					
Variable	Obs.	Mean	Std. Dev.	Min	Max
FDI	1367	3.80	4.49	-6.56	57.84
Democ	1624	4.06	4.17	0	10
RL	890	-0.04	0.69	-2.32	1.56
Norm	744	40.28	12.76	14	79.40
Industry weight	1251	32.89	13.90	8.06	87.80
GDP pc	1402	8640.40	4082.42	931.70	24713.11
Population	1850	26500000	105000000	53600	1400000000
HC	1659	7.64	2.40	0.65	12.60
Trade openness	1304	82.00	41.58	10.34	258.58
Inflation	1442	23.89	140.60	-27.52	2700.44

Lower middle income level					
Variable	Obs.	Mean	Std. Dev.	Min	Max
FDI	2133	2.78	4.31	-37.15	55.08
Democ	2052	4.10	3.66	0	10
RL	1047	-0.47	0.54	-1.99	1.04
Norm	811	31.01	8.66	11	64.50
Industry weight	2026	28.20	10.49	1.31	84.80
GDP pc	2163	2978.75	1568.81	680.49	12692.60
Population	2409	32000000	133000000	51151	1370000000
HC	2136	5.73	2.60	0	11.80
Trade openness	2083	76.45	33.71	0.02	210.40
Inflation	2251	57.08	475.48	-29.17	13611.63

Low income level					
Variable	Obs.	Mean	Std. Dev.	Min	Max
FDI	1868	1.96	3.89	-28.62	46.28
Democ	2001	2.40	3.06	0	10
RL	918	-0.85	0.50	-2.13	0.35
Norm	634	25.67	7.07	4	56
Industry weight	1691	21.86	9.25	0.96	72.15
GDP pc	1871	832.56	501.30	164.46	3360.72
Population	2024	48900000	166000000	115691	1240000000
HC	1769	3.45	2.31	0.20	11
Trade openness	1765	57.95	34.87	4.92	375.38
Inflation	1858	43.85	652.16	-27.049	26765.86

East Asia & Pacific region					
Variable	Obs.	Mean	Std. Dev.	Min	Max
FDI	1044	3.87	6.42	-37.15	58.52
Democ	900	4.63	4.11	0	10
RL	553	0.26	0.91	-1.28	2.01
Norm	401	49.82	24.87	17	96
Industry weight	884	29.70	14.31	3.54	90.51
GDP pc	1042	12621.62	15946.47	228.52	71992.15
Population	1150	78200000	239000000	51151	1400000000
HC	1056	7.00	3.01	0.94	12.80
Trade openness	997	104.87	80.76	4.92	442.62
Inflation	1047	8.36	25.41	-31.90	411.04

Europe & Central Asia region					
Variable	Obs.	Mean	Std. Dev.	Min	Max
FDI	1609	4.60	14.64	-40.41	280.13
Democ	2150	6.21	4.40	0	10
RL	1033	0.52	1.08	-1.65	2.10
Norm	972	54.51	23.81	15	100
Industry weight	1361	27.77	7.99	9.98	66.58
GDP pc	1677	22760.03	19164.43	366.94	92556.32
Population	2150	19100000	27800000	204438	149000000
HC	2000	9.34	2.27	2.02	14.20
Trade openness	1642	83.75	35.78	9.10	239.22
Inflation	1730	44.55	225.64	-20.86	4107.30

Latin America & Caribbean region					
Variable	Obs.	Mean	Std. Dev.	Min	Max
FDI	1391	3.34	4.08	-7.80	39.25
Democ	1150	6.17	3.55	0	10
RL	697	-0.20	0.77	-2.32	1.56
Norm	551	38.64	15.67	14	79.40
Industry weight	1254	26.92	9.58	9.26	63.98
GDP pc	1420	6346.54	5473.99	1029.21	32236.54
Population	1450	15800000	33300000	69650	211000000
HC	1298	6.54	2.27	0.90	11.50
Trade openness	1264	68.39	35.97	10.34	274.97
Inflation	1437	65.91	585.11	-30.24	13611.63

Middle East & North Africa region					
Variable	Obs.	Mean	Std. Dev.	Min	Max
FDI	800	4.10	25.43	-13.60	449.08
Democ	850	0.94	2.10	0	9
RL	432	-0.17	0.84	-2.09	1.63
Norm	333	39.84	15.37	13	79.70
Industry weight	636	39.54	16.71	12.09	87.80
GDP pc	712	11892.15	13662.20	631.49	69679.09
Population	897	15500000	19500000	109514	100000000
HC	835	5.47	3.08	0	13
Trade openness	757	88.38	48.30	0.02	322.68
Inflation	840	10.72	28.77	-27.52	396.44

North America region						
Variable	Obs.	Mean	Std. Dev.	Min	Max	
FDI	100	1.74	1.48	0.03	9.20	
Democ	100	9.83	0.59	7	10	
RL	48	1.67	0.11	1.44	1.89	
Norm	50	80.22	6.81	69	92	
Industry weight	42	23.85	4.00	17.98	29.88	
GDP pc	100	38727.27	8975.98	23207.22	55753.14	
Population	100	148000000	122000000	21300000	328000000	
HC	100	11.68	1.38	8.66	13.40	
Trade openness	100	40.42	20.89	10.76	83.04	
Inflation	100	3.99	3.03	-0.36	13.55	

South Asia region						
Variable	Obs.	Mean	Std. Dev.	Min	Max	
FDI	287	1.14	2.21	-6.01	15.79	
Democ	250	5.16	3.16	0	9	
RL	144	-0.39	0.42	-1.05	0.35	
Norm	116	27.81	7.34	4	41	
Industry weight	267	21.31	6.19	6.06	31.14	
GDP pc	275	1406.78	1815.67	270.95	8476.56	
Population	300	206000000	356000000	115691	1370000000	
HC	300	4.22	2.57	0.25	11	
Trade openness	271	49.74	49.35	7.66	375.38	
Inflation	250	8.82	8.10	-17.63	80.57	

Sub-Saharan Africa region					
Variable	Obs.	Mean	Std. Dev.	Min	Max
FDI	1880	2.36	4.38	-28.62	57.84
Democ	1900	2.85	3.34	0	10
RL	960	-0.62	0.65	-2.13	1.08
Norm	714	31.68	11.68	6.90	66
Industry weight	1797	23.46	11.18	0.96	72.15
GDP pc	1908	1855.41	2482.05	164.46	19581.67
Population	2000	13000000	21300000	53600	201000000
HC	1712	3.59	2.20	0.20	10.20
Trade openness	1821	64.99	32.70	6.32	225.02
Inflation	1895	32.49	627.69	-29.17	26765.86

A3. Correlation matrix

	FDI	Democ	RL	Norm	Industry weight	GDP pc	Population	HC	Trade openness	Inflation
FDI	1.0000									
Democ	0.0884	1.0000								
RL	0.1377	0.5828	1.0000							
Norm	0.1086	0.5148	0.9360	1.0000						
Industry weight	-0.0645	-0.1353	-0.1315	-0.1262	1.0000					
GDP pc	0.0867	0.4726	0.7834	0.8318	0.1002	1.0000				
Population	-0.0359	0.0163	-0.0301	-0.0770	0.1092	-0.0422	1.0000			
HC	0.1509	0.5344	0.6310	0.6228	0.0919	0.6069	-0.0171	1.0000		
Trade openness	0.2833	0.0489	0.2966	0.2879	0.0865	0.1894	-0.1969	0.2843	1.0000	
Inflation	-0.0155	-0.0240	-0.1169	-0.2435	0.0137	-0.0375	-0.0038	-0.0221	-0.0235	1.0000

Note: FDI (Foreign Direct Investment) is the net inflows of FDI in percentage of FDI; Democ (Democracy) is the Democracy index ; RL is the Rule of Law indicator; Norm (Normative) is the Corruption Perception Index; Industry weight is the industry (including constructing) value added in percentage of GDP.; GDP pc is GDP per capita (constant 2010 US dollars); Populations is the total population; HC (Human Capital) is the average number of years of education of people aged 25 and older; Trade openness is the sum of imports and exports in percentage of GDP; Inflation is the inflation consumer prices annual percentage.