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FDI and Corruption

Does foreign direct investment cause corruption?

Master's thesis in Political Science
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Abstract

This study examines the relationship between FDI and corruption. It innovates by using an expanded dataset, a new corruption variable and an FDI stock measure as the independent variable to estimate the effects of FDI on corruption. While previous studies have been interested in corruption as a determinant of FDI, little research has been done on the reverse relationship. The few studies that have investigated this suffer from poor sample sizes and incorrect model specifications. The present study contributes to a growing literature on the effects of international capital on domestic institutions by reversing the causal relationship and asking: *does FDI encourage corruption?* The analysis reveals a robust positive relationship between FDI and corruption. However, the substantive effects are very small. While the results support pessimistic views about the effects of multinational enterprises on corruption, the small effect may be due to a "spotlight" effect when companies start doing business in closed economies. Moreover, the effect of FDI on corruption completely disappears in the Post-Cold War period. Future studies might try to unpack these mechanisms more fully.

Sammendrag

Denne oppgaven undersøker sammenhengen mellom direkte uten-landsinvesteringer (FDI) og korrupsjon. Oppgaven innoverer ved å bruke et utvidet datasett, en ny korrupsjonsvariabel og en FDI stock variabel som uavhengig variabel for å estimere effektene av FDI på korrupsjon. Mens tidligere studier har vært interesserte i korrupsjon som en bestemmende faktor for FDI, så har lite forskning blitt gjort på det motsatte forholdet. De studiene som har utforsket dette har små utvalg og dårlig spesifiserte modeller. Denne oppgaven bidrar til en voksende litteratur om effektene av internasjonal kapital på nasjonale institusjoner ved å snu på kausalforholdet og spørre: *fører FDI til korrupsjon?* Analysen avdekker en robust og positiv sammenheng mellom FDI og korrupsjon. På den annen side er størrelsen av effekten veldig liten. Mens resultatene på den ene siden støtter pessimistiske syn på effekten av multinasjonale selskaper på korrupsjon, så kan effekten derimot være på grunn av en "spotlight" effekt når selskaper starter virksomhet i lukkede økonomier. Dessuten forsvinner effekten av FDI på korrupsjon helt i perioden etter den kalde krigen. Fremtidige studier burde forsøke å avdekke disse mekanismene ytterliggere.

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1 Introduction

In 1999, Guyana struck a deal with ExxonMobil, an international giant in the oil and gas industry, allowing the company to search for oil and gas on the Stabroek Block (OilNOW, 2018). In 2015, the company announced that it had discovered large oil reserves, totaling two billion barrels of oil (The Economist, 2017). For Guyana, a country with a population just over 750,000, this represents a massive resource wealth. The revenues from extracting these resources could play a large role in improving Guyana's infrastructure, education and health services. Certain details of the deal between the Guyanese government and the international giant raises some concerns, however. First, the country is expected to receive between 52% and 54% of the profits. This is a low return compared to similar projects, where upwards of 60% of the profits has been more common. Second, the country initially received \$18 million in a signing bonus from ExxonMobil, a sum that some critics now feel is far too low (Stabroek News, 2018). What can explain these poor negotiation outcomes between the small South American country and the international oil and gas company? One explanation is completely benign: the country, and it's leaders, do not yet know the rules of the game in the extractive industry, and have not been able to secure the kind of terms that other oil-exporting countries enjoy. Development scholars warn, however, against this type of "ignorance hypothesis" (Acemoglu and Robinson, 2012, p. 63). Another, more sinister, explanation almost suggests itself. What if ExxonMobil promised Guyanese officials great personal reward in return for favorable terms in the 1999 deal? In a country without substan-

tial natural resource revenues before today, it is doubtful that institutional practices that protect against this type of corruption has been put in place. In such an environment, it is not inconceivable that a morally flexible multinational enterprise could have seen and seized an opportunity to increase it's rate of return on its investment by buying off key government agents, such as top politicians.

The scenario outlined above is, of course, speculation. We, the public, do not know why the terms of the 1999 deal between Guyana and ExxonMobil was so favorable for the oil company. It will be up to the Guyanese people and its leaders to uncover that particular mystery. ExxonMobil does, however, have a reputation for corrupt dealings with local governments. The executive director of the Equatorial Guinean human rights nonprofit EG Justice describes how ExxonMobil allied itself with now Equatoguinean President Teodoro Obiang Ngueme Mbasogo (Alicante, 2017). The multinational hired a lobbyist to help legitimize a rigged election that Obiang overwhelmingly won. ExxonMobil also partnered with a company owned by Obiang in order to siphon profits directly to Obiang himself. A US Senate report reveals these and a myriad other examples of corrupt dealings between ExxonMobil and Obiang (O'brien, 2004). These two cases illustrate the dynamic that can arise between multinational enterprises (MNEs) and the countries they invest in. In many cases, the MNE is a large corporation with vast resources, while the host country is poor both in terms of capital and institutional safeguards against corruption. In such scenarios, MNEs may have both the motives and means to influence decision making outcomes in their favor. Simply speaking, MNEs may engage in corruption in order to reap larger profits. Even

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more disturbingly, we might imagine, MNEs may make host countries more corrupt as a result of their dealings. This type of conjecture is part of a much larger debate currently being undertaken in all levels of society. Is globalization good for the world? Specifically, is it good for poor countries? What effects does the free flow of international capital have on domestic politics? Does trade encourage growth? In an attempt to contribute to a broad literature that seeks to uncover these types of dynamics, this study focuses on the relationship between foreign direct investment (FDI) and corruption. For the sake of parsimony, the research question can be posed as a simple empirical question: does foreign direct investment lead to corruption?

While the research question posed is empirical, there is a broad theoretical literature that provides expectations for what effects FDI might have on host countries. In chapter 2 I review this literature in order to give some context for the hypotheses that will guide the analysis. In that chapter, I also review a selection of empirical studies done on the relationship between FDI and various institutional variables. In the empirical literature, research on the determinants of FDI has been predominant. Research on the reverse relationship - that is, the effects of FDI - is comparatively sparse. Specifically, few studies have looked at the role of FDI in encouraging or discouraging corruption. This study thus hopes to fill a gap in this empirical literature by contributing a new take on the empirics. This study improves on the existing literature on the effect of FDI on corruption in three major ways. First, this study employs data containing a wider range of countries and a longer time period than previous research, allowing us to more confidently estimate the relationship between FDI and corruption. Second, the corruption variable

employed in this study comes from the V-Dem project, using advanced probabilistic measurement models in order to reliably and accurately aggregate expert coder assessments on countries' corruption levels (Coppedge et al., 2017b). Finally, this study follows a methodological contribution provided by de Soysa (2003) by using a FDI stock variable that better captures the historical weight of foreign investment in a country's economy compared to yearly FDI inflows. Simply put, flows are excessively volatile, while stock is not. This improvement on previous model specifications allows us to better estimate the effect of FDI on host countries, because we can now see the total amount of international capital in a country. Chapter 3 elaborates on the methodological choices taken in this study, and the estimation strategy used.

Finally, chapter 4 reports the results of the analysis. The analysis finds a robust and statistically significant relationship between FDI stock and political corruption. However, in the model specifications presented here, FDI stock has a very weak role in determining political corruption, raising concerns about current methodology in estimating the effects of FDI on corruption specifically, and institutional variables more generally. Chapter 5 discusses some implications of these results before concluding the study.

2 Theory

This chapter presents theory on foreign direct investment and corruption, and lays out theory that may help us to understand the relationship between the two. The first section gives the motivation for the present study. It comes from an interest in development, and a wish to understand the factors that hinder and the factors that help it. To this end, this section will describe Acemoglu and Robinson's idea of inclusive and extractive institutions (Acemoglu and Robinson, 2012, p. 79). A core insight in this work is that political institutions lay the foundation for economic institutions and consequently for economic activity more broadly. This has implications for the level of economic development a country will enjoy, and who in the country will get to enjoy it. Further, this section will argue that corruption is a concept that squares with Acemoglu and Robinson's idea of extractive institutions, and can function as a proxy for measuring the extractiveness of a country's political and economic institutions.

The second section provides an introduction to foreign direct investment, and sketches a brief history of the academic literature on the subject. The section expands on this review by laying out theory that helps us to understand why multinational enterprises (MNEs) exist (that is, why do companies expand their production to other countries?). Emphasis is also laid on what considerations MNEs face when they do go abroad, and how this may affect their behavior once an investment has been placed. This section concludes by organizing the foregoing discussion into two main academic camps on the effects of FDI, in order to construct the hypotheses that will guide the

analysis.

The third section provides a review of the empirical literature on the relationship between FDI and various institutional indicators. The empirical literature on FDI has predominantly been occupied with discovering the determinants of FDI, out of a conviction that countries ought to attract it. A smaller, but still broad, literature has been interested in investigating the effects of FDI on host countries. Of this literature, only a very small amount of research appears to have been devoted to investigating the link between FDI and corruption. These studies are reviewed in order to inform the empirical analysis, and show how the present study fits within the extant empirical literature on FDI.

2.1   Development and corruption

The motivation for this study is, as has been intimated, an interest in development. Scholars interested in development have long sought to discover the determinants of economic growth. The current debate about globalization mirrors previous debates on the role of international capital in encouraging development (de Soysa, 2003, p. 26). More recently, there has emerged an understanding among development scholars that institutions matter. Academics have been interested in to what extent aspects of political institutions, such as democracy, corruption, human rights and the respect for other civil liberties interact with economic growth. Development scholars have taken an interest in the role of political institutions in predicting economic growth, alongside other, more traditional economic variables. A problem for the curi-

ous researcher, however, is the question of what type of institutions to focus on. Finding a theoretically satisfying and empirically tractable measure of "good institutions" seems to be a requisite for doing good research. It is not enough, however, to start with an idea of what good institutions entail, and investigate whether those have implications for growth. While it may be interesting to test whether one's own subjective evaluation of "good" institutions have growth implications, it is not likely to get us very far.

Rather, it is necessary to start with what we know of the determinants of economic growth, and build theory from there. It is important that we are precise in the terms we use and what we measure, and give a theoretical basis for why we use our terms. A challenge in the present study has been settling on a satisfactory measure of "good institutions". When the project settled on using political corruption, it came as a result of satisfying both the theoretical concerns outlined above, as well as methodological concerns. What follows here, then, is a discussion of the motivation behind the present study, a theoretical outline of how institutions can determine development and a defense of why I choose to focus on political corruption. In chapter 3 I discuss the methodological concerns related to using corruption as a dependent variable, and how I estimate political corruption in the analysis.

2.1.1 Why do institutions matter?

In 2013, an estimated 10.7% of the world population lived below the international poverty line. In other words, 766.6 million people lived on less than \$1.90 USD a day (World Bank, 2016, p. 4). To be sure, the number of people living in poverty has declined. Since 1990, the number of people

living under the poverty line has decreased by almost 2 billion (World Bank, 2016, p. 4). These statistics lead this author to two simultaneous intuitions. First, it appears that poverty is solvable, and that, by whatever mechanism, the problem is being solved. The second intuition is that there are still far too many people living in poverty, and that there is still a need to understand what causes poverty and how we can reduce it faster. For scholars in the West, this may be an academic and intellectual challenge. For the people living in material poverty, the problem must certainly be much more acute. Additionally, growing discontent among the world's poor is placing the responsibility for third-world poverty on the West, blaming Western governments and corporations alike for the persistence of poverty. Clearly there is a need to understand what it is that makes some countries poor and some countries rich.

Acemoglu and Robinson (2012) attempt to explain why some countries have developed into wealthy, industrialized countries, and why some see very little economic development. The authors understand the problem in terms of inclusive and extractive political and economic institutions. Inclusive institutions are those that allow and incentivize a broad cross-section of society to innovate and to apply themselves to whatever activity they are best suited for (Acemoglu and Robinson, 2012, p. 74). If people believe that working hard and innovating is likely to bear fruit, the reasoning goes, they are likely to do so. The more industrious and innovative a population is, the more development is likely to happen. Conversely, extractive institutions are institutions that either prohibit or discourage people from choosing their own jobs, from innovating or from investing their capital into other's entrepreneurship. If a

person has reason to believe that their hard work will be taken from them, they are not likely to work very hard.

The theory is conceptually fairly simple, but the authors offer myriad examples of this kind of dichotomy in real life, as well as some concrete examples of inclusive and extractive institutions. Among inclusive institutions, we can count "... secure private property, an unbiased system of law, and a provision of public services that provides a level playing field ..." (Acemoglu and Robinson, 2012, p. 74). Extractive institutions, then, are the lack of inclusive institutions. Countries where you cannot feel safe that your right to your own property will be respected, or countries where contracts are not observed are not likely to foster a culture of hard work and innovation.

One example provided by the authors is the case of North and South Korea (Acemoglu and Robinson, 2012, pp. 70-73). The 38th parallel dividing the two countries was established during the Cold War, owing to the respective occupations of the north and south parts of the Korean peninsula by the Soviet Union and the United States. The two countries make for an interesting natural experiment. The peninsula had been previously united under single governments until the start of the 20th century. The two new countries had, at the outset, similar cultures, similar languages, similar resources and geographies. We could expect the two countries to retain these similarities through the years. After all, why shouldn't North Korea be able to develop at the rate of South Korea - or vice versa? A brief look at a handful of statistics regarding the two countries today reveal that this has not been the case. The life expectancy of South Koreans was 82 years in 2016, but it was 71.7 for North Koreans. The mortality rate for infants in

South Korea in 2016 was 2.9 per 1000 live births, but it was 15.1 for North Korea (World Bank, 2018a). Acemoglu and Robinson argue that the reason the two countries have had such different outcomes in the past decades is the different economic and political regimes in place. South Korea has pursued a market economy with private property rights, and has both encouraged investment by private actors and invested public money in education (Acemoglu and Robinson, 2012, pp. 72-73). North Korea, on the other hand, has been ruled by a dictatorship that has outlawed private property and enforced a command economy. In terms of Acemoglu and Robinson's theory, South Korea has embraced inclusive institutions that encourage private investment and innovation and enable most people to take part in the economic sphere, while North Korea has chosen extractive institutions that actively discourage such activity while benefiting a protected class of elites. The citizens in South Korea can expect that the fruits of their labor are safe from expropriation; citizens of North Korea do not even own their own farm equipment.

A key point in Acemoglu and Robinson's theory is the codependency between political and economic institutions. Political institutions lay the premises for how politics are carried out. Political power can be distributed broadly or narrowly. If political power is distributed broadly, we can call the political institutions pluralistic. In the narrow case, politics are likely to be more absolutist (Acemoglu and Robinson, 2012, p. 80). Pluralistic political institutions allow a broad coalition of groups to participate in politics. In order for political institutions to be inclusive, however, it is not enough for power to be distributed. The potential for use of legitimate power also needs to be collected within the state apparatus. For Acemoglu and Robinson,

then, inclusive political institutions are characterized by a broad distribution of political power as well as a monopoly of legitimate violence. If either of these conditions are not met, the political institutions can be characterized as extractive. The main insight here is that inclusive political institutions reproduce inclusive economic institutions, which again reinforce the inclusive political institutions. Extractive political and economic institutions are similarly mutually reinforcing (Acemoglu and Robinson, 2012, p. 81). The logic is intuitive: in a society with extractive political institutions, an absolutist leader is likely to produce economic institutions that benefit himself and his own narrow interest group. Those extractive economic institutions, which limit the economic freedom of other groups and their prosperity, are likely to cement the political power of the leading group and thus the extractive political institutions they support.

A similar line of reasoning can be found in Bueno de Mesquita and Smith (2011). This book provides an analysis for understanding the motivations and actions of political leaders. Here, politics is simply considered a tool for leaders to gain and retain political power. The insight provided here is that even dictators need support in order to rule. The winning coalition is the smallest group a leader needs in order to retain their power (Bueno de Mesquita and Smith, 2011, p. 5). In countries with extractive institutions, this group can be small compared to the general population, but the leader is no less dependent on this group. By the rules of ruling, set out by Bueno de Mesquita and Smith (2011, pp. 17-19), a leader needs to keep a small winning coalition and ensure that this coalition is paid well enough to stay loyal and keep the leader in power. Even more critically, the leader has no incentive

to distribute wealth from the winning coalition to the general population, lest he run the risk of losing loyalty from his coalition. This theory demonstrates how extractive political institutions are likely to produce extractive economic institutions. It also shows that extractive economic institutions can be used to preserve extractive political institutions. A final point provided by Acemoglu and Robinson (2012, p. 82) is that even in the case of a violent power transition in a country with extractive economic and political institutions, those institutions are likely to be reproduced. The logic that guides governance for the dictator remain unchanged for the new regime. When a different party takes control, it inherits the tools for self-enrichment, and is likely to maintain the status quo by preserving the extractive economic institutions. It thus appears that extractive political institutions and extractive economic institutions go hand in hand. Similarly, inclusive political institutions are likely to produce inclusive economic institutions. When power is distributed broadly, it is difficult for any single group to structure the economy such that it benefits only that group. When economic opportunity is distributed broadly, resources are similarly more equally distributed, ensuring no single group can easily seize political power (Acemoglu and Robinson, 2012, p. 82).

The theory laid out above suggests that political institutions matter. Political institutions dictate the rules of the economy, which have broad implications for economic growth for a country in general, and for the personal prosperity of each private citizen in particular. There also appears to be a self-reinforcing relationship between political and economic institutions. For the optimist, this seems like a hopeful message: if we can encourage growth,

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we may be able to promote inclusive political institutions in dictatorships and autocracies across the world. For the pessimist, the theory implies that promoting development under oppressive regimes is a fool's errand. Regardless of one's disposition, curiosity and hope must surely oblige us to investigate in what ways we can aspire to influence the outcome of poor countries.

2.1.2 Corruption as an extractive institution

It appears that institutions are important for development. If a country's economic and political institutions enable and encourage most people to put their skills to the best use, it seems reasonable to expect that country to see more development than a country that discourages or proscribes such activity. A development researcher faced with this insight might come to two conclusions. First, if the theory bears out and it can be shown that inclusive institutions are a prerequisite for development and economic growth, it becomes essential to understand how inclusive institutions are made and maintained. As a corollary to this, the empirically minded might start asking how we can best measure this concept. While Acemoglu and Robinson's theory is conceptually simple, it is not clear how to best measure it in reality. One fruitful way to approach the problem of measuring a country's institutions' inclusiveness (or extractiveness) may be to look at corruption. In the following, I show how corruption in the public sphere (or political corruption) is a good measure of Acemoglu and Robinson's understanding of inclusive and extractive institutions.

First, it is necessary to explain what is meant by corruption. In the present study, I choose to focus on corruption in the public sphere, or political

corruption. Vannucci and della Porta (1999, pp. 16-18) provide a conceptual scheme for understanding political corruption. Corruption is conventionally understood as the misuse of some position or office for private gain. More formally, however, corruption can be thought of in terms of a relationship between three parties. First, the agent is a person in possession of some position that grants them access to resources and a certain amount of discretion in how to use them, along with a set of rules for how they are to be spent. The second party is the principal, who the agent is acting on behalf of. Third, there is a third party that the agent acts in the interest of, against the interests of the principal and in return for some sort of reward from the third party. For Vannucci and della Porta, then, in order for corruption to have taken place, there must have been an exchange of services and rewards between an agent and a third party against the interest of a principal. In a democracy, political corruption easily fits into this scheme. We can take the agent to be a bureaucrat, politician or anyone that holds some sort of public office with access to public funds, and discretion in how to spend those funds. The principal is the public, on whose behalf bureaucrats and politicians act. The third party is again someone that induces the bureaucrat or politician to misappropriate funds or grant some favor in return for some reward. In less technical terms, a corrupt bureaucrat or official may be incentivized to favor policies that benefit powerful patrons, rather than the public that they are nominally meant to serve.

In this conception of corruption, the corrupt act is by definition an illegal act. The corrupt exchange is thought of as a violation of a contract between the agent and the principal (Vannucci and della Porta, 1999, p. 16). This

is not a controversial understanding of corruption - the authors provide a thorough literature tracing this concept back to the 1930s (Vannucci and della Porta, 1999, p. 30). For the purposes of the present study, it is enough to take corruption as being the misuse of a public office for personal gain. Specifically, the breach of contract between the agent and the principal is theoretically relevant. To demonstrate this, I return to Acemoglu and Robinson's concept of inclusive institutions. Consider the characteristics: inclusive institutions have protections of private property, a fair system of law, public services that ensure equal access to marketplaces and contracts, and a way for people to start their own businesses and choose their own careers (Acemoglu and Robinson, 2012, pp. 74-75). Corruption undermines this ideal. Corruption in the executive can threaten private property rights if a minister can be made to expropriate the land, assets or capital of a third party's competitor. Corruption in the judiciary may erode the rule of law if a judge can be bribed to rule in a third party's favor. Corruption in the legislature can prevent equal access to marketplaces or contract enforcement if an industry group can pay off enough politicians to have their own interests protected through law. In short, corruption is a threat to inclusive institutions because it removes the guarantee that hard work, innovation and entrepreneurship is going to lead to personal prosperity. While the lack of corruption is certainly no guarantee that inclusive institutions are in place, the presence of corruption is surely a sign that a country's institutions are not inclusive.

Corruption thus seems to be a concept that squares with Acemoglu and Robinson's understanding of extractive institutions. If we believe that inclusive institutions promote development and economic growth, and that

corruption is inimical to inclusive institutions, it appears that one potential path to promoting development may be to limit corruption. The next question must be, then, what is it that causes corruption? At this point, the curious researcher just has to choose a theoretically interesting and empirically relevant phenomenon to investigate, and we may be a step closer to understanding the mechanics of development. In the next section, I discuss one potential source of corruption, and develop hypotheses that we can use to test whether it is.

2.2 Foreign Direct Investment

Foreign direct investment is, broadly defined, those investments that are made across borders and where the investor has some amount of direct control over the foreign affiliate and a fairly long time horizon for the investment. Mergers, acquisitions and greenfield investments are good examples of FDI. The UNCTAD places a threshold of 10% or higher ownership over a foreign asset for the investment to be properly considered FDI (UNCTAD, 2017). FDI can be contrasted with foreign portfolio investments (FPI), which do not require the investor to have any kind of direct control over the foreign asset.
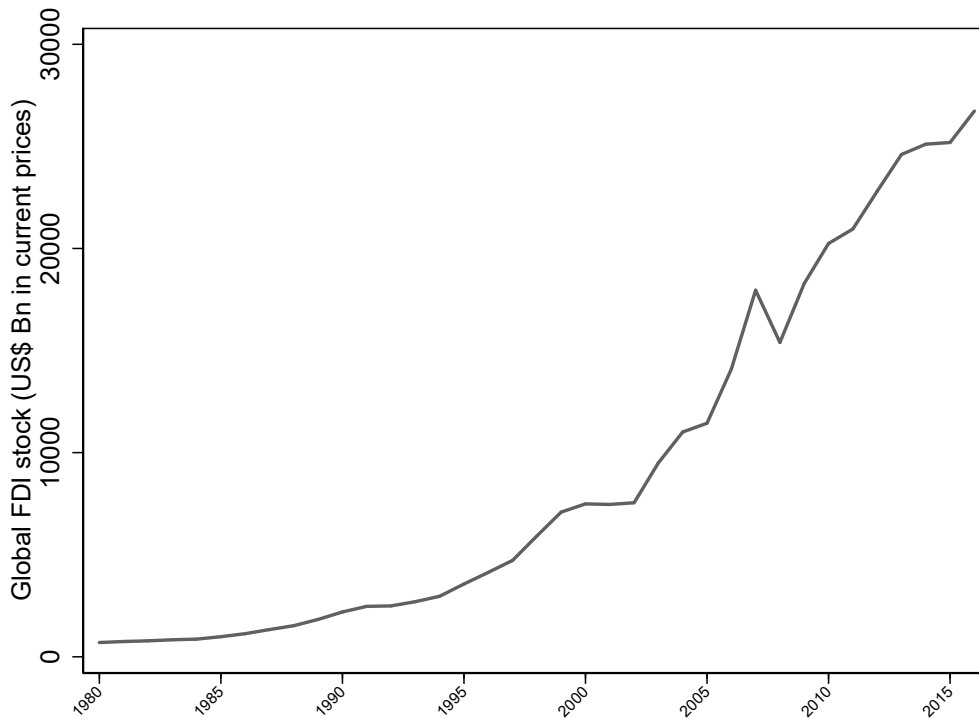
Figure 1: The evolution of global FDI stock (1980-2016)

FDI thus represents a type of international capital flow that is associated with active ownership and control by multinational enterprises. The concept can essentially serve as a proxy for the presence of foreign MNEs, and the 'size' of that presence in terms of capital. FDI should therefore be a particularly interesting phenomenon to scholars that wish to understand the effects of the presence and actions of MNEs in their investment destinations. Additionally, FDI represents a big part of the international economy. In 2016, global FDI stock was over \$26 trillion in current prices. Figure 1 shows the large increase in FDI stock over the last four decades. Given the large increase of this type of international capital, it becomes more and more critical to understand the effects this type of investment has on host countries.

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In the present study, we are interested in whether FDI leads to corruption. In developing countries, FDI can represent a large piece of the overall economic activity. There may be reasons to expect FDI to have a particularly strong role in either enabling or discouraging political corruption. To show this, this section provides an overview of theory that help us understand the motivations of MNEs, and their priorities in their investment destinations.

2.2.1 A brief history of FDI scholarship

The scholarship on the determinants and effects of FDI has its roots in international business literature. The first systematic effort to understand the existence of multinational enterprises can be attributed to Hymer (1960). In his dissertation, Hymer is more generally interested in all cross-border activities of firms, regardless of ownership or financing patterns (Dunning, 2009, p. 40). In other words, Hymer is not interested in FDI *per se*, but rather in all international firm activity. This early research viewed such activities in the light of entry barriers protecting certain industries and by extension the firms in those industries. This insight refuted prevailing theory that explained the existence of MNEs in terms of international differences in interest rates (Hennart, 2009, p. 127). Hymer showed that these theories are unsatisfactory, because they cannot explain why FDI is undertaken by MNEs, and not for instance banks. Since MNEs seek direct control over foreign operations, and are not simply content with formal ownership, there must be other reasons why MNEs go abroad. Hymer chose instead to focus on aspects of the firm, rather than national factors. Hymer described the existence of MNEs as a way to reduce losses incurred due to competition

in monopolized industries (Hennart, 2009, p. 127). If a foreign firm enters a local industry that has previously been dominated by a local monopoly, both firms stand to lose by competing with each other. A merger of the firms, or an acquisition of the local firm by the foreign firm, would however preserve the monopoly and ensure larger profits. By the same token, competition could be avoided altogether by opening a green-field venture abroad and thus preventing competitors from emerging in the first place (Hennart, 2009, p. 128).

Another early contribution to this literature is Vernon (1966). Vernon's approach was to explain MNE activity in terms of locational factors of both the origin and host countries of MNEs. To this end, Vernon develops his product cycle theory. Here, MNE activity is explained in terms of national factors of the home and host countries. In the initial stages of a particular product development, these considerations may lead firms to produce in the same country as the market the product is meant to serve. One such consideration is the availability of highly educated labor. Another is the ease of communication between the firm and the specialized labor required to innovate. A third is responsiveness to market wants, which is determined both by proximity to the market and the level of demand in the market determined by national income - that is, higher incomes leads to higher demands. Vernon, who wrote about US firms, argued that because of these three considerations, firms in the United States were likely to develop new products in the local US market (Vernon, 1966, pp. 191-193). The product cycle theory goes on to explain, however, that as a product matures and becomes more standardized, production may be shifted away from the original country (Dunning, 2009,

p. 41). At this stage, considerations such as labor and input costs become more important. Additionally, markets elsewhere may start demanding the new product. Vernon argues that these considerations may lead producers to move production overseas in the later stages of product development, in order to capitalize on lower production costs and to serve foreign markets (Vernon, 1966, pp. 196-197). The product cycle theory thus offers an explanation why certain MNEs choose to outsource operations to other countries. In contrast with Hymer, however, this theory is based on locational factors rather than firm specific factors.

In the 1970s, scholars began to view MNEs (and FDI in particular) as a market-replacing phenomenon. In this perspective, MNEs are a way to internalize cross-border transactions in order to overcome transaction costs associated with doing business at arms-length across borders (Dunning, 2009, p. 43). This type of internalization theory has been formulated by, among others, Hennart (1982) and in Rugman (1981). These theories are also known as transaction cost theories. The common thread in these theories is the role of certain market failures in incentivizing MNEs to internalize cross-border transactions. In this tradition, firms go abroad when they are more efficient at organizing cross-border interdependencies than markets (Hennart, 2009, p. 130). This type of theory thus views MNEs as a specific mode of organizing international production, and as a contrast to international trade.

2.2.2 The OLI paradigm

An important development in FDI scholarship was the inception of the eclectic theory of MNE activity by John H. Dunning (1977). The eclec-

tic paradigm (or the OLI paradigm) integrates the various explanations of MNE activity by casting the investment decision in terms of three main categories of advantages. The logic is simple; there are certain costs to operating abroad, such as communication difficulties and having to adapt to a new legal system. At the same time, local firms do not have to pay these costs, because they are domestic firms and thus naturally integrated into the local economy. Therefore, MNEs must have certain advantages that can compensate for these additional costs, so that going abroad can be worthwhile in the first place. First, a firm may have certain advantages - usually called firm specific advantages - that allows it to operate more efficiently than its competitors abroad. These are simply put the competitive advantages that a firm may have against its competitors. For instance, a company may have a certain technology that is as yet unavailable to the competition, and that enables it to produce more cheaply or produce higher quality products, or it may enjoy a high level of positive brand perception. Second, there may be certain location specific advantages that may induce a firm to go abroad. These include economic advantages, such as cost of production factors, but also cultural and political advantages such as political stability, openness to foreign enterprise and language. Finally, there may be certain internalization advantages to going abroad. In cases where the firm specific advantages of a company are tied to specific production techniques or skills, a firm may be reluctant to license production to a foreign partner. This is particularly the case in countries with low levels of intellectual property rights. In such cases, the firm may choose to acquire a local producer, or simply start an operation in the host country directly in order to avoid the risks associated

with arms-length transactions.

The OLI paradigm thus provides three broad categories of theoretical variables that affect MNE investment decisions. The common thread in this paradigm is the idea that MNEs pursue FDI as a deliberate business strategy, and will not engage in FDI unless the firm believes that it will be profitable. The agency and rationality of the MNE is thus a core part of this paradigm. As the research literature on the determinants of FDI show, FDI is sensitive to a number of locational factors such as democracy (Busse, 2003; de Soysa, 2003), corruption (Al-Sadig, 2009; Habib and Zurawicki, 2002) and various other institutional variables (Daude and Stein, 2007). In order to answer the research question this thesis poses, however, it is not sufficient to know where FDI goes in the first place. Rather, we need to understand the motivations of FDI once an investment has been placed. The act of investing in a foreign country faces the MNE with a different set of considerations than those leading up to the investment decision. One way to think about this is to consider different types of FDI.

One insight of the OLI paradigm is that the advantages that an MNE will enjoy once FDI has taken place, is highly contextual and depends on a range of firm-specific and location-specific factors (Dunning, 2000, p. 164). To help us understand this complex, Dunning (2000, pp. 164-165) distinguishes four main types of FDI. First, *market-seeking* FDI is that FDI which seeks to address a demand in a certain market. Second, *resource-seeking* FDI aims to capture or gain access to either natural resources, or other valuable resources such as unskilled labor. Third, FDI may be *efficiency-seeking* and wish to capitalize on locational factors such as lower production costs or

specialized labor. Finally, FDI may be *strategic-asset-seeking* and seek to take advantage of a firm's ownership advantages. We might expect these different types of FDI to behave differently. For instance, it stands to reason that market-seeking FDI is more sensitive to consumer perceptions than, for instance, resource-seeking FDI. Similarly, resource-seeking FDI involved in capital-heavy resource extraction might be more sensitive to a potential investment destination's history of expropriating land. One main theoretical point we can take from this discussion is that FDI is a type of investment that requires the investor to be conscious of a host of contextual factors about the investment destination. It is also a type of investment that is, by necessity, strategic in choosing investment destinations that will play to the advantages of the particular firm.

The next section explores two broad academic camps that interpret this agency in at least two different ways. In section 2.4, I construct hypotheses based on this discussion, in order to prepare for the analysis.

2.2.3 Liberal and dependency theory

The academic debate about FDI closely follows the general debate about globalization. FDI is a way for international firms to exert influence and participate in economies and markets across the globe. Because of this conceptual similarity, the literature on the determinants and effects of FDI can be roughly divided into two opposing intellectual camps. On the one hand there are the neoliberals, who believe that FDI is a source of development and economic growth for developing countries. On the other there are dependency theorists (sometimes called neo-marxists) that understand FDI as

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a way for the world's rich to oppress the world's poor and enrich themselves. At the heart of both analyses is an understanding that foreign investors are rational and strategic actors. This section elaborates on this theme to show how the same basic understanding of FDI can lead to opposing predictions about the effects of FDI.

De Soysa (2003) provides a comprehensive overview over the academic camps. The neoliberal position is optimistic about the effects of foreign capital. The outlook can be summarized in four main points. First, developing countries have an abundance of unexploited land and labor, and a correspondingly low savings rate. In such countries, foreign capital has a large marginal productivity compared to more capital-rich countries (de Soysa, 2003, p. 27). According to the neoliberal view, this should ensure capital transfers from developed to developing countries, as investors seek to exploit the difference in marginal productivity rates. Second, foreign investment is seen as a way for developing countries to acquire new technology and knowledge. This view can be traced to Kuznets (1966), who thought of economic growth in the Western world as tied to the development of science and technology. FDI can thus be a boon to the developing world to the extent that it provides poor countries with technology and knowledge transfers that allow them to "catch up" to the developed countries. Third, poor countries stand to gain from international capital and open markets because it allows them to specialize their production and thus increase their productivity, following the idea of comparative advantage. Open markets and trade will also boost developing countries by giving them an opportunity to learn from interacting with the global market (de Soysa, 2003, p. 28) Finally, FDI is thought to

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bring institutional transfers to developing countries. In the same way that FDI brings with it new technology and knowledge about production processes, it can bring organizational know-how to developing countries. Such "cultural" transfers can help developing countries increase their productivity by adopting organizational principles from the developed world (de Soysa, 2003, p. 28). Due to these considerations, we should not only expect developing countries to keep pace with the developing world - we should actually expect them to "catch up" with developed countries. The dissemination of technology and knowledge transfers from developed to developing countries should occur faster than the development of new technology in developed countries, ensuring that poor countries are able to catch up and reach a level of development on par with currently developed countries (de Soysa, 2003, p. 29). Gerschenkron (1962) terms this dynamic "advantages of backwardness" to illustrate that the underdevelopment of poor countries can be an advantage in this sense.

The contrary viewpoint to the neoliberal one is often named dependency theory. This perspective is pessimistic about the effects of international capital generally, and about FDI more specifically. The name derives from one prominent theoretical tradition, namely world systems theory. This perspective can be traced back to, among others, Wallerstein (1974), who conceived of the international economy as a single capitalist system of production. In this view, there is a distinction between "core" and "periphery" countries, with core countries being wealthy, industrialized countries, and countries in the periphery being the rest - developing and poor countries. The analysis offered in this perspective is fundamentally marxist: rich countries in the

core perpetuate the poverty of the countries in the periphery, using capital as a tool of subjugation (de Soysa, 2003, p. 36). The exploitation described here can take multiple forms. For instance, nations can buy raw materials from underdeveloped nations, and sell finished products back at value added prices. Additionally, foreign capital can ally itself with local capital in order to exploit the poor in periphery countries. The structure of multinational companies can also be interpreted in this light - decisions are made in headquarters in the core countries, without regard for the interests of citizens in periphery countries (de Soysa, 2003, p. 38). This type of elite collusion between core and periphery countries are thought to create "disarticulated economies". This view can be found in Amin (1974), who attributes underdevelopment to internal disarticulation and - critically for this study - suggests that more open economies are more likely to be disarticulated (Firebaugh, 1992, p. 4). Disarticulation can be thought of as dual, unconnected economies in the same country. This can be the case in outward-looking economies where an exporting sector is highly developed, while inward-looking areas of the economy are still underdeveloped (Stokes and Anderson, 1990, p. 5). Through a combination of these mechanisms, dependency theory expects FDI to be associated with worse outcomes for developing countries. A chain of causality that illustrates this is described in de Soysa (2003, p. 39): "MNC investments →lowered economic performance/income inequality →authoritarianism →underdevelopment." The penultimate link in this chain is of particular interest to this study. Since we in this instance are interested not in development per se, but in a precursor to development, we ought to identify those mechanisms that may harm a country's

institutions.

This general skepticism towards globalization can also be found in Rodrik (1997). Rodrik argues that increased trade openness and international investment is leading to increased tensions within both developed and developing countries. International economic integration may come at the expense of social and political disintegration, Rodrik warns (Rodrik, 1997, p. 2). Rodrik points to three main sources of tension. First, openness to trade and investment create inequalities between those workers that can compete internationally and those who cannot (Rodrik, 1997, p. 4). Highly educated workers can more easily move across borders to where their skills can be best put to use, while unskilled workers most often cannot. This has the effect of lowering wages for unskilled workers in the developed world once markets open, because they are now competing with similarly unskilled labor in developing countries. Second, globalization creates competition between countries that may result in weakened institutions domestically (Rodrik, 1997, p. 5). Differences between countries in workers' rights, legal institutions and welfare provisions could conceivably leave certain countries at a disadvantage if a MNE calculates that money can be saved by moving to a country with less stringent labor rights and pension schemes. Thirdly, globalization represents a threat to the welfare state specifically (Rodrik, 1997, p. 6). As transaction costs and barriers to trade and investment lower, domestic capital is more and more likely to flee, requiring states to turn to taxing labor in order to sustain welfare services. Rodrik calls modern capital "footloose", in order to illustrate how capital more easily can cross borders than before. This leads to the classical race to the bottom, where both workers and states compete

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to be seen as attractive investment destinations to MNEs, at the expense of wages, labor rights and welfare services. Rodrik argues that these pressures, if left unchecked, risk leading to bad governance (Rodrik, 1997, p. 69). In this view, the more easily a MNE can change locations, the less likely it is to stay and attempt to negotiate terms that all parties can agree to. Since society is built on deliberation and negotiation between groups, "footloose" capital actively erodes the communities it resides in by removing the possibility for productive debate, stunting local economic and institutional growth. The more mobile the capital, apparently, the worse the outcomes for domestic institutions.

While Rodrik himself is skeptical of unfettered globalization, the outlook is not completely anti-globalization at its core. Rather, Rodrik argues for responsible globalization. However, the arguments described here are consistent with those often verbalized by opponents of globalization. The theory outlined in this chapter thus represents a brief overview over some main intellectual traditions on the effects of FDI specifically, or globalization more generally. In a field so rich with theoretical work, it can be difficult to orient oneself. Section 2.4 will therefore not choose a particular theory to test, but rather produce complementary hypotheses about the relationship between FDI and corruption based on the rough theoretical sketch provided here. First, however, section 2.3 reviews some relevant empirical work done in this field.

2.3 Empirical literature review

In addition to the theoretical work described above, there has been done a great amount of empirical research on the determinants of FDI. That is, researchers have been interested in what factors attract foreign investments. The importance of various institutional factors in attracting FDI appears to be a robust finding in this literature, and there seems to be relatively little controversy on this point. Comparatively little work has been done on the effects of FDI, however. Among the extant empirical research on the consequences of FDI, we find contradictory results. Certain researchers find that FDI has positive effects on a range of variables, while other researchers appear to find the opposite. In the following, I describe some of this broad and disparate literature. The first section gives a review of studies that have treated institutional factors as a *determinant* of FDI. The second section will look at studies that consider the *effects* of FDI. In this last section, particular attention will be given to methodology, in order to give some context to the strategy employed in the present study.

2.3.1 Institutional determinants of FDI

Several scholars have investigated the role of democracy in attracting FDI. Busse (2003), using a sample covering 69 developing countries between 1972 to 1999 finds that more democratic countries receive more FDI. Interestingly, this relationship only held for the time period after 1980. Before this point, the relationship disappears. Busse attributes this to a change in the composition of FDI over time, and suggests that this may have had an effect on the

motivation of foreign investors. Specifically, Busse attributes this effect to a shift in the structure of FDI from primary sector industries to manufacturing and services (Busse, 2003, p. 16). This insight was originally formulated by Spar (1999). In this article, Spar suggests that FDI involved in manufacturing and services are more sensitive to human rights than FDI involved in natural resource extraction because they are more visible to the public. This "spotlight" effect, Spar argues, incentivizes MNEs to be sensitive to the human rights of the countries they invest in (Spar, 1999, p. 57). If the global composition of FDI has shifted from the primary to the secondary sector, it is reasonable to assume that FDI sensitivity to host-country variables has changed as well. In another article, Spar (1998) argues that the spotlight effect may have implications for investors' sensitivity to regime type more generally, and may in fact induce investors to promote human rights in their investment destinations.

In a similar study, Li and Resnick (2003) investigate the relationship between democracy and FDI. Using a sample consisting of fifty-three countries covering the 1982-1995 period, the authors find that the positive relationship between democracy and FDI found in previous studies disappears once they control for property rights protection. Critically, Li and Resnick find that democratic institutions improve private property rights protections (Li and Resnick, 2003, p. 178). The authors use these findings to suggest that countries in the beginning of democratization processes may initially lose out on FDI inflows until private property rights protections are in place (Li and Resnick, 2003, p. 203). In a replication of this study, Jakobsen and de Soysa (2006) find different results. Using an expanded dataset and a log-

transformed FDI variable, the negative relationship between democracy and FDI disappears (Jakobsen and de Soysa, 2006, p. 384). The authors argue that the findings of Li and Resnick were simply due to a small sample size and a misspecified model. One insight provided by Jakobsen and de Soysa (2006) is that the lower prevalence of rent-seeking by domestic industries in democracies should lead democracies to be more interested in attracting FDI (Jakobsen and de Soysa, 2006, p. 384). Similarly, democracies should be more attractive to FDI as they represent smaller levels of political risk. Asiedu and Lien (2011) find that democracy attracts FDI only if the value of natural resource exports is below a critical value, echoing the arguments of Busse and Spar that sector matters.

Some studies have looked at the relationship between corruption and FDI. Most of this literature treats corruption as a determinant of FDI. What follows is a brief review of some of these analyses, before the next section describes research focusing on the reverse relationship, namely FDI as a determinant of corruption.

Using a sample covering 45 countries, Wei (2000) finds that corruption is negatively correlated with FDI. The effect found is fairly strong: if a country increased the corruption level from that of Singapore to that of Mexico, FDI would drop by a similar amount as raising the tax rate by fifty percentage points would. Habib and Zurawicki (2002) also find that corruption deters FDI, using a dataset covering 89 countries over the 1996-1998 period. The authors theorize that there are two reasons for this. First, that investors have a moral imperative to shun corrupt investment destinations. Second, that investors consider corruption an operational hazard, particularly when the in-

vestment destination is more corrupt than the home country. Al-Sadig (2009) similarly finds that corruption deters FDI, using a panel dataset covering 117 non-OECD countries during the 1984-2003 period. Additionally, Brouthers, Gao, and McNicol (2008) find that market-attractiveness can compensate for corruption for certain types of FDI, such as market- and labor-seeking FDI, but not resource-seeking FDI.

Finally, Daude and Stein (2007) explore a wide range of institutional variables to explain FDI stock. Using a sample covering 152 countries during the 1982-2002 period, the authors find that institutional variables are both statistically significant and substantially powerful in explaining FDI location (Daude and Stein, 2007, p. 341). Of particular importance are the variables unpredictable policy, excessive regulatory burden and lack of government commitment, according to this study. The authors suggest that countries that look to attract FDI ought to shore up their political institutions, in order to make themselves more attractive to investors.

2.3.2 FDI as a determinant of corruption

In this section, I will focus on research that have investigated the role of FDI in explaining corruption. Bascuñán and Tavares (2004) use FDI inflows as a measure of openness. In this study, the authors estimate the effects of FDI on corruption using the International Country Risk Guide (ICRG) corruption indicator and a sample covering the 1980-1994 time period. The full specification of the regression analysis in this study includes the variables ethno-linguistic fractionalization, oil exporter status, government expenditures, previous colony status, population size and the level of political rights

(Bascuñán and Tavares, 2004, pp. 220-221). The authors find that larger FDI inflows decrease corruption (Bascuñán and Tavares, 2004, p. 225), a result that appears to be robust to a variety of alternate specifications. The authors also report a fairly strong effect of FDI on corruption, comparing the effect to that of GDP per capita's effect on corruption.

Kwok and Tadesse (2006) also look at the relationship between FDI and corruption. In this analysis, corruption is treated as the result of FDI inflows during the 1970s, 1980s and 1990s - and the entire 1970-1997 period. The study uses an average of several Transparency International perception of corruption indices as a measure of corruption, covering the 2000-2004 time period (Kwok and Tadesse, 2006, p. 771). The controls in this analysis consist of education variables, political tradition, legal environment and GDP per capita. This study also provides a substantial theoretical contribution, using institutionalization theory to theorize the effects of FDI on corruption. Here, FDI is thought to decrease corruption through a regulatory pressure effect, a demonstration effect and a professionalization effect (Kwok and Tadesse, 2006, pp. 769-770). In the empirical analysis, the authors find that corruption levels at the end of the time period were lower in countries with high levels of FDI in past decades, supporting their initial hypothesis.

Bascuñán and Tavares (2004, p. 218) suggest that there is a lack of systematic studies of the effect of FDI on corruption. While the absence of evidence certainly does not imply the evidence of absence, this is a statement this author must wholeheartedly repeat, more than a decade later. In the large body of empirical literature on the determinants of FDI and the smaller, but still substantial, literature on the effects of FDI, there appears

to be a conspicuous dearth of empirical analyses on the effect of FDI on corruption. This is particularly conspicuous if we recall the importance of good institutions in promoting development. Apparently there is a need for solid empirical analysis. This study hopes to fill this gap.

2.4   Hypotheses

Based on the discussion above, there are different possible expectations of the effects of FDI on corruption. If we take the liberal view, we might expect FDI to reduce the level of corruption in recipient countries. Contrarily, if we take the worlds-systems perspective, we might expect FDI to lead to increased levels of corruption. More formally, these expectations can be expressed as simple hypotheses in the following manner.

H_{1a}: *FDI is positively correlated with corruption.*

Besides the generally pessimistic view of international capital provided by dependency theory, there are certain concrete theoretical mechanisms by which this can be thought to happen. Jakobsen (2012, p. 70) provides an explanation of the obsolescing bargain. This model describes the investment relationship between a MNE and a host country as a bargaining relationship in two phases. In the first phase, an MNE is considering investing in a particular destination, and the host country may try to be perceived as an attractive investment destination. This is particularly the case when the MNE is considering making a large capital investment that is difficult to move after investment, as is often the case in the natural resource industry. In order to attract investment, the host country may offer various deals, in terms of

tax rates and ownership shares - among other things (Jakobsen, 2012, p. 70). After the investment has been placed, however, the relationship changes. The MNE, which in the initial stage had most of the negotiation leverage, is now in danger of having its investment outright expropriated (in the case of dealing with unpredictable governments) or having its investment's profitability otherwise hurt due to the host government reneging on any *ex ante* agreement between the government and MNE. The MNE is in a vulnerable position, and is incentivized to protect its investment. If the investment is large enough, it may be economical for the MNE to attempt to bribe officials in order to ensure the conditions of the deal are not changed *ex post*. If the MNE has enough resources, and plays a big enough role in the economy, it is conceivable that this sort of interaction can create a tradition for political corruption when dealing with MNEs specifically, and in the government as a whole more generally.

H_{1b}: *FDI is negatively correlated with corruption.*

Spar (1998) provides us with an alternate accounting of the behavior of MNEs. FDI is sensitive to media attention. Specifically, it is sensitive to negative portrayals in the media, and accusations that hurt its image both abroad and at home. Particularly firms that are dependent on a positive brand perception are loathe to incur the wrath of consumers. These companies are likely to pay attention to what the media is saying, and perhaps even pre-emptively make sure that they behave ethically and responsibly, so that they cannot be criticized later. This is what Spar terms the "spotlight effect". The media can, by shining a "spotlight" on bad corporate behavior, induce MNEs to behave responsibly. The idea of "corporate social responsi-

bility" is a symptom of this general phenomenon: corporations desire to be seen as promoting social justice, a healthy environment and ethical business practices. It is conceivable that the fear of being shamed for engaging in corruption with governments abroad may keep MNEs from engaging in this behavior, and thus (conversely from the previous hypothesis) set an example for the host countries they invest in. In institutionalization theory, this is known as a demonstration effect (Kwok and Tadesse, 2006, p. 770). In this perspective, FDI is thought to bring institutional spillover effects in areas such as production techniques, management styles and organization. Engaging with a MNE that will not provide bribes, or being shunned repeatedly by MNEs that do not want to participate in an environment where bribes are prevalent may induce host countries to change their corrupt practices.

We may also consider a null hypothesis, allowing for the case that there is no relation between FDI and corruption:

H_{1_0}: *FDI and corruption are not correlated.*

Following the discussion of Busse (2003) and Spar (1998), we might expect FDI to have different effects depending on the sector. Specifically, we might expect the changing sectoral composition of FDI over time to lead to have different effects on corruption at different times. As the composition of FDI shifts from mainly primary sector and (natural) resource-seeking FDI to manufacturing and service-oriented sectors, we could expect the relationship between FDI and corruption to disappear. A theoretically meaningful time for such a shift may be after the Cold War, since this marks a shift in in national policies towards FDI and thus conceivably a shift in the types and composition of FDI present in the developing world. Formally, I construct

the following hypothesis:

H_2: After 1989, FDI is not correlated with corruption.

3 Methods and data

This chapter describes the strategy used to test the hypotheses developed in chapter 2. The first section presents the model specification, including descriptions of the dependent variable, the independent variable and all control variables. The second section describes challenges in correctly estimating the results, and consequently the choice of estimation method. Finally, the last section describes the robustness tests that will be employed to ensure that the results obtained in the analysis are not simply spurious.

3.1 Model specification and data

While theory certainly informs the kind of questions we *should* ask, methods restrict the kind of questions we *can* ask in empirical research. The kinds of data we have access to and the tools we have to analyze them form a methodological horizon around the researcher. It would therefore only be partially correct to say that the data used in this analysis are particularly suited to the hypotheses we wish to test. Rather, the hypotheses we will test are to a certain extent adapted to the data and tools available to us.

Regardless, the data is suitable for testing our hypotheses. This analysis employs a panel data set containing 140 countries[1] covering the 1980-2016 time period, for a total of 36 years. Because the various variables used in this analysis are collected from different sources, not all variables are covered for all years and all countries. The dataset is therefore unbalanced. This data structure enables us to test both of our hypotheses using regression

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[1]For a list of countries in the sample, see Table 9 in the appendix.

analysis. The first hypothesis, H_1, is tested by running the full model on all countries for the entire time period. This allows us to estimate whether there is a correlation between FDI and corruption for the entire time period. The second hypothesis, H_2, is tested by restricting the sample to observations after 1989. This allows us to test whether the relationship between FDI and corruption changes after this point, compared to the models using the full sample.

The following sections describe the dependent variable, independent variable and control variables. Table 1 reports descriptive statistics for the variables used in the main analysis based on the least restricted model. For descriptive statistics of all variables used in this study, see Table 10 in the appendix.

Table 1: Descriptive statistics

Variables	Mean	Std. Dev.	Min	Max	Observations
Corruption	0.583	0.246	0.0240	0.969	4,704
FDI stock per capita in current US$ (log)	5.215	2.415	-13.19	12.17	4,704
GDP per capita in constant 2010 US$ (log)	7.740	1.295	4.752	11.19	4,342
Electoral democracy (Scale: 0-1)	0.433	0.252	0.0155	0.928	4,683
Population (log)	15.91	1.720	11.06	21.04	4,655
Trade share of GDP (log)	4.209	0.623	-1.787	6.276	4,244
Natural resources exports value in 2000 US$ (log)	2.393	2.898	0	11.07	4,315
Civil war (Dummy: 0 for no conflict)	0.200	0.400	0	1	4,292
Peace years	18.45	17.96	0	68	4,292

3.1.1 Dependent variable

The dependent variable in this study is corruption. Although the concept is well developed theoretically, it is hard to capture empirically. Corruption is, by its nature, bound to hide from public view as much as it can. Though there may be objective metrics that approximate corruption, obtaining an

objective measure of corruption itself appears to be practically intractable. There are, however, certain subjective measures of corruption available for a varying coverage of countries over various time periods. The International Country Risk Guide (ICRG) provides a monthly six-point corruption measure for 140 countries (ICRG, 2018). The PRS group is a commercial enterprise aiming to sell political risk analyses to international investors, but this variable is also suitable for research purposes. Transparency International also provides a yearly corruption perceptions index (CPI), starting in 1995 (Transparency International, 2018). This measure has varying coverage throughout the reports, making the full dataset severely unbalanced. It is also not provided in an easily accessible dataset format, making data collection tedious if not challenging. The World Bank (2018a) provides a set of political variables called the Worldwide Governance Indicators, which include a corruption variable. This variable is based on 23 different corruption measures (one of which is the ICRG corruption measure), and is available for over 200 countries between the 1996-2016 period.

Another corruption measure comes from the Varieties of Democracy (V-Dem) 7.1 dataset (Coppedge et al., 2017b). It is a political corruption index which is an aggregate measure of corruption in six sectors of government (Coppedge et al., 2017a, p. 73). These include corruption in the public, executive, legislative and judicial sectors of government. First, the public corruption measure averages a public sector bribery measure and an embezzlement measure (Coppedge et al., 2017a, pp. 73-74). Second, the executive corruption index takes an average of an executive bribery and an executive embezzlement measure. Third, the legislative corruption measure indicates

whether members of the legislature misuse their positions for personal gain (Coppedge et al., 2017a, p. 187). Finally, the judicial corruption measure indicates how often the judiciary is bribed to change the outcome of judicial decisions (Coppedge et al., 2017a, p. 213). The average of these six corruption variables are taken to form the overall political corruption variable. The data covers 178 countries during the 1900-2016 period. Figure 2 shows the evolution of the sample means of both the V-Dem political corruption variable and the ICRG corruption variable. Note the different ranges of the two vertical axes. As can be seen, the political corruption variable appears more stationary than the ICRG corruption variable, which seems more responsive. The two variables have a negative correlation of 51.8%, which indicates that although they capture the same theoretical variable to some extent (the prevalence of corruption in a government, or the lack of controls against it), the variables are sufficiently different that they may capture different aspects of it.
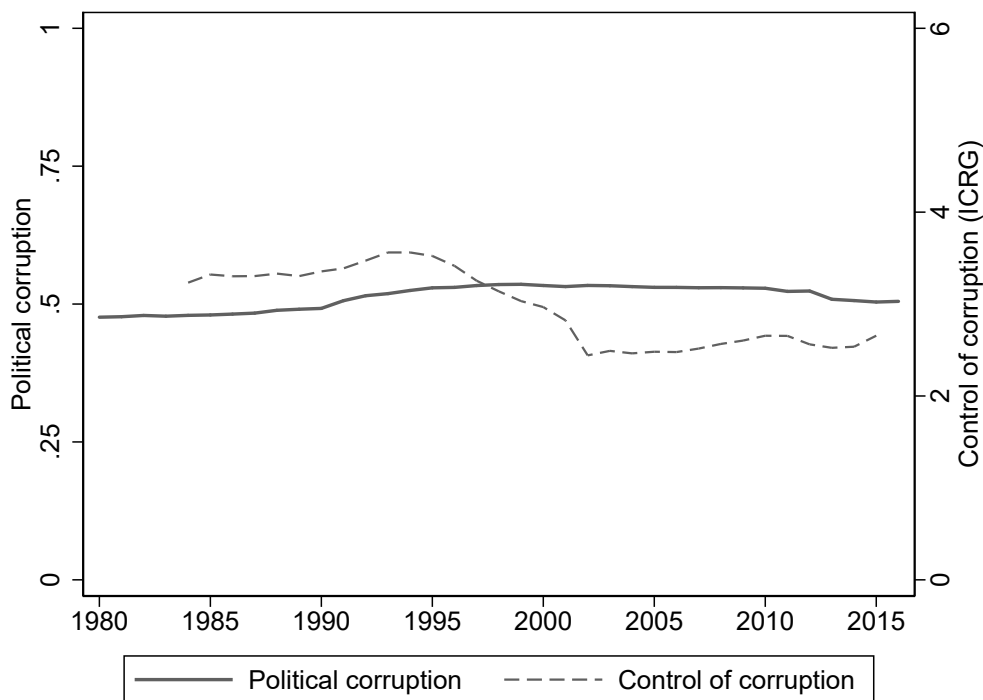
Figure 2: The evolution of political corruption and control of corruption

The V-Dem project produces various political indicators, like the political corruption scale, by aggregating expert codings by country experts. According to the organization's methodology documentation, most country experts are either residents in or nationals of the countries they evaluate, in order to ensure accuracy (Coppedge et al., 2017c, p. 16). The ratings must therefore be considered subjective evaluations, and not objective measures. The V-Dem project compensates for this by using Bayesian factor analysis to aggregate the ratings from multiple country experts for each country-year (Coppedge et al., 2017c, pp. 11,27). The measurement model used by the V-Dem project attempts to reconcile differing biases between experts in order to ensure reliability and (as far as possible) objectivity. However, even if

inter-coder variability and coder error can be adjusted with the proper measurement model, there is still the problem of subjectivity. Presumably, the coders surveyed by the V-Dem project are well informed about the countries they rate, but there is little reason to assume they have particular insider knowledge on corruption practices in a country, or even more doubtfully, that they have a complete overview over corrupt practices in all parts of government. Consequently, there is a certain risk that what is being captured in this variable is simply a general perception of corruption, imagined or otherwise. If corrupt practices are sufficiently discreet, they may simply never be captured by this variable. If that is the case, it casts doubts upon both the validity and the reliability of the data. In the first instance, it may be that this variable does not measure corruption itself, but merely the perception of corruption. In the second, it may be that the accuracy of the variable will vary wildly between countries or even within years on the same country.

Despite the methodological concerns outlined above, I use the V-Dem political corruption variable as the dependent variable for this analysis. The measurement model used in the production of this data corrects for much of the subjectivity usually feared when using this type of variable. The epistemological concerns that remain are harder to deal with, and must likely be accepted when doing research on such phenomena as corruption. Naturally, this does not mean that we can safely ignore concerns about validity, but we cannot do much about it without developing new concepts about what corruption is, and more objective ways to measure it. Such an endeavor lies outside the scope of the present study, which must make do with what is available. One final argument for using this particular data is novelty: the

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V-Dem project and its dataset are relatively new, and not much political science research has yet been done using them. This study thus presents an innovation in the field of corruption and FDI research, even if that innovation simply is applying known specifications to a new dataset. The political corruption index is used without modification in this analysis.

3.1.2 Independent variable

One problem that many statistical analyses face is the problem of specification error. Ensuring that the variables we employ both comply with the occasionally demanding assumptions of regression analysis as well as capturing our theoretical variables satisfactorily is not always possible, either because of constraints on time or availability of data. Occasionally, research can be overturned due to vigilant researchers discovering a specification error. This was the case, we can recall, in Jakobsen and de Soysa (2006) where a previous finding by Li and Resnick (2003) was cast into doubt upon log-transforming the dependent variable (in that case FDI flows). Much FDI research is also prone to another type of specification error. FDI is often used as a proxy for either the presence of MNEs, international capital or perhaps openness to the international market - among other theoretical variables. What some researchers neglect to consider is the conceptual difference between FDI flow and stock. FDI flows represent year-by-year transfers of FDI. That is, how much foreign investment entered the country in a certain year. While this may be theoretically meaningful in certain cases, it is definitely not in others.
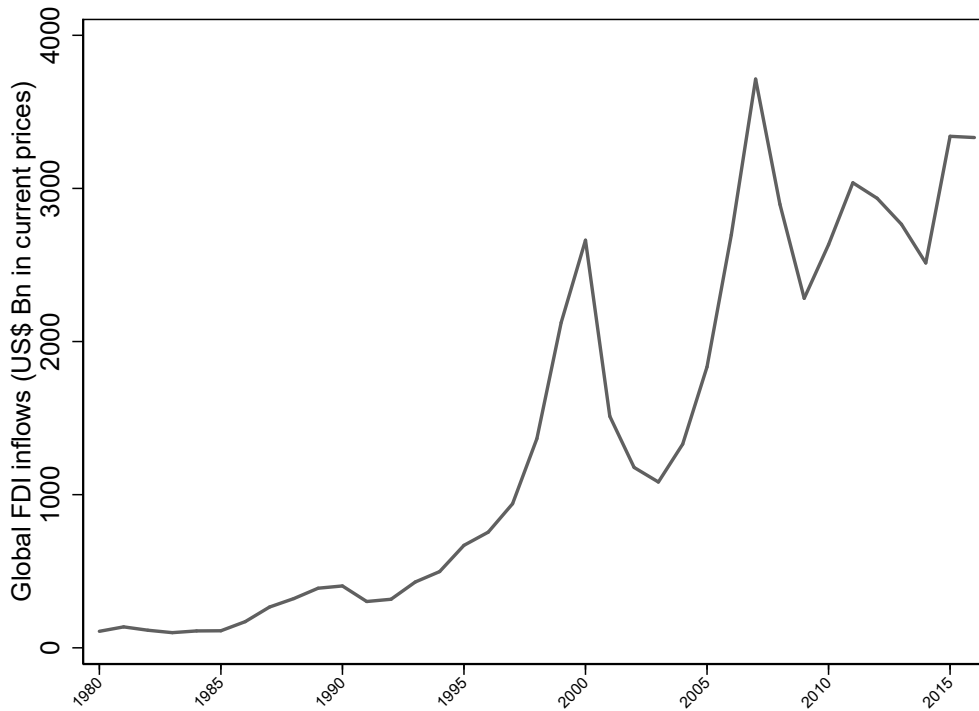
Figure 3: The evolution of global FDI inflows (1980-2016)

In the present study, we wish to investigate whether the presence of MNEs in a country's economy has implications for that country's corruption level. Conceptually, we are interested in the "historical weight" of international investment in a country. For this purpose, FDI stock is a better measure. FDI stock represents the accumulated amount of foreign investment into a country over time, and can thus give an indication of how much weight (metaphorically speaking) that FDI is likely to play in an economy. In other words, FDI stock captures MNE presence from the very early times of a country's history. Another way to think about the distinction between stock and flow is to consider the responsiveness of the two variables. Figure 3 reports the global sum of FDI inflows between 1980 and 2016. Comparing

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this figure with Figure 1, found in section 2.2, which shows the evolution of FDI stock, we can see that FDI flows are much more responsive to economic shifts than FDI stock. The sharp spikes seen around 2000 and 2007 in Figure 3 are much less pronounced in Figure 1. One reason may be this: economic downturns cause investors to invest less abroad, but are not as likely to make investors divest from existing projects. In other words, established FDI presence does not disappear as quickly as FDI flows, and is less sensitive to the international economic climate than FDI flows.

In order to measure FDI stock, I use data from the UNCTAD (2018). The UNCTAD provides FDI data on a total of 229 countries during the 1980-2016 period. This variable captures country-reported FDI stock values measured in current US dollars. This data can be expressed either as an absolute dollar value, per capita or as a share of GDP - among other possible expressions. Since we in this case are interested in those cases where FDI plays a large role in the country, we may wish to employ a measure of FDI stock that captures FDI stock relative to the size of the country. For this reason, I divide FDI stock by the population to obtain a FDI stock per capita variable. Figure 4 shows the distribution of FDI stock per capita. As can be seen, the vast majority of countries have FDI stocks per capita very close to zero. The observations beyond ~$10,000 represent only 8 countries; the observations beyond ~$50,000 only two (Iceland in 2007 and Singapore between 2005 and 2016). To account for this large skewness in the data, the FDI stock per capita is logarithmically transformed. There are no negative values on the untransformed FDI stock per capita variable, so no observations are lost when logging this variable.
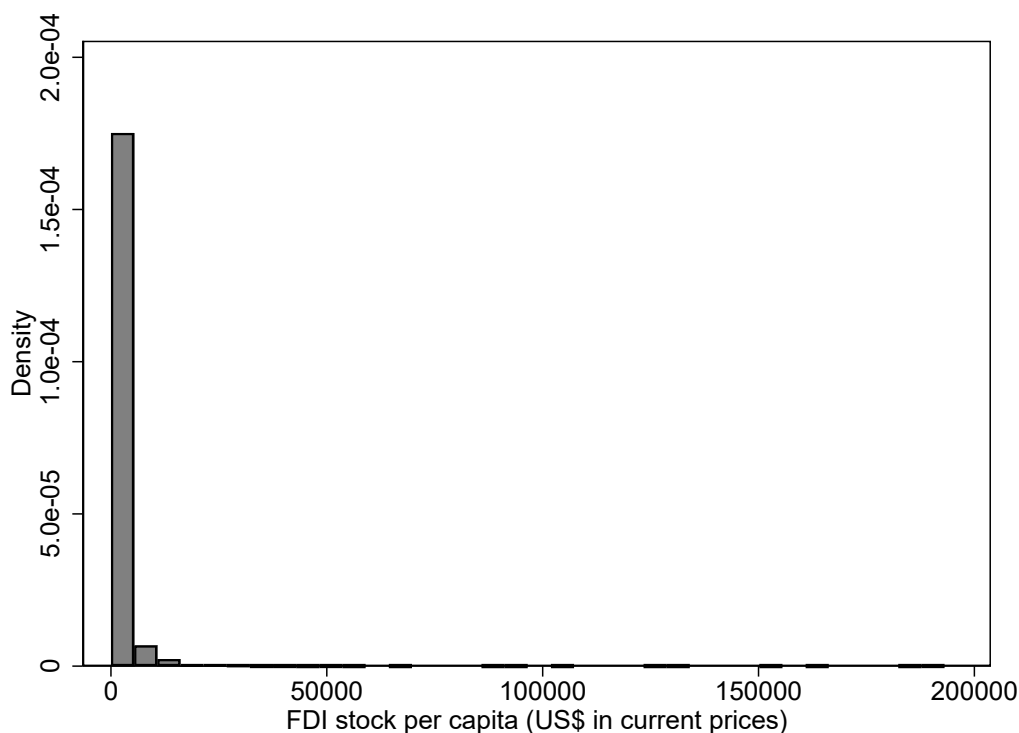
Figure 4: The distribution of FDI stock per capita

3.1.3 Control variables

While the specific linkage between FDI and corruption may be underdeveloped in the empirical literature, research on the determinants of corruption is certainly not. Many variables have been identified as significant determinants of corruption. Serra (2006) provides a sensitivity analysis that seeks to evaluate the robustness of these findings. In this study, five variables are found to be particularly determinant of corruption (Serra, 2006, p. 250). First, wealthy countries are found to be less corrupt than poor countries. Second, more democratic countries are found to be less corrupt, but only after a certain time period of higher levels of democracy. Third, countries

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with more political instability are more corrupt. Fourth, protestant countries appear to be more corrupt. Finally, countries with a colonial background are generally more corrupt.

When choosing control variables, care has to be taken not to overload the regression model. It is also necessary to consider what the goal of the regression analysis is. Do we wish to find all those variables which explain our dependent variable, or do we wish to tease out the effect of the hypothesis variable on the dependent? In this case, it is the latter. In order to best accomplish this, it is necessary to control for those variables that are thought to correlate with both the dependent and the independent variable, and not simply those variables that are known to influence the dependent variable. Achen (2005) warns against this type of practice in statistical analysis in the social sciences. While the multi-equation estimations Achen argues for are too ambitious for this study, it is worth our time to consider estimating a more conservative model than might be our first impulse. The main analysis will therefore include a total of seven control variables. In order to best gauge the effect of FDI on corruption (and the effects of the control variables on that relationship), all analyses in this study will be reported as stepwise models. Variables will be entered one by one into the regression models, allowing us to see the reaction of the hypothesis variable to the inclusion of the controls. The rest of this section describes the control variables, before the next section discusses the estimation method chosen for this analysis.

The first control variable in this analysis is GDP per capita. As we recall, Serra (2006) finds that wealth is a significant determinant of corruption. We also know that more wealthy countries receive more FDI (in fact, in 2016, the

six richest countries in terms of GDP[2] received one quarter of the global FDI flows). Bascuñán and Tavares (2004) as well as Kwok and Tadesse (2006) also control for GDP in their specifications, indicating a certain consensus in using this variable as a control. I obtain this variable from the World Bank (2018b) World Development Indicators (WDI). GDP per capita is highly skewed towards lower values, so the variable is log-transformed before being entered into the model.

The second control variable is a measure of democracy. Again, we know from Serra (2006) that democracies are likely to be less corrupt. Kwok and Tadesse (2006) also control for democracy in their specifications. Consequently, I add democracy to my specification. Although there are many democracy measures available, the most relevant for this study may be the democracy measure found in the V-Dem 7.1 dataset, *v2x_polyarchy*. This variable measures to what extent a country has electoral democracy (Coppedge et al., 2017a, p. 50). It is an aggregate of five different democracy measures, including freedom of expression, freedom of association, universal suffrage, clean elections and elected officials. The theoretical basis behind this variable is Robert A. Dahl's conception of polyarchy, including both political pluralism (that most people can participate in politics) and that the political opposition is guaranteed representation in the political institutions. The V-Dem democracy variable ranges from 0 to 1, and requires no transformation before being entered into the model.

The third control variable in this analysis is population. Population size is associated with higher levels of corruption, likely as a result of larger

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[2]The United States, China, Japan, Germany, the United Kingdom and France.

countries being more challenging to govern. Population is also a decent proxy for market size, which is a known determinant of FDI. Population data is sourced from the World Bank (2018b) WDI.

The next two control variables are partly informed by previous research as well as theory. In chapter 2, I discussed the contributions of Busse (2003) and Spar (1998) in FDI research. These authors suggest that different types of FDI may have different motivations and thus both respond differently to various factors and also have different effects on the countries they operate. Disaggregating FDI by sector would be the easiest way to control for this type of effect. However, it has not been possible to obtain this type of data for this analysis. One way to approximate controlling for different sectoral effects of FDI on corruption is to control directly for different sectors. To this end, I control for countries' trade share of GDP as well as the natural resource exports value. Trade share of GDP data is sourced from the World Bank (2018b) WDI, while natural resource data is sourced from Ross and Mahdavi (2015). Since we are interested in capturing the general effect of FDI on corruption, these variables may help to isolate that effect, and remove the particular effects of market-seeking and natural resource-seeking FDI. In the regression analysis, I use log-transformed values on these variables in order to reduce skewness.

Finally, the two last control variables in this analysis control for political instability. Countries with less political stability are generally more corrupt, and we might expect less stable countries to receive less FDI as investors view the country as too risky. In order to capture this variable, I first enter a civil conflict dummy variable that has a value 1 if there is armed civil conflict in a

country-year, and 0 if there is no armed civil conflict. This variable functions as a relatively simple proxy for political stability: presumably, countries with armed civil conflict are not particularly politically stable. Next, I add a "peace years" variable that simply represents the number of years since the last armed civil conflict in a country. This variable captures the long-term aspect of political stability, as we might expect a country that has gone a long time (say, fifty years) without armed civil conflict to be more politically stable than a country that had an armed civil conflict only two years ago. The civil conflict data is sourced from the UCDP/PRIO project (Allansson, Melander, and Themnér, 2017; Gleditsch et al., 2002).

3.2 Estimation method

3.2.1 Main model

Once the dataset has been constructed, it is possible to properly consider different estimation strategies. When using time-series cross-section data, a problem that often arises is autocorrelation. This occurs when multiple time-series display similar trends over time, even if there is no direct causation between the two variables. In regression analysis, this may cause an independent variable to appear to explain the dependent variable, or "steal" explanatory power from another. More formally, we can say that autocorrelation breaks the assumption that the residuals in the regression analysis are independent of each other (Skog, 2015, p. 251). One way to test for this is to use the Wooldridge (2002) test for autocorrelation, as developed by Drukker (2003). This test is run by estimating the effects of the independent variables

on the dependent variable in first-differences (that is, the variables represent the change on that variable in a country from *t* to *t-1*). Next, the residuals of this regression are tested. If the test returns a p-value of less than 0.05, there is reason to believe that there is some autocorrelation in the model. Running this test on the fully specified model, containing all control variables and using the full sample, I obtain a p-value of less than 0.0001. This strongly suggests that there is autocorrelation present in the model, and that regular ordinary least-squares (OLS) regression would be inappropriate.

To resolve this problem, I use OLS with Newey-West standard errors (Newey and West, 1987). This estimator is robust to both autocorrelation and heteroskedasticity. I lag all independent variables with a single year, since a time lag is required for this estimator. Finally, I control for those omitted variables that are time invariant for each country, and those that vary across all countries over time by using time and country fixed effects in nearly all models.

A final concern that will be treated in this study is the directionality of the relationship. In this study, we want to uncover the effect of FDI on corruption. In our specifications, we thus estimate FDI stock as a determinant of corruption. This would, however, be an inappropriate specification if the relationship was the reverse (corruption determining FDI). In reality, this relationship is likely two-way. One way to test whether the existence of a reverse relationship would spell trouble for our analysis is a Granger causality test. This test is performed by entering the independent variable (in this case, FDI stock) as the dependent variable in a regression, along with the same variable with three time lags (*t-1*, *t-2* and *t-3*), as well as the dependent

variable (political corruption) with three similar time lags. Testing the joint significance of the political corruption variable reveals that it is not a significant predictor of FDI stock in this test. It is important to note that this is not a definite assurance against causality problems. Rather, it is appropriate to say that political corruption does not *granger-cause* FDI stock, and that it is appropriate to model the relationship as in this analysis with the data at hand.

3.2.2 Selection effects

Another problem that may arise when using a non-randomly selected sample is sample selection bias. This occurs when the sample does not represent a random sample of the population. This may either be a result of self-selection or decisions made by the researcher. In this study, a special variant of this problem occurs. We are interested in estimating the effect of FDI on corruption, using FDI stock data. FDI stock is the result of cumulative FDI inflows over multiple years. Since we know that FDI is an active and calculated act on the behalf of an MNE, we can expect FDI to be sensitive to a range of locational factors, including corruption. Thus a selection problem occurs: if we allow investors to be sensitive to corruption, different types of FDI may respond differently to corruption. The effect of FDI on corruption can thus vary between countries depending on the level of FDI flows they receive, as a result of different corruption levels. If we naively estimate the effect of FDI on corruption without considering this effect, we may end up getting a biased result. In order to compensate for this effect, I estimate a two-step Heckman (1979) model. This estimation method first creates a

selection model based on a treatment variable. This is a dummy variable that has a value "0" if the observation is "untreated", and a value "1" if the observation is "treated". Treatment in this context indicates whether a country is preferred by FDI. Using this as a dependent variable, I estimate a probabilistic model that determines the likelihood of an observation being "treated" or "untreated" based on a range of independent variables. In the next step, the results from the previous model are entered as a regressor in an expanded model in order to correct for sample selection bias (Heckman, 1979, p. 157). Using this method, we can first test whether there is a selection effect in the sample, and next correct the estimates against this selection effect.

In this study, the estimation strategy I employ is simple. Since FDI stock is a result of cumulative yearly FDI flows, I use FDI inflows as a share of GDP as my treatment variable. This variable has a mean of 3.1%, with a standard deviation of 6.2%. Since the Heckman estimation requires a dummy variable, I consider values equal to and below 1% to be "0", and values above this threshold to be "1". Low values on this variable indicate that FDI flows are not a significant part of a country's economy, and consequently that FDI likely has a small effect on that country's institutions. In the new FDI treatment variable, 35.2% of the observations are recorded as "0", while the rest are recorded as "1". The control variables used in the main model are all variables that are known to be determinant of FDI. Therefore, the selection model will contain most of the variables used in the full model, with two exceptions. First, the political corruption variable will enter as an independent variable, since we can expect FDI to be sensitive to the level of corruption in a country. Second, FDI stock per capita is left out of the

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selection model for two reasons. First, since the Heckman estimator requires the selection model to be a subset of the second-stage model it is necessary to leave at least one variable out. Second, the correlation between FDI flow and stock is very high (85.7%), which presents collinearity issues. Finally, in order to preserve comparability between the main results presented and the results from the Heckman-corrected model, the second stage of the Heckman estimation will be specified identically to the main results.

3.3 Robustness tests

A risk in statistical analysis is finding and reporting a seemingly statistically significant result that is in actuality spurious and a result of circumstance. In the research process, a researcher may use a variety of different specifications, estimation methods and datasets as the research question shifts and changes, and as new theoretical insight is gained. A side-effect of this kind of process is that a researcher may stop once a statistically significant result is obtained, and not think to carry out any more analyses. The danger in this is that a p-value of 0.05 (a commonly accepted threshold of significance) simply indicates that the result could be obtained by chance one time out of twenty. If a researcher performs twenty different analyses and obtains one significant result, that's what we should expect in the case where there is no significant relationship. In statistical hypothesis testing, this is known as a type I error, which occurs when a true null hypothesis is rejected. Empirical research that is done through a process of trial and error, or simply by exploring a new dataset for interesting relationships are particularly prone to this kind

of error. Empirical researchers should therefore be cautious when reporting results found in this way, and be careful not to report possibly spurious results.

In order to minimize the risk of committing this kind of Type I error, I employ a variety of robustness tests. In the first test, I exchange the FDI stock per capita variable with a FDI stock as a share of GDP variable. This data is obtained from the UNCTAD (2018). The variable is originally coded as a percentage, but is logged in this analysis to reduce skew. The unlogged variable reports a minimum value very close to 0% and a maximum value of 1607.4% The mean on this variable is about 31%.

In the second robustness test, I exchange the FDI stock per capita variable with an FDI inflows share of GDP variable. Like the other FDI data used in this analysis, this variable is sourced from the UNCTAD (2018). FDI inflows are naturally smaller than FDI stocks relative to an economy's GDP, considering that they represent only yearly inflows rather than the total history of foreign investment. The observed minimum and maximum values on this variable are -65% and 189%, respectively. Negative values on this variable indicates that a country has experienced international divestments that exceed FDI inflows. A total of 393 observations have negative values on this variable. It is unclear how to read such values theoretically. On one hand, one could read countries with negative values on this variable as having particularly low levels of FDI. On the other, if we wish to capture MNE involvement in a country's economy, negative values do not indicate an absence of MNE involvement. On the contrary, it indicates that an MNE has divested from the country. Because of this theoretical conundrum, ob-

servations with a negative value on this variable have been dropped before performing the analysis.

In the third robustness test, I employ Driscoll and Kraay (1998) standard errors in order to correct for spatial dependence, or cross-sectional dependence. Spatial dependence can occur in panel data using geographically distributed units, particularly when the units are not randomly sampled (Driscoll and Kraay, 1998, p. 549). The units in this analysis have been chosen with an eye to theoretical relevance under availability constraints. As such, cross-sectional dependence may lead to spurious results. Driscoll and Kraay developed a modification to existing time-series covariance estimators (such as Newey-West standard errors) that can help correct for this type of bias.

In the fourth robustness test I introduce a tax-haven dummy variable. This is a variable that receives the value "1" if the country is a known tax haven, and "0" if it is not. The list of tax havens are taken from Gravelle (2015)[3]. The rationale is simple: certain countries that receive large amounts of FDI for tax purposes may be driving the results found in Table 2. Including a tax haven dummy variable controls for this eventuality.

The fifth robustness test excludes outliers on FDI stock per capita variable. Figure 5 shows the distribution of the logged FDI stock per capita variable. The variable was initially log-transformed before analysis due to a strong right-tailed skew. However, after transformation there are multiple observations on the left side of the distribution.

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[3]Tax havens in the present sample includes Switzerland, Lebanon, Costa Rica, Ireland, Jordan, Liberia, the Maldives, Panama, Barbados, Belize, Cyprus, Mauritius, the Seychelles, Singapore and Vanuatu.
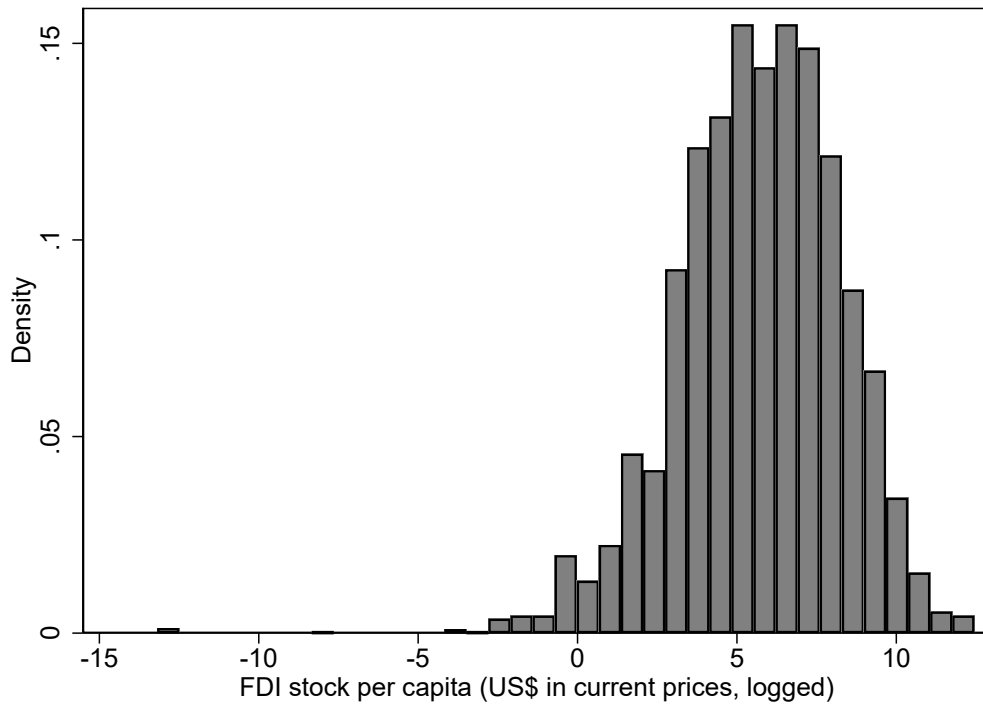
Figure 5: The distribution of FDI stock per capita (logged)

These are due to a number of observations close to zero in the untrans-
formed variable. After transformation, these receive negative values and
become outliers, and could conceivably be driving the results. Since there
is no reason to consider observations with values close to zero to be much
different from observations slightly above 1, these outliers have been removed
in model five. The cut-off point used in this instance is -2, which represents
an actual value of $0,13 USD FDI stock per capita. The 27 observations
below this value have been removed from the sample in the fifth robustness
test.

In the sixth and final robustness test I exchange the dependent variable
with the ICRG (2018) control of corruption variable. This variable ranges

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from 0 to 6, and higher values represent lower levels of corruption. It may be the case that the results obtained in the main analysis are driven by a poor operationalization of corruption. Testing the hypothesis variable against a different corruption measure helps reveal whether this is the case.

4   Analysis

This chapter presents the results of the statistical analysis described in chapter 3. The first two sections presents the main results, with an eye to how the hypothesis variable responds to the inclusion of control variables. Next, I address selection problems by showing an application of the Heckman (1979) two-step model. In the final section, I present various other specifications of the main model, to test whether the results obtained in the main results are robust to other specifications. The second section reproduces this procedure for the post-1989 sample, in order to test the second hypothesis.

4.1   Main results

Table 2 reports the results of the main analysis presented in this study. The dependent variable is corruption, and variables are added sequentially to the model, for a total of six models. Model six is the fully specified model, containing all of the control variables. The first model is a simple bivariate model, containing only the FDI stock per capita variable. If H_{1a} is correct, we would expect this variable to be significant and positive. Conversely, if H_{2a} is correct, we would rather expect the FDI stock per capita variable to be significant and negative. As can be seen, the FDI stock per capita variable is not significant in this first model, indicating that there is no relationship between FDI and corruption when not controlling for other variables. This may suggest that the null hypothesis H_0 is correct. However, since this is a simple bivariate model, another interpretation of this result is that there

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may be omitted variables confounding the results.

Table 2: The effect of FDI on corruption

	(1) Corruption	(2) Corruption	(3) Corruption	(4) Corruption	(5) Corruption	(6) Corruption
FDI stock per capita in current US$ (log)	0.00263	0.00636*	0.00443	0.00704*	0.00700*	0.00709*
	(1.01)	(2.02)	(1.43)	(2.33)	(2.05)	(2.05)
GDP per capita in constant 2010 US$ (log)		-0.0451***	-0.0481***	-0.0370***	-0.0445***	-0.0442***
		(-5.49)	(-6.29)	(-5.17)	(-5.40)	(-5.28)
Electoral democracy (Scale: 0-1)			-0.240***	-0.252***	-0.232***	-0.233***
			(-11.53)	(-12.35)	(-10.74)	(-10.76)
Population (log)				0.160***	0.145***	0.144***
				(8.70)	(6.79)	(6.66)
Trade share of GDP(log)					-0.0142*	-0.0144*
					(-2.11)	(-2.14)
Natural resource exports value per capita in 2000 US$ (log)					0.00529*	0.00526*
					(2.48)	(2.43)
Civil war (Dummy: 0 for no conflict)						-0.00379
						(-0.62)
Peace years						-0.000141
						(-0.57)
Constant	0.614***	1.007***	1.139***	-1.843***	-1.508***	-1.485***
	(20.74)	(13.63)	(16.42)	(-5.51)	(-3.78)	(-3.70)
Estimation Technique	Newey-West	Newey-West	Newey-West	Newey-West	Newey-West	Newey-West
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4704	4342	4321	4321	3833	3833

Notes:
(1) t-statistics in parentheses
(2) Statistical significance: ***p<0.001, **p<0.01, *p<0.05

In model two, GDP per capita is added. This variable is negative and highly significant (p<0.001), as expected. Because this variable is logged, the coefficient in this model suggests that a fifty percent increase in GDP per capita from the mean should lead to a 0.023 unit decrease on the corruption scale, keeping other variables constant. Considering the corruption variable ranges from 0 to 1, this is not inconsequential. The decrease is equivalent to 2.3% of the total range of the corruption scale. Importantly, the FDI stock per capita variable is positive and significant in this model, at the 95% confidence level. The effect is modest - interpreting the coefficient suggests that doubling FDI stock per capita from the mean leads to a 0.006 increase on the corruption scale, or a little less than one percent. So far, these results appear to give weak support to H_{1a}, viz. FDI leads to higher levels of corruption.

In model three, electoral democracy is added. This variable is negative

and highly significant (p<0.001), and has a fairly strong coefficient. The analysis suggests that more democratic countries have less corruption. Moving from the bottom to the top of the scale on this variable decreases a country's score on the corruption index by 0.24 points on the corruption scale, which is close to a full standard deviation (0.28). It is worth noting that such a shift on the electoral democracy variable is not found in the dataset. The closest example is that of Uruguay, which moves from a score of 0.109 to 0.857 between 1980 and 1986, due to the fall of the military dictatorship. A more realistic example, such as increasing the electoral democracy variable by the standard deviation (0.28) yields a 0.07 decrease on the corruption scale. The GDP per capita variable remains highly significant ($p < 0.001$), and the coefficient gains a nominal amount of power (moving from -0.0451 in model two to -0.0481 in model three.) Next, the hypothesis variable FDI stock per capita loses significance in this model, but remains positive. The coefficient also loses some power, moving from 0.0636 in model two to 0.00443 in model three. This suggests that some of the variation on the corruption variable captured by FDI stock per capita in previous models may have been driven by the negative relationship between democracy and corruption, leading to the variable losing significance in this model.

In model four, population is added. This variable is positive and highly significant (p<0.001), indicating that more populous countries are generally more corrupt. The coefficient suggests that increasing population size by ten percent from the mean would have the effect of increasing a country's corruption score by 0.016, *ceteris paribus*. Electoral democracy remains largely unchanged in this model, staying significant at the 0.1% level and losing

a modest amount of power. The GDP per capita variable similarly stays highly significant ($p < 0.001$), but the coefficient drops from -0.0481 to -0.037 - a considerable decrease. The hypothesis variable gains significance in this model, and is again significant at the 95% confidence level. Notably, the coefficient on the FDI stock variable increases from 0.00443 in the previous model to 0.007 in model 4, which is a substantial increase. In this model, doubling FDI stock per capita leads to a 0.007 increase on the corruption variable, keeping other variables constant. This suggests that though there is statistically significant relationship between FDI and corruption, the effect is fairly weak in substantial terms.

Model five introduces two new variables. The first is the trade share of GDP variable, and the second is the natural resource variable. Together, these two variables help control for potential differences between different types of sectoral FDI. The trade variable is negative and significant at the 95% confidence level, suggesting that countries where trade represents a larger part of the economy have lower levels of corruption. The coefficient indicates that doubling trade share of GDP would decrease a country's corruption score by 0.014, keeping other variables constant. Next, the natural resource variable is significant in this model at the 95% confidence level, suggesting that natural resource exports is a significant determinant of corruption. The coefficient suggests that doubling natural resource exports per capita from the mean would increase a country's corruption score by 0.005, or about a half percent of the overall corruption scale, *ceteris paribus*. This particular result has interesting implications for natural-resource exporting countries. Poor countries that lack the necessary infrastructure, technology

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and capital to extract newly discovered reserves of natural resources may turn to MNEs. These countries are also likely to have weak political institutions at home. Discovering natural resources can thus become a "double whammy" for poor countries, as they suffer corrupting influences from both FDI and natural resources. This kind of dynamic can be seen in Equatorial Guinea, which was described briefly in the introduction. This is more generally known as the resource curse, which has been treated extensively in the literature by among others Bueno de Mesquita and Smith (2011, pp. 88-92). The other control variables are largely unchanged in this model; population remains highly significant and loses a modest amount of power. The democracy variable similarly remains highly significant and sees only a token decrease in its coefficient. GDP per capita also remains highly significant and moves from -0.037 in model four to -0.045 in model five. The FDI stock per capita variable remains significant at the 95% confidence level in model five, and the coefficient remains essentially unchanged. This suggests that the relationship between FDI stock and corruption is robust to the inclusion of certain sector-specific variables.

Finally, model six introduces the last control variables. These are the civil war variable and the peace years variable. These variables are both insignificant in this model, suggesting that whether a country is experiencing civil conflict or not, or how many years have passed since the last conflict, are not significant determinants of corruption once other variables have been controlled for. A quick survey of the other control variables reveal that the inclusion of these last control variables do not meaningfully change the results. Finally, the hypothesis variable FDI stock per capita remains significant at

the 95% confidence level and is essentially unchanged compared to model five.

These results appear to give support to H_{1a}, namely that there is a positive correlation between FDI and corruption. FDI stock per capita is significant and positive in all but one model, suggesting that the relationship is fairly robust to the inclusion of control variables. Interpretation of log-transformed variables is made difficult by the fact that a unit increase on the scale now represents a doubling of the actual value, rather than a unit increase of the variable itself. To ease interpretation of the hypothesis variable, figure 6 reports corruption scores for different values of FDI stock, using the coefficient obtained from model six and keeping all other variables constant and at their means, using a linear scale. The horizontal axis is the FDI stock variable, while the vertical axis is the political corruption variable. The shaded area represents the 95% confidence interval. The graph shows the positive relationship between FDI stock and corruption, and gives an impression of the overall strength of FDI stock in determining political corruption.
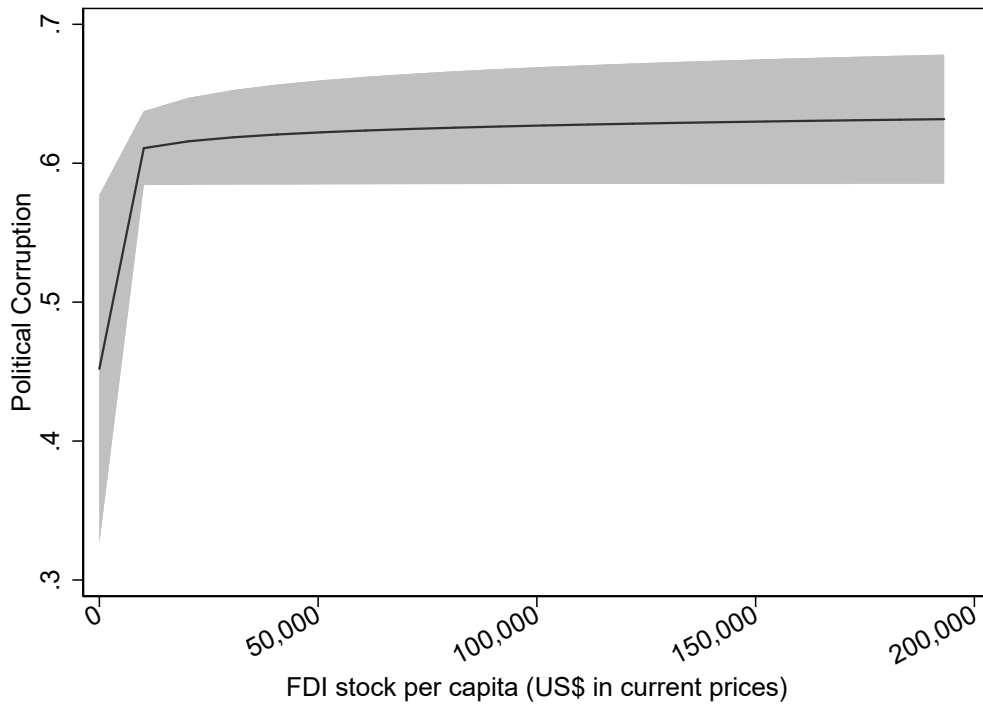
Figure 6: The relationship between FDI stock and political corruption

The shape of the predicted values may give the impression that there is a curvilinear relationship between FDI and corruption. The reader should take care to note that this is simply the result of the logarithmic transformation applied to the original FDI stock per capita variable before regression, and the back-transformation performed before graphing. Transforming the variable back to a linear scale before graphing reveals some interesting points, however. There is a clear increase in corruption as a function of FDI stock up until a certain point, after which the relationship appears to be less significant. This is confirmed by inspecting the confidence intervals. In the steep part of the curve, the confidence intervals are small, especially near the inflection point. Before and after this, the confidence intervals grow. This

is attributable to the number of observations around the various values of FDI stock. 75% of all observations have less than \$1,110 USD FDI stock per capita, and 90% have less than \$3,360 USD. There are, however, certain countries that have very large amounts of FDI stock per capita. For instance, Singapore starts the time period with \$2,216 USD FDI stock per capita, but ends the study period with over \$192,000. The "bend" observed at a little over 0.6 on the vertical axis occurs at around \$6,600 FDI stock per capita, suggesting that there is a point of "diminishing returns" in the relationship between FDI and corruption.

Naturally, results from statistical analyses should rarely be interpreted literally. The presentation above gives an indication, however, of the direction and strength of the relationship found. The evidence appears to suggest that FDI is associated with higher levels of corruption, although the effect is modest. In the next section, I expose the model presented here to various other specifications in order to investigate the robustness of the results.

4.1.1 Selection effects

In order to account for the possibility of selection effects, Table 3 reports the results of the second stage of the two-step Heckman estimator. The models presented here are equivalent in specification to those found in Table 2. The difference in this table is the sample selection bias correction described in section 3.2.2. The first-stage selection model includes all variables in the second-stage model, except for FDI stock per capita. The results of the first stage are not reported here, but may be found in Table 6 in the appendix.

Interpreting the results of this analysis is equivalent to the previous table,

Table 3: The effect of FDI on corruption: Heckman two-step estimator

	(1) Corruption	(2) Corruption	(3) Corruption	(4) Corruption	(5) Corruption	(6) Corruption
FDI stock per capita in current US$ (log)	0.000695	0.00662	0.00617	0.0102*	0.0114***	0.0110***
	(0.02)	(0.16)	(0.24)	(1.98)	(6.45)	(5.91)
GDP per capita in constant 2010 US$ (log)		0.0340	-0.00289	-0.0298	-0.0503***	-0.0526***
		(0.22)	(-0.03)	(-1.62)	(-8.03)	(-8.12)
Electoral democracy (Scale: 0-1)			-0.135	-0.282***	-0.291***	-0.299***
			(-0.48)	(-5.58)	(-17.81)	(-18.40)
Population (log)				0.183***	0.150***	0.147***
				(4.07)	(9.13)	(8.91)
Trade share of GDP(log)					-0.0128	-0.0257*
					(-1.06)	(-2.16)
Natural resource exports value per capita in 2000 US$ (log)					0.00822***	0.00894***
					(4.41)	(4.69)
Civil war (Dummy: 0 for no conflict)						-0.00792
						(-1.37)
Peace years						0.000444*
						(2.27)
Constant	-2.709	-2.199	-0.922	-2.670**	-1.654***	-1.493***
	(-1.32)	(-0.73)	(-0.43)	(-2.88)	(-4.96)	(-4.48)
Estimation Technique	Heckman	Heckman	Heckman	Heckman	Heckman	Heckman
Mill's Lambda	2.833	2.358	1.491	0.290	0.0634	0.0239
	(1.68)	(1.13)	(1.03)	(1.29)	(1.96)	(0.73)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4818	4422	4401	4401	3911	3911

Notes:
(1) t-statistics in parentheses
(2) Statistical significance: ***p<0.001, **p<0.01, *p<0.05

with the exception of the Mill's lambda term, which can be found towards the bottom of the table. If there was statistically significant sample selection bias present in the second stage, we would expect Mill's lambda to be significant. Inspecting this term on all models reveal that none show statistically significant sample selection biases, suggesting that there is no statistically significant sample selection bias in these models. Further, comparing Table 3 with Table 2 reveals certain differences. In the Heckman-estimated models, the hypothesis variable is only significant in the last three models, but is highly significant ($p < 0.0001$) in model five and six. The effect is stronger in most models, implying that correcting for sample selection bias strengthens the results from Table 2

4.1.2 Robustness tests

In order to investigate the robustness of the results reported above, Table 4 shows the results of the robustness tests described in the previous chapter. This includes inclusion of additional variables, different estimation methods and manipulations to the sample. Each model in this specification represents an alteration to the complete model reported as model six in Table 2. In the following, I describe the results of these robustness tests and describe implications for H_1.

In model one, I exchange the FDI stock per capita variable with an FDI stock relative to the GDP variable. As can be seen, this variable is highly significant at the 1% level. Compared to the hypothesis variable in Table 2, the effect is similarly positive, but has a considerably stronger effect. The control variables report similar significance levels, signs and coefficients. The results from this model corroborate those found in Table 2.

The results for model two are similar. Here FDI stock per capita is exchanged with a FDI inflows relative to GDP variable. As can be seen in model 2, the FDI inflows variable is insignificant with a correspondingly low coefficient. The remaining control variables are comparable to that of model six, with the exception of the natural resource variable which is insignificant in this model. This model seems to lend support to H_0, that there is no significant relationship between FDI and corruption.

Model three uses Driscoll-Kraay standard errors in order to correct for spatial dependence. In this model the FDI stock per capita is significant, with a similar coefficient to that found in the fully specified model in Table

Table 4: The effect of FDI on corruption: robustness tests

	(1) Corruption	(2) Corruption	(3) Corruption	(4) Corruption	(5) Corruption	(6) Corruption
FDI stock share of GDP (log)	0.0104**					
	(2.75)					
FDI inflows share of GDP (log)		0.000374				
		(1.11)				
FDI stock per capita in current US$ (log)			0.00641*	0.00709*	0.00768*	-0.0733**
			(2.31)	(2.05)	(2.48)	(-2.68)
GDP per capita in constant 2010 US$ (log)	-0.0388***	-0.0340***	-0.0509***	-0.0442***	-0.0429***	0.216
	(-4.91)	(-4.25)	(-6.20)	(-5.28)	(-5.79)	(1.63)
Electoral democracy (Scale: 0-1)	-0.235***	-0.226***	-0.208***	-0.233***	-0.245***	0.742***
	(-10.86)	(-10.21)	(-11.68)	(-10.76)	(-11.75)	(3.78)
Population (log)	0.145***	0.132***	0.150***	0.144***	0.147***	0.0437
	(6.58)	(6.19)	(11.24)	(6.66)	(6.87)	(0.22)
Trade share of GDP(log)	-0.0181**	-0.0163**	-0.0124*	-0.0144*	-0.0156*	0.0238
	(-2.64)	(-2.78)	(-2.30)	(-2.14)	(-2.43)	(0.43)
Natural resource exports value per capita in 2000 US$ (log)	0.00505*	0.00264	0.00508*	0.00526*	0.00410*	-0.0693**
	(2.34)	(1.26)	(2.28)	(2.43)	(2.00)	(-2.96)
Civil war (Dummy: 0 for no conflict)	-0.00362	-0.00398	-0.00354	-0.00379	-0.00498	-0.108
	(-0.57)	(-0.66)	(-0.78)	(-0.62)	(-0.85)	(-1.53)
Peace years	-0.000149	-0.000259	-0.000300*	-0.000141	-0.000244	-0.00326
	(-0.60)	(-1.04)	(-2.21)	(-0.57)	(-1.00)	(-1.50)
Tax haven (dummy)				-0.0978		
				(-1.37)		
Constant	-1.514***	-1.310***	-1.321***	-1.485***	-1.536***	0.371
	(-3.74)	(-3.36)	(-5.15)	(-3.70)	(-3.90)	(0.09)
Estimation technique	Newey-West	Newey-West	Driscoll-Kraay	Newey-West	Newey-West	Newey-West
Time fixed effects	Yes	Yes	No	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3798	3578	3833	3833	3817	2633

Notes:
(1) t-statistics in parentheses
(2) Statistical significance: ***p<0.001, **p<0.01, *p<0.05

2. Evidently, correcting for spatial dependence between countries does not meaningfully change the effect of the hypothesis variable. Inspecting the control variables reveals that there are few meaningful changes. All variables have similar significance levels, signs and coefficients to those found in the full model in Table 2, except for the peace years variable. This variable is significant at the 95% confidence level. The coefficient is negative, which suggests that countries that have enjoyed more years without civil conflict are less corrupt, *ceteris paribus*. Overall, this model seems to corroborate the results found in Table 2, and suggest that the results obtained there are robust to controlling for spatial dependence.

Model four introduces the tax haven variable as a control, in order to ensure that the results obtained are not being driven by tax havens. Inspecting the results from model 4 suggests that this is not the case. The hypothesis

variable is significant at the 5% level, and has a similar sign and coefficient as that found in the full model. The remaining control variables are similarly unchanged compared to the fully specified model, indicating that tax havens are not driving the results in any meaningful way.

Model five excludes outliers on the FDI stock per capita variable. As can be seen, this does not meaningfully change the result. The hypothesis variable remains significant at the 5% level, and receives a modest increase in power (moving from 0.0071 in model 6 in Table 2 to 0.0077 in this model). The rest of the control variables are similarly unchanged, suggesting that the outliers on the FDI stock per capita variable are not driving the results.

Finally, in model 6 I exchange the dependent variable for another corruption measure. As can be seen, the hypothesis variable is highly significant at the 1% level and negative, suggesting that more FDI leads to more corruption. The coefficient is roughly ten times larger than in the full model in Table 2, due to the larger scale. Figure 7 displays the marginal effects of FDI in this model, keeping other variables constant and at their means.
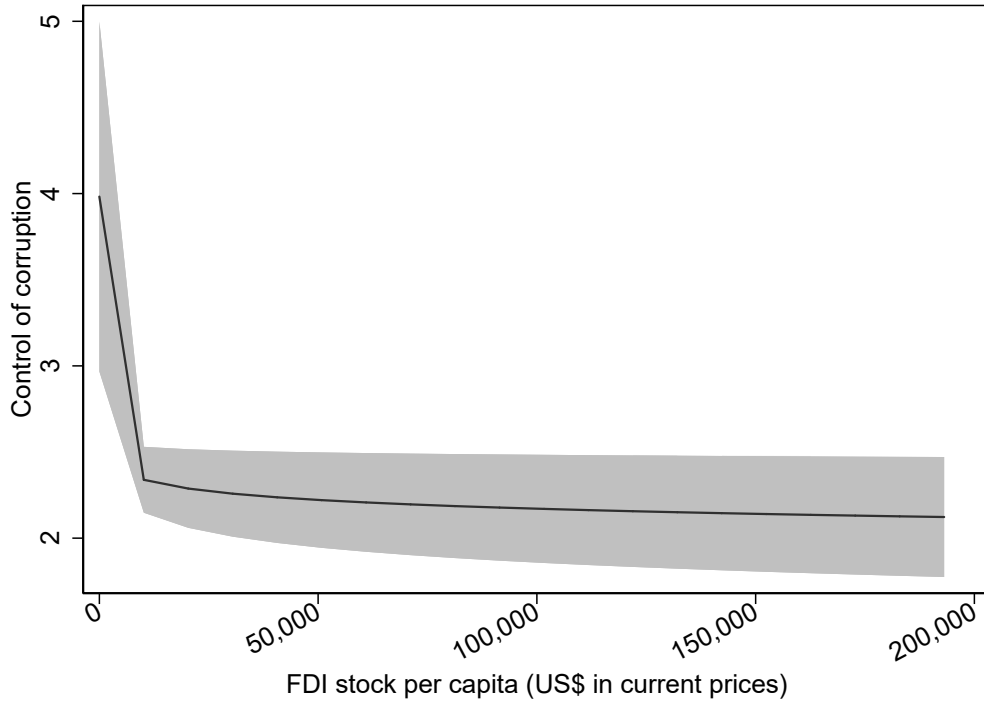
Figure 7: The relationship between FDI stock and control of corruption

Inspecting the control variables reveal some changes to the control variables in this model. GDP per capita, population and trade share of GDP are no longer significant. The democracy and natural resource variables remain significant, with the natural resource variable actually becoming more significant in this model than previously. The remaining variables remain unchanged. These results have two implications. First, this model seems to corroborate the findings of the main model in Table 2. The correlation between FDI and corruption appears to be robust to this change of corruption measure. However, the changes in the control variables imply that the control of corruption variable captures something slightly different than the political corruption variable.

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The results from the robustness tests presented here seem to indicate that the positive correlation between FDI and corruption are not spurious. The relationship has proven robust to a number of alternate model specifications and estimation methods, corroborating the results obtained in Table 2. This would appear to strengthen H_{1a}. The relationship between FDI and corruption disappeared when FDI stock per capita was exchanged with FDI flows as a share of GDP. This may indicate that size of FDI flows is not a reliable determinant of corruption. This may be due to the fact that flows may shift from year to year even in countries with a large FDI stock and MNE presence. It may thus be an imperfect estimator for MNE presence, and thus not capture the influence of MNEs on institutions.

4.2 Post-1989 sample

In order to evaluate the second hypothesis, Table 5 reports the results of the second analysis. In these models, observations from before 1990 are removed. This allows us to investigate whether the relationship observed in Table 2 also holds for a more limited time period.

As can be seen in these models, the relationship between FDI and corruption disappears completely. This may indicate that there has been a change in the relationship between FDI and corruption over time, as suggested by Busse (2003) and Spar (1998). This would seem to support H_2. Investigating the control variables reveals that there are certain small changes in coefficients and significance levels, but no meaningful changes to the interpretation compared to the main model presented in Table 2. Of course, we also

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Table 5: The effect of FDI on corruption: post-1989

	(1) Corruption	(2) Corruption	(3) Corruption	(4) Corruption	(5) Corruption	(6) Corruption
FDI stock per capita in current US$ (log)	0.000829	0.00232	0.000465	0.00255	0.00173	0.00184
	(0.25)	(0.65)	(0.14)	(0.84)	(0.53)	(0.55)
GDP per capita in constant 2010 US$ (log)		-0.0438***	-0.0432***	-0.0329***	-0.0446***	-0.0444***
		(-4.11)	(-4.46)	(-3.89)	(-4.73)	(-4.67)
Electoral democracy (Scale: 0-1)			-0.285***	-0.305***	-0.285***	-0.288***
			(-9.07)	(-9.79)	(-8.09)	(-8.12)
Population (log)				0.132***	0.117***	0.115***
				(6.16)	(4.71)	(4.56)
Trade share of GDP(log)					-0.0203**	-0.0204**
					(-3.14)	(-3.15)
Natural resource exports value per capita in 2000 US$ (log)					0.00644**	0.00642**
					(2.91)	(2.82)
Civil war (Dummy: 0 for no conflict)						-0.00833
						(-1.31)
Peace years						-0.000200
						(-0.69)
Constant	0.611***	0.991***	1.141***	-1.355***	-0.951*	-0.908*
	(19.87)	(10.34)	(12.53)	(-3.55)	(-2.11)	(-1.99)
Estimation Technique	Newey-West	Newey-West	Newey-West	Newey-West	Newey-West	Newey-West
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3675	3459	3448	3448	3035	3035

Notes:
(1) t-statistics in parentheses
(2) Statistical significance: ***p<0.001, **p<0.01, *p<0.05

need to consider the possibility that the change to the hypothesis variable observed in this table is due to the different sample. Comparing the number of observations between Table 2 and Table 5 reveals that around a thousand observations have been excluded from the sample, depending on the exact model. This could potentially hide an existing relationship between FDI and corruption, leading us to commit a type-II error.

Running the two-stage Heckman estimator on the post-1989 sample yields similar results. These can be found in Table 7 in the appendix. FDI stock is not significant in any of these models, suggesting that FDI is not a determinant of corruption in this sample. Finally, the results of the robustness tests performed on the post-1989 sample can be found in Table 8 in the appendix. In this table, FDI is only significant in model six, using the ICRG corruption measure. In sum, these results give strong support to H_2, and suggest that the effect found in Table 2 may have changed over time.

5 Conclusion

In this study, I wish to further our understanding of what encourages and discourages good institutions, out of a conviction that strong political institutions help encourage economic growth in developing countries. More specifically, I want to understand whether foreign direct investment plays a role in encouraging corruption. This question is part of a much broader debate about the effects of globalization on the developing world. As I have shown in chapter 2, certain scholars have been generally optimistic about the role of FDI in encouraging economic growth and building strong political institutions, while other authors have been more skeptical. From this intellectual divide we derived two complementary hypotheses, namely H_{1a}: *FDI is positively correlated with corruption*, and H_{1b}: *FDI is negatively correlated with corruption.*. We also considered an auxiliary hypothesis, to allow for the proposed relationship to change over time: H_2: *After 1989, FDI is not correlated with corruption*. The previous chapter investigated the effect of FDI on political corruption using regression analysis, in order to answer these hypotheses. While a technical interpretation of regression results, such as that found in chapter 4, is indispensable when investigating empirical relationships, it cannot replace meaningful analysis. To this end, this chapter will conclude the study by reviewing the results of the previous analysis in meaningful terms, consider implications for the hypotheses and discuss what these results suggest for the direction of future research on FDI and corruption.

It would be inappropriate to consider the effect of FDI on corruption in this analysis without taking the entire model into account. The control vari-

ables serve not only to help tease out the effects we are interested in, but also to help validate the model specification as a whole. If well-known determinants of corruption behave radically different than we would expect, there presumably is something wrong with the model specification. Let us briefly, then, consider the control variables. In the fully specified model in table 2, GDP per capita, democracy and trade were found to decrease the level of political corruption in a country. Conversely, population and natural resource exports were found to increase corruption levels. These results are largely in line with the previously reviewed research on the effects of FDI on corruption. Bascuñán and Tavares (2004) similarly find that per capita GDP and oil exporter status are significant determinants of corruption levels. These authors do not find a significant relationship between population and corruption, however. Kwok and Tadesse (2006) find that GDP per capita decreases corruption, but only finds a significant relationship between democracy and corruption in certain specifications. The results are also largely in line with Serra (2006), who suggests that wealth and democracy are both deterrents of corruption. That study also finds that political stability is a significant determinant of corruption, a result that is only very tenuously significant in this analysis. On the whole, the control variables appear to be in line with our expectations. If we take this as a validation of the model as a whole, it seems safe to interpret the results on the hypothesis variable.

The analysis found a statistically significant and positive relationship between FDI and political corruption. This implies that FDI plays a role in encouraging corruption in host countries. This effect was found to be robust to a range of alternate model specifications, suggesting that the results found

in the main analysis are not spurious. Additionally, these results were found not to be due to sample selection bias, using the Heckman two-step estimator. It seems that in terms of our hypotheses, we are required to dismiss H_{1b} and H_{1_0}. This is not in line with previous research. Both Bascuñán and Tavares (2004) and Kwok and Tadesse (2006) find that FDI, operationalized in the first case as FDI inflows and as FDI inflows as a share of GDP in the second, are negatively correlated with corruption. In the second analysis, the effect of FDI on corruption disappears in all models. This seems to be a confirmation of H_2, that there has been a change in the effect of FDI over time. We may recall the expectations of Busse (2003), who after finding a change in the relationship between FDI and democracy suggests that changes in the composition of global FDI over time has changed both the motivations and behavior of MNEs.

Although the results described above seem to lead us to conclude that FDI has had a positive effect on corruption, and that this relationship seems to disappear when looking at a smaller time period, some concerns remain. First, the effect of FDI on corruption is fairly modest. In the main model, I find that doubling FDI stock per capita from the mean (which is \$1,597 USD in current prices) had the effect of increasing corruption by about 0.006 points. While this is not a negligible effect (and apparently statistically significant), it is not a strong effect either. Further, by inspecting the marginal effects of FDI on corruption in Figure 6, we can see that the confidence intervals are fairly large at most values of FDI, except for the ones near the inflection point at around 0.6 on the political corruption scale. Particularly at low levels of FDI, the confidence intervals span between nearly 0.3 and

0.6 on the political corruption scale. Considering that most observations lie in this area, this suggests that while there is a significant relationship between FDI and political corruption, it is not strong enough to be predictive of political corruption in a meaningful sense.

The analysis thus seems to contradict itself. While FDI stock per capita is found to be a significant determinant of political corruption, and we must reject H_{1_b} and H_{1_0}, it also seems necessary to conclude that the relationship found here is not strong enough to meaningfully predict political corruption. If FDI stock per capita is an appropriate measure of what we are trying to measure, and if the political corruption variable employed here is adequately capturing political corruption, this is the paradoxical conclusion we must accept. Naturally, there are many reasons to doubt that this is the case. The robust but weak relationship between FDI and political corruption may instead suggest that there is a real relationship between MNE activity in some sense and political corruption, but that FDI is simply not capturing that activity in a substantially meaningful way. There can be several reasons. First, there may not be a simple relationship between the amount of MNE activity in terms of FDI and the effect that activity has on political corruption. Attaching a corrupting "value" to a dollar amount may simply speaking be misspecifying the relationship. Second, as has been discussed previously, there may be differences between different sectors of FDI that are not captured properly in the models presented here, resulting in inaccurate results. Thirdly, it may be that FDI is sufficiently heterogeneous that using an aggregate measure confounds the results by aggregating disparate types of foreign investment. In other words, there may be other dimensions to FDI

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that may better capture the mechanisms by which FDI could induce political corruption, and which makes the simple "dollar value of FDI" measure inappropriate. If this is the case, finding another way to more meaningfully operationalize MNE activity could conceivably produce clearer results. Another possibility is that the political corruption measure used in this analysis is not capturing corruption well. Since the corruption measure used here is a subjective one, it may be that expert coders are systematically incorrectly estimating the level of corruption in a country in response to other, unknown, variables. This would naturally lead to inaccurate estimates of any analyses using the variable, and conceivably the type of results found in this analysis. A final possibility is simply the existence of omitted variables that are confounding the results. Testing the joint significance of the country-fixed effects in the main model (that is, those country-specific effects that remain the same over time) returns a highly significant value (less than 0.0001), suggesting that there are country-specific variables that are strong determinants of political corruption, and that have not been controlled for. This suggests that the cause of corruption may be sufficiently heterogeneous between countries that FDI in the current specification remains a poor predictor of the overall corruption level, despite the statistically significant relationship.

If we choose to ignore the concerns above, the results in this analysis may be taken as support of dependency-like arguments. However, there are reasons to doubt such a conclusion. Most significantly, the relationship disappears in the post-1989 sample, a result that is robust to sample selection bias correction as well as a range of robustness tests. The weakness of the relationship, too, casts doubts on the results. After all, if FDI was really

efficient at corrupting host countries, we'd expect stronger substantive results than the ones obtained here. Since the corruption measure used in this analysis is subjective, and based on expert coders' perceptions of corruption, another explanation may simply be due to a perception problem when it comes to corruption. Simply put, it may be that our perceptions of corruption do not take scale into account. That is, as a country receives more FDI, it may simply be that corruption increases at an absolute level due to the increased economic and bureaucratic activity, while staying the same at a relative level. If we perceive corruption in absolute terms, it is only natural that we perceive there to be more corruption as an economy grows, given that the relative amount of corruption stays the same. We can call this a spotlight effect - countries that receive more FDI have more opportunities for corruption to occur and be noticed, leading to a higher perception of corruption, even though the relative amount of corruption stays the same. If this is the case, it is not clear that increased investment is a bad thing for developing countries. Increased perceptions of corruption alongside stable relative corruption levels may help decrease corruption over time, due to citizen and non-governmental organization involvement. Additionally, we know that increased growth decreases corruption from the research literature, as well as the results in this analysis. To the extent that FDI can help encourage growth, then, it may also help reduce corruption in the long term.

In short, there are multiple possible sources of specification and measurement error in the variables used that cast doubts on the results. At the same time, the pervasiveness of the statistical significance beg further inspection of the relationship. In order to provide a starting point for this, I conclude

this study with five recommendations for future research. First, the robustness of the results obtained in this study coupled with the weakness of the relationship between FDI and corruption suggests that more work is needed to correctly specify the relationship between MNE activity and political corruption. Future FDI research should take care to properly theorize which mode and measure of FDI is most appropriate to capture the theoretically interesting mechanisms. Researchers interested in the effects of MNE activity more generally might also look to other objective measures besides FDI that may act as proxies for MNE activity. Secondly, in order to allay the concerns associated with using a subjective corruption measure, future research might innovate by using an objective measure that may give a more reliable measure of the level of corruption. While this is certainly a challenging undertaking, arriving at an easily measured proxy for corruption will ensure that coder subjectivity is eliminated and remove doubts concerning the reliability of the measure. Additionally, using more concrete measures might help researchers by lowering the level of abstraction required to theorize about the relationship. Thirdly, while aggregated approaches like the one taken in this analysis might be helpful in gauging overall, large-scale relationships, they run the risk of hiding particular insights in large numbers. Future research might counteract this by choosing particular theoretical mechanisms to investigate, in order to ease hypothesis testing. Additionally, other specifications might allow for the cross-sectional dimension to play a larger role by looking at origin of FDI. Next, and in a similar vein, future research ought to disaggregate FDI by sector in order to properly tease out the particular effects of different types of FDI, rather than the aggregate approach pursued here. Fi-

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nally, in quantitative studies with both robust results and strong substantial effects, it is common for authors to accept the causal relationship without question. However, as most of us know, correlation is not causation. If this study found a strong substantial effect of FDI on corruption, it would not be enough to claim a causal chain between the two variables. Causality can be more properly estimated by using instrumental variable analysis. This allows us to ensure both the causal chain and the direction of it. Future research ought to take causality issues seriously by developing instrumental variables that can help conclusively solve causality issues. By taking these approaches, scholars may be able to better understand the effects of FDI on domestic institutions. Hopefully, such an understanding may help countries, corporations and individuals to take positive action to make the world less corrupt and more prosperous.

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Appendices

Table 6: The effect of FDI on corruption: Heckman two-step estimator (full results)

Regression based on selection model (second stage)	(1) Corruption	(2) Corruption	(3) Corruption	(4) Corruption	(5) Corruption	(6) Corruption
FDI stock per capita in current US$ (log)	0.000695	0.00662	0.00617	0.0102*	0.0114***	0.0110***
	(0.02)	(0.16)	(0.24)	(1.98)	(6.45)	(5.91)
GDP per capita in constant 2010 US$ (log)		0.0340	-0.00289	-0.0298	-0.0503***	-0.0526***
		(0.22)	(-0.03)	(-1.62)	(-8.03)	(-8.12)
Electoral democracy (Scale: 0-1)			-0.135	-0.282***	-0.291***	-0.299***
			(-0.48)	(-5.58)	(-17.81)	(-18.40)
Population (log)				0.183***	0.150***	0.147***
				(4.07)	(9.13)	(8.91)
Trade share of GDP(log)					-0.0128	-0.0257*
					(-1.06)	(-2.16)
Natural resource exports value per capita in 2000 US$ (log)					0.00822***	0.00894***
					(4.41)	(4.69)
Civil war (Dummy: 0 for no conflict)						-0.00792
						(-1.37)
Peace years						0.000444*
						(2.27)
Constant	-2.709	-2.199	-0.922	-2.670**	-1.654***	-1.493***
	(-1.32)	(-0.73)	(-0.43)	(-2.88)	(-4.96)	(-4.48)

Selection model (first stage)	(1) FDI / GDP	(2) FDI / GDP	(3) FDI / GDP	(4) FDI / GDP	(5) FDI / GDP	(6) FDI / GDP
Corruption	-0.449***	-0.259**	-0.208	-0.106	-0.102	-0.0717
	(-5.56)	(-2.65)	(-1.95)	(-0.97)	(-0.82)	(-0.57)
GDP per capita in constant 2010 US$ (log)		0.0563**	0.0501**	0.0469*	0.00559	-0.00282
		(3.01)	(2.62)	(2.44)	(0.20)	(-0.10)
Electoral democracy (Scale: 0-1)			0.140	0.171	0.388***	0.381**
			(1.33)	(1.63)	(3.31)	(3.24)
Population (log)				-0.0614***	0.0513**	0.0558***
				(-4.97)	(3.13)	(3.35)
Trade share of GDP(log)					0.565***	0.556***
					(13.05)	(12.72)
Natural resource exports value per capita in 2000 US$ (log)					0.00809	0.00969
					(0.75)	(0.90)
Civil war (Dummy: 0 for no conflict)						-0.0687
						(-1.04)
Peace years						0.00163
						(1.06)
Constant	-0.273*	-0.703**	-0.746**	0.174	-3.738***	-3.735***
	(-1.99)	(-3.12)	(-3.27)	(0.59)	(-8.31)	(-8.30)

	(1)	(2)	(3)	(4)	(5)	(6)
Estimation method	Heckman	Heckman	Heckman	Heckman	Heckman	Heckman
Mill's Lambda	2.833	2.358	1.491	0.290	0.0634	0.0239
	(1.68)	(1.13)	(1.03)	(1.29)	(1.96)	(0.73)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4818	4422	4401	4401	3911	3911

Notes:
(1) t-statistics in parentheses
(2) Statistical significance: ***p<0.001, **p<0.01, *p<0.05

Table 7: The effect of FDI on corruption: Heckman two-step estimator (post-1989)

	(1) Corruption	(2) Corruption	(3) Corruption	(4) Corruption	(5) Corruption	(6) Corruption
FDI stock per capita in current US$ (log)	-0.00266	-0.00227	-0.00284	0.00162	0.00154	0.00131
	(-0.04)	(-0.03)	(-0.15)	(0.31)	(0.80)	(0.65)
GDP per capita in constant 2010 US$ (log)		0.0566	0.000290	-0.00988	-0.0300***	-0.0307***
		(0.21)	(0.00)	(-0.51)	(-4.10)	(-4.12)
Electoral democracy (Scale: 0-1)			-0.190	-0.334***	-0.361***	-0.372***
			(-0.70)	(-4.98)	(-18.94)	(-19.84)
Population (log)				0.165***	0.144***	0.138***
				(3.85)	(8.43)	(8.02)
Trade share of GDP(log)					-0.0149	-0.0287*
					(-1.20)	(-2.36)
Natural resource exports value per capita in 2000 US$ (log)					0.00757***	0.00800***
					(3.82)	(3.95)
Civil war (Dummy: 0 for no conflict)						-0.00860
						(-1.48)
Peace years						0.000181
						(0.81)
Constant	-2.576	-3.048	-0.0853	-2.368*	-1.604***	-1.387***
	(-0.90)	(-0.61)	(-0.06)	(-2.57)	(-4.47)	(-3.86)
Estimation Technique	Heckman	Heckman	Heckman	Heckman	Heckman	Heckman
Mill's Lambda	3.208	3.325	0.869	0.233	0.0496	0.00110
	(1.16)	(0.87)	(0.81)	(0.89)	(1.29)	(0.03)
Time Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Country Fixed Effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3728	3502	3491	3491	3076	3076

Notes:
(1) t-statistics in parentheses
(2) Statistical significance: ***p<0.001, **p<0.01, *p<0.05

Table 8: The effect of FDI on corruption: Robustness tests (post-1989)

	(1) Corruption	(2) Corruption	(3) Corruption	(4) Corruption	(5) Corruption	(6) Corruption
FDI stock share of GDP (log)	0.00234					
	(0.68)					
FDI inflows share of GDP (log)		0.0000997				
		(0.37)				
FDI stock per capita in current US$ (log)			0.00310	0.00184	0.00470	-0.0967***
			(1.36)	(0.55)	(1.40)	(-3.31)
GDP per capita in constant 2010 US$ (log)	-0.0421***	-0.0425***	-0.0504***	-0.0444***	-0.0469***	0.281
	(-4.27)	(-4.26)	(-7.06)	(-4.67)	(-5.29)	(1.90)
Electoral democracy (Scale: 0-1)	-0.291***	-0.291***	-0.272***	-0.288***	-0.288***	0.618*
	(-8.18)	(-7.88)	(-6.07)	(-8.12)	(-8.21)	(2.55)
Population (log)	0.113***	0.0968***	0.123***	0.115***	0.115***	0.527**
	(4.48)	(3.80)	(7.19)	(4.56)	(4.67)	(2.72)
Trade share of GDP(log)	-0.0224***	-0.0232***	-0.0189**	-0.0204**	-0.0217***	0.0113
	(-3.43)	(-4.33)	(-3.33)	(-3.15)	(-3.38)	(0.20)
Natural resource exports value per capita in 2000 US$ (log)	0.00645**	0.00739**	0.00759**	0.00642**	0.00599**	-0.0439
	(2.84)	(3.04)	(3.63)	(2.82)	(2.70)	(-1.84)
Civil war (Dummy: 0 for no conflict)	-0.00839	-0.00769	-0.00940*	-0.00833	-0.0102	-0.0923
	(-1.28)	(-1.28)	(-2.18)	(-1.31)	(-1.69)	(-1.35)
Peace years	-0.000181	-0.000363	-0.000304*	-0.000200	-0.000251	-0.00105
	(-0.62)	(-1.21)	(-2.12)	(-0.69)	(-0.87)	(-0.42)
Tax haven (dummy)				-0.145		
				(-1.75)		
Constant	-0.878	-0.579	-0.807*	-0.908*	-0.899*	-8.782*
	(-1.94)	(-1.27)	(-2.49)	(-1.99)	(-2.01)	(-2.11)
Estimation technique	Newey-West	Newey-West	Driscoll-Kraay	Newey-West	Newey-West	Newey-West
Time fixed effects	Yes	Yes	No	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3010	2895	3035	3035	3030	2246

Notes:
(1) t-statistics in parentheses
(2) Statistical significance: ***p<0.001, **p<0.01, *p<0.05

Table 9: List of countries in sample

Afghanistan	Egypt	Lithuania	Senegal
Albania	El Salvador	Macedonia	Serbia
Algeria	Equatorial Guinea	Madagascar	Seychelles
Angola	Eritrea	Malawi	Sierra Leone
Argentina	Estonia	Malaysia	Singapore
Armenia	Ethiopia	Maldives	Slovakia
Azerbaijan	Fiji	Mali	Slovenia
Bangladesh	Gabon	Mauritania	Solomon Islands
Barbados	Georgia	Mauritius	Somalia
Belarus	Ghana	Mexico	South Africa
Benin	Guatemala	Moldova	South Korea
Bhutan	Guinea	Mongolia	Spain
Bolivia	Guinea-Bissau	Montenegro	Sri Lanka
Bosnia and Herzegovina	Guyana	Morocco	Sudan
Botswana	Haiti	Mozambique	Suriname
Brazil	Honduras	Myanmar	Swaziland
Bulgaria	Hungary	Namibia	Syria
Burkina Faso	Iceland	Nepal	Tajikistan
Burundi	India	Nicaragua	Tanzania
Cabo Verde	Indonesia	Niger	Thailand
Cambodia	Iran	Nigeria	Timor-Leste
Cameroon	Iraq	North Korea	Togo
Central African Republic	Ivory Coast	Oman	Trinidad and Tobago
Chad	Jamaica	Pakistan	Tunisia
Chile	Japan	Panama	Turkmenistan
China	Jordan	Papua New Guinea	Uganda
Colombia	Kazakhstan	Paraguay	Ukraine
Comoros	Kenya	Peru	Uruguay
Congo	Kuwait	Philippines	Uzbekistan
Congo, Dem. Rep.	Kyrgyzstan	Poland	Vanuatu
Costa Rica	Laos	Qatar	Venezuela
Croatia	Latvia	Romania	Viet Nam
Czechia	Lebanon	Russia	Yemen
Djibouti	Lesotho	Rwanda	Zambia
Dominican Republic	Liberia	Sao Tome and Principe	Zimbabwe
Ecuador	Libya	Saudi Arabia	

Table 10: Descriptive statistics (all variables)

Variables	Mean	Std. Dev.	Min	Max	Observations
Corruption	0.583	0.246	0.0240	0.969	4,704
Control of Corruption (ICRG)	2.551	1.051	0	6	3,018
FDI stock per capita in current US$ (log)	5.215	2.415	-13.19	12.17	4,704
FDI stock as a share of GDP (log)	2.469	1.638	-15.18	7.382	4,667
FDI flows as share of GDP (percentage)	3.242	5.669	-65.41	85.96	4,539
GDP per capita in constant 2010 US$ (log)	7.740	1.295	4.752	11.19	4,342
Electoral democracy (Scale: 0-1)	0.433	0.252	0.0155	0.928	4,683
Population (log)	15.91	1.720	11.06	21.04	4,655
Trade share of GDP(log)	4.209	0.623	-1.787	6.276	4,244
Natural resources exports value in 2000 US$ (log)	2.393	2.898	0	11.07	4,315
Civil war (Dummy: 0 for no conflict)	0.200	0.400	0	1	4,292
Peace years	18.45	17.96	0	68	4,292
Tax haven (Dummy: 1 for tax haven)	0.0825	0.275	0	1	4,704