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The relationship between inward FDI and domestic institutions

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Introduction

In recent decades, a wide strand of literature has investigated the determinants of inward foreign direct investment, or FDI, and has acknowledged the role played by domestic institutions in either attracting or discouraging multinational firms' investing decisions. In the meantime, a growing number of studies have addressed a complementary issue, that is whether increasing amounts of inward FDI have an effect on some institution of the host country. As a matter of fact, it is very likely that the relationship between FDI and domestic institutions is mutual, and the studies that mainly focus on either the influence of institutions on FDI, or on the effect of FDI on institutions, should properly account for that.

My Ph.D. thesis aims to further investigate this subject, namely, the relationship between inward FDI and institutions, and is organized in three chapters.

The first chapter, "Inward FDI and domestic institutions: an overview", has an introductory character: first, it shortly introduces one of the most recognized approaches to multinational firms' investing decisions, the OLI paradigm, and draws the attention to the increasingly acknowledged relevance of domestic institutions in affecting MNEs' investing decisions. Then, it reviews the literature concerning both the directions of the relationship between FDI and institutions, which are often addressed separately, and also briefly illustrates to two interesting case studies. In doing so, the present work attempts to summarize the current state of the art concerning the relationship between FDI and institutions and, in particular, to identify the aspects which have been under-researched so far. From the analysis of the literature, it emerged that the existing studies on the impact of institutions on inward FDI mainly concern formal institutions. Moreover, the research focusing on the other direction (from FDI to institutions) is still relatively scant, and the existing empirical works examine one institutional factor or policy at a time, use a relatively small sample of countries, and/or on a narrow time frame. These two considerations represent the starting point and the rationale of the second and the third chapter of this thesis, respectively.

The second chapter, "How do informal institutions influence inward FDI? A systematic review" (published in June 2018 on "*Economia Politica – Journal of Analytical and Institutional Economics*", DOI: 10.1007/s40888-018-0119-1), focuses on the less explored type of institutions, namely on informal institutions, and on their influence on foreign firms' investing decisions. More specifically, the main aims of this work are to shed more light on this elusive concept - informal institutions - by drawing comparisons with related constructs, to overview the main types of informal institutions and their effects on FDI inflows, and to explore the heterogeneity across empirical studies focused on this issue using a

meta-regression analysis. The main findings are the following: according to most of the existing literature, informal institutions, such as trust, social networks and corruption, matter for attracting FDI; the sign is significantly determined by the type of informal institution considered. In particular, social networks and values typically favouring FDI, such as trust and attitude towards liberalism, have a significant and positive impact on inward FDI, and this especially holds when the host country is a developing economy. To the best of the author's knowledge, this is the first meta-analysis to be conducted on this issue.

The third chapter, "Does inward FDI affect the quality of domestic institutions? A cross-country panel analysis" (with Roberto Antonietti) aims to provide a more global picture on the effects of inward FDI on the institutional quality of the host country. More specifically, it aims to understand whether, beyond pursuing their own interests, MNEs may exert a positive influence on the host country and if so, which institutional dimensions are more affected, and to assess whether inward FDI can foster institutional change in transition and developing economies. To this purpose, it analyses the impact of FDI on the overall quality of the host country's institutions, thus not limiting to some specific type, and then also on its main dimensions; it also resorts to a large sample and a considerable time frame, and adopts different econometric techniques, including fixed effects and dynamic system GMM in order to account for unobserved heterogeneity and simultaneity. The main finding is that attracting FDI has a positive impact on the average quality of domestic institutions. In particular, this effect is stronger when institutions are measured in terms of political stability, regulatory quality and rule of law, when FDI is measured as the number of greenfield projects, and when the recipient country is a developing country and, to a lesser extent, a transition economy.

The main contribution of this Ph.D. thesis is twofold. The first is to deeply analyse the informal institutions, which have been less explored than the formal ones, and their effect on inward FDI. The second is to estimate whether, and to what extent, increasing amounts of inward FDI do affect the quality of institutions in the host country. In doing so, this work should contribute to both the literature on the institutional determinants of inward FDI and the literature on the institutional effects of FDI, and should better clarify the complex, mutual relationship between FDI and institutions.

Chapter 1. Inward FDI and domestic institutions: an overview

In recent decades, a wide literature has included domestic institutions in the analysis of the determinants of inward FDI. However, it seems that also the latter are able to influence some institutional aspects of the host country. The main aim of this work is to provide a short overview of the mutual relationship between inward FDI and local institutions, whose two directions are often studied separately, and to clarify which aspects have been extensively investigated by the literature so far and which, instead, have been under-researched. The main findings are that the role of informal institutions in affecting foreign firms' decisions has been neglected and that the influence of inward FDI on institutions has not been investigated yet with a comprehensive empirical approach.

***Keywords**: FDI, institutions, review*

***JEL:** A13 · D02 · F21*

1.1 Introduction

In the last 30 years, the world has become more and more interconnected and the geographical distances between its different continents and countries have been ideally reduced and redrawn along with the mutual strengthening of the economic and social connections, as well as the advances in technology and transportation and in the liberalization processes.

In this interdependent and dynamic context, the scaffolding of international business has been deeply modified and shaped by the extraordinary globalization of production, which has been based not only on the export of raw materials and manufactured products, but also on the organization of production outside the national borders. In this scenario, the economic magnitude of the multinational firms has rapidly increased. As an illustration, in 1983 the incomes achieved by the biggest 200 multinational corporations were the equivalent of 25% of the global GDP while, in 2005, they amounted to 29.3% of the world GDP (UNCTAD, 2006). The main measure of the activity of these companies is represented by their Foreign Direct Investment, or FDI. According to the OECD, a foreign direct investment is an investment in a foreign company where the investor owns at least 10% of the ordinary shares, undertaken with the objective of establishing a "lasting interest" in the host country, a long-term relationship and a significant influence on the management of the firm (OECD, 2008).

While the world has become increasingly globalized and the economic geography of FDI has been redrawn with the emerging of new, fast-growing economies (as an illustration, China in 2017 was the second biggest recipient of FDI inflows and the third largest countries in terms of FDI inflows [UNCTAD, 2018]), a vast strand of literature in international economics and international business has investigated relevant aspects related to FDI, including its main effects on the local economy and its main determinants, among which the institutional aspects of the host country received have gained importance especially during the last two decades.

The main purpose of this work is to provide a simple but comprehensive and updated overview of the relationship between inward FDI and domestic institutions, which may represent a useful starting point for readers interested in delving into this topic and which also provides some guidelines for future research.

The balance of this paper is organized as follows: section 1.2 illustrates the OLI paradigm and introduces the institutional approach; section 1.3 highlights the relevance of formal and also of informal institutions

for foreign investors' decisions; section 1.4 addresses the issue of the influence of inward FDI on the host country's institutions, which has been gaining increasing attention but is still under-researched; section 1.5 reviews the main datasets on FDI and institutions that can be used for conducting cross-country panel analysis; finally, section 1.6 concludes.

1.2 The OLI paradigm and the institutional approach

One of the most adopted frameworks aimed at understanding the factors that induce a firm to become a multinational, proposed by John Dunning, is the eclectic or OLI paradigm. According to this approach, the extent, geography and industrial composition of the foreign production undertaken by multinational enterprises (or MNEs) is determined by the interaction of three sets of interdependent variables. The first one is the set of enterprises' ownership-specific advantages (O): *ceteris paribus*, the greater these advantages of the investing firms, with respect to those of other firms, the more they are likely to engage in, or increase, their foreign production. These O-advantages include asset advantages, concerning the resource structure of the firm (e.g. product innovations, production management, innovatory capacity, ability to reduce transaction costs), and transaction cost-minimizing advantages, which derive from the capability of the firm to coordinate multiple and geographically dispersed value-added activities and to capture the gains from risk diversification (e.g. exclusive or favoured access to inputs, ability to conclude productive and cooperative inter-firm relationships, exclusive or facilitated access to product markets, better knowledge about international markets). The second variable consists of the locational attractions (L) of alternative countries or regions in which the multinational companies can undertake their activities: if they manage to combine their own competitive advantages with locational advantages, namely they find it more profitable to acquire the endowments they need in a foreign country, they will probably start or increase their FDI in that country. Examples of locational-specific factors are spatial distribution and availability of resource endowments and markets, cost, quality and productivity of the factor of productions, market size, transport and communication costs, infrastructure, and the economic, legal and regulatory system. Finally, according to the third component of the OLI paradigm, namely internalization (I), the greater the net benefits of internalizing cross-border intermediate product markets, the more likely a firm will prefer to engage in foreign production, rather than license the right to do so to a foreign firm. These internalization advantages allow the multinational company to circumvent or exploit market failures, for instance to avoid search and negotiating costs, to avoid costs of moral hazard and adverse

selection, to avoid or exploit government intervention, to control market outlets (Dunning, 1988a; Dunning, 2000; Dunning & Lundan, 2008a).

Dunning has revisited his OLI paradigm over time in order to take into account the changes in the organization and external environment of MNEs, such as the spread of cooperative relationships and networks, the clustering of high value-added activities, the increasing importance of relational assets of firms and countries in economic activities, and the growing acknowledge of the role of institutions in affecting the society and several economic outcomes (Dunning & Lundan, 2008a).

Although it is possible to find some prior research on this topic (as an illustration, Basi [1963] investigated the effects of local political instability on FDI coming from the US), a milestone for the development of the so-called new institutional economics theory is represented by Douglass North's work *Institutional change: a framework analysis*. Starting from the assumption that the Neoclassical economic theory is not sufficient to explain the account for the very diverse performance of societies and economies both at a moment of time and over time, North defines institutions as "*the structure that humans impose on human interaction and therefore define the incentives that (together with the other constraints (budget, technology, etc.) determine the choices that individuals make that shape the performance of societies and economies over time"*. (North, 1990, p.1). In another work published in 1991, North proposes a shorter, compelling definition of institutions, namely "*the humanly devised constraints that structure political, economic and social interactions"* (North, 1991, p. 97). Another valuable definition has been provided more recently by Geoffrey M. Hodgson, who sees institutions as *"the systems of established and embedded social rules that structure social interactions"* (Hodgson, 2006, p.13).

This distinction between established and embedded social rules is closely connected to the distinction between formal and informal institutions. While formal institutions are founded on codified and explicit rules and standards that shape the interaction between members of society, and are created, communicated and enforced through channels that are widely accepted as official (North, 1990; Helmke & Levitsky, 2006), informal institutions consist in the "*socially shared rules, usually unwritten, that are created, communicated and enforced outside officially sanctioned channels,* (Helmke & Levitsky, 2006, p.5). As an example, North (1990) mentions sanctions, taboos, customs, traditions, and codes of conduct.

Formal institutions promote stability and regulation by providing authoritative behavioural guidelines, and by defining an established order within which individuals and firms operate (Scott, 2008a; Holmes

et al., 2013). They can be classified as regulatory (e.g. property rights, rule of law, and the judiciary system), political (e.g. political rights, political stability, democratic quality, and the presence of the military in politics), or economic (e.g. labour, business and financial freedoms [Kunčić, 2014]). With regard to informal institutions, they can either reinforce the formal rules (complementary informal institutions), or compensate for the weaknesses or inefficiency of formal institutions (substitutive informal institutions), or be in contrast with the formal framework (competing informal institutions [Helmke & Levitsky, 2006]). Three widely-acknowledged types of informal institution that emerge from the literature are trust towards other individuals, social networks -which can be defined as social ties developed through interpersonal and inter-organizational relationships between individuals or firms (Inkpen & Tsang, 2005) and which represents the main component of social-capital (Putnam et al., 1993), and corruption. In addition, cultural values and religiosity, despite some peculiarities, are often included in the realm of informal institutions.

Dunning has acknowledged the relevance of North's institutional prospective and has incorporated it in the three components of the OLI paradigm (see Dunning & Lundan, 2008b). In particular, he recognizes that the ownership-advantages component includes not only the asset and transaction-based advantages briefly illustrated before, but also advantages deriving from the institutional setting which is specific to a particular firm. This institutional infrastructure comprises a series of internally generated and externally imposed incentives, regulations and norms, which can be regarded as both formal or informal institutions, each of which may affect the managerial decision-taking, the attitudes and behaviour of the firm's stakeholders. These institutional advantages influence the ways in which firms create new or utilise more effectively their existing resources, capabilities and markets. The incorporation of institutions in the locational advantages is quite intuitive and consists in paying more attention to the institutional aspects of a country that are appealing to foreign investors, such as strong rule of law, property rights protection, good quality of governance and democratic system. The way and the extent to which host-country institutions influence inward FDI has been extensively examined by the literature (see section 1.3). As for the I-advantages dimension, a number of studies have shown how the institutional framework of the host country matters for the MNEs decisions regarding the mode of entry and the form of their outward investment (e.g. Delios & Henisz, 2003; Meyer & Nguyen, 2005; Peng & Delios, 2006). Research has also examined the institutional influences inside the firm, coming from factors like imitation and the accumulation of experience (e.g. Chan et al., 2006; Chang & Rosenzweig, 2001; Davis et al., 2000).

1.3. The role of institutions in attracting inward FDI: the literature

In the last twenty-five years or so, a growing number of empirical studies aimed at investigating the domestic factors that matter for MNEs' decisions have also taken into account institutional aspects, such as the quality of governance, the protection of property rights and the degree of economic freedom of the host country.

In particular, growing attention has been given to institutional factors in the so-called transition economies of the Eurasia, which, starting from the beginning of the nineties, have experienced relevant processes of decentralization, modernization and democratization and, consequently, an increase in their institutional quality. The improvements in their economic, political and institutional conditions led to a rapid increase of inward FDI, which in turn boosted their transition process, their economic growth and industry reconstruction (Bevan & Estrin, 2004). In turn, the local governments often attempted to attract new foreign investment by undertaking processes of privatization, by introducing investment incentives (e.g. fiscal incentives, subsidized loans, loan guarantees, government insurance at preferential rates, subsidized dedicated infrastructure and services and protection form import competition [Dunning & Lundan, 2008a]), and by adhering to international treatments and regulations, including a series of anti-corruption treaties (such as the Criminal Law and the Civil law Convention on Corruption and, for the Eastern European countries which are OECD members, the OECD anti-bribery Convention [OECD, 2016]).

The increasing interest in the determinants of inward FDI in the transition economies has fuelled a vast empirical literature on this topic. As an illustration, Tintin (2013), who investigates the determinants of FDI in the transition economies over the period 1996-2009, finds that a high quality of domestic institutions, and especially a high degree of economic freedom, which particularly affects the business and investment environment, have a positive effect on inward FDI. Other institutional factors that are found to matter for firms investing in transition economies are, for instance, progress in structural reforms (mainly related to the privatization process and the banking sector), the lack of trade barriers, the individuals' ability to accumulate private property, progress in fighting corruption in the host economy (Jimborean & Kelber, 2017) and, in particular in the Western Balkans, the restoration of peace and basic security (Kekić, 2005). With regard to the Balkan area, Demekas et al. (2007) assert that the initial wave of foreign investors was attracted primarily by market size, ease of access and low labour costs; however, once a "critical mass" of foreign investment was reached, the new investors were increasingly influenced

also by the degree of institutional development and the quality of the business environment of the country. Although, starting from the beginning of the new millennium, the Western Balkans underwent massive processes of political, economic and social transformation and reconstruction and attracted notable amounts of FDI, they still lag behind the other European transition countries. This is primarily due to the series of conflicts and political changes that happened from 1991 to 2001 (in particular the disintegration of the Yugoslav federation, five military conflicts, the international sanctions against the Former Yugoslavia, the Greek embargo related to the problems of recognition and denomination of the Former Yugoslav Republic of Macedonia, the Kosovo war and the NATO bombing of FR Yugoslavia in 1999), which caused the break-up of the traditional economic and trade links, a very deep recession, delays in the economic reforms required for the transition to a market economy and in the integration of most countries with the rest of Europe (Demekas et al., 2007; Uvalić, 2012a).

In order to obtain more robust and general conclusions about the role of transition-specific factors in influencing the FDI performance in the transition economies, Tokunaga & Iwasaki (2017) recently conducted a meta-analysis of 69 empirical studies investigating the determinants of inward FDI in this region. Their main finding is that both exogenous features of the host-country, such as natural resource endowments and geographical locations, and endogenous policy-oriented efforts, such as market economy reforms and institutional integration with Western Europe, matter for foreign investors.

Another valuable attempt to synthesize and review decades of research on the relationship between inward FDI and domestic institutional factors and which, unlike the work by Tokunaga & Iwasaki, does not focus on a specific sample of host countries, has been recently made by Bailey (2018), who conducted a meta-analysis based on 97 studies investigating the determinants of FDI. Bailey's meta-analysis confirms that institutional factors such as political stability, democracy and rule of law attract FDI, while others such as corruption and tax rates deter it.

Although they have not been so much explored as the formal ones so far, also informal institutions and their influence (direct or by means of their interaction with formal institutions) on inward FDI have been gaining increasing attention. As an illustration, some empirical studies show that a trust-based business environment favours inward FDI, since it reduces the probability of opportunistic behaviour in the local market, it facilitates the development of cooperative business relationships with local stakeholders, and it lowers monitoring costs. Similarly, sound social networks, which are based on trust, tend to foster FDI because they give foreign investors opportunities to have contacts in organizations with various

backgrounds and professions, and allow them to establish durable professional relationships (see, for instance, Wang, 2000; Lee & Filer, 2007; Seyoum, 2011; Zhao & Kim, 2011). Rather, the effect of corruption on multinational firms' decisions is ambiguous: on the one hand, it damages the economy because it raises transaction costs for foreign investors (Bardhan, 1997), carrying the risk of a loss of reputation and brand goodwill (Zhao et al., 2003), and causing inefficiencies and market distortions by giving corrupt firms preferential access to lucrative markets (Habib & Zurawicki, 2002). On the other hand, corruption may help investors to circumvent long and inefficient bureaucratic procedures (Huntington, 1968), accelerate decision-making, and enable businesses to avoid onerous government regulations (Lui, 1985). Sometimes corruption may also help supplement low wages, enable governments to reduce taxes and partially compensate for weak regulatory systems, especially in developing countries (Tullock, 1996; Houston, 2007).

Finally, it is worth mentioning that also the quality and the characteristics of the home country can affect the impact of domestic institutions on inward FDI. As a matter of fact, a number of studies resort to gravity models that use bilateral FDI between pairs of countries as dependent variables, and differences in relevant characteristics of the home and host country, including degree of development, location, culture and institutions as regressors (e.g. Du et al., 2012; Contractor et al., 2014; Kunčič & Jaklič, 2014; Demir & Hu, 2016). Recently, Cezar & Escobar (2015) proposed a theoretical model to explain the impact of institutional distance on FDI: according to their model, as adaptation costs increase with the institutional distance between source and host countries, the productivity threshold at which FDI is more profitable than exporting as a means of entering a foreign market increases and the number of firms that undertake FDI decreases. The assumptions of the model are confirmed by the author's empirical analysis. However, the effect of institutional and cultural distance is ambiguous. Indeed, on the one hand it can raise transaction costs since it can prevent investing foreign firms from understanding host country players and establishing external legitimacy in host countries (Zaheer, 1995; Brouthers, 2013). In addition, different expectations between headquarter and subsidiaries erode internal communication and reduce the efficiency of information exchange and knowledge transfer (Gaur & Lu, 2007). On the other hand, some authors (e.g. Boisot & Meyer, 2008; Cuervo-Cazurra & Ramamurti, 2015) assert that investors from countries characterized by a weak or inefficient institutional framework may strategically escape from home country's institutional voids by investing in economies with higher institutional quality.

1.3.1 The importance of informal institutions for attracting FDI: the case of guanxi in China

Before drawing the attention to what Kwok & Tadesse (2006, p.767) defined "*the other side of the picture*" in the relationship between inward FDI and institutions, it may be useful to shortly delve into an interesting case of well-established social network typical of China, known as guanxi. In the last thirty years, China has experienced a striking economic growth and a relevant transition process, and has become a new, prominent player within the international business community. At the same time, China has been receiving increasing volumes of FDI, in particular of the so-called non-Chinese FDI (namely FDI not coming from Hong Kong, Macao and Taiwan, from which most of foreign investments came until the end of the eighties), to the point that, since the early nineties, it has become one of the top destinations of FDI in the world. (Wang, 2000; Lu, 2012). However, its formal legal system, which is generally considered as an important determinant of FDI, is quite weak and inefficient and consequently, foreign investors face a great number of uncertainties in protecting their property rights, enforcing contracts, and settling investment-related disputes. According to several researchers, a key to understand the apparent contradiction between high amounts of inward FDI and high investment risk lies in the presence of strong informal networks in the Chinese society, known as guanxi, which act as substitutive informal institutions. Guanxi consists in a special type of social relations and connections based on mutual interests and benefits, in which relations between partners take place through reciprocal obligations, exchange of favors and continuous cooperation (Davies et al., 1995; Chen, 1995). The guiding principle of guanxi is mutual trust, which has been deeply rooted in the Chinese tradition for thousands of years. Guanxi are common also among business partners, who tend to create trustworthy and durable relationships (Wong & Leung, 2001), and also between entrepreneurs and government officials, since guanxi can help circumvent and overcome legal and administrative obstacles or serve as a mechanism to protect the company against unforeseen risks (Dunfee & Warren, 2001).

Guanxi support not only Chinese people, but also foreign investors. Indeed, they complement official law by clarifying legal ambiguities and providing access to legal contract enforcement and dispute settlement mechanisms, and they secure potentially highly-profitable business opportunities by compensating for the high investment risks involved (Wang, 2000). In turn, since trust is considered a fundamental element also in business transactions, without which a formal contract is not stipulated (Ambler, 1995), foreign firms operating in China should commit to building trust-based and long-lasting relationships with the local policy makers and managers.

The relevance of guanxi also for China's attractiveness in terms of FDI has been empirically tested mainly by means of interviews to local workers, local firms and foreign investors. As an illustration, Qiu (2005) administered a survey involving 105 foreign firms located in the Chinese province of Shaanxi; from the respondents' answers it emerges that guanxi plays a prominent role in attracting firms especially in areas, such as Shaanxi, that are less competitive than other ones and are characterized by a poor formal institutional framework. Rather, Wang (2000) employs an econometric model which uses inward FDI in China as dependent variable and includes formal institutions among the regressors. Although he does not model them, he infers the relevance of trust and guanxi from the lack of significance of the institutional factors (typically affecting FDI) modelled.

1.4 The impact of inward FDI on domestic institutions

As I shortly illustrated in section 1.3, in recent decades, the literature in international economics and international business has largely explored the determinants of inward FDI and has acknowledged the relevance of host country's institutions for the foreign investors' decisions. However, although this issue is less explored than the one concerning the effect of institutions on FDI, an increasing number of studies have attempted to understand whether and to what extent inward FDI can affect some type of domestic institution and policy or the quality of governance of the domestic country. Indeed, on the one hand, foreign firms, which generally own a higher level of political power over public officials than non-multinational, domestic firms, attempt to adapt to the local institutional condition and to obtain legitimacy in the local markets (Kostova, 1999; Dahan et al., 2006), and often try to also shape the local business environment in their favour (Boddewyn, 1988; Hillman & Hitt, 1999). To this purpose, they can resort, for instance, to lobbying activity, or adopt transfer-pricing schemes, or threaten the country to leave it if certain conditions are not satisfied (Desbordes & Vaudey, 2007). However, MNEs can also collaborate with local actors for the provision of public services, provide useful information about laws used in other destination countries or join policy networks, together with local policy makers, with the aim of proposing and implementing public policies (Dunning & Lundan, 2008a; Dahan et al., 2006). In addition, foreign firms may demonstrate to local firms how to conduct business in a different and often more advanced and efficient way, may promote the adoption of best practices and, by attracting young and talented workers (who often join business schools, training courses and take international certifications and, in doing so, they become more and more open-minded end reluctant towards obsolete

ways of doing business and conservative values) may foster a process of modernization and institutional convergence with more liberal and advanced countries (Kwok & Tadesse, 2006). Thus, MNEs can also have a more indirect influence on the local society.

At the same time, the host countries that are sensitive to the benefits of inward FDI, and that commit to gaining legitimacy and international reputation within the bigger, global business community, voluntarily adopt policies aimed at attracting FDI (Martin & McKibbin, 1999; Kwok & Tadesse, 2006) or allow the foreign firms to intervene in their reform processes by working with local actors. This particularly holds for transition and developing economies, which are generally undertaking processes of modernization, catch-up and structural change, have more scope for institutional change than advanced countries, often have quite malleable formal institutions and where, especially in the case of Post-Communist countries, MNEs often do not settle for a passive role in their reform process (Malesky, 2009).

As a matter of fact, in the last twenty years or so, several empirical studies have investigated the effect of increasing amounts of inward FDI on some institutions and policies. First, several researchers (e.g. (Kwok & Tadesse, 2006; Wei, 2000a, Sandholtz & Gray, 2003; Larrain B. & Tavares, 2004; Desbordes & Vauday, 2007; Robertson &Watson, 2004) have examined the effect of FDI on corruption. The latter can be positive because, for instance, MNEs can introduce more virtuous ways of doing business and are exposed to economic and political pressures from the international business community, and because corruption increases the costs and uncertainty of doing business. However, the prevailing effect can be also negative, since activities involving large infrastructure projects and rents, including FDI, are typically vulnerable to corruption and since the multinational companies themselves sometimes import in the host country sophisticated bribery schemes. Moreover, as mentioned before, the literature has found inward FDI to exert an influence on some policies which matter for their activities, but also to improve the provision of public services, including training programs (see section 4.1). FDI also seems to boost processes of de-centralization, by means of the so-called "empowerment of local leaders effect" (Malesky, 2008), to favour the improvement of the political and economic relations between the home and the host country (by increasing their economic and political interdependence, which makes military conflicts more costly [Polacheck et al., 2012; Kahler & Kasttner, 2006; Kim, 2016]) and their institutional convergence (which can be fostered by the workers coming from the two countries who join the same multinational company[Kim, 2016; Lin, 2018). For these reasons, some authors argued that foreign firms can act as "agents of change", "agents of economic transition" or "institutional entrepreneurs" (Kwok & Tadesse, 2006; Malesky, 2008; DiMaggio, 1988).

1.4.1 MNEs as institutional entrepreneurs: the case of Vietnam

A compelling example of fast-growing developing country of South-East Asia that attracted increasing amounts of inward FDI which, in turn, fostered its development and institutional change is offered by Vietnam. Since the beginning of economic reform in 1986 and the country's subsequent reintegration with the global economy, FDI has been considered a strategic pillar of socio-economic development. Thus, the country introduced and implemented a series of investment-related rules and regulations, such as the Law of Foreign Investment in 1988 and 1996, and the Law of Investment in 2005 and 2014). It has been even argued that local governments resorted also to policies that are not permitted by central laws to attract foreign investors, such as some excessive incentives related to long tax holidays, free land rental and very low profits tax (Dung et al., 2018; Malesky, 2009). At the same time, the multinational firms located in Vietnam have increasingly demanded a workforce which is equipped with modern occupational qualifications and professional skills, but also soft skills such as team work, problem solving and critical thinking (Quang & Metzger, 2007). However, despite some improvements, the local vocational training does not fully fulfill the MNEs' requirements, in particular because there is a limited communication between the business sector and vocational colleges, and because the latter typically do not have sufficient resources to update their equipment and provide further training for teachers (Hargreaves et al., 2001). As Dunning & Lundan (2008a) posit, in order to partially offset these limits, some MNEs decided to provide themselves the upgrading of human skills in the local environment.

An interesting study on this subject has been conducted by Wrana & Diez (2016), who attempted to better understand whether MNEs in Vietnam can positively influence the quality of local education, mainly by introducing institutional elements of their home country's skill formation system. Using a qualitative content analysis on 19 in-depth interviews with German and Japanese MNEs operating in Vietnam, as well as other stakeholders involved in the research project, the authors found out that MNEs, in cooperation with development agencies, are able to create proto-institutions that originate from their respective home country's skill formation system. Although this study has an explorative character, it provides some useful insights on this interesting phenomenon. Moreover, Wrana et al. (2018) further investigated this issue with the use of econometric techniques and by employing a sample of more than 100 provinces from Vietnam, and also from Indonesia and the Philippines, observed over the years 2007-2016.

1.5 Some widely-used datasets on FDI and institutions

This section briefly reviews some widely-used cross-country panel datasets containing data on FDI and on institutional indicators.

One of the most well-known databases used to collect data on FDI is the FDI Statistics dataset developed by UNCTAD. This dataset includes annual data on inward and outward FDI (provided in both their flow and stock version, in different measures and both in absolute and relative values, the latter with respect to GDP and other variables) at world level starting from 1970. It also reports some annex tables summarizing data that partially come also from other sources, such as the FDI Markets Database. The latter, launched by the Financial Time's group, tracks the announced greenfield FDI projects, namely *ex-novo* projects, in every country of the world, starting from 2003. Each project is registered together with information about the sector, the destination, the estimated job creation and capital investment. Rather, the FDI Statistics dataset provides data on aggregate FDI stocks and flows which refer to both M&A and greenfield investments. While cross-border M&A just involve a simple change in ownership between firms, greenfield FDI are investment projects that entail the establishment of new assets and activities in the host country, and not simply a change in the ownership and control of a domestic company. (UNCTAD, 2009). Therefore, they may have a larger/additional impact on the domestic economic and institutional framework. Moreover, multinational companies typically prefer to undertake a greenfield FDI rather than a M&A in developing and transition economies because of a general lack of suitable domestic companies, and because in these areas the potential reverse flows of knowledge and technology from the host location to the country of origin are in general relatively low. This reduces the potential success of a M&A, which relies on significant bi-directional flows between the acquiring and acquired organizations. Rather, the creation of new greenfield establishments in developing and transition economies allow MNEs, in particular from advanced countries, to organize, configure and control all the aspects of the production or service process (Iammarino & McCann, 2013). For these reasons, it would be advisable, when possible, to distinguish between the two aforementioned types of FDI when its influence on the domestic institutional environment is investigated.

As far as institutions are concerned, a highly acknowledged and widely employed dataset is the Worldwide Governance Indicator Database developed by Daniel Kaufmaan and Aart Kraay. This dataset includes six indicators capturing six complementary institutional dimensions of a country and ranging from from about -2.5 (the lowest quality) to +2.5 (the best quality), such as: voice and accountability,

which captures perceptions of the extent to which citizens are able to participate in the selection of their government, as well as freedom of expression, freedom of association, and free press and media; political stability and absence of violence/terrorism, which is related to perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism; government effectiveness, capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies; regulatory quality, concerning perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development and market-oriented strategies; rule of law, which reflects 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; control of corruption, capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests (see Kaufmann et al., 2011). The WGI condense information from a wide set of perception-based governance data sources (e.g. the World Economic Forum's Global Competitiveness Report, the Institute for Management Development's World Competitiveness Yearbook and the World Bank/EBRD's Business Environment and Enterprise Performance surveys) and measure several relevant types of institution, such as civil liberties, political rights and freedom of press, property rights, rule of law and corruption. Annual data of the WGI, which are published by the World Bank Group, are available at world level on yearly basis starting from 1996. As an illustration, the country with the best regulatory quality in 2017 is Hong Kong (with a score of 2.16), followed by Singapore, New Zealand, Netherlands and Australia (World Bank Group, 2018).

Another well-known indicator of institutional quality, which focuses especially on economic institutions, is the Index of Economic Freedom developed by the Heritage Foundation and available since 1995 for most of the world. This broad index, which ranges from 0 (lack of economic freedom) to 100 (full economic freedom) is based on 10 indicators, namely property rights, freedom from corruption, fiscal freedom, government spending, business freedom, labour freedom, monetary freedom, trade freedom, investment freedom and financial freedom. A country with an index lower than 50.0 is considered as repressed. A country with an index between 50.1 and 60.0 is mostly unfree, while it is defined as moderately free when it scores between 60.1 and 70.0. Finally, a country with an index higher than 70.0

is considered as mostly free. According to the Index of Economic Freedom 2018 Report, the most economically free country in 2017 is Hong Kong, followed by Singapore, New Zealand and Switzerland. Interestingly, also a country which is typically considered as a transition economy, namely Estonia, is in the top-ten, with an average index of 78.8 (mainly driven by the indicators of investment freedom and fiscal health [Heritage Foundation, 2018]).

Researchers that need to collect data on informal institutions such as trust, social networks, cultural values and religiosity often resort to the World Value Survey (WVS), the European Value Survey (EVS) and/or the European Social Survey (ESS). These extensive datasets are based on large-scale, cross-national and longitudinal surveys designed to empirically investigate the moral and social values and beliefs of the people living in the countries being surveyed. As for corruption, two widely-used measures, covering more than 150 countries, are the Corruption Perception Index (CPI) provided by Transparency International and the corruption index contained in the International Country Risk Guide (ICRG).

Another interesting data source is the Global Competitiveness Report on the economic and social performance of more than a hundred countries, released annually by the World Economic Forum. For each country scrutinized, this report provides a series of institutional indicators referring to both formal and informal institutions.

1.6 Conclusions and suggestions for future research

In the last twenty-five years or so, a broad literature aimed at investigating the phenomenon of FDI, which has rapidly spread and has relevant economic, political and social effects for the home and host country, but also for the increasingly globalized and interconnected global community, has flourished. This work mainly aims to shortly illustrate the mutual relationship between inward FDI and institutions, whose two directions are generally studied separately, mainly by reviewing the relevant literature and by presenting two interesting case studies. In doing so, it attempts to provide a simple but comprehensive picture of the current state of the art and to point out some research gaps.

More specifically, although the role of domestic institutions in either attracting or discouraging foreign investors has been thoroughly and extensively investigated, to the point that some meta-analyses on empirical works devoted to this topic have been recently conducted, most of the existing studies focus on formal institutions. Actually, although in the last two decades a growing number of studies have

recognized the relevance of informal institutions as well in affecting relevant social and economic variables, including FDI, and of their interplay with formal institutions, this topic is still under-explored, the concept of informal institutions is rather elusive and the literature adopts different interpretations and classifications.

Moreover, from the analysis of the literature on the effects of increasing amounts of inward FDI on some domestic institutions, it emerges that the existing empirical works focus on one institutional factor or policy at a time, on a relatively small sample of countries, and/or on a narrow time frame. Thus, it is difficult to draw more general and robust conclusions on this issue on the basis of this fragmented and heterogeneous framework.

In the light of these considerations, future research should attempt to answer the following research questions: which elements can be considered as informal institutions and how they interact with similar constructs and with formal institutions? Which are the prevalent effects of informal institutions on inward FDI emerging from a systematic review of the existing empirical studies on this issue? Does inward FDI exert a positive effect on the quality of domestic institutions, especially in transition and/or developing economies?

To conclude, although the relationship between FDI and domestic institutions has been largely investigated, the role of informal institutions in affecting foreign investors' decisions and the effectiveness of formal institutions has been neglected and, as far as "the other side of the picture" is concerned, there is still not a study which addresses the effect of inward FDI on a more comprehensive measure of the quality of domestic institutions and which resorts to a large sample of countries and to a considerable time frame. Therefore, future research should contribute to the existing literature by attempting to fill these research gaps.

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Chapter 2. How do informal institutions influence inward FDI?

A systematic review

In the last fifteen years, the literature in international economics and international business has been paying increasing attention to informal institutions and to how they affect a variety of economic variables, inward FDI in particular. The main aims of this work are: to shed more light on a puzzling, elusive concept -informal institutions- also by drawing comparisons with related constructs; to overview the main types of informal institution and their effects on FDI inflows; to conduct a meta-analysis to explore the heterogeneity across empirical studies focused on the effects of informal institutions on FDI inflows. The main findings of the present work are as follows: according to most of the existing literature, informal institutions, such as trust, social networks and corruption, matter for the purpose of attracting FDI. The sign is significantly determined by the type of informal institution considered. In particular, social networks and values typically favouring FDI or in favour of it, such as trust and attitude towards liberalism, have a significant and positive impact on inward FDI, and this especially holds when the host country is a developing economy.

Keywords: *informal institutions, FDI, systematic review*

JEL: *A13 · D02 · F21*

2.1 Introduction

In recent decades, pervasive processes of modernization, globalization and technological progress have made the world economies increasingly dynamic and interconnected, and have fostered the development of multinational firms. One of the main measures of these companies' activity is represented by foreign direct investments (FDI), defined by the OECD as investments in a foreign company in which the investor owns at least 10% of the ordinary shares, undertaken with the objective of establishing a "lasting interest" in the host country, a long-term relationship and a significant influence on the management of the firm (OECD, 2008).

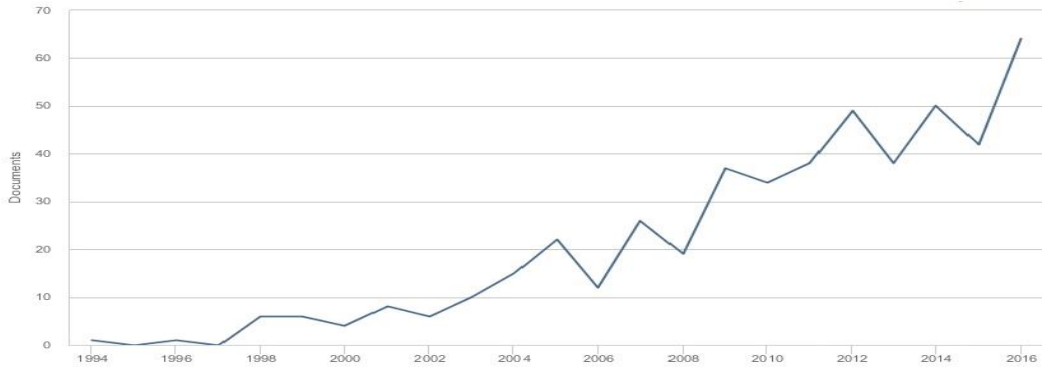
In the last twenty years, research in international business and international economics has been paying increasing attention to the effects of FDI on the host economies. For instance, domestic firms can benefit from the knowledge transfer deriving from the creation of links with foreign companies, and come into contact with different and sometimes more advanced technologies and managerial practices (Blomström & Kokko, 1998). FDI also foster competition, which motivates firms to innovate and become more productive (Blomström & Kokko, 1998; Spencer, 2008). On the other hand, this increased competition may lead to the exit of local businesses and to their gradual replacement, so FDI can have negative crowding-out effects too (Amoroso & Miller, 2017). Another strand of the literature has focused instead on host countries' determinants of inward FDI. These include factors such as infrastructure, human capital, economic stability and production costs, which are associated with the location aspect of the OLI paradigm[1], as well as market size, market growth, the economy's openness, and factor endowments, which are mainly investigated by the so-called New Trade Theory (Assunção et al., 2013). Another group of FDI determinants, the relevance of which has been highlighted since the late nineties, reflects the quality and effectiveness of a country's institutions. Growing awareness of the relevance of FDI, of institutions, and of their interaction clearly emerges from the sizable number of studies that deal with these topics. To give an example, as at June 2017 Scopus has indexed 488 papers belonging to the subareas *Economics, Econometrics and Finance, Business, Management and Accounting* and *Social Sciences* published between 1994 (the first year available) and 2016, with titles, abstracts and/or keywords containing both the terms "FDI" and "institutions". Figure 2.1 shows the rising trend of the peer-reviewed works investigating these subjects.

[1] Dunning's eclectic paradigm (often referred to as the OLI paradigm) is one of the frameworks most often adopted to explain the factors that induce a firm to become a multinational. See Dunning (2000) for a review.

Most researchers analysing institutions have focused on the formal ones (e.g. property rights, rule of law, civil liberties and political stability), especially in the transition economies, which have changed dramatically over a short period of time**.** From this vast literature it emerged that, generally, formal institutions play a relevant role in affecting the multinationals' investment decisions. In particular, increasing levels of institutional factors such as political stability, democracy, and rule of law tend to attract FDI, while others, such as corruption and poor governance, typically deter it. The results of these single studies are supported by the more robust and general findings of Bailey (2018), who conducted a meta-analysis based on a sample of 97 primary studies focusing on this issue.

In the meantime, informal institutions, which are typically not codified, and are harder to observe and measure, have been attracting more attention, especially since the beginning of the twenty-first century. In particular, several empirical works have found a significant effect of informal institutions on inward FDI, and on other relevant economic variables**.** However, this topic is still little explored, especially with respect to the relationship between FDI and informal institutions. Moreover, the concept of informal institutions is rather elusive and the literature adopts different interpretations and classifications. The available studies on informal institutions are consequently very heterogeneous and generally focus on just one or a few types, making it difficult for the reader to gain a clear and satisfactory overview of this interesting but puzzling subject.

Figure 2.1 Number of articles concerning FDI and institutions indexed in Scopus between 1994 and 2016



Source: articles from the Scopus (Elsevier) database

In the light of these considerations, the three main purposes that motivate this work are as follows:

(i) to shed more light on a puzzling, elusive concept - informal institutions- also by drawing comparisons with related constructs (section 2.2);
(ii) to overview the main types of informal institution and their effects on FDI inflows (section 2.2 and section 2.3);
(iii) to explore the heterogeneity across empirical studies focused on the effects of informal institutions on FDI inflows to see how, and to what extent, informal institutions affect a multinational firm's decision to invest in a given country. This is done by means of a simple meta-analysis, which - to the best of the author's knowledge – is the first to be conducted on this issue (sections from 2.3 to 2.6).

The remainder of the paper is organized as follows: section 2.2 contains an overview of the informal institutions framework, with a brief analysis of the main types forming the object of study; section 2.3 is devoted to a literature review of recent empirical studies on the influence of informal institutions on inward FDI; section 2.4 illustrates the empirical strategy and the data; section 2.5 presents and discusses the empirical findings; section 2.6 concludes.

2.2 Informal institutions: an overview

The present section provides a brief overview of informal institutions, mainly aiming to: shed light on the relationships and differences between formal and informal institutions; briefly describe what are typically considered as informal institutions, namely trust, social networks, corruption, but also culture and religion, which are often included in analyses on informal institutions, albeit with some peculiarities; underscore the main effects of these factors on inward FDI; reduce potential confusion on these topics by pointing out partial overlaps between similar concepts (such as informal institutions and social capital), and situations where the same item is included in different classifications. For instance, corruption is sometimes analysed from the point of view of governments monitoring and combatting the phenomenon and of the quality of governance, in which case it is included among the formal institutions. In addition, trust is considered an informal institution, as well as a major component of social capital, and sometimes as a cultural value too. This section also briefly presents the main datasets used by

researchers to obtain their indices of informal institutions, and provides the interested reader with numerous useful references on these aspects.

2.2.1 Formal versus informal institutions

Efforts to empirically analyse the effects of institutions on social and economic variables are quite a recent phenomenon, but anthropologists, sociologists and political scientists have long been interested in the role of institutions in various aspects of social life (such as the structure of family and kinship, social classes and government systems), and their effects on the structure and behaviour of organizations (Scott, 2010).

One of the most important contributions on the development of a modern institutional theory came from Douglass North, who defines institutions as "*the humanly devised constraints that structure political, economic and social interactions"* (North, 1991, p. 97). Another valuable definition was provided more recently by Geoffrey M. Hodgson, who sees institutions as *"systems of established and embedded social rules that structure social interactions"* (Hodgson, 2006, p.13). Theoretical support for the distinction between established and embedded social rules, which is closely connected to the distinction between formal and informal institutions, dates back to the beginning of the previous century. In his treatise *Folkways. A Study of the Sociological Importance of Usages, Manners, Customs, Mores, and Morals*, William Graham Sumner (considered one of the founders of sociology in the United States) distinguishes between *enacted* structures, which are deliberately created, and *cressive* structures, which slowly evolve more or less unplanned over lengthy periods of time (Sumner, 1906). More recently, W. Richard Scott defined institutions as "*social structures that have attained a high degree of resilience [and] are composed of cultural-cognitive, normative, and regulative elements that, together with associated activities and resources, provide stability and meaning to social life*". (Scott, 2008a, p.48). Both Hodgson's and Scott's definitions contain important references to the need to distinguish between two main categories, namely formal and informal institutions.

Formal institutions are founded on codified and explicit rules and standards that shape the interaction between members of society (North, 1990). They promote stability and regulation by providing authoritative behavioural guidelines, and by defining an established order within which individuals and firms operate (Scott, 2008a; Holmes et al., 2013). Formal institutions can be classified as regulatory (e.g.

property rights, rule of law, and the judiciary system), political (e.g. political rights, political stability, democratic quality, and the presence of the military in politics), or economic (e.g. labour, business and financial freedoms [Kunčić, 2014]).

According to Zucker (1987), formal institutions are based on shared cognitive understandings and on their acceptance by the members of society. These elements can be involved in the realm of the so-called informal institutions. A well-known and widely-recognized definition of informal institutions was proposed by Helmke & Levitsky, who describe them as "*socially shared rules, usually unwritten, that are created, communicated and enforced outside officially sanctioned channels,* whereas formal institutions are *created, communicated and enforced through channels that are widely accepted as official"* (Helmke & Levitsky, 2006, p.5). As an example, North mentioned sanctions, taboos, customs, traditions, and codes of conduct. Helmke & Levitsky's definition highlights some notable elements which help differentiate informal institutions from the formal ones, namely the fact that they are typically unwritten and that, although they are widely accepted and shared, they are not explicitly formalized. Moreover, as it can be inferred from Hodgson and Sumner's statements, informal institutions can be considered as embedded social guidelines and codes of conduct, rather than established normative and regulative rules, and tend to be more persistent over time than the formal ones. Anyway, formal and informal institutions are neither parallel sets of rules, nor consecutive phases, but they interact and mutually influence one another (Chakraborty et. al, 2015). Helmke & Levitsky (2006) classify informal institutions in four categories, based on the effectiveness/ineffectiveness of the corresponding formal institutions, and on the compatibility/incompatibility of their respective goals. To be more specific, when their goals are compatible and the formal institutions are effective, then the informal institutions are *complementary*, in the sense that they reinforce the formal rules. The operating routines and procedures that facilitate complex operations in the business and public sectors are an example. In the event of effective formal institutions and conflicting goals, *accommodating* informal institutions will tend to modify or undermine the effectiveness of the formal rules without openly contradicting them. As an instance of this, Helmke & Levitsky (2006) mention the informal power-sharing arrangements made by the governing elite in Chile after the fall of Pinochet. When ineffective formal institutions are accompanied by contrasting goals, there will be *competing* informal institutions, which are incompatible with the formal rules (as in the case of corruption). Finally, *substitutive* informal institutions help societies to achieve outcomes that formal institutions were expected to produce, but failed to do so. An example lies in the informal loan networks that compensate for the formal court system when the latter

is weak (see Chakraborty et al., 2015, for instance). Helmke & Levitsky (2006) also highlight the elements that, despite sharing some of their features, should not be considered as informal institutions, namely weak institutions (which may be formal or informal), informal behavioural regularities (that, to be considered informal institutions, must respond to an established rule or guideline, the violation of which generates some kind of external sanction), informal organizations (which, in North's view, play according to "the rule of the game"), and culture (which, according to the authors, is based on shared values while informal institutions are based on shared expectations; however, the two concepts are strictly related and partially overlap, as it will be underlined in section 2.3).

2.2.2 Some relevant types of informal institution

Three widely-acknowledged types of informal institution that emerge from the literature are trust, social networks, and corruption.

Trust can be defined as the willingness to make oneself vulnerable to other people's actions, based on beliefs about their trustworthiness (Bohenet, 2008). Trust helps solve problems of opportunism and moral hazard, it reduces the uncertainty of complex transactions for firms, it promotes interaction and flexibility among partners, and it facilitates the flow of information with consequently lower costs (Beugelsdijk, 2005; Mèon & Sekkat, 2015).

An informal institution closely related to trust is represented by social networks. They consist of social ties developed through interpersonal and inter-organizational relationships between individuals and firms, respectively (Inkpen & Tsang, 2005). Social networks allow trust to become transitive and spread, then trust boosts cooperation, and cooperation fosters trust, hence triggering a virtuous circle (Putnam et al., 1993). An interesting case concerns the well-established social networks typical of China called *guanxi*, which can be defined as personal relationships based on trust and reciprocity through which individuals exchange favours (Wang, 2000). Another example of a well-established, peculiar social network widespread in the Western Balkans is the exchange of ideas and opinions that flows in the *mesni zajednicas*. According to Mohamed & Mihailović (2014), these are "*a traditional form of sub-municipal, community-based self-government (…) recognized as forums where citizens come together and discuss issues, decide on strategies and formulate proposals on issues of local significance"* (Mohamed & Mihailović, 2014, p.81). *Mesni zajednicas* play an important part in promoting citizens' participation in

decision-making at municipal level, and in service provision, partially compensating for inefficiencies of the formal institutions (Marćić, 2015). In Japan, there are mutual help networks such as the *youi* (consisting in exchange of labour, typically among families), *moyai* (based on the redistribution of goods and services), and *tetsudai* (providing assistance with no expectation of reciprocity), which have traditionally been an important feature of Japanese society. Although the country changed profoundly during the last century, its tradition of mutual support persists, especially in farming villages (Onda, 2013).

Trust and social networks are also the object of a specific strand of literature focusing on a concept closely related to that of the informal institutions, social capital. According to Robert D. Putnam, social capital includes *"those features of social organization, such as networks of individuals or households, and the associated norms and values that create externalities for the community as a whole"* (Putnam et al., 1993, p.167). The literature on social capital typically also considers associative activity, a concept strongly related to that of social networks and referring to people's participation in civic groups and non-profit organizations. Knack & Keefer (1997) produced a list that include organizations dealing with social welfare services, religion, education, art and music, politics, human rights, environment protection, sports or recreation, youth work, health, animal rights, women's rights and local community action, professional associations, and trade unions. In their famous study on the Italian regions, *Make Democracy Work*, Putnam et al. (1993) show that the crucial factor in explaining the differences in governments' effectiveness and economic performance across Italy lay in regional disparities relating to the traditions of civic engagement and to the structure of the civic networks (which are based on associative activities). In particular, they found a positive link between high levels of social capital and high levels of government effectiveness and economic development.

Trust and social networks are usually considered as complementary or substitutive informal institutions. Rather, corruption, as pointed out by Helmke & Hevitsky (2006), can be considered as a typical competing informal institution. Corruption, which consists in illegal informal exchanges involving the misuse of public power for private benefit, is a widespread phenomenon with ancient origins, as documented in Noonan's work *Bribes* (Noonan, 1984). In the last two decades, a vast amount of empirical literature analysing the impact of corruption on economic growth and other economic and social variables has highlighted two main, opposite effects. According to the mainstream view, corruption damages the economy because it raises transaction costs for foreign investors (Bardhan, 1997), carrying the risk of a loss of reputation and brand goodwill (Zhao et al., 2003), and causing

inefficiencies and market distortions by giving corrupt firms preferential access to lucrative markets (Habib & Zurawicki, 2002). On the other hand, corruption may help investors to circumvent long and inefficient bureaucratic procedures (Huntington, 1968), accelerate decision-making, and enable businesses to avoid onerous government regulations (Lui, 1985). Sometimes corruption may also help supplement low wages, enable governments to reduce taxes and partially compensate for weak regulatory systems, especially in developing countries (Tullock, 1996; Houston, 2007). As a final consideration on corruption, to avoid possible misunderstandings, it is worth adding that some authors use indicators that refer not to the perception of corruption, but to the efficacy with which it is controlled and prevented by the political authorities, as captured for instance by the Worldwide Governance Indicator "Control of corruption". In such cases, corruption is typically included among the formal institutions.

Beyond trust, social networks and corruption, some other elements are sometimes identified as informal institutions. As an illustration, Harriss-White (2010) suggests that the informal labour market, or so-called shadow economy, can also be considered as an informal institution, and more specifically as a conflict management institution. Indeed, it represents a social welfare element in the economies where a more formal welfare system is lacking or very weak. A country's informal labour market may have some effect on its inward FDI. In this respect, Lee & Park (2013) suggest that a considerably large informal labour market can influence a country's FDI attractiveness by weakening a relevant formal institution, namely, the protection of intellectual property rights. Moreover, Kunčić & Jaklić (2014) employ indicators of the society's attitudes towards liberalism and non-liberalism to capture informal institutions, while Holmes et al. (2013) investigate informal institutions in the form of the cultural dimensions of collectivism and future orientation. More information about the aforementioned papers can be found in the literature review (section 2.3).

2.2.3 Culture and religion

Despite some peculiarities, culture and religion are two complex constructs closely related to informal institutions. Guiso, Sapienza & Zingales (2006, p.23) identify culture with "*those customary beliefs and values that ethnic, religious, and social groups transmit fairly unchanged from generation to generation*." One of the most prominent contributors to the modern literature on culture is Geert Hofstede, who defines culture as "*the collective programming of the mind which distinguishes the members of one human group from another*" (Hofstede, 1984, p. 21). He suggests that the most important

differences between cultures can be captured by the extent to which they diverge in terms of certain cultural values, or domains, i.e. uncertainty avoidance, power distance, individualism vs collectivism, and masculinity vs femininity. Uncertainty avoidance indicates to what extent a culture shapes its members to feel more or less uncomfortable in unstructured and ambiguous situations. Power distance is the degree to which the less powerful members of organizations and institutions accept that power is unequally distributed, or even expect it to be so. Individualism (versus collectivism) involves the extent to which individuals are more or less tightly integrated in groups. Masculinity (versus femininity) refers to the role distribution between the genders; in particular, more masculine societies view roles as more rigidly gender-dependent, while there is more freedom concerning role selection, regardless of gender, in more feminine societies (Hofstede, 2001). Despite some criticism (see Schwartz, 1994, and McSweeney, 2002, for instance), Hofstede's notion of culture is one of the most widely used in many research fields (Kaasa, 2015). More recently, Tabellini (2010) and Williamson & Kerekes (2011) identified four other cultural domains, namely trust, respect, individual self-determination, and obedience. Another cultural trait mentioned in the literature concerns the relevance of family ties in society. Alesina & Giuliano (2010) argue that societies with strong family ties experience lower levels of generalized trust and civic sense, and tend to have more home-based production (done largely by women, young adults, and older people). Like informal institutions, cultural traits tend to change more slowly than formal institutions (Alesina & Giuliano, 2010, Fernández & Fogli, 2009 and Giavazzi, Petkov & Schiantarelli, 2014), and they interact with formal institutions (Alesina & Giuliano, 2015 and Alesina et al., 2015).

Due to the strict relationship and overlaps between informal institutions and culture, to the point that the latter can be considered as an important reflection of a country's informal institutions (North, 1990; Peng et al., 2008), in the empirical part I included also some cultural values among the variables capturing informal institutions.

Religion is another construct having strong links with informal institutions, and especially with culture (as an illustration, Barro & McClerry, 2003, define religion as one important dimension of culture). Ever since the publication of Max Weber's seminal work, *The Protestant Ethic and the Spirit of Capitalism* (Weber et al., 2002 [1905]), numerous studies have investigated the effects of individuals' religious affiliation and/or religiosity (a more elusive concept that captures the strength of an individual's belief in God and participation in religious activities) in a given country on a variety of economic variables. These include entrepreneurship (Audretsch et al., 2007; Carswell & Rolland, 2007; Wiseman & Young,

2014; Nunziata & Rocco, 2016), productivity (Islam, 2008; Grafton et al., 2002; Gorodnichenko & Roland, 2010; Kaasa, 2015), income (Iannaccone, 1998, Barro & McCleary, 2003, Bettendorf & Dijkgraaf, 2010, Kortt et. al., 2012; Sinnewe et al., 2016), and economic attitudes (Lal, 2001; Minarik, 2014).

2.2.4 Informal institutions and inward FDI

Trust, social networks and corruption are likely to have an impact on inward FDI. A trust-based business environment is expected to favour inward FDI, since it reduces the probability of opportunistic behaviour in the local market (a key concern for foreign investors), it facilitates the development of cooperative business relationships with local stakeholders, and it lowers monitoring costs. Like trust, sound social networks should foster FDI because they give foreign investors opportunities to have contacts in organizations with various backgrounds and professions, and allow them to establish durable professional relationships (Zhao & Kim, 2011). For instance, *guanxi* support not only Chinese people, but also foreign investors. Indeed, they complement official law by clarifying legal ambiguities and providing access to legal contract enforcement and dispute settlement mechanisms, and they secure potentially highly-profitable business opportunities by compensating for the high investment risks involved (Wang, 2000). With regard to corruption, its effect on multinational firms' decisions is ambiguous for the reasons illustrated in section 2.2.

Also religion and culture can influence to some extent inward FDI. In particular, the empirical study conducted by Hahn & Bunyaratavej (2010) suggests that a higher level of uncertainty avoidance and a tendency for masculinity in a given country are negatively associated with its appeal to FDI, while a greater power distance and a tendency for individualism favour FDI inflows. While, as mentioned in section 2.3, there is a vast literature on religion and several economic variables, few empirical studies have concerned the influence of religion on FDI, and almost all of them (e.g. Hergueux, 2011) use gravitational models in which the key independent variable is not the host country's religiosity or religious affiliation(s), but the "distance" between those of the host and home countries, and the dependent variable is bilateral FDI. With regard to total inward FDI, Sathe & Handley-Schachler (2006) examine the effect on FDI inflows of several factors, including religion, in different Indian regions, finding that religious affiliation is not statistically significant after controlling for the degree of urbanization.

2.2.5 The main datasets used to construct indicators of informal institutions

The increasing attention paid to the role of informal institutions in societies, and to how they interact with formal institutions, has been supported by a greater availability of datasets, typically based on surveys administered to households or firms, that provide, or allow researchers to easily derive measurable and comparable indicators of these institutions.

Several studies derive their indices of informal institutions -including culture and religion- from data contained in the World Value Survey (WVS), the European Value Survey (EVS) and/or the European Social Survey (ESS). These extensive datasets are based on large-scale, cross-national and longitudinal surveys designed to empirically investigate the moral and social values and beliefs of the people living in the countries being surveyed. The WVS currently comprises six waves (1981-1984, 1990-1994, 1995-1998, 1999-2004, 2005-2009 and 2010-2014) covering nearly a hundred countries in all; the latest one available in 2017 concerns 46 countries. The EVS and ESS focus on European countries and, to date (2018), the EVS has released four waves (1981, 1990, 1999 and 2008) that have involved increasing numbers of countries (reaching 46 in the latest wave), while the ESS (which is updated biennially and covers fewer countries) has published eight waves (2002, 2004, 2006, 2008, 2010, 2012, 2014 and 2016). One question posed by all three surveys is whether the respondent thinks that most people can be trusted. Their answers are often used by sociologists, sometimes combined with other related queries, to build a trust-based indicator. The core concept underlying this index relates to interpersonal trust, generally meaning trust in physically proximal individuals, such as neighbours or people living in the same town. Some researchers, such as Baliamoune-Lutz (2011) and Ahmad & Hall (2017), believe that a trust indicator should reflect trust in strangers too, and that an indicator based on the WVS, EVS or ESS suffers from limited data availability across years, so they have employed alternative measures of trust. One of these is the contract-intensive money (CIM) indicator, which should reflect the trust placed by individuals entering into monetary transactions in a large number of individuals not necessarily known to them, as well as their confidence in being repaid (Baliamoune-Lutz, 2011).

Another interesting data source is the Global Competitiveness Report on the economic and social performance of more than a hundred countries, released annually by the World Economic Forum. For each country scrutinized, this report provides a series of institutional indicators, including some related to firms' values, informal practices and relationships, based on extensive interviews with business

executives. For instance, Seyoum (2011), whose paper is included in the literature review presented in section 2.3, resorts to these indices to build an indicator of informal institutions.

Finally, two widely-used measures of corruption, covering more than 150 countries, are the Corruption Perception Index (CPI), and the corruption index contained in the International Country Risk Guide (ICRG). The corruption index in the ICRG assesses corruption within political systems and is one of the twelve components of the political risk rating released by the PRS Group on a monthly or annual basis (PRS Group, 2012). The CPI has been issued annually since 1995 by Transparency International, the largest not-for-profit organization committed to fighting corruption. Another index capturing perceptions about corruption is the "Control of Corruption" Worldwide Governance Indicator, issued annually by the World Bank and covering numerous countries. As mentioned in section 2.3, the Control of Corruption index is typically included among the indicators of formal institutions since it can be interpreted as an indication of how effectively governments control illegal practices.

2.3 A review of recent empirical studies

Interest in the relationship between informal institutions and certain important economic variables, such as inward FDI, has been rapidly growing in the last two decades. This section reviews twenty recent empirical papers (selected as briefly explained in section 2.4) on how a host country's informal institutions affect its FDI inflows. To provide a compact but useful overview of the selected articles, and make it easier to compare them, Table 2.1 condenses the following information for each paper: year of publication, author(s), the FDI-related dependent variable, types of informal institution considered, types of formal institution (if modelled), and main conclusions. A more detailed version of Table 2.1, that includes the name of the journal that published the study, the proxies used to measure the informal institutions, further information on the institutional variables, and the time frame in question is available upon request (as well as, for readers interested in delving further into these topics, another similar table which reviews twenty recent empirical papers on the effects of informal institutions, including culture and religion, on a variety of interesting economic outcomes other than inward FDI, such as income, entrepreneurship and productivity).

A look at Table 2.1 prompts some considerations. First, the authors use quite different measures of the amount of inward FDI (see column 2), not just the more often-used FDI inflows, but also the number of

FDI projects, for instance (e.g. Hahn & Bunyaratavej, 2010), and the probability of FDI being made in a given country (e.g. Smarzynska & Wei, 2000) or region (e.g. Choe & Lee, 2016). The articles investigate different factors that might be seen as the types of informal institution described in section 2.2, namely trust, social networks, corruption, the informal labour market and cultural values (column 3).

Since most of the empirical papers dealing with FDI and religiosity employ gravitational models (as mentioned in section 2.2), none of the studies considered here include religious indicators. Several authors build indicators of informal institutions from the WVS, EVS and/or ESS, with the aid of data reduction techniques. A particular case concerns Wang (2000), and Sekkat (2014), who only include formal institutions in their empirical model, inferring the relevance of informal institutions, which may attenuate the effectiveness of the formal institutions, or compensate for their ineffectiveness, from the lack of significance of the institutional factors (typically affecting FDI) that are modelled. Column 4 refers to the inclusion of indicators of formal institutions. In particular, two studies (Holmes et al, 2013; Kunčić & Jaklić, 2014) adopt comprehensive indices of formal institutions derived with the aid of data reduction techniques from a broad set of institutional variables contained in different datasets. Column 5 provides some basic information on the sample of host countries considered in each study. The samples labelled as heterogeneous contain a mix of advanced, transition and developing economies[2] from various geographical areas. The three papers marked with an asterisk in Table 2.1 conduct their analysis either on different regions of the same country (Mudamba & Navarra, 2003; Choe & Lee, 2016), or on a very specific area and sector (Saleh et al., 2017). For this reason, they are not used as primary studies in the meta-analysis. The study by Paniagua et al. (2017), marked with two asterisks in Table 2.1, represents an interesting but a bit peculiar case: it investigates the role played by online social-networks, such as Facebook and Twitter, on FDI.

[2] I adopted the United Nations classification of countries to identify developing economies. They represent a quite heterogeneous group of countries, including both fast-growing economies such as China, India and Vietnam and poor emerging economies such as Sub-Saharan countries. While the UN classification labels also the Eastern European countries which joined the EU as advanced economies, I included the latter in the "transition economies" group, together with the Western Balkans' countries and the CIS countries.

Table 2.1 Empirical papers investigating the effects of informal institutions on a country's attraction of FDI

1. Author(s) and year of publication*	2. Dependent variable	3.Type(s) of informal institution	4. Type(s) of formal institution (if modeled)	5. Sample of host countries	6. Main conclusions
Wang (2000)	FDI inflows	SOC_NT	POL (CORR)	22 developed and 44 developing countries	Corruption is probably not a major deterrent against inward FDI because there are informal institutions (such as *guanxi* in China) that compensate for the shortcomings of the legal system.
Smarzynska & Wei (2000)	prob. of a FDI in a given country	CORR	NOT_MOD	22 transition economies	A higher level of corruption in a host country is associated with a lower probability of FDI.
Mudambi & Navarra (2003)*	number of FDI projects	OTHER_V	POL_INST	Italian regions	A move towards a center-right political orientation and an increase in Putnam's index of civic institutions have a positive, significant effect on inward FDI, whereas an increment in the concentration of political power has a very significant negative influence.
Bhardwaj et al. (2007)	WIR's FDI Index	TR, CULT	POL_INST	43[6.b] heterogeneous countries	Uncertainty avoidance discourages inward FDI and weakens the positive effect of trust.
Li & Filer (2007)	FDI inflows and % of inward FDI out of total FI	TR	LEG_INST, POL_INST	44 heterogeneous countries	Good governance increases FDI inflows, but it is important also to consider indirect foreign investment. In particular, the latter are preferred to FDI in countries with a weak environment, since they can be better protected by private means.
Hahn & Bunyaratavej (2010)	number of FDI projects in the service sector	CULT	POL_INST	The host countries of greenfield FDI in the service sector from the UK,the US,	Host countries with lower levels of uncertainty avoidance and higher levels of individualism and power distance are able to attract more FDI in the service sector.

				Germany and Japan	
Seyoum (2011)	FDI inflows	SOC_NT	LEG_INST	119 heterogeneous countries	There is a positive relationship between informal institutions and inward FDI, which is partially mediated by formal institutions.
Zhao & Zim (2011)	FDI inflows /GDP	TR, SOC_NT	LEG_INST, POL_INST	76 heterogeneous countries	Trust and associative activity are relevant determinants of FDI inflows and their effects are further strengthened by high regulatory quality.
Mudambi et al. (2013)	FDI inflows	CORR	EC_INST	55 developing countries	FDI are negatively associated with corruption, which tends to be higher where there is little protection for property rights and scarce trade freedom.
Alemu (2012)	FDI inflows	CORR	NOT_MOD	16 Asian countries	A greater freedom from corruption is associated with a significant increase in inward FDI.
Wu et al. (2012)	FDI inflows; % of inward FDI out of total FI	SOC_NT	LEG_INST, POL_INST	45 heterogeneous countries	Family-based and relational-based countries attract the highest amounts of FDI relative to the total amount of foreign investments.
Holmes et al. (2013)	FDI inflows	CULT	LEG_INST, EC_INT, POL_INST	50 heterogeneous countries	Countries' informal institutions shape their formal institutions, which in turn affect their level of inward FDI in various ways.
Lee & Park (2013)	FDI inflows	INF_LM	LEG_INST	11 Asian countries	Stronger IPR protection attracts more FDI in countries with small informal economies, but not in countries with large informal economies.
Helmy (2013)	FDI inflows	CORR	LEG_INST, EC_INST	21 MENA countries	In MENA countries corruption is positively, significantly associated with inward FDI.
Sekkat (2014)	FDI inflows	SOC_NT	LEG_INST	13 Arabic countries	Since the quality of formal institutions matters only for non-Arab countries, intra-Arab investments are likely to be driven by social networks and similar beliefs.
Kunčić & Jaklić (2014)	bilateral and total FDI stocks	CULT	LEG_INST, EC_INT, POL_INST	34 OECD countries	Not only the host country's political and legal institutions, but also its liberal public opinion have a positive effect on inward FDI.
Quazi (2014)	FDI inflows	CORR	POL_INST, EC_INST	16 Asiatic countries	Corruption has a significant, negative impact on inward FDI in East Asia and South Asia.

Mèon & Sekkat (2015)	FDI inflows /GDP	TR	LEG_INST	46 advanced and developing countries	Formal and informal institutions are substitutes when it comes to attracting FDI.
Choe & Lee (2016)*	probability of FDI in a given region	TR, SOC_NT	NOT_MOD	15 South Korean regions	"Trust and Norms" is a relevant locational factor for foreign investors in South Korea, while the "Social networks" factor is typically not statistically significant.
Jalil et al. (2016)	FDI inflows	CORR	NOT_MOD	43 developing countries	Generally, corruption has a positive impact on FDI inflows in the case of Asia and Africa, while it has a negative impact in the case of Latin America.
Paniagua et al. (2017)**	value and number of greenfield FDI	SOC_NT	POL_INST	87 heterogeneous countries	Online social networks' activities stimulate greenfield FDI.
Saleh et al. (2017)*	FDI inflows in the Vietnamese service industry	CULT	POL_INST	Vietnam (with focus on Ho Chi Minh City's service sector)	Not only market-seeking motives and government policies, but also culture have a strong impact on FDI location decisions related to the Vietnamese service industries.

Notes: the year in brackets refers to the year of the study's publication in a journal, with the exception of the two working papers (Smarzynska & Wei, 2000 and Lee & Park, 2013).

[6.b] LEGEND: SOC_NT: social networks; TR: trust; CULT: cultural values, namely: individualism, collectivism, power distance, uncertainty avoidance, future orientation, attitude towards liberalism/non-liberalism and (in Mudambi & Navarra, 2003) Putnam's index of civil institutions; CORR: corruption; INF_LM: informal labor market; LEG_INST: legal institutions (e.g. property rights); POL_INST: political institutions (e.g. political rights, government policies); EC_INST: economic institutions (e.g. indices of economic freedoms); NOT_MOD: not modelled.

Although they could be considered as an ultimate version of the concept of social networks illustrated in section 2.2, they are not related to a specific physical place, such as the destination country of FDI, since they could be joined by individuals and firms from all around the world. On the other hand, also this paper deals with the multinational firms' ability to join informal networks, which could represent an opportunity for both the investor company and the local firms and policy-makers of the host country to better know each other, to reduce skepticism and prejudices and to create contacts. For these reasons, I included this paper in the meta-analysis but, as sensitivity analysis, I also estimated the model without including it (see section 2.5). Finally, column 6 briefly summarizes the main conclusions, highlighting the effects of the informal institution(s) scrutinized on inward FDI and, in some cases, also the interplay between formal and informal institutions. From a preliminary analysis of these studies it can be observed, for instance, that: informal institutions can act as substitutes or complements of formal institutions or can mediate the effect of the latter on FDI (e.g. Wang, 2000; Seyum, 2011; Holmes et al., 2013); corruption typically discourages inward FDI, but can also favour it, especially in some peculiar sample of host countries (e.g. Helmy, 2013; Jalil et al., 2016); trust and social networks typically encourage inward FDI (e.g. Seyoum, 2011; Zhao & Kim, 2011). More rigorous and general conclusions can be drawn from the meta-analysis (see sections from 2.4 to 2.6).

2.4 Data and research methodology

After shedding more light on the informal institutions construct, the second main aim of this work is to employ the available studies on how informal institutions affect inward FDI to empirically test whether and to what extent these factors attract and/or discourage foreign investors. For this purpose, I selected twenty-two recent empirical studies dealing with this issue (see section 2.3 for a qualitative review), by means of a procedure briefly explained later. The selected articles differ considerably in terms of their main findings, and also in important aspects, such as the type(s) of informal institution considered, the estimation methods used, and the number of observations. Therefore, I statistically explored this heterogeneity by conducting a simple meta-analysis.

A meta-analysis can be defined as a quantitative review of empirical studies on the same issue, the main aim of which is to empirically assess their findings, to identify the main drivers of the latter (Ghisetti & Pontoni, 2015) and both to summarize and to explain the wide, often disparate, variation found among the reported results (Stanley et al., 2013). Such a combined statistical analysis helps overcome certain

limitations typical of single studies (such as measurement inaccuracies, limited reliability, restricted research range, small sample size and low statistical power), and enables more general and robust conclusions to be drawn (Borenstein et al., 2011). Stanley and Jarrell, two prominent experts on meta-analytic techniques, claim that meta-analysis offers *"a framework in which to organize and interpret exact and inexact replications, to review more objectively the literature and explain its disparities, and to engage in the self-analysis of investigating the socioeconomic phenomenon of social scientific research itself"* (Stanley & Jarrell, 2005, p. 306). Despite some limitations, concerning in particular the risk of personal judgement by the researcher (see Greco et al., 2013, for a review of what he defines the main "pitfalls" of a meta-analysis), meta-analysis has traditionally been used for research in the medical sciences and education, but has become more and more popular in the social sciences too, including international economics. Some authors have recently used meta-analytical models to examine the FDI determinants (e.g. Bailey, 2016; Tokunaga & Iwasaki, 2017) and FDI effects (e.g. Havranek & Irsova, 2011; Iwasaki & Tokunaga, 2016; Demena & van Bergeijk, 2017) identified by a large number of researchers. The basic meta-regression analysis is based on the following equation:

$$b_j = \propto + \sum_{k=1}^{K} \beta_k Z_{jk} + e_j \qquad j = 1,2,3 \ldots . N \qquad (1)$$

where:

- b_j is the estimate of the meta-dependent variable corresponding to the j^{th} regression model of a selected study, capturing the so-called effect size, namely the magnitude of the association between the variables of interest (i.e. FDI and informal institutions in this work);

- $\propto$ is the "true" value of the parameter of interest;

- Z_{jk} is the set of the meta-independent variables (usually called moderators), which reflect relevant characteristics of an empirical study and drive the magnitude and the sign of the effect size;

- β_k are the coefficients of the moderators;

- e_j is the meta-regression disturbance term.

The articles comprised in the meta-analysis are typically known as primary studies, and the corresponding regression models provide the observations of the meta-regressions. Primary studies are selected by exploring the existing literature on a given topic (e.g. the relationship between economic growth and FDI) and applying a set of identification criteria to obtain a sample. The meta-dependent variable is often an OLS-estimated regression coefficient drawn from each original regression model; although the OLS estimates are unbiased and consistent, some meta-analysts prefer to focus on the t-statistics reported by the primary studies because the meta-regression errors are very likely to be heteroskedastic due to the marked variability of the datasets, sample sizes and regressors in the primary literature. The t-statistic is a dimensionless, standardized measure of the critical parameter of interest (Stanley & Jarrell, 2005). When a selected study does not allow for the meta-dependent variable to be estimated in these ways - when the limited availability of empirical studies on a given topic makes it necessary to include qualitative studies, for instance – then a meta logit or probit model can be used (Stanley & Doucouliagos, 2012). To give an example, a binary variable can be created that takes a value of 1 if the economic phenomenon being investigated is significant, and 0 otherwise (Ghisetti & Pontoni, 2015). The moderators are often dichotomous variables and capture important characteristics of a study, such as the use of a cross-section or of a panel data model, the use of a single equation or of simultaneous systems, the inclusion or exclusion of certain relevant variables, the sample size, and the time frame.

In this work, I chose a meta-probit model because the sample size is limited, the FDI-related dependent variables are quite heterogeneous, and it is impossible to obtain t-statistics from a number of the studies selected. Moreover, the probit functional form has the advantage of being bounded between 0 and 1, implying that the predicted values cannot lie beyond the probability range and entail homoscedastic errors (Ghisetti & Pontoni, 2015). The observations are eighty-one relevant regression models (models that do not include informal institutions among the regressors or that do not provide further information for the purpose of meta-analysis are excluded) corresponding to the empirical papers reviewed in section 2.3, with the exception of Mudambi & Navarra (2003), Choe & Lee (2016) and Saleh et al. (2017), as anticipated in section 2.3, and of Li & Filer (2007), as explained below. These articles were collected by analyzing the results provided by Scopus and the Social Science Research Network (SSRN) for combinations of the keyword “FDI” with keywords relating to informal institutions, i.e. “informal institutions”, “informal”, “social capital”, “corruption”, “culture”, “social networks”, “business networks”, “beliefs”, “religion”, “religious”, “religiosity” (last access: 21.03.2018). Working papers were sought in the above-mentioned sources and also in the Research Papers in Economics (RePEc)

database, and the lists of working papers issued by the World Bank and the International Monetary Fund. Among the inclusion criteria adopted, the selected studies has to include an econometric model in which the factors briefly described in section 2.2 are considered as informal institutions, and employ some measures of inward FDI as dependent variables. Papers that use gravitational models were excluded, with the exception of the one by Kunčić & Jaklić (2014) since the authors use not the institutional distance between pairs of countries, but the absolute value of these institutional factors measured in the economies sampled, as the independent variable related to informal institutions. This enable the authors to draw conclusions on the effect on inward FDI of an interesting, little-explored type of informal institution, namely attitudes for and against liberalism. In addition, since one of the shortcomings of meta-analysis is the risk of within-study dependence, the reciprocal citations of the selected studies were checked. While eight out of the nine[3] articles involved in these reciprocal citations did not raise serious concerns about their inter-dependence, the study conducted by Li and Filer (2007) was dropped because a more recent one (Wu et al., 2012), which include Li among the authors, is partly based on the results of the earlier work by Li & Filer (2007). In addition, two regression models in the Wu et al. (2012) paper were excluded because their dependent variable is not the amount of inward FDI in absolute terms, but the percentage of FDI out of the total amount of foreign investment. There are far more empirical studies on the impact of corruption on FDI than studies dealing with other types of informal institution. I consequently used a random sample of articles corresponding to the combination of keywords "FDI" and "corruption", and fulfilling the other above-mentioned criteria, as suggested by Stanley & Doucouliagos (2012) in the event of large amounts of results being available. I also considered two unpublished papers; their limited number was due not only to the paucity of working papers on this topic, but also to the difficulty of gaining access to some of them. Generally speaking, including unpublished papers in the sample of primary studies should mitigate the risk of encountering one of the main forms of publication bias, a broad term encompassing all possible biases of a study (including those relating to its size, direction and statistical significance, but also to its availability and accessibility) according to which studies with significant or expected findings are more likely to be published (McShane et al., 2016).

I identified and then alternatively used two dichotomous meta-dependent variables:

[3] Smarzynska & Wei (2000) is cited by Mudambi et al. (2013), by Helmy (2013) and by Quazi (2014); Li & Filer (2007) is cited by Seyoum (2012) and by Wu et al. (2012); Bhardwaj (2007) is cited by Wu et al. (2012) and by Zhao & Kim (2011); and Seyoum is cited by Wu et al. (2012) and by Helmy (2013).

-SIGNIF: which takes a value of 1 if the effect of at least one of the informal institutions included in a regression model is significant, and 0 otherwise;

-SIGN_POS: which takes a value of 1 if informal institutions significantly attract inward FDI, and 0 otherwise. [4]

To capture a number of relevant characteristics of the models used in the primary studies[5], I selected the following moderators:

- IMF5: the five-year impact factor of the journal publishing the study, used as proxy for the relevance of that journal;

- FWCI: the field weight citation impact provided by Scopus, which shows how well cited an article by comparison with similar articles; it takes a value of 1 if this index is higher than 1;

- several macro-categories of informal institutions, namely: relationships and values typically facilitating FDI (VALPOS_REL), namely trust, social networks, individualism, collectivism, future orientation, power distance and attitude toward liberalism; illegal practices (ILL), including corruption and the informal labour market; values typically interfering with FDI (VAL_NEG), that is uncertainty avoidance and attitudes against liberalism. These indicators take a value of 1 if the corresponding type of institution is modelled in the regression model in question;

-FORM: the inclusion or exclusion of indicators of formal institutions;

[4] As stated in the note to Table A.2.1, since the main aim of the empirical analysis is to understand whether some types of informal institution may increase a country's attractiveness in terms of inward FDI, I did not use also the variable NEG_SIG as dependent variable. Anyway, the main results of probit regressions with NEG_SIG are that, as expected, VALPOS_REL is negatively significant, while VAL_NEG is positively significant.

[5] Other possible regressors - namely the "age" of the paper (given by the time elapsing between the current year, 2017, and the year when it was published), the use of a dependent variable other than FDI inflows, and the number of regressors - were not included because they were never significant or they correlated closely with other variables. In particular, the "age" of a study is partly captured by the FWCI. Moreover, positive values and relationships are both captured by a single regressor, VALPOS_REL, because they were strongly correlated.

-PREV_DEV: the prevalence of developing economies (at least 60% of the countries) in the sample[6]

-PAN: the use of a panel data model rather than a cross-section;

-NOT_LIN: the use or non-use of a non-linear regression model as an estimation technique (i.e. probit and logit models, or panel count data models);

-NUM_OBS: the number of observations.

With the exception of those referring to the journal's impact factor and the number of observations, all the above-listed moderators are dichotomous variables, which take a value of 1 when the related characteristic is displayed in a regression model. A glance at the values taken by each of the above-mentioned variables in all the regression models prompts a few preliminary considerations. Due to limited space, the table condensing this information is reported in the Appendix (Table A.2.1). Since about 79% of the whole set of regression models found informal institutions significant, I surmise that informal institutions have some impact on inward FDI according to most of the empirical literature reviewed. Moreover, almost all the primary regression models include developing economies among the host countries and about 59% of them are based on samples which are mainly made up of developing countries. This suggests that the issue about the relevance of informal institutions for inward FDI may be of particular interest for this type of economy. The Appendix contains two other tables with illustrate, respectively, the summary statistics for these variables (Table A.2.2) and the matrix of the pairwise correlations between the regressors (Table A.2.3). According to Table A.2.3, three pairwise correlations are notably high (higher than 70%), namely: the correlation between ILL and VALPOS_REL, equal to -1, since the studies included in the meta-analysis either focus on corruption and related activities, or on social networks and values favouring or in favour of FDI; the correlation between PREV_DEV and ILL, equal to 77.53; the correlation between PREV_DEV and VALPOS_REL, amounting to -77.53. These last two values are related to the fact that most of the authors of the sample who focus on developing economies are interested in investigating the effect of corruption on inward FDI, probably because corruption is often widespread in these countries but also because, especially when it can partially compensate for weak formal institutions, as it may happen in these countries, it could either discourage, or attract FDI.

[6] I included this dummy variable, rather than a dummy equal to 1 in case some developing economies were included in the sample, since the latter would take value 1 in more than 90 % of the observations and then it would be dropped from the model.

A more rigorous analysis of the factors driving these results can be done by estimating the empirical model, which is based on the following equations:

$$SIGNIF = \alpha + \beta_1 IF5 + \beta_2 VAL\_NEG + \beta_3 VALPOS\_REL + \beta_4 FORM + \beta_5 TRANS + \beta_6 PAN + \\ + \beta_7 NOT\_LIN + \beta_8 NUM\_OBS + \in \quad (2)$$

$$SIGN\_POS = \alpha + \beta_1 IF5 + \beta_2 VAL\_NEG + \beta_3 VALPOS\_REL + \beta_4 FORM + \beta_5 TRANS + \beta_6 PAN + \\ + \beta_7 NOT\_LIN + \beta_8 NUM\_OBS + \in \quad (3)$$

Due to the dichotomous nature of the three dependent variables, equations 2 and 3 are estimated with probit models that explain whether the presence of each moderator raises or lowers the probability of each dependent variable amounting to 1. To account for heteroscedasticity, all the standard errors are clustered by article.

2.5 Empirical results and discussion

The results of the estimation of the model introduced in section 2.4 are illustrated in Table 2.2.

Column 1 and column 2 refer to the main model specification, in which all the observations and all the regressors are used. According to column 1, the probability of informal institutions to significantly affect (either encourage or discourage) inward FDI -namely, that SIGNIF is equal to 1- is higher when informal institutions take the form of social networks, rather than illegal activities (taken as the default category) and values typically not in favor of FDI. On the other hand, this probability is lower when formal institutions are modelled, because part of the overall effect of institutions on inward FDI derives from the formal ones. Moreover, since the variable PAN is not statistically significant (in column 1 as well as in all the other columns of Table 2.2), the significance of informal institutions is not driven by the choice of a panel data rather than a cross-section model, and this is probably partly due to the nature of informal institutions, which tend to change very slowly over time. Hence, a cross-section may be appropriate too for modelling the relationship between FDI and informal institutions. Rather, the variable NOT_LIN, as well as the observations that employ non-linear regressions, are automatically dropped due to the limited number of cases in which they take on value 1. In addition, while the journals' five-year impact factor correlates negatively with SIGNIF (an element that could imply the presence of some publication bias),

the greater the importance of a study in terms of the number of its citations, the higher the likelihood of informal institutions being significant. This suggests that researchers should both take formal and informal institutions into account when analyzing the effect of institutions on FDI or other economic variables. Finally, it is noteworthy that the dummy variable referring to the prevalence of developing countries in the sample is highly significant. Hence, as suggested by the preliminary analysis of Table A.2.3, it seems that informal institutions can play a notable role in influencing inward FDI especially in these economies.

The sign of the effect being investigated is analyzed in column 2, in which the dependent variable is POS_SIG. According to the estimates, the sign is significantly influenced by the type of informal institution taken into account. More specifically, by comparison with illegal activities, values such as trust or attitude towards liberalism and social networks raise the probability of informal institutions attracting FDI, while values typically not facilitating FDI (e.g. illiberal public opinion and uncertainty avoidance). This result provides further support to the positive relationship between these two variables which typically emerges from the theoretical and the empirical literature. On the other hand, as expected, uncertainty avoidance and attitude towards non-liberalism are associated with a higher probability of the sign being negative. Like in column 1, the variable PREV_DEV is still highly significant. This may suggest researchers to further investigate the effect of social networks, trust and related values in these countries, especially considering that, as pointed out in section 2.4, most of the studies dealing with developing countries included in the meta-analysis focus on corruption.

Columns from 3 to 8 are devoted to some sensitivity analyses. In particular, in column 3 and column 4 the non-linear regressions are excluded (the results in column 3, as expected, replicate the results of column 1, in which NOT_LIN is dropped, a part from a couple of irrelevant differences in the robust standard errors); in column 5 and column 6 only the published papers are included in the sample; in column 7 and column 8, the paper by Paniagua et al. (2017), which resorts to a peculiar type of social network as briefly explained in section 2.3, is excluded from the regressions. All the major findings related to the main model specification are confirmed: indeed, the five-year impact factor is negatively significant with the dependent variable SIGNIF while PAN is never statistically significant, the variable VAL_POS and PREV_DEV have still a relevant positive impact with both SIGNIF and POS_SIG, and FORM_INS has always a negative sign. Finally, as a robustness check, I re-estimated the model after assigning each observation a frequency weight according to the number of repeated regressions included in each study. The main conclusions that can be drawn from the unweighted estimates do not change. As

an illustration, in column 9 and in column 10 I reported the weighted estimates for the main specification model.

Although these results prompt some interesting considerations also in terms of recommendations to multinational firms and policy-makers (as it will be highlighted in the conclusive section 2.6), the present empirical analysis suffers from some limitations. First, the conclusions drawn from a meta-analysis are generally only valid with respect to the papers analyzed (Ghisetti & Pontoni, 2015), and their validity can be undermined by inaccuracies in the primary studies. For instance, only some authors of the papers reviewed (i.e. Mudambi et al, 2012; Helmy, 2013; Sekkat, 2014, Mèon & Sekkat, 2015; Paniagua et al., 2017) deal with the issue of endogeneity of some explanatory variables, including the informal institution considered. Second, the present meta-analysis is based on a relatively limited number of observations due to the paucity of empirical papers focusing on the relationship between inward FDI and informal institutions other than corruption for more than a single country.

Moreover, the focus on this study is on institutions at national level; two interesting papers included in the literature review (Mudambi & Navarra, 2003; Choe & Lee, 2016) focus on inward FDI and informal institutions in regions, rather than in countries, and should remind of the relevance of regional institutions too and of the need to take into account their peculiarities with respect to national institutions. [7]

[7] An interesting recent paper by Casi & Resmini [Casi, L. & Resmini, L. (2017). Foreign direct investment, regional identity and economic growth, Scienze Regionali, 16(2), 171-200] has explored this issue using the European regions as sample. I did not included in the literature review since it focuses on FDI-induced spillovers conducive to growth and because, apart from the abstract, it is written in Italian language.

Table 2.2 Results of the Probit regressions

	main specification		linear regressions only		published papers only		paper by Paniagua et al. excluded		main specification with weights	
	1	2	3	4	5	6	7	8	9	10
dep.variable --->	SIGNIF	POS_SIG	SIGNIF	POS_SIG	SIGNIF	POS_SIG	SIGNIF	POS_SIG	SIGNIF	POS_SIG
regressors										
IF5	-0.4886***	-0.302	-0.4886***	-0.2517	-0.5909**	-0.603	-0.558***	-0.231	-0.4138**	-0.0260
	(0.1800)	(0.216)	(0.1800)	(0.2237)	(0.2453)	(0.559)	(0.156)	(0.220)	(0.1846)	(0.285)
FWCI	0.9690*	0.192	0.9690*	0.1718	0.5907	-0.568	0.960*	0.0359	1.0803***	-0.158
	(0.5480)	(1.045)	(0.5480)	(1.0399)	(0.6009)	(1.005)	(0.552)	(1.049)	(0.3921)	(1.208)
VALPOS_REL	5.2161***	8.146***	5.2161***	5.8080***	4.6100***	4.910***	5.199***	5.757***	5.2845***	5.949**
	(0.3900)	(1.977)	(0.3898)	(0.8388)	(0.5274)	(0.845)	(0.414)	(0.909)	(0.2737)	(2.454)
VAL_NEG	-1.1760	-2.169***	-1.1760	-1.9631***	-1.2334	-2.335***	0.688	-7.394	-1.3601*	-1.524*
	(0.8821)	(0.507)	(0.8821)	(0.5703)	(0.9757)	(0.800)	(0.911)	(4.916)	(0.7563)	(0.847)
PAN	-0.1096	-0.335	-0.1096	-0.3637	-0.2244	-0.397	0.247	-0.502	-0.2268	-0.991
	(0.5633)	(0.581)	(0.5633)	(0.6089)	(0.6598)	(0.475)	(0.527)	(0.630)	(0.5812)	(0.926)
PREV_DEV	4.5629***	7.042***	4.5629***	4.7827***	4.3527***	4.413***	4.267***	4.938***	4.4704***	5.928***
	(0.6961)	(1.239)	(0.6959)	(0.5839)	(0.7141)	(0.726)	(0.523)	(0.627)	(0.7378)	(1.381)
FORM_INS	-1.1812***	-0.689*	-1.1812***	-0.6952*	-1.0970**	-0.265	-1.434***	-0.186	-1.3389***	-0.536
	(0.3324)	(0.411)	(0.3324)	(0.4215)	(0.4729)	(0.710)	(0.376)	(0.424)	(0.2912)	(0.508)
NUM_OBS	-0.0000	1.24e-05	-0.0000	0.0000	0.0000	1.92e-05	-0.000368***	0.000724	-0.0000	2.34e-05
	(0.0000)	(1.12e-05)	(0.0000)	(0.0000)	(0.0000)	(2.13e-05)	(0.000110)	(0.000547)	(0.0000)	(2.53e-05)
NOT_LIN	omitted	1.233			omitted	2.804	omitted	omitted	omitted	0.483
		(0.765)				(2.227)				(1.114)
Constant	-2.9631***	-6.520***	2.9631***	-4.2561***	-2.1640***	-3.1650**	-3.048**	-4.698***	-2.7929***	-4.634**
	(0.7408)	(1.783)	(1.783)	(0.8927)	(0.8119)	(1.4391)	(1.417)	(0.996)	(0.8027)	(2.084)
N of clusters	16	18	16	16	15	16	15	15	16	18
Pseudo R2	0.211	0.3097	0.211	0.222	0.2653	0.3553	0.2315	0.238	0.1591	0.1919
Observations	71	81	71	71	63	70	68	68	482	525

Robust standard errors in parentheses; ***= p<0.01, **= p<0.05,*=p<0.1.

2.6 Conclusions

The main aims of this work were to delve into the intriguing topic of informal institutions, and to investigate whether and to what extent they help a country to attract FDI. After overviewing informal institutions and their main effects on FDI inflows, and reviewing recent empirical papers dealing with this issue, a simple meta-analysis was conducted based on the information extracted from the regression models of a selection of relevant studies.

The main conclusions that can be drawn from the present work are as follows: (i) according to most of the empirical literature reviewed, informal institutions matter for inward FDI; (ii) A broad array of values typically in favor of FDI and solid social networks of individuals and firms tend to significantly attract foreign investors; (iii) the role played by informal institutions in influencing FDI seems especially relevant for developing economies.

The first result suggests that researchers should try to include indicators of informal institutions as well when analyzing the effect of a country's institutional framework on its inward FDI or other economic variables. Moreover, the managers of foreign firms and policymakers in the host countries should both take these factors into account. In particular, as suggested by the second main finding, they should commit to fighting corruption and promoting collaborative, trust-based relationships between local firms, also by involving the foreign companies. In turn, the investor company managers should make an effort to be trustworthy and to become more integrated in the local society, to understand and respect the values and customs prevailing in the host country, and to join local business networks. Both parties should benefit from their respective efforts. Finally, according to the third conclusion, these recommendations matter in particular for developing countries, where informal institutions may partially compensate for poor official regulatory systems and governances. In addition, informal institutions may increase the FDI attractiveness of these countries, in which they can stimulate economic growth, job creation and modernization.

Hence, despite the limitations briefly illustrated at the end of section 2.5, the present study may offer some interesting insights. Moreover, more and more studies on these topics are rapidly becoming available, so future meta-analyses are expected to draw on more observations and consequently produce more generalizable conclusions.

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Appendix

Table A.2.1 The primary studies and the variables included in the meta-analysis

id	author	IF5	FWCI	SIGNIF	POS_SIG	NEG_SIG	VAL_NEG	ILL	VALPOS_REL	FORM_INS	DEV_EC	PREV_DEV	PAN	NOT_LIN	NUM_OBS
1	Alemu	0.32	0	1	0	1	0	1	0	0	1	1	1	0	240
1	Alemu	0.32	0	1	0	1	0	1	0	0	1	1	1	0	240
1	Alemu	0.32	0	1	0	1	0	1	0	0	1	1	1	0	240
2	Bhardwaj et al.	1.798	1	0	0	0	0	0	1	1	1	0	0	0	43
2	Bhardwaj et al.	1.798	1	1	0	1	1	0	1	1	1	0	0	0	43
3	Hahn & Bunyaratavej	7.692	1	1	0	1	1	0	1	0	1	0	1	1	222
3	Hahn & Bunyaratavej	7.692	1	1	0	1	1	0	1	0	1	0	1	1	222
3	Hahn & Bunyaratavej	7.692	1	1	0	1	1	0	1	1	1	0	1	1	222
3	Hahn & Bunyaratavej	7.692	1	1	0	1	1	0	1	1	1	0	1	1	222
4	Helmy	0.965	1	1	1	0	0	1	0	1	1	1	1	0	96
4	Helmy	0.965	1	1	1	0	0	1	0	1	1	1	1	0	50
4	Helmy	0.965	1	1	1	0	0	1	0	1	1	1	1	0	44
4	Helmy	0.965	1	0	0	0	0	1	0	1	1	1	1	0	96
4	Helmy	0.965	1	0	0	0	0	1	0	1	1	1	1	0	63
4	Helmy	0.965	1	0	0	0	0	1	0	1	1	1	1	0	19
4	Helmy	0.965	1	1	1	0	0	1	0	1	1	1	1	0	63
4	Helmy	0.965	1	1	1	0	0	1	0	1	1	1	1	0	96
4	Helmy	0.965	1	1	1	0	0	1	0	1	1	1	1	0	50
4	Helmy	0.965	1	1	1	0	0	1	0	1	1	1	1	0	33
5	Holmes et al.	9.238	1	0	0	0	0	0	1	1	1	0	1	0	450

5	Holmes et al.	9.238	1	0	0	0	0	0	1	0	1	0	1	0	450
6	Jalil et al.	0.867	1	1	0	1	0	1	0	0	1	1	1	0	551
6	Jalil et al.	0.867	1	1	0	1	0	1	0	0	1	1	1	0	377
6	Jalil et al.	0.867	0	1	1	0	0	1	0	0	1	1	1	0	290
6	Jalil et al.	0.867	0	1	1	0	0	1	0	0	1	1	1	0	1218
6	Jalil et al.	0.867	0	1	1	0	0	1	0	0	1	1	1	0	377
6	Jalil et al.	0.867	0	1	1	0	0	1	0	0	1	1	1	0	290
6	Jalil et al.	0.867	0	1	1	0	0	1	0	0	1	1	1	0	377
6	Jalil et al.	0.867	0	1	1	0	0	1	0	0	1	1	1	0	290
6	Jalil et al.	0.867	0	1	1	0	0	1	0	0	1	1	1	0	551
6	Jalil et al.	0.867	0	1	1	0	0	1	0	0	1	1	1	0	1218
6	Jalil et al.	0.867	0	1	1	0	0	1	0	0	1	1	1	0	551
6	Jalil et al.	0.867	0	0	0	0	0	1	0	0	1	1	1	0	1218
7	Kunčić & Jaklić	0.242	0	1	0	1	1	0	1	1	1	0	1	0	4908
7	Kunčić & Jaklić	0.242	0	0	0	0	1	0	1	1	1	0	1	0	5154
7	Kunčić & Jaklić	0.242	0	1	1	0	1	0	1	0	1	0	1	0	9385
7	Kunčić & Jaklić	0.242	0	0	0	0	1	0	1	0	1	0	1	0	9147
7	Kunčić & Jaklić	0.242	0	1	0	1	1	0	1	0	1	0	1	0	7853
7	Kunčić & Jaklić	0.242	0	0	0	0	1	0	1	1	1	0	1	0	5481
8	Lee & Park	0	0	1	0	1	0	1	0	1	1	1	1	0	300
8	Lee &Park	0	0	1	0	1	0	1	0	0	1	1	1	0	300
8	Lee & Park	0	0	1	0	1	0	1	0	1	1	1	1	0	45
8	Lee & Park	0	0	1	0	1	0	1	0	0	1	1	1	0	67
8	Lee & Park	0	0	0	0	0	0	1	0	0	1	1	1	0	553
8	Lee & Park	0	0	0	0	0	0	1	0	1	1	1	1	0	553
8	Lee & Park	0	0	1	0	1	0	1	0	0	1	1	1	0	45
8	Lee & Park	0	0	0	0	0	0	1	0	1	1	1	1	0	67
9	Mudambi et al.	2.5	1	0	0	0	0	1	0	1	1	1	0	0	55

9	Mudambi et al.	2.5	1	1	0	1	0	1	0	1	1	1	1	0	220
10	Meon & Sekkat	1.695	0	0	0	0	0	0	1	1	1	0	1	0	199
10	Meon & Sekkat	1.695	0	1	1	0	0	0	1	1	1	0	1	0	199
11	Paniagua et al.	2.608	0	1	1	0	0	0	1	0	1	0	1	0	36504
11	Paniagua et al.	2.608	0	1	1	0	0	0	1	0	1	0	1	0	36504
11	Paniagua et al.	2.608	0	0	0	0	0	0	1	1	1	0	1	0	36504
11	Paniagua et al.	2.608	0	1	1	0	0	0	1	0	1	0	1	1	36504
11	Paniagua et al.	2.608	0	1	1	0	0	0	1	0	1	0	1	1	36504
11	Paniagua et al.	2.608	0	1	1	0	0	0	1	1	1	0	1	1	36504
12	Quazi	0.957	1	1	0	1	0	1	0	1	1	1	1	0	161
12	Quazi	0.957	1	1	0	1	0	1	0	1	1	1	1	0	161
12	Quazi	0.957	1	1	0	1	0	1	0	1	1	1	1	0	161
12	Quazi	0.957	1	1	0	1	0	1	0	1	1	1	1	0	161
12	Quazi	0.957	1	1	0	1	0	1	0	1	1	1	1	0	161
12	Quazi	0.957	1	1	0	1	0	1	0	1	1	1	1	0	161
12	Quazi	0.957	1	1	0	1	0	1	0	1	1	1	1	0	125
13	Sekkat	0.425	0	1	1	0	0	0	1	1	1	1	1	0	57
13	Sekkat	0.425	0	1	1	0	0	0	1	1	1	1	1	0	83
13	Sekkat	0.425	0	1	1	0	0	0	1	1	1	1	1	0	97
13	Sekkat	0.425	0	1	1	0	0	0	1	1	1	1	1	0	77
14	Seyoum	0.569	0	1	1	0	0	0	1	1	1	0	0	0	107
15	Smarzynska & Wei	0	1	1	0	1	0	1	0	0	0	0	1	1	6320
15	Smarzynska & Wei	0	1	1	0	1	0	1	0	0	0	0	1	1	6320
15	Smarzynska & Wei	0	1	1	0	1	0	1	0	0	0	0	1	1	6320
16	Wang	0.525	1	1	1	0	0	0	1	1	1	1	0	0	22
16	Wang	0.525	1	1	1	0	0	0	1	1	0	0	0	0	71
16	Wang	0.525	1	1	1	0	0	0	1	1	1	1	0	0	49

17	Wu et al.	1.798	0	0	0	0	0	0	1	1	1	0	0	0	40
17	Wu et al.	1.798	0	1	1	0	0	0	1	1	1	0	0	0	40
18	Zhao & Kim	1.07	0	1	1	0	0	0	1	0	1	0	0	0	76
18	Zhao & Kim	1.07	0	1	1	0	0	0	1	1	1	0	0	0	76
18	Zhao & Kim	1.07	0	1	1	0	0	0	1	1	1	0	0	0	76
18	Zhao & Kim	1.07	0	1	1	0	0	0	1	1	1	0	0	0	76

Note: this table reports the values taken on also by the variable NEG_SIG and DEV_EC, which are not used in the regression estimates: in Table 2 I did not show the regression results for the dependent variable NEG_SIG since the main aim of this work is to better understand whether at least some types of informal institution attract inward FDI; moreover, the related results are quite symmetric with respect to the results obtained by using POS_SIG as dependent variable (namely, VAL_REL is significantly negative while VAL_NEG is significantly positive). With regard to DEV_EC, as I stated in the Notes section, I replaced it with the variable PREV_DEV since DEV_EC takes on value 1 in almost all the primary studies and then there should not be enough variability to allow an estimate of its coefficient.

Table A.2.2 Summary statistics of the variables included in the meta-analysis

	Observations	Mean	Standard deviation	Min	Max
SIGNIF	81	0.7901235	0.4097575	0	1
POS_SIG	81	0.4444444	0.5	0	1
NEG_SIG	81	0.345679	0.4785523	0	1
IF5	81	1.453864	2.06149	0	9238
FWCI	81	0.4320988	0.8820921	0	1
VAL_NEG	81	0.1358025	0.3447132	0	1
ILL	81	0.5555556	0.5	0	1
VALPOS_REL	81	0.4444444	0.5	0	1
FORM	81	0.5925926	0.4944132	0	1
PREV_DEV	81	0.5925926	0.4944132	0	1
PAN	81	0.8395062	0.3693504	0	1
NOT_LIN	81	0.1234568	0.3310104	0	1
NUM_OBS	81	3642.778	9593.209	19	36504

Table A.2.3 Pairwise correlations between the regression of the meta-analysis

	IF5	FWCI	VAL_NEG	ILL	VALPOS_REL	FORM_INST	PREV_DEV	PAN	NOT_LIN	NUM_OBS
IF5	1.0000									
FWCI	0.3237	1.0000								
VAL_NEG	0.3171	0.0180	1.0000							
ILL	-0.3967	0.2285	-0.4432	1.0000						
VALPOS_REL	0.3967	-0.2285	0.4432	-1.0000	1.0000					
FORM_INST	-0.0029	0.3175	-0.0380	-0.1854	0.1854	1.0000				
PREV_DEV	-0.4209	0.1146	-0.4781	0.7753	-0.7753	0.0284	1.0000			
PAN	0.0457	-0.0260	0.0751	0.4212	-0.4212	-0.2941	0.3220	1.0000		
NOT_LIN	0.4406	0.2030	0.2894	-0.1930	0.1930	-0.2235	-0.4526	0.1641	1.0000	
NUM_OBS	0.1125	-0.2709	0.0105	-0.3467	0.3467	-0.2138	-0.4284	0.1643	0.3658	1.0000

Chapter 3. Does inward FDI affect the quality of domestic institutions?

A cross-country panel analysis

Domestic institutions are recognized as important factors for attracting foreign direct investment (FDI) and spurring economic development in host countries. However, FDI as well can affect and shape domestic institutions. Despite an increasing interest in the influence of FDI, most of the existing empirical studies focus on only one or few institutions at a time. In this paper we use extensive data on the quality of institutions and on inward FDI for 127 countries and 22 years to assess whether attracting FDI increases the quality of institutions in the host economies. In doing so, we distinguish between different types of institution, FDI and countries and we estimate a series of pooled OLS, fixed effects and dynamic panel data models to address endogeneity. Our findings suggest that a higher amount of inward FDI increases the average quality of institutions in the country of destination. This particularly holds when institutional quality is measured in terms of political stability, regulatory quality and rule of law, and when the host country is a developing economy.

Keywords: *quality of institutions, foreign direct investment, panel data*

JEL: *A13 · D02 · F21*

3.1 Introduction

In the last two decades, the literature in international economics and international business has largely explored the determinants of inward foreign direct investment (FDI) and has acknowledged the relevance of host country's institutions[8]. Although most of the literature has focused on the influence of institutions on inward FDI (see Bailey, 2018 and Mondolo, 2018 for a review), institutions are unlikely to be exogenous to multinational enterprises' (MNEs)[9] strategies and then, to FDI. Indeed, foreign firms generally attempt to adapt to the local institutional conditions in order to overcome the "liability of foreignness" and to obtain legitimacy in the host markets (Kostova, 1999; Dahan et al., 2006). Moreover, they typically try to shape the local business environment in their favour (Boddewyn, 1988; Hillman & Hitt, 1999). At the same time, the countries that are sensitive to the benefits of inward FDI, and that commit to gaining legitimacy and international reputation within the bigger, global business community, voluntarily adopt policies aimed at attracting foreign investment (Martin & Mc Kibbin, 1999; Kwok & Tadesse, 2006). The reason why and the extent to which national governments are willing to modify their institutions or policies, either to affect the behaviour of MNEs, or as a result of their increasing presence in the global economy, can be explained by considering Dunning's eclectic paradigm[10]. According to this approach, the probability that the domestic government implements this type of initiatives is a positive function, *ceteris paribus*, of the number of distinctive ownership-specific advantages of MNEs and of their ability to augment or combine these assets with the local resources and competences. In addition, this probability increases with the attractiveness of the country's own

[8] We adopted Hodgson's definition of institutions. According to him, institutions are "*the systems of established and embedded social rules that structure social interactions"* (Hodgson, 2006, p.13). Property rights, rule of law, corruption and political rights are typically considered as examples of institutions. This work focuses on the so-called formal institutions, namely those institutions that are founded on codified and explicit rules and standards and that shape the interaction between members of society by promoting stability and regulation (North, 1990; Scott, 2008a).

[9] Unless otherwise specified, we use the terms multinational enterprises (or MNEs), foreign firms, foreign investors and multinational firms or companies interchangeably, to refer to foreign multinational firms (namely, the companies that undertake a FDI in another country).

[10] Dunning's eclectic or OLI paradigm is one of the most popular frameworks used to explain the factors that induce a firm to become a multinational. See Dunning (2000) for a review.

location-specific assets to inward investors, and also with the competition between MNEs for the host country's resources, capabilities or markets (Dunning & Lundan, 2008a).

As a matter of fact, in the last twenty years or so, a growing number of empirical studies have investigated what Kwok & Tadesse (2006, p. 767) define *"the other side of the picture*" in the relationship between inward FDI and institutions. However, this issue is still under-researched, and the existing works focus on one institutional factor or policy at a time, such as corruption or environmental regulation, on a relatively small sample of countries, and/or on a narrow time frame.

Thus, the present study aims to provide a more global picture of the effects of inward FDI on domestic institutional quality and of the relationship between inward FDI and institutions, which is likely to be mutual. More specifically, it intends to understand: whether, beyond pursuing their own interests, MNEs may exert a positive influence on the host country; whether inward FDI is a driver of institutional change, which can be in turn a driver of economic development, in transition and developing economies; how different institutional dimensions are affected by increasing amounts of FDI. To this purpose, this work merges data from different data sources on a sample of 127 countries and 22 years, and assesses the influence of inward FDI both on the *overall* quality of institutions of the host country and on its main components. Moreover, it distinguishes: (i) countries on the basis of their level of development; (ii) general real yearly financial inflows with respect to FDI inflows as a share of GDP and yearly number of greenfield FDI projects; (iii) the quality of institutions along six dimensions: voice and accountability, political stability, government effectiveness, regulatory quality, rule of law and control of corruption. Further, it adopts different econometric techniques, including a dynamic panel approach in order to address the potential endogeneity affecting the relationship between FDI and the quality of institutions.

We find that attracting FDI has a positive impact on the average quality of domestic institutions. In particular, this effect is stronger when: (i) institutions are measured in terms of political stability, government effectiveness and, in particular, regulatory quality and rule of law; (ii) the recipient country is a developing economy and, to a lesser extent, a transition economy; especially in the latter areas, when FDI is measured as the number of greenfield projects. These results are robust to unobserved heterogeneity, simultaneity and to alternative measures of institutional quality. Therefore, we posit that FDI attraction may act as a policy device which can help developing

regions to increase the quality of their institutional setting, and their level of economic development.

The balance of this paper is organized as follows. Section 3.2 discusses the conceptual framework, showing the mechanisms through which MNEs affect domestic institutions (3.2.1) and reviewing the literature on the effects of inward FDI on some specific types of institution (3.2.2). Section 3.3 describes the empirical model and the data. Section 3.4 presents the estimation results, and section 3.5 concludes.

3.2 Conceptual framework

3.2.1 The main mechanisms through which MNEs may affect domestic institutions

In recent decades, the literature has increasingly acknowledged the role of multinational companies, and consequently of inward FDI, in affecting the institutional framework of the host country, to the point that MNEs have been sometimes defined as "agents of change" (Kwok & Tadesse, 2006; Neffke et al., 2018) "agents of economic transition" (Malesky, 2009) and "institutional entrepreneurs" (DiMaggio, 1988; Dahan et al., 2006).

Multinational firms are typically able to shape the local business environment because they generally hold a higher level of political influence, namely, they hold more political power over public officials, than non-multinational domestic firms. This condition is due to two main elements: the host country's belief that the firm will contribute to economic growth, which increases the multinational company's bargaining power to negotiate favorable entry conditions in the host market; the international dimension of the multinational enterprise, which implies lower moving costs in another country (Desbordes & Vaudey, 2007), the knowledge of sophisticated market rules, the possibility to adopt transfer pricing schemes and benefit from subsidies not available to local firms (Ramirez & Kwok, 2009), and typically, also a greater experience in managing institutional idiosyncracies (Henisz, 2003). Thus, MNEs often resort to lobbying in order to influence some governmental policies that matter for their activities, such as regulations about trade protection and local environment (see section 3.2.2), or taxation.

However, foreign investors may also foster the local institutional development by providing information on laws used in other destination countries, by actively collaborating with local actors in the provision of services (see section 3.2.2) or, as pointed out by Dahan et al. (2006), by creating or participating in policy networks within transnational social and economic systems. The authors define a policy network as a *"self-organizing group that coordinates a growing number of public (decision-makers) and private (interest groups) actors for the purpose of formulating and implementing public policies"* (Dahan et al., 2006, p.1578), and they also report several examples of international organizations which can be considered as policy networks (e.g. the Transatlantic Business Dialogue, the World Commission on Social Dimensions of Globalization, and the Global Climate Change Coalition).

Generally, multinational firms also exert a more indirect influence on the local environment. In particular, starting from the analysis of the concepts of institutional isomorphism and of disembeddedness[11], (see DiMaggio & Powell, 1983, and Dacin et al., 1999), Kwok & Tadesse (2006) identify three main processes through which MNEs can affect the host country, mainly through their impact on domestic firms and on local workers hired by foreign companies: (i) the regulatory pressure effect, (ii) the demonstration effect, and (iii) the professionalization effect. The *regulatory pressure* effect exists because the subsidiaries are exposed to political and economic pressures exerted by the host country, by the home country and by the international business community, where the latter tends to delegitimize illegal activities and introduces compulsory requirements and norms of conduct (Sandholtz & Gray, 2003; Kwok & Tadesse, 2006). For instance, the regulatory pressure effect can make the foreign companies' employees more reluctant to offer bribes and then, contribute to discourage corruption. In addition, foreign firms may demonstrate to domestic firms how to conduct business in a different and maybe more efficient, effective and transparent way. This *demonstration effect* is fueled by the spread of the MNEs' standardized business procedures and corporate life across the world, which tend to substitute the local firm's existing organization patterns (DiMaggio & Powell, 1983). For this reason, Westney (1993) states that these local organization patterns undergo a process of de-institutionalization.

[11] Starting from the concept of "embeddedness of organizations", Dacin et al. (1999) argue that globalization may be regarded as a disembedding process that strips individuals and firms from their local structures and allows for restructuring at a more global level. A concept related to disembeddednes,s which helps understand firms' behavior, is that of institutional isomorphism proposed by DiMaggio & Powell (1983). According to them, organizations tend to take into account and to imitate the behaviour of other organizations that face a similar set of environmental conditions.

Historical examples include the transfer of US management models and incentive structures from the US to Europe in the fifties and sixties, and the transplantation of Japanese work practices and quality control procedures into the US and Europe in the eighties (Dunning & Lundan, 2008a).

Finally, the *professionalization effect* is due to the ability of MNEs, which typically rely on cutting-edge technologies and more advanced managerial techniques, and offer better working conditions and salaries, to attract young, talented workers. In order to increase their chance of being recruited, some of them attend business schools, obtain international certifications and join professional associations. In doing so, not only do these young people gain professional skills, but they also become increasingly open-minded and reluctant towards more obsolete ways of doing business and conservative values. Thus, they can contribute to gradually update the business culture of their country, which, over time, may shape personal values, human motivation and the social organization of production (DiMaggio & Powell, 1983; Kwok & Tadesse, 2006).

3.2.2 The effects of inward FDI on host countries' institutions: literature review

The mechanisms outlined in section 3.2.1 help understand why and how MNEs' inward FDI can affect different aspects of the domestic institutional environment. This section briefly reviews the literature concerned with this issue, focusing in particular on the effect of FDI on corruption, on government policies and on international relations. More detailed information on a selection of papers mentioned throughout the present paragraph is contained in Table 3.1. This table allows to easily analyse and compare these studies in terms of selected dependent variable and FDI regressor, subject and time frame, possible use of an econometric method which accounts for endogeneity, significance and direction of the effect of FDI on the institution taken into account and main conclusions. Sections from 3.2.2.1 to 3.2.2.4 briefly illustrate the effects of inward FDI on some types of institution outlined by the literature, while section 3.2.2.5 introduces the issue of sector heterogeneity.

TABLE 3.1 HERE

3.2.2.1 FDI and corruption

Several researchers have investigated the impact of inward FDI on corruption, which, broadly speaking, can be defined as *"the use of public office for private gains",* (Bardhan, 1997, p. 1321). According to Kwok & Tadesse (2006), by means of the demonstration effect, and in particular of the regulatory pressure effect, increasing inward FDI negatively affects the host country's level of corruption over time. The authors' quantitative analysis, conducted on a large sample of countries over thirty years, provides empirical support to this hypothesis.

However, whether higher levels of inward FDI discourages or stimulates corruption is a highly debated topic. Indeed, on the one hand, FDI may reduce the propensity of a country to engaging in illegal activities because foreign investors who are corruption-averse, such as, as suggested by Wei (2000a), most of the American and European investors, can exit the market quite easily. Moreover, countries that are more integrated into the international society and in which FDI is important for the local economy are more exposed to economic and normative pressures against corruption (Sandholtz & Gray, 2003; Larrain B. & Tavares, 2004). In particular, with the introduction of the OECD anti-bribery Convention, foreign firms from OECD countries are increasingly likely to resort to legal lobbying activities (Desbordes & Vauday, 2007). In addition, as suggested by the demonstration effect, inward FDI, especially from developed countries characterized by more solid and transparent institutions, may promote the diffusion of pro-business norms and inject new values and ideas. In doing so, they favour the adoption of good governance practices and the strengthening of property rights protection and rule of law, while discouraging illegal activities (Gerring & Tacker, 2005; Lee & Lio, 2016). Finally, corruption has a disincentive effect on investment in general, since it increases the risk and uncertainty faced by potential investors and raises the costs of doing business (Getz & Volkema, 2001; Robertson & Watson, 2004). In particular, as put forward by Rose-Ackerman (1975), corruption may be less frequent if it has long-term negative consequences to the firms and individuals involved, as is the case with FDI projects.

On the other hand, FDI is likely to be vulnerable to corrupt activities since it is typically associated with large infrastructure projects and privatization programs which involve considerable economic rents. This vulnerability is generally higher in lax regulatory frameworks, discretionary decision-making and imperfectly accountable public officials, in which it is more likely that foreign

investors conform to the local culture and the local business practices, including illegal activities (Larrain B. & Tavares, 2004; Lee & Lio, 2016). Further, the eagerness of foreign investors to enter the market may tempt the host-country nationals to resort to corruption as a means of sharing with the investors the local opportunities for profit offered by their own country (Robertson & Watson, 2004). Finally, multinational firms, which can rely on advanced knowledge in international business and a vast international network, may have developed sophisticated bribery schemes which could "import" into the host countries (Kwok & Tadesse, 2006). Pinto & Zhu (2016), who assess the influence of inward FDI on perception of corruption in 95 countries for the years 2000-2004, contend that whether FDI has a positive or negative effect on corruption mainly depends on the host country's economic and political conditions and on the availability of local resources. Rather, Bayar (2011), who investigates 10 countries belonging either to Eurasia or to East-Asia, finds out that FDI is not a significant determinant of corruption in this geographical area.

Finally, another relevant issue concerning FDI and corruption is endogeneity. Thus, most of the empirical papers that study the influence of FDI on corruption take endogeneity into account, for instance by resorting to an IV approach. In particular, the work by Craigwell & Wright (2011) mainly aims to understand which direction prevails and, to this purpose, it performs linear and non-linear Granger causality tests. According to the linear panel methods, the majority of the markets show a bidirectional causal link between FDI and corruption whereas, when nonlinear tests are used, the link from FDI to corruption dominates.

3.2.2.2 FDI and government policies

Foreign firms generally attempt to affect some host government policies, as the profitability of their FDI largely depends on the business environment in which they operate. Such corporate political strategy has been mostly investigated by the endogenous protection literature (Desbordes & Vaudey, 2007). Indeed, MNEs may influence the level of trade protection by undertaking "quid pro quo" direct investments, which alleviate protectionist pressures, and also by lobbying (see for instance: Bhagwati et al., 1992; Grossman & Helpman, 1996; Blonigen & Figlio, 1998; Gawande et al., 2006). Moreover, FDI is found to affect the local environment regulation. However, whether it is beneficial or detrimental in this regard has long been object of debate. According to a widely

held view, mostly known as the “Pollution Haven hypothesis”, pollution-intensive firms tend to open subsidiaries in countries with less stringent environmental regulations. On the other hand, according to the so-called “Trade-Up hypothesis”, which has gained relevance more recently, FDI may contribute to the improvement of local environment protection. Specifically, it suggests that international integration provides developing countries with an opportunity to learn advanced environmental technologies, standards and management systems and with incentives to adopt them (Lin et al., 2014). For instance, Zeng & Eastin (2012) come to the conclusion that multinational firms from the least developed countries find it increasing financially advantageous to signal to consumers, investors, and potential business partners their commitment to environmental protection by adopting sound environmental practices; then, according to these authors’ empirical analysis, FDI form these countries can positively affect the local environment protection. Whether the “Pollution Haven hypothesis” or the “Trade-Up hypothesis dominates depends on the characteristics of the home and host countries and of the firms involved. In particular, Cole et al. (2006) suggest that inward FDI has a positive impact on the stringency of environmental regulations when the level of local government's corruptibility is low; rather, at higher levels of corruptibility this impact is lessened, and eventually becomes negative.

Beyond pursuing their own interests, at times MNEs multinational firms collaborate with domestic enterprises with the aim of strengthening and upgrading the quality of local services, such as the local human resource training (see for instance Rasiah, 2002, and Okada, 2004). As an illustration, Wrana & Revilla-Diez (2016) find out that MNEs carrying out cooperation projects with local schools in Vietnam can positively influence the quality of local education by introducing institutional elements of their home country’s skill formation system. Moreover, as observed by Dunning & Lundan (2008a), the upgrading of local vocational training also allows the multinational firms to inject and disseminate business culture in the host country.

3.2.2.3 FDI and international relations

Inward FDI may also better the international relations between the home country and the host country. Indeed, FDI can improve their bilateral political relations and increase their economic interdependence, thus, making military conflicts, which would cause a loss of many of the gains

deriving from FDI for both the home and the host country, more costly. Hence, FDI can even act as a détente of military tensions (Russett & Oneal, 2001; Kahler & Kastner, 2006; Levy, 2003; Gartzke et al., 2001). An important empirical contribution to this strand of literature is provided by Polacheck et al. (2012). By employing bilateral FDI for a total of 53 countries, they find that a 10% increase in FDI is associated with an increase in net cooperation of 3.3%. An interesting case study is offered in this regard by what is often considered the most centralized economy of the world, North Korea. Indeed, in 2004 this country opened a special economic zone (the Gaeseong Industrial Complex, or GIC) that attracts investments from other countries, and especially from South Korea (Kim, 2016). The GIC could act as a conflict management tool which helps reduce the military tensions between these two countries by increasing their economic interdependence (Haggard & Noland, 2008), but also by influencing the opinion of North Korean people towards South Korea (Yang et al., 2013). Moreover, in the long term, the GIC could motivate North Korea to undertake a transformation process from a totally planned economy to a more open and market-oriented one (Lee & Lee, 2013; Kim, 2016).

3.2.2.4 FDI and other institutional factors

Increasing inward FDI and integration in the world economy may also lead to *de facto* decentralization. Indeed, they can provide subnational actors with resource flows which make them more independent from the central government authority and which strengthen the importance of subnational policies for economic development (Malesky, 2008). Evidence of this "empowerment of local leaders" effect has been found, for instance, in Kazakhstan (Jones-Luong, 2003), Mexico (Diaz-Cayeros et al., 2003) and Vietnam (Malesky, 2008).

Furthermore, FDI may contribute to ideological convergence across countries. In particular, Lin (2018), who uses data on extensive individual surveys administered in 28 provinces of mainland China, claims that those who work in foreign-invested enterprises (especially non-Hong Kong, Macao and Taiwan invested enterprises) tend to be more in favour of freedom of speech than individuals who work in domestic firms. According to Kim (2016), a gradual ideological convergence, also triggered by the workers of the two countries who work side by side in the GIC, could happen in the long-term also between the two Koreas (see section 3.2.2.3).

3.2.2.5 Inward FDI and institutions across different sectors

Almost all the studies addressing the effect of inward FDI on some institutions and policies do not investigate whether this impact varies across different industries, maybe also due to the limited availability of disaggregated data for certain countries and time horizons. In this regard, Zeng & Eastin (2012, p. 2230), in the conclusive section of their study focusing on the impact of FDI coming from developing countries on corporate environmental behavior, posit that, since the scope of their paper does not allow them to engage in detailed examination of FDI concerning different industries or market segments, they "*leave these questions to future research*". Rather, Malesky (2009), who derives his data on inward FDI from the Vienna Institute for International Economic Studies (WIIW) dataset (which provides detailed data, also decomposed by country of origin and sector, for 22 countries of the Eurasian region), shows that there is a positive effect of FDI on reform progress in 27 transition economies. Notably, this positive relationship is particularly strong in the service and in the manufacturing sectors, with the exception, for the latter, of construction and utility-based projects, while it does not hold for natural resource-based projects. Actually, according to the author, access to resources and bidding for construction and utilities projects may force some investors, who are mainly interested in the policies favouring their business, to lobby against general economic reform. Similar considerations are likely to hold also for other activities included in the primary sector, such as mineral extraction and mining. Interestingly, a number of papers that investigate the relevance of good institutional quality for foreign investors in different sectors (e.g. Ali et al., 2010; Walsh & Yu, 2010; Tintin, 2013) find that institutional quality is a robust determinant of FDI in the services and the manufacturing sectors but not of FDI concerning the primary sector, the latter being natural-resource seeking investments. Thus, it seems that there is not a significant mutual relationship between inward FDI and institutional quality when the primary industry only is taken into account. However, it is worth mentioning that the value added of the primary sector, in recent years, represents a small portion of GDP not only in the advanced countries, but also in developing and transition economies. Conversely, the service sector has been gaining relevance, to the point that in 2016 it accounted for 66 % of the total value added in the advanced countries, 64 % in the developing countries and 70 % in the transition economies. Moreover, the value of estimated global inward FDI stocks in the service sector, which in 2001 equaled 4 trillions of dollars, amounted to 16 trillions of dollars in 2015, compared to 2 trillions of dollars of the primary sector in the same year (UNCTAD, 2017).

3.2.3 The impact of inward FDI on institutions: research hypothesis

From the review of the studies presented in Table 3.1, it can be noticed that the results concerning the effect of corruption on FDI are quite mixed, while all the other studies find a positive effect of FDI on the type of institution taken into account. Moreover, by means of the mechanisms outlined in section 3.2.1, some authors posit that MNEs can favour the adoption of more advanced business practices and more liberal values, and encourage the local authorities to undertake processes of modernization, decentralization and liberalization, and to address the weaknesses of their institutional framework. Thus, beyond affecting the business practices and decision-making processes of the local markets' authorities to their advantage, foreign multinational firms can also trigger a positive, gradual progress of conformation of the host country to higher standards of governance and regulation (Hewko, 2002; Malesky, 2009). For these reasons, although its impact on corruption is ambiguous, FDI is likely to have a positive influence also on the overall quality of governance and institutions of the host country.

In addition, looking at the reviewed studies, it can be observed that their samples predominantly include developing and/or transition economies. Hence, it seems that the way and the extent to which FDI affects these countries is of particular interest. Actually, developing and, in particular, transition countries are undertaking process of catch-up and modernization and have more scope to improve their institutional quality than advanced economies. In addition, these countries often rely on a more malleable institutional framework. At the same time, foreign investors, especially in transition economies such as the post-communist countries, generally do not settle for a passive role in the host country's reform process, but work closely with government actors (Malesky, 2009). In doing so, they can promote more advanced business practises, favour the strengthening of property rights protection and rule of law, which in these countries are generally under-developed, and help improve the quality of public services (such as vocational training in Vietnam). Finally, as contended in section 3.2.2.4, FDI can favour de-centralization processes in countries dealing with an unequal distribution of political power and low levels of democracy, which are generally transition or developing economies (such as the three countries mentioned in section 3.2.2.4).

In the light of these considerations, first, we do expect increasing FDI to have a positive impact on the *average* quality of domestic institutions. Second, we do suppose that developing and transition

economies are more affected by inward FDI than developed countries, from which these investments mostly originate.[12] Third, we do expect this effect of inward FDI to vary according to the type of institutional aspect taken into account.

3.3 Empirical analysis

3.3.1 Data

Our sample consists of 127 countries (see the Appendix, Table A.3.1, for the full list), which are observed over a 22-year period, from 1995 to 2016. The time frame restricts to 2003-2016 when the amount of inward FDI is proxied by the number of greenfield FDI, because the corresponding data are not available before 2003. The countries are then split into three main groups, according to their level of development[13]: advanced countries, developing countries and transition economies. We merge information from different data sources (see the Appendix, Table A.3.2 for the full list of variables and related sources).

3.3.1.1 Dependent variable

The dependent variable is the "quality of governance index" (QGOV), which is the average of the six Worldwide Governance Indicators (WGI) developed by Daniel Kaufmann and Aart Kraay and made available by the World Bank Group. Despite some critiques (e.g. Arndt & Oman, 2006; Knack, 2006), most of which refuted by Kaufmann et al. (2007), these indicators are highly

[12] In recent years, there has been a remarkable increase of outward FDI from some highly-dynamic developing countries od South-East Asia, namely Singapore, Hong Kong and, primarily, China. As an illustration, in 2015, this country represented the biggest investor in the Developing Asia region and the fourth main investor in Africa (UNCTAD, 2018). However, this phenomenon is quite recent, and if we consider the whole 22-year time frame (from 1995 to 2016) adopted in this work, it emerges that most of FDI realized in those years in developing and transition economies come from developed countries.

[13] We split the sample following the United Nation classification, with the exception of the Eastern European countries currently belonging to the UE (i.e. Slovenia, Slovakia, Hungary, Czech Republic, Poland, Croatia, Lithuania, Latvia, Estonia, Romania and Bulgaria), which, in line with the economics of transition literature, are classified as transition economies.

acknowledged and widely employed. They are based on a broad definition of governance. Specifically, Kaufmann et al. (2011, p. 222) identify governance with *"the traditions and institutions by which authority in a country is exercised. This includes (a) the process by which governments are selected, monitored and replaced; (b) the capacity of the government to effectively formulate and implement sound policies; and (c) the respect of citizens and the state for the institutions that govern economic and social interactions among them"*. Therefore, QGOV may be a good proxy for the overall quality of institutions of a country. The six WGI, which range from about -2.5 (the lowest quality) to +2.5 (the best quality) and are available for most of the world from 1996, concern the following complementary governance dimensions:

- *voice and accountability*, which captures perceptions of the extent to which citizens are able to participate in the selection of their government, as well as freedom of expression, freedom of association, and free press and media;

- *political stability and absence of violence/terrorism*, which is related to perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism;

- *government effectiveness*, capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies;

-*regulatory quality*, concerning perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development and market-oriented strategies;

- *rule of law*, which reflects 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;

- *control of corruption*, capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as 'capture' of the state by elites and private interests.

The WGI condense information from a wide set of perception-based governance data sources (e.g. the World Economic Forum's Global Competitiveness Report, the Institute for Management Development's World Competitiveness Yearbook and the World Bank/EBRD's Business Environment and Enterprise Performance surveys) and measure several relevant types of institution, such as civil liberties, political rights and freedom of press, property rights, rule of law and corruption (World Bank Group, 2018).

In addition, we use each of the six aforementioned components of QGOV as dependent variable in order to understand how inward FDI affects different institutional dimensions.

Finally, as robustness check (see section 3.4.4), we employ the index of Economic Freedom provided by Heritage Foundation. Although the latter mainly focuses on economic institutions, it covers a wide range of institutional aspects too, and partially overlaps with some of the WGI. More specifically,this broad index, which ranges from 0 (lack of economic freedom) to 100 (full economic freedom) is based on 10 indicators, namely property rights, freedom from corruption, fiscal freedom, government spending, business freedom, labour freedom, monetary freedom, trade freedom, investment freedom and financial freedom (Heritage Foundation, 2018).

Figure 3.1 shows the trend of QGOV between 1995 and 2016 for all the countries in our sample and for the sub-samples of developing economies and of transition economies.

FIGURE 3.1 HERE

Across all the countries, we observe that the level of the institutional quality index remains quite stable over time, although, during the first years of the new millennium, it slightly decreases as compared to the level recorded in the second half of the nineties. This result is mainly driven by the performance of the developing economies, which, during those years, experienced a worsening in the quality of their institutions, mainly determined by the fall of the level of political stability and regulatory quality. This lowering in their institutional quality has been followed by a gradual recovery, mainly driven by the South-East Asian region. On the other hand, the overall quality of institutions has remarkably improved over time in transition economies, which, from the beginning

of the nineties, have undertaken pervasive processes of modernization, privatization and democratization.

3.3.1.2 Focal regressor: FDI

We employed three different FDI variables. The first one refers to the amount of real net FDI inflows (RFDI) measured in millions of US dollars[14]. Data on yearly inward FDI flows at current prices come from UNCTAD FDI Statistics. We then use data on country's GDP deflator from the World Bank's World Development Indicators Dataset to compute the yearly inward FDI flows in real terms. The second variable is FDI/GDP, and is given by FDI inflows as a share of national GDP: while RFDI provides a measure of the absolute amount of inward FDI, FDI/GDP provides a measure of the relevance of FDI inflows for the recipient country's economy. Third, we include the number of inward greenfield projects (GRFDI). This variable is based on data from the FDI Markets Dataset developed by the Financial Time's Group and from some Annex Tables provided by UNCTAD FDI Statistics. Differently from the other two variables, GRFDI considers the count of the physical investment projects that are undertaken by multinationals in host countries. Unlike cross-border mergers and acquisitions (M&A), which can just involve a simple change in ownership between firms, greenfield FDI are investment projects that entail the establishment of new assets and activities in the host country, and not simply a change in the ownership and control of a domestic company. (UNCTAD, 2009). Therefore, they may have a larger/additional impact on the domestic economic and institutional framework. Multinational companies typically prefer to undertake a greenfield FDI rather than a M&A in developing and transition economies because of a general lack of suitable domestic companies, and because in these areas the potential reverse flows of knowledge and technology from the host location to the country of origin are in general relatively low. This reduces the potential success of a M&A, which relies on significant bi-directional flows between the acquiring and acquired organizations. Rather, the creation of new greenfield establishments in developing and transition economies allow MNEs, in particular from advanced countries, to organize, configure and control all the aspects of the production or service process (Iammarino & McCann, 2013).

[14] The results do not remarkably change when FDI inflows at current prices are used.

Figure 3.2 shows the dynamics of FDI inflows between 1995 and 2016 across the entire sample, and, separately, for transition and developing economies. Looking at the whole sample, we observe that, since the mid-nineties, FDI inflows has increased considerably, except during the periods of the financial and sub-prime crises, i.e. 2008-09 and 2012-14 respectively. With regard to transition economies, this area attracted a relevant amount of FDI in particular from the mid-nineties until around 2008-2009. The contraction experienced in 2015 is mainly driven by the reduction of FDI in four large economies, namely Russia, Ukraine, Kazakhstan and Azerbaijan (also due to political uncertainty and military tensions in this area) and has been followed by a recovery, which, according to UNCTAD analysts, should continue in the next years (UNCTAD, 2018).

3.3.1.3 Control variables

When investigating the effect of inward FDI on institutions, we control for some macroeconomic factors of the host country that can potentially affect its institutional quality.

Several researchers have acknowledged the role played by the country's degree of economic development, which is often proxied by its GDP per capita, in influencing the quality of institutions and control for it in their empirical analysis. Indeed, as argued by Kaufmann et al. (2009), good governance and institutional quality require time and resources to develop, suggesting that richer countries or countries with greater human resources are more likely to experience a better quality of institutions. In line with these considerations, Alonso & Garcimartin (2013) posit that the level of economic development determines the availability of resources to build good institutions, and also that it generates a larger demand for quality institutions. Thus, we initially selected, among the controls, also the variable GDP per capita, which as expected was typically highly and positively significant. However, beyond generating concerns about its endogeneity with respect to institutional quality and also with the FDI variables, it was highly correlated with other controls. Accordingly, we eventually decided to drop it and to include other variables referring to socio-economic characteristics of the host county.

First, we control for country size, using total population (POP), and for population density (DENS), which typically provides also a measure of the degree of urbanization. The effects of these variables of institutional quality is ambiguous. Indeed, higher levels of population and of

population density may be positively influenced by reduced mortality rate, better medical facilities and immigration due to the presence of economic opportunities and then, it may reflect a certain degree of economic development, which, in turn, is expected to positively affect institutional quality. Moreover, as Lee & Lio (2016) suggest, a certain level of population density can help achieve economies of scale in the provision of public services. However, overpopulation can also create difficulties in the provision of public services and, more in general, in the management of the additional governance challenges of a highly populated country. Further, it may be driven by an average high number of children per woman, which is often associated with poverty and low levels of education, and therefore it may suggest the presence of lacking economic and especially of social development and have a negative influence on institutional quality.

We also control for the industry mix of a country, including the value added of services (SERV) and that of industry (IND), as a share of domestic GDP (keeping the share of value added in primary sectors as the term of reference). In this way, we implicitly control for the level of development of a country, which should increase the higher the share of value added in service-related activities. Rather, the influence of industrialization is more ambiguous since, as suggested by Lee & Lio (2016), it can create a large number of rent-seeking opportunities which may foster corruption.

Then, we include a variable computed as the sum of exports and imports divided by domestic GDP (TRADE) as a proxy of trade openness, which is expected to have a positive effect on the latter for similar reasons to those that have already been discussed with regard to inward FDI. However, previous studies show that the influence of this indicator on institutional quality varies according to the type of institution taken into account, especially after controlling for development level, and according to the country sample used (Islam & Montenegro, 2002; Knack & Azfar, 2003). In particular, Rigobon & Rodrik (2004) find a positive relationship, though weak, between trade openness and the rule of law, but a negative relationship between the former and democracy, which the authors interpret in terms of distributive tensions generated by economic openness.

Moreover, we control for inflation (INFL), using the domestic GDP deflator, and for unemployment (UNEMP), as given by the share of total unemployment on total labour force, since they can lead to conflicts, socio-political instability and insecurity which ,in turn, can have a negative influence on the quality of institutions.

In addition, the quality of domestic institutions may increase with the availability of network infrastructures such as the telephone lines and internet, which can improve the governance efficiency and reduce costs and wastes, and also have a more indirect influence on institutional quality by capturing social and economic development. Thus, we also include a variable measuring total broadband and fixed telephone subscriptions per 100 people (BROADTEL). This indicator is likely to be strongly related also to education, whose positive effect on institutional quality has been highlighted by Alesina & Perotti (1996) and then highly recognized by several researchers (see Alonso & Garcimartin, 2013, for a review). As a matter of fact, BROADTEL is highly correlated with our selected proxy for education (namely, the average number of years of schooling, derived from the Human Development Index Dataset provided by the United Nations). In addition, two relevant aspects concerning education, namely the perceived quality of primary education and the coverage of primary school, are already captured by the WGI "Government effectiveness", and thus by the dependent variable of our econometric model. These are likely to be the reasons why the coefficient of the variable "average number of years of schooling" is not significant in most of the regression estimates (available upon request). In the light of these considerations, we decided to drop it.

Finally, we control for a series of dummies capturing country's belonging to specific political and commercial areas, or being member of trade agreements, which can ease the attraction of FDI and also have a positive influence on institutional quality by requiring countries, or motivating them, to make important adjustments to various laws and regulations (Lehne et al., 2014). Thus, we alternatively control for a country's belonging to OECD and for a country's adherence to the following set of international economic organizations and agreements: UEMOA (Union Economique et Monétaire Ouest Africaine) COMESA (Common Market for Eastern and Southern Africa) and/or CFTA (Continental Free Trade Area), SADC (Southern African Development Community), APEC (Asia-Pacific Economic Cooperation), UNASUR (Union of South American Nations), CACM (Central American Common Market), NAFTA (North American Free Trade Agreement), ASEAN (Association of Southeast Asian Nations), MERCOSUR (Mercado Común del Sur), EU (European Union) and Schengen area.

3.3.2 Econometric model

We start estimating the following baseline model:

$$QGOV_{it} = \beta_0 + \beta_1 FDI_{it} + \beta_2 X_{it} + \theta_t + \delta_R + \in_{it} \quad (1)$$

where $QGOV_{it}$ is the index capturing the quality of institutions of country *i* at year *t*, that is further decomposed into the following six elements: voice and accountability (V&A), political stability (POLST), government effectiveness (GOVEFF), regulatory quality (REGQ), rule of law (RLAW) and control of corruption (CORR). To make the interpretation of these institutional variables easier, we normalized them between 0 and 1 using the following transformation: [*x*-*min*(*x*)/*max*(*x*)-*min*(*x*)]. We also transformed each of them in natural logarithm.

The variable FDI_{it} is the amount of FDI inflows in country *i* at year *t*, that we distinguish in: real FDI inflows (RFDI), FDI inflows as a share of GDP (FDI/GDP) and number of inward greenfield projects (GRFDI). The vector X_{it} includes the control variables, namely total resident population (POP), population density (DEN), trade openness (TRADE), inflation (INFL), unemployment (UNEMP), the share of value added in industry (IND) and service (SERV) sectors, and total broadband and fixed telephone subscriptions per 100 people (BROADTEL). Again, we transform each of these variables in natural logarithm, except inflation.

Finally, we include a vector of year-specific dummies (θ_t), and a vector of region-specific dummies (δ_R), using the UN geo-scheme as reference. All the standard errors are clustered at country level. Table 3.2 provides the summary statistics and the correlation matrix for the continuous variables.

TABLE 3.2 HERE

To account for unobserved heterogeneity, we also estimate a panel model with fixed effects:

$$QGOV_{it} = \beta_1 FDI_{it} + \beta_2 X_{it} + \mu_i + \theta_t + u_{it} \quad (2)$$

where μ_i is the vector of time-invariant characteristics of country *i* and u_{it} is the stochastic error term.

However, we reasonably think that the quality of institutions at time *t* largely depends on its value at time *t*-1. Moreover, it is likely that not only does inward FDI influence institutions, but also that the latter affect FDI. Thus, to account for persistence of institutions and for potential simultaneity with inward FDI, we also resort to a linear dynamic panel approach using the system GMM estimator provided by Arellano & Bover (1995) and by Blundell & Bond (1998), who refine the Arellano & Bond (1991) approach.

A system of two equations is then estimated, one in first differences and one in levels, the latter (equation 3) including area and time fixed effects:

$$QGOV_{it} = \beta_1 QGOV_{it-1} + \beta_2 FDI_{it} + \beta_3 X_{it} + \mu_i + \theta_t + +u_{it} \quad (3)$$

where $QGOV_{it-1}$ is the institutional index of country i at year *t*-1.

The instruments are used to form the moment conditions. Following Roodman (2009), we resort to a parsimonious specification which limits as much as possible the number of instruments in order to contain losses of efficiency. Moreover, for simplicity, we here consider only FDI as potentially endogenous with respect to institutional quality, whereas we take all the other regressors as exogenous. Thus, in the equation in levels, we instrument the FDI variable by the corresponding first difference at time *t*-1, which is supposed to be uncorrelated with the error term in levels. In the equation in first differences, we use one-year lagged values of the FDI in levels as instruments, which are supposed to be uncorrelated with the error term in first difference. We

estimate equation 3 using the two-step system GMM estimator, and we apply the Windmeijer's correction to the variance-covariance matrix in order to have heteroscedasticity-robust standard errors. The estimation of the system GMM model requires the presence of first-order serial correlation in the first-differenced residuals but the absence of second-order serial correlation. We test for this using the Arellano-Bond test for serial correlation, and we also test for over-identifying restrictions in our model by performing the Sargan test.

3.4 Results

The following section reports the main results of our regression estimates. Since the focus of our analysis is the effect of inward FDI on institutional quality and since we already briefly illustrated the possible effects of our control variables in section 3.3.1.3, most of the comments to the results from Table 3.4 onwards mostly refer to the FDI variables.

3.4.1 Full sample

Tables 3.3, 3.4 and 3.5 present, respectively, the pooled OLS, fixed effects and SYS-GMM estimates for the whole sample, using QGOV as dependent variable. Tables 3.6, 3.8 and 3.10 show the pooled OLS and fixed effects estimates for advanced, transition and developing countries respectively, while Tables 3.7, 3.9 and 3.11 show the SYS-GMM estimates for advanced, transition and developing countries respectively. Finally, Table 3.12 reports the pooled OLS, FE and GMM estimated coefficients of our three FDI variables, for transition and developing economies, using the six single dimensions of institutional quality as dependent variables.

Looking at the pooled OLS estimates in Table 3.3, we observe that the estimated coefficients of all the three FDI variables are positive and statistically significant. In particular, we find that, *ceteris paribus*, a 10% increase in real FDI inflows is related to an average 0.1% increase in the institutional quality (Columns 1 and 2), while a 10% increase in FDI/GDP is related to an average 0.12% increase in institutional quality (Columns 3 and 4). Columns 5 and 6 show that, *ceteris paribus*, a 10% increase in the number of inward greenfield FDI is associated with an average 0.8% increase in the quality of institutions. To give an idea of the magnitude of these effects, it is

worth considering that, in the full sample of 127 countries, the mean annual growth rate of QGOV is -0.002, with a minimum value of -0.182 and a maximum value of 0.211, and the median is 0. An estimated coefficient of 0.012 is a value closed to the top 25th percentile of the distribution, while a coefficient of 0.08 belongs to the 1st percentile of the distribution. This suggests that increasing FDI, and in particular greenfield FDI, is related to a remarkable raise in the quality of domestic institutions. With regard to the controls, we find that higher levels of total population and of the inflation rate are related to a lower institutional quality, whereas the latter increases the higher the relevance of the tertiary sector in a country, the higher the share of people using the network infrastructures and when the country is member of the OECD. Conversely, TRADE is not statistically significant in Columns 1 to 5, maybe because its potential positive effects are already captured by the FDI regressor and by other controls that reflect the degree of economic development, and is negatively significant in Column 6. This latter result, which is partially counterintuitive and is found also in other estimates, may be due to the higher incidence of imports with respect to exports, the latter typically entering the regression with positive sign. Finally, to test for potential multicollinearity, we provide a VIF test for each specification: we find that the value of the mean test statistics is always lower than 5.

TABLE 3.3 HERE

Table 3.4 provides the fixed effects estimates of equation 2[15]. Because of potential unobserved heterogeneity, the magnitude and the statistical significance of the coefficients of the FDI variables are lower than those found in the pooled OLS estimates. However, the fixed effects estimates still suggest that attracting FDI, and in particular greenfield projects, is positively related to an increase in the overall quality of institutions.

[15] Although they are not time-invariant, the OECD and the various trade agreements dummies are dropped from the fixed effects estimates due to their low variability. However, results do not change if we include them in the estimates.

TABLE 3.4 HERE

When we estimate equation 3 through the two-step SYS-GMM approach (Table 3.5), we still find a positive and significant coefficient for real FDI inflows and number of greenfield FDI. Although ln_FDI/GDP is not statistically significant, an alternative measure which also accounts for the dimension of the country and which is more stable over time, ln_FDI/POP (i.e. the natural logarithm of the amount of FDI inflows divided by total population) has a positive and significant coefficient. Since we control for endogeneity, we can posit that, *ceteris paribus*, an increase in inward FDI *induces* an increase in the quality of domestic institutions. Looking at the diagnostic tests, we observe that the LM test on the AR(1) and AR(2) confirm the presence of first-order serial correlation in the first-differenced residuals, while the Sargan test confirms the validity of our instruments.

Accordingly, these results are consistent with our first research hypothesis.

TABLE 3.5 HERE

3.4.2 Results for advanced, transition and developing economies

We now turn the attention to the estimates by type of country, i.e. advanced, transition and developing. Tables 3.6 and 3.7 show, respectively, the pooled OLS, fixed effects and SYS-GMM[16] estimates for the group of advanced countries. We find that the estimated coefficients of our three FDI variables are either not statistically significant, or, where significant, with a low magnitude, with the exception of the system GMM estimate of ln_RFDI, which is highly significant. The lack of significance of ln_FDI/GDP and of ln_GRFDI is probably related to the fact that, generally, these countries already rely on solid and efficient institutions, thus the marginal effect of increasing amounts of inward FDI on their institutional quality is positive but negligible. The significance of

[16] Due to the limited amount of observations, we are not able to use the two-step estimator because, even with the most parsimonious version of the model, the variance-covariance matrix is never full-ranked. Therefore, we opt for the one-step estimator.

the regressor capturing real FDI inflows, which include also mergers & acquisitions, may be related to the fact that most of inward FDI in developed countries takes the form of M&A. With regard to the control variables, the negative sign of the variable ln_SERV, which, in line with our expectations, typically enters with positive sign, raises some concerns and may deserve further investigation.

TABLE 3.6 HERE

TABLE 3.7 HERE

Table 3.8 and Table 3.9 present the estimates for transition economies. Columns 1-3 of Table 3.8 show the pooled OLS estimates, where the estimated coefficients of our three FDI variables are positive, statistically significant and in line with those reported in Table 3.3 for the full sample. However, the fixed effects estimates reported in Columns 4-6 show that only the coefficient of ln_GRFDI remains statistically different from zero: specifically, *ceteris paribus*, a 10% increase in inward greenfield FDI in transition economies is related to an average 0.22% increase in institutional quality. This value lies between the top 25^{th} percentile (0.019) and the top 10^{th} percentile of the distribution of the QGOV growth rate in transition economies, and so it represents a relevant change. The SYS-GMM estimates in Table 3.9 confirm this result, and also show that a 10% increase in ln_FDI/GDP induces, *ceteris paribus*, an average 0.04% increase in the overall quality of domestic institutions. Instead, the effect of real FDI remains not statistically different from zero.

TABLE 3.8 HERE

TABLE 3.9 HERE

Tables 3.10 and 3.11 provide the estimates for developing countries. Interestingly, from Table 3.10 we find that all the estimated coefficients of our FDI variables are positive and statistically

significant, and are higher than those related to transition economies (Table 3.8). The SYS-GMM estimates on Table 3.11 confirm these results, except for FDI/GDP[17]. More specifically, we find that, *ceteris paribus*, a 10% rise in greenfield FDI projects increases the quality of domestic institutions by an average 0.24%. Instead, the corresponding effect for real FDI inflows reduces to 0.05%, a value closed to the median of the distribution. All together, these results confirm our expectations: FDI can be a driver of institutional quality, particularly in transition and developing regions and in the form of greenfield projects, which, in these areas, represent the most common type of FDI.

TABLE 3.10 HERE

TABLE 3.11 HERE

3.4.3 Results by type of institution

Tables 3.3 to 3.11 provide the estimation results when the dependent variable is the average quality of institutions. However, it is likely that FDI has a different impact on different types of institution. To test our third hypothesis, we assess the effect of FDI on the single WGI. Table 3.12 summarizes the pooled OLS, fixed effects and SYS-GMM estimated coefficients of the FDI variables for, respectively, transition economies and developing countries[18], using each of the six main elements of the QGOV as dependent variable.

TABLE 3.12 HERE

[17] One possible explanation is that the share of FDI on GDP is larger in transition economies (mean value 4.6%) as compared to developing countries (mean value 3.8%). Rather, the coefficient of ln_FDI/POP is positive and highly significant.

[18] We did not report the summary of the estimates for the whole sample due to space constraints and because our focus is on transition and developing economies. As for the system GMM estimates, we found a positive and significant coefficient only for greenfield FDI using voice & accountability ($p<0.05$) and rule of law ($p<0.1$) as dependent variable.

We focus on the cases where the SYS-GMM estimates provide statistically significant results, and, in particular, on the cases where also the pooled OLS and fixed effects estimates provide statistically significant coefficients. From Columns 1-3 of Table 3.12 we note that, in transition economies, the impact of inward FDI is significantly relevant for improving domestic regulatory quality and rule of law (which concern institutional aspects that typically matter for firms, including foreign investors) and, to a lesser extent, for political stability and voice & accountability. Instead, we do not find robust results for control of corruption. In this latter case, while the pooled OLS and fixed effects estimates identify a positive and statistically significant coefficient for ln_GRFDI, the SYS-GMM estimates show that this coefficient is not statistically different from zero. This can be due to a reverse causality effect, according to which FDI is attracted where corruption is lower.

When looking at developing countries (Columns 4 to 6 of Table 12), we find that four out of six types of institution are significantly affected by inward FDI in each estimated model: political stability, government effectiveness, regulatory quality and rule of law. Although ln_FDI/GDP is never statistically significant, the alternative measure ln_FDI/POP is significant for the four aforementioned institutional dimensions. Similarly to transition economies, we find that the SYS-GMM estimates do not confirm the results coming from pooled OLS and fixed effects estimates with respect to inward FDI and control of corruption: again, this finding suggests that a higher perceived control of corruption is more a driver than a consequence of FDI attraction.

These results are consistent with our hypothesis concerning the different effect of FDI on different institutional dimensions. In particular, inward FDI (mainly greenfield) impacts more on those types of institution that are linked to the functioning of market-based rules, the ease of doing business and the corporate climate, namely regulatory quality and rule of law, and also has a positive effect on political stability and government effectiveness (and on voice & accountability too, in the case of transition economies). Instead, the impact on corruption becomes not relevant when we account for simultaneity.

3.4.4 Robustness checks

Finally, we conducted some robustness checks.

First, we used the index of Economic Freedom as an alternative proxy for the average quality of institutions. From the summary of the estimates for transition and developing economies (see Table 3.13), it emerges that also when we use an alternative measure for the quality of institutions, the latter is positively influenced by inward FDI, and in particular by greenfield FDI. Moreover, as in the main model specification, the magnitude and the statistical significance of the FDI coefficients decrease when shifting from the pooled OLS to the FE and to the system GMM estimators.

TABLE 3.13 HERE

Then, we lagged all the regressors by, respectively, one, two and three years in the pooled OLS and in the FE estimates. Table 3.14 condenses the coefficients of the lagged FDI variables for transition and developing economies.

TABLE 3.14 HERE

Next, in order to assess whether the accumulation over time of inward FDI has a relevant effect on the quality of institutions, we created two other FDI variables, namely CUM_RFDI and CUM_GRFDI. In particular, we assessed the effect of inward real FDI flows that entered a country during the time-frame 1995-2005 on the quality of institutions in 2006, and the effect of real FDI inflows over the period 2006-2016 on the quality of institutions in 2016. Moreover, we investigated the impact of cumulative greenfield FDI related to the period 2003-2009 on the quality of institutions in 2010, and the impact of greenfield FDI established in the period 2010-2016 on

the quality of institutions in 2016[19]. Column 1 of Table 3.15 reports the OLS coefficients of these cumulative FDI regressors for the whole sample (expressed, as usual, in natural logarithm). All the estimated coefficients are positive and statistically significant. Although the use of cumulative FDI may reduce potential simultaneity, the latter cannot be excluded due to the high persistence of institutions over time. Since external instruments are not available and we deal with a cross-section, in order to still account for potential simultaneity we resort to Lewbel's (2012) approach, which exploits conditional second moments of the endogenous variables to account for endogeneity by circumventing the need for traditional instruments. Identification is based on a heteroscedastic covariance restriction, namely, on the presence of covariates that are correlated with the conditional variance of the first-stage errors, but not with the conditional covariance of heteroscedastic errors. Column 2 of Table 3.15 reports the estimated coefficients for cumulative real FDI inflows and for cumulative greenfield FDI obtained by using Lewbel's (2012) method. The complete estimates, as well as the Kleibergen-Paap rk Wald F statistic, which is an indicator of the weakness of the instruments (the higher this statistic, the stronger the instruments), and the p-value of the Hansen J test for overidentification can be found in Table A.3.3 in the Appendix. Since the cumulative FDI coefficients are all positive and highly significant, we can posit that higher amounts of cumulative FDI induce an increase in the quality of institutions.

TABLE 3.15 HERE

3.5 Conclusions

In this paper we assess whether, and to what extent, inward FDI affects the quality of institutions in recipient countries. This relationship has been extensively analysed from the side of a higher quality of domestic institutions that are used to attract FDI from outside, whereas the other did not receive the same attention yet. Using a wide panel of 127 countries and 22 years, we estimate a series of pooled OLS, fixed effect and dynamic panel models to address endogeneity. In doing so, we also consider different groups of countries, different FDI variables and different types of

[19] We did not use the QGOV relative to year 2017 since our time frame is from 1995 to 2016.

institution. In line with our expectations, we find that, in general, a higher amount of inward FDI significantly increases the average quality of domestic institutions; specifically, this holds more strongly for developing and transition economies, in particular when FDI is greenfield, and when institutions are conceived in terms of regulatory quality and rule of law, but also political stability and government effectiveness.

These findings suggest that not only does a higher quality of institutions typically attract increasing FDI, but also that the latter, in turn, can lead to a rise in institutional quality, thus triggering a virtuous circle. This particularly holds for transition and developing countries, most of which, unlike advanced economies, are experiencing economic growth, processes of liberalization and democratization (in particular in the case of the transition economies), and institutional change. Since both the national governments and the foreign investors can benefit from a better institutional environment, local policy makers have the incentive to undertake reforms and face their institutional weaknesses. In doings so, not only do they increase the country's attractiveness in terms of FDI, but also bring benefits to the society itself and its citizens. At the same time, MNEs investing in transition and developing countries are motivated to actively contribute to the local reform processes and to the improvement of public services.

While the positive influence of FDI on political stability, government effectiveness, regulatory quality and rule of law is confirmed when the system GMM estimator is used, the effect on control of corruption is not robust across the estimates. This result is consistent with the ambiguous role played by FDI in either fostering or discouraging corruption, which can hinder the efficiency and strength of the government's control of this widespread phenomenon.

To conclude, not only do multinational firms benefit from a favourable business environment and/or from cheaper production factors in host countries, but they can also have an indirect positive influence on these economies by boosting their processes of catch-up, modernization and structural change. For this reason, as some authors averred, foreign investors may actually act as agents of institutional change.

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TABLES AND FIGURES

Table 3.1 Recent empirical papers concerning the influence if inward FDI on some type of domestic institution

Author	**dependent variable**	**FDI-related variables**	**subjects and time-frame**	**control for endogeneity**	**conclusions**	**Effect on host country's institutions**
Bayar (2011)	corruption (CPI)	FDI inflows as % of total fixed investment in the country	10 (ex URSS and East-Asia), 1999-2009	✓	Past values of corruption and the level of political rights are relevant causes of corruption in the sample examined, while other variables including FDI inflows seem not to have a significant effect.	NOT REL
Cole et al. (2006)	environmental regulatory stringency (grams of lead content per gallon of gasoline)	lagged inward FDI stocks and flows scaled by GDP, interaction term between corruption and FDI	33 developed and developing countries, 1982-1992	✓	Inward FDI has a positive impact on the stringency of environmental regulations when the level of local government's corruptibility is low; at higher levels of corruptibility, this impact is lessened and eventually becomes negative.	VARIABLE
Craigwell & Wright (2011)	corruption (WB Statiistics)	FDI as a share of GDP	42 developing countries, years 1998-2009	✓	When linear panel methods are used, the majority of the markets indicate a bidirectional causal link between FDI and corruption. In contrast, for the nonlinear tests, the link from FDI to corruption dominates.	NEG

Kwok & Tadesse (2006)	corruption (CPI); also changes in corruption in the robustness checks	(past) FDI as a share of GDP in different time frames. In the robustness checks, also: interaction between FDI variable and education, between FDI and cultural values, dummies indicating whether a country is a based on their rankings of FDI flows	sample varying between 40 and 100 countries according to the model specification; average of years 2000-2004	✓	Current corruption levels are significantly lower in countries with high FDI flows in the past. Moreover, harmful effects of culture on corruption are lower and the beneficial effects of education on corruption are higher in countries with higher FDI in the past.	POS
Larrain B. & Tavares (2004)	corruption (ICRG)	gross FDI inflows as a share of GDP	a large cross section of countries, years 1970-1994	✓	Higher FDI inflows are shown to significantly deter corruption.	POS
Lee & Lio (2016)	corruption and government performance (China Statistical Yearbook and the Procuratorial Yearbook of China)	amount of FDI as a share of GDP	China's provinces, years 2000-2009	✓	Foreign capital and investors improved governance performance and reduced corruption of Chinese provincial governments.	POS
Lin (2018)	freedom of speech	a dummy indicating whether an individual works in a foreign-invested enterprise	extensive individual surveys conducted in 28 provinces of mainland China, 2013	✓	The individuals working in foreign-invested enterprises (especially non-Hong Kong, Macao and Taiwan invested enterprises) tend to be more in favour of freedom of speech than individuals who work in domestic firms.	POS

Lin et al. (2014)	3 dependent variables capturing Shangai-based firms' COD discharges and SO2 emissions (SEPB)	firms with foreign control or not (dummy)	565 firms in Shangai		Foreign-invested firms are more likely to comply with environmental regulations than firms with no international linkage because the latter motivates firms to improve their environmental compliance and also provide them with the means to achieve that goal.	POS
Malesky (2008)	whether a province has engaged in an autonomous action in a given year (content analysis of state-owned Vietnamese newspapers)	stocks of FDI as a share of GDP	61 Vietnamese provinces, years 1990-2000	✓	FDI appears to have a powerful and robust impact on *de facto* decentralization regarding economic policy.	POS
Malesky (2009)	annual change in total economic reform (EBRD scores)	annual change in the stock of FDI as a percentage of GDP	27 transition countries, years 1991-2004	✓	FDI has a positive and relevant impact on economic reforms in transition economies.	POS
Pinto & Zhu (2016)	corruption (CPI)	real FDI stock per capita (5-year average) ,	95 , average 2000-2004	✓	The effects of inward FDI on corruption are expected to vary with local conditions in the host country. In particular, FDI is associated	VARIABLE

		interaction term between GDP per capita and FDI			with higher levels of corruption in less developed countries, but not in developed countries.	
Polacheck et al. (2012)	military conflicts	dyadic FDI flows	29 OECD host-countries and their source countries, for a total of 53 different countries	✓	A 10% increase in FDI is associated with an increase in net cooperation of 3.3%.	POS
Robertson & Watson (2004)	corruption (CPI)	FDI per capita, change in level of inward FDI	From 88 to 99 countries, years 1999 and 2000		The more rapid the rate of change in FDI, the higher the level of corruption.	NEG
Wrana & Revilla-Diez (2016)	Vietnam's education system	German and Japanese MNE involved in local educational projects	Vietnam, interviews conducted in 2014		MNEs can influence regional education systems by introducing institutional elements of their home country's skill formation system.	POS
Zeng & Eastin (2012)	number of ISO 14001-certified facilities in a country that receives developing-world FDI	share of total inward FDI stocks countries in GDP and of inward FDI from different areas	48 countries, both developed and developing, 1990–2005		Less-developed countries' MNEs find it increasing financially advantageous to signal to consumers, investors, and potential business partners their commitment to environmental protection by adopting sound environmental practices.	POS

Table 3.2 Correlation matrix and summary statistics

	Mean	St.dev.	Min	Max	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.
1. QGOV	0.516	0.147	0.232	0.828	1											
2. RFDI	6526.5	46065.3	0	1452963	0.343	1										
3. FDI/GDP	0.050	0.172	-0.589	4.996	0.164	0.001	1									
4. GRFDI	103.2	218.9	0	1933	0.407	0.575	-0.081	1								
5. POP	4.8e+07	1.57e+08	206963	1.38e+09	-0.275	0.315	-0.352	0.578	1							
6. DEN	179.9	602.2	1.479	6996.9	0.087	0.123	-0.010	0.219	0.138	1						
7. TRADE	0.853	0.492	0.156	4.426	0.272	-0.028	0.435	-0.101	-0.595	0.152	1					
8. INFL	0.092	0.319	-0.272	9.586	-0.368	-0.132	-0.046	-0.119	0.121	-0.134	-0.122	1				
9. UNEMP	0.087	0.063	0.001	0.393	0.067	0.018	0.065	-0.059	-0.114	-0.184	-0.023	-0.035	1			
10. IND	0.301	0.143	0.068	2.137	-0.112	0.050	-0.154	0.217	0.154	-0.242	-0.048	0.131	-0.143	1		
11. SERV	0.572	0.128	0.094	0.931	0.634	0.311	0.143	0.272	-0.191	0.235	0.173	-0.289	0.273	-0.477	1	
12. BROADTEL	0.265	0.263	0.001	1.021	0.675	0.373	0.081	0.522	-0.162	0.099	0.266	-0.216	0.095	0.119	0.584	1

Note: summary statistics refer to the variables before logarithmic transformation. Correlations, instead, refer to variables transformed in natural logarithm

Table 3.3 Inward FDI and quality of institutions: pooled OLS estimates

	(1)	(2)	(3)	(4)	(5)	(6)
ln_RFDI	0.010***	0.010***				
	(0.002)	(0.002)				
ln_FDI/GDP			0.015***	0.011**		
			(0.005)	(0.005)		
ln_GRFDI					0.081***	0.077***
					(0.012)	(0.009)
ln_POP	-0.043***	-0.058***	-0.034***	-0.049***	-0.103***	-0.116***
	(0.011)	(0.011)	(0.011)	(0.011)	(0.014)	(0.011)
ln_DENS	0.007	0.006	0.007	0.006	0.002	0.007
	(0.008)	(0.008)	(0.008)	(0.008)	(0.009)	(0.009)
ln_TRADE	0.007	-0.033	0.001	-0.036	-0.037	-0.091***
	(0.027)	(0.025)	(0.028)	(0.026)	(0.032)	(0.023)
ln_INFL	-0.040**	-0.052**	-0.051**	-0.064**	-0.290***	-0.254**
	(0.019)	(0.026)	(0.020)	(0.028)	(0.105)	(0.119)
ln_UNEMP	-0.020	-0.024*	-0.023	-0.026*	-0.022	-0.023*
	(0.016)	(0.014)	(0.016)	(0.015)	(0.015)	(0.013)
ln_IND	0.013	-0.003	0.025	0.008	-0.014	-0.043
	(0.033)	(0.029)	(0.033)	(0.031)	(0.041)	(0.036)
ln_SERV	0.197***	0.195***	0.222***	0.225***	0.161**	0.139**
	(0.058)	(0.060)	(0.061)	(0.065)	(0.064)	(0.068)
ln_BROADTEL	0.060***	0.044***	0.064***	0.048***	0.031*	0.010
	(0.017)	(0.013)	(0.017)	(0.013)	(0.017)	(0.013)
OECD	0.207***	0.204***	0.216***	0.211***	0.203***	0.186***
	(0.029)	(0.031)	(0.030)	(0.030)	(0.024)	(0.028)
UEMOA		0.075		0.082		0.106*
		(0.056)		(0.055)		(0.060)
COMESA_FTA		-0.109		-0.111		-0.117
		(0.110)		(0.111)		(0.104)
SADC		0.175***		0.176***		0.194***
		(0.053)		(0.054)		(0.045)
APEC		0.184***		0.178***		0.186***
		(0.046)		(0.045)		(0.048)
UNASUR		-0.051		-0.048		-0.020
		(0.039)		(0.041)		(0.035)
CACM		-0.021		-0.021		0.012
		(0.052)		(0.053)		(0.039)
NAFTA		-0.042		-0.026		-0.049
		(0.108)		(0.110)		(0.100)
ASEAN		-0.033		-0.032		-0.074
		(0.049)		(0.049)		(0.059)
MERCOSUR		0.085		0.083		0.091*
		(0.070)		(0.069)		(0.050)
EU_SCHN		0.139***		0.148***		0.128***
		(0.028)		(0.028)		(0.029)
Area dummies	Yes	No	Yes	No	Yes	No
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	2794	2794	2794	2794	1778	1778
Number of countries	127	127	127	127	127	127
R^2	0.799	0.765	0.797	0.761	0.841	0.815
Mean VIF	3.57	2.02	3.53	1.97	4.16	2.24

All the models include a constant term. Country-level cluster-robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3.4 Inward FDI and quality of institutions: fixed effects estimates

Dep var: ln_QGOV *Whole sample*	(1)	(2)	(3)
ln_RFDI	0.003***		
	(0.001)		
ln_FDI/GDP		0.004*	
		(0.002)	
ln_GRFDI			0.025***
			(0.006)
ln_POP	-0.217	-0.184	-1.820***
	(0.387)	(0.396)	(0.471)
ln_DENS	0.132	0.096	1.691***
	(0.412)	(0.421)	(0.522)
ln_TRADE	-0.011	-0.020	-0.040**
	(0.021)	(0.022)	(0.019)
ln_INFL	-0.012	-0.015	-0.071***
	(0.011)	(0.011)	(0.022)
ln_UNEMP	-0.007	-0.006	-0.016
	(0.012)	(0.011)	(0.011)
ln_IND	0.024	0.029	0.053*
	(0.041)	(0.042)	(0.031)
ln_SERV	0.029	0.029	0.037
	(0.043)	(0.044)	(0.033)
ln_BROADTEL	-0.006	-0.002	0.011
	(0.008)	(0.009)	(0.010)
Area dummies	No	No	No
Year dummies	Yes	Yes	Yes
Number of observations	2794	2794	1778
Number of countries	127	127	127
Within R^2	0.063	0.056	0.165

Country-level cluster-robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3.5 Inward FDI and quality of institutions: SYS-GMM estimates

Dep var: ln_QGOV *whole sample*	(1)	(2)	(3)
ln_QGOV_{t-1}	0.870***	0.981***	0.720***
	(0.071)	(0.102)	(0.086)
ln_RFDI	0.004***		
	(0.001)		
ln_FDI/GDP		0.001°°	
		(0.011)	
ln_GRFDI			0.014*
			(0.008)
ln_POP	-0.021	-0.013	-0.064**
	(0.015)	(0.040)	(0.031)
ln_DENS	-0.009	-0.020	0.029
	(0.016)	(0.100)	(0.026)
ln_TRADE	-0.022**	-0.018	-0.032***
	(0.010)	(0.067)	(0.011)
INFL	0.000	-0.003	-0.006
	(0.006)	(0.015)	(0.012)
ln_UNEMP	-0.002	-0.004	0.009
	(0.004)	(0.018)	(0.006)
ln_SERV	0.015	0.013	0.000
	(0.015)	(0.104)	(0.020)
ln_IND	0.024**	0.030	0.017
	(0.012)	(0.122)	(0.013)
ln_BROADTEL	-0.005	-0.003	0.009*
	(0.006)	(0.072)	(0.006)
OECD	0.011	0.006	-0.007
	(0.011)	(0.112)	(0.016)
Area dummies	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Number of observations	2,667	2,667	1,778
Number of countries	127	127	127
Number of instruments	129	129	85
AR (1)	0.000	0.000	0.000
AR (2)	0.6325	0.583	0.2306
Sargan	0.3191	0.1645	0.152

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3.6 Inward FDI and quality of institutions in advanced economies: pooled OLS and FE

Dep var:ln_QGOV	(1)	(2)	(3)	(4)	(5)	(6)
Advanced countries	Pooled OLS	Pooled OLS	Pooled OLS	FE	FE	FE
ln_RFDI	0.002*			0.001**		
	(0.001)			(0.000)		
ln_FDI/GDP		0.002			0.001	
		(0.002)			(0.001)	
ln_GRFDI			0.019			0.008*
			(0.012)			(0.004)
ln_POP	-0.012	-0.009	-0.036**	-0.145	-0.096	-1.510
	(0.009)	(0.010)	(0.017)	(0.267)	(0.268)	(1.279)
ln_DENS	0.008	0.008	0.007	0.337	0.283	1.756
	(0.007)	(0.007)	(0.009)	(0.292)	(0.299)	(1.247)
ln_TRADE	0.018	0.016	-0.010	0.025	0.023	-0.014
	(0.029)	(0.029)	(0.035)	(0.033)	(0.033)	(0.029)
ln_INFL	-0.176	-0.129	-0.210	0.158	0.180	0.052
	(0.120)	(0.130)	(0.154)	(0.115)	(0.112)	(0.097)
ln_UNEMP	-0.026	-0.027	-0.028	-0.027***	-0.027***	-0.031***
	(0.019)	(0.020)	(0.021)	(0.009)	(0.010)	(0.010)
In_lND	0.071**	0.070**	0.066**	-0.010	-0.007	0.005
	(0.028)	(0.029)	(0.030)	(0.016)	(0.015)	(0.021)
ln_SERV	-0.034***	-0.033***	-0.030***	-0.010**	-0.011**	-0.008
	(0.010)	(0.011)	(0.010)	(0.005)	(0.005)	(0.005)
ln_BROADTEL	0.025	0.025	0.013	0.004	0.004	0.021
	(0.039)	(0.039)	(0.035)	(0.020)	(0.021)	(0.022)
OECD	0.030	0.026	0.003			
	(0.042)	(0.044)	(0.051)			
Area dummies	Yes	Yes	Yes	No	No	No
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	550	550	350	550	550	350
Number of countries	25	25	25	25	25	25
R^2	0.811	0.808	0.840	0.341	0.336	0.393
Mean VIF	5.12	5.11	7.18			

Cluster-robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3.7 Inward FDI and quality of institutions in advanced countries: SYS-GMM estimates

Dep var: QGOV *Advanced countries*	(1)	(2)	(3)
ln_QGOV$_{t-1}$	0.836***	0.772***	0.754***
	(0.047)	(0.052)	(0.052)
ln_RFDI	0.001***		
	(0.000)		
ln_FDI/GDP		-0.000	
		(0.001)	
ln_GRFDI			0.002
			(0.005)
ln_POP	-0.007	-0.003	-0.001
	(0.007)	(0.004)	(0.005)
ln_DENS	0.006	0.004	0.004
	(0.007)	(0.005)	(0.005)
ln_TRADE	-0.002	0.019	0.019
	(0.015)	(0.012)	(0.012)
INFL	-0.061	-0.015	0.016
	(0.048)	(0.054)	(0.066)
ln_UNEMP	-0.006	-0.012**	-0.014**
	(0.005)	(0.005)	(0.005)
ln_SERV	-0.011***	-0.010**	-0.007**
	(0.003)	(0.004)	(0.004)
ln_IND	0.017	0.024	-0.002
	(0.015)	(0.018)	(0.016)
ln_BROADTEL	0.003	0.004	-0.015
	(0.010)	(0.012)	(0.015)
OECD	0.037	0.018	-0.001
	(0.040)	(0.025)	(0.025)
Area dummies	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Number of observations	525	525	350
Number of countries	25	25	25
Number of instruments	127	127	84
AR (1)	0.0002	0.0002	0.0005
AR (2)	0.8114	0.5472	0.1584
Sargan	0.0039	0.0002	0.0128

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3.8 Inward FDI and quality of institutions in transition economies: pooled OLS and FE

Dep var: ln_QGOV	(1)	(2)	(3)	(4)	(5)	(6)
Transition economies	Pooled OLS	Pooled OLS	Pooled OLS	FE	FE	FE
ln_RFDI	0.012***			0.000		
	(0.004)			(0.001)		
ln_FDI/GDP		0.015*			0.000	
		(0.008)			(0.003)	
ln_GRFDI			0.062***			0.022**
			(0.013)			(0.009)
ln_POP	-0.107***	-0.104***	-0.109***	-4.666	-4.678	-7.705***
	(0.024)	(0.024)	(0.022)	(3.880)	(3.872)	(1.372)
ln_DENS	0.031	0.029	0.034	4.457	4.469	7.504***
	(0.030)	(0.030)	(0.028)	(3.839)	(3.832)	(1.324)
ln_TRADE	-0.111**	-0.143***	-0.013	-0.069*	-0.069*	0.001
	(0.050)	(0.050)	(0.039)	(0.039)	(0.040)	(0.020)
ln_INFL	-0.010	-0.017	-0.299*	0.005	0.005	-0.025
	(0.014)	(0.015)	(0.148)	(0.010)	(0.010)	(0.026)
ln_UNEMP	0.050	0.051	0.025	0.018	0.018	-0.001
	(0.037)	(0.037)	(0.034)	(0.018)	(0.018)	(0.016)
ln_IND	0.209*	0.232**	0.244***	0.163**	0.163**	0.179***
	(0.101)	(0.103)	(0.074)	(0.076)	(0.076)	(0.058)
ln_SERV	0.294*	0.326*	0.493***	0.097	0.097	0.153*
	(0.165)	(0.164)	(0.111)	(0.138)	(0.138)	(0.075)
ln_BROADTEL	0.111**	0.117**	0.053	0.029	0.029	0.090***
	(0.045)	(0.045)	(0.042)	(0.036)	(0.036)	(0.031)
OECD	0.198***	0.216***	0.145***			
	(0.037)	(0.041)	(0.037)			
Area dummies	Yes	Yes	Yes	No	No	No
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	550	550	350	550	550	350
Number of countries	25	25	25	25	25	25
R^2	0.848	0.844	0.909	0.323	0.323	0.473
Mean VIF	2.86	2.79	3.82			

Cluster-robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3.9 Inward FDI and quality of institutions in transition economies: SYS-GMM

Dep var: ln_QGOV *Transition economies*	(1)	(2)	(3)
ln_QGOV_{t-1}	0.890***	0.844***	0.788***
	(0.045)	(0.035)	(0.055)
ln_RFDI	0.000		
	(0.001)		
ln_FDI/GDP		0.004*	
		(0.002)	
ln_GRFDI			0.032***
			(0.009)
ln_POP	-0.001	-0.006	-0.076***
	(0.013)	(0.014)	(0.027)
ln_DENS	0.015	0.021*	0.019
	(0.012)	(0.012)	(0.024)
ln_TRADE	0.013	0.014	-0.022
	(0.016)	(0.013)	(0.024)
INFL	0.001	0.001	0.023
	(0.003)	(0.003)	(0.038)
ln_UNEMP	0.026***	0.017**	0.024***
	(0.007)	(0.008)	(0.009)
ln_SERV	0.066*	0.071*	-0.004
	(0.038)	(0.038)	(0.053)
ln_IND	0.054**	0.059**	0.060*
	(0.027)	(0.026)	(0.033)
ln_BROADTEL	0.018	0.018	-0.002
	(0.014)	(0.013)	(0.019)
OECD	0.007	0.014	0.016
	(0.008)	(0.009)	(0.016)
Area dummies	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Number of observations	525	525	350
Number of countries	25	25	25
Number of instruments	128	128	85
AR (1)	0.0001	0.0001	0.0001
AR (2)	0.8447	0.6925	0.2987
Sargan	0.0042	0.000	0.0013

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3.10 Inward FDI and quality of institutions in developing countries: pooled OLS and FE

Dep var: ln_QGOV	(1)	(2)	(3)	(4)	(5)	(6)
Developing countries	Pooled OLS	Pooled OLS	Pooled OLS	FE	FE	FE
ln_RFDI	0.014***			0.005***		
	(0.004)			(0.002)		
ln_FDI/GDP		0.020***			0.007*	
		(0.007)			(0.004)	
ln_GRFDI			0.090***			0.033***
			(0.016)			(0.007)
ln_POP	-0.039***	-0.026**	-0.104***	-0.263	-0.211	-1.510***
	(0.013)	(0.013)	(0.018)	(0.412)	(0.421)	(0.449)
ln_DENS	-0.001	-0.001	-0.002	0.308	0.241	1.442***
	(0.010)	(0.010)	(0.012)	(0.431)	(0.440)	(0.515)
ln_TRADE	0.018	0.013	-0.033	0.002	-0.012	-0.042
	(0.039)	(0.039)	(0.045)	(0.023)	(0.025)	(0.027)
ln_INFL	-0.090	-0.114	-0.230*	-0.053*	-0.063**	-0.064**
	(0.073)	(0.074)	(0.123)	(0.027)	(0.029)	(0.026)
ln_UNEMP	-0.032**	-0.037**	-0.026	0.001	0.004	-0.015
	(0.016)	(0.016)	(0.021)	(0.015)	(0.015)	(0.014)
ln_IND	-0.016	-0.000	-0.023	0.003	0.006	0.056
	(0.042)	(0.040)	(0.050)	(0.043)	(0.045)	(0.040)
ln_SERV	0.156**	0.187**	0.149	0.040	0.033	0.061
	(0.072)	(0.073)	(0.093)	(0.053)	(0.057)	(0.053)
ln_BROADTEL	0.061***	0.066***	0.024	-0.001	0.004	0.005
	(0.018)	(0.018)	(0.019)	(0.009)	(0.010)	(0.010)
OECD	0.109**	0.123**	0.147***			
	(0.047)	(0.047)	(0.051)			
Area dummies	Yes	Yes	Yes	No	No	No
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	1694	1694	1078	1694	1694	1078
Number of countries	77	77	77	77	77	77
R^2	0.569	0.567	0.648	0.106	0.091	0.178
Mean VIF	2.98	3.00	3.49			

Cluster-robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table 3.11 Inward FDI and quality of institutions in developing countries: SYS-GMM

Dep var: ln_QGOV *Developing countries*	(1)	(2)	(3)
ln_QGOV_{t-1}	0.936***	0.939***	0.810***
	(0.033)	(0.041)	(0.064)
ln_RFDI	0.005***		
	(0.002)		
ln_FDI/GDP		0.003°°°	
		(0.002)	
ln_GRFDI			0.024***
			(0.009)
ln_POP	-0.016**	-0.021**	-0.050***
	(0.007)	(0.009)	(0.014)
ln_DENS	-0.007	0.001	0.017
	(0.008)	(0.010)	(0.012)
ln_TRADE	-0.032***	-0.032***	-0.037***
	(0.012)	(0.012)	(0.014)
INFL	-0.026***	-0.025***	-0.017
	(0.009)	(0.009)	(0.012)
ln_UNEMP	-0.007	-0.008	0.004
	(0.005)	(0.006)	(0.008)
ln_SERV	0.026	0.013	0.027
	(0.024)	(0.023)	(0.028)
ln_IND	0.031**	0.026**	0.029
	(0.016)	(0.013)	(0.018)
ln_BROADTEL	-0.003	0.001	0.004
	(0.005)	(0.006)	(0.007)
OECD	0.016	0.011	-0.003
	(0.026)	(0.024)	(0.040)
Area dummies	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes
Number of observations	1,617	1,617	1,078
Number of countries	77	77	77
Number of instruments	129	129	85
AR (1)	0.000	0.000	0.000
AR (2)	0.2984	0.2572	0.4469
Sargan	0.000	0.000	0.0001

Robust standard errors in parentheses.* $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$, °°°*p<0.01* with ln_FDI/POP.

Table 3.12 FDI and the six dimensions of institutional quality: summary of FDI estimates

	Transition economies			**Developing economies**		
Voice & Accountability	(1)Pooled OLS	(2)FE	(3)SYS-GMM	(4)Pooled OLS	(5)FE	(6)SYS-GMM
ln_RFDI	0.019***	0.001	0.003	0.010**	0.004***	-0.001
	(0.006)	(0.002)	(0.002)	(0.004)	(0.002)	(0.003)
ln_FDI/GDP	0.023*	0.001	0.001°°	0.01	-0.001	-0.009
	(0.013)	(0.004)	(0.003)	(0.01)	(0.005)	(0.005)
ln_GRFDI	0.058	0.003	0.027**	0.057**	0.014	0.014
	(0.036)	(0.01)	(0.013)	(0.023)	(0.011)	(0.017)
Political Stability	Pooled OLS	FE	SYS-GMM	Pooled OLS	FE	SYS-GMM
ln_RFDI	0.014**	0.002	-0.004	0.011*	0.007*	0.013**
	(0.006)	(0.003)	(0.004)	(0.006)	(0.004)	(0.006)
ln_FDI/GDP	0.028*	0.005	0.013	0.019	0.004	0.013°°°
	(0.014)	(0.008)	(0.015)	(0.013)	(0.008)	(0.011)
ln_GRFDI	0.051***	0.058**	0.091*	0.088***	0.074***	0.071*
	(0.015)	(0.024)	(0.051)	(0.012)	(0.019)	(0.040)
Government Effectiveness	Pooled OLS	FE	SYS-GMM	Pooled OLS	FE	SYS-GMM
ln_RFDI	0.010***	0.000	0.001	0.014***	0.004**	0.001
	(0.004)	(0.001)	(0.002)	(0.003)	(0.002)	(0.002)
ln_FDI/GDP	0.012	0.000	0.001°°°	0.017**	0.006	0.003°°
	(0.008)	(0.004)	(0.004)	(0.006)	(0.004)	(0.002)
ln_GRFDI	0.054***	0.007	0.016	0.054***	0.023***	0.019*
	(0.011)	(0.015)	(0.016)	(0.011)	(0.007)	(0.011)
Regulatory Quality	Pooled OLS	FE	SYS-GMM	Pooled OLS	FE	SYS-GMM
ln_RFDI	0.019***	0.001	0.002	0.021***	0.008***	0.007**
	(0.007)	(0.002)	(0.003)	(0.005)	(0.002)	(0.003)
ln_FDI/GDP	0.023*	-0.002	0.011*	0.029***	0.015***	-0.008°°°
	(0.012)	(0.003)	(0.006)	(0.010)	(0.005)	(0.005)
ln_GRFDI	0.088***	0.026*	0.039***	0.115***	0.041***	0.033
	(0.026)	(0.015)	(0.014)	(0.02)	(0.009)	(0.021)
Rule of Law	Pooled OLS	FE	SYS-GMM	Pooled OLS	FE	SYS-GMM
ln_RFDI	0.008**	0.000	0.001	0.016***	0.007***	0.002
	(0.003)	(0.002)	(0.002)	(0.005)	(0.002)	(0.003)
ln_FDI/GDP	0.006	-0.003	-0.002	0.028***	0.014***	-0.001°°
	(0.007)	(0.003)	(0.003)	(0.009)	(0.005)	(0.003)
ln_GRFDI	0.069***	0.021**	0.046***	0.108***	0.041***	0.029**
	(0.015)	(0.01)	(0.013)	(0.021)	(0.01)	(0.012)

Control of Corruption	Pooled OLS	FE	SYS-GMM	Pooled OLS	FE	SYS-GMM
ln_RFDI	0.004	0.001	0.001	0.011***	0.003**	0.002
	(0.004)	(0.002)	(0.002)	(0.004)	(0.001)	(0.003)
ln_FDI/GDP	(0.003)	-0.002	-0.003	0.016*	0.003	0.005
	(0.005)	(0.003)	(0.002)	(0.008)	(0.004)	(0.003)
ln_GRFDI	0.067***	0.021**	0.010	0.089***	0.022***	0.005
	(0.015)	(0.008)	(0.010)	(0.017)	(0.007)	(0.011)
Area dummies	Yes	No	Yes	Yes	No	Yes
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of countries	25	25	25	77	77	77

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$; °° *p<0.05* with ln_FDI/POP, °°°*p<0.01* with ln_FDI/POP.

Note: due to space constraints, the estimates of the other regressors are not reported. Complete estimates available upon request.

Table 3.13 Inward FDI and the index of Economic Freedom (summary of FDI estimates)

	Transition economies			Developing economies		
Dep var: ln_ECFR	(1)	(2)	(3)	(4)	(5)	(6)
	Pooled OLS	FE	SYS-GMM	Pooled OLS	FE	SYS-GMM
ln_RFDI	0.009**	0.001	0.002	0.009***	0.004**	0.001
	(0.003)	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)
ln_FDI/GDP	0.005	-0.003	0.000	0.013*	0.009**	0.002°°
	(0.007)	(0.002)	(0.005)	(0.007)	(0.004)	(0.003)
ln_GRFDI	0.048***	0.020**	0.013*	0.063***	0.017***	0.025**
	(0.009)	(0.009)	(0.008)	(0.013)	(0.006)	(0.011)
Area dummies	Yes	No	Yes	Yes	No	Yes
Time dummies	Yes	Yes	Yes	Yes	Yes	Yes
Number of countries	25	25	25	77	77	77

Robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Note: due to space constraints, the estimates of the other regressors are not reported. Complete estimates available upon request.

Table 3.14 Lagged inward FDI and the quality of institutions (summary of FDI estimates)

	Transition economies		Developing economies	
	(1)	(2)	(1)	(2)
Dep var: ln_QGOV	Pooled OLS	FE	Pooled OLS	FE
One-lagged regressors				
ln_RFDI_{t-1}	0.013***	0.000	0.014***	0.006***
	(0.005)	(0.002)	(0.004)	(0.002)
ln_FDI/GDP_{t-1}	0.014	0.001*	0.018**	0.004
	(0.009)	(0.003)	(0.008)	(0.004)
ln_GRGDI_{t-1}	0.061***	0.024***	0.090***	0.004
	(0.013)	(0.007)	(0.016)	(0.004)
Two-lagged regressors				
ln_RFDI_{t-2}	0.013**	-0.001	0.014***	0.005**
	(0.006)	(0.002)	(0.004)	(0.002)
ln_FDI/GDP_{t-2}	0.015	0.002	0.016**	0.001
	(0.009)	(0.003)	(0.008)	(0.004)
ln_GRGDI_{t-2}	0.053***	0.017**	0.088***	0.018**
	(0.015)	(0.008)	(0.016)	(0.008)
Three-lagged regressors				
ln_RFDI_{t-3}	0.014**	-0.001	0.014***	0.003*
	(0.006)	(0.002)	(0.004)	(0.002)
ln_FDI/GDP_{t-3}	0.016*	0.004	0.014*	-0.001
	(0.009)	(0.003)	(0.007)	(0.004)
ln_GRGDI_{t-3}	0.052***	0.009	0.014*	0.013*
	(0.015)	(0.008)	(0.007)	(0.008)
Area dummies	Yes	No	Yes	No
Year dummies	Yes	Yes	Yes	Yes
Number of countries	525	525	77	77

Cluster-robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Note: due to space constraints, the estimates of the other regressors are not reported. Complete estimates available upon request.

Table 3.15 Cumulative FDI and the quality of institutions (summary of FDI estimates)

	OLS	Lewbel's (2012) approach
dep var: ln_QGOV[(a)] *Whole sample*	(1)	(2)
$ln\_CUMRFDI_{1995-2005}$	0.043***	0.034***
	(0.011)	(0.007)
$ln\_CUMGRFDI_{2003-2009}$	0.091***	0.063***
	(0.025)	(0.013)
$ln\_CUMRFDI_{2005-2016}$	0.036***	0.033***
	(0.012)	(0.007)
$ln\_CUMGRFDI_{2010-2016}$	0.116***	0.119***
	(0.019)	(0.012)
Area dummies	Yes	Yes
Time dummies	Yes	Yes
Number of countries	127	127

Cluster-robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

[(a)]$CUMRFDI_{1995-2005}$ on QGOV in 2006, $CUMRFDI_{2006-2016}$ on QGOV in 2016, $GRFDI_{2003-2009}$ on QGOV in 2010, $CUMGRFDI_{2010-2016}$ on QGOV in 2016.

Note: due to space constraints, the estimates of the other regressors are not reported. Complete estimates provided in the Appendix (Table A.3.3).

Figure 3.1 Quality of institutions from 1995 to 2016

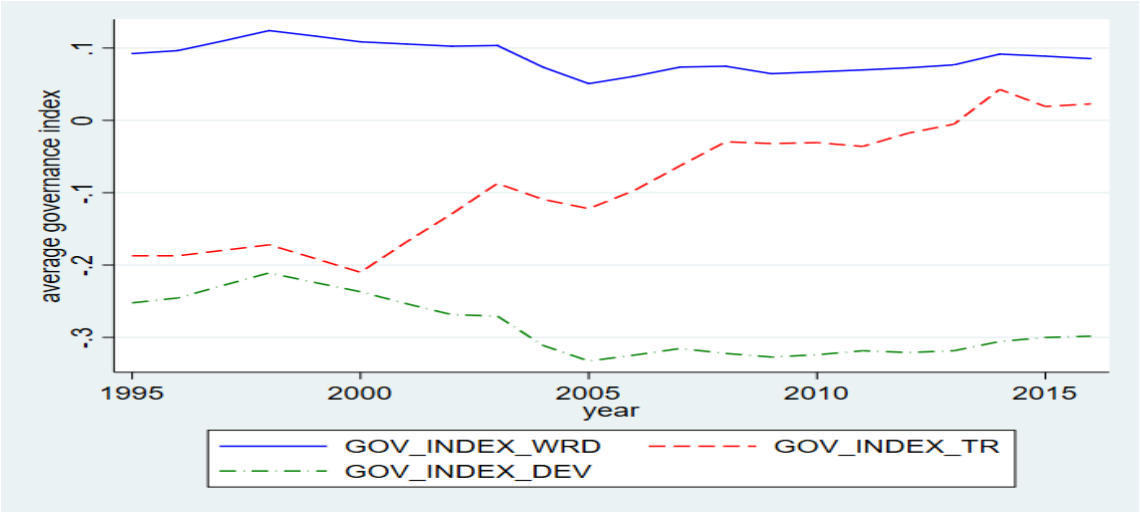
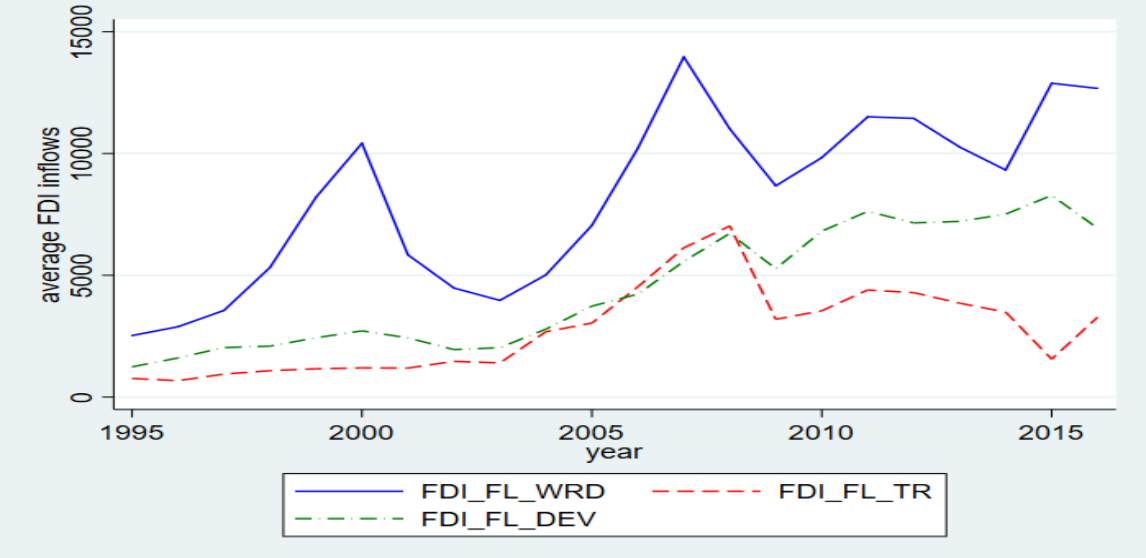


Figure 3.2 FDI inflows from 1995 to 2016



Appendix

Table A.3.1 List of countries

advanced countries	transition economies	developing economies		
Australia	Albania	Algeria	Gambia	Morocco
Austria	Armenia	Argentina	Ghana	Mozambique
Belgium	Azerbaijan	Bahrain	Guatemala	Namibia
Canada	Belarus	Bangladesh	Guinea	Nepal
Cyprus	Bosnia and Herzegovina	Barbados	Guyana	Nicaragua
Denmark	Bulgaria	Belize	Honduras	Nigeria
Finland	Croatia	Benin	Hong Kong	Pakistan
France	Czech Republic	Bhutan	India	Panama
Germany	Estonia	Bolivia	Indonesia	Paraguay
Greece	Georgia	Botswana	Iran	Peru
Iceland	Hungary	Brazil	Jamaica	Philippines
Ireland	Kazakhstan	Burkina Faso	Jordan	Qatar
Italy	Kyrgyz Republic	Cabo Verde	Kenya	Rwanda
Japan	Latvia	Cambodia	Korea, Rep.	Saudi Arabia
Luxembourg	Lithuania	Cameroon	Kuwait	Senegal
Malta	Macedonia	Chad	Laos	South Africa
Netherlands	Moldova	Chile	Lebanon	Sri Lanka
New Zealand	Poland	China	Lesotho	Tanzania
Norway	Romania	Colombia	Madagascar	Thailand
Portugal	Russia	Costa Rica	Malawi	Tunisia
Spain	Slovakia	Cote d'Ivoire	Malaysia	Turkey
Sweden	Slovenia	Ecuador	Mali	Uganda
Switzerland	Tajikistan	Egypt	Mauritania	Uruguay
United Kingdom	Ukraine	El Salvador	Mexico	Venezuela
United States	Uzbekistan	Ethiopia	Mongolia	Vietnam
				Zambia
				Zimbabwe
Tot: 25	Tot: 25	Tot: 77		

Table A.3.2 Variable list

Variable name	variable description	data source
Dependent variables		
GOV_INDX	Index of governance (average of the six WGI)	World Bank's Worldwide Governance Indicators (WGI) dataset
V_ACC	Voice & Accountability	World Bank's WGI dataset
POS_ST	Political Stability	World Bank's WGI dataset
GOV_EFF	Government Effectiveness	World Bank's WGI dataset
REG_QL	Regulatory Quality	World Bank's WGI dataset
R_LAW	Rule of Law	World Bank's WGI dataset
CON_CORR	Control of Corruption	World Bank's WGI dataset
EC_INDX	Index of Economic Freedom	Heritage Foundation's Index of Economic Freedom dataset

FDI variables		
RFDI	real FDI inflows (FDI inflows in million dollars/annual GDP deflator)	United Nations' UNCTAD database (nominator) and World Bank's World Development Indicators (denominator)
FDI/GDP	FDI inflows/ host country's GDP	UNCTAD database
GRFDI	number of (announced) greenfield FDI projects	Financial Times Group's FDI Markets Dataset
Other regressors		
POP_TOT	total population	World Bank's World Development Indicators (WDI) dataset
POP_DEN	population density (people per km^2 of land area)	
TRADE_OP	trade openness (sum of imports and exports of goods and services as % of GDP)	authors' elaboration based on WDI dataset
INFL	inflation, GDP deflator (annual %)	WDI dataset
UNEMP	total unemployment (as % of total labour force)	WDI dataset
SERV	value added of services (as % of GDP)	WDI dataset
INDUS	value added of industry (as % of GDP)	WDI dataset
BROADTEL	fixed broadband subscriptions (per 100 people)+fixed telephone subscriptions (per 100 people)	authors' elaboration based on WDI dataset

UEMOA	being a member of UEMOA (Union Economique et Monétaire Ouest Africaine)	
COMESA_CFTA	being a member of COMESA (Common Market for Eastern and Southern Africa) and/or CFTA Continental Free Trade Area)	
SADC	being a member of SADC (Southern African Development Community)	
APEC	being a member of APEC (Asia-Pacific Economic Cooperation)	
UNASUR	being a member of UNASUR (Union of South American Nations)	
CACM	being a member of CACM (Central American Common Market)	
NAFTA	being a member of NAFTA (North American Free Trade Agreement)	
ASEAN	being a member of ASEAN (Association of Southeast Asian Nations)	
MERCOSUR	being a member of MERCOSUR (Mercado Común del Sur)	
EU_SCHN	being a member of the EU (European Union) and/or of the Schengen area	
OECD	being a member of the OECD (Organisation for Economic Co-operation and Development)	

A.3.3 Cumulative FDI and the quality of institutions

Dep var:ln_QGOV[(a)] *Whole sample*	(1)	(2)	(3)	(4)
ln_RFDI1995-2005	0.034***			
	(0.007)			
ln_RFDI2006-2016		0.033***		
		(0.007)		
ln_CUMGRFDI2003-2009			0.063***	
			(0.013)	
ln_CUMGRFDI2010-2016				0.119***
				(0.012)
ln_POP	-0.069***	-0.777***	-0.098***	-0.152***
	(0.009)	(0.013)	(0. 015)	(0.016)
ln_DENS	-0.011	-0.016*	0.005	0.01
	(0.007)	(0.009)	(0.007)	(0.008)
ln_TRADE	-0.039	-0.04	-0.03	-0.088**
	(0.029)	(0.036)	(0.028)	(0.036)
ln_INFL	-0.078	-0.103	-0.357*	-0.08
	(0.213)	(0.274)	(0.197)	(0.172)
ln_UNEMP	-0.034*	-0.028	-0.033**	-0.017
	(0.018)	(0.020)	(0.016)	(0.015)
ln_IND	0.071*	0.141***	0.028	0.018
	(0.028)	(0.042)	(0.038)	(0.036)
ln_SERV	0.253***	0.392***	0.344***	0.19**
	(0.078)	(0.098)	(0.090)	(0.082)
ln_BROADTEL	0.079***	0.006	0.048**	-0.003
	(0.016)	(0.02)	(0.02)	(0. 013)
OECD	0.135***	0.178***	0.194***	0.195***
	(0.033)	(0.033)	(0.290)	(0.03)
Area dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
Number of observations	127	127	127	127
Number of countries	127	127	127	127
Kleibergen-Paap rk Wald F	5.838	564.107	37.73	4013.971
J.Hansen p-value	0.724	0.182	0.042	0.071

Cluster-robust standard errors in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

a)$CUMRFDI_{1995\text{-}2005}$ on QGOV in 2006, $CUMRFDI_{2006\text{-}2016}$ on QGOV in 2016, $GRFDI_{2003\text{-}2009}$ on QGOV in 2010, $CUMGRFDI_{2010\text{-}2016}$ on QGOV in 2016.