

DISSERTATION

FOREIGN DIRECT INVESTMENT AND CORRUPTION

Submitted by

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ABSTRACT

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Corruption is the abuse of public authority and discretion for private gain. Corruption is perceived as detrimental to investment as it acts like a tax on investment by increasing the cost of doing business. However, the efficient grease hypothesis argues that corruption could increase investment as it acts as grease money that enables firms to avoid bureaucratic red tape and expedite the decision making process.

This study attempts to build empirical models to investigate the relationship between foreign direct investment (FDI) and corruption and identify the determinants of corruption itself. As tolerance towards corruption tends to vary from country to country, countries are disaggregated into developed economies and developing economies. Additionally, there are four regions within the developing economies group to take into account intrinsic differences in perceptions of and attitudes towards corruption, as well as cultural and geographical differences.

The dissertation finds that corruption is deleterious for FDI inflows in developed countries, but is somewhat beneficial for attracting FDI inflows in developing economies. However, when developing countries are disaggregated into several regions, the effect of corruption on FDI inflows fades away. Furthermore, corruption can be caused by both economic and institutional factors. It is also confirmed that factors influencing corruption vary among developed countries, developing countries and within regions of developing countries. The importance of institutional factors makes it clear that the institutional framework is important for explaining corruption, no matter whether a country is a developed or developing one.

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Chapter 1

Introduction

1.1. Background

Corruption is the abuse of public authority and discretion for private gain. Corruption has become an important topic among economists and international development institutions.¹ Corruption is perceived as detrimental to investment as it acts like a tax on investment by increasing the cost of doing business (Wei 2000; Svensson and Fisman 2000; Tanzi and Davoodi 1998, 1997). Corruption also reduces the private marginal product of capital, thus decreasing private investment and lowering economic growth (Keefer and Knack 1996; Mauro 1995). However, some say that corruption could have a positive effect on investment. The efficient grease hypothesis argues that corruption could increase investment as it acts as grease money that enables firms to avoid bureaucratic red tape and expedite the decision making process (Huntington 1968; Leff 1964). As Elliot (1997: 186) points out “bribes are viewed not only as reasonable but as enhancing efficiency in situations where red tape or state control of the economy may be strangling economic activity”. Whether corruption is harmful or beneficial for investment is therefore an empirical matter, which is a question this dissertation will address. In particular, this dissertation will investigate the effect of corruption on foreign direct investment (FDI).

The dissertation finds that corruption is deleterious for FDI inflows in developed countries, but is somewhat beneficial for attracting FDI inflows in developing economies.

¹ For example, the World Bank (1997) has identified corruption as among the greatest obstacles to economic and social development since it undermines development by distorting the rule of law and weakening the institutional foundation on which economic growth depends. Transparency International (2009) considers corruption to be “...one of the greatest challenges of the contemporary world. It undermines good government, fundamentally distorts public policy, leads to the misallocation of resources, harms the private sector and private sector development and particularly hurts the poor.”

However, when developing countries are disaggregated into several regions, the effect of corruption on FDI inflows fades away. Furthermore, corruption can be caused by both economic and institutional factors. It is also confirmed that factors influencing corruption vary among developed countries, developing countries and within regions of developing countries. The importance of institutional factors makes it clear that the institutional framework is important for explaining corruption, no matter whether a country is a developed or developing one.

Meanwhile, global capital flows are acknowledged to positively affect the development of a nation, channeling through technology transfer, capital investment, increased labor productivity, and the financial sector (Goldin and Reinert 2005; Obstfeld 1998). One of the most celebrated global capital flows is in the kind of foreign direct investment (FDI), which is “the acquisition of more than 10 percent shares on the part of a firm in a foreign-based enterprise and implies lasting interest in or effective managerial control over an enterprise in another country” (World Bank 2010).² Rapid changes in international production systems—in which multinational corporations (MNCs) continue to locate production or research facilities in countries with lowest costs possible—make international border-crossing no longer relevant. On the other side, host governments now consider even greater foreign direct investment (FDI) as one of the quickest ways to achieve high growth, especially after looking at successful export-led growth strategies and trade and investment liberalization programs pursued by East Asian countries. However, corruption is still argued to be one of the main obstacles in undertaking FDI especially in developing countries, although corruption could also be helpful when formal and informal

² IMF (1993) labels foreign direct investment as investment aimed at obtaining a lasting interest by a resident entity of one economy (direct investor) in an enterprise that is resident in another economy (the direct investment enterprise). The “lasting interest” implies the existence of a long-term relationship between the direct investor and the direct investment enterprise and a significant degree of influence on the management of the latter. IMF defines the owner of 10% or more of a company’s capital as a direct investor (ibid).

institutions are weak since bribes might serve as “lubricants” in an otherwise sluggish economy.³ Therefore, firms, consulting firms, researchers, and academia alike now pay more attention to corruption, which may have a strong effect, whether it is negative or positive, on FDI.

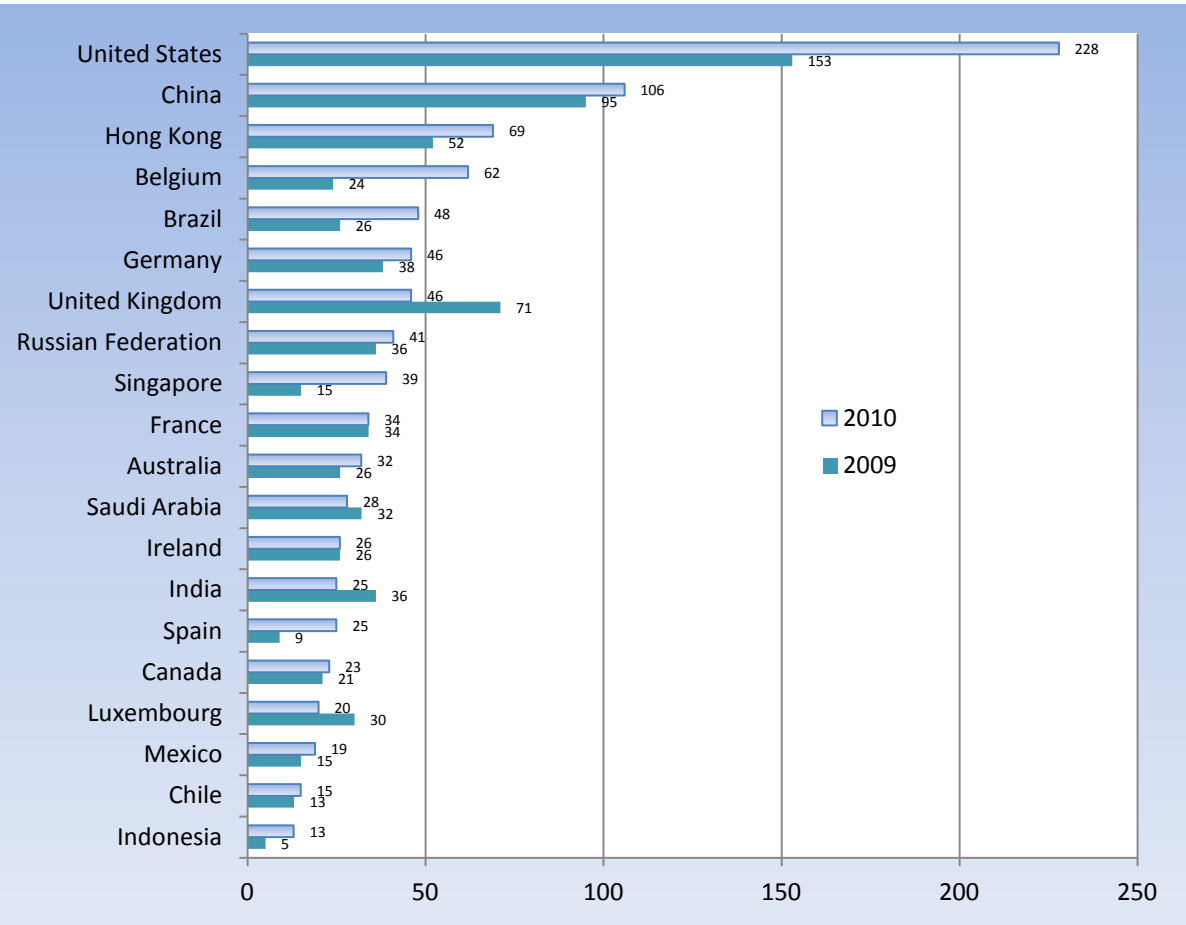
According to *World Investment Report 2011*, the current FDI recovery is taking place in the wake of a severe decline in FDI flows worldwide in 2009 due to the global recession. After a 16 percent decline in 2008, global FDI inflows fell a further 37 percent to \$1.185 trillion in 2009, but bounced back to \$1.244 trillion in 2010, a moderate rise of 5 percent from previous year. However, FDI flows in 2010 were still 15 percent below their pre-crisis level and 37 percent below their 2007 peak. The recovery of FDI inflows in 2010 was stronger in developing countries than in developed ones due to developing countries’ pace of growth and reform, fast economic recovery, strong domestic demand, rapid growth in South-South FDI flows— and their increased openness to FDI and international production. Consequently, developing and transition economies now account, for the first time, for more than a half of global FDI inflows in 2010.

For many years, North American and Western European countries have received a large share of FDI inflow. Nonetheless, there has been a significant shift of FDI inflows into developing countries since the 1990s. Table 1.1 presents the top twenty host economies for FDI inflows in 2009 and 2010. According to Table 1.1, the United States was still the largest recipient of FDI inflows both in 2009 and 2010. However, in 2010, half of the top twenty host economies were developing and transition countries. Additionally, three developing economies

³ Donor countries and development institutions have established guidelines for reducing corruption. For instance, the World Bank’s *Helping Countries Combat Corruption: The Role of the World Bank*, September 1997 and Organisation for Economic Cooperation and Development’s *Convention on Combating Bribery of Foreign Public Officials in International Business Transactions*, November 1997. For one specific country, the Foreign Corrupt Practices Act of 1977 prohibits U.S. firms from offering or making payment to foreign officials to secure any improper advantage in order to obtain or retain business. Regardless of these sustained commitments and increased efforts to contain corruption, today’s evidence shows that the intensity of corruption is far from subsiding and maybe even worse in some developing countries.

ranked among the five largest FDI recipients in the world. Although the United States and China maintained their top positions, some European countries became less popular for attracting FDI inflows.

**Table 1.1. Top Twenty FDI Flows Destination, 2010 and 2009
(billions of US dollars)**

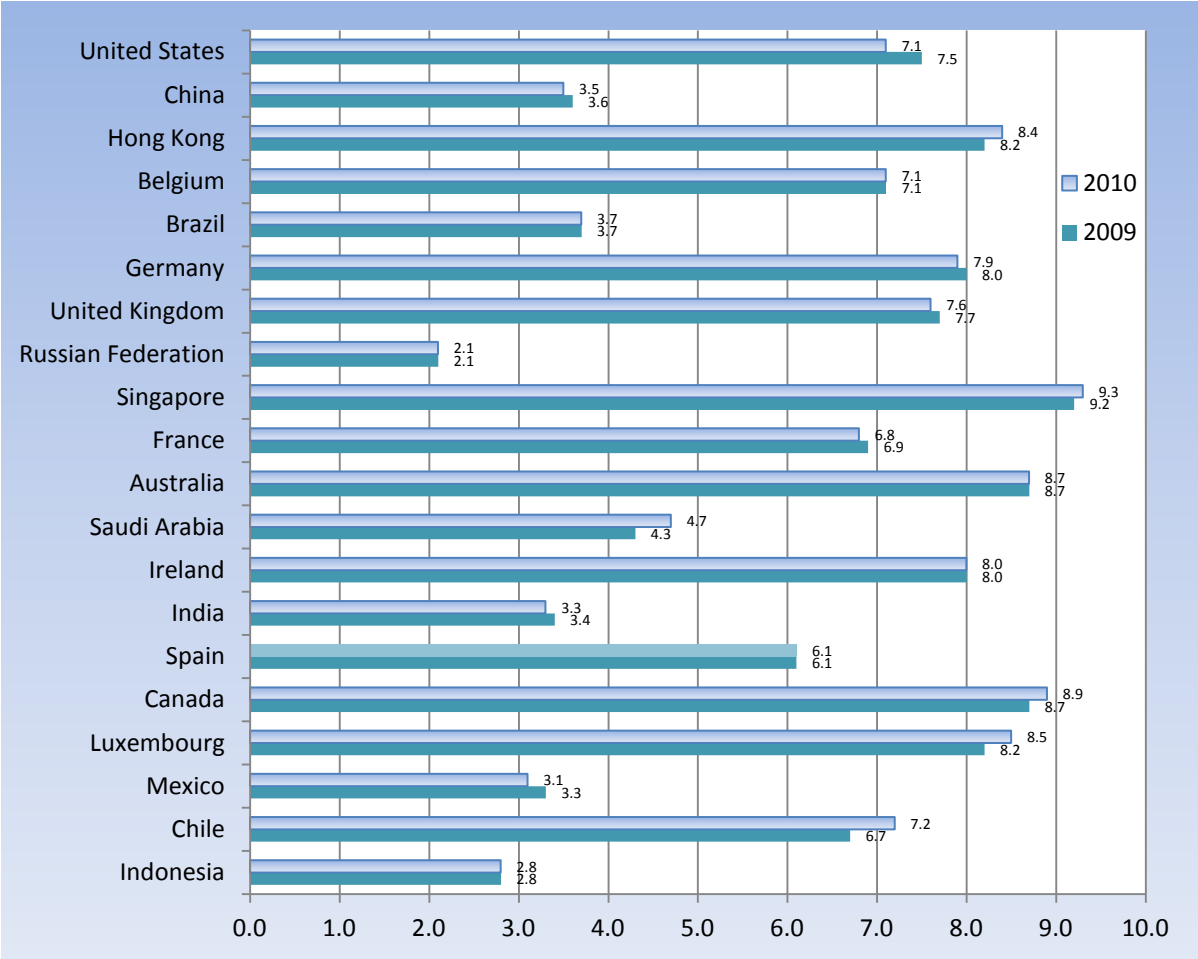


Source: UNCTAD 2011, Figure I.4

To get a quick glimpse of the level of corruption across countries, Table 1.2 presents the Corruption Perceptions Index from Transparency International (TI) —hereinafter referred to as the TI corruption index or TI index for short— for the top twenty FDI destinations for 2010 and 2009. TI publishes this corruption index annually since 1995 and defines corruption as "the

misuse of public power for private benefit." TI ranks countries by their perceived levels of corruption— not absolute levels of corruption because of measurement difficulty due to the secretive nature of corruption— as determined by expert assessments and opinion surveys. As of 2011, TI ranks 182 countries on a scale from 10 (very clean) to 0 (highly corrupt).

**Table 1.2. TI Corruption Index, 2010 and 2009
(10: very clean, 0: highly corrupt)**



Source: Transparency International 2010

If corruption is perceived as harmful to investment— it is expected that the less corruption a country has; the more investment will pour in, *ceteris paribus*. Based on Table 1.2, this proposition holds true when applied to United States, Hong Kong, Singapore, Chile, Canada,

Australia, Belgium, Germany, United Kingdom, and some other Western European countries. But what about China, Brazil, India, Russian Federation, and some other emerging economies? According to Table 1.2, China was relatively corrupt with average score of 3.5 in 2010 and 3.6 in 2009 but it was the second most popular destination of FDI in the world. India was worse than China in terms of corruption, but still it was better at attracting FDI than Spain, Canada, and Luxembourg, which are less corrupt. The Russian Federation was even more corrupt than India but it was still pulling significant amount of FDI inflows, even larger than those of India. Brazil was more corrupt than Singapore, Canada, Saudi Arabia, Chile, Belgium, and other Western European countries, but it fared better in gaining a share of FDI than those latter countries except Belgium. Overall, corruption has a restrictive as well as an expansionary economic effect. We will empirically investigate the effect of corruption on FDI at large by taking into account other variables believed to be important determinants of FDI. Additionally, we will examine the determinants of corruption itself empirically by considering both economic and institutional variables.

1.2. Organization of the study

The dissertation consists of six chapters. Chapter 1 presents background information on FDI and corruption. It presents the recent trends in FDI flows and corruption. We see that there is some consistency between the level of FDI inflows and the level of perceived corruption. The less corrupt they are, the more FDI coming in. Most developed countries and some developing countries, particularly Hong Kong, Singapore, and Chile get this result straight. However, we also go over some contradiction for most developing countries among the top twenty FDI

destinations. Investment keeps pouring in although they are relatively corrupt. The organization of the dissertation concludes Chapter 1.

Chapter 2 is a literature review on FDI and corruption. It starts with a discussion about the academic theories of why firms engage in FDI and how firms can successfully produce goods and services in remote and unfamiliar business environments. There are five dominant theories: the monopolistic advantage theory, transaction cost and internalization theory, ownership, location, and internalization (OLI) advantages theory, product life cycle theory, and horizontal FDI, vertical FDI, and knowledge-capital. There is also a discussion about the types of FDI based on its role in the parent company's global production strategy. Next, we discuss corruption. The role of corruption either as a grabbing hand or a helping hand will be elaborated upon. Corruption may deter FDI inflows as it increases cost of doing business. Moreover, bribes also decrease the expected profitability of investment and the private marginal product of capital, thus decreasing private investment and then lowering economic growth (Keefer and Knack 1996; Mauro 1995). However, bribes may be also helpful in countries with very long customs-waiting times at the border or with a low quality of customs service (Lui 1985). Corruption could also be considered a useful substitute for a weak rule of law if the value of behaving corruptly—the value of additional productive transactions occurred—exceeds the costs of engaging in corruption (Bardhan 1997). The previous empirical research on the effects of corruption on FDI and the determinants of corruption end Chapter 2.

Chapter 3 explains the data and methodology used in the dissertation. In the first section, we elaborate upon several ways to measure FDI inflows and corruption, along with some options on data sources. Then, we discuss the reasons why certain independent variables should be included. To explain FDI, there are standard independent economic variables such as GDP per

capita, exports, inflation, investment, FDI inflows in previous year, and population. Labor productivity is the variable representing labor market factor. Civil liberties include the freedom of expression and belief, associational and organizational rights, rule of law, and personal autonomy and individual rights. For the corruption equation, there are some economic variables as well. The institutional variables will be added progressively. The summary of data sources concludes the first section. The second section explains the methodology. We explore the advantages and disadvantages of using panel data, which is the type of data used in this dissertation. Next, we look at the choice of appropriate econometric technique to run the regression. Because autocorrelation and heteroskedasticity are two common problems in panel data, the feasible generalized least squares (FGLS) estimator is preferred. The FGLS estimator allows estimation in the presence of autocorrelation of type AR (1) within panels, contemporaneously cross-sectional correlation, and heteroskedasticity across panels (Greene 2008).

Chapter 4 investigates the empirical relationship between FDI inflows and corruption in developed and developing economies, including regions within developing countries. First, we plot FDI inflows against corruption to find the fitted line in order to get a quick look at whether corruption could be detrimental or beneficial for FDI inflows. Then, we present the theoretical model for explaining the relationship between FDI and corruption. Corruption, in terms of bribery, might be good for FDI because more bribery could lower real red tape. However, firms that pay more bribes could wind up spending more management time to negotiate with a corrupt government officer— and therefore face higher costs. Next, we demonstrate the empirical investigation of the relationship between FDI (the dependent variable) and corruption using the benchmark model. The benchmark model includes the following explanatory variables:

institutional quality (corruption), market size (GDP per capita), export capacity (exports per capita), demography (population), and labor efficiency (labor productivity). Other explanatory variables will be added progressively to the benchmark model: economic stability (inflation), investment capacity (investment as a percent of GDP), agglomeration (past FDI inflows), and institutional freedom (civil liberties). The discussion of the regression results is elaborated upon based on region, starting with developed countries and developing countries, and ending with each region within developing countries.

Chapter 5 examines the determinants of corruption empirically. The perceived corruption level in host countries will be treated as endogenous. Variation in corruption levels across countries is argued to be mainly due to differences in economic factors and institutional quality. In assessing the level of economic development, I focus on the rate of growth of GDP. As the incentive to engage in corrupt practices increases with the availability of rents, I include government consumption expenditures per capita, openness, and endowment of natural resources. All those variables— in sum — become the explanatory variables in the benchmark model. Institutional variables will be added to the benchmark model gradually. The first institutional variable to be included is economic freedom, which broadly measures the ability of citizens and companies within a country to carry out economic activities without being obstructed by the state. The second institutional variable is civil liberties since more civil liberties increase the ability of civil society to monitor and legally limit government officials from engaging in rent seeking behavior. The last institutional variable to be taken into account is the level of democracy because political competition, through democratic elections, brings on stronger public pressure against corruption.

Chapter 6 is the concluding remarks. It presents a set of conclusions based on empirical findings of the effect of corruption on FDI and the determinants of corruption. Chapter 6 also offers policy recommendations. Suggestions for future research conclude the chapter.

Chapter 2

Literature Review

Why do firms want to invest abroad by setting up plants or subsidiaries in host countries rather than exporting goods produced at their home plants? The reasons are obvious. Having a plant abroad reduces transportation costs and some types of transaction costs. Firms can avoid any tariff and nontariff barriers from exporting to the host country. Firms can also take advantage of lower wages and access to raw materials in host countries especially in developing economies. Better customer service and product management are expected as sellers are closer to the customers. An alliance between the production divisions of firms also allows technical expertise to be shared and possible duplication of products is avoided (Feenstra and Taylor 2012: 21).

The first part of this chapter explores the academic theories why firms engage in FDI and how firms can successfully produce goods and services in remote and unfamiliar business environment. In FDI literature, there are basically five dominant theories: (1) the monopolistic advantage theory; (2) transaction cost and internalization theory; (3) ownership, location, and internalization (OLI) advantages theory; (4) product life cycle theory, and; (5) horizontal FDI, vertical FDI, and knowledge-capital. There are also discussions about the types of FDI based on the role in the parent company's global production strategy.

The second part of the chapter discusses corruption. The role of corruption either as a grabbing hand or a helping hand will be elaborated. Corruption may deter FDI inflows as it increases the cost of doing business. Moreover, bribes also decrease the expected profitability of investment and the private marginal product of capital, thus decreasing private investment and then lowering economic growth (Keefer and Knack 1996; Mauro 1995). However, corruption may increase investment as it acts as grease money that enables firms to circumvent troublesome

red tape. Bribes may be also helpful in countries with very long waiting-times at the border or with a low quality of customs service (Lui 1985). Corruption could also be considered a useful substitute for a weak rule of law if the value of behaving corruptly—the value of additional productive transactions that occur—exceeds the costs of engaging in corruption (Bardhan 1997). The previous empirical research on the effect of corruption on FDI and the determinants of corruption itself conclude this chapter.

2.1. FDI theories

2.1.1. The monopolistic advantages theory

The first modern theory of FDI can be traced back to Stephen Hymer. In his 1960's dissertation (published posthumously in 1976), he uses industrial organization and imperfect competition theories to explain firms' motivation to perform FDI. Hymer (1960) starts his theory with an analysis of the special features of the multinational corporations (MNCs) that are not possessed by their domestic counterparts. Those MNCs specific advantages include but are not limited to brand names, trademarks, management and marketing skills, restricted or advanced technologies, access to low-cost financing, and economies of scale.

The possession of these advantages is indispensable for foreign firms to perform FDI because they are at a disadvantage compare to local firms. Local firms have advantages over foreign firms because they know the local environment better. They have knowledge of local market conditions, the legal and institutional framework of doing business, and local business customs. Of course, foreign firms can get all the knowledge possessed by local firms, but only at cost and this cost may be considerable.

Furthermore, foreign firms incur costs from operating at a distance because they are concerned with the difficulties of operating in the host country's unfamiliar business practices. Therefore, if FDI should occur and be profitable, it must be the case that foreign firms have certain advantages over the local firms. And some market imperfections must impede local firms' access to foreign firms' advantages. Therefore, FDI can be considered as a strategic action by the firm to take advantage of market imperfections and also an instrument to avoid market imperfections.

Hymer also mentions the difference between two kinds of long term private international capital movements – direct investment and portfolio investment. The difference is the issue of control. Control is defined as occurring if the investors own twenty five percent of the equity of the foreign firm (Hymer 1976: 1). If the investor directly controls the foreign enterprise, Hymer called it a direct investment. On the other hand, if the investor has less than twenty five percent of the equity or does not control it, the investment is termed a portfolio investment. It is carried out mainly to exercise gains from interest rate differentials, capital gains, and diversification of market risk through purchases of bonds and stocks.

Hymer (1976: 33) claims that the circumstances causing a firm to control an enterprise in foreign countries are for one minor reason and two major reasons. The minor reason is diversification. He considered it minor because it is not necessarily to establish control. It is primarily to smooth shocks by promoting risk sharing. By diversifying their portfolios, firms own not only the income streams from their own capital stocks, but also income streams from capital stocks of foreign firms. On the other hand, the major reasons are as follows:

1. Often it is profitable to control firms in more than one country in order to eliminate competition between them.
2. Some firms have advantages in some certain activities and they may find it tempting to exploit these advantages by establishing foreign operations.

Kindleberger (1969: 33) also argues that FDI occurs in the absence of conditions of perfect competition because when perfect competition conditions exist, local firms would have advantages over foreign firms due to the proximity of their operation to their decision making centers. Therefore, no firms could survive in foreign operation. For FDI to flourish there must be some imperfections in markets for goods or factors. Kindleberger (1969) presents the characteristics of monopolistic advantages that induce FDI as follows:

1. Imperfections in the goods markets associated with product differentiation, superior managerial and marketing skills and collusion in pricing.
2. Imperfections in factor markets because of patented and proprietary technology, preferential access to borrowed capital and management and engineering skills.
3. Internal and external economies of scale that lead to no other choice for MNCs but to expand by producing and marketing on a multinational basis.
4. Market distortions created by government that influence monopolistic advantages, for instance tariffs, quotas, subsidies to favored industry or other nontariff barriers.

The more significant the advantages due to those market imperfections, the greater the likelihood that monopoly profits will be earned and the more the firms are motivated to engage in FDI. When there are no imperfections, FDI will not occur. International production would be undertaken through some market arrangements, for example export and import, licensing, turnkey projects, management and marketing contracts, franchising and offshoring.

Caves (1974, 1971) considers product differentiation in the home market as the vital element giving rise to FDI. The MNC's possession of intangible assets allows it to differentiate products in different markets and secure cash flows streams. These intangible assets are termed "unique assets". The connection between the firm's unique assets, including its technology and management superiority, and the level of foreign involvement is confirmed (Caves 2007). The firms that aggressively seek overseas investment are generally the leading firms in their industries. They invest more in research and development, put massive effort into marketing and advertising, employ many scientists, engineers, and professional staff, sell some distinctive products and have easy access to market distribution networks.

Caves also distinguishes between horizontal FDI, vertical FDI, and conglomeration. Horizontal FDI is doing roughly the same production activities in many countries. Vertical FDI is locating different stages of production in different countries. On the other hand, conglomeration is basically producing many products in many countries. For horizontal FDI, he highlights the importance of product differentiation. According to him, it is the horizontally integrated firm that has unique assets over its local counterparts. When the product is protected by patents or trademarks, it is difficult for local competitors to produce exactly the same product. When a product is created using a combination of superior managerial and production skills, innovative production processes, financial advantages and access to production factors, then it is not easy for local competitors to mimic the product using their resources.

For vertically integrated firms, the possession of unique assets is not binding so much because the motivation for foreign production is to avoid uncertainty regarding the availability and pricing of its production inputs. He assumes that the production units of vertically integrated firms are dispersed in different countries because of conventional location pressures. Vertically

integrated firms also perform international production in order to establish barriers to entry for new competitors.

Spreading of business risks is the main explanation for conglomeration, in which multiple international plants have no evident horizontal or vertical relationship (ibid). Doing international production in any form brings some diversification gains to the firm. These gains are widened when firms could diversify across product and geographical spaces. Diversified foreign investment is also partly motivated by the parent company's efforts to utilize its diverse research and development discoveries.

2.1.2. Transaction cost and internalization theory

Transaction cost and internalization theory was initially developed by Ronald Coase. His main purpose was to explain why economic activity was organized within firms. Coase (1937) argues that firms exist because they reduce the transaction costs, which arise during production and exchange, capturing efficiencies that individuals are not capable of. These transaction costs are organized more efficiently within the institution of the firm. However, according to him, there are also internal costs of the firm, which are mainly associated with the diminishing rate of return when a firm expands above certain scale and the inefficient allocation of resources as a result of the absence of a price mechanism to direct all economic activities (ibid).

Williamson (1985, 1975) extends Coase's ideas by treating the firm as a governance structure and by identifying the particular transaction characteristics that play a crucial role in comparative institutional assessment. Williamson argues that there are costs to using the market, thus in order to avoid these costs, the transactions could be performed within the firm (ibid). However, then there will be internal organization costs incurred. Given different costs associated

with the market channel and internal organization, it is the transaction cost minimization that determines which transaction cost is used for each transaction. A channel is selected for one particular type of transactions when it is cheaper than the others. When the internal organization is less costly and thus preferred, it supersedes the market and directs economic activities and resource allocation. The transaction cost approach provides a conceptual framework to explain the operation of the MNCs. FDI, in this approach, is considered to be an economic instrument to bypass international markets and internalize transactions within the firm.

McManus (1972) highlights the role of transaction costs in the development of foreign operations by recognizing the existence of main interdependencies between activities conducted in different countries and the need to coordinate the activities of the interdependent parties. He argues that in order to successfully coordinate economic agents in different countries, firms can use strategies as follows:

1. Decentralized decision making by utilizing the price mechanism.
2. Contractual agreements, such as licensing, franchising, marketing contract, management contracts and international subcontracting.
3. Internalization of transactions within a single institution, through the establishment of an international firm.

The first strategy, by using the price mechanism, will incur costs because there are transaction costs that come from the need to specify the attributes of the good to be exchanged or from the difficulties in quantifying the flows of services or assets being exchanged (ibid). When the transaction costs are high or prohibitive, then MNCs exist. The MNC, then, arises as a response to market failures, as a way to increase allocative efficiency when the cost of coordinating economic activity between independent economic agents is high.

Buckley and Casson (1976) argue that a firm will engage in international production if the net benefit of its joint ownership of domestic and international activities outweighs those offered by the market. Moreover, it is sometimes difficult to use the market to organize transactions involving intermediate products. This creates an incentive for firms to bypass the market. Thus, the internal market is created by establishment of the firm that unites different transactions under single ownership. When this internalization is extended across borders by FDI, a MNC is born. They also claim that both industry-specific factors and industry-related factors lead to internalization of markets. The industry-specific factors will lead directly to the internalization of markets for intermediate products, whereas the industry-related factors will lead to the internalization of the market for knowledge. They claim that the growth of multinational companies before World War II was fueled by the internalization of the market for primary products, while the growth of multinational companies nowadays is more encouraged by the need to internalize the market for knowledge (ibid).

2.1.3. Ownership, location, and internalization (OLI) advantages theory

Dunning (1993, 1988, and 1979) proposes an eclectic approach, which suggests that the firm-specific (ownership) advantages, internalization efficiencies of hierarchical governance advantages, and host country location-specific advantages are three necessary and sufficient conditions for FDI. Dunning's eclectic theory presents a synthesis based on the theory of industrial organization, the theory of the firm, and the theory of economic location.

According to Dunning, ownership advantages are firm-specific advantages, which are basically the same as the monopolistic advantages discussed earlier. Ownership advantages include products and manufacturing processes protected by patents, trademarks, copyrights, and

trade secrets. They also include superior marketing and managerial skills, control over market and trade advantages, economies of scale, and firms' established reputations that enable them to gain easy access to raw material, labor, and borrowed capital. These ownership advantages provide firms with market power and competitive advantages over domestic firms.

Internalization advantages are derived from the benefits the firm gains from the common governance of its value added activity. For example, ownership advantages are best exploited internally within the firm. By ruling out the possibility of licensing the firm's production technology to another firm or sharing them in a joint venture firm, the firm then can minimize technology imitation. The firm can also maintain its reputation through effective management and quality control. Sales and profits are presumably maximized by retaining sole control of foreign production. According to Dunning, internalization advantages include the desire to avoid search and negotiation costs, to engage in transfer pricing, cross subsidization and price differentiation, and to maintain the firm's established reputation (Dunning 1993: 81).

Location advantages are firm's motive to produce abroad. The firm's choice of where to locate its foreign operations is influenced by countries' locational advantages. They are not limited to the natural resource endowment of a country, but also include cultural, legal, political, institutional, and market structure environments in which a firm operates. Government policies also matter because tariffs, quotas, subsidies, and other nontariff barriers such as local content requirements affect a firm's decision to locate abroad. These foreign government policies somewhat explain why a firm set up a production plant abroad rather than making products in their home country and exporting them.

Dunning (1979) claims that the configuration of OLI advantages determines the pattern and form of FDI in the following order:

1. A firm needs to have ownership advantages in order to successfully compete with local firms in foreign countries.
2. Internalization advantages must be apparent in the sense that the firm has an interest in transferring ownership advantages across borders but still within the organization of the firm itself rather than licensing for use by others.
3. If (1) and (2) above are satisfied, locational advantages determine whether the firm should export the product from the home country or undertake local production in the host country.

Dunning (1993: 80) also argues that the more ownership-specific advantages a firm has over its foreign competitors, the greater is its incentive to internalize them rather than externalize their use. The more research-intensive, technology-intensive, and marketing-intensive a product is, the higher the degree of foreign ownership in an industry. The greater the firm's interest in using the ownership and internalization advantages in a foreign country, the greater is the possibility of performing FDI. Later, Dunning also claims that his approach explains all forms of international production in different geographical regions (ibid).

2.1.4. Product life cycle (PLC) theory

Vernon (1966) develops the product life cycle model to introduce trade and FDI as different stages of a sequential development process. Vernon argues that the investment decision is a decision between exporting and investing as products move through a life cycle that gives a cost-based reason for switching from exporting to FDI. According to Vernon, the first stage in the product life cycle is a new product stage, in which a new product is highly differentiated and is produced by skilled labor at relatively high cost. This new product is also produced in limited amounts because the ultimate market potential and optimal production technique are still

unknown. At this stage, an innovative product is likely to be introduced in the U.S. because its technology and economic development are more advanced. The price elasticity of demand for this new product is low because of the high degree of product differentiation and the existence of monopoly in early stages. The manufacturing production at this stage is tied to the company's home base. The demand for this new product is mainly from the U.S. domestic market, where consumers have higher levels of income and their consumption needs are more sophisticated. Foreign sales are handled initially through exporting.

The second stage in product life cycle is a mature product, where a certain level of standardization has been achieved, demand for the product expands and knowledge of its production is more diffuse. A commitment to some set of product standards opens up technical possibilities for achieving economies of scale through mass output and encourages long term commitment to some given process and some fixed set of facilities. The expansion of the foreign market also increases the attractiveness of setting up production facilities there rather than exporting from the home country. Another consideration is production costs, especially labor cost in the U.S., which become less tolerable for the firm. The threat of the imposition of trade and nontrade barriers and the anticipation of foreign competitors as local firms start to have local production, also encourages U.S. firm to relocate production there as a strategy to secure local market share.

The last stage in product life cycle is a standardized product, in which a product becomes highly standardized, the production process becomes common and price is the major factor determining the competitive outcome. The barrier to entry generated by economies of scale is deteriorating. The technology to produce the product has reached its limit with no major innovation or production changes. The product has become a commodity where price is a more

important selling point than the brand of the company that makes it. Firms from the U.S. and other developed countries will move labor-intensive production to developing countries in order to take advantage of lower labor costs. At this stage, the demand in the developed countries is satisfied mainly by overseas imports. In sum, Vernon's product life cycle predicts that production is initially located in the U.S., subsequently relocates to other developed countries to meet the market demand there and eventually moves to developing countries where the labor costs are the lowest.

The later works by Vernon (1979, 1974) modify product life cycle model by emphasizing the oligopolistic structure of industries where MNCs operate. Multinational companies are further categorized as innovation based oligopolies, mature oligopolies, and senescent oligopolies. He still assumes that each company seeks to maintain its competitive position in oligopolistic competition. He also takes into account other factor costs, such as raw materials and land, and develops a model of FDI in other industrialized countries and not only in the U.S. (Vernon 1974).

Most empirical research on product life cycle theory focuses on patterns of production, trade, and activity of MNCs. The prevalence of MNCs in advanced research and development industries implies that MNCs have crucial roles in the international dissemination of innovation. The model explains why the U.S. has been the main source of innovations and a prolific source of MNCs and why U.S. foreign investment has been concentrated in innovative industries in the early and late twentieth century (Vernon 1971; Gruber, Mehta, and Vernon 1967).

Vernon and Davidson (1979) and McFetridge (1987) empirically test the dissemination of innovations from U.S. firms. Their results are generally consistent with product life cycle theory. Technologies are indeed transferred first to countries with high income per capita, high

educational achievement and large manufacturing industries. Moreover, trade barriers from host countries actually speed up transfers of technology, whereas screening restrictions on FDI slow them down.

2.1.5. Horizontal FDI, vertical FDI and knowledge-capital theory

Recent research on FDI has focused on providing a general equilibrium framework for the microeconomic basis for FDI and drawing conclusions about welfare (Caves 2007).

Markusen (1984) uses a general equilibrium model to explain horizontally integrated firms with simultaneous activities in multiple identical countries. He characterizes the MNC as incurring a fixed cost per firm or trade costs, another fixed cost per plant and a permanent variable cost of production. This implies the MNC that produces the same good in two countries –horizontal FDI– will exist whenever trade costs are high, which reduces the incentive to export, and the foreign market is large, which offsets the fixed costs of the plant.

Brainard (1993) also claims the higher trade barriers increase the incentive to perform horizontal FDI. Horizontal FDI tends to dominate exporting in industries where the cost of transporting good across borders is high and plant level economies of scale are low relative to firm level economies to scale. Markusen and Venables (2000, 1998) confirm the horizontal FDI between two countries is small when factor endowment differences between countries are large. When the factor endowments are similar, horizontal FDI increases because MNCs find it feasible to make production and headquarters services in both countries.

Helpman (1985, 1984) uses a general equilibrium model with monopolistic competition among vertically integrated firms that produce differentiated goods to shed light on MNCs as an equilibrium phenomenon. He argues that firms vertically relocate abroad because factor

endowment differences are large and factor price differences exist. FDI should flow to the countries that are abundant in the particular factor, which is used intensively by that industry. Furthermore, MNCs' activity grows larger and vertical FDI will dominate horizontal FDI, the greater the difference in factor endowments.

Grossman and Helpman (2004) deal with the comparative costs of managing vertical integration and arms-length contracts with input suppliers. They utilize a general equilibrium model to explain the microeconomic make or buy decision with the emphasis on differentiated products subject to a fixed design cost at home. The inputs are also differentiated and firm's problem is to obtain variety of input that best suits its design. They wind up with the result that the firm with moderate productivity will choose in-house production of inputs, whereas designers with either very high or very low productivity will choose to outsource (buy) inputs.

Moreover, Markusen and Venables (1998) apply a general equilibrium framework and a Cournot oligopoly model setup to test how MNC activities, trade pattern, and affiliate production are related to country characteristics; for example, relative factor endowments, market size, asymmetries in market size, plant-level scale economies and trade costs. They reach the same conclusion as Helpman (1985, 1984), in which a vertically integrated MNC with international trade in inputs and intermediate product would expand as national factor endowment grows more different.

The knowledge-capital model combines horizontal FDI motivations (the desire to place production close to the market and avoid trade costs) with vertical FDI motivations (the desire to take advantage of low labor costs and the abundance of low-skilled labor) to explore the impact of various factors on FDI. Markusen, Venables, Konan, and Zhang (1996) and Markusen (2002, 1997) set up the knowledge-capital model with two countries, two factors, and two goods (one

good with constant returns to scale, another good with plant and firm-level economies). Then, they compare the incentives for three different types of firms: (1) national firms with a plant and a headquarters in the home country; (2) horizontal firms with a plant in each country and a headquarters in the home country, and; (3) vertical firms with a plant in the host country and a headquarters in the home country. Only when trade costs and FDI are prohibitive, national firms existed in both countries.

There is a difference in predictions of the horizontal FDI model and the knowledge-capital model regarding the impact of skill differences on FDI. The horizontal FDI model anticipates that FDI will get lower when the skill difference between two countries is getting larger (Markusen and Venables 2000). On the other hand, the knowledge-capital model predicts a higher FDI between them as it takes into account both horizontal FDI and vertical FDI. According to vertical FDI model, the difference in relative factor endowments determines vertical FDI. As national factor endowments become more different, vertical FDI would expand. The knowledge-capital model predicts the same result, but claims that the effect of skill difference on FDI is decreasing because the knowledge capital model considers many variables, such as trade costs, market size and distance.

Carr, Markusen, and Maskus (1998) empirically estimate the knowledge-capital model using a panel of inward and outward sales data of foreign affiliates for the U.S. and 36 other countries and test for the importance factors such as market size, factor endowments, and transport costs. Their results, with expected signs and strong statistical significance for most variables, support the knowledge-capital model. Since they use foreign affiliates' sales in host country to proxy for FDI, there is insufficient information to distinguish between vertical FDI and horizontal FDI. Nevertheless, their results demonstrate that trade costs have positive effects

on FDI when there is a small skill difference between parent and host countries. In this case the increase in horizontal FDI will dominate the decrease in vertical FDI. On the other hand, when the skill difference is large, trade costs have negative effects on FDI. In this case the increase in vertical FDI outweighs the decrease in horizontal FDI.

However, Blonigen, Davies, and Head (2002) claim that Carr, Markusen, and Maskus (1998) empirical framework misspecified the variables that measure differences in skilled-labor abundance. Blonigen et al. (2002) estimate a revised version of the model and prove that the model actually supports the horizontal FDI model, not the knowledge-capital model, because horizontal FDI is smaller the more countries differ in their relative factor endowments.

2.2. Types of FDI: horizontal, vertical and export-platform

FDI can be divided in one of three ways based on its role in the parent company's global production strategy: horizontal FDI, vertical FDI, and export-platform FDI. Horizontal FDI occurs when roughly same goods are produced both in the source and host country or the similar operations applied to plants in home and host countries. This kind of FDI is relatively common in the manufacturing sector, in which firms horizontally transfer a portion of home country production to the firm's foreign plants. The objective of horizontal FDI is usually strengthening the firm's global competitive position (market-seeking). Horizontal FDI usually happens between industrial countries, when a firm from one industrial country buys a firm or establishes subsidiary in another industrial country. For example, Ford Motor Company bought Jaguar, a British car producer, and Volvo, a Swedish car maker. Toyota Motor Sales U.S.A. is a wholly owned subsidiary of Toyota Motor Corporation Japan. The reasons for those acquisition or establishments are as follows (Feenstra and Taylor 2012: 21):

- a. By establishing a plant abroad, the home firm can avoid any tariffs or nontariff barriers from exporting from the home country to the host country because the firm can simply produce and sell locally in the host country.
- b. By having a foreign subsidiary overseas, the firm improves access to the local market because local firms will have better facilities and local market information.
- c. By having several production facilities overseas, the firm can build alliances between production divisions within the firm, so that technical expertise can be easily shared. It also avoids possible duplication of products. Better customer service and product management are expected as the seller moves closer to customers.

Vertical FDI is characterized by fragmenting stages of production geographically. In this case, a firm could locate part of the production process in a developing country for the main purpose of taking advantage of cheaper inputs and wages (resource-seeking and efficiency-seeking). Firms from advanced economies use their technological and managerial capabilities to produce goods in developing countries for the world market. For instance, Chrysler, Volkswagen, Peugeot, General Motors, Honda, Suzuki all have subsidiaries and plants in China, both in order to take advantage of lower production costs and to better market their cars in China (market-seeking). The other plausible reasons for this kind of FDI are as follows (Chen 2000: 19):

- a. MNCs establish a plant in a developing country in order to enter the market there because of non-tradable product or service markets. If transportation costs, transaction costs and tariffs for a product are high or even prohibitive, the MNCs in the source country will not be able to export the product from the home country at the local market in the host country.

Additionally, the MNC can acquire local partners to access information on the market development in the host country in order to better sell their products there.

- b. Non-movable resources in the host country, including low wage workers, and raw materials with a high transportation cost can be utilized if MNCs set up a plant at the location of said resources. Therefore, MNCs' competitiveness improves because they can take advantage of the low input costs by using locational resources in the host country.
- c. Advances in communication, data processing, customer service, call centers, and transportation have allowed global production networks to flourish and operate at high efficiency. Geographic specialization exploits cost advantages in different countries for different products. MNC can minimize production cost by taking advantage of international factor-price differential.

The last type of FDI is export-platform FDI, which takes place when a firm uses a host country as an export base. The firm could locate a part or a whole operation in a host country and then export its products to third markets, which could be either regional or international market.⁴ For instance, Toyota Japan made Thailand a base country for its truck production to be marketed in the Middle East and Australia. The world's largest vinyl chloride monomer (a raw material for plastics used primarily for construction) producer, Shinetsu Chemical, a Japanese company, has plants in Portugal, from which it supplies all European countries. The reason for this kind of FDI is mainly production costs as firms are able to import intermediate goods and raw materials from around the world to host country production facilities, utilizing incentives offered by host country government.

⁴ Export-platform FDI can be either of a horizontal or vertical type with the difference that affiliate production is exported to a third country for direct sales for the horizontal type or for further processing for the vertical type.

Host governments are usually very concerned with anything that happens in an export processing zone because it is the face and image of FDI in their countries. It is not uncommon that host governments show off the export processing zone if there are potential investors wanting to invest in their countries but investors are not sure about the condition and security of their direct investments. Moreover, the host governments are relatively reactive when it comes to complaints filed by firms operating in an export processing zone.

Host governments frequently offer incentives and facilities to boost the attractiveness of their locations. Tax breaks and tax incentives are offered by the host government to attract more FDI. Export processing zones and free trades zone are two main types of facilities offered by host country governments. In those areas, goods may be landed, handled, manufactured or reconfigured, stored and re-exported without customs' intervention. Only when the goods are imported to consumers in the country, where the zone is located, do they become subject to customs duties.

Free-trade zones are usually organized in areas with many geographic advantages for trade, such as major seaports, international airports, and national frontiers. In those zones, MNCs enjoy exemptions from tariffs and nontariff barriers, exemption from most business regulations, and exemption from some or all corporate income taxes. Moreover, MNCs are attracted to countries that possess a pool of skilled labor, low-cost labor, and a fairly advanced quality of infrastructure and industrial services (Kumar 1994). Other factors such as low transportation costs, political stability, monetary variables, agglomeration economies, and strong manufacturing concentration are also important to lure MNCs into export processing zones and free trade zones (Woodward and Rolfe 1993).

2.3. Theoretical framework of corruption

There are many definitions of corruption.⁵ Shleifer and Vishny (1993: 599) define government corruption as “the sale by government officials of government property for personal gain”. For instance, government officers often take bribes for providing permits and licenses or for restricting entry of a competitor into a market. With regard to international trade, a bribe sometimes must be given for passage through customs. In all those cases, government officers charge personally for goods that the government officially owns (ibid).

De Jong and Udo (2006: 4) define corruption as “the misuse of public power for private benefit (or much alike).” Misuse would be deviating from the formal duties of a public role or a code of conduct. Public power is exercised by customs officials in the context of international trade. Customs officers have something that firms value i.e. access to the domestic market. Corrupt officers extort bribes from a client, who otherwise will not receive assured services, or will receive inferior service. Therefore, businesses and individuals may collude with customs officers to lower customs duties, speed up service or restrict competitors.

Macrae (1982: 678) defines corruption as an “arrangement that involves a private exchange between two parties (the demander and the supplier)”. The arrangement has an influence on the allocation of resources, either immediately or in the future, and involves the use or abuse of public or collective responsibility for private ends (ibid). The demanders in this case could be the government officials, who are customs officers in particular, in terms of international trade, and the suppliers are businesses or individuals interested in importing goods for daily operation or for physical investment.

⁵ In this dissertation, corruption is defined as government corruption or public office corruption, not private sector (bribes among private sector participants) or political corruption such as vote-buying or illegal campaign donations. Some illegal acts such as money laundering or black market operations are not defined as corruption either because they do not involve public office use. For a brief summary of various definitions, see Jain (2001).

Political scientist Joseph Nye (1967: 419) defines corruption as “the behavior which deviates from formal duties of a public role because of private-regarding (personal, close family, private clique) pecuniary or status gains: or violates rules against the exercise of certain types of private-regarding influence.” So, basically Nye (1967) says that corruption is the deviation from the duties of a formal public role for private gain.⁶ The World Bank economist, Daniel Kaufmann (1997: 114) defines corruption as “the misuse of public office for private gain.” He is followed by political scientists Daniel Treisman (2000: 399), Wayne Sandholtz and William Koetzle (2000: 31) and many others who define corruption the same way as he does. Aidt (2003: F623) defines “corruption is an act in which the power of public office is used for personal gain in a manner that contravenes the rules of the game.” Susan Rose-Ackerman (1999: 9) takes a slightly different perspective, as she specifically defines government corruption as “payments illegally made to public agents with the goal of obtaining a benefit or avoiding a cost.”

Jain (2001) argues that while it is not easy to be in agreement on the definition of corruption, there is consensus that corruption refers to actions where public office is used for personal gain in a manner that violates the rules of the game and the code of conduct. He also claims that there are three necessary conditions for corruption to occur as follows:

1. The government officer must have monopoly power over the regulation or delivery of the government good or service.
2. The government officer must be able and willing to misuse that power
3. The government officer must have an economic incentive to do so.

⁶ Nye (1967: 419) states that corruption includes behavior such as bribery (use of rewards to alter the judgment of a person in a position of trust), nepotism (bestowal of patronage by reason of involved relationship rather than merit), and misappropriation (illegal appropriation of public resources for private uses)

In this dissertation I will use the simple and straightforward definition by the World Bank, which defines corruption as:

The abuse of public office for private gain. Public office is abused for private gain when an official accepts, solicits, or extorts a bribe. It is also abused when private agents actively offer bribes to circumvent public policies and processes for competitive advantage and profit. Public office can also be abused for personal benefit even if no bribery occurs, through patronage and nepotism, the theft of state assets, or the diversion of state revenues (World Bank 1997: 7-8).

Corruption may take many forms including practices such as bribery, fraud, extortion and embezzlement. However, corruption with respect to FDI and international trade usually takes the form of bribery (bribes paid to and extorted by government officers) that is “a transaction that provides the parties involved with undue payment (interpreted widely to include any property having financial and non-financial value) or other benefit or advantage” (UNCTAD 2001: 12).⁷ Customs officers might take bribes to let otherwise taxable goods go without paying any taxes.⁸ Foreign investment office officials could ask for speed money to expedite the paperwork. Procurement officers might ask for kickbacks for buying goods from certain suppliers. The bribe does not have to be in the form hard currency; it might be in the form of expensive gifts, shopping trips abroad, or lavish entertainment treats.

Corruption is usually modeled using a principal-agent model, supply and demand model or gravity model. The principal-agent model involves the classic principal-agent problem, in which the principal, who may be a top-rank or middle-rank government officer, deals with the agent, who may be the multinational company interested in some government-provided good or

⁷ Bribery also includes “a payment or advantage that is in consideration of (non) performance of that which is already due by virtue of the recipient’s terms of service, or other commitments and obligations. It also includes payments in consideration for the receipt of information, services or other advantages that the payer would not otherwise be entitled to receive” (UNCTAD 2001: 12).

⁸ Bribe may be referred to using many terms, for example sweetener, payoff, kickback, speed money, or for a small amount of bribes: pass money, coffee money or cigarette money.

in avoiding higher taxes (Aidt 2003; Dutta and Mishra 2004). Shleifer and Vishny (1993) provide a nice example of this type of corruption. They also distinguish between corruption with theft, which is a bribe to a customs officer in exchange for goods entering the country without paying tax and corruption without theft that is an additional bribe beyond the regular price for getting a certain service or good; the customs official keeps the bribe but passes the regular price to the government.

The supply demand and model is best illustrated by Rose-Ackerman (1999, 1978). She illustrates the case in which the government has the authority to allocate a scarce good or service to individuals and firms, using legal criteria other than willingness to pay (Rose-Ackerman 1999: 9). Bribes then clear the market. She shows an example of a government that frequently provides goods for free or sells them below market prices. In such a case, dual prices usually exist, a low state price and a higher free market price. Firms then bribe corrupt officials for access to below-market-price supplies.

There is also another example of the supply demand model where a government official must allocate a fixed number of import permits (Rose-Ackerman 1999: 12). Assume the number of importers qualified to obtain import permits exceeds the supply. If the corrupt market operates efficiently, the import permits will be given to the importers with the highest willingness to pay. Assuming the government official cannot price-discriminate, then the market clearing bribe will be equivalent to the price in the efficient market. The winner is the one willing to pay the highest bribes. Corruption in the form of a bribe equates supply and demand, and thus clears the market. However, it is unlikely that corrupt markets work as efficiently as open competitive legal markets. Because of the illegal nature of corruption, the transaction is kept secret and the information about bribe prices is not widely available. There is a chance of getting caught if

there are many parties involved, so government officials may limit their dealings to the firms they really know well. Potential parties may also refuse to join because of fear of punishment. Thus, the bribe price is usually sticky and there is asymmetric information because of the difficulty in communicating market information.

The allocation of scarce import and export licenses is often a source of payoff for government officers responsible for the allocation. In the Philippines in the early 1950s, those with political connections could easily get licenses if they paid a 10 percent bribe (Hutchcroft 1998: 73). The former Indonesian dictator, President Suharto was known as ‘‘Mr. Ten Percent’’ because MNCs doing business there were naturally expected to pay a relatively well-defined bribe to the president or members of his family (Wei 2000: 1). In Nigeria in the early 1980s, Shehu Sagari’s presidential regime declined free trade reforms recommended by the International Monetary Fund because the existing system of import licensing was a main source of patronage and payoff (Herbst and Olukashi 1994: 465).

The gravity model is similar to Tinbergen’s gravity model for modeling international trade (Tinbergen 1962). It is based on the idea that some forces explain the intensity of trade between two countries. Income and size constitute attraction forces, while distance and trade barriers act as resistance ones. In investment model, for instance, market size and market power represent attraction forces, whereas a high level of corruption and a weak rule of law symbolize opposing forces. Anderson and van Wincoop (2003), Bergstrand (1989) and Anderson (1979) present micro foundations for the gravity model. The monopolistic competition model, as well as the Heckscher-Ohlin market structures model, is utilized to derive the gravity equation.

The effect of institutions on trade flows in the context of gravity equations was first addressed by Anderson and Marcouiller (2002). They show that trade increases significantly

when supported by strong institutions, particularly a legal system capable of enforcing business contracts and a transparent and impartial implementation of government economic policy.

Further, they regard corruption and imperfect contract enforcement as elements of the insecurity of international trade and construct a model of import demand in an insecure world. They show that theft by corrupt officials generates a price mark-up equivalent to a hidden tax or tariff, in which the extent depends on the quality of institutions.

Dutt and Traca (2008) follow the monopolistic competition approach of Anderson and van Wincoop (2003) by extending the gravity model to include a corruption tax. They focus on the procedure an exporter must perform to clear customs, and how the relationship between the exporter and self-interested customs officials influences the exporter's profit maximizing decisions. Their working assumption is that pervasive institutional corruption in the country lowers the probability of getting caught in extorting bribes and/or the associated social or pecuniary penalty. Consequently, this increases the marginal utility of the bribe to the customs official. Their conclusion is that corruption impedes trade for the vast majority of countries, but when the level of tariffs is high, corruption can be trade-enhancing, although only at the margin.

I will lay down a theoretical framework for corruption based on work by Shleifer and Vishny (1993) because of simplicity of their approach compared to other papers, though they still get the same general point. In Shleifer and Vishny (1993), there is a government-produced good, for example an import license. It is assumed that this good is homogenous and there is a demand curve for this government-produced good, $D(p)$ from the firms. It is also assumed that good is sold on behalf of the government by a government official, for example a customs officer, in which he exercises monopoly power by determining the quantity of good, either by refusing to provide the good or delaying the provision of the good. Bribes are paid by the firms

in order to get this good. The government officer maximizes the value of the bribes he collects from selling the government good. Moreover, there is no risk of being caught collecting bribes as a result of refusing to provide the good or restricting the supply of the good. Perhaps this is because the officer gives some of the bribes to his supervisor or because anticorruption measures are not strong. The official government price of the good is p . Cost of producing this good is zero to the officer personally because it is the government that is paying the cost.

Shleifer and Vishny (1993) consider two cases of corruption. In the first case, corruption without theft, an officer overprices by providing the good at the official government price plus the bribe (Figure 2.1). He passes the official price to the government but keeps the bribes for himself. For instance, when a custom officer asks for bribes for giving an import license, he actually submits the official price of the import license p to the government, but retains the bribes for himself. The marginal cost for customs officer is therefore the official price of the government good p . If he cannot price discriminate between firms (buyers), he will simply act as a monopolist determining the quantity supplied by equating marginal revenue to marginal cost. In this case, the total price with bribes is always higher than the government's official price. Output will therefore be lower as well because a monopolist can always restrict quantity in order to increase the price. Bribes act as a tool to clear the market for the government provided good because corrupt officers create a shortage at the government's official price.

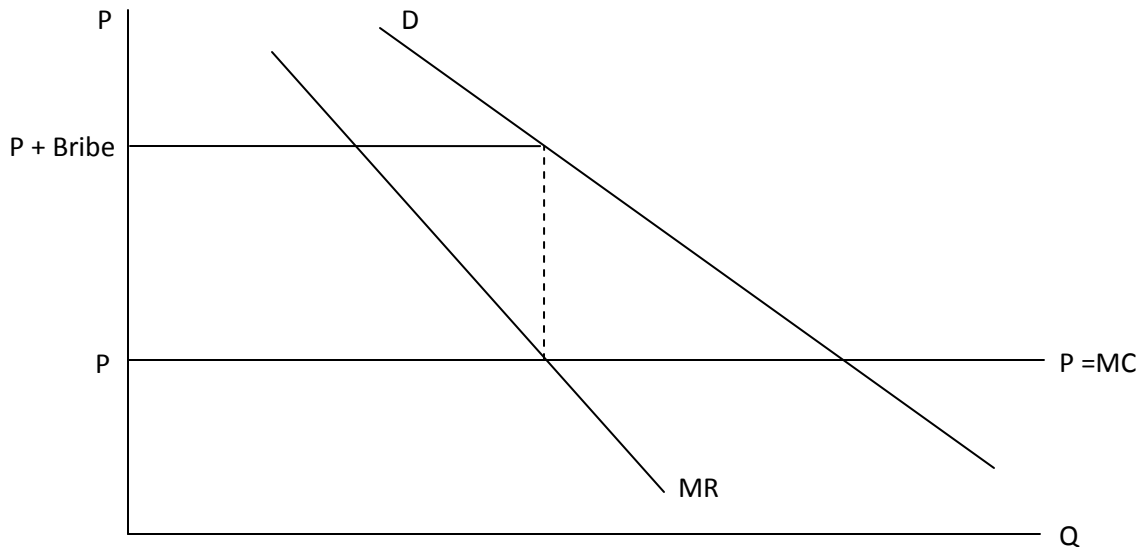


Figure 2.1. Corruption without Theft

Source: Shleifer and Vishny (1993)

In the second case, corruption with theft, the official does not turn over anything to the government at all (Figure 2.2). He simply hides the proceeds from selling the government-provided good. Government goods are stolen by the government officer and the price that the buyers pay equals the bribe, which must be lower than the official price. For instance, a customs officer at an arrival terminal at the airport may give fake receipts for a dutiable good to incoming passengers, thus giving nothing to the government. Customs officers may also ask the importer to declare a full container of taxable goods or a fully loaded vessel of dutiable goods as “zero manifest”, meaning that there is no cargo in the container or vessel. Thus, there is no obligation to collect any revenue whatsoever from import duties for the government. In this case the marginal cost to the officer is zero. The officer once again equates marginal revenue and marginal cost, which is zero, and ends up with bribe that is lower than official government price.

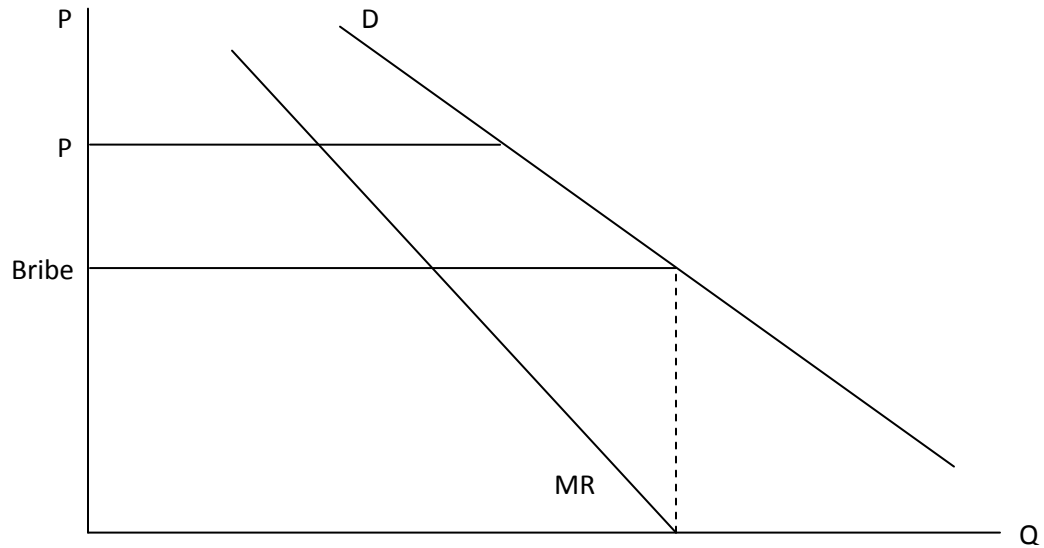


Figure 2.2. Corruption with Theft

Source: Shleifer and Vishny (1993)

In real life, bribes that importers pay in corruption with theft cases must be lower than the official government price because there is no strong reason why an importer would want to pay a bribe that is equal to or higher than the official government price. Importers pay bribes because they want to get something from the situation and in this case that means lower expenses for importation. This kind of corruption is more attractive to the importers and customs officers because it is a win-win solution for both of them. It is also more difficult to detect because there is an aligned interest between importers and customs officers.

In sum, the price paid by the firms in the corruption without theft case is always higher than that in the corruption with theft case. Furthermore, corruption with theft is more damaging for the government, because no revenue is collected. From the corrupt officers' side, corruption with theft is more advantageous for them because they will have more discretion to choose the amount of bribes. If they decided to lower the bribe level, demand for their output or service would be going up. The increase in demand offsets the decrease in bribe level, thus increasing

total bribes. Also, the smaller bribe lowers the risk of being caught, if there is any. From firms' side, corruption without theft increase costs because the amount paid is the government official price plus bribes. On the other hand, corruption with theft decreases costs since the amount paid is only bribes, which are lower than the official government price. In the latter case, corruption is actually beneficial for the firm. It is greasing the wheels of commerce rather than sanding them and it is a "helping hand" instead of a "grabbing hand".

Moreover, corruption may discourage FDI inflows as we have seen for the case of some developed countries: the United States, France, the United Kingdom, Canada, Australia, Germany and some other Western European countries. The inverse relationship between corruption and FDI inflows has also applied for some developing countries, such as Hong Kong, Singapore, and Chile. Various theoretical papers show that corruption has a negative impact on FDI. Corruption deters FDI as it acts like a tax on FDI by increasing the cost of doing business (Wei 2000; Svensson and Fisman 2000; Tanzi and Davoodi 1997).

Wei (1997) presents a simple model of foreign investors in a corrupt destination country. He models corruption as a distortionary tax and relates it to uncertainty. In his model, there is a foreign investor who is choosing investment level x . Proceeds from investments is $f(x)$, which is a twice differentiable and weakly concave. Because corruption acts like a distortionary tax, it lowers proceeds from investment. Let q denote the corruption level, which is a random variable with mean μ and variance σ^2 , implying uncertainty. Therefore, a representative foreign-invested firm's profit in a corrupt destination country is: $\pi = (1-q)f(x) - c(x)$, where $c(x)$ is the cost of capital. Assuming that the foreign investor has a mean-variance utility function, Wei demonstrates that the optimal investment level, x^* decreases when the mean or variance of corruption level going up. Therefore, both higher levels of corruption and higher levels of

corruption-induced uncertainty lower the firm's profit in a destination country and consequently lower the inflows of foreign investment into that country.

Further, Wei (2000) and Svensson and Fisman (2000) conclude that corruption, measured in terms of bribery, is more harmful to firms than taxation. The reason for this is that "corruption, unlike tax, is not transparent, not preannounced, and carries a much poorer enforcement of an agreement between a briber and a bribee" (Wei 1997: 1). Moreover, because foreign firms so often have to pay bribes in order to get permits to import or invest, particularly in developing countries, corruption raises the costs of investment. Such extra costs decrease the expected profitability of investment. Consequently, corruption is commonly viewed as a tax on profits of investment (Shleifer and Vishny 1993). Corruption also reduces the private marginal product of capital, thus decreasing private investment and then lowering economic growth (Keefer and Knack 1996; Mauro 1995).

Additionally, specifically for U.S. firms, there is the Foreign Corrupt Practices Act of 1977 that prohibits U.S. firms from bribing foreign officers in international business transactions. As a result, when the level of corruption in the host country is high, U.S. firms will be reluctant to invest in that country because they do not bribe. But, are those prior conclusions always applied? We have learned that corruption may help increase FDI inflows as seems to be the case for some developing countries: China, Brazil, the Russian Federation, Saudi Arabia, India, Mexico, and Brazil. Hence, corruption may help increase FDI under the efficient grease hypothesis. The efficient grease hypothesis argues that corruption could boost investment because it acts as speed money that enables firms to avoid red tape.

Corruption in the form of bribes may also be beneficial in countries with very long waiting-times at the border or with a low quality of customs service. Lui (1985), in support of the

view that corruption could be beneficial, shows that if bribery is allowed, speed money permits clients to avoid bureaucratic delays. In his model, firms that value time the most can choose a strategy by paying bribes to get a better position in the line and have decisions made more quickly. He demonstrates that the firm's strategy forms a Nash equilibrium that minimizes the average value of the time costs of the queue. Based on this equilibrium, the server, who can be a customs officer in the airport or seaport, who wants to maximize either bribe revenue or bribe revenue net of cost of service, will also choose an optimal speed of service. He shows that the server could choose to expedite the service when bribery is allowed. Thus, if clients have different opportunity costs of time, bribes can minimize the value of waiting costs. In this queuing model, corruption could actually increase efficiency as different bribes by different firms may reflect their different opportunity costs with respect to bureaucratic delay, so the ability to buy less red tape might be advantageous.

Another argument, which supports the helping hand hypothesis, is that corruption allows supply and demand to work efficiently, since under competitive bidding for government contracts, the most efficient firm can offer the highest bribe. Thus, the contract goes to the lowest-cost firm. Beck and Maher (1986) model the commission bribery transaction in a governmental procurement context where the contract could be awarded competitively to the supplier that submits the lowest bid price or awarded at a prearranged price to the firm paying the largest bribe. In their bribery model, each potential supplier is assumed to negotiate privately with a governmental official. Thus, the information available to participants is similar to the information available to bidders in a competitive auction process. Participating firms do not know the bribe offered by other firms to the government official. Firms are assumed to know the government's policy of awarding the contract to the firm offering to pay the largest bribe. Firms

are also assumed to know their own costs, but have incomplete information about other firms' costs and profits. Their result shows that in the absence of punishment for bribery, firms would be indifferent between bribery and auction institutions. If all suppliers face the same penalty, then the equilibrium bribe would be reduced by the amount of the penalty. Therefore, bribery and auction would have the same outcome. For a predetermined contract price, the bribery model demonstrates that the same firm wins the contract and the government paid the same net-of-bribes purchase price. This is the same result as that under a competitive auction process. However, Tanzi (1998) argues that those paying the highest bribes are not necessarily the most efficient firms but rather successful rent seekers.

Lien (1986) extends Beck and Maher (1986) model by assuming that each firm chooses the optimal amount of bribes according to its gross profit (or cost) level using the same bribe-gross profit (cost) function as the other firms. Because this bribery function is assumed to be monotonically increasing with gross profit, or alternatively, monotonically decreasing with cost, the most cost-efficient firm will offer the highest bribe and thus win the prize. Consequently, the bribery game produces a desirable outcome since there is no loss of efficiency in the awarding process because the project is assigned to the most efficient firm.

Corruption could also be considered as a useful substitute for a weak rule of law if the value of behaving corruptly—the value of additional productive transactions that occur—exceeds the costs of engaging in corruption. This is most likely when the legal options for doing business are quite limited (Leff 1964). Bardhan (1997) also argues that if rigid regulation and an inefficient bureaucracy prevail, bribes may increase bureaucratic efficiency by expediting the process of decision-making. Also, bribes might be needed to gain access to publicly funded projects. Similarly, Glass and Wu (2002) claim that in the long run, there are complicated

general equilibrium effects at work, and corruption is not necessarily bad for FDI. Corruption may even foster inward FDI. However, Kaufmann and Wei (1999) take a different perspective. They argue that the efficient grease hypothesis should be interpreted with a grain of salt because this hypothesis depends on crucial assumptions that should not be taken for granted. It may occur if red tape is assumed to be exogenous, independent of the incentive for officer to take bribes. As a result, the hypothesis is a partial equilibrium in nature, and does not necessarily hold in a general equilibrium.

Bribes can also complement low wages, especially in most developing countries where the wages of government officials are infamously low, but their discretionary powers are huge, particularly customs officers, tax officers and police officers. Therefore, corruption in the form of bribes allows the government to sustain a lower tax burden, which is positive for growth (Tullock 1996). The question here is whether a lower tax burden is more conducive to growth than a lower level of corruption. Thus, again this is a classic second-best problem.

2.4. Empirical findings

2.4.1. The effect of corruption on FDI

Regarding empirical results, the classic paper investigating the relationship between corruption and investment is that of Mauro (1995). He utilizes a corruption index provided by Business International (BI) and runs a sample of 67 countries using Ordinary Least Squares (OLS) and Two Stage Least Squares (2SLS) methods. The strength of this paper is that it controls for endogeneity by using an index of ethno linguistic fractionalization as an instrument and nine indicators of institutional efficiency.⁹ He demonstrates that high levels of corruption are

⁹ Ethno linguistic fractionalization measures the probability that two persons drawn at random from a country's population will not belong to the same ethno linguistic group.

associated with lower levels of investment as a share of Gross Domestic Product (GDP). For instance, if Bangladesh (score of 4.7) were to improve the integrity and efficiency of its bureaucracy to the level of Uruguay (score of 6.8), its investment rate would increase by almost five percentage points and its yearly GDP growth would rise by over half a percentage point.¹⁰ Nevertheless, Wedeman (1997) argues that while the correlation between corruption and the ratio of investment to GDP might be strong for countries with little corruption, it loses power for countries with higher levels of corruption. Certain kinds of corruption might have more significance for investment decisions than the overall level of corruption.

Wei (2000), using a broader data set on foreign investment from 12 sources to 45 host countries in 1989 and 1990, and utilizing OLS, quasi fixed effects, and tobit estimation, finds that corruption in a host country has a negative effect on inward FDI from all source countries in a way that is statistically significant and quantitatively large. Corruption acts like a tax on FDI by increasing the cost of doing business. An increase in the corruption level from relatively clean Singapore to relatively corrupt Mexico is equivalent to raising the tax rate by fifty percentage points. The author puts strong emphasis on the comparison between the effect of corruption on FDI and the tax effects. He also experiments with three different corruption indices from Business International, International Country Risk Group, and Transparency International. Nevertheless, Wei's FDI sample set is dominated by rich countries a.k.a. OECD countries, so if OECD countries were ruled out from the host country sample, the results might be different.

Ades and Di Tella (1997b) argue that an aggressive industrial policy may be to a certain extent stimulated by the corrupt gains from such policy. Corruption is indeed higher in countries with more active industrial policy (*ibid*). In this case, the direct positive effect of the policy can

¹⁰ He uses the Business International (BI) index that ranges from 0 (most corrupt) to 10 (least corrupt). Likewise, the International Country Risk Guide (ICRG) ranges its corruption index from 0 (most corrupt) to 6 (least corrupt).

be weakened by its role in increasing corruption and therefore discouraging investment. They present a hold-up model of investment where active industrial policy promotes both corruption and investment. Their 2SLS with time dummies, spanning the 1989-1992 period, for 32 countries, shows that in the presence of corruption, the positive impact of industrial policy towards investment is undermined. The strength of this paper is in the way it decomposes the total effect of industrial policy into a positive-direct effect, and a negative-corruption-induced effect. The negative effect of corruption (stimulated by industrial policy) on investment is relatively big and thus should not be ignored in cost and benefit analysis of industrial policies. It is between 84 percent and 56 percent of the direct beneficial impacts. However, there seems to be a simultaneity bias when they try to explain the determinants of corruption. Also, the data set is relatively limited.

Alternatively, there is also supporting empirical evidence that corruption can be greasing the wheels of commerce rather than sanding them, reducing red tape, and thus, increasing efficiency. This is usually based on the second best case, where corruption is taken as exogenous and independent of the incentive for officials to take bribes, and the quality of institutions is poor. Egger and Winner (2005), using a data set of 73 developed and less developed countries over the time period 1995–1999, find a clear and positive relationship between corruption and FDI.¹¹ There is a positive short run as well as a positive long run impact of corruption on FDI. The contribution of the change in perceived corruption in the long run may account for up to 40 percent of the observed overall FDI growth between 1995 and 1999. Further, the change in corruption is not only able to explain part of the growth of FDI but also the change in its worldwide distribution. Nevertheless, they do not take into account irregular data caused by the

¹¹ Estimation makes use of fixed effects and a Hausman–Taylor model, which separates the short and additional long run impact of corruption on FDI, hence accounting for the potential endogeneity of the long run impact. They also use information from three different corruption data sources to improve robustness.

global crisis in 1997 that hit Asian countries particularly hard. Henisz (2000) examines the effect of corruption on market entry using U.S. firm-level data, and employs the two-stage probit estimation technique on 3,389 overseas manufacturing operations by 461 firms in 112 countries. The results show little effect of corruption but some estimates point out that corruption increases the probability of investing in a foreign country.

Wheeler and Mody (1992) investigate the association between corruption and FDI. Using the fixed effects method, it is stated that “the domestic socio-political considerations, as summarized by the principal component RISK, appear to have a very small effect” (Wheeler and Mody 1992: 67). However, it is argued that other variables may not be overwhelmingly correlated with government corruption, may not be precisely measured, or may not be as important for FDI (Wei 2000). Because the regressor RISK is formed from twelve other indicators, consequently, the noise-to-signal ratio for RISK might be too high to show up significantly in the estimation (*ibid.*)¹²

Similarly, using fixed effects estimation and total inward FDI instead of bilateral FDI, Hines (1995) does not find a negative correlation between total inward FDI and the corruption level in host countries. However, Foreign Corrupt Practices Act of 1977 actually weakens the competitive position and FDI growth of the American firms during 1977-1982, without significantly decreasing the importance of bribery to foreign business transactions. Nonetheless, he admits that the equation fits poorly.¹³

¹² The other variables are political change (institutional), attitudes of major opposition groups, probability of opposition group takeover, stability of labor, likelihood of terrorism, desire for foreign investment, attitude toward the private sector, cultural interaction, expatriate environment, bureaucracy and red tape, quality of legal system (judiciary), and distribution of wealth.

¹³ Wei (2000) also claims that Hines’ total inward FDI data from International Finance Statistics may be too noisy.

Akçay (2001) uses cross sectional data from 52 developing countries with two different indices of corruption to estimate the effect of the level of corruption on FDI inflows. He utilizes OLS with region dummies. The results fail to identify any significant effect of corruption on FDI. The most significant determinants of FDI are found to be market size, corporate tax rates, labor costs and the openness of the economy.

For firm level data, Hakkala, Norbaack, and Svaleryd (2008) find that corruption has a differential impact on different types of FDI. They divide FDI into three categories: horizontal, vertical, and export-platform FDI. Using Swedish multinational firms in manufacturing industries data compiled by the Research Institute of Industrial Economics (IUI) for 1998, they find that on two of the FDI measures, vertical and horizontal FDI, the effect is statistically significant. The results point out that more corruption raises vertical FDI, but reduces horizontal FDI. Corruption seems to discourage horizontal FDI more than other types of FDI because horizontal FDI requires deeper participation in the country and more connections with public officers, whose actions directly influence the firms' business operations. Thus, firms have to pay more bribes. This increase in the cost of corruption cannot simply be avoided by firms since they import inputs, need infrastructure, and demand public services. Another possible explanation is that horizontal FDI requires more advanced production that is more exposed to corruption undermining the protection of property rights.

2.4.2. The determinants of corruption

The classic empirical examples of the determinants of corruption are papers by Treisman (2000) and Adis and Di Tella (1999, 1997a, and 1997b). Treisman (2000) uses indices of corruption (68 countries) from Business International for the early 1980s and for 1996, and from

Transparency International for 1996 (54 countries), 1997 (52 countries), and 1998 (85 countries) to investigate the causes of corruption. He tests twelve hypotheses commonly found in the literature to be the causes of corruption and finds that more developed economies, countries with Protestant traditions, histories of British rule and higher imports were less corrupt.¹⁴ On the other hand, higher levels of corruption exist in federal states and in those that are not democratic. In particular, there are strong associations between the level of development and corruption and between exposure to democracy and corruption. However, the correlation between openness and corruption is “surprisingly small” and not always significant regardless of the direction of causality between openness and corruption. For dummy regions, Treisman (2000) discovers, not surprisingly, that Africa, Asia, Eastern Europe, Latin America, and the Middle East are more corrupt than North America and Western Europe. Moreover, controlling for the level of economic development, he finds that only Eastern Europe and Latin America are significantly more corrupt. However, the effect of dummy regions vanishes once he introduces political system variables into the model. The level of economic development and exposure to democracy explain almost all of the variation in corruption.

In their paper series, based on a theoretical framework of rent seeking behavior, Ades and Di Tella (1999, 1997a, and 1997b) claim that the incentive to engage in corrupt practices increases with the availability of rents. Corruption can be explained by a low level of competition. Competition is argued to lessen the rents of economic activities, and therefore, reduce the motive of public servants and politicians to grab parts of these rents by means of corruption and extortion. Ades and Di Tella (1997a), using corruption data from Business

¹⁴ La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) also find that countries that are less developed, close to the equator, ethnolinguistically heterogeneous, use French or socialist law, have high Catholics or Muslims populations tend to have inferior measures of government performance, including higher corruption. Gupta, Davoodi, and Tiongson (2001) find that corruption is highly associated with the share of Protestants in the population, GDP per capita, and exposure to democracy.

International for 68 countries for period 1980-1983, regress corruption on GDP per capita, openness that is proxied by share of imports to GDP, average years of total schooling, political rights, the judiciary system and an interaction term between openness and the judiciary system. They find that corruption is high in countries that are closed to foreign competition (measured by low share of import in GDP). They also find that corruption is higher in countries in which the degree of independence of the judiciary system is not fully developed. There is also a significantly negative effect of openness on corruption. The interaction term of judiciary and openness is positive and significant. In their conclusion, they suggest that opening up an economy to foreign trade (more exposure to foreign competition) is indispensable in a country where institutions are not well developed because it can curb corruption more robustly than in a country where institutions are already sophisticated.

Ades and Di Tella (1997b) shows that active industrial policies are positively correlated with corruption. Their regressions are done for a sample of 32 countries for the period of 1989-1992. They regress corruption on level of development (GDP per capita), average years of total schooling, political competition (political rights), security (the extent to which there is general crime prevention against property and person), openness (share of imports to GDP) and industrial policy. The corruption data are from World Competitiveness Report and Impulse, a German business publication, compiled by Neumann (1994). The indicators of industrial policy are from World Competitiveness Report: a procurement index that measures the extent to which public procurement is open to foreign bidders and a fiscal index that measures the extent to which there is equal fiscal treatment of all enterprises. Their results show that domestic industrial policy significantly increases corruption but the degree of openness significantly decreases

corruption. However, other variables such as GDP per capita and political rights do not show a significant relationship with the level of corruption.

Ades and Di Tella (1999) test the hypothesis that the levels of natural resources and rents induced by the lack of product market competition determine the level of corruption in an economy. Using corruption data from Business International (1984) for the time period 1980-1983 and World Competitiveness Report (1990 and 1991) for 1989 and 1990, they model corruption as dependent on four factors: average years of total schooling, income per capita, political rights, and variables capturing the level of rents and the market structure of competition: (1) openness that is share of imports in GDP; (2) the importance of fuels, minerals, and metals in the composition of total exports, and; (3) the distance to the world's major exporters. They use a cross section analysis of 52 countries and control for country and time fixed effects. For the time period 1980-1983, schooling, GDP per capita and political rights have negative effects on corruption, although schooling and political rights are only significant at the 10 percent level. The extent to which domestic firms enjoy rents: openness is negative and significant, the proportion of total exports accounted for fuels, minerals, and metals, and the distance to the world's major exporters are all positive and significant. For 1989 and 1990, schooling, GDP per capita and political rights have negative effects on corruption, although schooling and GDP per capita are not significant at conventional levels. The extent to which domestic firms enjoy rents: openness is negative and significant, the proportion of total exports accounted for fuels, mineral, and metal is negative and insignificant, and the distance to the world's major exporters are all positive and insignificant at standard levels.

Ades and Di Tella's (1999, 1997a, and 1997b) results have been supported and replicated by several other researchers, such as Gerring and Thacker (2005), Bonaglia, de Macedo, and

Bussolo (2001), Sandholtz and Koetzle (2000), Treisman (2000). For instance, Bonaglia et al. (2001) find that the negative effect of trade volumes on corruption is about one third of the effect of economic development. Treisman (2000) finds that corruption is associated with lower exposure to imports in all of the indices used except for the TI corruption index in 1998. Nevertheless, the effect is “surprisingly small” and the direction of the causality between openness and corruption is inconclusive. Kaufmann, Leautier, and Mastruzzi (2005) investigate the quality of governance at city level in 271 cities in 101 countries. His findings confirm that city size or country size does not negatively affect city governance levels. However, the degree to which the country is globalized, which includes trade volumes, has a positive and significant impact on city governance.

Nevertheless, Ades and Di Tella’s (1999, 1997a, and 1997b) results have also been criticized by several authors. For example, Torrez (2002) argues that although most of the empirical evidence corroborates a negative relationship between corruption and openness, this does not hold for his dataset. In his paper (Torrez 2002), he finds a significant relationship between trade volumes and the TI corruption index in the 1980s, but not with the International Country Risk Group (ICRG) corruption index (1982-1992). He claims that the results depend on the choice of the corruption index. According to him, Ades and Di Tella’s (1999, 1997a, and 1997b) cases are theoretically robust but empirically weak.

Knack and Azfar (2003) study the choice and composition of indices and whether they affect the result. They pinpoint that the surveys on which the TI and ICRG corruption indices are based include only countries of interest for multinational companies, which are mostly all large nations. They only include small nations if those nations are well governed. The openness variable is strongly connected to country size because smaller countries have disadvantages in

producing as wide a range of goods as large ones. Therefore, the exclusion of small poorly-governed nations may result in a spurious relationship between corruption and trade intensity (ibid). They later argue that Ades and Di Tella (1999, 1997a, and 1997b), Treisman (2000), Sandholtz and Koetzle (2000), and Torrez (2002) suffer from selection bias. For example, the fact that Treisman (2000) cannot find a correlation between openness and the TI corruption index in 1998 may be due to increased country coverage in that year, including more small countries with higher corruption levels.

Gatti (2004) finds some fairly but weak support for the effect of import share of GDP on ICRG corruption index but the significant connection between openness and corruption is very sensitive to the inclusion of outliers in the sample, for example Singapore or Hong Kong. These two countries are known for low corruption and are important shipping and processing centers, so they are importing goods, processing them and then exporting the final product to other countries. That explains why the total amount those countries import or trade can be greater than their GDP. When Singapore is excluded from the sample, the relationship becomes insignificant. Another possible underlying explanatory factor is political institutions. Treisman (2000) states the “surprisingly small” effect of openness is less robust than the effects of political institutions. After taking political institutions, such as democracy, parliamentary systems and freedom of the press into account, Lederman, Loayza, and Soares (2005) find that the effect of openness fade away. They conclude this to be evidence that institutions are determinants of both trade outcomes and corruption levels.

Chapter 3

Data and Methodology

There are two sections in this chapter. The first section discusses the data used in this dissertation. The second section explores the methodology used to examine the data. In the first section, we elaborate several ways to measure FDI inflows and corruption, along with some options on data sources. Next, we discuss the reasons why certain independent variables should be included. To explain FDI, there are standard independent economic variables such as GDP per capita, export, inflation, investment, past FDI inflows, and population. Civil liberties include the freedom of expression and belief, associational and organizational rights, rule of law, and personal autonomy and individual rights. Labor productivity is the variable representing labor market factor. For the corruption equation, there are some economic variables as well. The institutional variables will be added progressively. The summary of data sources concludes the first section.

The second section explains the methodology used to examine the data and run the regressions. We explore the advantages and disadvantages of using panel data, which is the type of data used in this dissertation. Then, we look at the choice of proper methodology to run the regressions. Since autocorrelation and heteroskedasticity are two common problems in panel data sets, the feasible generalized least squares (FGLS) estimator is preferred. The estimator allows estimation in the presence of autocorrelation of type AR (1) within panels, contemporaneous cross-sectional correlation, and heteroskedasticity across panels (Greene 2008).

3.1. How to measure FDI inflows

FDI inflows are the dependent variables in the first topic investigating association between FDI inflows and corruption. Data on FDI are provided by several sources, such as *Balance of Payments Statistics Yearbook* and *International Finance Statistics* by the International Monetary Fund (IMF), *European Union Direct Investment Yearbook* by EUROSTAT, *World Investment Report* by UNCTAD, *World Development Indicators* by the World Bank, and *International Direct Investment Statistics Yearbook* by OECD. Yet, only the UNCTAD, OECD, and EUROSTAT offer a sectoral breakdown of FDI flows and stocks. The drawback is that OECD and EUROSTAT only cover a very limited number of world countries and thus the total direct investment received by any given country cannot be completely assessed. On the other hand, the time span for FDI stocks data from UNCTAD is more limited than that of FDI flows data. Moreover, we are more interested in FDI inflows than FDI stocks because policy recommendations are usually formulated to boost FDI inflows rather than to accumulate FDI stocks for a given period. Therefore, I focus on FDI inflows. The dependent variable is, consequently, the level of FDI inflows.

The number of countries limitation in OECD and EUROSTAT datasets has left us with the data on FDI flows from the World Bank, UNCTAD, and the IMF. However, only UNCTAD provides a break down into two different categories: FDI figures for developed and for developing countries. Thus, I use FDI inflows data from UNCTAD because this dissertation examines the relationship between FDI inflows and corruption in developed and developing economies. If we are to use the World Bank or IMF data, it should be harmonized with this breakdown by adding up individual countries' figures based on the geographical classification of

the World Economic Outlook.¹⁵ Nevertheless, in rough terms, UNCTAD data and World Bank and IMF data reveal a similar pattern for all countries, albeit significant differences in magnitude especially with regard to stocks and with regard to developing countries (Duce 2003). The UNCTAD dataset contains information on foreign direct investment (FDI) inflows and outflows by individual country, geographical region, and economic grouping, expressed in millions of U.S. dollars (2000 U.S. dollar).

UNCTAD data on FDI inflows and outflows consist of capital provided —directly or via other related enterprises— by a foreign direct investor to a FDI enterprise (inflows), or capital received by a foreign direct investor from a FDI enterprise (outflows). FDI includes three components: equity capital, reinvested earnings and intra-company loans with explanation as follows (www.unctadstat.unctad.org):

1. Equity capital is the foreign direct investor's purchase of shares in an enterprise in a country other than that of its residence.
2. Reinvested earnings are the direct investor's share (in proportion to direct equity participation) of earnings not distributed as dividends by affiliates or earnings not remitted to the direct investor. Those profits retained by affiliates are reinvested.
3. Intra-company loans or intra-company debt transactions are short- or long-term borrowing and lending of funds between direct investors (parent enterprises) and affiliate enterprises.

Data on FDI flows are shown on a net basis (capital transactions' credits less debits between direct investors and their foreign affiliates). Net decreases in assets or net increases in liabilities are recorded as credits with a positive sign, whereas net increases in assets or net

¹⁵ The World Development Indicator of World Bank obtains data on net FDI inflows from the International Monetary Fund, Balance of Payments Statistics Yearbook and data files (World Bank 2011). The data are in current U.S. dollars, not inflation-adjusted U.S. dollars.

decreases in liabilities are documented as debits with a negative sign. Therefore, FDI flows with a negative sign (reverse investment or disinvestment) reveal that at least one of the three components of FDI is negative and not offset by positive amounts of the remaining components (ibid). The data is adjusted to inflation-adjusted U.S. dollar using deflator from the World Bank (World Development Indicators 2011).

3.2. How to measure corruption

There are no direct ways to measure corruption because of its secretive nature. Tanzi (1998: 576) argues that “if corruption could be measured, it could probably be eliminated”. If one simply measures bribes paid this would disregard many corrupt acts that are not accompanied by the payment of bribes. Nonetheless, an effort to quantify acts of corruption rather than the amounts of bribes paid would need to count many relatively insignificant actions and to identify each act of corruption; information that is simply impossible to obtain. Thus, there are no direct ways of measuring corruption. Yet, there are several indirect methods of getting information about the existence of corruption in a country or in an institution from the source as follows (Tanzi 1998):

- a. Reports on corruption available from published sources, such as the Corruption Index of the Political Risk Services International Country Risk Guide (ICRG), the Control of Corruption measure from the World Bank’s Governance Indicators database (WB), and the Corruption Perception Index by Transparency International (TI index).
- b. The internet, newspapers, and magazines have also published many articles on corruption. They have become valuable sources for information on corruption.

- c. Case studies of corrupt agencies such as tax, customs, and police agencies. While there are many such studies, unfortunately, the reports are often internal and confidential.
- d. Questionnaire-based surveys. These can be related to a specific agency or to a whole country. The World Bank has been making use of these surveys in its work in some developing countries to improve the effectiveness of particular programs such as health care.

The most viable method for getting practical information on the seriousness of corruption in a country is by using surveys of experts or firms in that country. These surveys are measures of perceptions of corruption rather than quantitative measures of actual corruption because “like pornography, corruption is difficult to quantify, but you know it when you see it” (Wei 1999: 4). Perceptions are employed because corruption, whether frequency or amount, is generally a hideous activity that is hard to measure.¹⁶ Over time, perceptions have proved to be a dependable estimate of corruption (Transparency International 2011: 3).

The three most widely used cross-country corruption perception indices are the Control of Corruption measure from the World Bank’s Governance Indicators database (WGI), the Corruption Index of the Political Risk Services International Country Risk Guide (ICRG), and the Corruption Perception Index of Transparency International (TI index). The World Bank’s Governance Indicators database is a statistical compilation of responses on the quality of governance given by a large number of enterprise, citizen and expert survey respondents in industrial and developing countries, as reported by a number of survey institutes, think tanks, non-governmental organizations and international organizations (Kaufmann, Kraay, and Mastruzzi 2010).

¹⁶ Wei (1999) argues that while perceptions may differ from real life, it may be the case that perceptions of corruption that in fact make the difference in investment decisions.

The control of corruption, which is one of the six indicators of governance, measures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption.¹⁷ It is mostly used by international organizations and donors. The estimates of governance in each indicator range from approximately -2.5 (weak) to 2.5 (strong). However, the dataset is not available every year. It is only available for the years of 1996, 1998, 2000, 2002, 2003, and so on.

There is a significant literature criticizing the WGI. Critics say that WGI are ill-suited to comparisons over time and between countries (Hoyland, Moene, and Willumsen 2012). The diversity of data sources may suggest that changes in measures just reflect corrections of past errors. They lack transparency, suffer from sample biases and there is a high likelihood of correlation of errors among the sources used (ibid). Langbein and Knack (2010) also argue that the WGI do not measure distinct concepts of control of corruption, rule of law, government effectiveness, rule quality, political stability, and voice and accountability as posited. Instead the WGI are measuring the same broad concept. Kaufmann, Kraay, and Mastruzzi (2010) counter such criticisms by arguing that there are inherent limitations in measuring governance which must be understood by those who use the indicators.

The ICRG rating system comprises 22 variables, representing three major components of country risk: economic, financial, and political. These variables essentially represent risk-free measures. The ICRG corruption index is based on the surveys of experts and captures the extent to which “high government officials are likely to demand special payments” and to which “illegal payments are generally expected throughout lower levels of government” in the form of

¹⁷ The other indicators are: voice and accountability, political stability and absence of violence, government effectiveness, regulatory quality and rule of law.

“bribes connected with import and export licenses, exchange controls, tax assessments, police protection, or loans.” Over the years, researchers have either taken the whole of the index or, more commonly, have taken out the components that best suit their area of study. The index provides detailed and consistent monthly data over an extended period for a large number of countries. However, several issues relating to the ICRG coverage of the listed countries should be highlighted. Some sovereign states, such as the former Soviet Republics and the former Communist bloc countries, have been covered only recently. Moreover, structural changes generally are not accommodated in the risk ratings.

The cost of acquiring the ICRG index is significant because the index is sold mostly to private firms intending to invest in a particular country. Because this index is aimed at international investors, that influences the choice of countries and the questions asked. Resources will also be concentrated in the countries that these investors would be interested. The OECD countries and large developing countries such as China, Indonesia, India, and Brazil are obviously included. However, when these scores are used for wide cross-country studies, it may mean that the results for smaller countries are more prone to measurement error (Torrez 2002). Lamsdorff (2004) also claims that the ICRG index does not really measure corruption; it indicates the political risk involved in corruption. Treisman (2000) also finds some ranking by ICRG puzzling.

Transparency International (TI) defines corruption as “the misuse of public power for private benefit”. The Corruption Perceptions Index (TI index) ranks countries according to the perception of corruption in the public sector. The TI index is an aggregate indicator that combines different sources of information about corruption, so that it is possible to compare

countries. It draws on different assessments and business opinion surveys undertaken by independent and reputable institutions.

I use the TI index for the main reason that it is free; others may require some fees or subscription. Nevertheless, the index is relatively reliable and powerful.¹⁸ For example, TI index 2010 is calculated using data from thirteen sources, whereas TI index 2011 is calculated using data from seventeen sources provided by thirteen reputable institutions (Transparency International 2011). All sources measure the overall extent of corruption (frequency and/or size of bribes) in the public sector, and all sources provide a ranking of countries, i.e. include an assessment of multiple countries (ibid). The sources used in the TI index 2011 utilize the perceptions of both resident and nonresident experts and are a combination of business surveys, assessments by commercial risk analysts and country experts from international institutions. Therefore, the TI index is a “poll of polls” or “survey of surveys”, representing the average scores based on several different expert and business surveys. The sources for calculating TI index 2011 are as follows (ibid):

1. African Development Bank Governance Ratings 2010
2. Asian Development Bank Country Performance Assessment 2010
3. Bertelsmann Foundation Sustainable Governance Indicators
4. Bertelsmann Foundation Transformation Index
5. Economist Intelligence Unit Country Risk Assessment
6. Freedom House Nations In Transit
7. Global Insight Country Risk Ratings
8. IMD World Competitiveness Year Book 2010

¹⁸ Wei (2000) finds that the Transparency International (TI) index and the Business International (BI) index, which is used by Mauro (1995), are highly correlated with a coefficient equal to 0.89. Therefore, estimation results using one of these corruption indices can be easily extended to either the BI or TI index.

9. IMD World Competitiveness Yearbook 2011
10. Political and Economic Risk Consultancy Asian Intelligence 2010
11. Political and Economic Risk Consultancy Asian Intelligence 2011
12. Political Risk Services International Country Risk Guide
13. Transparency International Bribe Payers Survey
14. World Bank Country Performance and Institutional Assessment
15. World Economic Forum Executive Opinion Survey (EOS) 2010
16. World Economic Forum Executive Opinion Survey (EOS) 2011
17. World Justice Project Rule of Law Index

The surveys and assessments used to construct the TI index include questions relating to the bribery of public officials, kickbacks in public procurement, embezzlement of public funds, and questions that probe the strength and effectiveness of public sector anti-corruption efforts (Transparency International 2011: 3). Even though not all countries were covered by each of the measures, the index was constructed by giving a weight to each of these. TI also includes the number of sources for each country, with the theory being that the more sources available, the more reliable the overall score. Moreover, countries are only included in the index if there are at least three different sources.

Galtung (1998) says the TI index is very robust because it captures more than one indicators of corruption. Furthermore, the TI index can measure corruption over time and it is possible to compare countries indicating relative standings among them. Nonetheless, TI index is not without its drawbacks. A minor concern is that expansive country coverage did not begin until 1998, thus, research that uses this index before this 1998 period may suffer from sample selection issues. Another caveat is that at the same time the country coverage has increased, the

number of data sources they use has increased as well. For instance, Treisman (2000), when investigating the association between corruption and trade find that corruption is a significant factor when using the TI index for 1996 and 1997, but not significant when using the TI index for 1998. Knack and Azfar (2003) also argue that this is likely because the TI index 1998 includes a much larger range of countries, which then casts doubt on his results, given that a larger sample size is generally preferred to a smaller or less representative sample.

TI index ranges from 0 to 10, in which the lowest score (0) suggests that a high level of corruption prevails, whereas the highest score (10) implies the cleanest. To avoid confusion, the index is rescaled, so 0 means very clean and 10 represents highly corrupt, instead of less corrupt as on the original scale. The sign of the corruption variable could be positive or negative depending upon the helping hand or grabbing hand hypothesis of corruption. Nowadays, the TI corruption index is a relatively common institutional measure in the literature, for example, among others Wei (2000), Gyimah-Brempong (2002), Ng and Yeats (1999), Sandholtz and Koetzle (2000) and Torrez (2002). In particular, the TI index has been used by various studies to investigate the effects of corruption on public investment and public infrastructure (Goldsmith 1999; Blackburn, Bose and Haques 2011), economic growth and the shadow economy (Pellegrini and Gerlagh 2004; Buehn and Schneider 2009) and foreign direct investment (Barassi and Zhou 2012; Habib and Zurawicki 2002; Fons 1999).

3.3. Explanatory variables for FDI equation

GDP per capita. Real GDP informs us about the economic size of a country. Equally important or perhaps more essential is real GDP per capita. It tells us the average standard of living of the country and reflects, more precisely, the actual market size for MNCs. The size of

the domestic market plays a crucial role in attracting FDI, especially market-seeking FDI, because it shows high consumption potential in the host country. Firms would want to invest in the host country to capture a share of the domestic market. Caves (2007) argues that MNCs locate their production depending upon the size of the national market. Moreover, “market characteristics such as size, growth in size and income level are most relevant for investment that seeks to access the host market” (Loree and Guisinger 1995: 295). A large and growing host economy also provides MNCs a market for its product and economies of scale (Lucas 1993). Transaction costs are likely to be lower (McMillan 1995). Thus, I follow related literature and utilize real GDP per capita as a proxy of the host country’s market size (Al-Sadiq 2009; Krugell 2005; Chakrabarti 2001). I expect GDP per capita to having positive effects on FDI inflows.

Exports per capita. Jun and Singh (1996) argue that export orientation can stimulate FDI because of the higher export propensity for foreign affiliates. They find a robust association between exports in general, and manufacturing exports in particular, and FDI. It is argued that an outward-oriented economy will be more successful at attracting FDI. The reason is that the ease of exporting without any restriction from the host country will help boost FDI as some FDIs, especially vertical FDI and export-platform FDI are mostly for export use. An outward-oriented economy is not handicapped by the size of its domestic economy when attracting FDI since it offers efficiency and access to the world market (Krugell 2005). Moreover, a country's international orientation can be a sign of its competitiveness and the pressures of international competition make for higher productivity. Countries that are open to international trade also provide a good platform for global business operations (Habib and Zurawicki 2002). Previous research by Neaime and Marktanner (2009) find that manufacturing export capacity is an important factor in explaining FDI shares in the Middle East and North Africa. Lucas (1993)

discovers that FDI in Southeast Asia is more elastic with respect to the demand for exports than to aggregate domestic demand. It is anticipated that the larger the value exports per capita, the higher the level of FDI.

Inflation. Al-Sadig (2009), Urata and Kawai (2000), Greene and Villanueva (1991), and Schneider and Frey (1985) look at how various macroeconomic factors have affected private investment activity. Among the factors examined is macroeconomic stability as represented by low inflation rates. A low inflation rate adds to certainty and promotes more investment. On the other hand, a high inflation rate is a sign of internal economic tension and the inability or unwillingness of the government to balance the budget and the central bank to control the growth of the money supply (Schneider and Frey 1985). High inflation rates also create challenges in strategic planning, forecasting of demand and financing of operations (Cuervo-Cazurra 2006). All those things associated with high inflation are not good for business environment since they raise uncertainty and the cost of production. Thus, high inflation is anticipated to have a depressing effect on FDI inflows.

Investment. There is a robust relationship between domestic investment and FDI (Urata and Kawai 2000; Cheng and Kwan 2000; Wheeler and Mody 1992). The effect of domestic investment on FDI can be explained through its role in supplementing financing for FDI. Consequently, domestic investment may crowd in FDI by raising productive capacity (Chaudhuri and Srivastava 1999). I expect that more investment attracts more FDI because not all FDI is 100 percent foreign-owned. Sometimes foreign investors form a joint venture with a local company and the latter should provide some funding. For strategic industries such as power plants, port operators, and defense contractors, usually the local share is greater than foreign share because the government requires it to be so.

Population. Population is included to account for differences in country size. It can also proxy for market size for market-seeking FDI. Most empirical studies on FDI determinants have included explanatory variables try to measure local market demand. GDP or population is generally used as a measure of host country demand (Al-Sadiq 2009; Wei 2000; Habib and Zurawicki 2002). Large markets also provide a reasonable scope for investment and thus influence market-seeking FDI (Habib and Zurawicki 2002). I anticipate that FDI inflows are positively associated with a country's population.

Labor productivity. It is expected that MNCs would take into account labor productivity in a host country before deciding to undertake FDI.¹⁹ The more abundant, more productive and less costly labor is, the more attractive the location becomes. Labor productivity is expected to positively affect the ability of the host country to attract FDI (Mathur and Singh 2011). MNCs are also interested in countries with a large pool of workers including professionals and skilled workers (Veugelers 1991). It is anticipated that countries with higher labor productivities attract more FDI inflows.

Past FDI inflows. Past FDI inflows show a rough measure of agglomeration effect. Agglomeration effects exist when the localization of industry creates positive externalities and past FDI inflows attract more FDI (Cheng and Kwan 2000). The sign for this parameter is projected to be positive.

Civil liberties. Civil liberties ratings are based on an evaluation of freedom of expression and belief, associational and organizational rights, rule of law, and personal autonomy and

¹⁹ Initially, I wanted to also include secondary school enrollment as a measure of quality of human capital in educational achievement. However, some country data on educational attainment in WDI 2011 and UNESCO dataset are completely not available. Similarly, Barro-Lee Educational Attainment Data Set is too little to have meaningful regression. Fortunately, some effects of educational attainment can be captured by labor productivity variable (Hanushek and Kimko 2000; Hanushek and Kim 1995; Mankiw, Romer, and Weil 1992; Romer 1990).

individual rights. It is argued that MNCs will be more interested in investing in the host country with strong civil liberties, particularly when the rule of law is robustly enforced. Harms and Ursprung (2002) find that index of civil liberties has a significant influence on FDI per capita. The Freedom House's numerical rating for civil liberties is from 1 to 7, with 1 representing the most free and 7 is the least free. To avoid confusion, the index is rescaled, so 1 means the least free and 7 represents the most free. After rescaling, it is expected that there will be a positive relationship between civil liberties and FDI inflows. It is expected that host countries with strong civil liberties (high score, after rescaling) would attract more FDI inflows.

3.4. Explanatory variables for the corruption equation

Chapter 5 will discuss the causes of corruption itself. The perceived corruption level in host countries will be treated as being endogenous. Variation in corruption levels across countries is usually because of differences in economic development and institutional qualities. In assessing the level of economic development, I focus on GDP per capita or rate of growth of real GDP. Economic freedom, civil liberties and level of democracy in the host country will be the explanatory institutional variables. Moreover, as the incentive to engage in corrupt practices increases with the availability of rents, I utilize government consumption expenditures per capita, openness (sum of imports and exports as a percentage of GDP), and natural resources' endowment. The explanation for each explanatory variable is presented below.

GDP growth rate. Countries with weak economic performance tend to experience growing levels of corruption (Gyimah-Brempong 2001). Gyimah-Brempong (2001) argues that the goal of economic development is to improve the standard of living and well-being of citizens within a country. Thus, anything that impedes the chance of improving the standard of living

may retard economic growth, and thus, increase corruption. The economic performance of a country can be linked to its institutions and quality of governance. There is a strong association between GDP and government performance because government performance improves as better institutions can be afforded (North 1990). There are also direct and significant statistical relationships between economic development and corruption (Larrain and Tavarez 2007; Kaufmann, Kraay, and Zoido-Lobaton 1999; Mauro 1995). Strong economic performance also alters the incentives for public officers to engage in corrupt activities by reducing the value of their expected financial gains and increasing the costs of penalties (Lipset and Lenz 2000). It is expected that the better a country's economic performance as represented by higher GDP growth rate, the lower the level of corruption would be.

Government expenditures per capita. Tanzi and Davoodi (1998, 1997) argue that large, complex, and expensive government projects are favored by corrupt public officials. This may take place because public investment can be simply manipulated by powerful politicians or bureaucrats, and often gives rise to the payment of larger kickbacks by those who undertake the project (ibid). Mauro (1995) states that in high-level corruption or rent seeking, high level officials are the decision makers for public investments concerning their scale and composition. Public projects often are carried out specifically to provide certain individuals or political groups with opportunities to receive commissions from project contractors. Government officials, in collusion with legislative members, sometimes decide on budget allocations in accordance with orders from private companies. Therefore, the decision for budget allocation for public investment projects is based upon the commission offered and received from the private companies instead of on the basis of cost benefit analysis. Tanzi and Davoodi (1998, 1997),

utilizing cross-country data, find that increased public investment is positively and significantly associated with corruption. Work by Ali and Isse (2003) find the same result.

However, if some of the government expenditures are spent on measures to curb corruption, for instance improving the quality of human capital through education, then there will be a negative correlation between government expenditure and corruption. Education is argued to be a strong measure for controlling corruption because more educated individuals pay more attention to corruption and are better able to take action against it (Glaeser and Saks 2006: 1056). Government expenditures can also be used to fund the establishment of a strong and independent anti corruption agency. More funding for democratic elections to ensure more fairness and more efforts to increase fair competition in the market could also help lower corruption. Increasing the salary of public officials could also curb corruption. Lindbeck (1998) attributes the low corruption in Sweden partly to the fact that high-level administrators earn 12–15 times the salary of an average industrial worker. Low corruption rates in Hong Kong and Singapore perhaps is partly because of the high salaries of public officials. Empirical studies by Fisman and Gatti (2002) and Bonaglia et al. (2001) find a negative impact of government expenditures on corruption. I expect that higher government investment per capita may lead to higher or lower corruption.

Openness. Openness measures the degree to which host economies are open to the rest of the world. Krueger (1974) argues that more open economies tend to be less corrupt than their more closed counterparts. Ades and Di Tella (1999, 1997a, and 1997b) explain that the incentive to engage in corrupt practices increases with the availability of rents. Corruption can be explained by a low level of competition. Competition is argued to reduce the rents of economic activities and therefore reduce the motive of public servants and politicians to grab part of these

rents by means of corruption and extortion. A domestic market with less foreign competition (lower import volume) will increase rents enjoyed by domestic firms, thus promoting corruption. Ades and Di Tella (1999, 1997a, and 1997b), Herzfeld and Weiss (2003), Fisman and Gatti (2002), Frechete (2001) find that openness, defined as a share of imports to GDP, is significantly and negatively correlated with corruption. However, Treisman (2000) and Gatti (2004), using the same measure of openness as Ades and Di Tella (1999, 1997a, and 1997b), find that the correlation between openness and corruption is actually small and weak.

I will use an indicator of openness that is readily available from the Penn World Table 7.0 (Heston, Summers, and Aten 2010). Openness is defined as the sum of imports and exports as a percentage of GDP, which can also be thought of as representing the extent of global economic integration. This measure of openness is a better fit because rents can be extracted not only from imports but also from exports. Several scholars have used the same measure of openness, for instance Neeman, Paserman, and Simhon (2008), Rock (2007), Sandholtz and Koetzle (2000), Larrain and Tavaréz (2007), and Bonaglia et al. (2001). They all find that corruption is high in countries that are closed to foreign competition (measured by a low share of imports and exports in GDP). I expect a negative relationship between openness and corruption, in which the more open a country is, the lower the level of corruption will be.

Natural resources. Ades and Di Tella (1999) argue that in countries with large endowments of precious raw materials— such as oil, natural gas, minerals, and forests — corruption may offer greater potential gain to public officials who distribute rights to exploit such resources. Treisman (2000) also claims that some rents may be ‘natural’ instead of artificially created, but still induce a corrupt competition over their allocation. To proxy for countries’ raw materials endowments and associated rents, I use total natural resources rents as a

percent of GDP from *World Development Indicators 2011*. Total natural resources rents are the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents and forest rents (World Bank 2011). This basically measures natural resources contribution to GDP. I expect corruption will be higher in countries with greater endowments of valuable natural resources.

Economic freedom. Lambsdorff (1999) argues that one government activity suspected of promoting corruption is restriction on economic freedom. By restricting economic freedom, the government is actually discouraging competition. Competition is generally assumed to reduce the rents of economic activities, and therefore, reduce the motive of public officials to seize part of these rents by means of extortion and corruption (ibid). Carden and Verdon (2010), Goel and Nelson (2005), Shen and Williamson (2005), Graeff and Mehlkop (2003), Paldam (2002), Chafuen and Guzman (2000) all find that corruption is negatively correlated with different indicators of economic freedom. The more economic freedom a country has, the lower the corruption will be.

I will use an economic freedom index from the Heritage Foundation. The index is created by the Heritage Foundation and the Wall Street Journal since 1995. The objective is to measure the degree of economic freedom in the world. Economic freedom is defined as “the fundamental right of every human to control his or her own labor and property”. In an economically free society, individuals are free to work, produce, consume, and invest in any way they please, with that freedom both protected by the state and unconstrained by the state” (www.heritage.org). Also, in economically free societies, governments allow labor, capital, and goods to move freely. These governments also refrain from coercion or constraint of liberty beyond the extent necessary to protect and maintain liberty itself (ibid).

The Heritage Foundation and the Wall Street Journal measure ten components of economic freedom, such as business freedom, trade freedom, fiscal freedom, monetary freedom, investment freedom, financial freedom, and labor freedom. They assign a grade in each using a scale from 0 to 100, where 100 represent maximum freedom. The ten component scores are then averaged to give an overall economic freedom score for each country. It is expected that more economic freedom (higher score) leads to less corruption.

Civil liberties. Researchers usually assume a negative relationship between corruption and civil liberties, in which the more free civil liberties are present in a country, the lower the level of corruption there will be. Civil liberties with emphasis on accountability may dampen the illicit behavior of public officials engaging in corruption. The personal cost of corruption for public officials is job loss and incarceration if caught and prosecuted. Emerson (2006) finds the coefficient estimates on civil liberties are all negative and significant at the 1% level meaning that the higher the level of civil liberties in a country, the lower the level of corruption. Goel and Nelson (2005) also discover that corruption declines when civil liberties get better. I will use the index of civil liberties from Freedom House. Several researchers have utilized the same index (Emerson 2006; Goel and Nelson 2005; Bengoa and Sanchez-Robles 2003; Fisman and Gatti 2002; Ades and Di Tella 1999; Scully 1988).

According to the Freedom House's *Economic Freedom of the World: 2011 Annual Report*, civil liberty ratings depend on an evaluation of freedom of expression and belief, associational and organizational rights, rule of law, and personal autonomy and individual rights. The numerical rating is from 1 to 7, with 1 representing the most free and 7 is the least free. To avoid confusion, the index is rescaled, so 1 means the least free and 7 represents the most free.

After rescaling, it is expected that there will be a negative association between civil liberties and corruption. The less free a country is (low score, after rescaling), the more corruption prevails.

Democracy. Democratic institutions are related to better governance, which includes lower corruption (La Porta et al. 1998). Countries with more political competition have stronger public pressure against corruption, through democratic elections. The strength of the competitive political environment raises the stakes and lowers the likelihood of corruption, thus it can be a check on corruption (Rose-Ackerman 1999). Democracy may also affect corruption because the risk of being caught and punished is high in a well-developed democratic society with a free press, rigorous citizen participations and competitive elections (Treisman 2000). Chowdhury (2004) finds that corruption declines with democracy index, whereas Treisman (2000) discovers that long exposure to democracy, defined as the number of uninterrupted years in which a country is democratic significantly decreases corruption. Studies, which control for democracy, usually find a significant association with corruption levels (Svensson 2000; Sandholtz and Koetzle 2000; La Porta et al. 1998; Isham, Kaufmann, and Pritchett 1997).

An index of the level of democracy from Polity IV database will be employed to explain corruption, following some researchers (Rock 2007; Treisman 2000; Svensson 2000; Sandholtz and Koetzle 2000; La Porta et al. 1998; Isham et al. 1997). From its website (www.systemicpeace.org), the Polity IV database provides descriptive measures of political structures and regime change. The measure is composed of six components: how chief executives are selected, sources of the chief executive's power, constraints on executive authority, political competition, changes in centralization and scope of governing authority and the institutionalization of autocracy or democracy.

The Polity IV score takes values between minus ten and plus ten. Scores in the range between minus ten and minus six can be regarded as autocracies. Polity scores between minus five and plus five are anocracies or partial democracies. Anocracies are states behind a democratic regime or otherwise malfunctioning democracies. Polity scores between plus six and plus ten can be interpreted as full democracies. To avoid confusion, the index is rescaled with the following formula: $\text{new polity score} = \text{original polity score} + 11$. Therefore, a completely autocratic country with an original polity score of minus 10 is equal to a new polity score of 1. Likewise, a fully democratic country with a score of 10 in the original polity index will transform to a score of 21 in the new polity index. It is expected that there will be a negative correlation between the level of democracy and corruption. A higher score, which means more democratic, is expected to induce less corruption. Moreover, the summary of data sources is presented in Table 3.1.

Table 3.1. Summary of Data Sources

Variables	Data Series	Unit	Source*
Economic	FDI	millions US\$, 2000 US\$	UNCTAD 2011
	Past FDI inflows	millions US\$, 2000 US\$	UNCTAD 2011
	GDP per capita	US\$, 2000 US\$	WDI 2011
	GDP growth rate	percentage point	WDI 2011
	Inflation	percentage point	WDI 2011
	Exports per capita	US\$, 2000 US\$	WDI 2011
	Investment	percent of GDP	WDI 2011
	Openness	N/A	PWT 7.0
	Gov. expenditures pc	US\$, 2000 US\$	WDI 2011
	Natural resources	percent of GDP	WDI 2011
	Population	person	WDI 2011
Institutional	Corruption	N/A	TI 2011
	Economic freedom	N/A	Heritage Foundation
	Civil liberties	N/A	Freedom House
	Democracy	N/A	Polity IV Database
Labor	Labor productivity	US\$, 1990 US\$	ILO

*UNCTAD = United Nations Conference on Trade and Development; WDI = World Development Indicators; PWT = Penn World Table; TI = Transparency International; ILO = International Labour Organization; N/A = Not Available. All data in current U.S. dollars is adjusted to constant U.S. dollars using the deflator available from WDI 2011.

3.5. Country sample

Classification of developed and developing countries follows United Nations Conference on Trade and Development (UNCTAD) guidelines. UNCTAD (2011) classifies developed countries as follows: members of the European Union, other developed Europe (Norway and Switzerland), North America (United States and Canada) and other developed countries (Australia, Israel, Japan, and New Zealand). In this dissertation, developed countries will be treated as one big group rather than several. Developing countries are classified based on region as follows: Africa, Latin America and the Caribbean, Asia and Oceania, and Southeast Europe and the Commonwealth of Independent States (CIS). The 82 countries included in the sample are as follows:

A. Developed countries

1. Europe: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, United Kingdom.
2. North America: Canada, United States.
3. Other developed countries: Australia, Israel, Japan, New Zealand.

B. Developing countries

1. Africa: Cameron, Cote d'Ivoire, Egypt, Ethiopia, Ghana, Kenya, Malawi, Morocco, Senegal, South Africa, Tanzania, Tunisia, Uganda, Zambia, Zimbabwe.
2. Latin America and the Caribbean: Argentina, Brazil, Bolivia, Chile, Colombia, Costa Rica, Dominican Republic, Guatemala, Ecuador, Mexico, Peru, Trinidad and Tobago, Uruguay, Venezuela.
3. Asia and Oceania: China, Hong Kong SAR, India, Indonesia, Jordan, Kuwait, Malaysia, Oman, Pakistan, Philippines, Qatar, Saudi Arabia, Singapore, South Korea, Thailand, Turkey, Vietnam.
4. Southeast Europe and the CIS: Albania, Armenia, Belarus, Croatia, Georgia, Kazakhstan, Macedonia, Moldova, Russian Federation, Ukraine, Uzbekistan.

3.6. Panel Data

This dissertation will utilize panel data techniques because the data is a mix between cross sectional and time series data. Baltagi (2008) considers some of the benefits from using panel data:

1. Allowing for individual heterogeneity in individuals, states, firms, countries, and regions, which is absent in time series and cross sectional studies. Panel data techniques are able to control for the state-invariant and time-invariant variables, while a time series study or a cross sectional study cannot. They can also identify and measure effects that are plainly not noticeable in pure cross sectional or pure time series data.
2. Giving more informative data, more variability and less collinearity among the variables. It also provides more degrees of freedom, more efficiency, and more reliable parameter results. Macro panel data also usually have longer time series.
3. Studying the dynamics of adjustment better. Panel data are better suited to study the duration of economic states like unemployment or GDP growth and if the panel data are long enough, they can give an explanation of the speed of adjustment to economic changes. Panel data studies are also crucial to estimation of intertemporal relations, life-cycle and intergenerational models.
4. Panel data techniques construct and test more complex behavioral models than pure time series data. Using panel data, biases from aggregation over countries or individuals may be reduced or even eliminated.

The drawbacks of using panel data are usually concerned with model design and data collection, distortions of measurement errors, selectivity problems (self-selectivity, nonresponse and attrition in the panel over time) and cross section dependence (ibid). Moreover, panel estimates are obtained by regressing a dependent variable on a set of explanatory variables for a group of countries. A simple model that uses panel data takes the form as follows (Baltagi 2008):

$$y_{it} = \alpha + X'_{it} \beta + u_{it} \text{ with } i = 1, \dots, N \text{ and } t = 1, \dots, T \dots\dots\dots (1)$$

where i denotes individuals, firms, countries, etc, and t denotes time. The i subscript denotes the cross section dimension, while the t subscript denotes the time series dimension. α is a constant term, β is $K \times 1$ and X_{it} is the it th observation on K explanatory variables. Most panel data applications employ a one-way error component model for the disturbances with:

$$u_{it} = \mu_i + v_{it} \dots\dots\dots (2)$$

where μ_i is the unobservable individual specific effect and v_{it} is the remainder of the disturbance.

In the FDI equation, for instance, y_{it} measures FDI inflows in host country, while X_{it} consists of a set of variables such as GDP per capita, corruption, labor productivity, etc. The unobservable individual specific effect, μ_i , is time invariant and it accounts for any individual specific effect that is not included in the regression, for example an individual country leader’s managerial skill. The remainder of the disturbance, v_{it} , varies with individuals and time. It can be thought of as the usual disturbance in the regression.

The multicollinearity problem is decided using simple pair-wise correlations among regressors. As a rule of thumb, if the pair-wise or zero-order correlation coefficient between two regressors is higher than of 0.8, then multicollinearity is a serious problem (Gujarati 2004: 359).²⁰ I utilize the Wooldridge test for autocorrelation in panel data with the null hypothesis of no first order autocorrelation and the alternative hypothesis of the opposite. For testing for heteroskedasticity, a modified Wald test for groupwise heteroskedasticity is used. The null hypothesis is constant variance, whereas the alternative hypothesis is heteroskedasticity.

²⁰ Gujarati (2004: 359) argues that although high zero-order correlations may suggest collinearity, it is not necessary that they would be high to have collinearity in any specific case. High zero-order correlations are a sufficient but not a necessary condition for the existence of multicollinearity since it can present even though the pair-wise or zero-order correlations are relatively low, for instance less than 0.5 (ibid). The relatively high correlation among independent variables is also found in several studies about the effect of FDI on corruption, for example Cuervo-Cazurra (2008) and Uhlenbruck, Rodriguez, Doh, and Eden (2006).

To simultaneously account for heteroskedasticity across panels and serial correlation within panels, I use a three-step feasible generalized least squares (FGLS) estimator. The benefit of this estimator is that it allows estimation in the presence of autocorrelation of type AR (1) within panels, contemporaneous cross-sectional correlation, and heteroskedasticity across panels (Greene 2008). It also allows for a variety of patterns for missing data for some of the countries selected for the study (Baltagi and Wu 1999). Nonetheless, the use of this estimator is conditional on having a sufficient number of degrees of freedom, since it must produce additional estimates of the variance, covariance and serial correlation parameters. However, we do have enough degrees of freedom.

The standard version of the FGLS estimator in the presence of both heteroskedasticity and autocorrelation is a three-step process as follows (Medvedev 2006: 27):

1. The model assumes errors are homoskedastic errors calculates consistent estimates of the AR(1) parameters.
2. A groupwise heteroskedastic model is applied to the transformed data, which is now free of autocorrelation, with the purpose of accounting for the possibility of country-specific error terms that are not normally distributed.
3. The new moment matrix is used to solve the full FGLS system and to obtain the accurate asymptotic variance-covariance matrix for the estimates of the FGLS coefficients.²¹

Taylor (1980) finds that FGLS is more efficient than a Least Square Dummy Variable model or a fixed effects method for all but the fewer degrees of freedom. The variance of FGLS is also never more than 17 percent above the Cramer-Reo lower bound. He also discovers that more efficient estimators of the variance components do not necessarily produce more efficient FGLS

²¹ The third step can be iterated to convergence. However, no asymptotic gains can be expected from iteration since the estimator is efficient at every step (Greene 2008).

estimators. Taylor's (1980) findings are confirmed by Baltagi (2008), who uses Monte Carlo experiments as performed in Maddala and Mount (1973).

Chapter 4

The Effect of Corruption on FDI Inflows

The first section of this chapter discusses the relationship between FDI inflows and corruption using a naive method by plotting corruption level against FDI inflows. This is done to get a first glimpse that corruption could be detrimental or beneficial for FDI inflows. The second section demonstrates the theoretical model for explaining FDI and corruption. Corruption, in the sense of bribery, might be good for FDI as more bribery could lower real red tape. However, it might be the case that firm that pays more bribes would be spending more management time to negotiate with a corrupt government officer and thus faces higher costs of capital.

The third section talks about the empirical investigation of the relationship between FDI and corruption. We will first investigate the relationship between them using the benchmark model. Other explanatory variables will be added to the benchmark model progressively. Discussion of regression results follows, starting with developed countries, then developing countries, and finally each region within developing countries.

4.1. Preliminary results of OLS fitted line

A preliminary investigation of the OLS fitted line in Figures 4.1, 4.2, 4.3, 4.4, 4.5, 4.6, and 4.7 shows that the association between FDI and corruption is mixed. The fitted line is plotted using raw data adjusted for inflation and the naive technique.

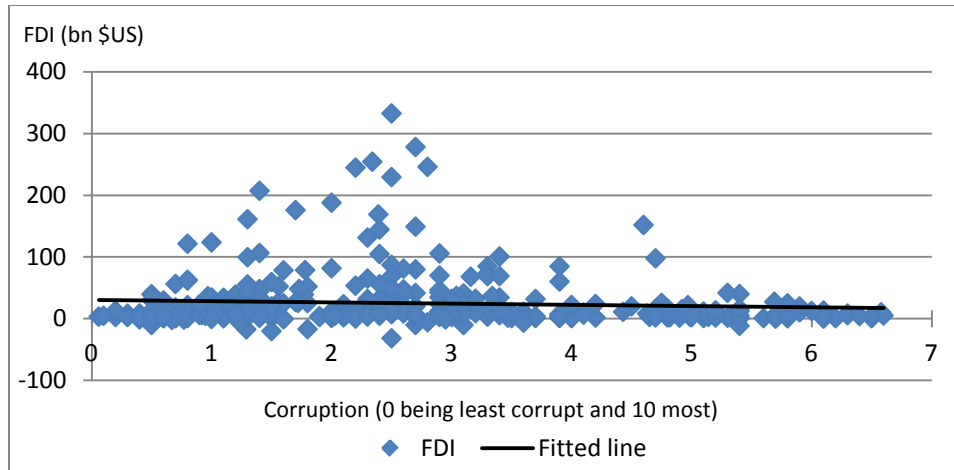


Figure 4.1 FDI Inflows and Corruption in Developed Countries

Based on the OLS fitted line in Figure 4.1, there appears to be a negative relationship between FDI inflows and corruption in developed countries. Without taking other factors affecting FDI inflows into account, it seems that corruption is sanding the wheels of commerce rather than greasing them. Corruption is harmful for FDI inflows in developed countries. This is an unsurprising result due to economic, institutional and human capital factors. High income, good governance, advanced education and high productivity there not only are attractive for FDI inflows, but are also strong measures for curb corruption.

There is a positive association between FDI inflows and corruption in developing countries according to Figure 4.2. Corruption seems to be beneficial for FDI in developing countries. Perhaps, the extra value of bribing—the value of additional productive transactions that have occurred—exceeds the costs of bribing. We will investigate this further by considering several factors believed to be the important determinants of FDI inflows.

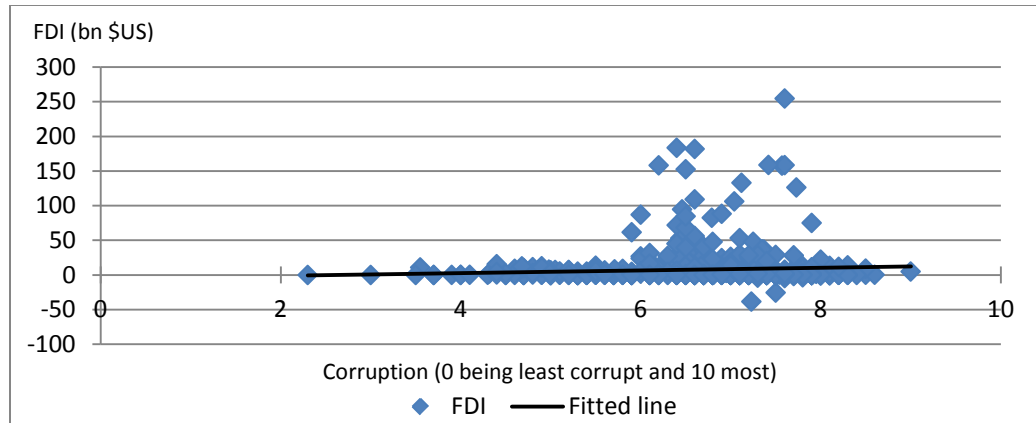


Figure 4.2. FDI Inflows and Corruption in Developing Countries

Figure 4.3 shows a negative relationship between FDI inflows and corruption in Africa. Higher levels of corruption there induce much lower FDI inflows. Based on the *World Investment Report 2011*, Africa, along with the least developed countries, landlocked developing countries and small island developing countries, received the least FDI inflows in 2010. FDI inflows to Africa were down by 9 percent in 2010 compared to previous year. At \$55 billion, the contribution of Africa to total global FDI inflows was 4.4 percent in 2010. It fell from 5.1 percent in 2009. The long distances to world markets, lack of infrastructure, lack of human capital, low institutional quality—including higher corruption levels—are some of the reasons for low FDI inflows to the region. The contraction in global demand and decrease in commodity prices exacerbated this situation. It is expected, nonetheless, that the continuing quest for natural resources, especially oil, by MNCs will at least maintain FDI flows to the continent. However, political escalation in North Africa, particularly in Tunisia, Libya, and Egypt, will remain an obstacle.

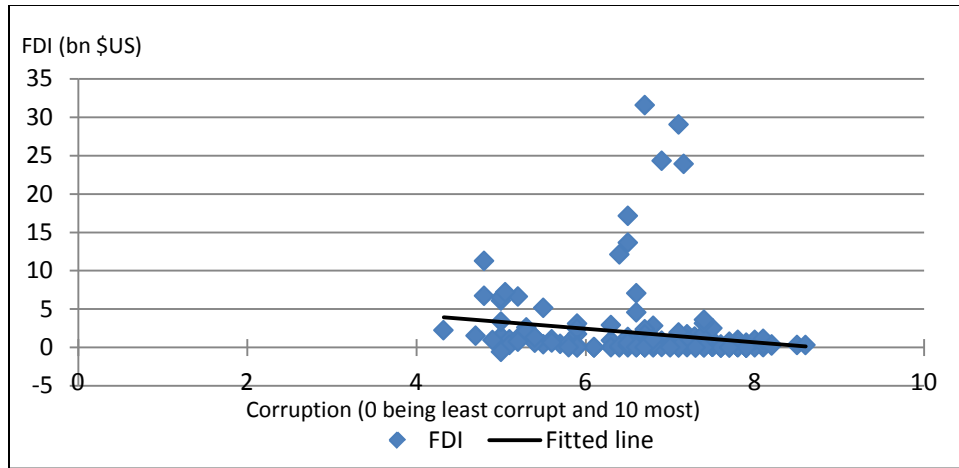


Figure 4.3. FDI Inflows and Corruption in Africa

With a quick look at the fitted line for Latin America and the Caribbean in Figure 4.4, it seems that corruption does not affect FDI inflows there since the line is almost horizontal. In Latin America and the Caribbean, FDI has gone up and down recently despite relatively stable (higher) corruption levels. According to the *World Investment Report 2009*, FDI inflows increased in 2008 by 13 percent to \$144 billion. Natural-resource-related activities have been the main appeal for FDI in South America, and they gained more and more significance in Central America and the Caribbean. However, the global economic and financial turmoil have dropped FDI to Latin America and the Caribbean to \$117 billion— a 36 percent decline from the 2008 level (UNCTAD 2010). Based on the *World Investment Report 2011*, FDI flows to Latin America and the Caribbean increased by 13 percent in 2010. The strongest increase was in South America, where the growth rate was 56 percent, with Brazil in particular at the top of the line. Moreover, acquisitions by Asian MNCs soared to \$20 billion, accounting for more than 60 percent of total FDI to the region in 2010. Brazil and Mexico remain the most popular investment destinations in the whole region.

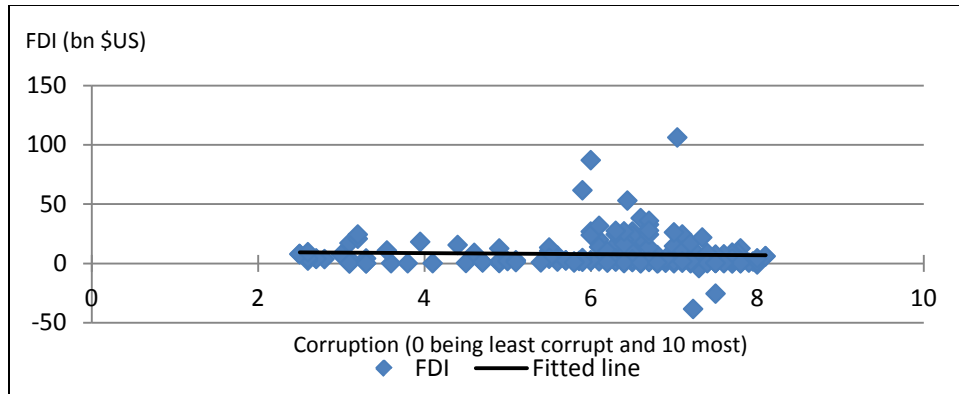


Figure 4.4. FDI Inflows and Corruption in Latin America and the Caribbean

The same story applies to Asia and Oceania, where the OLS fitted line is almost linear in Figure 4.5 or probably a little bit bending to be more negative on the right tip. We may assume there is no exact relationship between FDI inflows and corruption from 1996 to 2010. FDI inflows have moved erratically, despite the fact that corruption has been always low for some countries (for example Hong Kong and Singapore), and has been relatively high for others. *World Investment Report 2009* states that South, East and Southeast Asia registered strong growth of 17 percent in FDI inflows in 2008, reaching \$298 billion. This was partly because of changes in domestic policies and legislation to be more favorable to FDI, for example by raising or abolishing FDI ceilings or simplifying procedures. FDI inflows into West Asia increased 16 percent to \$90 billion for the same year, due mainly to the significant growth in inflows to Middle Eastern countries, particularly in the real estate, petrochemical, and oil refining sectors. The inflows to small island developing countries in Oceania have been very small and almost negligible. However, the global financial crisis, tightening of international credit markets, decline in international trade and the collapse of Dubai World put some dents in FDI inflows into the region. FDI flows to South, East and Southeast Asia dropped by 17 percent in 2009 (\$233 billion), mainly because of a decline in cross-border mergers and acquisitions (UNCTAD 2010).

FDI flows to West Asia decreased by 24 percent to \$68 billion in 2009. In 2011, FDI to South, East and South-East Asia bounced back quickly, increased by 24 percent in 2010, reaching \$300 billion. However, FDI flows to West Asia in 2010 continued to be affected by the global economic crisis, down by 12 percent. Political instability in the region is expected to hamper the recovery.

Nonetheless, if we exclude Hong Kong and Singapore —these two countries are known for low corruption and are important shipping and processing centers— from the Asia and Oceania sample, the relationship between FDI inflows and corruption becomes positive as shown in Figure 4.6. To contain corruption, the wages of government officers in Singapore and Hong Kong are leveled with those in private sector. The salary of Singapore's prime minister is more than four times higher than that of the U.S. President. The salaries of Singapore's cabinet ministers are pegged to those of CEOs of big MNCs in the world (Wei 1999: 18). Singapore and Hong Kong also have strong and independent anti-corruption agencies. Moreover, besides their strategic location as trade hubs, investment's climates in Singapore and Hong Kong are favorable to foreign investors. Realizing that they do not have natural resources to offer, Singapore and Hong Kong provide highly productive workers and better connections to Southeast Asia and mainland China.

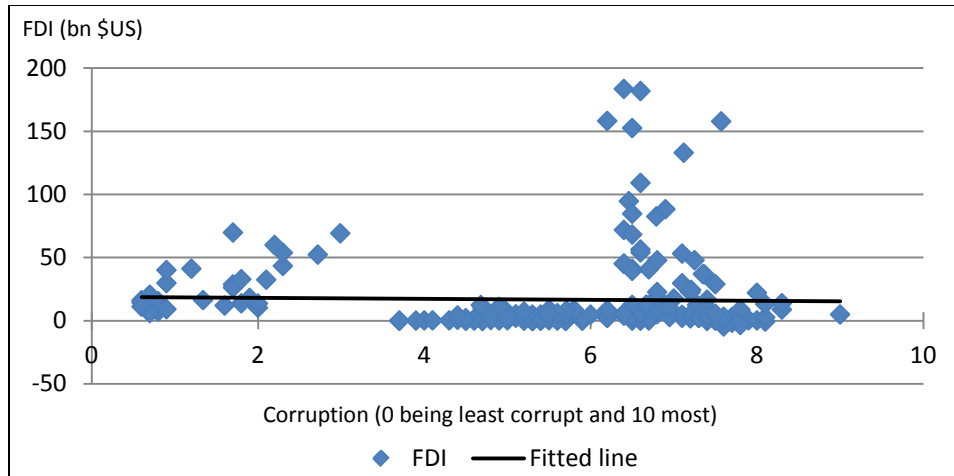


Figure 4.5. FDI Inflows and Corruption in Asia and Oceania

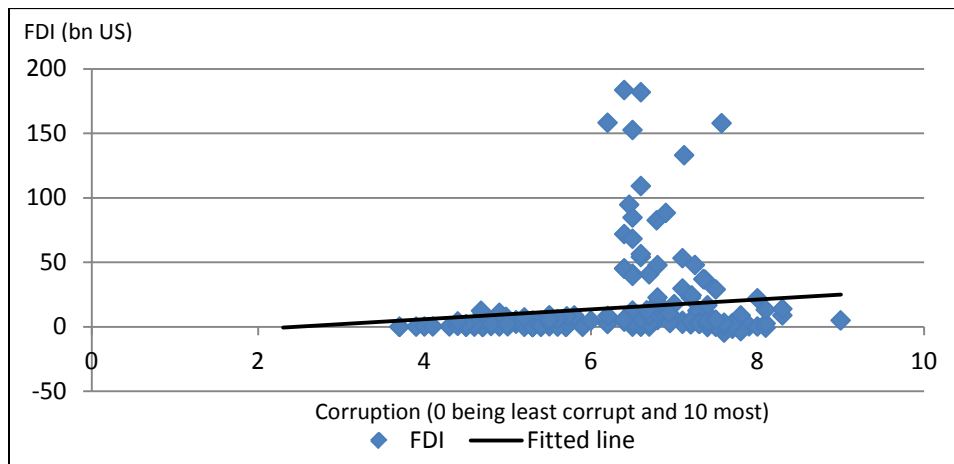


Figure 4.6. FDI Inflows and Corruption in Asia and Oceania excluding Hong Kong and Singapore

There is a positive association between FDI inflows and corruption in Southeast Europe and the CIS. Figure 4.7 shows that high corruption is beneficial for FDI inflows. Strong and fast growing local consumer markets, especially in the Russian Federation in which FDI inflows picked up by 13 percent to \$41 billion keep attracting foreign investors (UNCTAD 2011). Kazakhstan has also been a favorite FDI destination for investors from other developing countries, especially from China and Singapore. Sovereign wealth funds, such as China

Investment Corporation and Singapore’s Temasek Holdings invest heavily in the Russian Federation and Kazakhstan, despite the high level of corruption that prevails in those countries. It seems that foreign investors take corruption there as a usual extra cost of doing business. There may be no way to avoid paying bribes, thus either you play the game or back off. However, FDI flows to Southeast Europe have been decreasing recently, in part because of sluggish investment from European Union countries. Banking crises and government debt problems in Portugal, Italy, Ireland, Greece, and Spain have contributed to low investment abroad.

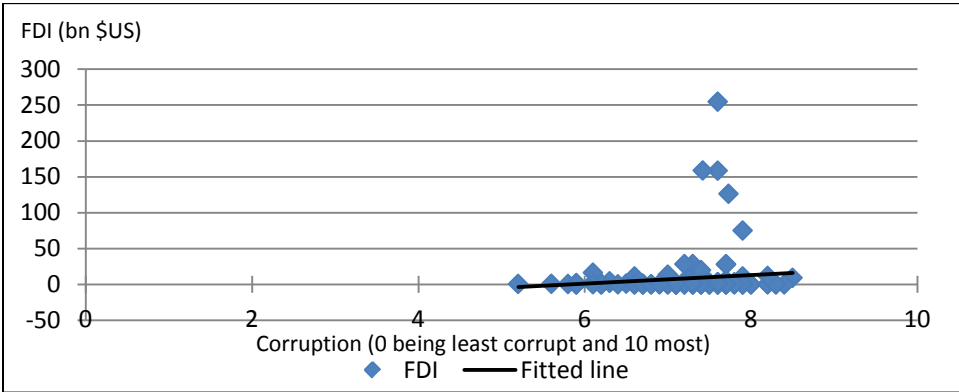


Figure 4.7. FDI Inflows and Corruption in Southeast Europe and the CIS

In sum, the relationship between FDI inflows and corruption, derived from OLS fitted lines only, is varied and too simplistic. Obviously, there are other things influencing the relationship that must be taken into account. The data itself most likely suffers from the classical assumptions of OLS and other econometric problems. We will include other factors affecting the relationship, correct the data and use appropriate econometric techniques in a following segment. Nonetheless, the mixed relationship between FDI and corruption is fine enough to convince us that the impacts of corruption on FDI for different economies can be dissimilar.

4.2. Theoretical model

Kaufmann and Wei (1999) shed some light on the bad and good sides of corruption in connection to profit gained from FDI. However, I make some modifications to make it more fit with real practice. Kaufmann and Wei (1999) show that corruption in the form of bribery may lower red tape under the efficient grease hypothesis. In their paper, they present a simple Stackelberg model between a corrupt government officer and a representative firm. The government officer moves first to choose harassment or a red tape delay, which can be customized to some extent, to maximize bribe intake. The firm, which is a price taker, moves next to choose the bribe payment to maximize the after-bribe profit. The equilibrium levels of bribe and red tape are solved by backward induction.

First, consider the firm's problem. Let b denote the amount of the bribe a firm has to pay to a corrupt government officer. Profit that would have attained by the firm without any harassment or red tape from the government officer is π . The bribe will reduce profit but it is not a part of operating costs. Let h be the nominal harassment that the officer imposes on the firm, for example the published or official number of days an import license application can take ("on the book red tape"). Therefore, the nominal harassment is the red tape announced by the government or the amount of red tape before the firm bribes. Assume the nominal harassment can be customized, so government officer can decide the number of days an import license is actually given to the firm. There is also r , which is the real harassment or the real effective red tape that the firm actually faces after paying bribes, with the following formula:

$$r = h - s(b) \dots \dots \dots (3)$$

From (1), if nominal harassment stays constant (h), thus bribery (b) and real harassment (r) have an inverse relationship.²² More bribery means lower real red tape, although there is a decreasing return to paying bribes because $s(b)$, which is a function of how bribe payment helps reduce real harassment, is assumed to be twice differentiable and concave ($s_b > 0$ and $s_{bb} < 0$). This is what Kaufmann and Wei (1999) illustrate as a narrow version of efficient grease hypothesis. The more the firm pays bribes, the lower the real harassment or real effective red tape. To put it in another way, a firm that pays more bribes is likely to spend less time negotiating with corrupt government officers and faces lower costs of capital, which boosts after-harassment profit.

Furthermore, the pre-bribe profit, π , is assumed to be predetermined. The firm's objective is to maximize after-bribe or after-harassment profit, π_a :

$$\pi_a = g(r)\pi - b \dots\dots\dots (4)$$

where g is a multiplying function of pre-bribe profit and depends on real harassment.

The first order condition is as follow:

$$\frac{\partial \pi_a}{\partial b} = \frac{dg}{dr} \frac{dr}{db} \pi - 1 = 0$$

$$g_r \{-s_b\} \pi - 1 = 0 \Rightarrow -[g_r \{s_b\} \pi] = 1 \dots\dots\dots (5)$$

The first order condition results an implicit function that relates the optimal amount of bribe money that the firm would pay and the nominal harassment. The second order condition gives a negative value, so the maximization condition is satisfied.

²² This is an identity equation which defines what real harassment is. We may think of another identity equation, for example, the real interest rate equation, which is the nominal interest rate minus the inflation rate. The logic is the same, if the nominal interest rate stays constant, then the real interest rate and inflation rate have a negative relationship.

$$-[g_r(h, b)\{s_b\} \pi] = 1 \Rightarrow -[g_r(h, b)\{s_b\}] - \frac{1}{\pi} = 0$$

$$\frac{\partial^2 \pi_a}{\partial b^2} = -[g_{rr}\{-s_b\}\{s_b\} + g_r(h, b)\{s_{bb}\}]$$

$$\frac{\partial^2 \pi_a}{\partial b^2} = -[g_{rr}\{-s_b^2\} + g_r(h, b)\{s_{bb}\}] < 0 \dots\dots\dots (6)$$

where $g_r < 0$, $s_b > 0$, $g_{rr} < 0$, and $s_{bb} < 0$.²³

Totally differentiating the first order condition yields the optimal bribery schedule,

$b = B(h)$:

$$\frac{db}{dh} = - \frac{-\left[\frac{dg_r}{dr} \frac{dr}{dh} s_b + g_r \cdot 0\right]}{-\left[\frac{dg_r}{dr} \frac{dr}{db} s_b + g_r \cdot s_{bb}\right]} \dots\dots\dots (7)$$

From (1) we have $dr/dh = 1$, $dr/db = -s_b$, thus:

$$\frac{db}{dh} = - \frac{[g_{rr} \cdot 1 \cdot s_b]}{[g_{rr} \cdot -s_b \cdot s_b + g_r \cdot s_{bb}]} = - \frac{g_{rr} \cdot s_b}{- [g_{rr} \cdot s_b^2 - g_r \cdot s_{bb}]}$$

$$\frac{db}{dh} = \frac{g_{rr} \cdot s_b}{g_{rr} \cdot s_b^2 - g_r \cdot s_{bb}} > 0 \dots\dots\dots (8)$$

where $g_r < 0$, $s_b > 0$, $g_{rr} < 0$, and $s_{bb} < 0$.

From (8) above, the bribery schedule is upward sloping that is the higher the nominal harassment; the higher the optimal bribe.²⁴

²³ $g_r < 0$ because the higher the real harassment (r) is, the lower g is, and the lower pre-bribe profit (π) and after-bribe profit (π_a) would be. $g_{rr} < 0$ because the marginal change in g as a result of a marginal change in real harassment is diminishing. $s(\cdot)$ is a function of how bribe payment helps reduce real harassment and is assumed twice differentiable and concave ($s_b > 0$ and $s_{bb} < 0$) because of decreasing returns to paying bribes.

²⁴ It is unlikely to have $db/dh < 0$ because from the firm's perspective, if the firm was harassed more, the firm would bribe more. Similarly, from government officer's perspective, if he wanted more bribe, he would harass more.

The previous bribery schedule implies that the firm ought to tolerate any level of harassment and then gives bribes accordingly. In a more relevant situation, realistically there should be an exit option for the firm. Firms may back off if the amount of harassment is too high and consequently the amount of bribe is too high as well because the optimal bribery schedule is upward sloping. Therefore, there is a maximum amount of harassment the firm is willing to tolerate. To model the actual bribe that the firm is willing to pay, let h^* be the maximum harassment the firm would tolerate. Then, let h^* be the point in which the firm is indifferent between paying bribes or backing off from their investment opportunity. Likewise, h^* is also the optimal nominal harassment from the officer's perspective. For this constrained problem, the actual bribe the firm is willing to pay is:

$$b = \min \{B(h^*), B(h)\} \dots\dots\dots (9)$$

The officer's objective is to maximize the bribe intake. It is assumed that the officer's utility is an increasing function of bribe intake. He also sets the harassment rate, for example the number of days an import license can actually be given to the firm, solely for the purpose of extracting bribe payment. Therefore, the officer would impose "just enough harassment" to make the firm pay the maximum bribe, $b^* = A(h^*)$. Since this "just enough harassment" imposed by the officer is maximizing his bribe intake, the "enough harassment" turns into optimal harassment. In equilibrium, the firm would pay just b^* as well.²⁵ Thus, nominal harassment and bribery are positively correlated. To sum up, if red tape can be endogenously chosen by a corrupt government officer, then he may demand a bribe based upon the firm's "ability to pay" by adequately raising the level of red tape (ibid).

²⁵ For example, if nominal harassment (h) is 100 units, the bribe is \$1,000. But the tolerable harassment level for the firm, h^* , (the maximum harassment the firm is willing to take) is only 50 units, which constitutes a bribe of \$500. Then, the government officer would only impose harassment of 50 units and get paid \$500.

Further, the relationship between real harassment and bribery in equilibrium is as follows:

$$r = h - s(b) \Rightarrow \frac{dr}{db} = \frac{dh}{db} - s_b(b)$$

$$\frac{dr}{db} = \frac{g_{rr} \cdot s_b^2 - g_r \cdot s_{bb}}{g_{rr} \cdot s_b} - s_b(b) = \frac{g_{rr} \cdot s_b^2 - g_r \cdot s_{bb} - g_{rr} \cdot s_b^2}{g_{rr} \cdot s_b}$$

$$\frac{dr}{db} = - \frac{g_r \cdot s_{bb}}{g_{rr} \cdot s_b} > 0 \dots\dots\dots (10)$$

where $g_r < 0$, $s_b > 0$, $g_{rr} < 0$, and $s_{bb} < 0$.

In above equation, firm that pays more bribes faces higher nominal red tape and higher real effective red tape at equilibrium. The reason is that the firm that pays more bribes is likely to spend more, not less, management time negotiating with a corrupt government officer and thus has higher, not lower, costs of capital that decrease after-harassment profit. This contrasts with the “efficient grease hypothesis”, in which the more bribes a firm pays, the lower the level of real harassment and the higher the after-harassment profit.²⁶

Moreover, FDI is defined as a function of after-bribe or after-harassment profit, π_a .

$$FDI = f\{\pi_a(b)\} \dots\dots\dots (11)$$

The relationship between FDI and corruption, which is measured by bribes, can be solved out using the chain rule as follows:

$$\frac{\partial FDI}{\partial b} = \frac{\partial FDI}{\partial \pi_a} \frac{\partial \pi_a}{\partial b} \dots\dots\dots (12)$$

²⁶ The difference between nominal harassment and real harassment is the magnitude. From the definition of real harassment, $r = h - s(b)$, thus if the firm pays bribes, real harassment is smaller than nominal harassment.

For the “grabbing hand hypothesis”, bribes decreases after-bribe profit.²⁷ Thus, $\frac{\partial \pi_a}{\partial b} < 0$, and since the firm’s desire to undertake FDI is positively correlated with after-bribe profit, then $\frac{\partial FDI}{\partial \pi_a} > 0$. Therefore, for the “grabbing hand hypothesis”, $\frac{\partial FDI}{\partial b} < 0$ or it is expected that the more bribes that the firm has to pay to the corrupt government officer or the higher the level of corruption in a country, the lower FDI inflows coming into that country will be.²⁸

In contrast, there is a literature suggesting that corruption can actually increase FDI (see Chapter 2). In this case, corruption acts as a “helping hand”. For example, from the definition of after-bribe profit (equation 4), $\pi_a = g(r)\pi - b$, we can redefine π_a as follows:

$$\pi_a = g(r)\pi - b = g(r)[revenue - cost] - b \dots\dots\dots (13)$$

In the above equation, there is an opportunity cost implied in the profit equation. For example, there is always paper work regarding import licenses to import raw materials or capital goods from overseas to the host country where the firm’s plant is located. This customs clearance process can take weeks. The longer the customs clearance process, the higher the cost for the firm because the firm has to pay storage costs, handling costs and idle costs at a container yard in the port. In reality, the costs are progressive because the space at the container yard is limited and the port operator wants to clear out the container yard to be used for other consignments. Moreover, if the firm could not start production right away due to the raw materials or the capital goods is still in hold at the container yard, the firm would lose more money too. If the firm does not bribe, it would pay, for example, \$5,000 per week for storage costs, handling costs, and idle

²⁷ For the “grabbing hand hypothesis”, bribes reduce after-harassment profit. As profit decreases, there will be less of an incentive for the firm to undertake FDI, thus the amount of FDI will be decreasing.

²⁸ Supporters of the “grabbing hand hypothesis” also argue that firms that pay more bribes are likely to spend more, not less, management time negotiating with a corrupt government officer and faces higher, not lower, costs of capital that decrease after-harassment profit (see Chapter 2). This contrasts with the “efficient grease hypothesis”, in which the more a firm pays bribes, the lower the real harassment and the higher the after-harassment profit.

costs altogether. It also incurs an additional cost of \$10,000 per week if production does not start right away.

In the above situation, bribes could actually solve the problem. If the firm were to bribe \$3,000 all in one shot to clear customs, then it could save \$12,000 for the first week and \$15,000 for subsequent weeks until imported goods are cleared out of the port and going into production. In this case the “helping hand hypothesis” applies. Corruption is a useful substitute for a weak rule of law because the value of behaving corruptly—the value of additional productive transactions occurring—exceeds the cost of engaging in corruption. Thus, corruption in the form of bribes will have a beneficial effect on after-bribe profit, and consequently $\frac{\partial \pi_a}{\partial b} > 0$, and assuming that firm’s intention to perform FDI is an increasing function of after-bribe profit, then $\frac{\partial FDI}{\partial \pi_a} > 0$. Hence, for the “helping hand hypothesis”, $\frac{\partial FDI}{\partial b} > 0$ or more bribes paid to the corrupt government officials would increase the amount of FDI or the higher the level of corruption in a country, the higher the level of FDI inflows would be.

4.3. Empirical framework

The framework for evaluating the association between FDI, corruption, and other determinants of FDI is presented below:

$$Y_{it} = \alpha + \beta X_{it} + \gamma Z_{it} + u_{it} \dots \dots \dots (14)$$

where Y_{it} is a measure of FDI in region i at time period t , X_{it} is an index of corruption in region i at time period t , Z_{it} are control variables in region i at time period t , which include market, macroeconomic, demographic, labor, and human capital variables, β and γ are parameters to be estimated and $u_{i,t}$ denotes the disturbance term.

While this framework deals with the impact of corruption on FDI, the existing data do not allow one to differentiate between the two cases of corruption discussed in Shleifer and Vishny (1993). Therefore, the regression should be viewed as a reduced-form specification (Gupta, Davoodi, and Tiongson 2001: 119). However, the regression does follow the theoretical model and the extension of Kaufmann and Wei (1999).

There are 82 countries included in the sample over period 1996-2010. The starting year of 1996 is chosen because Transparency International suggests that its corruption index be used from 1996 and after.²⁹ The original Transparency International corruption index score ranges from 0 to 10, in which the lowest score (0) suggests high level of corruption prevails, whereas the highest score (10) implies the cleanest. To avoid confusion, the index is rescaled, so 0 means very clean and 10 represents highly corrupt. All developed and developing countries for which a complete dataset for all variables is available over the period 1996-2010 are included in the regression. Classification of developed and developing countries follows United Nations Conference on Trade and Development (UNCTAD 2011). All units of measurement in current U.S. dollar have been adjusted to constant U.S. dollars using a deflator from the *World Development Indicators 2011*.

I use panel data for this research in order to take advantage of the larger sample size. The estimation will also be more informative, have more variability, more degrees of freedom, be more efficient, more reliable, and have less collinearity among the variables (Baltagi 2008). Multicollinearity is a common problem in time series data, but it is less likely with panel data because the cross section dimension adds plenty of variability, thus the data is more informative.

²⁹ TI recommends that conclusions regarding time trends should be based on comparison between the 1996 score and the historical data. Comparisons with the 1995 ranking may be less precise because the 1995 ranking is out of date. For complete reasons, please see http://www.icgg.org/corruption.cpi_olderindices_1995.html

Variation in the panel data can also be decomposed into variation between countries of different size and features. With additional, more informative data, one can generate more reliable parameter estimates. The effect of corruption is entered into a model as a direct independent variable. The benchmark FDI equation in a linear form, with a constant term, is as follows:

$$FDI_{i,t} = \beta_1 + \beta_2 \text{Corruption}_{i,t-1} + \beta_3 \text{GDP per capita}_{i,t-1} + \beta_4 \text{Exports per capita}_{i,t-1} + \beta_5 \text{Population}_{i,t-1} + \beta_6 \text{Labor productivity}_{i,t-1} + u_{i,t} \dots\dots\dots (15)$$

where *i* is the country subscript, *t* is the time subscript, β_s are parameters to be estimated, and $u_{i,t}$ denotes the disturbance term. All explanatory variables (except dummies) are lagged one year to avoid simultaneity with the dependent variable and to take into consideration the fact that investment abroad takes time (Wooldridge 2002: 51; Hayashi 2000: 139). They also resolve the likely endogeneity problem associated with the causal relationship between FDI flows and some of the right hand variables (Sun, Tong, and Yu 2002).

However, I opt to run regressions through the origin (no intercept) for developed and developing groups because I am more interested in the mean value of variables in each region than the differential value between them. The reason is that sometimes the differential value between variables is huge and thus it is no longer comparable anymore. For example, the differential value of corruption in developed countries (2.6 in average) and African countries (6.9 in average) is great although the relationship between them using OLS fitted line earlier both produced a negative relationship between FDI inflows and corruption. Much higher corruption alone in Africa attracts much lower FDI inflows. To make a point about the differential corruption value, Mauro (1995), using the Business International corruption index, finds that if Bangladesh (score of 4.7) were to improve the integrity and efficiency of its bureaucracy to the level of that of Uruguay (score of 6.8), its investment rate would increase by almost five

percentage points and its yearly GDP growth would rise by over half a percentage point.³⁰ Wei (2000) also finds that, under the double-log linear specification, a worsening in the host government's corruption level from that of Singapore (score of 1) to that of Mexico (score of 7.75) has the same negative effect on the inward FDI as raising the marginal tax rate by fifty percentage points. Both authors use the Business International corruption index, which is highly correlated (coefficient of 0.89) with the Transparency International corruption index used in this dissertation (Wei 2000).

I introduce as many dummy variables as the number of categories of that variable but without including a constant term. Therefore, we do not fall into dummy variable because there is no perfect collinearity. This approach reports the coefficients that are easy to interpret substantively since with the intercept suppressed, and allowing a dummy variable for each category, we get directly the mean values of the various categories (Gujarati 2004). Our benchmark FDI specification for developed and developing countries in linear form, thus becomes as follows:

$$\begin{aligned}
 FDI_{i,t} = & \beta_1 \text{DevelopedCorruption}_{i,t-1} + \beta_2 \text{DevelopingCorruption}_{i,t-1} + \\
 & \beta_3 \text{DevelopedGDPpercapita}_{i,t-1} + \beta_4 \text{DevelopingGDPpercapita}_{i,t-1} + \\
 & \beta_5 \text{DevelopedExportspercapita}_{i,t-1} + \beta_6 \text{DevelopingExportspercapita}_{i,t-1} + \\
 & \beta_7 \text{DevelopedPopulation}_{i,t-1} + \beta_8 \text{DevelopingPopulation}_{i,t-1} + \\
 & \beta_9 \text{DevelopedLaborproductivity}_{i,t-1} + \beta_{10} \text{DevelopingLaborproductivity}_{i,t-1} + \\
 & \beta_{11} \text{Developed}_{i,t} + \beta_{12} \text{Developing}_{i,t} + u_{i,t} \dots\dots\dots (16)
 \end{aligned}$$

The full regression results are presented in Table 4.1.³¹ The discussions for developed and developing economies follow in subsequent segments.

³⁰ The BI corruption index measure is an integer from 1 (most corrupt) to 10 (least corrupt) according to “the degree to which business transactions involve corruption or questionable payments.”

³¹ Excluding China from the sample does not change the significance of the explanatory variables.

Table 4.1. FDI Inflows and Corruption: Developed and Developing Countries

	Dependent variable: FDI inflows				
	Model 1	Model 2	Model 3	Model 4	Model 5
Developed corruption	-3403.613 (1139.762)***	-3504.611 (1142.328)***	-3422.109 (1157.029)***	-1901.620 (839.346)**	-254.491 (950.027)
Developing corruption	2122.658 (976.571)**	2128.276 (977.619)**	2150.17 (980.738)**	348.450 (709.692)	339.717 (721.046)
Developed GDP pc	-2.194 (0.291)***	-2.136 (0.296)***	-2.114 (0.300)***	-1.209 (0.224)***	-0.760 (0.255)***
Developing GDP pc	-0.037 (0.457)	-0.037 (0.457)	0.024 (0.463)	0.003 (0.334)	-0.002 (0.331)
Developed exports pc	1.351 (0.342)***	1.282 (0.347)***	1.269 (0.349)***	0.662 (0.254)***	0.307 (0.271)
Developing exports pc	0.389 (0.213)*	0.389 (0.213)*	0.367 (0.215)*	0.069 (0.155)	0.067 (0.158)
Developed population (per 1000 persons)	0.588 (0.036)***	0.581 (0.037)***	0.578 (0.037)***	0.319 (0.032)***	0.312 (0.031)***
Developing population (per 1000 persons)	0.047 (0.004)***	0.047 (0.004)***	0.045 (0.005)***	0.008 (0.004)**	0.007 (0.003)**
Developed labor productivity	1.646 (0.229)***	1.711 (0.236)***	1.687 (0.242)***	0.866 (0.183)***	0.740 (0.185)***
Developing labor productivity	0.593 (0.141)***	0.594 (0.141)***	0.559 (0.147)***	0.067 (0.107)	0.068 (0.108)
Developed inflation		619.280 (582.485)	659.580 (589.392)	-74.804 (427.262)	-61.691 (424.552)
Developing inflation		0.113 (1.028)	0.195 (1.034)	-0.013 (0.745)	-0.016 (0.742)
Developed investment			-216.307 (472.222)	-176.736 (340.169)	-243.083 (338.496)
Developing investment			144.74 (172.910)	-5.868 (124.682)	-6.378 (124.198)
Developed past FDI inflows				0.487 (0.032)***	0.466 (0.032)***
Developing past FDI inflows				0.939 (0.035)***	0.938 (0.035)***
Developed civil liberties					5762.949 (1591.876)***
Developing civil liberties					-31.595 (544.491)
Developed	-18824.300 (9203.073)**	-23241.350 (10120.420)**	-18057.830 (15185.090)	-3967.433 (10977.030)	-45243.640 (15778.430)***
Developing	-17559.43 (7456.345)**	-17615.72 (7471.700)**	-20482.38 (8201.717)***	-2134.107 (5948.021)	-1945.792 (6742.495)
R ²	0.5165	0.5188	0.5196	0.7487	0.7515
R ² -adjusted	0.5049	0.5062	0.5060	0.7410	0.7434
N	1021	1020	1018	1018	1018

4.4. Developed and developing countries: results and discussions

4.4.1. Model 1

Five different specifications for determinants of FDI are estimated and the results for both developed and developing countries are shown in Table 4.1. For the benchmark model (model 1), I include corruption, GDP per capita, exports per capita, population and labor productivity. The other explanatory variables are added to the benchmark model gradually. All the explanatory variables are lagged one year to avoid simultaneity with the dependent variable.

Corruption. The main interest of our empirical results is the sign and the marginal effect of corruption on FDI inflows. The results of the benchmark model for developed economies seem to confirm most of our prior expectations. The explanatory variables are all statistically significant and of the expected signs except for GDP per capita. The coefficient of corruption is indeed negative and is significant at 1 percent level. A one-point increase in corruption level is associated with approximately a 3.4 billion US dollar reduction in FDI inflows, ceteris paribus. This result demonstrates strong support for the existence of the expected negative association between corruption and FDI inflows. It seems that corruption acts like a tax on investment in developed countries, which lowers the profitability of investment. This, therefore, confirms the findings of Mauro (1995), Wei (2000), Ales and Di Tella (1997b), Campos, Lien, and Pradhan (1999), Smarzynska and Wei (2000), Habib and Zurawicki (2002), and Al-Sadiq (2009), among others, in which they find a negative relationship between FDI inflows and corruption in the host country.

For developing countries, the coefficient of corruption is both positive and significant at the 5 percent level for the benchmark model and all other models. Apparently, corruption acts as a helping hand for investment and greases the wheels of commerce in developing countries.

MNCs may be willing to use bribes to speed up the bureaucratic process to get legal permission for establishing foreign production facilities or for obtaining needed service.³² In this case bribes may increase bureaucratic efficiency by speeding up the of decision-making process. Bribes might be needed to gain access to publicly funded projects.

Another argument related to market demand is that although corruption adds extra costs in the form of bribe payments, the value of additional productive transactions that occur may exceed the costs of engaging in corruption. For example, an investor wishes to build a production plant in a host country. He contemplates building the plant in a developed country or in a developing country. He does not have to pay bribes in a developed country but has to pay some bribes in a developing one. If he were to build in a developing country and pay some bribes, actually the bribes may raise aggregate the expenditure of households, thus increasing the firm's sales volume. Glass and Wu (2002) demonstrate that this positive effect dominates the negative cost effect in general equilibrium. In the long run, there are complicated general equilibrium effects at work and corruption is not necessarily bad for FDI (ibid).

Moreover, paying taxes or customs duties is always troublesome. Private business may collude with tax inspectors or customs agents to lower taxes or duties that a firm has to pay and speed up services. If they do, the extra cost for paying bribes may be offset by the extra payoff from paying lower taxes or duties and receiving service more quickly. The problem with this kind of corruption is that the forgone revenue may be too damaging for a country. For example,

³² A study of the informal economy in the Ukraine reveals lists of bribes for a range of services needed by private business (Rose-Ackerman 1999: 15). Most firms reported paying fees in connection with importing and exporting. Bribes to tax-, fire-, and health- inspectors were not uncommon, as were unofficial lease fees. In St. Petersburg, Russia, the rate for installing telephone lines was \$200 (Webster and Charap 1993). Installation of an electric meter cost 25,000 to 30,000 rupee in India ("Bribe Index" *Sunday Times of India*, December 17, 1995 as cited in Rose-Ackerman 1999). Bribes are common in regulatory agencies that issue licenses and permits in Mexico (Morris 1991: 51). In Indonesia, less well connected private businesses make payments amounting to from 5 to 20 percent of annual gross income ("Graft and the Small Business" *Far Eastern Economic Review*, October 16, 1997 as cited in Rose-Ackerman 1999).

in Gambia, the forgone revenue from income tax and customs duties was 8 to 9 percent of GDP (Rose-Ackerman 1999: 19). Low (1995) investigates justified and unjustified tariff exemptions in Zambia, Mali, and Tanzania, and estimates that those exemptions generate a shortfall in revenue collected of about 50 percent. In Mozambique, the customs duties collected only 49 percent of what would have collected if no exemptions had been given in 1995 (Rose-Ackerman 1999: 19).

Corruption may be good for agglomeration. According to Egger and Winner (2006), more corruption may be harmful for a firm's foreign investment at a location given that the firm already runs a plant there. However, it can lead to the entry of new investors that would not have entered the market in the absence of helping hand type corruption. They indicate that this is even true in the case of FDI within country-pairs. Using sample of 73 countries, they find that the contribution of the change in perceived corruption in the long run may account for up to 40 percent of the observed overall FDI growth in low income countries between 1995 and 1999 (Egger and Winner 2005).

I am in no way suggesting that anyone should take more bribes in order to boost FDI inflows in developing countries, although the results show that worsening corruption seems to be associated with more FDI inflows. I am against under-invoicing practices and not in favor of misleading the description of imported goods in order to lower customs duties, although paying lower customs duties and taxes could reduce production costs. As Aidt (2003) points out that the socially most beneficial policy is to eliminate corruption rather than to circumvent it. The positive and significant relationship between corruption and FDI inflows implies that administrative procedures and bureaucratic discretion are used to allow government officials to engage in rent seeking behavior and seize a share of the profits from foreign investment.

GDP per capita. Although significant at the 1percent level in all models, the coefficient of GDP per capita for developed countries is not as expected. It is negative instead of positive. Developed economies do not attract FDI on the basis of their market size. The plausible explanation is that during the last decade, FDI in developed countries was not completely market seeking. The growing market and rise of the middle class in Asia, especially China and Indonesia with their huge population, due to higher standards of living might actually attract more market-seeking FDI, at least in automobile industry. For example, General Motors sold more cars in China than anywhere in the world in 2009 (Feenstra and Taylor 2012). Sales in China rose by 66 percent, whereas US sales dropped by 30 percent that year. Chinese consumers actually saved GM. Without its China sales, GM probably could not have been saved at all (ibid).

GDP per capita does not seem to be an important factor attracting FDI inflows to developing countries as the coefficients are not significant at standard levels in the benchmark model and all other specifications. Although it is important to point out the exploding demand in certain developing countries, especially in Brazil, Russia, India, China, and Indonesia, with their huge populations, it seems that investors went there more for resource seeking (especially oil and gas) or efficiency seeking (low wages) rather than for market seeking, which is roughly based on GDP per capita. Moreover, only recently developing and transition economies toppled developed economies in receiving FDI inflows. According to *World Investment Report 2011*, for the first time, developing and transition economies together attracted more than half of global FDI flows in 2010. As international production and, recently, international consumption shift to developing and transition economies, MNCs are increasingly investing in both efficiency-seeking FDI and market-seeking FDI in those countries (ibid).

Exports per capita. Consistent with previous literature, exports per capita show a positive and significant coefficient at standard levels in the benchmark model and most of the models for both developed (4 out of 5 models) and developing countries (3 out of 5 models). Exports do provide a good platform for international business operations. The ease of exporting offers efficiency and access to world markets, which would help promote FDI. An outward-oriented economy is indeed not constrained by the size of its domestic economy as it offers both efficiency and access to world markets.

If we compare the coefficients of exports per capita between developed and developing countries for which the coefficients are significant, then the coefficient of exports per capita for developed countries are bigger and more significant. European countries, especially those in Western and Northern Europe, export goods heavily with each other since there are so many countries located there. It is also relatively easy to transport from one country to another since most of them are contiguous. The European Union also makes it easier to send goods between countries. Under NAFTA, the United States and Canada also export goods to each other a lot for a similar reason. For developing countries, the Asia region includes the largest exporters. All exports from Asia totaled approximately \$3.1 trillion in 2006, just shortly before the global economic crisis (Feenstra and Taylor 2012). That is about 27 percent of world exports, with China as the largest exporting country (\$288 billion in 2006).

Population. The population variable is used to control for differences in country size since the size of countries included in the sample is diverse. There are developed countries with small populations, such as Finland and New Zealand. There are also large developed countries with large populations, for example United States and Japan. If we are to exclude population from the control variables, the other explanatory variables become mostly insignificant. The

importance of population is reflected in all five models. The population coefficients are all significant at the 1 percent level.

The population coefficients are all significant at the 1 percent level for developing countries as well. A large population is beneficial for FDI in terms of market size potential and availability of a large labor force. The major determinant of market-seeking type FDI is the presence of sizable market, which can be reflected in a large population size and/or population with high income. Import protection through tariff or non-tariff measures, can be categorized as affecting this type. Recently, market-seeking FDI has been motivated by the rapid increase in purchasing power of the Asian population. China and India are attractive to MNCs worldwide due to their strong growth rates, growing consumer populations and low-cost but highly educated labor forces. The result suggests the importance of population in attracting FDI.

Labor productivity. Labor productivity is of the expected sign and significant at the 1 percent level in all specifications for developed countries and most models for developing economies. MNCs are indeed interested in countries with a large pool of workers, professionals, and skilled workers (Veugelers 1991). Countries with higher labor productivities attract more FDI inflows as we can see from the labor productivity coefficient between developed and developing countries. MNCs indeed took labor productivity into account before deciding to undertake FDI. However, if we compare the labor productivity coefficients between developed and developing countries for which the coefficients are significant, then workers in developing countries are less productive. For example, if we compare labor productivity between United States and China in apparel, textiles, and wheat production industries, the productivity of those three sectors in the United States are far higher than those in China. Based on Table 4.2, a worker in the United States produced 7 times more apparel than a worker in China. An employee

in the United States produced 16 times more textiles than an employee in China. Even a farmer in the United States is 275 times more productive than a farmer in China in producing wheat. Table 4.2 illustrates the difference in productivity between United States and China in apparel, textile, and wheat production industries. Productivity is measured by sales per employee for the apparel and textile industries, and bushels per hour in producing wheat.

Table 4.2. Differing Productivities in the United States and China

	United States	China	U.S. / China Ratio
Apparel	\$92,000	\$13,500	7
Textiles	\$140,000	\$9,000	16
Wheat	27.5	0.1	275

Source: Table 2-2 Feenstra and Taylor (2012)

Research also shows that the productivity of workers in Indonesia, Thailand and Pakistan are about 5 percent of that in United States (Feenstra and Taylor 2012). This provides evidence for the Ricardian model, in which there are indeed differing productivities across groups of countries. Since labor is paid based on productivity (marginal product of labor), countries with higher labor productivities (developed countries) pay higher wages, just as the Ricardian model predicts.

The coefficient for developed or developing tells us about other factors that may affect FDI but are not included in the regression. We will try to include other factors progressively based on FDI literature, starting with inflation since it is argued that high inflation adds to business uncertainty and has a detrimental effect on FDI inflows.

4.4.2. Model 2

Inflation. Model 2 adds inflation to the benchmark model. In general, adding inflation does not change the significance of the coefficients of the benchmark model. The coefficients are up and down a bit, but nothing major. The coefficient of inflation is not significant at standard levels. It seems that inflation rates in most of the developed countries are not a major consideration for investing there, considering their history of maintaining low inflation rates. The United States inflation rate was 2.4 percent on average during 1996-2010. Japan's average inflation rate for the same period was -0.07 (deflation). Based on Maastricht Treaty of 1991, prior to joining the Eurozone, EU member countries should have inflation rates of no more than 1.5 percentage points above the level in the three member states with the lowest inflation in the previous year. The European Central Bank (ECB), which conducts monetary policy in Eurozone area, has an excessive focus on inflation. Its primary objective is to maintain price stability in the Eurozone area.³³ Price stability is defined as Eurozone consumer price inflation rate of less than but close to 2 percentage points per year over the medium term.

Adding an inflation variable does not change the significances of the coefficients of the benchmark model for developing countries either. Some of the coefficients increase a bit, but nothing noteworthy. The coefficient on inflation itself is not significant at standard levels. It seems that the inflation rate is not one of the main factors to perform FDI in developing countries either. For instance, although Ecuador's average inflation rate is about 22 percent during 1996-2010, foreign investors still came in. They were mainly driven by oil, which accounts for 40

³³ ECB's secondary objective is to support the general economic policies in the Eurozone area with a view to contributing to the achievement of the objectives of Eurozone. However, in practice ECB places little weight on economic performance, growth and unemployment, and where the real economy is in the business cycle (Feenstra and Taylor 2012: 819)

percent of Ecuador's exports. To put an end to hyperinflation, Ecuador adopted the U.S dollar as its legal tender since 2000. Ever since, inflation rates have been much lower.

4.4.3. Model 3

Investment. Investment is taken into account in Model 3. This refers to gross domestic investment as a percent of GDP or gross capital formation as a percent of GDP in the recent World Development Indicator's terminology. The coefficient on the investment variable is not significant for both developed and developing countries. Clearly, domestic investment in the host country is not a factor attracting foreign investors. Perhaps, the ease of doing business, investment liberalization, and abolishment of FDI ownership ceilings in developed countries make it possible for foreign investors to own a 100 percent share in a local company, at least in a non strategic industry. For instance, Toyota Motor Sales U.S.A. is a wholly owned subsidiary of Toyota Motor Corporation in Japan and sells Toyota trucks and cars in the United States. The significances of other coefficient do not change for developed countries, except for the developed dummy.

For developing countries, the addition of the investment variable makes the effect of corruption is a little bit more positive. Perhaps, the increasing investment provides more rent seeking activities for government officers. The coefficient of GDP per capita turns positive although it is not significant at standard levels. The significances of other explanatory variables do not change. The investment coefficient itself is not significant. We may, for example, look back to the Asian crisis to see why domestic investment variable is not significant. After Asian crisis, in return for its support package, the IMF advised countries to radically open their financial markets, liberally restructure private and government-owned companies and heavily

promote deregulation in many sectors. The removal of most restrictions on cross-border capital flows has led to a dramatic increase in the influence of foreign capital. In some countries, foreign investors can own up to 100 percent of shares in local companies. Therefore, domestic investment is now less significant in attracting FDI inflows.

4.4.4. Model 4

Past FDI inflows. In Model 4, the effect of the past FDI inflows is considered. The coefficient of past FDI inflows (FDI inflows in one year before investment takes place) is of the expected sign and significant at the 1 percent level for both the developed and developing countries. This may imply that the agglomeration effect is an important determinant for FDI inflows. Therefore, it is more likely that when FDI is already taking place in a country, MNCs see that as a signal that investing there is a safe and sound decision and more FDI follows (Urata and Kawai 2000). The other explanatory variables of developed countries do not change in terms of their significance. However, the coefficients of corruption, exports per capita and labor productivity of developing country turns to be insignificant. The strong beneficial effect of past FDI inflows seems to outweigh the effects of other explanatory variables. This probably makes sense for resource-seeking FDI that put more weight on natural resources abundance than efficiency-seeking FDI, which gives more weight on the labor productivity and costs of labor. Recently, recovering commodity prices in world markets, growing demand for raw materials, and the continuing search for mineral and energy resources in developing countries have made resource-seeking FDI more attractive, for example the acquisition of Repsol YPF Brazil SA in Brazil and the purchase of the Carabobo block in Venezuela (UNCTAD 2011).

4.4.5. Model 5

Civil liberties. Model 5 considers civil liberties. The civil rights variable is positive and significant for developed country, which is not surprising because the freedom of press, the freedom of association, the freedom of religion, the freedom of speech, the rule of law and the personal autonomy and individual rights are enforced in most developed countries. However, the addition of the civil liberties variables makes coefficients of corruption and exports per capita for developed countries are no longer significant. When you are a foreign investor and look for productive workers (measured by labor productivity, which is positive and significant) to run a research or production facility, perhaps you would not care much about the level of corruption in the host country. Moreover, as you knew you would invest in a developed country with a relatively low level of corruption, you would care much less about it. The corruption level in developed countries may not even be among your business plan considerations in the first place. For developing countries, the coefficient of civil liberties is not significant. Apparently, foreign investors cannot expect much of legal guarantees for their investments in developing countries.

4.5. Regions within developing countries category: results and discussions

4.5.1. Africa

Africa has been receiving a small share of FDI inflows over time, compared to other regional groups of developing economies. Mix in other factors such as possible political instability, a high incidence of war, currency devaluations, highly inefficient financial systems, external factors and weak institutions have contributed simultaneously to Africa's relative unattractiveness. A majority of the countries in region still have restrictive features that dampen trade and investment, including being geographically distanced from world markets, being land-

locked, having low population densities and unfavorable climatic conditions. The long distance from the world's leading markets and world suppliers is not suitable for efficiency seeking FDI either. Apple, Intel and other electronic companies don't assemble their products in Africa because their suppliers are mostly located in Asia.

Table 4.3. FDI Inflows and Corruption: Africa

	Dependent variable: FDI inflows in Africa				
	Model 1	Model 2	Model 3	Model 4	Model 5
Corruption	346.076 (586.729)	395.106 (603.709)	290.381 (643.147)	-297.505 (346.090)	-271.947 (362.014)
GDP per capita	-4.585 (1.220)***	-4.572 (1.220)***	-4.745 (1.277)***	-0.965 (0.710)	-1.088 (0.874)
Exports per capita	15.042 (3.939)***	15.107 (3.942)***	15.242 (3.982)***	0.169 (2.260)	0.242 (2.279)
Population (per 1000 persons)	0.114 (0.019)***	0.114 (0.019)***	0.116 (0.020)***	0.017 (0.012)	0.017 (0.012)
Labor productivity	0.300 (0.221)	0.302 (0.221)	0.316 (0.147)	0.180 (0.124)	0.204 (0.160)
Inflation		0.056 (0.164)	0.042 (0.168)	-0.033 (0.090)	-0.030 (0.091)
Investment			-16.982 (57.249)	-27.017 (30.704)	-30.662 (34.241)
Past FDI inflows				0.927 (0.045)***	0.926 (0.046)***
Civil liberties					50.575 (210.514)
Intercept	-5249.936 (4559.806)	-5652.984 (4707.379)	-4607.548 (5223.631)	2444.033 (2822.424)	3627.663 (11469.240)
R ²	0.3922	0.3934	0.4031	0.8291	0.8292
R ² -adjusted	0.3198	0.3166	0.3219	0.8045	0.8032
N	170	170	168	168	168

Nonetheless, the natural resources potential, such as crude oil, gold and diamonds, is simply too tempting to resist. Calvo and Reinhart (1997), looking at panel data on total capital flows to Africa, find that the only external factor that systematically affects capital flows to Africa is world commodity prices. Flows go up during booms in commodity prices and down during busts, *ceteris paribus*. That explains why corruption does not seem to affect FDI inflows in all specifications based on Table 4.3. Although corruption is relatively high, FDI flows still come and go, depending on international commodity prices. Most investment to Africa has been

for oil-related projects. Some were for large mining projects, such as in Ghana, Zambia, and South Africa.

The coefficient of GDP per capita is significant in the first-three models but not as expected. This is the same result as Krugell (1995). He finds that GDP per capita is negatively related to FDI flows in Africa. Exports per capita are significant in three specifications. It seems that foreign investors export most, if not all, of these commodities outside of Africa. They have better prices in world leading markets than in Africa. Perhaps, this is because purchasing power in Africa is weak since Africa has also lagged behind in term of standards of living compared to other regions of developing countries. To account for differences in the size of countries, a population variable is included and is significant in three specifications. Labor productivity is not significant in all models because most FDI to Africa is for resource-seeking not efficiency-seeking purposes. Labor efficiency-seeking FDI requires relatively productive workers but at a low cost. Asia has been taking a large share of this type of FDI, but not Africa.

Inflation is added to model 2 and afterward, however the coefficients are never significant. FDI still came in to Africa despite the high inflation in Zambia or Malawi, or the low inflation rate in Senegal and Morocco. The other independent variables do not change in terms of significance. The adjusted r-squared goes down a bit. Investment is put into play in model 3 and subsequent models, but the coefficients are not significant. Foreign investors come and go regardless of the level of domestic investment. Probably private investment in Africa is so low that a foreign firm with a strong financial position wanting to extract mineral resources does not see it as an important factor. Other explanatory variables only change a bit, nothing major. Model 4 adds past FDI inflows as one of the explanatory variables. It is positive and very significant. Agglomeration does work as an important factor in attracting FDI. The other

explanatory variables are not significant, perhaps due to the strong useful effect of past FDI inflows. Civil liberties variable completes model 5, however it is not significant. Credible legal guarantees for investment do not impact the amount of FDI inflows to Africa.

4.5.2. Latin America and the Caribbean

Looking at Table 4.4, corruption does have a negative effect on FDI in all models but model 4 and 5. Higher perceived corruption in a host country is likely to significantly discourage investment. A one point increase in the corruption index (more corrupt) is associated with reduced FDI inflows of approximately 1-1.8 billion US dollar.

Table 4.4. FDI Inflows and Corruption: Latin America and the Caribbean

	Dependent variable: FDI inflows in Latin America and the Caribbean				
	Model 1	Model 2	Model 3	Model 4	Model 5
Corruption	-1179.878 (525.212)**	-1015.54 (537.425)**	-1092.352 (556.167)**	-555.638 (446.314)	450.999 (534.938)
GDP per capita	1.412 (0.586)***	1.347 (0.587)**	1.424 (0.604)***	0.412 (0.491)	-0.419 (0.543)
Exports per capita	3.119 (1.151)***	3.060 (1.147)***	2.863 (1.204)***	1.499 (0.969)	0.504 (0.992)
Population (per 1000 persons)	0.207 (0.015)***	0.206 (0.015)***	0.205 (0.015)***	0.079 (0.017)***	0.106 (0.019)***
Labor productivity	-0.587 (0.192)***	-0.556 (0.192)***	-0.584 (0.200)***	-0.241 (0.163)	0.023 (0.178)
Inflation		-69.690 (52.912)	-68.023 (52.964)	-16.324 (42.510)	-28.933 (41.538)
Investment			100.783 (189.864)	-113.612 (152.748)	-110.395 (148.597)
Past FDI inflows				0.739 (0.072)***	0.670 (0.073)***
Civil liberties					2822.957 (876.338)***
Intercept	9221.731 (4440.743)**	8737.731 (4435.094)**	7589.975 (4931.038)	6884.505 (3930.365)	-14777.2 (7735.485)**
R ²	0.6686	0.6695	0.6697	0.8125	0.8193
R ² -adjusted	0.6322	0.6310	0.6289	0.7880	0.7945
N	183	183	183	183	183

Brazil has led its South American neighbors in foreign direct investment as companies from the U.S. and other developed countries made some investments there. NAFTA expansion brings maquiladora plants, locating just south of the Mexico-U.S. border, into play. Maquiladoras benefit Mexican workers and U.S. producers as production takes place at much lower cost. Costa Rica has been successful in attracting high-technology companies, including Intel, to build production facilities there. Latin American countries realize that corruption deters FDI; therefore they have been putting extra measures into place to curb corruption. For example, all South American countries have now adopted at least one of the prevailing anti-corruption conventions, such as the Inter-American Convention against Corruption, the United Nations Convention against Corruption and the Organisation for Economic Cooperation and Development Convention against Transnational Bribery. Some countries went even farther. They passed legislation and established a special agency to combat corruption. For instance, Chile, which is the least corrupt country in Latin America, passed the Criminal Responsibility of Legal Persons for the Crimes of Money Laundering, Financing of Terrorism, and Offences of Bribery in December 2009. The law criminalizes bribery of Chilean and foreign public officials. Colombia passed an Anti Corruption Law in 2011 that mandates the creation of a new agency tasked with developing anti corruption policies and monitoring their effectiveness.

GDP per capita is significant in all specifications except model 4 and 5. FDI in Latin America is mostly for development of new markets. Large and growing markets in Brazil and Argentina provide a reason for market expansion. Exports per capita are significant in three models since some FDI to Latin America is for labor efficiency, such as the case of maquiladoras in Mexico. Some are for resource seeking, for instance FDI to Venezuela, Ecuador and Bolivia. Although Brazil is a potential destination for market-seeking FDI, it also attracts export -

platform FDI, especially in manufacturing. Venezuela has large oil deposits, and consequently its economy is dominated by the petroleum sector, which accounts for approximately a third of its GDP and about eighty percent of exports.

Population, which accounts for the difference in country size, is significant in all models. Population may secondly measure market size or availability of labor, which is a crucial factor in market seeking FDI or efficiency seeking FDI. Labor productivity is significant but is off the expected sign in the first-three specifications. Increasing productivity makes higher wages, which leads to increasing production costs. MNCs are assumed to choose locations with lower labor costs, *ceteris paribus*. Model 2 and afterward adds an inflation rate variable. The effect is not significant. FDI was coming in to Latin America and the Caribbean despite the low inflation rate in Chile, the moderate inflation level in Brazil, and the high inflation rate in Venezuela. Investment is added to model 3 and subsequent models. It is not significant in all models. Private investment does not seem to crowd in or crowd out FDI inflows. The dismantling of governmental barriers to foreign investment in the region during 1990s leads to expansion of FDI flows to Latin America. Almost every Latin American country, from Argentina to Mexico, has undergone a major liberalization of its regulations concerning foreign investment. Liberalization of restrictions on FDI, which allows for greater ownership of foreign shares or abolishment of FDI ceilings, has made the contribution of private investment less significant. The past FDI inflows variable is added to model 4 and afterward. The coefficients are always positive and significant. It seems that agglomeration effect is one of the main motives behind FDI expansion. Model 5 takes into account the civil liberties variable. The coefficient is positive and significant. It seems that foreign investors considered a strong rule of law and an independent judiciary as a salient factor affecting their decision to invest in Latin America and the Caribbean.

4.5.3. Asia and Oceania

Asia and Oceania captured the greatest share of FDI among developing countries during 1996-2010. Their export-led growth, which is based on pegged exchange rates and resistance to pressures for revaluation to strengthen current accounts as well as liberalization of trade and investment have attracted MNCs to do business there. China, Hong Kong, Singapore and Indonesia are at the top of the list for investment destinations. Hong Kong and Singapore are vital shipping and processing centers. They are importing goods, processing them and then exporting the final product to other countries. Hong Kong and Singapore, along with Taiwan and South Korea are often called the Asian Tigers because of their impressive growth. China and Indonesia have huge populations, which is an ideal situation for market seeking FDI or efficiency-seeking FDI.

The results of the regressions for Asia and Oceania countries are presented in Table 4.5. There are no correlations between corruption and FDI in all specifications but model 3. FDI still poured in regardless the level of corruption. China has been ranked as one of the most corrupt countries in the world. However, China has experienced a sharp increase in FDI inflows since the late 1990s and is expected to be the most favored location for FDI in both the short and medium term (UNCTAD 2011). The former president of Indonesia, Suharto, is called “Mr. Ten Percent” because paying a 10% commission to his family/crony/inner circle would secure the deal in Indonesia (Wei 2000: 1). It is argued that due to this 10% rule, Indonesia could maintain stable economic growth.

Singapore and Hong Kong ranked among the least corrupt countries in the world, not just in Asia. Both countries have been attracting large FDI inflows. Their strategic location as a trade hub for Southeast Asia (Singapore) or stronger ties to mainland China (Hong Kong) contribute to

these inflows. However, both countries have strong measures to contain corruption. Both maintain one strong independent anti corruption agency that is not tampered with by politicians in power or the police force. To curb corruption, the salaries of government officials in Singapore and Hong Kong are well above that of their neighbors. In Hong Kong, the legal precedent for someone accused of corruption is “guilty until proven innocent” (Klitgaard 1988; UNDP 1997). In Singapore, to reduce corrupt incentives, the government gives officials a stake in their job through high wages, bonuses and favorable working conditions. The objective is to keep compensation packages lined up with private sector alternatives (Klitgaard 1988).

Table 4.5. FDI Inflows and Corruption: Asia and Oceania

	Dependent variable: FDI inflows in Asia and Oceania				
	Model 1	Model 2	Model 3	Model 4	Model 5
Corruption	2967.889 (2039.061)	2968.358 (2039.214)	3817.773 (2042.644)*	674.872 (967.836)	694.769 (973.434)
GDP per capita	-0.235 (0.565)	-0.236 (0.567)	-0.032 (0.566)	0.029 (0.266)	0.021 (0.268)
Exports per capita	0.506 (0.281)*	0.506 (0.281)*	0.494 (0.277)***	0.089 (0.131)	0.090 (0.131)
Population (per 1000 persons)	0.044 (0.005)***	0.044 (0.005)***	0.037 (0.006)***	0.005 (0.003)*	0.005 (0.003)*
Labor productivity	0.770 (0.192)***	0.770 (0.209)***	0.746 (0.206)***	0.056 (0.1009)	0.061 (0.103)
Inflation		-2.805 (150.290)	40.140 (149.327)	0.765 (70.247)	0.278 (70.288)
Investment			709.211 (297.339)***	112.529 (141.607)	111.836 (141.641)
Past FDI inflows				0.939 (0.035)***	0.938 (0.035)***
Civil liberties					-127.9507 (675.446)
Intercept	-26097.800 (14934.250)*	-26072.460 (14995.810)*	-48700.500 (17571.980)***	-6900.020 (8410.421)	-6584.985 (8572.543)
R ²	0.3892	0.3896	0.3984	0.8689	0.8694
R ² -adjusted	0.3298	0.3266	0.3326	0.8537	0.8535
N	204	204	204	204	204

One seemingly contradictory result is the zero impact of GDP per capita on FDI inflows in all models. This seems counterintuitive because countries with higher purchasing power are

assumed to be more attractive to market-seeking investors. However, if we take a look at exports per capita and labor productivity (both are positive and significant in three models) and population (always significantly positive at the standard levels), we may conclude that most of the FDI coming to Asia is of the efficiency seeking type. Foreign investors set up production facilities in Indonesia, China, or Vietnam and then export the products internationally via Singapore, Hong Kong or Shanghai. Apple's iPod sold in the U.S. is assembled in China, but the company outsources the whole manufacture of iPod to a large number of Asian companies, such as Asustek, Inventec Appliances, and Foxconn (Feenstra and Taylor 2012). Those companies make final assembly from 451 parts from all over the world that go into the iPod (ibid).

The production of the iPhone is mostly done outside of the U.S. It involves nine companies, which are located in China, South Korea, Taiwan, Japan, Germany and the U.S. (Xing and Detert 2010). The major producers and suppliers of iPhone parts and components include some companies from East Asia such as Toshiba, Samsung, Infineon and Murata. All iPhone parts and components produced by these companies are shipped to Foxconn, a Taiwanese firm located in Shenzhen, China. As the sole iPhone assembly center, China first imports all of the components then assembles the final products and ships them to the U.S. and the rest of the world.

Moreover, an article in *Collegian Magazine* September 12, 2012 mentions that when Apple had to make a last minute screen redesign for iPhone, they counted on their contractor in China to get the job done on time. The contractor then deployed factory workers from the factory dormitories to immediately begin putting the new screen onto iPhones in 12-hour shifts with nothing but a biscuit and a cup of tea. All those activities cannot be carried out in U.S. or other developed countries because there are laws prohibiting overwork, underpay and worker

exploitation. According to Apple executives in the same article, going overseas is their only alternative due to speed, flexibility, work capabilities and diligence of foreign workers. The cost reduction is also huge because of low labor costs and efficient supply chains that can manage different parts and components from all over the world.

Model 2 and afterward add inflation. The coefficient of inflation itself is not significant. FDI still flew to Asia despite high inflation in Turkey, moderate inflation in India, Pakistan and Indonesia, or relatively low inflation in the rest of the region. When we include investment in model 3, the investment coefficient is very significant and has the correct sign. Private domestic investment is sometimes needed to supplement foreign direct financing. The reason is that the host country government usually does not let go of the ownership of strategic industries, especially if the defense and telecommunication industries could end up wholly owned by foreign investors. However, it seems that more private investment creates more opportunity for government officials to engage in rent seeking behavior as the corruption coefficient is now positive and significant. Bribes might be needed to speed up the bureaucratic process to get legal permission for establishing production facilities or for obtaining services that are needed. Health-, fire-, and safety- inspections of new production facilities may also create opportunities for new bribes. Bribes might be paid to import capital goods from overseas or to expedite the customs clearance process. Bribes might be demanded to gain access to publicly funded projects. Apparently, corruption acts as a helping hand and greases the wheels of commerce for FDI inflows after taking into account private domestic investment.

Model 4 takes pas FDI inflows into account. The coefficient is positive and significant. It seems that higher concentration of FDI has a tendency to attract more FDI. Model 5 completes

the specification by taking civil liberties variable into account, nonetheless the coefficient is not significant. Higher or lower civil liberties do not affect FDI inflows in Asia and Oceania.

4.5.4. Southeast Europe and the CIS

The fall of the Soviet Union put large group of countries into the economic category of “transition economies” as they shifted from a command economy to free markets, from communism to democracy and from being closed to open for foreign investors. This meant that public goods had to be privatized, a new government would introduce new rules and new legislation and there were new opportunities for investors and entrepreneurs (King 2003). Starting in the 1990’s, the former communist bloc countries considered privatization of public companies as a means for economic development due to the possibility of increasing efficiency. However, this massive privatization also created opportunities for rent seeking behavior. Corruption in this European area has turned out to be among the worst in the world as these countries increased their openness and participation in international communities and organizations. The average corruption level (higher score is more corruption) for countries included in the sample during 1996-2010 is 7.2, higher than that of Asia and Oceania which has score of 5.6.

FDI inflows to the CIS have been mainly of the resource seeking type. Countries rich in natural resources, such as Russia and Kazakhstan, with oil-related industries, have been gaining a large chunk of FDI coming to the region over time. Recently, foreign investors are also attracted to the fast-growing local consumer market, especially in Russian where flows rose by 13 percent to \$41 billion in 2010 (UNCTAD 2011). On the other hand, Southeast Europe has been attracting

only a small proportion of FDI. FDI has even dropped sharply for the third consecutive year, due partly to sluggish investment from EU countries (ibid).

Table 4.6. FDI Inflows and Corruption: Southeast Europe and the CIS

	Dependent variable: FDI inflows in Southeast Europe and the CIS				
	Model 1	Model 2	Model 3	Model 4	Model 5
Corruption	5246.422 (5032.270)	7442.719 (5176.544)	7529.179 (5268.141)	3664.085 (3310.896)	3727.693 (3306.719)
GDP per capita	-2.301 (6.030)	-5.098 (6.232)	-5.288 (6.592)	-4.202 (4.128)	-3.222 (4.404)
Exports per capita	7.310 (14.271)	14.130 (14.788)	14.435 (15.185)	10.169 (9.512)	9.401 (9.573)
Population (per 1000 persons)	0.383 (0.063)***	0.373 (0.063)***	0.371 (0.067)***	0.110 (0.046)**	0.107 (0.046)**
Labor productivity	1.689 (0.736)**	1.570 (0.732)**	1.612 (0.867)*	0.637 (0.548)	0.504 (0.586)
Inflation		-122.753 (78.932)	-123.6152 (79.532)	-61.489 (50.009)	-106.395 (78.640)
Investment			59.665 (675.622)	-257.724 (423.247)	-73.361 (53.351)
Past FDI inflows				0.813 (0.061)***	0.810 (0.061)***
Civil liberties					-1130.623 (1792.086)
Intercept	-62774.340 (38213.320)*	-74732.630 (38591.540)**	-74323.830 (38866.890)**	-27664.300 (24582.880)	-23836.390 (25279.380)
R ²	0.5277	0.5291	0.5508	0.8325	0.8358
R ² -adjusted	0.4391	0.4349	0.4552	0.7974	0.7965
N	115	115	115	115	115

The results of the regressions for determinants of FDI inflows in Southeast Europe and the CIS are shown in Table 4.6. The first thing to note is that the classification of developing countries follows UNCTAD, which excludes Southeast European countries that already became new European Union members, such as Czech Republic, Hungary, and Poland. Due to availability of data, countries included in the sample are: Albania, Croatia, Macedonia, Armenia, Belarus, Georgia, Kazakhstan, Moldova, Russian Federation, Ukraine, and Uzbekistan. In all models, the coefficient of corruption is never significant. Corruption does not seem to affect FDI

inflows. The results are parallel with those of King (2003), who has done regressions for transition economies for the years 1992-2000. She did regressions of FDI inflows on several explanatory variables, including corruption (additional payments to get things done) from the World Bank and perceptions of corruption from Transparency International. The coefficients of corruption, corruption squared, perceptions of corruption, perceptions of corruption squared have never been significant. She states that the indicators for corruption and perceptions of corruption did not remain significant when combined with the traditional determinants due to lack of information and difficulty in measuring corruption. The large sample analysis does not capture the effects of corruption on FDI, nor can it adequately separate the types of corruption.

Abed and Davoodi (2000) did not find the relationship to be significant either for a sample of 25 transition economies in 1994-1998. Although the structural index is significant in the panel data, the corruption variable is not significant in either panel and cross sectional regressions when the first variable is included. Those previous results perhaps can be attributed to different types of corruption. Cuervo-Cazurra (2008) argues that it is not the level but rather the type of corruption that influences FDI in transition economies. Pervasive corruption, or corruption that is widely present, acts as a deterrent to FDI because it raises the known costs of investing, *ceteris paribus*. On the other hand, arbitrary corruption, or corruption that is uncertain, does not have such a discouraging influence since it becomes part of the uncertainty of operating in transition economies. Arbitrary corruption only creates higher uncertainty in the return on investment, uncertainty that is already present in transition economies, because transition countries have unclear rules to govern business operations. In transition economies, investors prefer to deal with arbitrary corruption than pervasive corruption. An investor deciding to invest in a transition economy must be well prepared to deal with the uncertainty created by poorly

developed institutions. It may also need to be ready to deal with the additional uncertainty created by arbitrary corruption (ibid).

For model 1, the coefficients of population and labor productivity are positive and significant, but the coefficients of GDP per capita and exports per capita are not. It seems that the region does not attract FDI inflows on the basis of market size. However, the positive effects of population and labor productivity may imply labor efficiency seeking FDI. There are limitations on labor movement from low wage countries to high wage countries within Europe. Even within old members of the European Union and new members of the European Union there is limited labor mobility. Germany and Austria, countries that border some of the new member countries, pleaded for a seven-year moratorium on allowing labor mobility from the new members. However, the limitations on migration out of low wage countries in transition economies and the CIS open up an opportunity to export products from the region. Former East Germany has traditional ties with some transition countries in terms of culture, language, tradition and economic integration. The reunification of Germany has not caused these ties to be completely lost. We might expect lower transactions costs for German firms operating in the transition economies.

Model 2 and afterward add inflation to the model. However, the coefficient is not significant. The relatively high inflation all over the region has left foreign investors in no position to circumvent it. They just have to admit that high inflation is a characteristic of the region. The other explanatory variables do not change in significances. Model 3 and subsequent models take investment into account. It seems that there is no correlation between investment and FDI inflows. Heavy privatization and investment deregulation have made domestic investment less important as foreign capital takes part in buying previously state-owned

companies. For example, Russia's spontaneous privatization in the oil, gas, coal and diamond sectors has only made a few people filthy rich. The robber barons did not have enough money in the first place to buy the previously state-owned companies. They borrow money from the government, buy a state-owned company, and then sell some of their stakes in a new acquired company to foreign buyers at high price. Next, they pay back the government from the proceeds of the sale, while still having left over profit and maintaining significant stakes in the company. It is a foolproof money making scheme. Of course, they need to be in the inner circle of the official who deals out the firms based on personal interests and relationships. In this type of allocation, the firms were not given out or sold to the best bidder or to the best person for the job. The other independent variables do not change much in terms of their significance, although labor productivity becomes less significant since the FDI is now more for resource seeking than for labor efficiency seeking. Past FDI inflows are added to model 4 and afterward. The coefficient is positive and significant. Agglomeration is considered to be an important determinant of FDI in Southeast Europe and the CIS. Model 5 takes civil liberties variable into account, however the coefficient is not significant.

Overall, the hypothesis that corruption could be either deleterious or beneficial for FDI inflows is still legitimate, not necessarily invalid, in spite of some odd coefficients and lack of statistical significances for some explanatory variables. I believe that they are caused by other variables at work, but that we have failed to take into account in our model due to data availability. The other explanatory variables that also shed some light that factors influencing FDI inflows are varied among group of countries. The motives of FDI, whether it is market seeking, resource seeking or labor efficiency seeking seem to affect the significance of the different explanatory variables.

Chapter 5

The Determinants of Corruption

Corruption is the abuse of public authority and discretion for private gain. No country or region in the world is free from the damages of public sector corruption (Transparency International 2011). Corruption occurs in all countries whether a country is a developed or a developing one. The difference is in the magnitude. Corruption is the single greatest obstacle to economic and social development because it undermines development by distorting the rule of law and weakening the institutional foundation on which economic growth depends (World Bank 1997). Transparency International (2009) considers corruption as "... one of the greatest challenges of the contemporary world. It undermines good government, fundamentally distorts public policy, leads to the misallocation of resources, harms the private sector and private sector development and particularly hurts the poor."

This chapter discusses the determinants of corruption. The perceived corruption level in host countries will be treated as being endogenous. Variation in corruption levels across countries is argued to be due mainly to differences in economic factors and institutional quality. In assessing the level of economic development, I focus on rate of growth of GDP. As the incentive to engage in corrupt practices increases with the availability of rents, I utilize government consumption expenditures per capita, openness and endowment of natural resources. Then we add other institutional variables gradually, starting with economic freedom, civil rights and level of democracy³⁴. The discussion is elaborated upon based on region and whether it is a

³⁴ Initially, I also wanted to include a political rights variable. Political rights are based on an evaluation of electoral process, political pluralism and participation and functioning of government. However civil and political liberties typically move in tandem (there is indeed high collinearity between them). There is also somewhat high collinearity between the political rights variable and the level of democracy variables. Thus, I opted to drop the political rights variable, but kept the civil rights and level of democracy variables.

group of developed or developing countries. Next, we consider what happened in regions of developing countries, as corruption seems to be more pervasive in developing countries.

We will firstly examine the determinants of corruption based on economic variables only.

The benchmark corruption equation in a linear form, with a constant term, is as follows:

$$\text{Corruption}_{i,t} = \beta_1 + \beta_2 \text{GDP growth rate}_{i,t-1} + \beta_3 \text{Openness}_{i,t-1} + \beta_4 \text{Government expenditures}_{i,t-1} + \beta_5 \text{Natural resources}_{i,t-1} + u_{i,t} \dots\dots\dots (17)$$

where *i* is the country subscript, *t* is the time subscript, β_s are parameters to be estimated and $u_{i,t}$ denotes the disturbance term. All explanatory variables (except dummies) are lagged one year to avoid simultaneity with the dependent variable and endogeneity problems associated with the causal relationship between corruption and some of the right hand variables (Sun, Tong, and Yu 2002; Wooldridge 2002: 51; Hayashi 2000: 139).

Institutional variables will be added to the benchmark model gradually. The first institutional variable to be included is economic freedom, which broadly measures the ability of citizens and companies within a country to carry out economic activities without being obstructed by the state. A negative correlation between economic freedom and corruption is anticipated. More economic freedom is expected to reduce corruption.

The second institutional variable is civil liberties. It is argued that more civil liberties lead to lower corruption because civil liberties impose transparency and provide checks and balances to the government system. Thus, more civil liberties increase the ability of civil society to monitor and legally limit government officials from engaging in rent seeking behavior. The index for civil liberties is from 1 to 7, with 1 representing the most free and 7 is the least free. To avoid confusion, the index is rescaled, so 1 means the least free and 7 represents the most free.

After rescaling, it is expected that there will be a negative association between civil liberties and corruption i.e. the less free a country is (low score, after rescaling), the more corruption prevails.

The last institutional variable to be taken into account is the level of democracy. Political competition, through democratic elections, brings on stronger public pressure against corruption. Democracy may also affect corruption because the risk of being caught and punished is higher in a well-developed democratic society with a free press, rigorous citizen participation, and competitive elections (Treisman 2000). A regime that has frequent elections, political competition, active and well-organized opposition forces, an independent legislature and judiciary, free media and liberty of expression is expected to create more limits on the scope and frequency of corruption than a regime that does not have them (Elliot 1997: 11).

Just like the FDI equation for developed and developing countries, I choose to run the regression through the origin since I am more interested in the mean value of variables in developed and developing countries than the differential value between them. I introduce as many dummy variables as the number of categories of that variable but without including a constant term, so we do not fall into perfect collinearity. This method reports coefficients that are easy to interpret since allowing a dummy variable for each category, but with the intercept suppressed, we directly obtain the mean values of the various categories (Gujarati 2004). Our benchmark corruption equation for developed and developing countries in linear form, thus becomes as follows:

$$\begin{aligned} \text{Corruption}_{i,t} = & \beta_1 \text{DevelopedGDPgrowthrate}_{i,t-1} + \beta_2 \text{DevelopingGDPgrowthrate}_{i,t-1} + \\ & \beta_3 \text{DevelopedOpenness}_{i,t-1} + \beta_4 \text{DevelopingOpenness}_{i,t-1} + \\ & \beta_5 \text{DevelopedGovernmentexpenditures}_{i,t-1} + \\ & \beta_6 \text{DevelopingGovernmentexpenditures}_{i,t-1} + \beta_7 \text{Developednaturalresources}_{i,t-1} + \\ & \beta_8 \text{Developingnaturalresources}_{i,t-1} + \beta_9 \text{Developed}_{i,t} + \beta_{10} \text{Developing}_{i,t} + u_{i,t} \dots (18) \end{aligned}$$

The full regression results are shown in Table 5.1. The discussions for developed and developing economies follow in subsequent sections.

Table 5.1. Determinants of Corruption: Developed and Developing Countries

	Dependent variable: Corruption			
	Model 1	Model 2	Model 3	Model 4
Developed GDP growth rate	-0.054 (0.024)**	-0.075 (0.020)***	-0.069 (0.019)***	-0.066 (0.019)***
Developing GDP growth rate	-0.012 (0.012)	-0.020 (0.010)**	-0.020 (0.009)**	-0.018 (0.009)*
Developed government exp. per capita (US\$000)	-0.560 (0.034)***	-0.456 (0.029)***	-0.484 (0.028)***	-0.484 (0.028)***
Developing government exp. per capita (US\$000)	-1.020 (0.076)***	-0.600 (0.071)***	-0.608 (0.069)***	-0.583 (0.069)***
Developed openness	0.001 (0.002)	0.002 (0.001)	0.006 (0.001)***	0.005 (0.001)***
Developing openness	-0.009 (0.001)***	-0.006 (0.001)***	-0.007 (0.001)***	-0.007 (0.001)***
Developed natural resources	-0.053 (0.020)***	-0.037 (0.016)**	-0.001 (0.016)	0.003 (0.016)
Developing natural resources	0.031 (0.005)***	0.016 (0.004)***	0.015 (0.004)***	0.015 (0.004)***
Developed economic freedom		-0.120 (0.008)***	-0.098 (0.008)***	-0.092 (0.008)***
Developing economic freedom		-0.068 (0.005)***	-0.063 (0.005)***	-0.063 (0.005)***
Developed civil liberties			-0.581 (0.068)***	-0.590 (0.067)***
Developing civil liberties			-0.081 (0.030)***	-0.144 (0.039)***
Developed democracy				-0.507 (0.135)***
Developing democracy				0.018 (0.007)***
Developed	5.221 (0.218)***	13.035 (0.528)***	15.060 (0.560)***	25.292 (2.785)***
Developing	7.473 (0.091)***	11.244 (0.306)***	11.317 (0.295)***	11.321 (0.292)***
R ²	0.7928	0.8571	0.8702	0.8727
R ² -adjusted	0.7880	0.8534	0.8666	0.8689
N	975	967	967	967

5.1. Developed and developing countries: results and discussions

5.1.1. Model 1

Four different models of the determinants of corruption are estimated. For the benchmark model (model 1), I only include economic variables: GDP growth rate, government consumption expenditure per capita, openness and natural resources endowment. All the explanatory variables are lagged one year to avoid simultaneity with the dependent variable. The model explains the

determinants of corruption relatively well. The dummies for developed and developing countries are also significant.

GDP growth rate. The coefficient of the GDP growth rate is negative and significant for developed countries. Countries with strong economic performance are indeed experiencing lower levels of corruption. As the goal of economic development is to raise the standard of living and well being of the citizens within a country; therefore, anything that increases the chances of improving standard of living may boost economic growth and thus lower corruption (Gyimah-Brempong 2001). Strong economic performance also alters the incentives for public officers to engage in corrupt activities by reducing the value of expected financial gains and increasing the costs of penalty (Lipset and Lenz 2000).

There is a strong association between economic performance and government performance because government performance improves as better institutions can be afforded (North 1990). La Porta et al. (1999) also find that countries that are less developed, close to the equator, ethnolinguistically heterogeneous, use French or socialist law and have high Catholic or Muslim populations tend to have inferior measures of government performance, including higher corruption.

However, the coefficient of GDP growth is not significant for developing countries. It seems that the effect of the GDP growth rate on corruption is outweighed by the effects of other economic explanatory variables— government expenditure, openness and natural resource endowment— on corruption. Coefficients for all these variables are significant at the 1 percent level. We will include several institutional variables to see their direct effect on corruption and indirect effect on GDP growth.

Government expenditures per capita. The coefficients of government consumption expenditure per capita for both developed and developing countries are negative and significant. More government expenditure leads to less corruption. Perhaps, some of the government expenditure is directed toward curbing corruption, for instance by giving more effort in improving the quality of human capital through education. Education is argued to be a strong measure to control corruption because more educated individuals pay more attention to corruption and are better able to take action against it (Glaeser and Saks 2006: 1056). Some of the government expenditure could also be spent on increasing the salaries of public officials. Lindbeck (1998) attributes the low corruption in Sweden is partly to the fact that high-level administrators earned 12–15 times the salary of an average industrial worker. Low corruption rates in Hong Kong and Singapore perhaps are partly because of high salaries of public officials in those countries. In an effort to contain corruption, the wages of government officers in Singapore and Hong Kong are leveled with those in the private sector.

The negative effect of government expenditure on corruption confirms the results of Fisman and Gatti (2002) and Bonaglia et al. (2001). Fisman and Gatti (2002) find that government expenditure is consistently associated with lower measured corruption across countries. Their result is highly statistically significant, is not strongly affected by outlier countries and is robust to a wide range of specifications, including all of those that have been used in the recent cross-country literature on corruption. Additionally, Bonaglia et al. (2001: 23) argue that higher public officials' salaries should discourage corruption. This seems to contradict Tanzi and Davoodi (1998, 1997), who argue that large, complex and expensive government projects are favored by corrupt public officials because public investment can be simply manipulated by powerful politicians or bureaucrats and often gives rise to the payment of higher

kickbacks by those who undertake the project. However, some of the least corrupt countries in the world, such as Denmark, Finland, the Netherlands and Sweden have some of the largest public sectors, as measured by shares of public spending in GDP. Thus, the solution to the problem of corruption may not be as simple as reducing public spending; instead the way the state operates and carries out its functions is more important than the size of public sector activity as measured in the traditional way (Tanzi 1998).

Openness. The openness coefficient is not significant for developed countries but significant and negative for developing countries. The insignificant coefficient for developed countries is perhaps due to the fact that this variable, to a large extent, depends on the size of a country, measured for instance by the size of the public sector or total population. This is because large countries can compensate for a low ratio of imports and exports to GDP through more competition within their own country (Lambsdorff 1999).

For developing countries, it is confirmed that more open economies are less corrupt than their more closed counterparts (Fisman and Gatti 2002, Bonaglia et al. 2001, Wei 2000, Ades and Di Tella 1999). The incentive to engage in corrupt practices increases with the availability of rents (Ades and Di Tella 1999, 1997a, and 1997b). A domestic market with more foreign competition (higher import and export volumes) will have decreased rents enjoyed by domestic firms, thus lowering corruption. Import and export tariffs are also more attractive in developing countries because developing countries do not often have any other significant and reliable source of government revenue. Those tariffs are easy to collect as well, since every country has customs agents at major ports that check goods that cross borders.

Moreover, in developing countries, import and export regulations are sometimes difficult to understand and can be interpreted in different ways. Trade barriers may favor inefficient local

firms rather than more efficient foreign ones and this may lead to corrupt practices. For instance, high import tariffs and other restrictions may exist for the purpose of protecting inefficient infant domestic industries. The presence of such restrictions—for example the necessary licenses to import and export—offers an opportunity to bribe (Tanzi 1998). Customs agents also have discretion over important decisions, such as the percentage of goods to be checked, the formal import and export documents required, the time needed to clear customs, or selection of customs audits. More open economies with small tariff restrictions, minimal intervention at ports, transparent criteria for customs audits, both for exports and imports, would produce less contact between importers/exporters and customs agents, so that less rent seeking behavior would be expected.

Natural resources. Natural resource variables are both significant at 1 percent levels for developed and developing countries, although the sign is different. For developed countries, the coefficient is negative and significant. This means that a higher natural resource contribution to GDP leads to lower corruption. The small share of natural resources and transparent and well regulated allocation of natural resources in developed countries make it not worthwhile to bribe government officials who distribute the rights to exploit these resources. The average share of natural resources contribution to GDP for developed countries during the period 1996-2010 was only 1.57 percent. This is relatively low compared to that of developing countries, where that number amounted to 10.25 percent or 10.63 percent (excluding Hong Kong and Singapore) for the same time period.

For developing countries, larger endowments of valuable natural resources offer greater potential gain to public officials who distribute rights to exploit such resources. This is the same result as Herzfeld and Weiss (2003), Tavaréz (2003) and Bonaglia et al. (2001). Some rents are

indeed 'natural' instead of artificially created, but still stimulate a corrupt competition over their allocation (Treisman 2000). Perhaps dependence on natural resources is characteristic of poorer countries and that poverty increases corruption (ibid). Furthermore, because such endowments create rents, they therefore present the phenomenon of rents-related corruption that is usually found in natural-resource-abundant countries, like in most developing countries (Tornell and Lane 1998).

5.1.2. Model 2

Economic freedom is added to the benchmark model (model 1) and we call it model 2. Now, model 2 consists of the GDP growth rate, government consumption expenditure per capita, openness, natural resource endowment and economic freedom. One government activity suspected of promoting corruption is restriction on economic freedom (Lambsdorff 1999). By restricting economic freedom the government discourages competition. Competition is generally assumed to reduce the rents of economic activities and therefore lessen the motive of public officials to seize part of these rents by means of extortion and corruption (ibid).

Both developed and developing countries economic freedom coefficients are significant and of the expected signs, meaning more economic freedom leads to lower corruption. From a broader perspective, the economic freedom variable deals with the impact of government regulation at large on corruption. In a simple way, full economic freedom means the absence of regulation. A higher level of economic freedom suggests greater opportunities for business transactions coupled with the legal protection of property.

Economies with the greatest economic freedom operate with a minimal level of government intervention, counting upon markets to respond to the basic economic questions of

what to produce, how to produce, how much to produce and for whom to produce (Karabegovic et al. 2003). The more the government involves itself in markets, the more the level of economic freedom goes down. Government involvement in the market either acting as a third party regulator or as the primary buyer in the market creates opportunities for corruption. A burdensome regulatory environment increases the opportunities for individuals and firms to bypass these regulations through various forms of bribery (Rose-Ackerman 1999).

Adding an economic freedom variable turns the impact of GDP growth in developing countries from negative but not significant into negative and significant. Better economic performance now does reduce corruption. As corruption hurts the poor more than the rich, progress in economic development does help developing countries lower the level of corruption (Husted 1999). The rest of the explanatory variables do not change in terms of their significance. Model 2 explains the determinants of corruption better than model 1 as there is a large increase in adjusted r-squared. Institutional variables, not just economic variables, are indeed important explaining levels of corruption.

5.1.3. Model 3

Economic freedom and civil liberties are added to the benchmark model. The new model is called model 3, which is now composed of the GDP growth rate, government consumption expenditure per capita, openness, natural resource endowment, economic freedom and civil liberties. Economic freedom variables' coefficients are negative and significant for both developed and developing countries. More economic freedom does lead to less corruption.

The civil liberties variable evaluates freedom of expression and belief, associational and organizational rights, rule of law and personal autonomy and individual rights (Freedom House

2011). The numerical rating is from 1 to 7, with 1 representing the most free and 7 the least free. To avoid confusion, the index is rescaled, so that 1 means the least free and 7 represents the most free. After rescaling, it is expected that there will be a negative association between civil liberties and corruption. The less free a country is (a low score, after rescaling), the worse the corruption level is.

The coefficients of civil liberties for both developed and developing countries are negative and significant, meaning that the higher the level of civil liberties in a country, the lower the level of corruption. The major reason why civil liberty reduces corruption is that civil liberties impose transparency and provide checks and balances to the government system. Therefore, they increase the ability of civil society to monitor and legally limit government officials from engaging in rent seeking behavior. The increasing involvement of civil society and non government organizations in the fight against corruption is an undisputed fact, as is their role in increasing awareness of corruption and mobilizing support for policies (Kaufmann 1998). However, such involvement requires the existence of civil society as a partnership or community sharing a common goal of fighting corruption. Civil society should also operate in an environment where civil liberties are safeguarded. Current empirical research shows that countries with better civil liberties are significantly more successful in addressing corruption, even after controlling for other determinants (Emerson 2006; Goel and Nelson 2005; Chowdhury 2004; Kaufmann and Sachs 1998).

Controlling for economic freedom and civil liberties changes the significances of some other independent variables. The impact of the GDP growth rate for developing countries is still negative and now more significant. Robust economic progress does lower the level of corruption. The impact of openness for developed countries changes to significant and positive. This is

somewhat contradictory. Probably, as the size of trade increases, the returns to bypassing regulations increase as well (Glaeser and Saks 2006: 1056). The natural resources coefficient for developed countries switches from negative and significant to negative but not significant. Perhaps this is due to the fact that the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents and forest rents for developed countries are minuscule. Therefore, it is not worthwhile to engage in rent seeking behavior regarding allocation of natural resources.

5.1.4. Model 4

Model 4 adds to the benchmark model the following institutional variables: economic freedom, civil liberties and a democracy variable, which measures political structures and regime change. Economic freedom and civil liberties coefficients are both negative and significant for developed and developing countries. The ore free a country is, in terms of economic freedom and civil rights, the less corruption there would be.

The democracy variable is composed of six components, such as how chief executives are selected, sources of the chief executive's power, constraints on executive authority, political competition, changes centralization and scope of the governing authority and the institutionalization of autocracy or democracy. It is expected that there will be a negative correlation between the level of democracy and corruption. A higher score, which means more democratic, is expected to bring on less corruption.

The coefficients of the democracy variables are very significant both for developed and developing countries. Nonetheless the signs are conflicting. It is negative for developed countries but positive for developing countries. It seems that the hypothesis that democratic institutions are related to better governance, which includes lower corruption, only applies to developed

countries. In developed countries, it seems to be true that more political competition brings on stronger public pressure against corruption, through democratic elections. The strength of the competitive political environment raises the stakes and lowers the likelihood of corruption, thus it can be a check on corruption (Rose-Ackerman 1999). Democracy may also affect corruption because the risk of being caught and punished is high in a well-developed democratic society with a free press, rigorous citizen participation and competitive elections (Treisman 2000). A regime that has frequent elections, political competition, active and well-organized opposition forces, an independent legislature and judiciary, free media and liberty of expression is expected to create more limits on the scope and frequency of corruption than a regime that does not have them (Elliot 1997: 11).

However, in developing countries it seems that the more democratic a country is the more corruption would prevail, *ceteris paribus*. Probably some features of democratic elections create opportunities for corruption. For instance, selecting politicians through party lists can weaken the direct link between voters and politicians, thus diminishing the ability of voters to hold politicians accountable (Kunicova and Rose-Ackerman 2005; Persson and Tabellini 2003). In their study on electoral systems and corruption, Chang and Golden (2004) and Persson et al. (2003) find that under open-list proportional representation, increases in the size of electoral districts give rise to corruption. On the other hand, under closed-list proportional representation arrangements, increases in district size leads to less corruption.

In Indonesia during President Suharto's dictatorship, almost nobody was ever convicted of corruption. Nevertheless, after transitioning to democratic election, it is not uncommon for congressmen/congresswomen in the central government or provinces, cabinet's ministers, governors, mayors, ambassadors, chairman and deputy chairman of Indonesian central bank,

high-ranked police commissioners and other high-ranking public officials to be incarcerated for this reason. Similarly, no customs agents or tax administrators were ever convicted of corruption or abuse of power during President Suharto's dictatorship. Now it is relatively easy to charge customs agents or tax officers with money laundering or taking bribes or other forms of gratification. Several customs agents and tax officers have lost their jobs and been sent to jail. Government officials are now avoiding being the head of large procurement projects (such as construction projects, vehicle procurements and computer and electronic equipment procurements) or the chief of auctions for confiscated goods. The reason is that they could easily be the target of corruption accusations, such as mark-up practices, favorable contracts to certain suppliers and illegal auction arrangements. They deliberately fail themselves when taking the exam required to become a procurement officer which is held by National Planning Agency.

I am not in any way saying that an increased democratic system is beneficial for corruption. The democratic system does essentially lower corruption in Indonesia. Thanks to the democratic system, Indonesia now has an anti corruption agency whose committee members are elected by members of parliament. The salary of government officers, particularly the ones who collect government revenue, has been significantly increased to deter the temptations of corruption. Indonesian customs and tax administrations each have one special center devoted to handling internal affairs. There are also powerful internal affairs divisions in each regional customs house and tax office. What is needed here is changing people's mindset about corruption through education and bold measures. In some societies or agencies, taking bribes is considered acceptable. Perhaps, they think of it as service tips, which in my opinion is simply wrong. Bribes involve reciprocal obligations, whereas customers tip sales people for excellent service. Government officers are not supposed to take tips because they are already paid and get

some allowances to compensate for their service. For example, customs officers stationed in some regional customs houses get extra allowances since they have direct and frequent contacts with importers and exporters and provide outstanding service, for instance a 24-hour service for exports, passengers and rush-handling of certain imports, such as newspapers, foodstuffs, fresh flowers, live animals and human remains. This is supposed to deter corruption, so that no one would take bribes or service tips. The same position would be paid less in customs headquarters, for example, as it is basically not a “front line” position. Moreover, In Indonesia, there are barely any private donations or political action committees to support candidates, like in the United States. You bid for public office with your own money or borrow from somebody else or are funded by a businessman or businessmen. When elected officials take office, they often take bribes as payback for what they had spent during the election or give favorable contracts to businessmen that financed the campaign.

Compared to the benchmark model, adding economic freedom, civil liberties, and democracy variables changes the coefficient of developing countries’ GDP growth rate to negative and significant at 10 percent level. Strong economic development lessens the temptation for corrupt behavior. The openness variable coefficient for developed countries is now positive and significant. Perhaps, in some countries, increased trade makes public officials, who grant import and export permits or impose import and export duties, more willing to engage in rent seeking activities. However, the natural resources variable for developed countries becomes insignificant. This could be attributed to the tiny share of natural resource rents to GDP.

5.2. Regions within developing countries category: results and discussions

5.2.1. Africa

Corruption is a pervasive problem in Africa. Transparency International (2010) names Africa as the most corrupt region in the world with Somalia as the most corrupt country on earth. Among the 178 countries surveyed, Sudan, Chad, Burundi, Equatorial Guinea and Angola are at the top of the list of most corrupt countries. Even Botswana, the least corrupt country in Africa, only gained score of 5.8, which is not so superior according to TI's scale that rates corruption on a 10-point scale, zero being the most corrupt. Corruption in Africa varies from high-level political corruption on the scale of millions of dollars to low-level bribes to police officers or customs officials. Political graft sets the largest direct financial cost on a country, whereas petty bribes have a corrosive effect on fundamental institutions and damage public trust in the government (Hanson 2009). We will consider different factors influencing corruption in Africa, starting with economic factors only and then gradually adding institutional variables. The complete regression results are shown in Table 5.2.

Table 5.2. Determinants of Corruption: Africa

	Dependent variable: Corruption in Africa			
	Model 1	Model 2	Model 3	Model 4
GDP growth rate	-0.020 (0.013)	-0.018 (0.013)	-0.017 (0.014)	-0.010 (0.014)
Government expenditures per capita (US\$000)	-4.362 (0.216)***	-4.282 (0.240)***	-4.196 (0.256)***	-4.144 (0.258)***
Openness	-0.008 (0.002)***	-0.008 (0.002)***	-0.009 (0.002)***	-0.009 (0.002)***
Natural resources	-0.003 (0.008)	-0.006 (0.009)	-0.008 (0.009)	-0.010 (0.009)
Economic freedom		-0.007 (0.009)	-0.005 (0.009)	-0.007 (0.009)
Civil liberties			-0.038 (0.040)	-0.095 (0.058)*
Democracy				0.015 (0.011)
Intercept	8.170 (0.138)***	8.576 (0.558)***	8.643 (0.561)***	8.799 (0.569)***
R ²	0.7972	0.7992	0.8035	0.8044
R ² -adjusted	0.7713	0.7718	0.7750	0.7743
N	151	151	151	151

For the benchmark model (model 1), four economic variables are considered: GDP growth rate, government expenditure, openness and natural resource endowment. The coefficient of GDP growth rate is not significant. The performance of the economy does not help or worsen corruption levels in Africa. The moderately robust growth in Northern Africa (Egypt, Morocco, and Tunisia), which can be somewhat attributed to closer proximity to European markets and weak growth in the rest of Africa, particularly in Sub Saharan Africa which has been one of the least developed regions in the world, do not influence corruption levels.

The government expenditures coefficient is negative and significant. Increasing government expenditure does reduce corruption levels in Africa. In the past decade, African governments have made some efforts to fight corruption. In some cases, they have been pushed by international donors that demand transparency and good governance. In most cases, government expenditure is because of domestic pressure to fulfill promises of reform made during an election bid. To fight the different aspects of corruption, many African states have established ombudsmen, auditor generals and parliamentary investigative committees to combat misadministration and corruption. According to *African Governance Report 2009*, Botswana, Uganda, Namibia, Rwanda, Tanzania, Gambia, Zimbabwe, Burkina Faso, Malawi, Lesotho, Senegal, South Africa and Sudan have established ombudsperson offices. Ghana has set up tax audit and legal services divisions to stem tax evasion. Botswana has promoted executive responsibility and accountability and enforced relative openness in economic policymaking, priority setting and national development planning. South Africa and Madagascar have also taken up national anti-corruption strategies and have put in place mechanisms to implement, monitor and report on them. All those efforts need resources, including funding, which came from government spending.

The openness coefficient is negative and significant. More open economies have less corruption. A domestic market with more foreign competition will lower the rents enjoyed by domestic firms, thus decreasing the level of corruption. Moreover, African ports have made significant progress in recent years, with big benefits coming from successful port management partnerships. For example the Port of Durban in South Africa is Africa's busiest general cargo port and home to one of the largest and busiest container terminals in the Southern Hemisphere.

The natural resources variable is not significant. It seems that endowments of oil, natural gas, hard coal, soft coal, other mineral resources and forests do not affect corruption levels in Africa. This seems contradictory until we realize that most African countries do not have the capabilities and resources to extract and handle minerals by themselves. There are usually partnerships between them and European countries, mostly French and British companies— their former colonialists, which have been enjoying rents from natural resources. Furthermore, transporting natural resources from origin countries to world markets requires special vessels. For example, oil and natural gas are carried using tankers and coal is transported by bulk cargo vessels. However, some of the African countries that are rich in valuable natural resources are landlocked, lack natural ports along the coastline and/or do not have rivers that are navigable by ocean-going vessels. Therefore, the largest part of natural resource rents may actually go to land transporters, vessel owners and final port operators — for instance, DP World, which is majority owned by Dubai World of United Arab Emirates, which operates thirteen sea terminals across Africa.

In model 2, the effect of economic freedom is added. African countries have had moderate levels of economic freedom. The average score of the countries included in the sample during 1996-2010 is about 56 out of 100, with 100 being the most free. The economic freedom

coefficient is not significant. Government restrictions seem to be not influencing corruption on a large scale. A burdensome regulatory environment does not affect the opportunities for individuals and firms to bypass these regulations through various forms of bribery. A plausible explanation is that perhaps there is threshold for what is considered corruption. Maybe petty bribes to keep things going on, to expedite paperwork or to keep bad things from happening are not considered corruption. It is just an unavoidable extra cost when dealing with government officials. The other explanatory variables do not change in terms of their significance.

Model 3 adds economic freedom and civil liberties to the benchmark model. The coefficient estimates on civil liberties are not significant meaning that the higher or lower level of civil liberties in a country does not affect the level of corruption. Civil liberty in Africa does not seem to create more transparency and provides checks and balances to the government system. A possible reason is that the ability of civil society to monitor and legally limit government officials from engaging in rent seeking behavior has been largely absent and ineffective due to their uncertain political footing (United Nations 2009). In some countries, which maintain some degree of “civil liberties”, they are vulnerable, fragile and under constant threat of sudden death. For instance, the leaders of the anti corruption movements in Nigeria and Kenya were sidelined or forced out of country. The rest of the independent variables do not change their significance.

Economic freedom, civil liberty and democracy variables are added simultaneously to model 4. The democracy variable itself is not significant, but civil liberty is now negative and significant at the 10 percent level. The pressure of a democratic system does increase the ability of civil society to monitor and legally limit government officials from engaging in rent seeking behavior. If civil liberties variable is a good proxy for the amount of monitoring of government

officials, this offers support for the hypothesis that better monitoring will lead to higher competition, which eventually should lead to lower corruption. The insignificance of the democracy variable perhaps can be attributed to the fact that democracy may lower corruption in some countries, but may actually increase corruption in other countries. If elected executives commit to wide-ranging institutional reforms to provide incentives that maximize the creation of wealth for the citizen population, then democracy may lower corruption. However, if the new leaders engage in opportunistic institutional reforms, which improve their ability to monopolize political power and use state structures to maximize their personal interests and accumulate their private capital then democracy may worsen corruption (Mbaku 2007).

5.2.2. Latin America and the Caribbean

According to Transparency International (2010), the level of corruption differs widely among countries in Latin America. Chile and Uruguay were perceived to be the least corrupt. Chile consistently demonstrates the lowest levels of corruption in the region (score of 7.2, with 10 being the least corrupt), from 178 country surveyed, Uruguay ranks 24th with a score of 6.9. This places Chile and Uruguay in the company of more economically developed countries like Belgium (7.1), the U.S. (7.1) and France (6.8). Never has any other Latin American country really ever come close to matching Chile's and Uruguay's scores. On the other hand, Venezuela has been seen as the most corrupt, placed at 164th with score of 2.0, followed by Paraguay, Haiti, Bolivia and Honduras. Brazil, the region's biggest economy, was roughly in the middle of the pack. . The entire regression result for determinants of corruption in Latin America is presented in Table 5.3.

Table 5.3. Determinants of Corruption: Latin America and the Caribbean

	Dependent variable: Corruption in Latin America and the Caribbean			
	Model 1	Model 2	Model 3	Model 4
GDP growth rate	-0.025 (0.024)	-0.056 (0.020)***	-0.048 (0.019)***	-0.048 (0.019)***
Government expenditures per capita (US\$000)	-1.668 (0.313)***	-1.316 (0.260)***	-0.659 (0.267)***	-0.658 (0.267)***
Openness	-0.017 (0.004)***	-0.001 (0.004)	-0.007 (0.004)**	-0.007 (0.004)**
Natural resources	0.044 (0.009)***	0.010 (0.008)	0.001 (0.008)	0.001 (0.008)
Economic freedom		-0.114 (0.012)***	-0.096 (0.011)***	-0.096 (0.012)***
Civil liberties			-0.530 (0.095)***	-0.530 (0.096)***
Democracy				0.001 (0.010)
Intercept	7.771 (0.292)***	14.264 (0.743)***	15.148 (0.703)***	15.149 (0.714)***
R ²	0.2647	0.5162	0.5786	0.5787
R ² -adjusted	0.1861	0.4611	0.5277	0.5246
N	177	177	177	177

With only economic variables as the explanatory variables, model 1 does not really explain the determinants of corruption well; corruption in Latin America seems to be more of an institutional problem. The performance of the economy does not help or worsen corruption levels in Latin America. Strong growth in Chile and Brazil— the new economic powerhouses, along with Russia, India and China, which sometimes are nicknamed BRIC— with growing demand for goods and services, does not affect corruption levels in Latin America. The relatively low growth in Guatemala and Venezuela does not influence the level of corruption either.

The government expenditures coefficient is negative and significant. Increasing government expenditure does lower corruption. Latin American governments— spurred by fiscal crises, the pressures of globalization and growing expectations created by the democratization process— have made significant efforts to strengthen the institutional capacity of the public sector. International donors, especially the World Bank, have implemented specific anticorruption features in their projects pertaining to public sector management, for example financial decentralization and accountability projects in Bolivia and a judicial reform project in

Guatemala. Integrated financial management systems assisted by the World Bank, were implemented and audit institutions were reinforced in a number of countries to enhance transparency and accountability in public expenditure management (World Bank 1998). Moreover, in order to lower possibilities of fraud and corruption in public procurement of goods and services, many countries are strengthening their laws and procedures relating to procurement and contracting (ibid). A study to build up strategies for preventing and controlling corruption in the Colombian tax and customs administration has also been initiated by the World Bank.

The openness variable is negative and significant. A more open economy does lower corruption as the availability of rents decreases due to increased competition. As Latin American countries amplify their openness and participation in international communities and organizations, such as joining World Trade Organization, they need to make all trade policy and import and export procedures transparent, thus minimizing the incentives to circumvent the regulation. Several countries have also launched extensive efforts to modernize tax and customs administrations in order to improve resource mobilization (ibid).

The natural resources variable is positive and significant. For some Latin American countries, especially those who are endowed by valuable natural resources, such as Venezuela with huge oil deposits or Bolivia with massive natural gas deposits, larger endowments of natural resources seem to offer greater potential gain to public officials engaging in corrupt behavior. Some rents are indeed considered 'natural' rather than artificially created, but still attract a corrupt competition over their distribution. Probably dependence on natural resources is a feature of poorer countries and that poverty increases corruption (Treisman 2000).

The effect of economic freedom is added to model 2. The adjusted r-square increases significantly. The economic freedom coefficient is significant and negative. More economic

freedom means less corruption. The GDP growth rate variable now becomes negative and significant. Higher economic growth does reduce corruption. Government expenditure is still negative and significant. Larger government helps in reducing corruption. It seems that strong economic growth, large government expenditures with prudent and accountable practices, coupled with deregulation help in lowering corruption levels. However, the openness and natural resources variables become insignificant. It looks like the robust effect of the GDP growth rate, government expenditure and economic freedom together on corruption outweigh the openness and natural resources effects.

In Latin America, more economic freedom does lower corruption and numerous restrictions on economic freedom provide opportunities for corruption. Many Latin American countries have carried out major economic policy reforms, involving structural adjustment, economic liberalization and deregulation (World Bank 1998). By removing distortions in economic policy and simplifying regulations these reforms have helped countries in making the transition to a market economy. They have also helped close a number of avenues for corruption. As Rose Ackerman (1999) argues, government intervention in the form of a third party regulator or as the primary buyer in the market creates opportunities for corruption. An excessive regulatory environment increases the opportunities for individuals and firms to get around these regulations through various forms of bribery.

Model 3 adds economic freedom and civil liberties variables to the benchmark model. All explanatory variables are now significant except for natural resources. The GDP growth rate, government expenditures, openness, economic freedom and civil liberty all have negative signs. Good economic performance, targeted and responsible government spending, more competition, less government restriction and the ability of civil society to monitor and legally limit

government officials from engaging in rent seeking behavior, contribute to a lower level of corruption. The natural resources variable does not seem to affect corruption, though.

Civil liberties are very important in the fight against corruption. Without appropriate checks and institutional controls, the executive is prone to abuse power and engage in corrupt acts. In Latin America, social organizations, media and interest groups have been working hard to preserve civil liberties and empower civil society. For example, in Brazil Movimento Mega Nao is a civil movement responding to an invasive cybercrime bill by advocating a civil rights framework for the Internet, including safeguards for free expression and privacy (Rodriguez 2012). In Chile, the NGO Derechos Digitales has promoted more balanced copyright laws. The Center for Studies on Freedom of Expression and Access to Information (CELE) in Argentina has also pioneered research on freedom of expression and privacy issues. Relatively new NGOs, such as the Internet Users Association in Ecuador and Fundación Proceso in Venezuela are also working on privacy in the region. Social media and blogs have also made a significant impact through activism work in several countries throughout the region.

Model 4 adds to the benchmark model the following institutional variables: economic freedom, civil liberties and the democracy variable, which measures the political structures and regime change. GDP growth rate, government expenditure, openness, economic freedom, and civil liberty are all significant and have negative signs. The combination of better economic performance, transparent government spending, more imports and exports, less government intervention and more civil liberty does lower corruption. However, corruption is not influenced by natural resource endowments.

The coefficient for democracy itself is not significant. Liberalization of the political arena and democratization do not provide enough checks on the powers of the executive. Although

political executives are now subjected to periodic elections and civil society organizations and the media have a freer environment for exposing corruption, democracy does not seem to affect the corruption level. This essential issue—why democracy has not contributed more to a reduction in corruption—has been a major research question. Gingerich (2006), Weyland (2006), Whitehead (2002), Geddes and Neto (1999) investigate the causes of corruption in the newly forged democratic institutions in Latin America. They find that the enhancement of presidential powers in the face of the economic crisis, the decentralization of state power, institutional constraints faced by presidents in creating governing coalitions and the rise of neo populist leaders are the main reasons why a democratic system does not bring down corruption.

Furthermore, democracy has enhanced the role, importance and costs of elections and campaigns, thus expanding the opportunities, the need and changing the guise of corruption in this arena (Zovatto 2000; Skidmore 1998). For instance, the open-list, proportional representation system and deeply fragmented party system in Brazil, seems to generate a strong incentive for legislators seeking reelection to build up personal gains by distributing pork and private goods to supporters, partly through corruption (Samuels 2006; Fleischer 2002; Geddes and Neto 1999). On the other hand, the closed-list proportional representation systems in Argentina and Bolivia create collusion between party elites and politicized bureaucrats to use public resources to help the party (Gingerich 2006). Throughout Latin America, patronage seems to have become the dominant component in party and electoral affairs (Rehren 2009).

5.2.3. Asia and Oceania

Just as in Latin America and the Caribbean, corruption levels in Asia and Oceania varies broadly among countries. As the top least corrupt country, there is Singapore. Singapore is actually the least corrupt country in the world with a score of 9.3 (10 being the most corrupt),

tied with Denmark and New Zealand (Transparency International 2010). Hong Kong stands as thirteenth least corrupt country with a score of 8.4. Then there are several relatively corrupt countries: Pakistan (143th), the Philippines (134th), Vietnam (116th) and Indonesia (110th). The other countries are roughly in the middle of the pack. There is also a unique relationship between democracy and corruption in Asia. For instance, Indonesia has been a fairly democratic country over the last decade, yet remains fairly corrupt. However, a low level of democracy does not hold Singapore back from being ranked as the least corrupt country. The full result of the regressions are shown in Table 5.4.

Table 5.4. Determinants of Corruption: Asia and Oceania

	Dependent variable: Corruption in Asia and Oceania			
	Model 1	Model 2	Model 3	Model 4
GDP growth rate	-0.015 (0.017)	-0.043 (0.015)***	-0.040 (0.015)***	-0.039 (0.015)***
Government expenditures per capita (US\$000)	-0.836 (0.082)***	-0.340 (0.098)***	-0.347 (0.096)***	-0.338 (0.099)***
Openness	-0.011 (0.001)***	-0.006 (0.001)***	-0.006 (0.001)***	-0.006 (0.001)***
Natural resources	0.033 (0.007)***	0.007 (0.007)	0.013 (0.007)*	0.013 (0.007)*
Economic freedom		-0.080 (0.011)***	-0.083 (0.011)***	-0.083 (0.011)***
Civil liberties			0.121 (0.044)***	-0.097 (0.074)
Democracy				0.007 (0.017)
Intercept	7.662 (0.140)***	12.055 (0.600)***	11.687 (0.603)***	11.682 (0.603)***
R ²	0.8360	0.8686	0.8689	0.8698
R ² -adjusted	0.8206	0.8554	0.8550	0.8552
N	199	199	199	199

Our benchmark model deals with economic variables only. The first economic variable, GDP per capita, does not seem to affect the level of corruption at all. Perhaps, this can be attributed to economic variables being only the variables accounted for. We will see the effect of adding institutional variables directly on the corruption level and indirectly through the effect of GDP per capita on corruption.

Government expenditure per capita is negative and significant. More government expenditure does lower corruption. Some Asian governments asked for financial assistance from international donors in order to help combat corruption. Some used their own money. For example, in the ADB/OECD Anti-Corruption Initiative for Asia and the Pacific Report (2008), the Malaysian Government, in an effort to developing effective and transparent systems for public service, conducted a corruption survey without external funding and technical assistance, although they may require this. The result of the survey was submitted in a report that would help the Government of Malaysia and the Anti Corruption Agency to determine public perception of the level of corruption in Malaysia and to establish a corruption perception index applicable to the country. The Thai government did not ask for financial assistance either for ADB in their project Legal System Development and Good Governance, whose purpose is to raise and strengthen public awareness about corruption as well as to build up a network countrywide. They used budgets proposed by all relevant agencies.

Moreover, based on 2002 revised constitutional law, the Indonesian government is mandated to spend to spend at least 20 percent of the annual government budget on education or education-related spending. Education is a strong measure to control corruption since more educated individuals pay more attention to corruption and are better able to take action against it (Glaeser and Saks 2006: 1056). We already knew that salaries of government officials in Singapore and Hong Kong are far higher than those of their neighbors in order to dissuade them from leaving for private sector jobs and from engaging in corrupt activities. In Singapore, cabinet ministers are also handsomely paid. Lee Kuan Yew, the founder of Singapore and long time prime minister, argues that cabinet ministers and political leaders should be paid top salaries in

order to ensure a clean and honest government. If they were underpaid, they would give way readily to temptation and indulge in corrupt acts.

Openness variables are negative and significant. More open economies are indeed less corrupt than their more closed counterparts. A domestic market with more foreign competition (higher import and export volumes) will have decreased rents enjoyed by domestic firms, thus lowering corruption. Some Asian countries have a high degree of openness. For example, during 1996-2010 the average openness score of Singapore is 376, meaning the amount of imports and exports combined is almost 4 times its GDP. For Hong Kong, during the same period, its openness score is 332. The average amount of imports and exports in Malaysia is almost twice its GDP (score of 194). Singapore and Hong Kong do not have natural resources to offer, thus they focus on being trade hubs and financial centers in Asia. Singapore offers better connections to Southeast Asia and its financial markets are highly developed. Hong Kong provides better connections to mainland China and is one of the world's leading financial centers.

The natural resources variable is positive and significant. In Asia, countries with large endowments of precious raw materials offer greater potential gain to public officials who distribute the rights to exploit such resources. Some rents are indeed natural instead of artificially created, but still stimulate a corrupt competition over their allocation. The United Nations (2005) reports the corruption involved in natural resources. The economic benefits natural resources produce are all too often squandered by government officials. In Indonesia alone, the United Nations estimates that \$1 billion a year disappears due to informal payments and bribes in the logging industry. Illegal logging and other corrupt practices in the management of natural resources are especially detrimental to the poor because small farmers and indigenous people are often driven into poverty as a result of land expropriations. The United Nations suggests a

number of strategies that could help reduce such corruption, for example improving the quality of a merit-based civil service, raising civil servant salaries and enhancing press freedom and international cooperation.

In model 2, the effect of economic freedom is added. Now GDP per capita is negative and significant. Strong economic growth help reduce investment. Government expenditure and openness variables remain negative and significant. However, the natural resources variable turns out to be insignificant. Thus, it can be concluded that more economic freedom, in the sense of lower government regulation, is good for business. More economic freedom creates more economic opportunities in a free market economy and lessens the incentives for government officers to engage in corrupt behavior in the natural resource sector.

Sally (2012) argues that the unprecedented expansion of economic freedom is at the core of the Asia's genuine success. Economies have prospered most when governments have dismantled interventionist policies in favor of unleashing the animal spirits of common people. He states that China's greatest leaps forward had come when government instituted rural property rights and opened up domestic and international trade, exposing the economy to international competition. Asian Tigers prospered because they maintained macroeconomic stability, had a low prevalence of price controls and subsidies, built necessary infrastructure, and were very open to international trade.

Some Asian countries are extremely free in terms of economic freedom. Hong Kong is actually the freest country in the world by some measures, followed by Singapore. Their objective of government regulation is to make firms able to do business comfortably. Hong Kong and Singapore grant private firms the most flexibility in hiring and firing workers. Most travelers from other countries are excluded from needing a visa for a 30-day visit. You can get a

longer visa as a businessman or a private company executive relatively easily there. They also set the standard for clean and free government and benefit significantly from their transparent and straightforward business environments.

Model 3 adds economic freedom and civil liberties to the benchmark model. The coefficient of economic freedom is negative and significant. Deregulation does lower corruption. The impacts of GDP per capita, government expenditure and openness are also negative and significant. The natural resources variable is positive and significant at the 10 percent level. This is perhaps because of the addition of civil liberties, which is positive and significant. More civil liberties lead to more corruption, including corruption in the natural resources sector. This seems contradictory until we find out that actually civil liberties in Asia are relatively repressed.

Singapore and Malaysia both have Internal Security Acts that allow for indefinite detention without trial. Students in Malaysia are not permitted to join political parties. Malaysians must apply for a police permit for gatherings of more than five people. Under the new Peaceful Assembly Act, the government of Malaysia prohibits street protests and anyone under the age of 21 will not be permitted to organize an assembly. The Philippines has the Human Security Act, which allows suspects to be detained for up to three days and allows their rendition to other countries. India and Indonesia have broadly-worded legislation that could be used against various expressions of dissent such as labor strikes and demonstrations. Moreover, the revised Indonesian Criminal Code allows looser rules of evidence than did the old one, including the use of intelligence reports. Although those reports need to be reviewed by a judge, the Indonesian court system is so weak and corrupt that judicial review barely constitutes a meaningful safeguard (Jones 2002).

Greater civil liberty is argued to lead to higher levels of citizen involvement and political participation. High level of civil liberty reflects a citizen's ability to agitate and influence government behavior without negative repercussions, a mechanism that can plausibly lead to greater accountability and thus better choice and implementation of good governance (Isham, Kaufmann, and Pritchett 1997). Higher civil liberties are strongly associated with higher levels of riots, demonstrations and political strikes (ibid). However, if civil actions are easily repressed by the law, then the ruling government could also ask police forces to shut down its political enemies or to muzzle the media. This creates more opportunity for the abuse of power and rent seeking behavior.

In model 3, the effects of economic freedom, civil liberties and democracy are added to the benchmark model. GDP per capita, government expenditure, openness, economic freedom coefficients are all negative and significant. Robust economic growth, large but well-directed government spending, more international trade and less governmental restriction all reduce corruption levels. However, the natural resources variable is positive and significant at the 10 percent level. Some rents may be 'natural' rather than artificially created, but still encourage a corrupt competition over their allocation (Treisman 2000).

The coefficients of civil liberties and democracy are not significant. This is not surprising since civil liberties and more democratic regimes are strongly connected as a certain degree of civil liberty is a precondition for democracy. What is surprising is that they are not significant for Asian countries. According to Diamond (2011), some countries in Asia are democracies such, as India—the largest democratic country in the world, South Korea, Indonesia, and the Philippines. Thailand is a recurrent and probable future democracy. Malaysia and Singapore will become democracies within generations. China and Vietnam will become democracies faster if they

rapidly modernize in one generation or two generations (he predicts within 20 years to 40 years from now). The diversity level of democracies in Asia is perhaps what brings the democracy coefficient to be insignificant.

There are also two contrasting arguments about the effect of democracy on corruption, which probably contributes to the insignificance of the democracy coefficient (Isham, Kaufmann, and Pritchett 1997). More democratic systems may lead to greater public investments in infrastructure, greater and more equitable investments in human capital, more open trade policies and better provision of a secure legal system and property rights (Clague et al. 1997; Tavares and Wacziarg 1996). All those things, if well formulated and well-implemented, will eventually lead to a reduction in corruption. However, democratic arrangements may worsen corruption if government policies and actions are directed by vested interests lobbying for preferential treatment and against efficiency-enhancing reforms (Olson 1965). Some view the success of some Asian governments in pursuing sensible macroeconomic policies, leading to lower corruption, as because authoritarian leaders effectively insulated meritocratically selected government officials from direct popular pressures, think of Singapore and Hong Kong and perhaps Malaysia (World Bank 1993). On the other hand, authoritarian leaders in other countries pursue vested interest macroeconomic policies, leading to higher corruption, for instance Indonesia during President Suharto's presidency.³⁵

³⁵ Excluding Hong Kong and Singapore, models 1 and 2 produce the same results in terms of the signs and significance of the coefficients. Models 3 and 4 differ only in the natural resources coefficient, which is not significant. Hong Kong and Singapore do not have natural resources to offer, thus excluding them minimizes the effect of natural resource rents for the sample countries.

5.2.4. Southeast Europe and the CIS

Corruption has been always a problem in Southeast Europe and the CIS. Particularly during massive the privatization in the 1990s, governments have been accused of corruption even more frequently. According to Transparency International (2010), Uzbekistan and Turkmenistan (unofficial member of CIS) are the most corrupt countries in the CIS region. They are tied at 172th among the 178 countries surveyed worldwide, with scores of 1.6, ten being the least corrupt. Russia, the largest economy in the CIS, does not do much better either as it ranks 154th, followed by the Ukraine (de facto participating in the CIS) and Azerbaijan, which are tied at 134th. Southeast Europe include countries in the Balkan Peninsula, whether they are mostly inside the Balkans, such as Croatia and Serbia or whose borders lie entirely within the Balkans, for example Albania, Bosnia and Herzegovina, Macedonia and Montenegro. The least corrupt countries in the region are Croatia and Macedonia that are tied at 62nd (score of 4.1), whereas the most corrupt country is Kosovo (limited recognition), ranked at 110th, followed by Moldova at 105th, with a score of 2.9, ten being the most corrupt. In this dissertation, we pooled together the countries in Southeast Europe and the CIS since we follow the categorization used by UNCTAD. The complete regression results are shown in Table 5.5.

The coefficient of GDP growth is not significant. The performance of the economy is not beneficial, nor detrimental for corruption levels in Southeast Europe and the CIS. The moderately strong growth in Russia and Kazakhstan, which somewhat can be attributed to their endowment of natural resources and relatively slow growth in Moldova and Macedonia do not seem to influence corruption levels.

Table 5.5. Determinants of Corruption: Southeast Europe and the CIS

	Dependent variable: Corruption in Southeast Europe and the CIS			
	Model 1	Model 2	Model 3	Model 4
GDP growth rate	-0.006 (0.010)	-0.010 (0.011)	-0.001 (0.011)	0.006 (0.011)
Government expenditures per capita (US\$000)	-0.924 (0.162)***	-0.918 (0.162)***	-1.144 (0.178)***	-1.063 (0.176)***
Openness	-0.001 (0.002)	-0.001 (0.002)	-0.001 (0.002)	0.001 (0.002)
Natural resources	0.014 (0.004)***	0.015 (0.004)***	0.018 (0.004)***	0.018 (0.004)***
Economic freedom		0.009 (0.008)	-0.005 (0.010)	-0.014 (0.010)
Civil liberties			0.187 (0.071)***	0.082 (0.081)
Democracy				0.033 (0.013)***
Intercept	7.405 (0.191)***	6.950 (0.513)***	6.968 (0.494)***	7.236 (0.490)***
R ²	0.3764	0.3788	0.4374	0.4786
R ² -adjusted	0.2439	0.2213	0.2847	0.3275
N	98	90	90	90

The government consumption expenditures coefficient is negative and significant. It seems that some of the government expenditure is directed toward curbing corruption. Particularly for Southeast European countries wanting to become members of the European Union (EU), anti corruption measures were an integral part of accession to the EU. The EU sets out the Copenhagen Criteria, the political and economic conditions that future EU applicants must satisfy. Corruption and corruption control are evaluated in annual reports on the candidate state's progress in satisfying the Copenhagen Criteria. Batory (2010) argues that insufficient results of anti corruption measures are one of the main reasons why Romania and Bulgaria could not enter EU in 2004.³⁶ However, once the countries joined EU the external pressures may decrease, which could bring a reversal of the achievements of the pre EU period.

Openness does not seem to influence corruption. The transition to a market economy in Southeast Europe and the CIS has been associated with dramatic changes in foreign trade for most countries. Imports and exports are argued to be strongly affected by processes of

³⁶ Romania and Bulgaria became the members of the EU in 2007.

geographical reorientation, especially towards the EU, and sectoral restructuring (Capolupo and Celi 2008). However, most transition economies only emerged in the early 1990s and embodied a relatively homogeneous set of countries that started from an environment of socialist central planning and were all subject to a roughly similar external shock— the dissolution of the Soviet Union— but had somewhat different economic policies (Billmeier and Nannicini 2010). Diverse economic policies adopted by individual countries cause the effect of openness on corruption to be insignificant. For instance, Armenia and Georgia have been pursuing aggressive trade liberalization, while Uzbekistan is considered to have “missed liberalization” (ibid).

Larger endowments of valuable natural resources offer greater potential gain to public officials who distribute the rights to exploit such resources. Because such endowments create rents, they present a phenomenon of rents-related corruption which is usually found in natural-resource-abundant countries, like in most developing countries (Tornell and Lane 1998). This is confirmed as the coefficient of natural resources is significant and positive. Yukos and Gazprom were the main petroleum companies in Russia. Yukos, before being bankrupted by the Russian Government, was one of the world's largest non-state oil companies, producing 20% of Russian oil—approximately 2% of world production.³⁷ Its assets were acquired in controversial circumstances— characterized by grand scale corruption, nepotism, and often bloodshed— from the Russian Government during the initial period of the oligarchic privatization process in the early 1990s.

Gazprom is the largest natural gas company and one of the largest companies in the world. Gazprom produced 17 percent of natural gas worldwide and its activities accounted for 8 percent of Russia’s GDP in 2011. Gazprom was created in 1989 by Ministry of Gas Industry of the Soviet Union when it transformed itself into a corporation, keeping all of its assets integrated.

³⁷ Hugh Fraser, “Russia's oligarchs: Their risky routes to riches.” *BBC News Online* July 27, 2004.

The company was later partly privatized, but the Russian government currently holds most of the stock. Moreover, energy is the leading economic sector in Kazakhstan. Kazakhstan has huge deposits of crude oil and natural gas condensate. It is also a leading exporter of uranium. However, most of activities in natural resources are controlled by Astana, which is a coalition of state-owned companies. Since natural resources sectors are largely controlled by state-owned companies, both in Russia and Kazakhstan, competition is relatively low. This perhaps also explains why the openness variable is not significant, but the natural resource variable is positive and significant.

The effect of economic freedom is added to the benchmark model and the new model is called model 2. The coefficient of economic freedom is not significant. Economic freedom broadly measures the ability of citizens and companies within a country to carry out economic activities without being obstructed by the state. There are countries that have moderately economic freedom (for instance Armenia, Macedonia and Kazakhstan), mostly unfree economic freedom (for example Croatia, Moldova and Russia), and repressed economic freedom such as in Belarus, Uzbekistan and Ukraine. In terms of economic freedom, Kazakhstan is in a far better situation than Russia. Kazakhstan's strengths lie in its access to funds and low levels regulation of credit, labor and business. On the other hand, Russia has layers of complex non-tariff barriers, bureaucratic inconsistency and regulatory obscurity and a lack of market competition that has inflated price levels (Heritage Foundation 2010). However, the overall effect of economic freedom on corruption is still not significant. The other explanatory variables do not change in terms of their significance.

Model 3 adds economic freedom and civil liberties variables to the benchmark model. The GDP growth rate is still not significant as are openness and economic freedom variables.

However, civil liberty is very significant in the new specification. According to OECD' Anti Corruption Measures in Southeast Europe (2002), involvement of civil society in anti-corruption efforts is high in Southeast European countries and is based on the agenda of the Stability Pact Anti-Corruption Initiative (SPAI). SPAI countries have adopted constitutions that guarantee the most political and human rights. Many of the SPAI countries have also adopted new laws facilitating the establishment of civil society organizations and have taken some steps to liberalize the media sector. The report also states that SPAI countries have improved transparency in government and cooperation with civil society. Some countries have established Offices for Relationships with NGOs or Ombudsman's Offices and many have passed freedom of information laws. In each of the SPAI countries, the commitment of civil society to join the fight against corruption has been demonstrated by many concrete activities. Most, though not all, countries have active Transparency International chapters and some have anti-corruption coalitions of NGOs and business associations. All those things probably have to be done to speed up accession to the European Union as Copenhagen Criteria require certain political and economic conditions that future EU applicants must establish. The European Union's internal market counts 504 million citizens and a GDP (PPP) of US\$15.821 trillion in 2011. For small economies, such as the countries in Balkan Peninsula, it is an enormous and dominating market, considering the close distance between them and Germany, for example.

In the CIS, there has been a declining trend of civil liberties. According to *Economic Freedom of the World: 2010 Annual Report*, the legacy of the Soviet Union, Russia's undemocratic influence and economic power gained by regimes in natural gas and oil-rich countries such as Azerbaijan, Kazakhstan, and Turkmenistan have contributed to the decline. There was also a disputed presidential election in Belarus in December, which was followed by a

violent crackdown on protesters. Ukraine also holds back press freedom, threatens civil society and pushes for greater government influence on the judiciary. Moreover, the media sector in Russia has been unable to examine important issues on a significant and ongoing basis, the judiciary is subjected to heavy interference and is unable to function in an independent manner, and political activities are strictly sanctioned and devised in such a way that there is no meaningful accountability across institutions.

Economic freedom, civil liberty and democracy variables are added to the benchmark model to create model 4. Adding the democracy variable, which turns out to be positive and significant, diminishes the negative effect of civil liberty on corruption. The other variables do not change their significance. This finding seems to be contradictory, since we assume that more democracy will reduce corruption. This is not the case for countries in Southeast Europe and the CIS. There is a strong positive link between democratization and corruption (Kuzio 2008). Five CIS countries have carried out referendums to prolong their presidents' terms in office: Tajikistan (2003), Kyrgyzstan (2003), Uzbekistan (2002), Kazakhstan (2000), and Turkmenistan (1999 for life). Presidential elections in Russia (2000) and Azerbaijan (2003) were organized in such a way that there are successions from prime minister to president. In Azerbaijan, there was a succession from father to son. There were no fair and free presidential elections in Belarus (2001) or Armenia (2003). In Macedonia, there was an extended boycott of parliament by a political party dominated by ethnic Albanians. In Albania, opposition accusations of planned government fraud forced the delay of local elections and have been followed by deadlock over parliament's selection of a successor to President Moisiu (Rhodes 2007).

Kuzio (2008), in sum, argues that leaders are afraid of being out of power due to their involvement in corruption during the “economic reforms” of the 1990s or during their

authoritarian rule. For these leaders being out of power means vulnerability to revenge by a newly elected opposition, potential loss of accumulated assets, or becoming the target of the application of anti-corruption legislation. More democracy and more presidential elections, but with old leaders or those connected to them at the fore, tend to maintain the legacy of corruption.

Overall, corruption is caused by both economic and institutional variables. It is also confirmed that factors influencing corruption tend to vary from one group of countries to another. In some regions, corruption is very pervasive and seems to be a cultural phenomenon. In some countries and societies, giving commissions and paying bribes is neither uncommon nor considered inappropriate. There is perhaps a threshold for what is considered to be corruption, in terms of money or payback. The institutional explanatory variables clarify that the institutional framework does matter in explaining corruption; regardless of whether a country is a developed or developing one.

Chapter 6

Concluding Remarks

6.1. Summary of findings

This study attempts to build empirical models to investigate the relationship between FDI and corruption and identify the determinants of corruption itself. Specifically, this dissertation examines whether corruption could be beneficial or deleterious to FDI inflows. As tolerance towards corruption tends to vary from country to country, countries are disaggregated into developed economies and developing economies. Additionally, there are four regions within the developing economies group: Africa, Latin America and the Caribbean, Asia and Oceania, and Southeast Europe and the Commonwealth of Independent States (CIS). This is performed to take into account intrinsic differences in perceptions of and attitudes towards corruption, as well as cultural and geographical differences.

A preliminary investigation of OLS fitted lines, without taking other factors affecting FDI inflows into account, shows that the association between FDI inflows and corruption is mixed. Corruption is detrimental to FDI inflows in developed countries, but is somewhat helpful for attracting FDI inflows to developing economies. Obviously, there are other factors influencing the relationship that must be taken into account. The benchmark model, estimated using feasible generalized least squares method, captures the effect of corruption, GDP per capita, exports per capita, population and labor productivity on FDI inflows. The results of the benchmark model for developed economies confirm most of our prior expectations. The explanatory variables are all significant and of the expected signs except for GDP per capita. The coefficient of corruption is indeed negative and significant. Corruption does act like a tax on investment in developed countries, which lowers the profitability of investment.

For developing countries as a group, the coefficients of corruption, export per capita, population, and labor productivity in the benchmark model are positive and significant. Apparently, corruption acts as a helping hand for investment and greases the wheels of commerce. Bribes may increase bureaucratic efficiency by speeding up the process of decision-making or bribes may be needed to gain access to publicly funded projects. However, when we look into regions within developing countries, the effect of corruption on FDI inflows vanishes in most regions. In Africa as well as Southeast Europe and the CIS, corruption does not seem to affect FDI inflows at all in all models. Corruption is very pervasive in those regions; therefore foreign investors have simply taken it as a given. Although corruption is relatively high, FDI flows still come and go depending on factors other than corruption. In Latin America and the Caribbean, corruption does have a negative effect on FDI in most models. However, corruption shows a positive effect on FDI inflows in only one specification for Asia and Oceania.

Four different models for investigating the determinants of corruption are estimated. The benchmark model includes only economic variables: the GDP growth rate, government consumption expenditures per capita, openness and natural resource endowments. For developed countries, the GDP growth rate and government expenditures per capita variables are always significant in the benchmark model and the rest of the models. However, openness and natural resource variables are only significant in half of the models. Starting from model 2, institutional variables— economic freedom, civil liberties and level of democracy— are introduced progressively. For developed countries, each institutional variable is always significant and of the expected sign in each specification.

The benchmark model for developing countries shows that the GDP growth rate is not an important factor affecting corruption. Nonetheless, when we put together the institutional

variables in subsequent models, the GDP growth rate is always significant and of the expected sign. Government expenditure per capita, openness and natural resource variables are all significant and of the expected sign in all specifications. Institutional variables economic freedom and civil liberties have always had the correct signs and are significant in all specifications. Nevertheless, the democracy variable has a significant and positive sign. Perhaps some features of democratic elections create opportunities for corruption.

Within region of developing countries, it seems that corruption in Africa is influenced more by economic variables, particularly government expenditures and openness, than by institutional variables. Meanwhile, corruption in Latin America and the Caribbean is affected by both economic variables and institutional variables— economic freedom and civil liberty—but not the level of democracy. In Asia and Oceania, economic variables almost always affect corruption, whereas the effect of institutional variables is mixed. Economic freedom is always significant and of the expected sign, civil liberties variable is only significant in one model and democracy never influences corruption. Government expenditures per capita and the natural resource variable are two economic variables influencing corruption in Southeast Europe and the CIS, while the GDP growth rate and openness have never become determinants of corruption there. Economic freedom has also never been a determinant of corruption, whereas civil liberty and level of democracy each are significant in one model only.

6.2. Policy recommendations

The FDI empirical results tell us that the phenomenon of FDI has multidimensional grounds. There is no indisputably best policy towards attracting FDI as each region is unique. However, as exports per capita variables are positive and significant in most of specifications for

both developed and developing countries, thus policy towards increasing the level of exports should be considered. Export processing zones and free trade zones are two main type of facilities that can offered by host country governments to foreign firms where output of a foreign affiliate is largely exported rather than sold in the host country. In those areas, goods may be landed, handled, manufactured or reconfigured, stored, and re-exported without customs' intervention. In those zones, MNCs enjoy exemptions from tariffs and nontariff barriers, exemption from most business regulations, and exemption from some or all corporate income taxes. Seaports and airports in export processing zones and free trade zones should be upgraded to accommodate larger vessel and aircraft. The general infrastructure of the country and of the zones particularly should be improved, not only large projects such as public transportation systems, but also basic utilities, for instance, water, electricity, and telecommunications. The introduction of foreign involvement in those sectors could also be considered to improve the quality of services on offer.

Labor productivity variables are almost always positive and significant in all models for developed and developing countries. Thus, it is important to devise a robust policy to increase labor productivity. The government should spend additional funding on improving education, particularly at technical and tertiary levels. Governments should actively collaborate with firms in the development of curriculum, the selection of equipment used for tertiary and technical training, and participation in on-the-job training (Barclay 2000). Governments could also offer training incentives, for instance training subsidies or training-related tax deductions to stimulate continuous training (ibid). Graduate institutes for specialized training need to be established or strengthened in order to increase the number of engineers and scientists because high skilled labor is necessary for developing a country's own technology and receiving technology transfers

efficiently from MNCs. Moreover, the government should formulate policies concerning technology transfer and several measures intended to stimulate MNCs to increase and expedite their technology transfer to local affiliate firms, including requirements for local content and local research and development.

Agglomeration as represented by past FDI inflows turns out to be a very important factor to attract FDI inflows as the lags of FDI inflows are always positive and significant for developed and developing countries. Therefore, the host country government should promote a comprehensive policy to attract the entry of new investors that would not have entered the market in the absence of agglomeration and to simultaneously retain the investors that already operated in their country. Government policies to promote local sites for FDI are especially those intended to reduce the set up costs and production costs in foreign-affiliated plants. Deregulation and investment liberalization are the first two things to be done. The formal documents required for application of investment should be clear and justifiable. There should be a time limit for when investment applications should be processed and cleared. The customs clearance times should also be predictable. Investment incentive packages must also be considered to increase the attractiveness of the local sites. The preferred incentives are low taxes, tax breaks, tax holidays, and duty exemptions on capital goods. Tax incentives is “free money” to citizens since as in many cases, they only represent revenues forgone—tax expenditures—instead of cash paid out (Buss 2001). Tax incentive benefits may outweigh the costs because tax incentives given will eventually be repaid directly or indirectly in taxes, growth, and employment. Investment through tax incentives may also give individuals employment experience, enhancing their long-run employability (*ibid*). Therefore, even relatively short-run tax incentive programs may have long-run effects. However, tax incentives must be offered carefully. Governments must conduct cost

benefit analysis to determine if large tax incentives should be given to individual firms, firms in targeted sectors or firms in certain locations. Governments should use only those tax incentives with clear benefits over costs. There should be periodic evaluations of all tax incentive programs so that the incentives are not abused. Evaluation should compare economies under study before tax incentives were given with those economies after implementation. Moreover, governments must require truth and disclosure in financing provisions, particularly public subsidies. Governments must also demand legally binding performance contracts and penalize firms for not meeting goals exchanged for incentives.

Although the results of the effect of corruption on FDI inflows are mixed, the current state of the art theory favors the idea that corruption is harmful for FDI inflows and the economy at large. The socially most beneficial policy is to get rid of corruption rather than to circumvent it (Aidt 2003). While it is difficult to provide specific guidance on national foreign anti corruption policies, there are some guidelines out there on how to curb corruption provided by international organizations. For instance, the World Bank's *Helping Countries Combat Corruption: The Role of the World Bank* (1997), Organisation for Economic Cooperation and Development's *Convention on Combating Bribery of Foreign Public Officials in International Business Transactions* (1997), and the United Nations' *Convention against Corruption* (2004) send clear instructions on how to implement a wide and detailed range of anti-corruption measures affecting their laws, institutions, and practices. These measures aim to promote prevention, criminalization and law enforcement, international cooperation, asset recovery, technical assistance, information exchange, and mechanisms for implementation of anti corruption actions. Individual countries must adopt at least one of the prevailing anti-corruption conventions, or even better ratify these conventions to become legislation.

Based on the successful experiences of Hong Kong and Singapore in fighting corruption, we may as well take lessons from them. The civil service reforms and the establishment of an independent anti-corruption agency are the first two things to do. The professional civil service should be politically neutral, have security of tenure, have decent salary, be recruited and promoted based on merit, and not have property or business interests that conflict with the performance of its duties (Adamolekun 1993). Civil service pay reform should not only consist of higher formal salary but also fringe benefits such as housing and health care. These in-kind fringe benefits are particularly valuable during periods of high inflations. Effective corruption control for civil service also needs a credible system of reward and punishment. Formal legal sanctions provide a crucial back-up, but incentives within the bureaucracy can be used to reduce the incidence of corruption (Rose-Ackerman 1999). For instance, if a group of tax auditors imposes a hefty legitimate fine on firms for violating tax codes and the firm decides to pay the fine to the government, the group should be rewarded with a fraction of the fine. If a customs patrol group busts smugglers and confiscate their goods, and the government decides to sell the confiscated good, then the group should get a portion of the proceeds from the sale. Nevertheless, the incentive system should be designed cautiously to avoid giving government officials monopoly powers that they can use to extract increased levels of rents (Rose-Ackerman 1978).

There should be an independent anti corruption agency reporting only to the head of state, which is supposedly not corrupt. The agency should have the power to investigate corruption cases— independently of police forces— and prosecute corruption cases directly to the court, independent of attorneys general. Officials in the agency should be paid more than other government officers in other agencies and should not be subject to transfer to other

agencies. Nobody in the agency should face the possibility of winding up working for a more senior officer who had been the subject of a corruption investigation. The agency should also be able to recommend legal and administrative changes to lower corruption incentives and to engage in public education on anti corruption campaigns. Moreover, the internal affairs department within the agency must be strong. Any staff member of an anti-corruption agency, who is found guilty of corruption and abuse of power, should not only be punished but also be removed from civil service forever, so that the cost of the loss of a job is huge.

Lastly, mechanisms for controlling the misuse of power must be strengthened. Governments should apply policy changes that reduce the demand for corruption by evaluating what regulations are being bypassed and then take action to simplify them. The regulations that are retained should be made transparent and as nondiscretionary as possible (Tanzi 1998). Those agencies that are susceptible to corrupt activities such as customs houses, tax offices or police forces should evaluate their standard operating procedures periodically to reduce opportunities for corruption. Their procedures should be clear and can be interpreted unambiguously. The taxpayers should be able to pay taxes, duties or fines entirely online to minimize contact between the taxpayers and the officers. Penalties for misuse of power should also be included to introduce a deterrent effect.

6.3. Suggestions for future research

The estimates in this dissertation have to be interpreted with caution as the models do not control for all variables considered to be primary determinants of FDI inflows or all factors deemed essential in explaining corruption due to data availability. The time period chosen is also restricted because the data on corruption provided by Transparency International is limited.

Further research could utilize the bilateral model and include other variables the models fail to control for. The bilateral model allows for differences in corruption level between the home and host countries, which could reveal location advantages. One could also lengthen the time period by using a corruption index from Business International or the International Country Risk Guide.

Testing for causality between FDI inflows and corruption would also be a worthwhile exercise and could provide further evidence of the importance of anti corruption measures in investment sectors or the significance of investment policy as a way to curb corruption. One can also perform a deeper analysis on a country by country basis using case studies. The effect of corruption on FDI at an industry level is also worth investigating as foreign firms may have different degrees of sensitivity for corruption at an industry level. The focus of the study is therefore from a microeconomic perspective, rather than the macroeconomic point of view carried out in this dissertation.

References

- Abed, George T. and Hamid R. Davoodi. 2000. "Corruption, Structural Reforms, and Economic Performance in the Transition Economies." IMF Working Paper No. 132.
- Adamolekun, Ladipo. 1993. "A Note on Civil Service Personnel Policy Reform in Sub-Saharan Africa." *International Journal of Public Sector Management* 6: 38-46.
- Ades, Alberto and Rafael di Tella. 1999. "Rents, Competition, and Corruption." *American Economic Review* 89: 982-93.
- . 1997a. "The New Economics of Corruption: A Survey and Some New Results." *Political Studies* XLV: 496-515.
- . 1997b. "National Champions and Corruption: Some Unpleasant Interventionist Arithmetic." *Economic Journal* 107: 1023-42.
- Aidt, Toke S. 2003. "Economic Analysis of Corruption: A Survey." *The Economic Journal* 113: F632-F652.
- Ali, Abdiweli M. and Hodan Said Isse. 2003. "Determinants of Economic Corruption: A Cross-Country Comparison." *Cato Journal* 22(3): 449-66.
- Akcay, Selcuk. 2001. "Is Corruption an Obstacle for Foreign Investors in Developing Countries? A Cross-Country Evidence." *Yapi Kredi Economic Review* 12(2): 27-34.
- Al-Sadiq, Ali. 2009. "The Effects of Corruption on FDI Inflows." *Cato Journal* 29(2): 267-94.
- Anderson, James E. 1979. "A Theoretical Foundation for the Gravity Equation." *American Economic Review* 69: 106-16.
- Anderson James E. and Eric van Wincoop. 2003. "Gravity with Gravitas: A Solution to the Border Puzzle." *American Economic Review* 93(1): 170-92.
- Anderson, James E. and Douglas Marcouiller. 2002. "Insecurity and the Pattern of Trade: An Empirical Investigation." *Review of Economics and Statistics* 84(2): 342-52.
- Asian Development Bank (ADB)/Organisation for Economic Cooperation and Development (OECD). 2008. *ADB/OECD Anti-Corruption Initiative for Asia and the Pacific Annual Report*. Manila and Paris: ADB/OECD.
- Baltagi, Badi. 2008. *Econometric Analysis of Panel Data*. Fourth edition. West Sussex: John Wiley & Sons Ltd.
- Baltagi, Badi. H. and Ping X. Wu. 1999. "Unequally Spaced Panel Data Regressions with AR(1) Disturbances." *Econometric Theory* 15(06): 814-23.
- Barassi Marco R. and Ying Zhou. 2012. "The Impact of Corruption on FDI: A Parametric and Non Parametric Analysis." *European Journal of Political Economy* 28(3): 302-12.
- Barclay, Lou A. A. 2000. *Foreign Direct Investment in Emerging Economies: Corporate Strategy and Investment Behavior in the Caribbean*. London: Routledge.
- Bardhan, Pranab. 1997. "Corruption and Development: A Review of the Issues." *Journal of Economic Literature* 35: 1320-46.

- Batory, Agnes. 2008. *The Politics of EU Accession: Ideology, Party Strategy and the European Question in Hungary*. Manchester: Manchester University Press.
- Beck, Paul J. and Michael W. Maher. 1986. "A Comparison of Bribery and Bidding in Thin Markets." *Economics Letters* 20: 1-5.
- Bengoa, Marta and Blanca Sanchez-Robles. 2003. "Foreign Direct Investment, Economic Freedom and Growth: New Evidence from Latin America." *European Journal of Political Economy* 19(3): 529-45.
- Bergstrand, Jeffrey H. 1989. "The Generalized Gravity Equation, Monopolistic Competition, and the Factor-proportions Theory in International Trade." *Review of Economics and Statistics* 71(1): 143-53.
- Billmeier, Andreas and Tommaso Nannicini. 2009. "Trade Openness and Growth: Pursuing Empirical Glasnost." *IMF Staff Papers* 56(3): 447-75.
- Blackburn, Keith., Niloy Bose and M. Emranul Haque. 2011. "Public Expenditures, Bureaucratic Corruption and Economic Development." *Manchester School, University of Manchester* 79(3): 405-28.
- Bloningen, B. A., Davies, R. B. and Head, K. 2002. "Estimating the Knowledge-capital Model of the Multinational Enterprise: Comment." *National Bureau of Economic Research Working Paper No. 8929*.
- Bonaglia, Federico, Jorge Braga de Macedo, and Maurizio Bussolo. 2001. "How Globalization Improves Governance." *OECD Development Centre Working Paper 181*.
- Brainard, S. L. 1993. "A Simple Theory of Multinational Corporations and Trade with a Tradeoff between Proximity and Concentration." *National Bureau of Economic Research Working Paper No. 4269*.
- Buckley, P. J. and M. Casson. 1976. *The Future of the Multinational Enterprise*. London: Macmillan.
- Buehn, Andreas and Friedrich Schneider. 2009. "Corruption and the Shadow Economy: A Structural Equation Model Approach." *Institute for the Study of Labor (IZA) Discussion Papers* 4182.
- Buss, Terry F. 2001. "The Effect of State Tax Incentives on Economic Growth and Firm Location Decisions: An Overview of the Literature." *Economic Development Quarterly* 15(1): 90-105.
- Calvo, Guillermo and Carmen Reinhart. 1998. "The Consequences and Management of Capital Inflows: Lessons for Sub-Saharan Africa." *Expert Group on Development Issues Series* 1998: 2.
- Carden, Art and Lisa Verdon. 2010. "When is Corruption a Substitute for Economic Freedom?" *Law and Development Review* 3(1): 41-64.
- Capolupo, Rosa and Giuseppe Celi. 2008. "Openness and Economic Growth: A Comparative Study of Alternative Trading Regimes." *Economie internationale* 116: 5-36.

- Carr, D. L., Markusen J. R. and Maskus K. E. 1998. "Estimating the Knowledge-capital Model of the Multinational Enterprise." National Bureau of Economic Research Working Paper No. 6773.
- Caves, Richard E. 2007. *Multinational Enterprise and Economic Analysis*. Third edition. New York: Cambridge University Press.
- . 1974. "Multinational Firms, Competition, and Productivity in Host-Country Industries." *Economica* 41 (May): 176-93.
- . 1971. "International Corporations: The Industrial Economics of Foreign Investment." *Economica* 38 (February): 1-27.
- Chafuen, A.A. and E. Guzman. 2000. "Economic Freedom and Corruption." In G.P. O'Driscoll Jr., K.R. Holmes, and M. Kirkpatrick, eds., *2000 Index of Economic Freedom*, pp. 51-63. Washington, D.C. and New York: Heritage Foundation Press.
- Chakrabarti, Avik. 2001. "The Determinants of Foreign Direct Investment: Sensitivity Analyses of Cross-Country Regression." *Kyklos* 54(1): 89-114.
- Chang, Eric C. C. and Miriam A. Golden. 2007. "Electoral Systems, District Magnitude and Corruption." *British Journal of Political Science* 37(1): 115-37.
- Chaudhuri, Kausik and D. K. Srivastava. 1999. "Dearth of Private Capital Flows in Sub-Saharan Africa." *Applied Economics Letters* 6(6): 365-68.
- Chen, John-ren. 2000. "Foreign Direct Investment, International Financial Flows and Geography." John-ren Chen, ed., *Foreign Direct Investment*, pp. 6-32. London.: Macmillan.
- Cheng, L. and Y. Kwan. 2000. "What Are the Determinants of the Location of Foreign Direct Investment? The Chinese experience." *Journal of International Economics* 51: 379-400.
- Chowdhury, Shyamal K. 2004. "The Effect of Democracy and Press Freedom on Corruption: An Empirical Test." *Economics Letters* 85(1): 93-101.
- Clague, C., P. Keefer, S. Knack and M. Olson. 1996. "Property and Contract Rights in Autocracies and Democracies." *Journal of Economic Growth* 1(2): 243-76.
- Coase, Ronald H. 1937. "The Nature of the Firm". *Economica* 4 (16): 386-405.
- Cuervo-Cazurra, Alvaro. 2008. "Better the Devil You Don't Know: Types of Corruption and FDI in Transition Economies." *Journal of International Management* 14: 12-27.
- Diamond, Larry. 2011. "East Asia amid the Receding Tide of the Third Wave of Democracy. Keynote speech presented to International Conference on Democracy in East Asia and Taiwan in Global Perspective held in Taipei, ROC August 24-25, 2011.
- Dunning, John H. 1993. *Multinational Enterprises and the Global Economy*. Wokingham and Reading: Addison Wesley.
- . 1988. *Explaining International Production*. London: Unwin Hyman.
- . 1979. Explaining Changing Patterns of International Production: In Defense of the Eclectic Theory. *Oxford Bulletin of Economics and Statistics* 41(4): 269-95.

- De Jong, Eelke and Erwin Udo. 2006. "Is Corruption Detrimental to Foreign Direct Investment." Working Paper Radboud University Nijmegen.
- Duce, Maitena. 2003. Definitions of Foreign Direct Investment (FDI): A Methodological Note. Banco de Espana Paper for the BIS Meeting of the CGFS Working Group on FDI in the Financial Sector.
- Dutt, Pushan and Daniel Traca. 2010. "Corruption and Bilateral Trade Flows: Extortion or Evasion?" *Review of Economics and Statistics* 92(4): 843-60.
- Dutta, Indranil and Ajit Mishra. 2004. "Corruption and Competition in the Presence of Inequality and Market Imperfections." Centre for Development Economics Working Paper No. 123.
- Egger, Peter and Hannes Winner. 2006. "How Corruption Influences Foreign Direct Investment: A Panel Data Study." *Economic Development and Cultural Change* 54(2): 459-86.
- . 2005. "Evidence on Corruption as an Incentive for Foreign Direct Investment." *European Journal of Political Economy* 21(4): 932-52.
- Elliott, Kimberly A. 1997. "Corruption as an International Policy Problem: Overview and Recommendations." In Kimberly A. Elliott, ed., *Corruption and the Global Economy*, pp. 175-233. Washington, D.C.: Institute for International Economics.
- Emerson, Patrick M. 2006. "Corruption, Competition and Democracy." *Journal of Development Economics* 81: 193-212.
- Feenstra, Robert and Alan Taylor. 2012. *International Economics*. Second edition. New York: Worth Publishers.
- Fisman, Raymond J. and Roberta Gatti. 2002. "Decentralization and Corruption: Evidence across Countries." *Journal of Public Economics* 83(3): 325-45.
- Fons, Jeremy S. 1999. "Improving Transparency in Asian Banking Systems." In William C. Hunter, George G. Kaufman, and Thomas H. Krueger, eds., *The Asian Financial Crises: Origins, Implications and Solutions*, pp. 305-20. Norwell, MA: Kluwer Academic Publishers.
- Fraser, Hugh. 2004. "Russia's oligarchs: Their risky routes to riches." *BBC News Online* July 27, 2004.
- Frechette, Guillaume R. 2006. "A Panel Data Analysis of the Time-Varying Determinants of Corruption." CIRANO Working Paper No. 28.
- Galtung, Fredrik. 2006. "Measuring the Immeasurable: Boundaries and Functions of (Macro) Corruption Indices." In Charles Sampford, Arthur Shacklock, Carmel Connors, and Fredrik Galtung, eds., *Measuring Corruption*, pp. 101-30. Hampshire: Ashgate Publishing Limited.
- Gatti, Roberta. 2004. "Explaining Corruption: Are Open Countries Less Corrupt?" *Journal of International Development* 16(6): 851-61.
- Geddes, B. and A. Ribeiro Neto. 1999. "Institutional Sources of Corruption in Brazil." In K. S. Rosenn and R. Downes, eds., *Corruption and Political Reform in Brazil*, pp. 21-48. Miami, FL: North-South Center Press of the University of Miami.

- Gerring, John and Strom c. Thacker. 2005. "Do Neoliberal Policies Deter Political Corruption?" *International Organization* 59(1): 233-54.
- Gingerich, Daniel W. 2007. *Corruption in General Equilibrium: Political Institutions and Bureaucratic Performance in South America*. Cambridge, MA: Harvard University Press.
- Glass, Amy J. and Xiaodong Wu. 2002. "Does Corruption Discourage Foreign Direct Investment and Innovation?" Proceedings the Mid-West International Economics Meetings, Northwestern University, Evanston, IL, May 3-5, 2002.
- Glaeser, Edward L. and Raven E. Saks. 2006. "Corruption in America." *Journal of Public Economics* 90: 1053-72.
- Goldin, Ian A. and Kenneth. A. Reinert. 2005. "Global Capital Flows and Development: A Survey." *Journal of International Trade and Economic Development* 14(4): 453-81.
- Goldsmith, Arthur A. 1999. "Slapping the Grasping Hand: Correlates of Political Corruption in Emerging Market." *American Journal of Economics and Sociology* 58(4): 865-83.
- Goel, Rajeev K. and Michael A. Nelson. 2005. "Economic Freedom versus Political Freedom: Cross Country Influences on Corruption." *Australian Economic Papers* 44 (2): 121-133.
- Graeff, Peter and Guido Mehlkop. 2003. "The Impact of Economic Freedom on Corruption: Different Patterns for Rich and Poor Countries." *European Journal of Political Economy* 19(3): 605-20.
- Greene, Joshua and Delano Villaneuva. 1991. "Corruption, Public Investment, and Growth." IMF Staff Paper 38/1.
- Greene, William H. 2008. *Econometric Analysis*. Sixth edition. Upper Saddle River, N.J.: Prentice-Hall.
- Greene, J. and D. Villanueva. 1991. "Private Investment in Developing Countries: An Empirical Analysis." *IMF Staff Papers* 38 (1): 33-58.
- Grosse, R. and L. J. Trevino. 1996, "Foreign Direct Investment in the United States: An Analysis by Country of Origin." *Journal of International Business Studies* 27: 139-55.
- Grossman, Gene M. and E. Helpman. 2004. "Managerial Incentives and the International Organization of Production." *Journal of International Economics* 63: 237-62.
- Gruber, William, Dileep Mehta, and Raymond Vernon. 1967. "The R&D Factor in International Trade and International Investment of United States Industries." *Journal of Political Economy* 75(1): 20-37.
- Gujarati, Damodar N. 2004. *Basic Econometrics*. Fourth edition. New York: McGraw-Hill.
- Gupta, Sanjeev, Hamid Davoodi and Erwin Tiongson. 2001. "Corruption and the Provision of Health Care and Education Services." In Arvind K. Jain, ed., *The Political Economy of Corruption*, pp. 111-141. London: Routledge.
- Gwartney, James D., Joshua C. Hall, and Robert Lawson. 2011. Freedom of the World Dataset available at www.freetheworld/datasets_efw.html
- . 2011. *Economic Freedom of the World: 2011 Annual Report*. Vancouver: Fraser Institute.

- . 2010. *Economic Freedom of the World: 2010 Annual Report*. Vancouver: Fraser Institute.
- Gyimah-Brempong, Kwabena. 2002. "Corruption, Economic Growth, and Income Inequality in Africa." *Economics of Governance* 3(3): 183-209.
- Habib, Moshin and Leon Zurawicki. 2002. "Corruption and Foreign Direct Investment." *Journal of International Business Studies* 33(2): 291-307.
- Hakkala, Katariina, Pehr-Johan Norback, and Helena Svaleryd. 2008. "Asymmetric Effects of Corruption on FDI: Evidence from Swedish Multinational Firms." *Review of Economics and Statistics* 90(4): 627-42.
- Hanson, Stephanie. 2009. "Corruption in Sub-Saharan Africa." Council on Foreign Relations. Background, August 6, 2009.
- Hanushek, Eric A. and Dennis D. Kimko. 2000. "Schooling, Labour Force Quality and the Growth of Nations." *American Economic Review* 90(5): 1184–1208.
- Hanushek, Eric. A. and Doongwok Kim. 1995. "Schooling, Labour Force Quality and Economic Growth." National Bureau of Economic Research Working Paper No. 5399.
- Harms, Phillip and Heinrich W. Ursprung 2002. "Do Civil and Political Repression Really Boost Foreign Direct Investments?" *Economic Enquiry* 40(4): 651-63.
- Hayashi, Fumio. 2000. *Econometrics*. First edition. Princeton, N.J.: Princeton University Press.
- Helpman, Elhanan. 1985. "Multinational Corporations and Trade Structure." *Review of Economic Studies* 52: 443-58.
- . 1984. "A Simple Theory of Trade with Multinational Corporations." *Journal of Political Economy* 92: 451-71.
- Henisz, Witold J. 2000 "The Institutional Environment for Multinational Investment." *Journal of Law, Economics and Organization* 16(2): 334-64.
- Herbst, Jeffrey and Adebayo Olukashi. 1994. "Nigeria: Economic and Political Reform at Cross Purposes." In Stephen Haggard and Steven V. Webbs, eds., *Voting for Reform: Democracy, Political Liberalization and Economic Adjustment*, pp. 453-502. New York: Oxford University Press.
- Heston, Alan, Robert Summers and Bettina Aten. Penn World Table Version 7.0, Center for International Comparisons of Production, Income and Prices at the University of Pennsylvania, May 2011.
- Herzfeld, Thomas and Christoph Weiss. 2003. "Corruption and Legal (In) Effectiveness: An Empirical Investigation." *European Journal of Political Economy* 19(3): 621-32.
- Hines, James R. 1995. "Forbidden Payment: Foreign Bribery and American Business after 1977." National Bureau of Economic Research Working Paper No. 5266.
- Hoyland, Bjorn, Karl Moene, and Fredrik Willumsen. 2012. "The Tyranny of International Index Rankings". *Journal of Development Economics* 97(1): 1-14.
- Huntington, Samuel P. 1968. *Political Order in Changing Societies*. New Haven: Yale University Press.

- Husted, Bryan W. 1999. "Wealth, Culture, and Corruption." *Journal of International Business Studies* 30(2): 339-60.
- Hutchcroft, Paul D. 1998. *Booty Capitalism: The Politics of Banking in the Philippines*. Ithaca: Cornell University Press.
- Hymer, Stephen H. 1960. *The International Operations of National Firms: A Study of Direct Foreign Investment*. Cambridge, Massachusetts: The MIT Press.
- International Labour Organization. 2011. *Key Indicators of the Labour Market 7th Edition*. Geneva: International Labour Organization (Producer and Distributor) available at <http://kilm.ilo.org/kilmnet>.
- International Monetary Fund. 1993. *Balance of Payments Manual*. Fifth edition. Washington, D.C.: International Monetary Fund.
- Internet Center for Corruption Research. The CPI Ranking 1995. www.icgg.org/corruption.cpi_olderindices_1995.html, accessed on January 12, 2011.
- Isham, Jonathan, Daniel Kaufmann, and Lant H. Pritchett. 1997. "Civil Liberties, Democracy, and the Performance of Government Projects." *World Bank Economic Review* 11(2): 219-42.
- Jain, Arvind K. 2001. "Corruption: A Review." *Journal of Economic Surveys* 15(1): 71-121.
- Jones, Sidney. 2002. "The War on Terror in Southeast Asia Could Hurt Civil Liberties." December 6, 2002. YaleGlobal online.
- Jun, K. W. and H. Singh. 1996. "The Determinants of Foreign Direct Investment in Developing Countries." *Transnational Corporation* 5(2): 67-105.
- Karabegovic, Amela, Dexter Samida, Chris M. Schlegel and Fred McMahon. 2003. "North American Economic Freedom: An Index of 10 Canadian Provinces and 50 U.S. States." *European Journal of Political Economy* 19(3): 431-52.
- Kaufmann, D. 1998. "Challenges in the Next Stage of Anti-corruption". In Daniel Kaufmann, ed., *New Perspectives on Combating Corruption*, pp.139-164. Transparency International and Economic Development Institute of the World Bank prepared on the occasion of Transparency International's Annual General Meeting held in Kuala Lumpur, Malaysia, on 11-16 September 1998.
- . 1997. "Corruption: Some Myths and Facts." An early version was published in *Foreign Policy*, Summer 1997: 114-31.
- Kaufmann, Daniel and Shang-Jin Wei. 1999. "Does 'Grease Money' Speed Up the Wheels of Commerce." National Bureau of Economic Research Working Paper No. 7093.
- Kaufmann, Daniel, and Jeffrey Sachs. 1998. *Determinants of Corruption*. Cambridge, MA: Harvard University Press.
- Kaufmann, Daniel, Aart Kraay and Massimo Mastruzzi. 2010. The Worldwide Governance Indicators: Methodology and Analytical Issues. World Bank Policy Research Working Paper Series No. 5430.

- Kaufmann, Daniel, Frannie Leautier and Massimo Mastruzzi. 2005. "Governance and the City : An Empirical Exploration into Global Determinants of Urban Performance." World Bank Policy Research Working Paper Series No. 3712
- Kaufmann, Daniel, Aart Kraay and Pablo Zoido-Lobaton. 1999. "Governance Matters." World Bank Policy Research Working Paper Series No. 2196.
- Keefer, Phillip and Stephen Knack. 1996. "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures." *Economics and Politics* VII: 207-27.
- Kindleberger, Charles P. 1969. *American Business Abroad: Six Lectures on Direct Investment*. New Haven: Yale University Press.
- King, Andrea K. 2003. "The Link between Foreign Direct Investment and Corruption in Transitional Economies. Working Paper Carleton University Ottawa.
- Klitgaard, Robert. 1998. *Controlling Corruption*. Berkeley, CA: University of California Press.
- Knack, Stephen and Omar Azfar. 2003. "Trade Intensity, Country Size, and Corruption." *Economics of Governance* 4(1): 1-18.
- Krugell, W. 2005. "The Determinants of Foreign Direct Investment in Africa." In Gilroy, Bernard M., Thomas Gries, and Willem A. Naude, eds., *Multinational Enterprises, Foreign Direct Investment and Growth in Africa: South-African Perspectives*, pp. 49-72. Heidelberg: Physica-Verlag GmbH & Co.
- Krueger, Anne O. 1974. "The Political Economy of the Rent-Seeking Society." *American Economic Review* 64(3): 291-303.
- Kumar, Nagesh. 1994. "Determinants of Export-Oriented Foreign Production by U.S. Multinationals: An Inter Country Analysis." *Journal of International Business Studies* 25(1): 141-56.
- Kunicova, Jana and Susan Rose-Ackerman. 2005. "Electoral Rules and Constitutional Structures as Constraints on Corruption." *British Journal of Political Science* 35(4): 573-606.
- Kuzio, Taras. 2003. "Corruption and Democratization in the CIS." The Ukrainian Weekly Online November 23, 2003.
- Lambsdorff, Johann G. 2004. "Background Paper to the 2004 Corruption Perceptions Index: Framework Document." Transparency International and University of Passau.
- . 1999. "Corruption in Empirical Research – A Review." Transparency International Working Paper November 1999.
- Langbein, Laura and Stephen Knack. 2010. "The Worldwide Governance Indicators: Six, One, or None?" *Journal of Development Studies* 46(2): 350-70.
- La Porta, Rafael, Florencio Lopez-de-Silanes, Andrei Shleifer, and Robert Vishny. 1998. "The Quality of Government." National Bureau of Economic Research Working Paper No. 6727.
- Larrain B., Felipe and Jose Tavares. 2007. "Can Openness Deter Corruption? The Role of Foreign Direct Investment." CEPR Discussion Papers No. 6488.

- Lederman, Daniel, Norman V. Loayza and Rodrigo R. Soares. 2005. "Accountability and Corruption: Political Institutions Matter." *Economics and Politics* 17(1): 1-35.
- Lee, Seung-Hyun and Kyeungrae Kenny Oh. 2007. "Corruption in Asia: Pervasiveness and Arbitrariness." *Asia Pacific Journal of Management* 24: 97-114.
- Leff, Nathaniel H. 1964. "Economic Development through Bureaucratic Corruption." *American Behavioral Scientist* 8(3): 8-14.
- Lien, Da-Hsiang D. 1986. "A Note on Competitive Bribery Games." *Economic Letters* 22: 337-41.
- Lindbeck, Assar. 1998. "Swedish Lessons for Post-Socialist Countries." Stockholm University, Institute for International Economic Studies Seminar Papers No. 645.
- Lipset, Seymour N. and Gabriel S. Lenz. 2000. "Corruption, Culture, and Markets." In Lawrence E. Harrison and Samuel P. Huntington, eds., *Culture Matters: How Values Shape Human Progress*, pp. 112-124. New York: Basic Books.
- Loree, David W. and Stephen E. Guisinger. "Policy and Non-policy Determinants of U.S. Equity Foreign Direct Investment." *Journal of International Business Studies* 26(2): 281-99.
- Low, Patrick. 1995. "Preshipment Inspection Services." World Bank Discussion Paper No. 278.
- Lucas, Robert E. B. 1993. "On the Determinants of Direct Foreign Investment: Evidence from East and Southeast Asia." *World Development* 21(3): 391-406.
- Lui, Francis T. 1985. "An Equilibrium Queuing Model of Bribery." *Journal of Political Economy* 93: 760-81.
- Macrae, J. 1982. "Underdevelopment and the Economics of Corruption: A Game Theory Approach." *World Development* 10(8): 677-87.
- Maddala, G. S. and T. D. Mount. 1973. "A Comparative Study of Alternative Estimators for Variance Components Models Used in Econometric Applications." *Journal of the American Statistical Association* 68: 324-28.
- Mankiw, N. Gregory, David Romer, and David N. Weil. 1992. "A Contribution to the Empirics of Economic Growth." *Quarterly Journal of Economics* 107(2): 407-37.
- Markusen, James R. 2002. *Multinational Firms and the Theory of International Trade*. Cambridge, Massachusetts: MIT Press.
- . 1997. "Trade versus Investment Liberalization." National Bureau of Economic Research Working Paper No. 6231.
- . 1995. "The Boundaries of Multinational Enterprises and the Theory of International Trade." *Journal of Economic Perspectives* 9: 169-89.
- . 1984. "Multinationals, Multi-plant Economies and the Gains from Trade." *Journal of International Economics* 16: 205-26
- Markusen, James R and A. J. Venables. 2000. "The Theory of Endowment, Intra-industry, and Multinational Trade." *Journal of International Economics* 52: 209-34.
- . 1998. "Multinational Firms and the New Trade Theory." *Journal of International Economics* 46: 183-203.

- Markusen, James R., A. J. Venables, D. E. Konan, and K. H. Zhang. 1996. "A Unified Treatment of Horizontal Direct Investment, Vertical Direct Investment, and the Pattern of Trade in Goods and Services." National Bureau of Economic Research Working Paper No. 5696.
- Marshall, Monty G., Keith Jagers and Ted R. Gurr. 2010. *Polity IV Project: Political Regime Characteristics and Transitions, 1800-2010*. Version p4v2010. Center for Systemic Peace available at www.systemicpeace.org/polity/polity4.htm.
- Mathur, Aparna and Kartikeya Singh. 2007. "Foreign Direct Investment, Corruption, and Democracy." AEI Working Paper No. 135.
- Mauro, Paolo. 1995. "Corruption and Growth." *Quarterly Journal of Economics* 110: 681–712.
- Mbaku, John M. 2007. *Corruption in Africa: Causes, Consequences, and Cleanups*. Lanham, MD: Lexington Books.
- McFetridge, D.G. 1987. "The Timing, Mode and Terms of Technology Transfer: Some Recent Findings." In A. Safarian and G.Y. Bertin, eds., *Governments, Multinationals, and International Technology Transfer*, pp. 135-50. New York: St. Martin's Press.
- McManus, J.C. 1972. "The Theory of the International Firm". In G. Paquet, ed., *The Multinational Firm and the Nation State*, pp. 66–93. Toronto: Collier-Macmillan.
- McMillan, Susan. 1995. "Foreign Direct Investment in Ghana and Cote d'Ivoire." In Steve Chan, ed., *Foreign Direct Investment in a Changing Global Economy*, pp. 150-65. New York: St. Martin's Press.
- Medvedev, Denis. 2006. "Beyond Trade The Impact of Preferential Trade Agreements on Foreign Direct Investment Inflows." World Bank Policy Research Working Paper No. 4065.
- Miller, Terry and Kim R. Holmes. 2010. *Index of Economic Freedom*. Washington, D.C.: The Heritage Foundation and Dow Jones & Company available at www.heritage.org/index.
- Morris, Stephen. 1991. *Corruption and Politics in Contemporary Mexico*. Tuscaloosa: University of Alabama Press.
- Neaime, Simon and Marcus Marktanner. 2009. "The Role of Foreign Direct Investment for Economic Development in the MENA Region." Proceedings 29th International Conference of Middle East Economic Association in San Francisco, CA, January 2-5, 2009.
- Neeman, Zvika, M. Daniele Paserman and Avi Simhon. 2008. "Corruption and Openness," *The B.E. Journal of Economic Analysis & Policy* 8(1): Article 50.
- Neumann, Peter. 1994. "Bose: fast alle bestechen." *Impulse*, pp. 12-16. Hamburg: Gruner+Jahr AG&Co.
- Neumayer, Eric and Indra de Soysa. 2005. "Trade Openness, Foreign Direct Investment and Child Labor." *World Development* 33(1): 43-63.
- Ng, Francis and Alexander Yeats. 1999. "Good Governance and Trade Policy : Are They the Keys to Africa's Global Integration and Growth?" World Bank Policy Research Working Paper Series No. 2038.

- North, Douglass C. 1990. *Institutions, Institutional Change and Economic Performance*. Cambridge, U.K.: Cambridge University Press.
- Nye, Joseph S. 1967. "Corruption and Political Development: A Cost-Benefit Analysis." *American Political Science Review* 61(2): 417-27.
- Obstfeld, Maurice. 1998. "The Global Capital Market: Benefactor or Menace?" *Journal of Economic Perspectives* 12(4): 9-30.
- Olson, M. 1982. *The Rise and Decline of Nations: Economic Growth, Stagnation and Social Rigidities*. New Haven, CT: Yale University Press.
- Organisation for Economic Cooperation and Development (OECD). 2002. *Anti-corruption Measures in South Eastern Europe: Civil Society's Involvement*. Paris: OECD.
- . 1997. *Convention on Combating Bribery of Foreign Public Officials in International Business Transactions*. Paris: OECD.
- Paldam, Martin. 2002. "The Cross-Country Pattern of Corruption: Economics, Culture and the Seesaw Dynamics." *European Journal of Political Economy* 18(2): 215-40.
- Pellegrini, Lorenzo and Reyer Gerlagh. 2004. "Corruption's Effect on Growth and its Transmission Channels." *Kyklos* 57(3): 429-56.
- Persson, Torsten, Guido Tabellini and Francesco Trebbi. 2003. "Electoral Rules and Corruption." *Journal of the European Economic Association* 1(4): 958-89.
- Quah, Jon S. T. 1988. "Corruption in Asia with Special Reference to Singapore: Patterns and Consequences." *Asian Journal of Public Administration* 10(1): 80-98.
- Rehren, Alfredo. 2009. "The Crisis of the Democratic States." In Charles H. Blake and Stephen D. Morris, eds., *Corruption and Democracy in Latin America*, pp. 46-59. Pittsburg, PA: University of Pittsburg Press.
- Rhodes, Matthew. 2007. "A Crisis of Democracy in Southeast Europe." In Ernst M. Felberbauer, Predrag Jurekovic, and Frederic Labarre, eds., *Approaching or Avoiding Cooperative Security?* pp. 103-108. Vienna: Austrian Federal Ministry of Defense.
- Rock, Michael T. 2007. "Corruption and Democracy." DESA Working Paper No. 55.
- Rocky Mountain Collegian. 2012. "iPhone jobs are gone." September 12, 2012: 4. Print.
- Rodriguez, Katitza and Renata Avila-Pinto. 2012. "Privacy Rights Activism in Latin America." Electronic Frontier Foundation. September 24, 2012.
- Romer, Paul M. 1990. "Endogenous Technological Change." *Journal of Political Economy*, 98(5): 71-102.
- Rose-Ackerman, Susan. 1999. *Corruption and Government: Causes, Consequences, and Reform*. Cambridge, U.K.: Cambridge University Press.
- . 1978. *Corruption: A Study in Political Economy*. New York: Academic Press.
- Sally, Razeen. 2012. "A New Birth of Economic Freedom for Asia." September 23, 2012. Wall Street Journal Online.

- Sandholtz, Wayne and William Koetzle. 2000. "Accounting for Corruption: Economic Structure, Democracy, and Trade." *International Studies Quarterly* 44(1): 31-50.
- Schneider, F. and B. S. Frey. 1985. "Economic and Political Determinants of Foreign Direct Investment." *World Development* 13(2): 161-175.
- Scully, G. W. 1988. "The Institutional Framework and Economic Development." *Journal of Political Economy* 96: 652-62.
- Shen C. and J. B. Williamson. 2005. "Corruption, Democracy, Economic Freedom and State Strength." *International Journal of Comparative Sociology* 46(4): 327-45.
- Shleifer, Andrei and Robert Vishny. 1993. "Corruption." *Quarterly Journal of Economics* 108(3): 599-617.
- Skidmore, Thomas E. 1998. *Brazil: Five Centuries of Change*. New York: Oxford University Press.
- Smarzynska, Beata and Shang-Jin Wei. 2000. "Corruption and Composition of Foreign Direct Investment: Firm-Level Evidence." National Bureau of Economic Research Working Paper No. 969.
- Sun, Q., W. Tong and Q. Yu. 2002. "Determinants of Foreign Direct Investment across China." *Journal of International Money and Finance* 21(1): 79-113.
- Svensson, Jakob. 2000. "Foreign Aid and Rent-Seeking." *Journal of International Economics* 51: 437-61.
- Svensson, Jakob and Raymond J. Fisman. 2000. "Are Corruption and Taxation Really Harmful to Growth? Firm-Level Evidence." World Bank Policy Research Working Paper No. 2485.
- Tanzi, Vito. 1998. *Corruption Around the World: Causes, Consequences, Scope, and Cures*. *IMF Staff Papers* 45(4): 559-94.
- Tanzi, Vito and Hamid Davoodi. 1998. *Roads to Nowhere: How Corruption in Public Investment Hurts Growth*. Washington, D.C.: International Monetary Fund.
- . 1997. "Corruption, Public Investment, and Growth." IMF Working Paper 97/139.
- Tavares, Jose. 2003. "Does Foreign Aid Corrupt?" *Economic Letters* 79(1): 99-106.
- Tavares, Jose H. and Roman Wacziarg. 2001. "How Democracy Affects Growth." *European Economic Review* 45: 1341-78.
- Taylor, William E., 1980. "Small Sample Considerations in Estimation from Panel Data." *Journal of Econometrics* 13: 203-23.
- Tinbergen, Jan. 1962. *Shaping the World Economy*. New York: The Twentieth Century Fund.
- Tornell, Aaron and Philip R. Lane. 1998. "Voracity and Growth." National Bureau of Economic Research Working Paper No. 6498.
- Torrez, Jimmy. 2002. "The Effect of Openness on Corruption." *Journal of International Trade & Economic Development: An International and Comparative Review* 11(4): 387-403.

- Transparency International. 2011. *Corruption Perceptions Index*. Berlin: Transparency International available at www.transparency.org/cpi.
- . 2010. *Corruption Perceptions Index*. Berlin: Transparency International available at www.transparency.org/cpi.
- . 2009. *Corruption Perceptions Index*. Berlin: Transparency International. available at www.transparency.org/cpi.
- Treisman, Daniel. 2000. "The Causes of Corruption: A Cross-national Study." *Journal of Public Economics* 76: 399–457.
- Tullock, Gordon. 1996. "Corruption Theory and Practice." *Contemporary Economic Policy* 14: 6–13.
- United Nations. 2009. *African Governance Report*. New York and Geneva: United Nations, Economic Commission for Africa.
- . 2004. *United Nations Convention against Corruption*. New York: United Nations, Office on Drugs and Crime.
- United Nations Conference on Trade and Development (UNCTAD). 2011. *World Investment Report*. New York and Geneva: United Nations.
- . 2010. *World Investment Report*. New York and Geneva: United Nations.
- . 2009. *World Investment Report*. New York and Geneva: United Nations.
- . 2001. *Illicit Payments*. New York and Geneva: United Nations.
- . UNCTADStat. FDI/TNC database available at www.unctad.org/fdistatistics.
- United Nations Development Programme. 2011. *Asia Pacific Human Development Report: Tackling Corruption, Transforming Lives - Accelerating Human Development in Asia and the Pacific*. New York: United Nations Development Programme.
- . 1997. "Corruption and Good Governance." Discussion Paper No. 3, Management Development and Governance Division.
- Urata, S. and H. Kawai. 2000. "The Determinants of the Locations of Foreign Direct Investment by Japanese Small and Medium-sized Enterprises." *Small Business Economics* 15: 79-103.
- Uhlenbruck, K., P. Rodriguez, J. Doh, and L. Eden. 2006. "The impact of Corruption on Entry Strategy, Evidence from Telecommunication Projects in Emerging Economies." *Organization Science* 17: 402-14.
- U.S. Department of Justice. 1977. *Foreign Corrupt Practices Act of 1977*. Washington, D.C.: USDJ.
- Vernon, Raymond. 1979. "The Product Cycle Hypothesis in a New International Environment." *Oxford Bulletin of Economics and Statistics* 41: 255-67.
- . 1974. "Competition Policy toward Multinational Companies." *American Economics Review* 64: 276-82.
- . 1971. *Sovereignty at Bay: The Multinational Spread of U.S. Enterprises*. New York: Basic Books.

- . 1966. “International Investment and International Trade in the Product Cycle.” *Quarterly Journal of Economics* 80: 190-207.
- Vernon, Raymond and W.H. Davidson. 1979. “Foreign Production of Technology-Intensive Products by U.S.-Based Multinational Enterprises.” Working Paper No. 79-5, Division of Research, Graduate School of Business Administration, Harvard University.
- Veugelers, R. 1991. “Locational Determinants and Ranking of Host Countries: An Empirical Assessment.” *Kyklos* 44: 363-82.
- Wedeman, Andrew. 1997. “Looters, Rent-Scrappers, and Dividend Collectors: The Political Economy of Corruption in Zaire, South Korea, and the Philippines.” *Journal of Developing Areas* 31(4): 457-78.
- Weyland, Kurt. 2006. Reform and Corruption in Latin America. *Current History* 105(688): 84-102.
- Wheeler, David and Ashoka Mody. 1992. “International Investment Location Decisions: the Case of U.S. Firms.” *Journal of International Economics* 33: 57-76.
- Wei, Shang-Jin. 2000. “How Taxing is Corruption on International Investors?” *Review of Economics and Statistics* 82(1): 1-11.
- . 1999. “Corruption in Economic Development: Beneficial Grease, Minor Annoyance, or Major Obstacle? World Bank Policy Research Working Paper Series No. 2048.
- . 1997. “Why is Corruption So Much More Taxing than Tax? Arbitrariness Kills.” National Bureau of Economic Research Working Paper No. 6255.
- Webster, Leila M. and Joshua Charap. 1993. “The Emergence of Private Sector Manufacturing in St. Petersburg.” World Bank Technical Paper No. 228.
- Whitehead, Laurence. 2002. *Democratization: Theory and Experience*. Oxford: Oxford University Press.
- Williamson, Oliver E. 1985. *The Economic Institutions of Capitalism*. New York: Free Press.
- . 1975. *Markets and Hierarchies: Analysis and Antitrust Implications*. New York: Free Press.
- Woodward, Douglas and Robert Rolfe. 1993. “The Location of Export-oriented Foreign Direct Investment in the Caribbean Basin.” *Journal of International Business Studies*, 24(1): 121-44.
- Wooldridge, Jeffrey. 2002. *Econometric Analysis of Cross Section and Panel Data*. First edition. Cambridge, M.A.: The MIT Press.
- World Bank, 2011. World Development Indicators Online Database. Washington, D.C.: World Bank (Producer and Distributor).
- . 2010. World Development Indicators Online Database. Washington, D.C.: World Bank (Producer and Distributor).
- . 1998. *Assessing Aid: What Works, What Doesn't, and Why*. World Bank Development Research Group Policy Research Reports. New York: Oxford University Press.

- . 1997. *Helping Countries Combat Corruption: The Role of the World Bank*. Washington, D.C.: World Bank.
- . 1993. *The East Asian Miracle: Economic Growth and Public Policy*. New York: Oxford University Press.
- Xing, Yuqing and Neal Detert. 2010. “How the iPhone Widens the United States Trade Deficit with the People's Republic of China.” ADBI Working Paper Series No. 257.