Corruption and Foreign Direct Investment in Brazil

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Due Date: 07.07.2017
Assignment: MA Thesis International Studies (15,000 words)
Supervisor: Dr. A.R. Shidiq
Second Reader:
Word count: 14,825 words

Abstract: In this thesis, I examine the relationship between corruption and Foreign Direct Investment (FDI) inflows in Brazil. I explore a mechanism which may possibly attenuate the effect that corruption has on FDI- circumventing inefficiencies. I observe several factors that appear strongly connected to inefficiencies: business negotiations, taxation and competition policy. I also find that a prevailing weak legal accountability process and small probability of punishment, may help to strengthen the attenuating effect. My findings confirm previous studies that determine corruption might not necessarily be negatively correlated with FDI.
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1. Introduction

Despite being known for its corruption scandals, Brazil has been able to record relatively respectable economic growth. Increasing Foreign Direct Investment (FDI) inflows, a growing presence of multinational corporations and even hosting international sport events such as the Olympic Games and the Fifa World Cup put Brazil into the global focus.

Brazil is a member of the BRICS and the eighth greatest economy worldwide. Its economy, size and population are larger than of any of its neighbouring states. This makes Brazil the largest democracy in South America (Green 2012, 40). Furthermore, it is Latin America’s largest FDI recipient (Kang and Huang 2012, 474). Except for the year 2006, Brazil was constantly in the top 20 FDI recipients worldwide since 1995 (The World Bank 2016a). Yet, Brazil has a long history of corruption reaching back as far as its colonial days (Green 2012).

Academics and diplomats have long been discussing the political and economic effects of corruption especially in regards to economic growth and FDI. The traditional thought is that corruption increases the cost of doing business which has negative or hindering effects on the investment climate. Consequently, most scholars argue that corruption inhibits FDI. However, I find that this traditional mechanism is not fully applicable to the case of Brazil. Investors “just don’t care about the scandal” (Sambo and Andrade 2017). Therefore, I suggest that corruption might not be negatively correlated to FDI in Brazil, especially in the time between Brazil’s market reforms in the early 1990s and the 2014 legal reforms.

FDI and corruption are topics vastly researched. Nevertheless, there have, to my knowledge, only been analyses using econometric frameworks. Analyses looking at the effects and influence of corruption in Brazil which followed a more social or political science approach have often neglected economic effects. The goal of this paper is to connect the different approaches to fill the gap.

My aim is to explore the mechanisms which may possibly attenuate the effect that corruption has on FDI inflows, as seen in the case of Brazil. My argument is that the large inefficiencies prevailing in Brazil encourage corrupt behaviour, because bribery and other illicit acts allow the circumvention of these inefficiencies. This is possible
because of the weak legal accountability process and the low probability of punishment of corrupt behaviour in the private sector.

This paper is organised into six sections. After the introduction, the second section gives a brief overview of the topic. It shows data which casts doubt on the traditional assertion that corruption has a negative impact on FDI inflows. I also explain and define the key concepts: FDI and corruption. In the third section I review literature from which I derive the possible mechanisms how corruption may influence FDI. These are part of two competing theories, one which suggests that corruption enhances FDI and the other one saying that corruption is a major hindrance. Subsequently, I explain the empirical strategy I use based on the suggestion that corruption supports FDI because it helps in circumventing inefficiencies. My hypothesis is that by circumventing the inefficiencies, the negative effect of corruption on FDI may be attenuated.

In the fourth section I present my empirical findings which are grouped according to areas where inefficiencies can be found: doing business, taxation and competition policy. I find that there are Brazil specific costs companies have to pay when operating in Brazil. These direct and indirect costs for doing business involve licencing, obtaining permits, opening a firm and receiving financial support. I find that corruption is present in all these cost areas. I explain how corruption may have helped companies to waiver the costs and increase the business opportunities. Similarly, I find that the costs and bureaucracy existent around taxation portrays another obstacle which can be reduced through corruption. Finally, I discuss Brazil’s competition policy and find evidence that corruption helped companies in the past to secure contracts and hence increase profits. All of these prevailing inefficiencies and the impact of illicit behaviour in form of bribes lend credence to my hypothesis that inefficiencies may have reduced the effect corruption has on FDI inflows in Brazil.

This interpretation is corroborated by the finding that the accountability process and legal punishment of corruption is weak. The prevailing inefficiencies in the judiciary and joint investigatory agencies lower the probability of detection. I argue that the low probability to detect corrupt behaviour in the private sector has deteriorated the legal enforcement of anti-corruption law. Consequently, deterrence is weak and companies might enjoy the benefits gained from corruption to a greater extent. Hence, the effect
of corruption may be attenuated. Thus, the findings support the theory that corruption may work as a helping hand or “grease in the wheels” for FDI.

In light of these findings, my fifth section focuses on possible industry variation. I select and juxtapose sectors of high, medium and low corruption levels. After giving a short overview over the sectors and past corruption cases, I plot their FDI. The results demonstrate that there seems to be little difference in FDI levels between the industries varying with levels of corruption. Hence, I conclude that my empirical findings are plausible and corruption may not be negatively correlated with FDI in Brazil.

2. Institutional background

The main concepts I use are FDI and corruption. I selected Brazil as a case study because it has a long history of corruption and has seen increasing FDI inflows over the past two decades. The prevalence of these two factors is especially important, since an analysis of the mechanisms would make little or no sense if these prerequisites are not met (Beach and Pedersen 2013).

![Figure 1: Corruption Perception Index (CPI) and FDI (BoP) in Brazil (Transparency International n.d., The World Bank, 2016)](image)

Figure 1 presents the prevalence of both corruption perception and FDI inflows between 1995 and 2015. However, it does not seem to show any correlation between corruption and FDI. This is in contrast to the traditional view that the prevalence of corruption deters investors.
With a CPI constantly below 50, Brazil can be seen as more corrupt than clean. Comparing the years 1995 and 2015 it can be noted, that there has been a decrease in corruption perception. Furthermore, it can be seen that the CPI fluctuated to some extent between 27 (in 1995) and 43 (in 2012 and 2014) probably due to the revelation of various corruption scandals, such as the Mensalão in 2005 and the Lava Jato Scandal since 2014.

Another objection against the traditional view was raised by Jalil, Qureshi, and Feridun (2016). In their panel-data study of 42 countries over the period 1984 until 2012, they found a positive coefficient between corruption and FDI inflows in the case of Brazil. This finding suggests that corruption had a positive impact on FDI. Their result corroborates that a 1% increase in corruption is associated with a 1.315% increase in FDI in Brazil.

FDI measures “the total level of direct investment at a given point in time” (OECD 2016). They are made “to acquire a lasting management interest (usually 10 percent of voting stock) in an enterprise operating in a country other than that of the investor (defined according to residency)” (Al-Sadig 2009, 289f). Depending on the economy in focus, it is differentiated between inward and outward FDI. I only focus on inward FDI, which is defined as “the value of foreign investors' equity in and net loans to enterprises resident in the reporting economy” (OECD 2016). More specifically, FDI inflows are “the value of inward direct investment made by non-resident investors in the reporting economy, including reinvested earnings and intra-company loans, net of repatriation of capital and repayment of loans” (United Nations 2017). Here, the reporting economy is Brazil. Because I only focus on FDI inflows, I will from now on use the terms FDI and inward FDI interchangeably.

Corruption relates to “the misuse of entrusted authority for personal benefit” (OECD 2015, 30). Similarly, Transparency International (2016) defines corruption as “the abuse of entrusted power for private gain” with the distinct classifications of grand, petty and political corruption depending on the sector and amount of money involved. Here, the authority is understood as the power given to Brazilian government officials.
The OECD (2013, 7) enumerates the four most widespread corruption measures: the Corruption Perception Index (CPI), the Bribe Payers’ Index (BPI), the Control of Corruption Indicator (CC) and the Corruption Index of the International Country Risk Guide (ICRG).

I use the CPI because it “aggregates data from a number of different sources that provide perceptions of business people and country experts of the level of corruption in the public sector” (Transparency International 2017). Even though the index only accounts the “perception” of corruption, it is still seen as a reliable index due to its popularity and the variety of sources used. The index aims to only visualise corruption and is therefore “clean of other determinants of the institutional environment” (Egger and Winner 2006, 461).

In order to be able to plot the CPI for the full range of years, I adjusted the range of measurement for the years 1995 until 2011. In these years, the CPI was plotted on a range between 0 (highly corrupt) and 10 (clean) which was then changed to 0 and 100 in 2012. Therefore, I multiplied the scores of the years before 2012 by 10 and plotted the results on a scale out of a hundred. This is possible because, to my knowledge, only the scale but not the method of measurement changed.

Possible forms of corruptive behaviour are: bribery, influencing trading, embezzlement, misappropriation, diversion of property and obstruction of justice (OECD 2008), theft and patronage (OECD 2013). This includes inefficiencies such as the misallocation of resources and the distortion of incentives (ibid.). Brazil also experiences a variation of theft of public money such as embezzlement or tax evasion (Taylor 2010). Patronage may appear in form of favouritism, nepotism or clientelism (OECD 2013). Especially nepotism seems to be a significant obstacle in Brazil, when elected representatives hire family members by using public funds (Taylor 2010).

I mainly focus on bribery because it seems to be the most common and widely used form of corruption between country officials and the private sector. Bribery refers to influencing public decisions by paying public officials (OECD 2013). However, the motives of corruption are likely to be similar and independent of the form used. Corruption between two private entities will only be discussed briefly.
Bribe payments result from “interaction between public and private interests within the structure of state” (Morosini and Vaz Ferreira 2014, 142). Payments involve state offers in regards to benefits or costs offered by the state, for instance subsidies distribution, tax collection, enforcement of regulations or giving authorisations (ibid.). The private sector then tries to bargain to increase the benefits or decrease the costs through paying bribes.

Taylor (2010) argues that the higher the number of public transactions and interactions that an organisation is confronted with the more susceptible it is to corruption. Taylor’s analysis further shows that Brazilians have more direct experience with corruption than their Latin American peers and they view corruption as salient hindrance regarding economic development. This is caused by the long history of corruption and its persistence in Brazil since colonial days. Hence, it may be seen “as a rational (if still unethical) response to local conditions” (Taylor 2010, 93). In a similar manner, Green (2012) studies the historical development of corruption and finds that one of the causes of corruption is the persistent inequality because “inequality feeds the growth of more orthodox forms of criminal behavior” (ibid., 51) and corrupt modalities have existed independent of the prevailing form of government. Green (ibid., 47) further pinpoints that “since the return to democracy in 1985, every elected government has been caught up in more than one major corruption scandal.”

3. Conceptual framework

3.1. Theoretical background

There are well established theories in this field, enumerating various mechanisms. My aim is to develop a framework which is suitable for the case. I review relevant literature which was published mainly in academic journals and look at the mechanisms of how corruption might influence FDI. In the second part of this chapter I explain the empirical strategy which I will use for the case of Brazil. The main mechanism I find by looking at the theoretical background, is the avoidance of inefficiencies.

Hossain (2016) and Jalil et al (2016) argue that the influence of corruption on FDI varies between regions. In general they suggest that corruption has negative effects on Latin America’s FDI, with Brazil being an exception (Jalil, Qureshi, and Feridun S1908391
They consider different economic pull factors for FDI; which are market size, a stable macroeconomic environment, the availability of a skilled workforce and infrastructure (Hossain 2016, 256). Further determinants of FDI are: corporate tax rates, labour cost and quality, trade openness (Hossain 2016), inflation and external debt (Jalil, Qureshi, and Feridun 2016) with possible influence from prevalence of democracy and bureaucracy (Hossain 2016). I will use some of these determinants in my analysis, such as taxation and trade openness, as I found that they play an important role and probable motive for corrupt activities.

There are two groups of theorists with opposing views. One group argues that corruption metaphorically grease the economic wheels. The other suggests that corruption is a deterrent and hinders FDI which means that it is sand in the wheels of the economy. Hence, corruption may be either beneficial for FDI or impeding it. Some authors refer to the sand or grease in the wheels theory as the grabbing or helping hand (Amarandei 2013; Egger and Winner 2006). Building on the findings of Jalil et al (2016) that corruption did not have a negative impact on FDI in Brazil, I focus on the greasing-the-wheels theory. However, as the norm supported by most OECD states is mitigating corruption, the OECD and other international organisations support the “sand-in-the-wheels” theory and conclude that corruption has myriad disadvantages for FDI (OECD 2013). One exception is the “Asian Paradox” where some Asian countries show high corruption levels and high economic growth rates (ibid.).

<table>
<thead>
<tr>
<th>Mechanisms</th>
<th>Literature</th>
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<tbody>
<tr>
<td>Avoiding inefficiencies</td>
<td>(Jalil, Qureshi, and Feridun 2016, 259)</td>
</tr>
<tr>
<td>Circumventing bureaucracy</td>
<td>(Delgado, McCloud, and Kumbhakar 2014, 300)</td>
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<td>Circumventing government regulations</td>
<td>(OECD 2013, 3)</td>
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<tr>
<td>Facilitating transactions</td>
<td>(Hossain 2016, 257)</td>
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<td>Speeding up processes</td>
<td>(Bellos and Subasat 2012, 565f)</td>
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*Table 1: Mechanisms suggested by the “greasing the wheels” theory*

Table 1 shows the mechanisms how corruption is thought to grease the investment environment. These can be summarised under the idea of avoiding or circumventing inefficiencies. Scholars argue, that in countries with high, inefficient bureaucracies and burdensome government regulations, corruption can help to bypass these (Delgado, McCloud, and Kumbhakar 2014; OECD 2013; Bellos and Subasat 2012).
Furthermore, transactions between companies or with the state can be facilitated (Hossain 2016). Hence, corruption may accelerate and facilitate processes which can be translated into a reduction of indirect costs especially in terms of time.

Corruption may further help to reduce the direct costs of doing business through bribing government officials to ease inspections. As a result firms may pay less in taxes or tariffs which might be essential if the company wants to stay in business (Taylor 2010). Similarly, facilitating transactions can also ease the market entrance of foreign firms as it could help circumventing for instance environmental regulations or reducing entrance barriers. As a result, conducting business seems easier compared to less corrupt countries.

Bribe payments may also be used to win private or public tenders and thus business. Hence, the bribing company can achieve more contracts which are likely to translate into higher profits and an increased market share. An environment of bribe-paying competitors is likely to motivate a company to engage in corruption to win business (Taylor 2010). Based on a cost-benefit analysis, companies may find that the bribe payment only represents a small cost in relation to the potential gains they achieve in return (ibid.). The illicit payments are also likely to be smaller than the direct or indirect cost they would have to pay otherwise. If the benefits of paying the bribe are higher than the potential costs, illicit behaviour is expected to be more accepted by the majority of companies.

On the other hand, there are various mechanisms scholars suggest which may lead to corruption inhibiting FDI inflows (Table 2). Those scholars generally agree that corruption increases the cost of production and consequently decreases profits (OECD 2013; Al-Sadig 2009; Amarandei 2013; Bellos and Subasat 2012; Egger and Winner 2006; Habib and Zurawicki 2002; Hossain 2016; Jalil, Qureshi, and Feridun 2016).

Corruption may lead to a reduction in investment quality and deteriorates infrastructure (Jalil, Qureshi, and Feridun 2016). The quality of investments is particularly damaged because resources are not used efficiently (ibid.). Corruption is further expected to divert or hinder the free flow of resources (Delgado, McCloud, and Kumbhakar 2014). Hence, the efficient allocation provided by free markets cannot prevail. This often leads to uneven competition (Bellos and Subasat 2012; S1908391 9
Habib and Zurawicki 2002). Inefficient resource allocation may further hinder innovation (Delgado, McCloud, and Kumbhakar 2014). These factors then lead to a decrease in a country’s productivity (Jalil, Qureshi, and Feridun 2016).

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<th>Mechanisms</th>
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<tr>
<td>Decreasing investment quality</td>
<td>(Jalil, Qureshi, and Feridun 2016, 261)</td>
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<td>Decreasing productivity</td>
<td>(Jalil, Qureshi, and Feridun 2016, 261)</td>
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<td>Decreasing transparency</td>
<td>(Jalil, Qureshi, and Feridun 2016, 259ff)</td>
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<td></td>
<td>(Bellos and Subasat 2012, 565)</td>
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<tr>
<td>Deteriorating infrastructure</td>
<td>(Jalil, Qureshi, and Feridun 2016, 261)</td>
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<tr>
<td>Hindering innovation</td>
<td>(Delgado, McCloud, and Kumbhakar 2014, 299)</td>
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<td>Increasing costs</td>
<td>(OECD 2013, 3)</td>
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<td>(Al-Sadig 2009, 267)</td>
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<td>(Amarandei 2013, 314)</td>
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<td>(Bellos and Subasat 2012, 565)</td>
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<td>(Egger and Winner 2006, 459)</td>
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<td>(Habib and Zurawicki 2002, 293)</td>
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<td>(Hossain 2016, 257)</td>
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<td></td>
<td>(Jalil, Qureshi, and Feridun 2016, 259ff)</td>
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<tr>
<td>Increasing risk</td>
<td>(Habib and Zurawicki 2002, 303)</td>
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<tr>
<td>Increasing uncertainty</td>
<td>(Bellos and Subasat 2012, 565)</td>
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<td>(OECD 2013, 3)</td>
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<td>(Al-Sadig 2009, 269)</td>
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<td>Less legal protection</td>
<td>(Bellos and Subasat 2012, 565)</td>
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<td>(Jalil, Qureshi, and Feridun 2016, 259)</td>
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<tr>
<td>Resources (Hindering free flow,</td>
<td>(Delgado, McCloud, and Kumbhakar 2014, 298f)</td>
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<td>inefficient use)</td>
<td>(Jalil, Qureshi, and Feridun 2016, 259)</td>
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<tr>
<td>Uneven competition</td>
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Table 2: Mechanisms suggested by the “sand in the wheels” theory

From a legal perspective illicit behaviour may increase uncertainty (Bellos and Subasat 2012; OECD 2013; Al-Sadig 2009) for instance because agreements emerging from corruption might not be legally binding. Hence, there is often no or only little legal protection for the contracting parties (Bellos and Subasat 2012; Jalil, Qureshi, and Feridun 2016). A lack of legal protection could lead to higher risks of breached contracts (Habib and Zurawicki 2002). Thus, uncertainty and risks increase which could become costly for firms and lead to less predictability. The limitation or lack of transparency (Jalil, Qureshi, and Feridun 2016; Bellos and Subasat 2012) might also increase uncertainties which investors may not be willing to face.
Consequently, corruption could deter corporations to invest into certain countries or markets.

The probability that the corrupt activity gets detected and successfully punished also plays an important role (Taylor 2010). A high probability is likely to lead to additional direct and indirect costs as well as damaging a company’s reputation. Hence, it is likely to act as a deterrent and may hinder companies profiting from the benefits corruption might have. Hossain (2016, 268) summarises that reducing corruption would increase the FDI inflows due to increased confidence of investors, a reduction of costs and higher transparency and accountability. However, the general perception is that the relative importance or impact of both sides, the sand and the grease mechanisms as well as the probability of punishment influence or outweigh each other.

Therefore, it needs to be taken into account that the effects of corruption depend on the overall structure of the economy and regulations. “If the revenue effects outweigh the cost effects, corruption is expected to increase FDI” (Amarandei 2013, 314) and vice-versa. Consequently, the overall impact of corruption can be either negative, positive, or zero, depending on the importance of both aspects or which mechanism is dominant (Egger and Winner 2006, 459). In the case of Brazil I assume that corruption does not have a strong negative impact on FDI. According to Amarandei’s theory of balancing this would mean that the benefits achieved through corruption are higher or equal compared to the respective disadvantages.

3.2. Empirical strategy
The aim of this thesis is to analyse the mechanisms that might have attenuated the effect that corruption has on FDI. I will use the established, aforementioned theory by emphasising the greasing-the-wheels effect. I focus on this theory because as seen in the previous sections, corruption might not have a negative correlation with FDI. Consequently, the sand-in-the-wheels theory does not seem to be completely applicable to the case. This was for instance shown by Jalil et al (2016) who calculated that a 1% increase in corruption would lead to a 1.315% increase in FDI. Subsequently, the underlying purpose of the thesis is “to investigate whether the hypothesized mechanism was present in the case” (Beach and Pedersen 2013, 165).
Here, the mechanism in focus is that corruption circumvents inefficiencies and may therefore attenuate the effect of corruption on FDI.

First of all, I conceptualise the theory and establish the framework which I employ during the empirical research. A framework is important in order to analyse the process. Here, the mechanisms need to be “disaggregated into a series of parts composed of entities engaging in activities” (Beach and Pedersen 2013, 164). The entities used are international corporations engaging in corrupt activities. The mechanisms and hence the theoretical underlying forces are taken from the theory. The reviewed process looks at the ways corruption may attenuate the effect of corruption on FDI. Thus, the expected outcome is either no visible change or a slight increase in FDI. In focus for the theoretical framework are inefficiencies and the possibility of circumvention through corruption.

Taylor (2010, 95) asserts that “corruption emerges from a mix of long-term structural conditions and institutional factors that constitute the environment in which corrupt activity takes place”. I argue, in line with the theory that the conditions mainly refer to inefficiencies. Thus, the following hypothesis will be tested: There are prevailing inefficiencies in Brazil which can be avoided through corrupt activities. Hence, prevailing inefficiencies are the principle aspect of the theory which is singled out for analysis.

Included in the inefficiency analysis will be costs since they are a central argument of the opponents of the greasing-the-wheel theory. They argue that corruption increases the costs of doing business in a country and is therefore impeding FDI. Furthermore, costs are a vital part when operating in Brazil. The country has the reputation of being a “highly bureaucratized society or inefficient system” (Green 2012, 45). Here, a great obstacle is the “Custo Brasil” (Brazil Cost), a popular phrase used in literature to summarise Brazil specific costs which companies need to pay for doing business.

The OECD (2015, 27) summarises Brazil costs as “the high costs of Brazil’s industry as a result of weak policy settings”. The overall burden of these costs caused by government regulations is among the highest in global comparison and bribe payments are quite common (World Economic Forum 2015, OECD 2015b). It includes both direct and indirect costs of business operations arising from
“distribution, government procedures, employee benefits, environmental laws, and a complex tax structure” (U.S. Department of Commerce 2016b). In summary, these costs include obstacles arising from the complex bureaucracy of the tax system and other administrative or regulatory frameworks and judicial hurdles (International Monetary Fund 2015). Despite not being explicitly stated, corruption is sometimes also assigned to this category. The importance of the Brazil Costs as summary of the inefficiencies makes it a central part for my empirical analysis.

By providing these stumbling blocks for foreign and local investors, the Brazil Costs are a major obstacle inhibiting economic growth and investment (International Monetary Fund 2015). It is suggested that reasons for the poor domestic services provided mainly allude to a variety of interconnected factors such as the quality of infrastructure, costs of doing business, openness to trade and consequently access to new technologies and innovation and the efficiency especially in the financial sector (The World Bank 2016b). In the case of Brazil, the obstacles are in particular, “burdensome taxes, inefficient regulation, poor access to long-term financing, and a rigid labor market” (The Heritage Foundation 2017). All these hindrances depict inefficiencies and raise costs. In order to structure the empirical analysis, I group these factors as follows: doing business, taxation and competition policy. These three groups are used for the framework of my empirical analysis as depicted below.

Apart from the inefficiencies prevailing in Brazil I give industry examples, where possible, of situations when corruption was used. Statistics are explained where available to support my findings. In my research I use mainly qualitative, secondary data from a variety of sources as for example analyses by international organisations, academic articles and newspaper articles. Nevertheless, the prohibition of corruption makes it difficult to find myriads of reliable sources and examples from previous years on why a company used bribe payments. Therefore, the majority of examples include revelations of current investigations mainly concerning the Lava Jato
Scandal. Throughout the course of the proceedings, various business people and politicians have testified and explained the corrupt networks, strategies and reasons for using these means. Because the revelations mainly refer to the last decade, I argue that they are applicable to this case study. Furthermore, the oil and connected construction industry which are in focus of the investigators are major recipients of FDI. Especially the petroleum conglomerate Petrobras, which is “the one true magnet that’s attracting all of that foreign capital flowing into Brazil” (Rapoza 2012). Its importance for Brazil and the industry make it an interesting and useful example for the case.

Furthermore, it is important to compare the costs of corruption to the profits generated with its aid. There are some developments I expect, which could have influenced the outcome. I assume that in terms of business operations, bribing government officials led to the award of contracts. Bribes may have also led to reductions of costs for instance in taxation. Thus, as argued by supporters of the greasing-the-wheels theory, the bribe payment may only have been a minor cost in order to generate higher profits which would possibly not have been achieved without the payment.

Theory recalls that corruption reduces the effective resource allocation for example through hindering their free flow or creating artificial bottlenecks. The ineffective use of resources would then reduce productivity and hence FDI inflows. The resource allocation may have not at all, or only slightly been affected by corruption, but rather by other inefficiencies in the market environment. Another possibility is that the diversion of resources did not negatively influence companies.

Scholars argue that corruption further reduces or distorts competition in the market, for instance when artificial monopolies or oligopolies are created. Limited competition would then reduce productivity and FDI inflows. I expect that competition is reduced due to other circumstances such as inefficient liberalisation of the market. Therefore, corruption might not have limited competition in the Brazilian market.

Apart from analysing the inefficiencies, I will look at the enforcement of anti-corruption law and the probability of detection. I argue that a weak or inefficient judiciary is advantageous for corruption because the probability to get caught would be low. Thus, the factor of deterrence might not be given. Analysing the judiciary is
likely to help assessing the quality of law-enforcement. I expect that the accountability process and anti-corruption law-enforcement is weak which could thus not successfully deter bribery. Because of its importance and complexity, legal enforcement forms a separate part in the empirical analysis.

Lastly, to find further evidence on whether the empirical findings may be true, I look at industry variation. The aim is to identify the differences in FDI between industries of high, medium and low corruption. I do this by identifying sectors with these criteria and analysing their respective FDIs. Statistics and surveys mainly from secondary sources are used to differentiate the level of corruption. If the hypothesis is true that corruption may attenuate the effect of corruption on FDI, the FDIs of high and low corrupt industries should show similar developments.

4. Empirical findings

4.1. Doing business
Bribe payments might assist the importation process in a multitude of ways. They could accelerate the time to clear imports from customs, reduce tariffs or ease inspections. Consequently, direct and indirect costs may be reduced. This is especially important because companies operating in Brazil face a large complexity of regulations which often lead to large financial burdens. The bureaucratic obstacles are not only time consuming but also create relatively high compliance costs. The OECD (2015b, 51) argues that while direct compliance costs are comparable to neighbouring or OECD countries, the indirect costs resulting from numerous and time consuming procedures are higher.

Business operations are complex and include myriad bureaucratic processes for instance, when opening a new business, importing or applying for licenses. Apart from these administrative processes, companies face a variety of other obstacles such as regular audits and application for financial support. My research shows that all these activities are affected by corruption with the aim to facilitate processes and to avoid costs.

Research confirms, that bribes are frequently used as a catalyst to accelerate bureaucracy and the transmission of documents (Salgado 2002). Over a third of the population feels that business is corrupt (Transparency International 2013). 11.7% of
1,802 firms surveyed by the World Bank corroborate that they had previously been asked to pay bribes during their business operations (World Bank Group 2009). This is not surprising because almost half of the Brazilian population agrees that public officials and civil servants are corrupt (Transparency International 2013).

In terms of opening new businesses, firms evaluate the process as medium efficient and cumbersome, principally due to the high level of bureaucracy, cost and the required time (The Heritage Foundation 2017). Despite the existence of free trade agreements, trade barriers and tariff protection are high and raise the costs and product prices especially for high capital and intermediate goods (OECD 2015b). With 10%, Brazil's average tariff is higher than in other countries of the region such as Colombia (OECD 2015, 30).

Furthermore, non-tariff barriers such as customs are medium high in global comparison (Brazil ranks 117 of 140). Custom procedures and compliance portray high burdens as shown by the low ranking in the Global Competitiveness Index where Brazil only ranks 133 out of 140 (World Economic Forum 2015). Businesses are also highly impacted by the rules on FDI (rank 108 of 140). Clearing for instance imports from customs required 24.7 days which is around 10 days more than in other Latin American countries (World Bank Group 2009). Thus, almost 30% of firms identify customs and trade regulations as a major obstacle in Brazil which lies above the regional average of 18.2% (ibid.).

Lengthy processes and additional costs also challenge the application for licenses and permits. Corruption may reduce the time and money needed to obtain a license. It might also ease controls and inspections and subsequently decisions in favour of issuance. For companies, this is especially important because opening a firm in Brazil is often considered challenging. At 83 days, opening a business takes over 7 times longer than in other Latin American countries (OECD 2015, 29) and three times longer than in countries like China (The World Bank 2016b). This is due to the high regulatory and tax burdens which are among the highest in global comparison (The World Bank 2016b). The process comprises 12 procedures and is therefore bureaucratic and burdensome which the Brazilian government has already acknowledged (OECD 2015, World Economic Forum 2015).
In 2002 Transparência Brasil and the consulting firm Kroll conducted a survey among 92 firms, discussing corruption in the private sector (Globonews 2002). The study revealed that the majority of firms have been confronted with bribe payments by government officials in the past in return for the permission for participation in public bidding processes or to obtain licences. Almost half of the companies (48.4%) identify licensing and permits as a major constraint to business operations in Brazil. This is more than twice as many as the regional average (World Bank Group 2009).

The time required to collect licenses is relatively lengthy: 79.7 days for an operating license and 73.2 days for a construction-related permit (World Bank Group 2009). The regional average is as low as 45.1 days to obtain an operating license. However, the process to get a construction-related permit is faster than the regional average time of 84.8 days (ibid.). As I explain in the following sections, the construction industry is affected vastly by corruption. Therefore, it may be that the high corruption accelerated the average time needed for obtaining a construction license.

The average time for issuing an import license is 62.6 days (World Bank Group 2009). This exceeds the statutory timeframe of 60 days (World Trade Organization 2013, 10) and is more than twice as long as the regional average of 25.5 days (World Bank Group 2009). Reasons may be a lack in capacity of the customs services and high bureaucratic burden which inhibits faster processing. In some cases, goods require licenses from more than one agency or even a fee (World Trade Organization 2013, 10) which prolongs the processes even more.

A study by the World Bank Group (2009) confirms the prevalence of corruption in the licensing environment. 9.9 % of the firms surveyed were expected to use bribes in order to get an operating licence which is almost the same number as for construction permits (9.4%). However, in terms of import licenses corruption only affected 1.2% of firms. Apart from licencing, gifts were requested in exchange for electrical connections (4.6% of firms), water connections (6.7%) or simply “to get things done” (12.5%) (ibid.).

Illicit means may also be used in order to obtain financial assistance or other incentives, for example in the form of financial support, tax incentives, credit insurance or guarantees (World Trade Organization 2013, 11). These incentives are available at federal and local levels, for example for programmes in the automotive,
information technology or petroleum sector (ibid.). According to the Global Competitive Index, financial services are available and relatively affordable (World Economic Forum 2015). However, it is difficult to access these loans or to gain venture capital (ibid.). The availability of subsidised credits is either scarce or costly due to their accessibility and high interest rates (OECD 2015b, 19). These restrict firms new to the Brazilian market. The often urgently needed financial assistance imposes large obstacles for the firms. Credits at low interest rates are almost exclusively available from the Brazilian national development bank (BNDES). In some cases, small and medium sized enterprises cannot afford the loans offered by private banks as they often come with high interest rates. Consequently, corruption can work as a facilitator to gain access to cheap loans. Nevertheless, small firms may not have the means to pay for, or organise large bribes.

The World Bank (2016) found that often older, more conservative companies, and not firms with different profiles, benefited from public loans with low interest rates. Therefore, it was little surprising when corruption investigations began around the BNDES. In 2010, the dispersed loans of the BNDES comprised a value of around $101 billion (Margolis 2016). It is estimated that around 60% of loans provided by the BNDES between 2003 and 2011 went to companies with high annual earnings instead of those companies originally envisaged for the subsidised, affordable loans (ibid.). By providing financial support, for example to political candidates during electoral campaigns, companies attained $28 million worth of loans in return if the candidate won (ibid.). In the case of loosing, loans to the company dropped significantly (ibid.). Marcelo Odebrecht, imprisoned former head of the construction conglomerate Odebrecht, has revealed that the former Brazilian finance minister pressured him to financially support political campaigns in exchange for cheap, subsidised loans (ibid.).

Nevertheless, the scandal evolving around the BNDES was not the first of its kind. Around the turn of the millenium, two large development agencies were already found guilty in diverting funds. Instead of promoting economic development by providing financial assistance, the agencies enriched businessmen and politicians (Green 2012, 48). For those companies with sufficient funds for corruption, these bribes brought cheap capital. On the other hand, those dependent on initial financial

1 Banco Nacional do Desenvolvimento
aid, are unlikely to profit from credit related bribes if they do not successfully bribe agents themselves.

Corruption and bribe payments also appear on a less structured and smaller scale. Research confirmed that bribe payments enabled firms to benefit from more relaxed inspections by ending threats, ignoring fraud, fines and undeclared values (Globonews 2002). Hence, even occasional, small bribe payments are already likely to lead to cost reductions, facilitating business operations or the release from charges. Subsequently, apart from circumventing inefficiencies, corruption also helped reduce direct and indirect costs of doing business.

4.2. Taxation
The Global Competitiveness Report shows that tax rates are the primary hurdle of doing business in Brazil (World Economic Forum 2015) and subsequently cause of inefficiencies. A survey conducted by the World Bank Group (2009) found that 71.4% of firms see tax administration in general as a major constraint. Tax rates are considered as a major hurdle by 81.5% of the firms. Both shares are vastly above the regional average where only 20.9% see tax administration and 32.9% of firms find tax rates constraining (ibid.).

Traditionally taxation has been a popular subject affected by corruption. Reasons for corruption are, according to Pearson (2016) the high tax rates as well as the complex and burdensome tax system. These make tax evasion a “survival strategy” (Taylor 2010, 93). Corruption might also accelerate the tax compliance time.

Companies have confirmed the existence of corruption in relation to taxation. 8.3% of the firms surveyed had already been asked by tax officials to pay bribes or give presents (World Bank Group 2009). What is more interesting is that more foreign (13.7%) than domestic companies (4.2%) had been asked for bribes (ibid.). These findings reveal the high perception of taxation related hindrances for business operations in Brazil. They further confirm, that corruption is rooted in this sector. In the following, I identify the inefficiencies in more detail.

The total tax rate in Brazil is 69,0% of profits (World Economic Forum 2015). This is significantly above the regional average of 52.3% (World Bank Group and Pwc 2017, 122). The non-refundable taxes alone account for an increase of around 6% of final
investment costs (Confederação Nacional da Indústria 2014, 11f). Total taxation costs represent around 14.8% of the total investment value (ibid., 21). However, with only ten required payments the number is less than half of the amount of payments usually required in South America (World Bank Group and Pwc 2017, 123).

Not only are the direct taxation costs a burden, especially in terms of compliance, the indirect costs related to taxation are relatively high in global comparison (OECD 2015b). This is due to a “fragmented and inefficient indirect tax system” (OECD 2015, 27). Curiously, taxation systems vary between states and sometimes even municipalities, for instance in terms of the value added taxes (VAT) (OECD 2015b; Confederação Nacional da Indústria 2014). These local variations demonstrate a barrier to investment which is higher in Brazil than in its neighbouring countries due to the regulations and local differences (Subramanian, Anderson, and Lee 2005). There are three levels of government for which different regulations and tax rates may apply: state, province and municipality. There is also not a single, common VAT but a variety of at least four distinct tax rates depending on the kind of good or service concerned (Confederação Nacional da Indústria 2014). Internal taxes vary and depend on the “product type, the competent sub-federal authority, and the importer’s tax regime status” (World Trade Organization 2013). Hence, compliance with this complex system is difficult and time consuming. Furthermore, requesting a tax refund is also time consuming and is related to relatively high bureaucracy (Confederação Nacional da Indústria 2014).

Even though the time to comply with tax payments has decreased in Brazil, it is still a major obstacle. The introduction of electronic systems increased the efficiency within the tax compliance process (World Bank Group and Pwc 2017). Brazil managed to save 562 hours in tax compliance in 2015 compared to previous years. However, with 2,038 hours in 2015, Brazil still has the highest time to comply with taxes worldwide according to a study conducted by the World Bank Group (ibid., 38). The regional average of time to comply with taxes is 564 hours and thus less than a third of the time requirement in Brazil (ibid., 122).

Recent revelations in relation to the “Operation Zelotes” which started in 2014 found a number of tax evasion cases involving over 70 Brazilian companies. These companies are from a variety of industries, for example agriculture, civil engineering
and finance (Boadle 2015). By bribing officials these companies achieved a reduction or waiver of the required tax payments (Pearson 2016). Hence, bribe payments allowed companies to save time and money which may have helped some firms to change losses into profits. Waivers may have also accelerated the business processes because no or less compliance time was required.

Furthermore, corruption often involves the Brazilian VAT called ICMS\(^2\) (Salgado 2002). By bribing government officials to ease inspections, companies only pay an inferior value in taxes and a commission to the inspector. A case in the state of Mato Grosso in the end of the 1990s showed that by paying 10\% of the initial ICMS value in bribes, the inspectors let goods enter the state without the required tax payments (Salgado 2002). Thus, the companies saved 90\% of the tax payment which significantly reduced the costs of doing business.

4.3. Competition policy

Competitive pressures and resource allocation mechanisms are weak and do not necessarily favour those firms with high productivity as in a free market (OECD 2015). These weak competitive pressures, the lack of incentives and high trade protection hinder productivity gains (ibid.). Researchers found that Brazil has more poorly-managed companies than for example Mexico, China or the USA (The World Bank 2016b). This is partly caused by the insufficient competition and thus lagging incentive to increase productivity. In global comparison the intensity of local competition is rated medium with relatively ineffective anti-monopoly policy (World Economic Forum 2015).

Bribes are often aimed at influencing or avoiding extensive competition. Latest revelations indicate to what extent corruption is used to influence the market. Emílio Odebrecht, former chairmen of the construction firm Odebrecht, one of the main companies involved in the Lava Jato corruption scandal, revealed that bribes have helped the company to increase its turnover from R$17bn in 2003 to R$132bn in 2015 (Chade 2017). In Brazil itself, Odebrecht gained $1.9 billion in contracts in return for only $349 million spent in bribes (Stevenson and Sreeharsha 2016; U.S. District Court 2016, 12). For over a decade, the company bribed government officials

\(^2\) Imposto sobre Circulação de Mercadorias e Serviços
and employees of Petrobras in order to illegally secure contracts in multiple countries (U.S. District Court 2016).

In general, researchers found that at least 32.9% of companies are expected to give presents or to pay bribes in order to secure government contracts (World Bank Group 2009). However, the share of foreign-owned firms is lower (3.7%). The additional costs for the bribe payments accounted on average for 0.4% of the contract value (ibid.). Companies are likely to reimburse these costs by adding them to the sales price. Subsequently, companies could gain from the additional contract value while reimbursing the costs of corruption.

Some argue that corruption restricts competition and therefore creates inefficiencies. While this may be true for some cases, I find that some restrictions to competitive forces are leftovers of previous governments. Until the late 1980s Brazil’s economy and policy making supported various competition-limiting and resource-diverting factors. These included high protection and isolation of the Brazilian market from global competition and an evolving monopolistic or oligopolistic market structure with rent-seeking firms and little orientation towards improvements in productivity (Amann and Baer 2008). Only in the 1990s, Brazil started liberalising its market and privatising its firms. The effect and degree of liberalisation still varies between industries and not all sectors of the economy were able to increase productivity and to successfully deal with the new competitive pressures (ibid.). This is one of the reasons why restrictions in foreign investment and therefore competitive distortion are still present in a variety of sectors such as, “health, mass media, and telecommunications, aerospace industry, rural property, maritime and air transport” (World Trade Organization 2013, 9). Evidence may be that less productive companies often gain the largest market shares (OECD 2015, 29). This shows that inefficiencies also have other origins than corruption.

Traditionally, bribe payments also motivated country officials to influence the market and competition. The latest corruption investigations revealed that the chemical company Braskem paid over $20 million in bribes to government officials (Stevenson and Sreeharsha 2016). In return, these influenced the petroleum supplier Petrobras to sell their crude oil byproducts for more favourable prices (ibid.). Further bribe payments made by Braskem to politicians influenced policy making in passing a law.
which allows tax credit for certain raw materials purchased by Braskem (ibid.). Hence, Braskem managed to decrease its cost of production and may have benefited from a facilitated taxation system.

Despite these bribe payments helping companies like Braskem, it needs to be taken into account, that they may drive other companies out of the market. Thus, bribe payments can be useful for those paying them but due to the distortion of competition, other companies, especially those of small or medium size, are likely to be disadvantaged. Therefore, corruption may be beneficial but could also deter some companies, according to the sand-in-the-wheels theorists.

Furthermore, those companies profiting need to take into account that the contracts are not necessarily legally binding. Therefore, in case of disputes, the parties may have difficulties to legally enforce the meeting of commitments. In addition, transparency especially towards the shareholders is not given. Construction companies can for instance raise their prices or charge for additional services initially not agreed upon and the client has little possibility to demand adherence to the contract. However, this is seldom an issue from the foreign investor’s point of view as long as profits are generated.

As the Lava Jato operation shows, Braskem is not the only company profiting from illicit behaviour. In order to participate in a transportation project, Odebrecht paid over $20 million between 2010 and 2014 to government officials which led to profits of around $184 million (U.S. District Court 2016, 15). For another construction project located in Rio de Janeiro, Odebrecht paid around $9.7 million in bribes over the course of 4 years which led to profits of around $142 million (ibid., 16). These examples prove that corruption does not necessarily increase the costs for the company on the bribing end. In the aforementioned cases the costs only represented a small share compared to the gains achieved.

Another strategy pursued by companies through illicit means is the formation of cartel-like networks. Odebrecht and other construction companies, for instance, formed such a network as recent revelations showed. The firms divided up contracts and coordinated prices. Consequently, various companies achieved contracts and similarly to oligopolies, they could charge higher prices for their services.
Investigations conducted by an U.S. District Court (2016, 13) have found and published the procedure used by these companies:

“Once it was determined which company or companies should be responsible for a certain project, as well as the price that Petrobras felt was appropriate for the particular project, it was agreed that only the predetermined company would present a qualifying bid, and that the other Cartel Companies would present proposals that would ensure the predetermined company’s winning bid. In this manner, the Cartel Companies rotated the available Petrobras contracts between them.”

The previous examples show that in terms of competitiveness, corruption allowed some companies to achieve profits and survive in the market. This contradicts the idea of corruption deterring investment. On the other hand, Brazil also faces a variety of structural shortcomings which may instead influence its competitiveness. I argue that these need to be understood as obstacles for investment instead of solely focusing on the prevalence of corruption. These hindrances are for example “inadequate infrastructure, insufficient access to credit, and high taxes” (World Trade Organization 2013, 8) as well as the previously mentioned administrative burden and regulations (OECD 2015b; International Monetary Fund 2015). Competitiveness is also reduced due to trade barriers, local content requirements and high tariffs which shield Brazil from competition. Other barriers are the low quality of education and skill level of the workforce (OECD 2015), low innovation, lack of quality infrastructure and to some extent inefficient governance and justice (International Monetary Fund 2015).

Probably the most severe factor is the lack of physical infrastructure. This is one of the main constraints for the Brazilian economy (International Monetary Fund 2015) together with the capital market scarcity (OECD 2015b). Almost 28% of the firms consider transportation as a major constraint (World Bank Group 2009). In global comparison it shows that Brazil’s infrastructure quality is relatively low (World Economic Forum 2015). Companies operating in Brazil face high transport and logistics costs (OECD 2015). In addition to these direct costs, insufficient logistics cause for instance delays and thus indirect costs (Subramanian, Anderson, and Lee 2005).
The Global Competitive Index shows that the overall education system as well as primary education is low, ranking Brazil 132nd out of 140 observed economies (World Economic Forum 2015). Education is seen as one of the most important development priorities in Brazil according to the 2016 Country Opinion Survey (The World Bank Group 2016). The poor education system also negatively affects the quality of the workforce which is another inhibiting factor. 74.9% of the surveyed companies say that the workforce in Brazil is inadequately educated (World Bank Group 2009). This is more than twice as many as in the regional comparison.

Furthermore, companies operating in Brazil face complex and rigid labour regulation (OECD 2015b). These impose additional direct and indirect costs on companies. Labour costs have increased over the last years due to minimum wage indexation, taxes and a consumption orientated policy (ibid., 20). The restrictive labour regulations are the second most problematic factor for business operations in Brazil (World Economic Forum 2015). Labour regulations are seen as outdated with high non-salary costs of employment (The Heritage Foundation 2017). This is the reason why labour regulations are seen as a major constraint by 63.2% of Brazilian firms whereas the regional average is only 16% (World Bank Group 2009). Based on these previous examples it is important to see that there are also non-corruption related inefficiencies which influence market attractiveness.

4.4. Legal enforcement

Corruption is more likely to be effective and offer the aforementioned advantages if it is not detected. A high probability of detection and punishment may outweigh the possible benefits. Thus, the quality of law enforcement is highly important. I argue that the accountability process, the law enforcement efficiency and the probability of conviction were low in Brazil and therefore an insufficient deterrent of corruption. Only the 2014 reforms may change this perception.

Despite having a relatively strong legal framework (Green 2012), the application of the law is considered weak (Taylor and Buranelli 2007). The judiciary is considered the least efficient government institution in Brazil and it is the only one responsible for legal punishment (Mota Prado, Carson, and Correa 2015, 107). Consequently, the judiciary represents a bottleneck of Brazil's anti-corruption system (ibid., 113).
The Index of Economic Freedom calculated by the Heritage Foundation (2017), a Washington based think tank, summarises that, “the efficiency and overall quality of government services remain poor”. The poor services arising from government inefficiency and the lack of capacity do not only affect corporations but are also major obstacles for the work and efforts of the World Bank (World Bank Group 2016). The judiciary is one government branch providing low service quality.

Especially the private sector has received little attention from law enforcement as it was mainly ignored by Brazilian anti-corruption law (Morosini and Vaz Ferreira 2014). The focus was primarily on the involvement of the public administration which relegated the private sector to the background (Taffarello 2015). The legal framework drafted by anti-corruption law was insufficient in preventing or punishing corrupt companies (Morosini and Vaz Ferreira 2014). Only the legal changes in 2014 and the implementation of the Brazilian Clean Company Act show a stricter accountability process towards bribery in the private sector (ibid.). The new anti-corruption laws “dramatically altered the enforcement landscape in Brazil” (Girgenti, 2016).

Even though anti-corruption law may exist on paper, it does not necessarily mean that the process of enforcement is successful. Its application, enforcement and the monitoring of the rules often differ vastly from the theory. Institutional barriers to accountability are still visible in Brazil and give opportunities for illicit behaviour (Mota Prado, Carson, and Correa 2015). The U.S. Department of Commerce (2016a) asserts that even though, “Brazil has laws, regulations and penalties to combat corruption, [...] their effectiveness is inconsistent”. The weak accountability structure let corruption flourish: “The chances that corrupt activity will be detected at all are in fact quite low, while the chances that detection will then lead to effective punishment are infinitesimally small” (Taylor 2010, 93). Furthermore, the level of enforcement of anti-bribery law and the quality of accountability differs among the individual states (U.S. Department of Commerce 2016a).

A principal reason for the low accountability is the prevailing corruption within the judiciary. Half of the population see the judiciary as extremely corrupt (Transparency International 2013). Many Brazilians even say it is the most corrupt branch of the government (Green 2012, 45). The existence of corruption in the judiciary was proven in 2003 during the investigation, “Operation Anaconda”. This exposed a
corrupt ring involving various federal judges, police men and other agents (Green 2012, 45). However, the judicial independence, virtual immunity from prosecution and collegiality made it difficult to remove corrupt judges from the court (Taylor 2010).

The police were also confronted with allegations of corruption inside the force which was participating in investigation processes. The low salary of the police is seen as a main reason for their lack in resilience regarding bribe payments (Otten 2006). 70% of Brazilians perceive the police as highly corrupt (Transparency International 2013). The public regard the police as one of the most corrupt branches of the civil servants and it is assumed that in return for bribes they hinder prosecution of corrupt investigators or companies (Salgado 2002).

Another influential reason for the weak judiciary is the difficulty and lack of monitoring and accountability due to the prevailing institutional arrangements (Taylor 2010). The absence of a well-functioning government and weak courts and law enforcement allowed corruption to flourish (Green 2012). There are various organisations participating in the whole process reaching from accusations to investigations and prosecutions. However, there is no clear interaction or permanent link facilitating cooperation in information gathering and sharing (Taylor and Buranelli 2007). The multiplicity of organisation may hinder or complicate the investigatory process which is in favour off the corrupt as they are more likely to escape prosecution.

The lack of cooperation and coordination and the mere focus on investigation instead of achieving oversight or effective sanctioning, weakens the judiciary (Taylor 2010). The lack of a central authority to oversee the processes complicates imposing sanctions (Taylor and Buranelli 2007). In the case of existing monitoring and oversight processes they are often slow and uncertain (ibid.). This is likely to be advantageous for corruption because it decreases the probability of detection.

Despite the duplication of functions and lack of oversight, institutional multiplicity can also be seen as complementary. Some argue that multiplicity leads to a greater chance of corrupt acts being identified because various institutions work on the same case. Multiplicity has especially enhanced the accountability process by, “allowing institutions to compete, to collaborate, to complement one another, or to compensate for one another’s deficiencies or oversights” (Mota Prado, Carson, and Correa 2015, 111).
In spite of these possible advantages, most researchers agree that institutional multiplicity leads to a myriad of shortcomings. Communication between the institutions is rare in comparison to other countries (Mota Prado, Carson, and Correa 2015). The multiplicity is likely to create coordination problems and the “risk of some actors undermining the functions performed by others” (ibid., 162). In the past, cooperation between the organisations mainly took place with high profile cases but not in regular, day-to-day investigations (ibid., 145).

Another constraint apparent in all institutions is the relatively small size of the workforce commissioned with the investigation of corruption (Taylor and Buranelli 2007, 67). The wide range of responsibilities and the large number of corruption cases limit investigations and prosecutions. This also affects the judicial effectiveness which is seen as relatively low despite its independence. Reasons for the low effectiveness are also the high burden, inefficiency, intimidation and further external influences (The Heritage Foundation 2017). Courts also face structural problems and are malfunctioning because they “have been burdened by an explosion in demand, scarce human resources, weak administration, a highly bureaucratic process, and a dated criminal code” (Taylor 2010, 103). Hence, judicial processes are usually inefficient, lengthy and unpredictable which could benefit corruption.

Even though the incentive structure supports the detection of cases, it does not motivate officials to follow a successful prosecution. The main incentive for investigators is generally the detection of new cases (Taylor and Buranelli 2007), because the detection instead of the prosecution helps them reach their career goals. This incentive structure increases inefficiency in the investigatory process and it is less likely that the accused will actually be punished. Even if the corrupt get prosecuted, the processes usually take many years to reach a conclusion, probably enough time to hide the bribe payments or to destroy the evidence. Thus, recuperation of illicit payments is difficult (Salgado 2002).

Another obstacle is the “heavy burden of proof necessary to establish guilt in criminal cases” (Mota Prado, Carson, and Correa 2015, 148). Former rules required a definite conviction which means there is no possibility of appeal (Taylor 2010). Without sufficient evidence, successful punishment was scarce. The judiciary is restrained by formalistic rules, rigid standards and a high evidentiary burden on prosecutors (Mota
Prado, Carson, and Correa 2015). These formalities undermine the work of the judiciary and the effective punishment of the corrupt. Even if sanctions are imposed they are often relatively small (Taylor and Buranelli 2007) which reduces the effect of deterrence.

The structure of the institutions investigating corruption is not very effective. The federal police for instance is less autonomous and more dependent on government officials (Taylor and Buranelli 2007, 66), which might hinder their prosecution. The Federal Public Ministry (MPF) is “the most important institution of accountability at the federal level in Brazil” (ibid., 63). However, it is restricted by the large volume of potential cases which the individual prosecutors can select. Due to the arbitrary selection of cases and the slow judicial process, the MPF’s activities often do not show an overall coherent direction (ibid., 64). This, and the insufficient number of prosecutors, weakens the investigatory process (ibid.). Nevertheless, the autonomy given to the investigators regarding the selection of cases and the lack of centralisation may strengthen the MPF’s power because cases one prosecutor overlooks, another one could still start to investigate (Mota Prado, Carson, and Correa 2015, 148). But it is possible that the free selection of cases provides another source for corrupt behaviour as bribe payments might influence officials to drop a case, or select a different one.

In terms of monitoring, the large number of municipalities and companies makes it difficult to overview all behaviour. Municipalities are regularly audited regarding corruption also in relation with the private sector. However, from over 5,000 municipalities, only a few undergo audits each year (Mota Prado, Carson, and Correa 2015, 138). Even though this may have some effect in the audited municipalities, it is unlikely to affect those which are not reviewed.

The aforementioned inefficiencies show that the probability to detect corruption was relatively low. The legal reforms of the past years however, have facilitated the investigatory and prosecution process. They made it possible for prosecutors to choose between civil and criminal charges. In civil cases the amount of proof needed is lower and thus prosecution is likely to be easier (Mota Prado, Carson, and Correa 2015, 148). The new “tougher judiciary” which is “backed by public outrage” is seen as the causes of the high level of recent corruption revelations (Haynes and
Spagnuolo 2017). Without the reform, the latest investigations and allegations revealing large corrupt networks “might never have taken off” (Watts 2017). One reason might also be the newly established plea bargaining, allowing prosecutors to make deals with suspects. These can reduce the sentences of suspects if they comply, by informing investigators about other corrupt activities (ibid.).

The Clean Company Act which was part of the reforms allows three types of punishment of corrupt behaviour: administrative, civil and criminal (Mota Prado, Carson, and Correa 2015). It further introduced corporate liability and extends civil and administrative liability to legal persons such as foreign and Brazilian multinational companies (ibid.). Being able to impose administrate liability allows institutions to bypass the inefficient judicial system (ibid.). However, administrative sanctions can be overturned and it is found that only a small share of corrupt officials (3.17%) were actually convicted (ibid., 151). The Clean Company Act will hold legal persons liable for the actions of their employees, agents and intermediaries (ibid.). It is expected that this will serve as an incentive of stronger controls and diligence to implement anti-corruption measures within the firms.

Usually corrupt businesses only received punishment in terms of fines and temporary suspensions from being allowed to enter into contracts with the public sector. Morosini and Vaz Ferreira (2014), argue that this punishment is not a sufficient deterrence and does not change the status quo. Furthermore, Brazil lacks specific laws which prohibit illicit payments between private parties (ibid.). However, the new regulations are likely to impose stricter sanctions which might create higher levels of deterrence.

Brazilian anti-bribery law in general, “does not provide for a minimum requirement in compliance programmes” (Morosini and Vaz Ferreira 2014, 149). Nevertheless, it cannot be ignored that those companies operating internationally or with orientation towards foreign markets often need to follow foreign anti-bribery laws in addition to the Brazilian laws. Companies registered on the U.S. stock market must be especially diligent to obey certain anti-bribery rules, since the law enforcement of the Foreign Corruption Practices Act is high.

In summary, legal enforcement was and partly still is generally weak in Brazil. New developments in anti-corruption law may be more successful in fighting corrupt
behaviour. However, it needs to be seen whether the law enforcement will be efficient in diminishing corruption. Prior to 2014, the weak legal enforcement was relatively unsuccessful in fighting corruption and as I argue, therefore unlikely to be a sufficient deterrent. These findings support my argument that corruption could prevail and companies were more likely to benefit from the advantages of corruption.

5. Industry Variation

5.1. Industry selection

Having explained possible mechanisms and inefficiencies, I now look at the industry variation. I expect that some variation between industries and sectors is likely. In order to test my previous findings, that inefficiencies may have attenuated the effect that corruption has on FDI, I now select three sample industries. Because all economic sectors face corruption (Agência Efe 2017), the pattern for selection is: most, medium and least corrupt. If my empirical findings are applicable and corruption does in fact not strongly affect FDI, the most corrupt industry should see similar developments in FDI as the least corrupt industry. The medium corrupt industry will serve as control industry.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Sector</th>
<th>Bribery Incidence (% of firms experiencing at least one bribe payment request)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>Other Manufacturing</td>
<td>21.2</td>
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<tr>
<td></td>
<td>Garments</td>
<td>16.8</td>
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<tr>
<td></td>
<td>Furniture</td>
<td>15.8</td>
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<td></td>
<td>Leather Products</td>
<td>10.6</td>
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<td></td>
<td>Chemicals &amp; Chemical Products</td>
<td>9.2</td>
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<td>Textiles</td>
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<td></td>
<td>Motor Vehicles</td>
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<tr>
<td></td>
<td>Machinery &amp; Equipment</td>
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<tr>
<td></td>
<td>IT &amp; IT Services</td>
<td>0.3</td>
</tr>
</tbody>
</table>

*Table 3: Percentage of firms which were requested to pay bribes (World Bank Group 2009)*
Table 3 shows the prevalence of bribery in Brazil per sector. The data demonstrates that bribery is more common in the manufacturing industry than in services. The division “other manufacturing” is the most corrupt. However, the study does not explain which industries are grouped into “other manufacturing”. Manufacturing is defined as “the making of articles on a large scale using machinery” (Oxford Dictionaries 2017). Therefore construction, or to some extent even mining could be included in this group. Other industries with high corruption are garments, furniture and leather product manufacturing, as well as retail. The least corrupt sectors are food and information technology services.

Comparing the industries and likelihood of bribe payments of Brazil and 27 other large economies, the outcome is similar (table 4). Transparency International’s Bribe Payers Index ranks industries and countries on a scale from 0 to 10 where a 10 means no bribery is perceived.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Sector</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Light manufacturing</td>
<td>7.1</td>
</tr>
<tr>
<td>1</td>
<td>Agriculture</td>
<td>7.1</td>
</tr>
<tr>
<td>3</td>
<td>Civilian aerospace</td>
<td>7</td>
</tr>
<tr>
<td>3</td>
<td>Information technology</td>
<td>7</td>
</tr>
<tr>
<td>5</td>
<td>Banking and finance</td>
<td>6.9</td>
</tr>
<tr>
<td>5</td>
<td>Forestry</td>
<td>6.9</td>
</tr>
<tr>
<td>7</td>
<td>Consumer services</td>
<td>6.8</td>
</tr>
<tr>
<td>8</td>
<td>Telecommunications</td>
<td>6.7</td>
</tr>
<tr>
<td>8</td>
<td>Transportation and storage</td>
<td>6.7</td>
</tr>
<tr>
<td>10</td>
<td>Fisheries</td>
<td>6.6</td>
</tr>
<tr>
<td>10</td>
<td>Arms, defence and military</td>
<td>6.6</td>
</tr>
<tr>
<td>12</td>
<td>Heavy manufacturing</td>
<td>6.5</td>
</tr>
<tr>
<td>13</td>
<td>Pharmaceutical and healthcare</td>
<td>6.4</td>
</tr>
<tr>
<td>13</td>
<td>Power generation and transmission</td>
<td>6.4</td>
</tr>
<tr>
<td>15</td>
<td>Mining</td>
<td>6.3</td>
</tr>
<tr>
<td>16</td>
<td>Oil and gas</td>
<td>6.2</td>
</tr>
<tr>
<td>17</td>
<td>Real estate, property, legal and business services</td>
<td>6.1</td>
</tr>
<tr>
<td>17</td>
<td>Utilities</td>
<td>6.1</td>
</tr>
<tr>
<td>19</td>
<td>Public works contracts and construction</td>
<td>5.3</td>
</tr>
</tbody>
</table>

Table 4: Bribe Payer Index by sector, global (Transparency International 2011)

The disadvantage of this index is that it only differentiates by sector or country but not both. Nevertheless, the index includes Brazil and other territories which in total represent almost 80% of global outward trade and investment (Transparency
International 2011). Therefore, I argue that the index is relevant for the case of Brazil since country specific information is scarce.

According to the Bribe Payers Index shown in table 4, public works contracts and construction is the most corrupt sector, followed by utilities as well as real estate and legal and business services. Of all 19 industries observed oil, gas and mining are the fourth and fifth most corrupt sectors. The pharmaceutical industry and healthcare are considered seventh place on the high corruption scale. According to Transparency International (2011), the cleanest industries are agriculture and light manufacturing even though bribery can still be expected as they scored a 7.1 out of 10.

These two data reviews raise the expectation that construction and mining, as well as garments and furniture are highly corrupt industries. The chemical and pharmaceutical industry can be found in the middle of the spectrum. On the lower end with less corruption is food and agriculture. In order to understand these industries better in terms of corruption and to see whether these perceptions could be true, I search for relevant corruption cases. I do not argue that corruption scandals and published cases give a complete view over prevailing corruption. However, investors principally perceive scandals so they are likely to have influenced investment behaviour.

The U.S. Securities and Exchange Commission (2017) “created a specialized unit to further enhance its enforcement of the FCPA,\(^3\) which prohibits companies issuing stock in the U.S. from bribing foreign officials for government contracts and other business”. In general, listings started as early as 1978 but more detailed explanations are only available from 1997 onwards.

There are six bribery incidents involving business operations in Brazil which are listed by the Commission. The most recent one concerns Orthofix International, a medical device company which bribed doctors to use their products. Another medical device company, Biomet, was sued twice in 2012 and 2017, when its Brazil based subsidiaries made illicit payments to local doctors in order to win business. In 2016, the Brazilian petrochemical manufacturer Braskem was found guilty in bribing government officials to secure contracts. In 2012 the Eli Lilly and Company pharmaceutical corporation

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\(^3\) Foreign Corrupt Practices Act
was found guilty of similar acts. The only company not operating in the chemical or pharmaceutical industry is Embraer, a global leading aircraft manufacturer from Brazil. Thus, this list suggests that the industries in the network around the pharmaceutical and chemical industry are corrupt.

Looking at food and agriculture, the industries which are said to have low levels of corruption, I find that corruption exists but probably to a smaller extent. To facilitate the research and because food and agriculture are often intertwined, I will see both sectors as one group. It is important to point out that a low level of corruption does not necessarily equal no prevailing corruption.

A relatively recent case of corruption from March 2017 has been found in the meatpacking industry (Eisenhammer 2017). Investigations were running against some dozens of firms regarding irregularities in the sanitary inspections (ibid.). However, the agriculture ministry and the police stated that the malfunction is only limited to few, and not all, firms operating in agriculture. The accused were mainly health inspectors which were bribed in order to accept the sale of rancid products and falsifying documents (ibid.). Allegations involve, “an alleged scheme to delay or cancel fines in in return for some 3 million reais ($965,000) in bribes between 2010 and 2016” (Fonseca 2017). As a result of the investigations the ministry of agriculture dismissed 30 employees (Romero 2017).

Investigations are still in progress and the dimensions of corruption cannot yet be foreseen. At the time of writing, only the meat sector has been investigated but no other parts included in agriculture. Nevertheless, as a leading exporter of life stock the meat industry represents an important part of Brazil’s agriculture sector. Apart from the aforementioned allegations I did not find any finalised or processed corruption case in this sector. Livestock analyst Alex Silva agrees that Brazil has never “seen a scandal like this in the sector” (Haynes and Spagnuolo 2017). The case thus adds to the belief that every sector and industry in Brazil is affected to some extent by corruption.

When researching the highly corrupt industries, I did not find any corruption scandals or investigations for the garments and furniture industries. This does not necessarily mean that there is no bribery involved, but unfortunately, there is, to my knowledge, no data and hence little or no proof available.
On the other hand, the manufacturing and construction industries have been in the headlines over the past months and years. When explaining my empirical findings I have already mentioned the recent developments in the Operation Carwash (Lava Jato) which mainly involved the construction and mining industry. This operation and the resulting scandal have been labelled as the “biggest corruption scandal in the history of Brazil” if not the world as a whole (Watts 2017). The case evolved around two of Brazil’s largest companies: Odebrecht and Petrobras. The first is the largest construction conglomerate of the region. Odebrecht paid “more than $30m [...] in bribes to Petrobras officials in exchange for contracts and influence” (BBC News 2017). Petrobras is a state-run oil firm where state involvement and the prevalence of corruption is not surprising.

As previously stated, Odebrecht alone paid $349 million in bribes. Petrobras’ corruption costs reached $2bn in 2015 (BBC News 2017). I argue that it can be agreed that the sectors of construction and petroleum are highly corrupt because of the large scale of the scandal, the high amount of money and people involved and its wide reach globally. It needs to be pointed out that despite Odebrecht and Petrobras being the largest and most prominent companies involved, there are many other companies affected. Other companies investigated in Lava Jato generally also work in the petroleum or construction industry or those sectors related to them.4

Even though the actual level of corruption is difficult to assess, my research did, to the main extent, support the statistics and prove the expectations. Hence, in the following the petroleum and construction industries will serve to represent sectors of high corruption. The pharmaceutical and chemical industry will constitute a medium level of prevailing corruption. In the case of low corruption, I look at the food industry.

4 see for instance Meu Congresso Nacional 2017 for further information
5.2. Development of Foreign Direct Investment

In the following I look at the FDI which the aforementioned industries received. If they correspond with my empirical findings, then the industry with the highest level of corruption should show either the highest or similar FDI developments as the industries with lower corruption prevalence.

When looking at the FDI of the past ten years it is noticeable that, except for the years 2012 and 2014, the petroleum and natural gas industry had the highest inflows of investment. The level of investment did fall when the investigations of Lava Jato started in 2014, however, they recovered to some extent in 2015 and 2016. Thus, it seems that the revelation of corruption did not lead to a sharp drop in investment inflows. The Brazilian government argues that the reduction of investment was limited due to a new model of control introduced for Petrobras as well as the large potential of Brazil in the sector (Portal Brasil 2016). There are more petroleum and gas reserves expected in the country and its offshore area.

As previously described, the Lava Jato investigations focus mainly on Petrobras’ business operations until 2010 and revealed a high prevalence of corruption. Through the bribe payments and the gaining of contracts, the company increased its
profits. This is likely to have attracted global investors. On the other hand, the case of construction does not show a similar effect.

The FDI of infrastructure construction, the pharmaceutical industry and agriculture are relatively low in comparison to the other industries. Despite accounting for different levels of corruption, they do show similar developments and investment levels. This is especially interesting because these industries experienced a similar, if not the same, prevailing business environment in Brazil. An important distinction is primarily the level of corruption. However, it does not seem to have had a large effect which supports my argument that corruption may not necessarily have a negative impact on FDI.

When comparing the food and the chemical industry it can be noticed that they show similar levels of FDI. The peak of the chemical industry is even slightly higher than the one of the food industry. Only the fluctuations along the timeline vary. Despite the chemical industry having a higher level of corruption, the curves are comparable. This supports the hypothesis that the intensity of corruption does not necessarily lead to less FDI overall.

In general, the findings lend credence to the hypothesis that the effect of corruption on FDI was attenuated, because industries with high and low corruption levels, both received similar FDI levels. In the case of Petrobras, the principal player in the petroleum sector, corruption is likely to have helped increase FDI. However, this cannot be confirmed for the other sectors. Therefore, the industry variation supports my hypothesis that inefficiencies and a weak enforcement of anti-corruption law attenuated the effect that corruption has on FDI.

6. Conclusion

The analysis of the inefficiencies prevailing in Brazil’s business environment and law enforcement showed that companies struggle with and are concerned about a variety of factors. Starting with lengthy processes to open up a business, barriers to enter the domestic market and high direct and indirect costs concerning taxation are hurdles when operating in Brazil. As it could be seen some factors might deter companies from investing into Brazil. Competition is often weak and resource allocation is thus not optimal from a liberalist point of view. However, I have shown
that inefficiencies could attenuate the effect of corruption on FDI. Thus, corruption does not necessarily have a negative correlation with FDI.

All of these inefficiencies and the weak accountability and law enforcement of anti-corruption law in the private sector were to some extent beneficial for corruption. As the empirical evidence showed, corruption may help circumventing the inefficiencies. It is also likely that bribe payments led to cost reduction which further motivated illicit behaviour. Hence, the evidence supports the hypothesis and corruption did not necessarily negatively affect FDI in Brazil. The research on industry variation corroborates this finding.

Furthermore, it can be said that even though corruption may have not negatively affected the amount of FDI coming into Brazil, there are also other factors impacting FDI. Additionally to corruption, Jalil et al (2016) found that the trade openness and external debt positively influence FDI. The coefficient of these is even higher than the one of corruption. This suggests that by influencing these two variables the FDI inflows would increase more than in case of an increase in corruption. Other variables like government expenditure negatively affects FDI (Jalil, Qureshi, and Feridun 2016). Thus, the influence of corruption might be mitigated by the factors with opposing effects.

The level, success and acceptance of corruption may also vary depending on the degree of which a company is domestically or foreign led. Other scholars such as Brada et al (2012) have suggested a distinction between the level of corruption prevailing in the home countries of investors and its effects on FDI. Some differentiate according to the type of FDI as for instance market or resource seeking FDI. However, due to the limited word count of the paper, I could not extend the research and apply these factors in the case of Brazil.

A further limitation and challenge of this research is the lack of documentation or measurement of corruption. Because corruption is illicit, firms do not openly discuss why and how many bribes they paid. It is likely that the current and future corruption scandals will reveal more about the incentives. Furthermore, it was difficult to find numerical evidence for the impact of corruption because firms hide it from their

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5 See for example Brouthers, Gao, and McNicol (2008) for a distinction between types of FDI.
financial statements. For a detailed study on causality, more quantitative data would be necessary. There are also opposing views on whether corruption influences FDI or if in fact FDI impacts the level of corruption.\textsuperscript{6}

Since the evolvement of recent corruption scandals, in particular the Lava Jato scandal, perceptions regarding corruption and law enforcement have changed. Therefore, it may be useful for future studies to further analyse the recent changes and whether these had an impact on the mechanisms described in this thesis. Jalil et al's (2016) analysis only uses data until the year 2012. Thus, recent changes in Brazilian anti-corruption law and their possible effects are not included. Since the changes where implemented in 2014, I believe that it is still too early to be able to analyse all possible effects.

It is likely that the legal enforcement and the accountability processes have become more efficient in recent years, leading to higher deterrence. If this was the case, it would outweigh some of the advantages of corruption due to the fear of penalties and costs. Therefore, studies about the recent changes are needed even though they are probably difficult at the current state because the new policies have only recently been implemented.

I would also like to point out that the aim of this thesis was only to review the relation between corruption and FDI inflows. I do not suggest that corruption, and thus the diversion of public funds for instance through tax evasion, is beneficial in general for an economy or society. Other effects of corruption form not part of this paper and were therefore not discussed.

It can be concluded that this thesis successfully added to existing literature in explaining the mechanisms which may have possibly attenuated the effect that corruption had on FDI. Furthermore, it provided an analysis linking economic and political science approaches and applying them on the case of Brazil.

\textsuperscript{6} See for example Robertson and Watson (2004) for an analysis on how FDI may impact corruption
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