# The Impact of Corruption on FDI and Public Investment


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**Abstract**

The thesis examines the relationship between corruption and investment. Existing literature provides evidence that there is a negative relationship between corruption and investment. In particular, studies have found that corruption has a negative effect on Foreign Direct Investment (FDI). Whereas other studies have found that corruption increases the level of public investment, but not contributing to economic growth. This thesis examines the effect of corruption on FDI and public investment. The research will contribute to the literature by investigating a long time period from 1996 until 2011. Most studies use a very short dataset due to the limited data availability in the past. The second reason I employ a long period is based on the findings in the study by Judge et al. (2011), who suggests that the effect of corruption is larger in studies using data after the year 2000. Secondly, I will explore the indirect effect of corruption on FDI. Everhart et al. (2009) one of the few to examine the indirect relationship of corruption on FDI and public investment and recommends that this should be needs to be investigated more in detail. Furthermore, I use the two most widely used corruption measures available, the Control of Corruption Index (CCI) and the Corruption Perception Index (CPI). My main finding is that corruption does not have a significant effect on FDI. Furthermore, I find no evidence for an indirect of corruption through public investment. The second main result is that corruption does not have a significant effect on public investment.

**Keywords**: Corruption, FDI, public investment

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**List of Abbreviations**

BI: Business International

CCI: Control of Corruption Index

CPI: Corruption Perception Index

Depend: dependency ratio

FDI: Foreign Direct Investment

GDP: Gross Domestic Product

GFS: Governance Finance Statistics

GMM: Generalized Method of Moments

ICGR: International Country Risk Guide

IV-method: Instrumental Variable Method

LDI: Local Domestic Investment

MNE: Multinational Enterprise

OECD: Organization for Economic Co-operation and Development

TI: Transparency International

WB: World Bank

WGI: World Governance Indicators

2SLS-method: Two Stage Least Squares Method

## 1. Introduction

Corruption has received wide attention from researchers, policy makers and international organizations. The World Bank estimated that over more than $1 trillion dollars is paid in bribes each year.[1] In addition, the Asian Development bank has shown that corruption can cost a country up to 17% of its GDP.[2] Several international organizations have taken their part to combat corruption. The World Bank and the OECD have launched anti-corruption programs since 1997 in approximately 100 countries. Moreover, the United Nations adopted the United Nations Convention against Corruption, which is the first legally binding global instrument to fight corruption. Although international organizations have introduced anti-corruption strategies, local residents are not content with the actions of their national governments. In fact, the Global Corruption Barometer published by Transparency International (TI) shows that 54% of the respondents' state that the government's anti-corruption policies are ineffective. Researchers have studied this phenomenon for a few decades. For example North (1987) and La Porta et al. (1999) have shown that government institutions which do not function properly can harm economic performance through a reduction in incentives to invest and innovate. Researchers have also examined the effect of corruption on income distribution and inequality (Li et al., 2002), the influence of natural resource abundance (Leite and Weidmann, 1999) and the determinants of corruption (Treisman, 2007). The first influential empirical paper by Mauro (1995) found a significant negative relationship between corruption and economic growth. In addition, corruption can have a direct effect on growth and can also influence growth indirectly through other channels. Mauro (1995), Pak Hung Mo (2001) and Pellegrini and Gerlagh (2004) have examined the channels through which corruption can affect growth. One of the most important channels identified is the investment channel. This thesis will further re-examine the relationship between corruption and investment. More specifically, a distinction will be made between private investment and public investment. The related literature suggests that corruption affects private and public investment differently; therefore I will focus on both types of investment. I will contribute to the existing literature in several ways. First, I extend the time period and the number of cross sections used in the empirical analysis. The articles which I will discuss in my literature review use smaller datasets with less countries and data till the year 2003. The dataset used in the analysis covers the period 1996 till 2011, using between 133 and 174 countries covering all continents. The second reason I employ a long period is based on the findings in the study by Judge et al. (2011) who suggests that the effect of corruption is larger in studies using data after the year 2000. They recommend that research on corruption should be conducted longitudinally over time. Secondly, I will explore the indirect effect of corruption on FDI and public investment. Everhart et al. (2009) is one of the first to examine the indirect relationship and recommends that this should be explored more in empirical research. Thirdly, I will use two measures for corruption, the Control of Corruption Index and

[1] World Bank (2004). The cost of corruption.
[2] http://www.un.org/News/Press/docs/2004/soccp301.doc.htm

Corruption Perception Index to see whether the results are the same. My main finding is that corruption does not have a significant effect on FDI. In addition, I find no evidence for an indirect effect of corruption through public investment. I also examine the relationship for different subsamples such as income levels and continents. The subsample estimations have shown that corruption has a significant effect on FDI for European and OECD countries, indicating that lower levels of corruption increase the FDI inflow. The second main result is that corruption does not have a significant effect on public investment. The subsample regressions have shown that corruption has a negative effect on public investment in Latin America and a positive effect in the Middle East. There is no difference in findings between the two corruption measure used for both FDI and public investment. The thesis is organized as follows: the next section briefly reviews the existing literature on the relationship between growth, investment and corruption. In section three and four I will explain the methodology and data used. Section 5 discusses the results. Consequently, I will discuss the limitations of my results and I will end my analysis with a conclusion of my findings.

## 2. **Literature review**

In the Oxford dictionary corruption is defined as dishonest or fraudulent conduct by those in power, typically involving bribery. Following Everhart et al. (2009), Habib and Zurawicki (2001) and Tanzi (1998), I focus on the misuse of public power for private benefit.[3] When governments are corrupt, government officials have public power to demand bribes from citizens. Another form of corruption is when politicians put their own interest above the interests of the society. They make policy decisions which are favorable to a certain part of society and detrimental to the rest of the society. Jain (2001) discusses three factors that need to be present for corruption to occur. First, a government official must have the power to design and implement policies. Secondly, the regulatory framework should offer low probability of getting caught. Thirdly, economic rents that can be earned in society need to be connected to the authority of government officials. For example an entrepreneur will need the necessary documents to start up his business, hence needs to deal with government officials. The amount of rents that can be earned, determine the degree to which citizens want to avoid cumbersome regulations, which in turn determines the value of the bribe of the government officials.

### *2.1 Relationship economic growth and corruption*

The literature on the relationship between corruption and growth is not conclusive. The first articles were published in the 1960s and were mostly theoretical due to the fact that there was no data available on corruption which allowed for empirical studies. The literature on corruption can be divided in two

[3] Lambsdorff. Johann Graf. 2007. The institutional Economics of Corruption. Cambridge: The Edinburgh Building

views. The first view suggests that corruption can enhance growth. The main argument put forward is that inefficiencies in the government are detrimental to investments. In this situation corruption can speed up the red tap process and lead to an increase in efficiency, investment and growth (Leff, 1964). The other view states that corruption hampers economic growth, which is supported by most of the studies (Murphy et al., 1993; Rose-Ackerman, 1975; Shleifer and Vishny, 1993). The first empirical paper about the relationship between corruption and growth was written by Mauro (1995), who finds that corruption decreases private investment and thereby reducing economic growth. The studies conducted by Guillaumeméon and Sekkat (2005) and Knack and Keefer (1995) confirm the result that corruption reduces economic growth. Pak Hung Mo (2001) extended the work of Mauro (1995) by examining the channels through which corruption affects economic growth. Political instability followed by human capital and private investment are the most important channels through which corruption affects economic growth. Pellegrini and Gerlagh (2004) also investigated the transmissions channels through which corruption affects growth. They found that the investment and trade channel are the most important channels through which corruption affects growth.

### *2.2 Relationship total investment and corruption*

Brunetti and Weder (1998) study how different uncertainty variables affect the average investment rate. The sample used consists of 60 countries for the period 1974 until 1989. They have shown that rule of law and corruption have the largest negative effect on investment. Campos et al. (1999) confirms the result, however they argue that the level of corruption and different corruption regimes can affect the level of investments. They made a distinction between predictable and unpredictable corruption. They have shown that corruption regimes that are predictable have a smaller negative effect on investment compared to a regime in which corruption is less predictable. This result can help to explain the growth miracle of the Asian economies, where the corruption is well organized with a high degree of predictability.

### *2.3 Relationship FDI and corruption*

Asiedu (2006), Cuervo-Cazurra (2006, 2008), Egger and Winner (2005, 2006), Habib and Zurawicki (2001, 2002) studied the effect of corruption of FDI and found a negative impact on FDI. Habib and Zurawicki (2001) use a dataset consisting of 111 countries for the period 1994-1998, containing developed and developing countries. They found that corruption has a negative impact on FDI and Local Domestic Investment (LDI). Particularly, the effect of corruption on FDI is larger than on LDI. Additionally, Habib and Zurawicki (2002) analyze the level of corruption in the host country and the absolute difference between the host and home country.

They found that corruption has a negative impact on investment due to the difference in the level of corruption between the home and host country. On the other hand, Cuervo-Cazurra (2006) suggests that corruption changes the composition of FDI of the country of origin. In particular, he has shown that countries that have signed the OECD convention decrease the FDI outflow to countries that have a high corruption level.[4] This mechanism has a reinforcing effect to fight corruption. Countries that reduce the level of corruption benefit not only from a higher FDI inflow, but also with an FDI inflow from countries that actively combat corruption. Egger and Winner (2005) extend the work done in previous papers by examining the short and long run impacts of FDI. They employ a panel dataset containing 73 countries covering the period 1995-1999. They investigate how the observed change in corruption contributed to the growth and distribution of FDI. They found that corruption has a positive short run impact on FDI, confirming the view supported by Leff (1964). Additionally, the authors also find a long run positive effect of corruption on a host country's attractiveness for foreign investors, contradicting former analyses done by Habib and Zurawicki (2001, 2002).

### *2.4 Relationship public investment and corruption*

Another strand of literature focuses on the effect of corruption on public investment. One of the studies that received a lot of attention was the paper written by Tanzi and Davoodi (1998). Their research suggests that corruption increases the share of public investment, decreasing the productivity of investment and reducing the share of investment going to sectors such as education, health and maintenance. Additionally, Mauro (1998) has shown that corruption changes the composition of government expenditures. He argues that some categories of expenditures such as education expenditures are less attractive for government officials to collect bribes from. A possible solution would be to increase the share of government spending on categories that are not attractive for bribery. De La Croix and Delavallade (2006) support Mauro (1998) his view by arguing that corruption is an important determinant for the structure of government expenditure by sector. Using data for 64 countries in the period 1996 until 2001, they find that corruption redistributes funds to sectors such as fuel, energy, public services, defense and culture. The sectors that receive fewer funds are education, health and social protection, confirming the result of Mauro (1998). In contrast, Knack and Kneefer (2007) use a composite index to measure the governance quality. The measure includes expropriation and contract repudiation risk, law and order, corruption and bureaucratic quality. They find that public investment is higher in countries with a low quality of governance, confirming the result found by Tanzi and Davoodi (1998). Rajkumar and Swaroop (2008) contribute to the literature by studying the relationship between public spending, governance and outcomes.

[4] Combating Bribery of Foreign Public officials in International Business transactions

The main finding is that spending on healthcare (decreasing child mortality) and education (increasing primary educational attainment) is effective in countries where the quality of governance is relatively good. More importantly, public spending has no effect on health and education outcomes in countries with weak governance. Everhart et al. (2009) developed a neoclassical model of output to examine how corruption and governance affect investment. The dataset used consisted of 50 developing and transition economies covering the period 1984-1999. Their estimations have shown that corruption is not a significant factor contributing to public investment. It is worth noting that there are not a lot of studies that examine the effect of corruption on total public investment besides Everhart et al. (2009), Knack and Kneefer (2007) and Tanzi and Davoodi (1998).

## 3. Methodology

### *3.1 Foreign Direct Investment*

The effect of corruption on FDI will be estimated by following the approach in the paper by Egger and Winner (2005). The main equation is as follows:

$$FDI_{it} = \beta_0 + \beta_1 Cor_{i(t-1)} + \beta_2 real\ GDP_{i\,(t-1)} + \beta_3 schooling_{i\,(t-1)} + \beta_4 real\ GDP_{i\,(t-1)} * schooling_{i\,(t-1)} + \beta_5 legal_{i\,(t-1)} + Z'_{i\,(t-1)} + \alpha_i + \delta_t + \varepsilon_{it} \quad (1)$$

The subscripts $i$ and $t$ stand for country and year respectively. $\alpha_i$ is a country-specific fixed effect, $\delta_t$ is a time specific fixed effects and $\varepsilon_{it}$ is the error term. $FDI_{it}$ presents log value of inward $FDI$, $Cor_{i\,(t-1)}$ is the main variable of interest which is defined as corruption measured by the log of $Control\ of\ Corruption\ (CCI)$ or $Corruption\ Perception\ Index\ (CPI)$. The variable $schooling_{i\,(t-1)}$ is the log of $Secondary\ School\ Enrollment\ (SES)$ which is used as a proxy for human capital. The variable $real\ GDP_{i\,(t-1)}$ is used as a proxy for market size and $Legal_{i(t-1)}$ is defined as legal quality measured by log $regulatory\ quality$ . The interaction between $real\ GDP_{i\,(t-1)}$ and $schooling_{i\,(t-1)}$ corrects for the influence of vertical FDI.[5] In addition, Markusen and Maskus (2002) hypothesize that small countries with a high level of skilled labor have an outflow of FDI and large countries with a high level of skilled labor have an inflow of FDI. A negative sign of the interaction term supports the hypothesis. $Z'_{i\,(t-1)}$ is a vector of control variables including political, legal and social economic factors which have been chosen based on the related literature.

[5] Vertical Multinational Enterprises (MNEs) are firms that divide the production into different phases, which is determined by the factor intensities. Thus high-skilled labor intensive processes are directed towards countries with a level of high-skilled labor and vice versa (Markusen and Maskus , 2002).

*3.1.1 Control variables*

The literature on the determinants of FDI is extensive and not always conclusive; nevertheless I will include the most important determinants for which sufficient data is available. The $Consumer\ Price\ Index$ ($price\ index$) is included in the regression to control for the macroeconomic situation in a country (Asiedu, 2006; Easterly and Rebelo, 1993; Schneider and Frey, 1985). The variable $trade$ defined as exports plus imports as a share of GDP is used as a measure for the openness of a country. The openness of a country is positively related to the inflow of FDI (Everhart et al., 2009; Habib and Zurawicki 2001, 2002). The log of $telephones$ ($tel$) per 1000 inhabitants is included as a proxy for the development of infrastructure in a country (Asiedu, 2006; Tanzi and Davoodi, 1997).[6] In the main equation country size is measured by $real\ GDP$, however other studies have also used the log of $population$ ($pop$) as a proxy (Asiedu, 2006; Cuervo-Cazurra, 2008; Habib and Zurawikci, 200). Thus I will also include the log of $population$ in some of my models. According to Bloningen (2005) institutional factors such as political stability are important in determining FDI inflows. For example Nigh (1985) showed that political stability has a positive effect on FDI, whereas Wheeler and Moody (1992) find no significant effect of political stability of FDI. Based on the findings I will include a variable $political\ stability$ ($psp$) to see if it has an effect on FDI in the sample of countries. The log of $gross\ national\ expenditures$ is added to the model as a measure for public investment. This variable is added to the model to see whether expenditures crowd out or crowd in FDI (Everhart et al., 2009; Misati and Nyamongo, 2011). Lastly, I add an interaction term of the corruption indices (CCI and CPI) and $public\ investment$ measured by $gross\ national\ expenditures$, to see whether corruption has an effect on FDI through the public investment channel (Everhart et al., 2009). According to my knowledge Everhart et al. (2009) is one of the first papers that examined the effect of the interaction between corruption and public investment on FDI. Therefore, I will explore this further in detail in as I will discuss in Section 5.1. I take the natural logarithm of all the independent variables and lag them by 1 year to account for heteroskedasticity and endogeneity. A full description of all the variables can be found in the Appendix Table A-1.

[6] See Asiedu (2002) for the use of the number of telephones as a measure for infrastructure.

*3.2 Public investment*

The main approach will be taken from the paper by Everhart et al. (2009). The main equation is:

$$public\ investment_{it} = \beta_0 + \beta_1\ Cor_{i(t-1)} + \beta_2 GDP\_pc_{\ i\ (t-1)} + \beta_3\ Legal_{i\ (t-1)} + \beta_4\ trade_{i\ (t-1)} + \beta_5\ FDI_{i(t-1)} + \beta_6\ Z'_{i\ (t-1)} + \alpha_{it} + \delta_{it} + \varepsilon_{it} \quad (2)$$

The variable $public\ investment_{it}$ is measured by the log of $gross\ national\ expenditure$ as a fraction of GDP. $Gross\ national\ expenditures$ includes household final consumption, general government final consumption expenditure and gross capital formation.[7] The variable $GDP\_pc_{i\ (t-1)}$ is defined as $GDP\ per\ capita$ which accounts for the level of economic development in a country (Tanzi and Davoodi, 1997). Following Alesina and Wacziarg (1998), De La Croix and Delavallade (2006), Keefer and Knack (2007), Mehrota and Valila (2006), Tanzi and Davoodi (1997), I include the most important control variables for which sufficient data is available. The variables that will be added to the model are: $political\ stability, population, dependency\ ratio\ and\ urbanization.$ The remaining variables are the same as stated in Equation 1.

*3.3 Institutional variables*

The first measure I will use is called Control of Corruption (CCI) which is developed by Kaufmann et al. (2010). The CCI captures the perceptions of the extent to which public power is exercised for private gain.[8] The CCI is a percentile ranking varying between 0 (lowest) and 100 (highest). The CCI uses four types of data sources: surveys of households and firms, commercial business information provides non-governmental organizations and public sector organizations. The second measure I will use is the Corruption Perception Index (CPI) developed by Transparency International. This index is a combination of surveys and assessments of corruption, collected by a variety of reliable institutions specialized in governance and business climate analysis. The CPI is a score of the perception of how corrupt the public sector is of a country.[9] The score ranges from 0 to 10, where higher values indicate less corruption.

[7] World bank (2014) definitions: *Household final consumption expenditure* is the market value of all goods and services, including durable products purchased by households. *General government final consumption expenditure*) includes all government current expenditures for purchases of goods and. *Gross capital formation* consists of outlays on additions to the fixed assets of the economy plus net changes in the level of inventories.

[8] World bank: World Governance Indicators

[9] http://cpi.transparency.org/cpi2013/in_detail/

I have chosen CCI and CPI as a measure for corruption, because they are the most widely used corruption measures in empirical analyses and they are readily available on the respective websites. The CCI will be the main measure for corruption, because this measure is available for a large number of countries and long time period. The CPI will be used as a second measure, because the number of observations is substantively smaller than the CCI. Furthermore, I have chosen to use these two measures, since the combination of the two measures in empirical studies is scarce.

The CCI and the CPI are not the only two measures that have been used in previous studies. Throughout the years several corruption measures have been developed. Business International Corporation published ratings on the level of corruption based on data collected from respondents and analysts, which was first used by Mauro (1995). Another index was developed by Political Risk Services who publishes an annual report called the International Country Risk Guide consisting of 22 country risk indicators. This index is used by several studies including Tanzi and Davoodi (1997) and Rajkumar and Swaroop (2008). These measures are not included in the analysis, because the data is not available for students.

The estimates of the institutional variables CCI and CPI need to be interpreted with caution. The most frequently used data sources for corruption indices are surveys of government officials, foreign and domestic investors (Kraay and Murrel, 2013; Rodrik, 2004). Furthermore, Rodrik (2004) argues that perceptions are not only based on the actual operation of the institutional environment, but also by other aspects of a country, such as the state of the economy. Kraay and Murrel (2013) argue that survey respondents are hesitant to report the true level of perceived corruption, leading to a downward bias in the estimations of the level of corruption. They developed a model to correct for the hesitant behavior of respondents. The hesitant adjusted estimates of corruption are twice the level of corruption indicated by the respondents. Moreover, TI states that the CPI is not the total picture of the perceived level of corruption in a country. To gain more insight of the situation in a country, the CPI must be complemented with other indices such as the Global Corruption Barometer, Bribe Payers Index and National Integrity System assessments. Nevertheless, these measures can be used; however attention needs to be paid to the way in which the governance measures are interpreted.

*3.4 Estimation method*

I use a panel of 15 years, 133 countries for Equation 1 and 174 countries for Equation 2. I will estimate Equation 1 and 2 with the fixed effects estimator (within estimator), which accounts for unobserved heterogeneity between individuals.[10] Before the regressions are conducted, I will test to see whether multicollinearity exists between the variables. High multicollinearity leads to unreliable coefficient estimates. I will test for multicollinearity by examining the correlation matrix and calculating the Variance Inflation Factor (VIF) will be calculated. The VIF examines whether a variable has strong linear relationship with the other variables. There is no rule of thumb on the value of the VIF, but a value of 10 might indicate the presence of multicollinearity.[11] I use a significance level of 5% throughout my analysis.

The estimations of Equation 1 and 2 are reliable if the residuals meet certain assumptions. The residuals need to be normally distributed, homoscedastic, uncorrelated and uncorrelated with the independent variables. Heteroskedasticity and Autocorrelation Consistent Standard Errors (HAC) are used to correct for heteroskedasticity and autocorrelation. If an independent variable is correlated with the error term, there might be endogeneity. Endogeneity is a problem, when a causal relationship wants to be inferred from the estimated coefficients. Previous literature has identified several instruments which have been used to instrument corruption (Mauro, 1995; Pak Hung, Mo 2001; Pellegrini and Gerlagh, 2004). The first to use variables to instrument corruption was Mauro (1995). Mauro (1995) used Ethnic fractionalization (ELF index) and dummy variable former colony. The ELF index measures the probability that two randomly selected persons from a given country will not belong to the same ethnolinguistic group. Previous studies suggest that the ELF index is a good instrument, because there is a negative correlation between institutional quality and the ELF index. High ethnic diversity can increase corruption due to the fact that bureaucrats favor people of their own ethnic group. Another instrument is the dummy which indicates whether a country is a former colony. The argument is that a colonial history influences the possibility to form a stable government and the efficiency. Mauro (1995), Pak Hung Mo (2001), Pellegrini and Gerlagh (2004) all agree that the proposed instruments have some problems. Mauro (1995) suggests that the ELF index can also influence growth and investment through a political stability variable, thus not a perfect instrument. Pak Hung Mo (2001) uses the ELF index and continental dummies in his IV-estimation. The results are quite similar to those in the regular OLS regression, however the 2SLS estimation method is less stable and the results are less significant. Pellegrini and Gerlagh (2004) found no significant confirmation for the use of the proposed instruments. They also used legal origin as an instrument, but the instrument is rejected as a valid instrument.

[10] The hausman test shows that a fixed effects model is preferred over a random effects model.
[11] See Field (2009) for more details

These studies have shown that there is not a good instrument available for corruption. Based on the evidence on instruments in the literature, I will not use variables to instrument corruption. Therefore, it must be noted that the use of a simple panel data setting estimation technique might leave some endogeneity issues.[12]

## 4. Data

### *4.1 Data selection*

The CCI is collected from Transparency International, $real\ GDP$ is collected from the Penn World Tables and the rest of the variables are collected from the World Bank (World Development Indicators and World Governance Indicators). The selection of the variables is based on the data availability. Most of the studies in the related literature have used a relatively small datasets.[13] I have chosen to include the data for all the available countries, because I want I large sample of countries to increase the robustness of the results. The sample consists of data from all continents covering the period 1996-2011.The variable CCI is available every other year for the period 1996-2000, thus I took the average of the neighboring values to increase the number of observations.

The number of observations in my baseline estimation lies between 909 and 2135. I employ a long period based on the findings in a meta-analysis of Judge et al. (2011), who have shown that the effect of corruption is larger in studies using data after the year 2000. A possible explanation for this is the fact that the measurement of corruption improves over time and that the concept of corruption is better understood. For example corruption awareness arose at the beginning of the 21st century. In particular, organizations such as the OECD and the World Bank followed by the UN and TI identified corruption as a criminal act in the late 90s and took actions to reduce corruption in the year 2000. In addition, studies conducted by researchers of the WB assess the quality of the governance indicators and try to improve the measurement technique (Kraay and Murrel, 2013; Langbein and Knack, 2008).They recommend that research on corruption should be conducted longitudinally over time. Table A-12 in the Appendix indicates that most studies in my review use data until the year 2001.

[12] If endogeneity is a problem the differenced Generalized Method of Moments (GMM) can be used, where instruments are constructed inside the model.

[13] Kneefer and Knack (2007) use 114 observations, Habib and Zurawicki (2002) use 405 observations, and Asiedu (2006) use 137 observations.

*4.2 Descriptive statistics*

Before discussing the results, I first make some remarks about the descriptive statistics. The descriptive statistics of the variables can be found in Table A-2 and the correlation matrix in Table A-4 in the Appendix. The correlation matrix in Table A-4 shows that there is a significant correlation between CCI and FDI is (0.14) and (-0.07) between CPI and FDI. Furthermore, the correlation matrix shows high correlations for certain variables. The governance indicators from the WB are highly correlated. For example the correlation between CCI and $regulatory\ quality$ is (0.85) and (0.76) between CCI and $political\ stability$. Langbein and Knack (2008) examine the validity of the WGI. They argue that the indicators are being used as six unique elements of governance in studies. However, their study suggests that the indicators do not measure distinctive elements of governance, but the level of governance. The high correlations among the WGI could be explained by the fact that the indicators measure the same concept. High correlations are also present for some of the control variables between $schooling$ and $telephones$ (0.74) and (-0.79) between $schooling$ and $dependency\ ratio$. The VIF values depicted in Table A-6 in the Appendix are all smaller than 10, indicating no signs of multicollinearity.

A depiction of the average corruption level classified by income level between1996 and 2011 is presented in the Appendix Table A-3. A list of countries classified based on income level (low, middle and high) is presented in Table A-5 in the Appendix. There are large differences between low, middle and high income countries. The lowest CCI level (highest corruption level) exists in the low income countries with a mean value of (21.10). Figure A-1 in the Appendix shows that Somalia (0.80), Afghanistan (1.38), Democratic Republic of Korea (2.41), Myanmar (2.80) and Democratic Republic of Congo (3.14) have the lowest average CCI level. Furthermore, the figure shows that the OECD countries have the highest average CCI level (lowest corruption level) which is (86.90). Also, Figure A-1 illustrates that Denmark (99.72), Finland (99.41) and New Zealand (98.92) have the highest average CCI level. In Addition, Figure A-1 shows that there are also high income countries with a low average CCI level, for example Equatorial Guinea (2.04) and the Russian Federation (18.42). When the sample is divided into continents, it can be observed that the lowest highest CCI level exists in Europe and the lowest average CCI level in in Africa.

## 5. Results

### *5.1 Corruption and FDI*

The results of Equation 1 are reported in Table 1 in the main text. Column 1, 2 and 3 are the estimations with the Control of Corruption Index and Column 4, 5 and 6 are estimations with the Corruption Perception Index. Colum 1 presents estimations of the baseline Equation 1.The variable CCI is insignificant and this also holds for the other variables in Column 1. Column 2 is the baseline equation with additional control variables and Column 3 also includes the interaction term between $public\ investment$ and CCI. The variable CCI remains insignificant in Column 2 and 3. The interaction term is insignificant, indicating that corruption does not impact FDI indirectly through public investment. This contradicts the findings of Everhart et al. (2009), who finds a significant indirect effect of corruption on FDI. Additionally, Column 2 and 3 show that the variables $trade$ and $population$ are significant and have a positive effect on FDI. The variable $public\ investment$ significant and positive in Column 2, indicating that public investment increases inward FDI. Colum 4, 5 and 6 present the same estimations with the second corruption measure, the Corruption Perception Index. I find no significant effect of the variable CPI on FDI. Furthermore, the interaction between $real\ GDP_{i\ (t-1)}$ and $schooling_{i\ (t-1)}$ is insignificant in Colum 1 to 6, thus I find no support for the hypothesis of Markusen and Maskus (2002). The estimations in Table 1 show that corruption does not have a significant effect on FDI, whether it is directly or indirectly through $public\ investment$. My result contradict the findings of Asiedu (2006), Cuervo-Cazurra (2006, 2008), Egger and Winner (2005, 2006) and Habib and Zurawicki (2001, 2002).

To examine whether the Equation 1 is robust, I estimated a set of different specifications which can be found in Table A-7 in the Appendix. Column 1, 2 and 3 present the result without the interaction term between CCI and $public\ investment$ and Column 4, 5 and 6 present the estimations with the interaction term. I first test whether my results are driven by the definition of the variables that I use. In the original specification I use log FDI as the dependent variable, whereas others such as Asiedu (2006) have used FDI as a share of GDP as the dependent variable. Column 1 in Table A-7 shows that the variable CCI is insignificant when using FDI as a share of GDP as the dependent variable.

**Table 1: Estimation results equation 1. The dependent variable is log FDI**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | Control of Corruption | | | Corruption Perception Index | | |
| Log CCI | 0.0864 | 0.0580 | 0.00815 | | | |
| | (0.120) | (0.103) | (1.495) | | | |
| Log CPI | | | | 0.826 | 0.743 | -0.573 |
| | | | | (0.646) | (0.570) | (3.236) |
| Log real GDP | -0.335 | -0.505 | -0.505 | 1.672 | 1.579 | 1.574 |
| | (1.034) | (1.041) | (1.040) | (1.215) | (1.202) | (1.207) |
| Log legal | 0.105 | 0.0957 | 0.0956 | 0.115 | 0.0923 | 0.0887 |
| | (0.127) | (0.118) | (0.118) | (0.219) | (0.216) | (0.216) |
| Log schooling | 0.272 | -0.909 | -0.909 | 5.696** | 4.645* | 4.603* |
| | (2.072) | (2.097) | (2.102) | (2.783) | (2.485) | (2.486) |
| Log real GDP* Log schooling | 0.0855 | 0.148 | 0.148 | -0.365 | -0.324 | -0.320 |
| | (0.223) | (0.225) | (0.225) | (0.265) | (0.253) | (0.254) |
| Log price index | | 0.174 | 0.174 | | -0.158 | -0.164 |
| | | (0.114) | (0.114) | | (0.313) | (0.314) |
| Log trade | | 0.899* | 0.899** | | 0.733 | 0.745 |
| | | (0.456) | (0.454) | | (0.505) | (0.514) |
| Log telephones | | 0.136 | 0.136 | | 0.186 | 0.186 |
| | | (0.173) | (0.173) | | (0.226) | (0.227) |
| Log population | | 1.470** | 1.474** | | 1.746** | 1.739** |
| | | (0.687) | (0.723) | | (0.728) | (0.729) |
| Log political stability | | -0.0433 | -0.0433 | | -0.136 | -0.136 |
| | | (0.0931) | (0.0931) | | (0.111) | (0.111) |
| Log public investment | | 1.517** | 1.479 | | 1.804*** | 1.418 |
| | | (0.590) | (1.096) | | (0.683) | (1.233) |
| Log CCI* Log public investment | | | 0.0109 | | | |
| | | | (0.330) | | | |
| Log CPI*Log public investment | | | | | | 0.285 |
| | | | | | | (0.771) |
| Constant | 17.93* | -12.90 | -12.77 | -7.132 | -41.46** | -39.52** |
| | (9.577) | (14.42) | (14.16) | (12.85) | (18.47) | (18.59) |
| Obs. | 1,270 | 1,270 | 1,270 | 909 | 909 | 909 |
| R-squared | 0.366 | 0.390 | 0.390 | 0.420 | 0.443 | 0.444 |

The robust standard errors are in parentheses. Column 1, 2 and 3 are estimated with the Corruption Perception index and Column 4, 5 and 6 are estimated with the Corruption Perception Index. All the estimations include country and time fixed effects. All the independent variables are lagged by 1 year. Note that the estimations with the CPI have fewer observations than with the CCI.

Significance level *** $p<0.01$,
Significance level ** $p<0.05$,
Significance level * $p<0.1$

In the main specification I use $real\ GDP_{i\,(t-1)}$ as a measure for the size of the market, where as other have used log GDP and log GDP per capita as a measure. Asiedu (2006), Cuervo-Cazurra (2006, 2008) have used log GDP. Column 2 shows the estimations with log GDP instead of $real\ GDP$ and illustrates that corruption is still insignificant. Column 3 shows the estimation with log GDP per capita and indicates that corruption remains insignificant. Column 4, 5 and 6 are the same estimations as the previous columns withthe interaction term. The estimations indicate that the corruption variable remains insignificant. In sum, the analysis has shown that the corruption variable remains insignificant when changing the specification for both the direct effect and indirect effect through public investment.

The next set of estimations explores the relationship for different income levels and continents. The results of these estimations can be found in Table A-8, A-9 and A-10 in the Appendix. First, I estimated Equation 1 with the additional control variables for three income levels. I have used the classification of income levels from the World Bank (2014). The WB has made a classification of low, middle and high income countries based on the GNI of a country. Low income is classified as GNI smaller than $1035; middle income is between $1035 and $12614 and high income larger than $12615. Column 1, 2, 3 show the results for low, middle and high income respectively without the interaction term. The estimations indicate that there is no significant effect of corruption on FDI for the three subsamples. Columns 4, 5 and 6 present the same estimations with the interaction term and indicate no significant effect indirect effect. Next, Equation 1 is estimated for different continents shown in Table A-9 in Column 1 to 7. The estimations show that corruption has a positive effect on FDI in Column 1 and 5, which corresponds to the OECD countries and Europe. This suggests that lower levels of corruption increase the level of inward FDI in European and OECD countries. As discussed in the Section 4.1, Europe and the OECD have the lowest average corruption level, thus this might explain the significant effect found in the estimations. To end my analysis on FDI, I estimated Equation 1 for the top oil producers in the world shown in Column 8 of Table A-9. Leite and Weidmann (1999) have shown that resource abundant economies grow slower due to corruption. On the other hand, Brunnschweiler (2008) finds an opposing result that natural resource abundance taking into consideration the quality of institutions, has a positive effect on growth. I find that corruption does not have a significant on FDI for the top oil producing countries. I estimated the same models with the interaction term illustrated in Table A-10. The results indicate that corruption does not have an indirect on FDI for any subsample.

**Table 2: Estimation results Equation 2**

| | (1) | (2) | (3) | (4) | (5) | (6) |
|---|---|---|---|---|---|---|
| | **Control of Corruption** | | **Corruption Perception Index** | | **Government consumption** | **Gross capital formation** |
| Log CCI | 0.0182 | 0.0196 | | | 0.0246 | -0.00311 |
| | (0.0181) | (0.0169) | | | (0.0280) | (0.0279) |
| Log CPI | | | 0.0217 | 0.0222 | | |
| | | | (0.0181) | (0.0188) | | |
| Log GDP per capita | -0.186*** | -0.211*** | -0.147* | -0.188** | -0.134 | 0.0402 |
| | (0.0632) | (0.0603) | (0.0846) | (0.0771) | (0.156) | (0.152) |
| Log Legal | 0.0125 | 0.0205 | -0.0122 | -0.00576 | 0.0295 | 0.0979** |
| | (0.0148) | (0.0161) | (0.0140) | (0.0144) | (0.0372) | (0.0418) |
| Log trade | 0.0595 | 0.0562 | 0.0842* | 0.0777* | 0.187** | 0.304** |
| | (0.0413) | (0.0394) | (0.0482) | (0.0439) | (0.0729) | (0.117) |
| Log FDI | 0.00879*** | 0.0101*** | 0.0101*** | 0.0113*** | 0.00855 | 0.0662*** |
| | (0.00278) | (0.00278) | (0.00264) | (0.00287) | (0.00558) | (0.0172) |
| Log Political Stability | | -0.0135 | | 0.000701 | -0.0377 | -0.0225 |
| | | (0.0122) | | (0.00830) | (0.0245) | (0.0327) |
| Log population | | -0.177** | | -0.273*** | -0.218 | 0.642** |
| | | (0.0751) | | (0.0982) | (0.225) | (0.254) |
| Log dependency ratio | | 0.0154 | | -0.130 | 0.213 | 0.275 |
| | | (0.0695) | | (0.0968) | (0.152) | (0.238) |
| Log urbanization | | 0.0491 | | 0.0890 | 0.223 | -0.0379 |
| | | (0.0899) | | (0.106) | (0.194) | (0.289) |
| Constant | 5.567*** | 8.305*** | 5.286*** | 10.04*** | 4.364 | -11.27** |
| | (0.484) | (1.396) | (0.715) | (2.229) | (4.636) | (4.918) |
| Observations | 2,135 | 2,135 | 1,223 | 1,223 | 2,125 | 2,135 |
| R-squared | 0.129 | 0.146 | 0.141 | 0.174 | 0.098 | 0.181 |

The dependent variable is log gross national expenditures for Column 1 to 4. Column 5 and 6 use different dependent variables, Government consumption (Column 5) and Gross capital formation ( Column 6). The robust standard errors are in parentheses. Column 1, 2 and 3 are estimated with the Corruption Perception index and Column 4, 5 and 6 are estimated with the Corruption Perception Index. All the estimations include country and time fixed effects. All the independent variables are lagged by 1 year.
Significance level *** $p<0.01$,
Significance level ** $p<0.05$,
Significance level * $p<0.1$

*5.2 Corruption and public investment*

Table 2 in the main text presents the results for Equation 2. . Column 1 shows the result for Equation 1 and Column 2 includes additional control variables. Column 1 and 2 present the results using the Control of Corruption Index and show that corruption variable is insignificant. The estimations with the Corruption Perception Index in Column 3 and 4 illustrates that corruption does not have a significant effect on public investment. Furthermore, Column 4 and 5 present Equation 1 with a different measure for public investment. The results contradict the findings of Knack and Kneefer (2007) and Tanzi and Davoodi (1998). The variable log FDI is significant in Column 1 to 4; hence the level of FDI has a significant positive effect on public investment. My findings confirm the result of Everhart et al. (20009), even though they have used the OLS estimator with first differenced data.

The robustness check consists of using different measures for public investment and estimating the equation for different income levels. I first start by testing whether my result is sensitive to the definition of public investment. Different measures for $public\ investment$ have been used in the literature. Mehrota and Valila (2006) have used $gross\ capital\ formation$; Knack and Kneefer (2007), Devarajan et al. (1996) and Levin and Renelt (1992) have used a public investment indicator of the Governance Finance Statistics (GFS) provided by the International Monetary Fund. Rodrik (1996) has sed $government\ capital\ expenditures$ and $real\ government\ consumption$ as a share of GDP. I use two measures available provided by the World Bank. $General\ govervent\ final\ consumption$ includes all government current expenditures for purchases of goods and services. The second measure is $gross\ capital\ formation$ which includes land improvements, equipment purchases and construction of roads, railways and schools. Column 5 and 6 in Table 2 show that corruption does not have a significant effect, when using a different definition for public investment. Next, Equation 2 is estimated for the three income levels and different continents. The results are presented in Table A-11 in the Appendix. Column 1, 2, 3 show the results for low, middle and high income respectively. The results indicate that corruption does not have an effect for the different income levels. Next, Column 4 to 10 depicts the result for the different continents. The corruption variable is insignificant in nearly all columns, except Column 8 and 9. The variable CCI is positive for Latin America, meaning that an increase in the CCI level (lower corruption), increases public investment. On the hand, the sign of the coefficient is negative and significant in Column 9, indicating that higher corruption is associated with higher levels of public investment in the Middle East, supporting the view by ( Leff, 1964).

My findings are quite surprising compared to previous studies. I conducted additional robustness checks for Equation 1 and 2 to make sure that my result holds. These results are not included in my Appendix; however I will describe what I did. The variable $schooling$ in Equation 1 is the variable with the least observations as can be seen in Table A-2 in the Appendix. I included this variable in my baseline model, because it is an important determinant of FDI. I excluded this variable $schooling$ from the regression to increase the number of observations. Another possibility might be the high correlations among the three governance indicators (corruption, political stability and legal quality). I excluded the variable political stability and regulatory quality. Nevertheless, I found no significant effect on FDI and Public investment with the additional robustness checks I conducted.

## 6. Discussion

In this section I will address the limitations of my analysis and provide explanations why my results confirm or contradict previous studies. A limitation of my analysis for both the effect of corruption on FDI and public investment is the fact that I only considered the short term effect. The Hausman test showed that a fixed effects estimator is preferred over the random effects estimator. The fixed effects estimator eliminates time invariant information, thus only capturing the short run effect. Egger and Winner (2005) study the short and long run impact of corruption and find that the short run impact is smaller than the long run impact. A random effects estimators offers the possibility to capture both the short and long run impact, because its exploits both the between and within dimension of the data (Verbeek, 2012). Secondly, I assumed that corruption is exogenous, however previous studies have shown that corruption is endogenous (Treisman, 2000). As discussed in Section 3.4, I do not employ an IV-technique due to the fact that previous studies suggest that there is no suitable instrument for corruption.

My findings on the effect of corruption on FDI strongly contradict previous studies. Table A-12 in the Appendix gives an overview of the studies included in my literature review. The table summarizes the time period, corruption index used, estimation method and measure for public investment. A plausible explanation why the results in the sample of countries differ with previous studies is the fact that I used a large number of observations in my estimations. The number of observations for the main equations lies between 909 and 1270 which is high compared to the observations in previous studies (see Section 4.1). Another reason why my results could differ lies in the use of the measure for corruption. Table A-12 indicates that two studies (Cuervo-Cazurra, 2006; Egger and Winner, 2005) have used the CCI, but in a cross sectional setting. Thus no study that I reviewed used the CCI variable in panel setting. The CPI is one of the most used measures in the studies I have reviewed. However the CPI measure also turned out insignificant in my estimations.

Turning to the relationship between corruption and public investment, the result is different compared to the studies of Tanzi and Davoodi (1997) and Keefer and Knack (2007). A limitation for Equation 2 is that I did not include all the determinants that could influence public investment because of the limited data availability. A few of the variables that I did not include are current account, public debt and political preferences (Knack and Kneefer, 2007; Mehrota and Valila, 2006). Additionally, I used an aggregate measure for public investment; however some studies disaggregate public investment into different expenditures. For example Mauro (1998) and Rajkumar and Swaroop (2008) split public investment into healthcare expenditures and education expenditures. This enables the possibility to conduct a more in depth analysis of how certain variables affect specific expenditures. A possible explanation why I do not find a significant effect of corruption on public investment in the complete sample could be the estimation technique used. Table A-12 illustrates that none of the studies have used the fixed effects estimator, but have used the OLS estimator and the IV-method to estimate the effect of corruption on total public investment. Another explanation why the results could differ lies in the use of the measure for corruption. The studies that examined the effect of corruption on total public investment have used the measure provided by ICGR. Additionally, all the studies use the public investment measure provided by the GFS, whereas I have used the measures of the World Bank.

## 7. Conclusion

The thesis examined the relationship between corruption and investment. The analysis made a distinction between public and private investments. Most studies support the view that corruption has a negative effect on FDI, whereas some studies have shown that corruption has a positive effect on FDI. The relationship between corruption and FDI was estimated using data for 133 countries covering the period 1996-2011. Furthermore, I used two corruption measures to see whether the result would differ. The main corruption variable used in the analysis is the Control of Corruption Index and I used the Corruption Perception Index as a second measure. The estimations have shown that corruption does not have a direct effect on FDI. The same result holds when using the Corruption Perception Index. In addition, the interaction term between corruption and public investment is insignificant in all specifications, indicating that corruption does not affect FDI indirectly in the sample of countries, contradicting the results of Everhart et al. (2009). The subsamples regressions pointed out that corruption has a significant effect on FDI for European and OECD countries. The second equation explored the relationship between corruption and public investment. The literature suggests that corruption increases the level of public investment, but does not lead to economic growth. The sample of countries for the public investment equation consisted of 174 countries covering the period 1996-2011. The results have shown that corruption does not have an effect on investment contrary to the findings of Tanzi and Davoodi (1997). The subsample regressions have shown that corruption has a negative effect on public investment in Latin America and a positive effect in the Middle East.

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## Appendix

**Table A-1: Definition variables**

| Variable | Definition | Source |
|---|---|---|
| FDI | Foreign direct investment is the net inflows of investment to acquire a lasting management interest in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series is divided by GDP. | WB |
| GDP | GDP at purchaser's prices is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. Data are in constant 2005 U.S. dollars. | WB |
| Real GDP | GDP corrected for inflation. | Penn World Tables |
| GDP per capita | GDP divided by population. | WB |
| Consumer Price Index | Inflation as measured by the consumer price index reflects the annual percentage change in the cost to the average consumer of acquiring a basket of goods and services that may be fixed or changed at specified intervals. | WB |
| M2 | Money and quasi money comprise the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government divided by GDP. | WB |
| Trade | Trade is the sum of exports and imports of goods and services measured as a share of gross domestic product divided by GDP. | WB |
| Population | Total population is based on the de facto definition of population, which counts all residents regardless of legal status or citizenship. | WB |
| Schooling | Gross enrollment ratio is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. | WB |
| Gov_exp | Gross national expenditure is the sum of household final consumption expenditure, general government final consumption expenditure, and gross capital formation. | WB |

**Table A-1 (continued)**

| | | |
|---|---|---|
| Gov_cons | General government final consumption expenditure includes all government current expenditures for purchases of goods and services. It also includes most expenditure on national defense and security, but excludes government military expenditures that are part of government capital formation. | WB |
| Cap_form | Gross fixed capital formation includes land improvements (fences, ditches, drains, and so on); plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings. | WB |
| Corruption Perception Index | The CPI scores and ranks countries/territories based on how corrupt a country's public sector is perceived to be. It is a composite index, a combination of surveys and assessments of corruption, collected by a variety of reputable institutions.. | TI |
| Control of Corruption | Control of Corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. The measures ranges from 0 to 100, where a higher values, indicates a lower level of corruption. | WGI |
| Political stability | Political Stability and Absence of Violence/Terrorism captures perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism. The measure ranges from 0 to 100, where a higher value, indicates a higher level of political stability. | WGI |
| Regulatory quality | Regulatory Quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.The measures ranges from 0 to 100, where a higher value, indicates a higher level of regulatory quality | WGI |
| Telephone | Telephone lines are fixed telephone lines that connect a subscriber's terminal equipment to the public switched telephone network and that have a port on a telephone exchange. Integrated services digital network channels and is fixed wireless subscribers are included. Per 1000 inhabitants. | WB |
| Urbanization | Refers to people living in urban areas | WB |
| Dependency ratio | Age dependency ratio is the ratio of dependents (people younger than 15 or older than 64) to the working population those ages 15-64. | WB |

**Table A-2: Descriptive statistics variables**

| Variable | Obs | Mean | Std. Dev. | Min | Max |
|---|---|---|---|---|---|
| GDP | 3072 | 2.25E+11 | 9.80E+11 | 1.75E+07 | 1.32E+13 |
| GDP per capita | 3072 | 10973.12 | 17879.09 | 53.09856 | 158802.5 |
| Real GDP | 2672 | 332483.1 | 1171734 | 168.2699 | 1.32E+07 |
| Consumer Price Index | 2746 | 99.64838 | 62.13933 | 0.055333 | 2378.378 |
| Corruption Perception Index | 1997 | 4.286187 | 2.270877 | 0.4 | 10 |
| Control of Corruption | 3207 | 49.86126 | 29.04926 | 0.243902 | 100 |
| Political Stability | 3440 | 45.573 | 30.50126 | 0 | 100 |
| Regulatory quality | 3200 | 49.84397 | 28.96967 | 0.473934 | 100 |
| M2 | 2782 | 61.08823 | 58.37786 | 2.072555 | 669.8804 |
| Trade | 2877 | 89.35613 | 50.00423 | 0.308803 | 446.0469 |
| FDI | 3044 | 6.09E+09 | 2.36E+10 | -2.83E+10 | 3.40E+11 |
| Current account | 1146 | -2.08598 | 19.88708 | -50.9669 | 304.0221 |
| Population | 3420 | 2.97E+07 | 1.20E+08 | 9264 | 1.34E+09 |
| Schooling | 2170 | 75.72661 | 30.20984 | 5.15948 | 162.3487 |
| Telephones | 3231 | 20.66218 | 20.75205 | 0.005759 | 125.5963 |
| Dependency ratio | 3103 | 64.38276 | 19.22859 | 16.54258 | 114.3089 |
| Urbanization | 3360 | 55.48289 | 24.41438 | 7.418 | 100 |
| Gross national expenditure | 2793 | 105.5242 | 19.05676 | 41.43408 | 292.7158 |
| Government consumption | 2770 | 16.26374 | 8.643056 | 2.047121 | 164.6963 |
| Capital Formation | 2764 | 21.97657 | 8.562567 | -2.42436 | 154.7965 |

**Table A-3: Descriptive Control of Corruption for different subsamples**

| Countries | Mean | Std. Dev. | Min. | Max. |
|---|---|---|---|---|
| Low Income | 21.10 | 14.75 | 0.80 | 52.27 |
| Lower Middle Income | 33.88 | 16.25 | 7.8 | 74.25 |
| Higher Middle Income | 40.23 | 19.23 | 3.58 | 79.06 |
| High Income OECD | 86.90 | 11.54 | 65.14 | 99.72 |
| High Income Non-OECD | 72.92 | 20.47 | 2.04 | 97.61 |
| Africa | 42.41 | 27.17 | 0.48 | 98.56 |
| Latin America | 45.94 | 34.19 | 0.48 | 97.56 |
| Europe | 59.46 | 30.55 | 1.91 | 99.51 |
| Asia | 53.20 | 26.82 | .24 | 100 |
| Middle East | 45.78 | 29.25 | 1.45 | 95.12 |
| Top oil producers | 47.78 | 34.87 | 1.45 | 97.63 |

**Table A-4: Correlation Matrix**

| | GDP | GDP_pc | Real GDP | Price index | CPI | CCI | PSP | Legal | M2 | Trade |
|---|---|---|---|---|---|---|---|---|---|---|
| GDP | 1 | | | | | | | | | |
| GDP pc | 0.2250* | 1 | | | | | | | | |
| Real GDP | -0.0764* | -0.0778* | 1 | | | | | | | |
| Price index | -0.0005 | 0.0079 | 0.0573* | 1 | | | | | | |
| CPI | -0.1275* | -0.0564* | 0.0175 | -0.1324* | 1 | | | | | |
| CCI | 0.1498* | 0.1279* | -0.0995* | 0.0083 | -0.0580* | 1 | | | | |
| PSP | 0.0834* | 0.0924* | -0.0079 | 0.0335 | -0.0879* | **0.7608*** | 1 | | | |
| RQP | 0.1180* | 0.1260* | -0.0649* | 0.0198 | -0.0254 | **0.8582*** | **0.6617*** | 1 | | |
| m2 | 0.1957* | 0.6087* | -0.0730* | 0.0431* | -0.0936* | 0.1348* | 0.0951* | 0.1439* | 1 | |
| Trade | -0.1710* | 0.2419* | 0.0297 | 0.0597* | 0.0469 | -0.1021* | -0.0491* | -0.0491* | 0.3952* | 1 |
| FDI | 0.7314* | 0.3181* | -0.0613* | 0.0193 | **-0.0736*** | **0.1402*** | 0.0742* | 0.1188* | 0.2551* | -0.0112 |
| CA | 0.0268 | 0.1619* | 0.0224 | -0.0917* | -0.0072 | -0.0736* | -0.0813* | -0.0734* | 0.0355 | 0.1434* |
| Pop | 0.3285* | -0.0581* | -0.0413* | 0.0111 | -0.0454* | 0.0922* | 0.0054 | 0.1016* | 0.0923* | -0.1810* |
| SES | 0.1764* | 0.5531* | -0.0573* | -0.0036 | -0.0257 | 0.1636* | 0.0735* | 0.1242* | 0.3597* | 0.1710* |
| Tel | 0.2920* | 0.7997* | -0.1180* | -0.0021 | -0.0474* | 0.1863* | 0.1020* | 0.1147* | 0.5451* | 0.2508* |
| depend | -0.1756* | -0.5100* | 0.0414* | -0.0394* | 0.0506* | -0.2160* | -0.1263* | -0.2225* | -0.4063* | -0.2763* |
| urban | 0.1890* | 0.4915* | -0.0569* | 0.0017 | 0.0215 | 0.0266 | -0.0022 | 0.0039 | 0.3727* | 0.2097* |
| Gov ex | -0.0769* | -0.3726* | -0.0344 | 0.0322 | **0.0655*** | **0.0195** | -0.0182 | -0.0283 | -0.1819* | -0.1296* |
| Gov cons | 0.0247 | 0.1538* | -0.0706* | -0.0091 | **0.0603*** | **0.0724*** | -0.0091 | 0.0355 | 0.1085* | 0.0599* |
| Cap_form | 0.0085 | 0.004 | -0.0468* | 0.0493* | **-0.0326** | **0.0556*** | 0.0796* | 0.0422* | 0.0927* | 0.2417* |

Note that the variables are in levels, whereas they are in logs in the empirical analysis. The correlations are significant at a 5% level (*).**Note that I use abbreviations in the table, to make them fit on 1 page.

**Table A-4 (continued)**

| | **FDI** | **CA** | **pop** | **SES** | **tel** | **depend** | **urban** | **gov_exp** | **Gov cons** | **Cap form** |
|---|---|---|---|---|---|---|---|---|---|---|
| **Fdi** | 1 | | | | | | | | | |
| **CA** | 0.0477 | 1 | | | | | | | | |
| **Pop** | 0.3654* | 0.0389 | 1 | | | | | | | |
| **SES** | 0.1971* | 0.0315 | -0.0576* | 1 | | | | | | |
| **Tel** | 0.3228* | 0.0187 | -0.0451* | **0.7443*** | 1 | | | | | |
| **Depend** | -0.2147* | -0.0162 | -0.0921* | **-0.7983*** | **-0.6769*** | 1 | | | | |
| **Urban** | 0.2210* | 0.1448* | -0.0707* | **0.6570*** | **0.6330*** | **-0.6179*** | 1 | | | |
| **gov_exp** | -0.1092* | -0.1499* | -0.0700* | -0.2900* | -0.2492* | 0.3371* | -0.4116* | 1 | | |
| **gov_cons** | 0.0405* | 0.5509* | -0.0797* | 0.1654* | 0.2083* | -0.0441* | 0.1004* | 0.3948* | 1 | |
| **cap_form** | 0.0382* | -0.0708* | 0.1178* | 0.0657* | 0.0724* | -0.1543* | -0.0253 | 0.2355* | 0.0856* | 1 |

**Table A-5: List of countries classified in three income level**

| **High income** | | |
|---|---|---|
| Andorra | French Polynesia | Norway |
| Antigua and Barbuda | Germany | Oman |
| Aruba | Greece | Poland |
| Australia | Greenland | Portugal |
| Austria | Guam | Puerto Rico |
| Bahamas, The | Hong Kong SAR, China | Qatar |
| Bahrain | Iceland | Russian Federation |
| Barbados | Ireland | San Marino |
| Belgium | Isle of Man | Saudi Arabia |
| Bermuda | Israel | Singapore |
| Brunei Darussalam | Italy | Sint Maarten |
| Canada | Japan | Slovak Republic |
| Cayman Islands | Korea, Rep. | Slovenia |
| Channel Islands | Kuwait | Spain |
| Chile | Latvia | St. Kitts and Nevis |
| Croatia | Liechtenstein | St. Martin |
| Curaçao | Lithuania | Sweden |
| Cyprus | Luxembourg | Switzerland |
| Czech Republic | Macao SAR, China | Trinidad and Tobago |
| Denmark | Malta | Turks and Caicos Islands |
| Estonia | Monaco | United Arab Emirates |
| Equatorial Guinea | Netherlands | United Kingdom |
| Faeroe Islands | New Caledonia | United States |
| Finland | New Zealand | Uruguay |
| France | Northern Mariana Islands | Virgin Islands (U.S.) |

**Table A-5 (continued)**

| **Low income** | | |
|---|---|---|
| Afghanistan | Gambia, The | Myanmar |
| Bangladesh | Guinea | Nepal |
| Benin | Guinea-Bisau | Niger |
| Burkina Faso | Haiti | Rwanda |
| Burundi | Kenya | Sierra Leone |
| Cambodia | Korea, Dem Rep. | Somalia |
| Central African Republic | Kyrgyz Republic | South Sudan |
| Chad | Liberia | Tajikistan |
| Comoros | Madagascar | Tanzania |

| | | |
|---|---|---|
| Congo, Dem. Rep | Malawi | Togo |
| Eritrea | Mali | Uganda |
| Ethiopia | Mozambique | Zimbabwe |
| **Middle income** | | |
| Armenia | India | Samoa |
| Bhutan | Kiribati | São Tomé and Principe |
| Bolivia | Kosovo | Senegal |
| Cameroon | Lao PDR | Solomon Islands |
| Cabo Verde | Lesotho | Sri Lanka |
| Congo, Rep. | Mauritania | Sudan |
| Côte d'Ivoire | Micronesia, Fed. Sts. | Swaziland |
| Djibouti | Moldova | Syrian Arab Republic |
| Egypt, Arab Rep. | Mongolia | Timor-Leste |
| El Salvador | Morocco | Ukraine |
| Georgia | Nicaragua | Uzbekistan |
| Ghana | Nigeria | Vanuatu |
| Guatemala | Pakistan | Vietnam |
| Guyana | Papua New Guinea | West Bank and Gaza |
| Honduras | Paraguay | Yemen, Rep. |
| Indonesia | Philippines | Zambia |
| Angola | Fiji | Palau |
| Albania | Gabon | Panama |
| Algeria | Grenada | Peru |
| American Samoa | Hungary | Romania |
| Argentina | Iran, Islamic Rep. | Serbia |
| Azerbaijan | Iraq | Seychelles |
| Belarus | Jamaica | South Africa |
| Belize | Jordan | St. Lucia |
| Bosnia and Herzegovina | Kazakhstan | St. Vincent and the Grenadines |
| Botswana | Lebanon | Suriname |
| Brazil | Libya | Thailand |
| Bulgaria | Macedonia, FYR | Tonga |
| China | Malaysia | Tunisia |
| Colombia | Maldives | Turkey |
| Costa Rica | Marshall Islands | Turkmenistan |
| Cuba | Mauritius | Tuvalu |
| Dominica | Mexico | Venezuela, RB |
| Dominican Republic | Montenegro | |

**Figure A-1: Average corruption level (Control of Corruption)**
**Low income countries, high income countries (OECD) and high income countries (Non-OECD)**

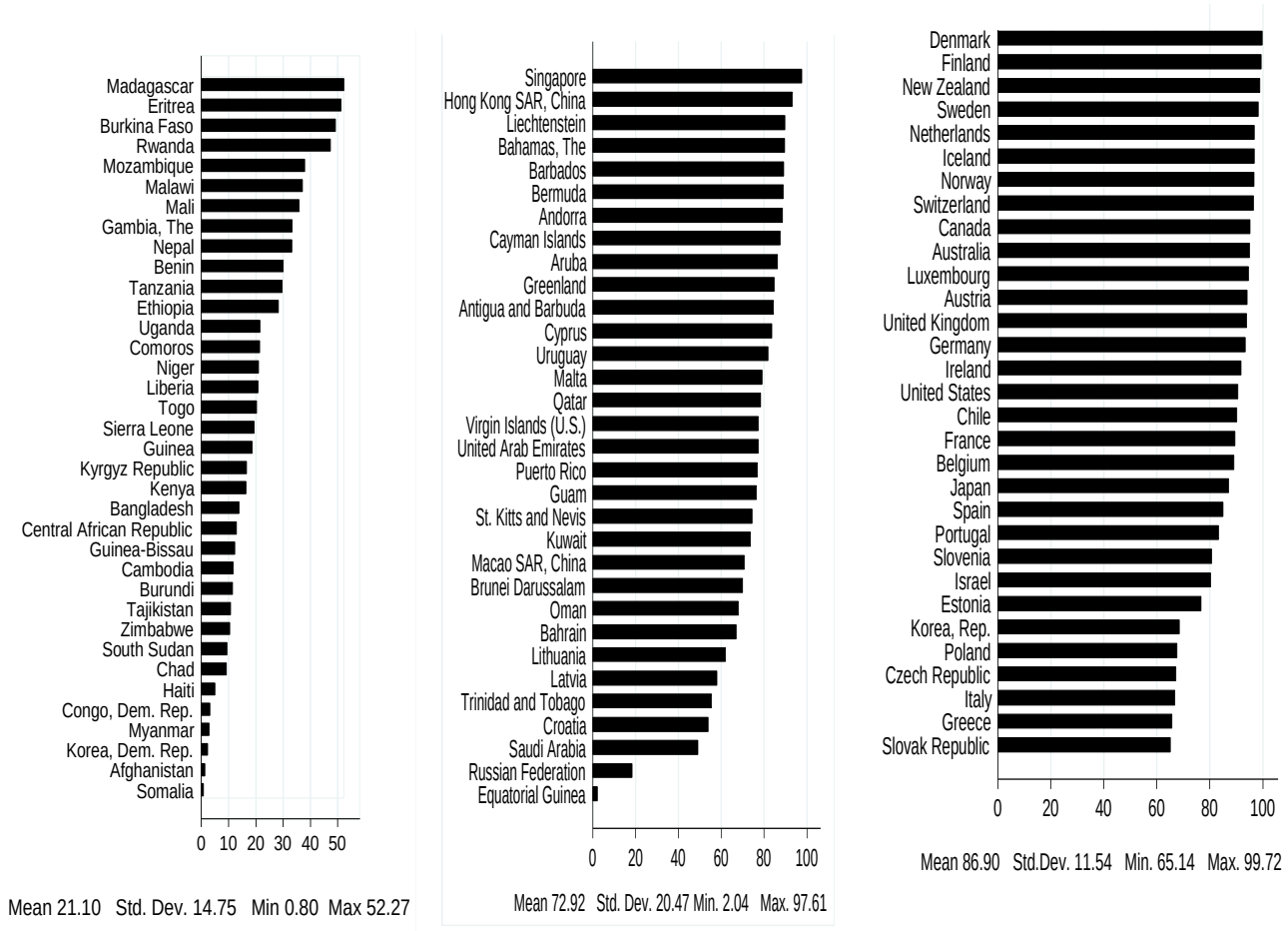


**Table A-6: Variance Inflation Factor independent variables**

| Variable | VIF | Variable | VIF |
|---|---|---|---|
| GDP | 2.55 | FDI | 1.72 |
| GDP pc | 5.49 | CA | 3.6 |
| Real GDP | 1.12 | Population | 2.05 |
| Price index | 1.19 | SES | 6.28 |
| CPI | 1.15 | Telephone | 6.68 |
| CCI | 5.91 | Dependency ratio | 5.2 |
| PSP | 2.88 | Urbanization | 3.11 |
| RQP | 4.85 | Government expenditures | 4.74 |
| M2 | 3.39 | Government consumption | 1.72 |
| Trade | 2.4 | Capital formation | 1.66 |

**Table A-7: Robustness check Equation 1**

| | Without interaction | | | With interaction | | |
|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) |
| **Depedent variable** | **FDI/GDP** | **Log FDI** | **Log FDI** | **FDI/GDP** | **Log FDI** | **Log FDI** |
| CCI | 0.0535 | 0.0784 | 0.0516 | -1.446 | -0.624 | -0.875 |
| | (0.0968) | (0.109) | (0.108) | (1.212) | (1.151) | (1.149) |
| real GDP | -0.871 | | | -0.900 | | |
| | (0.856) | | | (0.870) | | |
| legal | 0.0375 | 0.0207 | 0.0735 | 0.0260 | 0.0189 | 0.0711 |
| | (0.130) | (0.126) | (0.130) | (0.130) | (0.126) | (0.130) |
| schooling | -1.542 | 7.784** | 0.439 | -1.531 | 7.705** | 0.380 |
| | (1.727) | (3.934) | (1.670) | (1.767) | (3.894) | (1.651) |
| real GDP* Log schooling | 0.192 | | | 0.195 | | |
| | (0.185) | | | (0.188) | | |
| price index | -0.00738 | 0.0910 | 0.0866 | -0.00405 | 0.0850 | 0.0787 |
| | (0.113) | (0.108) | (0.107) | (0.114) | (0.108) | (0.108) |
| trade | 1.026** | 0.803* | 0.869** | 1.019** | 0.800* | 0.868** |
| | (0.441) | (0.426) | (0.439) | (0.436) | (0.425) | (0.438) |
| telephones | -0.00195 | 0.102 | 0.0387 | -0.0162 | 0.0991 | 0.0353 |
| | (0.169) | (0.200) | (0.201) | (0.169) | (0.199) | (0.200) |
| population | 1.486** | 0.885 | 2.425*** | 1.345* | 0.927 | 2.512*** |
| | (0.663) | (0.683) | (0.759) | (0.750) | (0.681) | (0.735) |
| political stability | -0.0458 | -0.0438 | -0.0326 | -0.0507 | -0.0446 | -0.0339 |
| | (0.0900) | (0.0927) | (0.0922) | (0.0898) | (0.0929) | (0.0924) |
| public investment | 1.908*** | 1.947*** | 1.933*** | 0.805 | 1.419* | 1.238 |
| | (0.528) | (0.567) | (0.572) | (0.876) | (0.813) | (0.827) |
| GDP | | 2.783*** | | | 2.791*** | |
| | | (0.824) | | | (0.826) | |
| GDP* schooling | | -0.341* | | | -0.338* | |
| | | (0.177) | | | (0.176) | |
| GDP per capita | | | 1.341 | | | 1.341 |
| | | | (1.110) | | | (1.113) |
| GDP per capita* schooling | | | -0.0225 | | | -0.0156 |
| | | | (0.245) | | | (0.243) |
| CCI* public investment | | | | 0.328 | 0.153 | 0.202 |
| | | | | (0.269) | (0.254) | (0.255) |
| Constant | -28.80** | -72.15*** | -43.72*** | -21.35 | -70.53*** | -41.84*** |
| | (14.14) | (22.94) | (14.98) | (14.40) | (22.21) | (14.23) |
| Observations | 1,281 | 1,270 | 1,270 | 1,266 | 1,270 | 1,270 |
| R-squared | 0.159 | 0.404 | 0.399 | 0.161 | 0.404 | 0.399 |

Robust standard errors in parentheses,
Significance level: *** p<0.01, ** p<0.05, * p<0.1.
Note that all the independent variables are in log and lagged by 1 year

**Table A-8: Subsample estimations Equation 1. The dependent variable is Log FDI**

| | Without interaction | | | With interaction | | |
|---|---|---|---|---|---|---|
| | **(1)** | **(2)** | **(3)** | **(6)** | **(7)** | **(8)** |
| CCI | 0.549 | -0.0621 | 0.0706 | -13.96 | 1.537 | -1.974 |
| | (0.327) | (0.146) | (0.141) | (11.38) | (2.069) | (1.332) |
| real GDP | -3.314** | 0.613 | 1.539 | -3.249** | 0.610 | 1.553 |
| | (1.371) | (0.983) | (1.656) | (1.317) | (0.968) | (1.728) |
| legal | -0.533 | 0.152 | 0.0108 | -0.427 | 0.152 | 0.0138 |
| | (0.511) | (0.212) | (0.206) | (0.468) | (0.215) | (0.201) |
| schooling | -7.183*** | 0.875 | 4.048 | -7.136*** | 0.833 | 4.278 |
| | (1.931) | (2.027) | (3.360) | (1.957) | (1.981) | (3.556) |
| real GDP* Log schooling | 0.712*** | 0.000504 | -0.354 | 0.711*** | 0.00406 | -0.356 |
| | (0.215) | (0.237) | (0.327) | (0.212) | (0.231) | (0.343) |
| price index | -0.194 | 0.0125 | 1.730 | -0.219 | 0.0294 | 1.844* |
| | (0.483) | (0.128) | (1.032) | (0.465) | (0.132) | (1.028) |
| trade | 2.487** | 0.546 | 0.0428 | 2.377*** | 0.563 | 0.0928 |
| | (0.915) | (0.466) | (0.625) | (0.728) | (0.472) | (0.616) |
| telephones | -0.446 | 0.245 | -0.143 | -0.494 | 0.230 | -0.153 |
| | (0.312) | (0.283) | (0.838) | (0.312) | (0.280) | (0.842) |
| population | 8.444* | -1.887 | 2.509*** | 7.701* | -1.821 | 2.624*** |
| | (4.096) | (1.333) | (0.583) | (3.803) | (1.358) | (0.553) |
| political stability | 0.0989 | -0.0261 | 0.0189 | 0.0907 | -0.0214 | 0.0268 |
| | (0.222) | (0.135) | (0.188) | (0.195) | (0.136) | (0.183) |
| public investment | 3.251 | 1.047 | 0.269 | -6.511 | 2.339 | -1.282 |
| | (2.004) | (0.640) | (0.598) | (6.918) | (1.856) | (1.143) |
| CCI* public investment | | | | 3.088 | -0.346 | 0.464 |
| | | | | (2.401) | (0.454) | (0.302) |
| Constant | -112.7 | 31.85 | -44.18** | -55.14 | 24.77 | -40.98** |
| | (74.85) | (23.67) | (18.33) | (65.18) | (28.67) | (18.45) |
| Observations | 195 | 615 | 458 | 195 | 615 | 458 |
| R-squared | 0.598 | 0.449 | 0.365 | 0.605 | 0.450 | 0.368 |

Robust standard errors in parentheses,
Significance level: *** p<0.01, ** p<0.05, * p<0.1.
Note that all the independent variables are in log and lagged by 1 year

**Table A-9: Subsample regression Equation 1 without the interaction term. The dependent variable is Log FDI.**

| | (1) OECD | (2) Non-OED | (3) Africa | (4) Latin America | (5) Europe | (6) Asia | (7) Middle East | (8) Oil export |
|---|---|---|---|---|---|---|---|---|
| CCI | 0.609*** | 0.00787 | 0.474 | -0.0160 | 0.344** | -0.194 | 0.218 | 0.199 |
| | (0.217) | (0.108) | (0.288) | (0.0962) | (0.138) | (0.598) | (0.263) | (0.308) |
| real GDP | 3.919* | -0.500 | -2.405 | -1.030 | 1.729 | -4.505*** | 3.994 | 2.553 |
| | (2.256) | (0.998) | (1.630) | (1.706) | (1.565) | (1.277) | (3.077) | (2.213) |
| legal | -0.0139 | 0.0293 | -0.376 | -0.538 | 0.137 | 0.124 | 1.032*** | 0.695 |
| | (0.113) | (0.161) | (0.466) | (0.580) | (0.312) | (0.291) | (0.196) | (0.728) |
| schooling | 8.126* | -1.818 | -5.624** | -9.387* | 2.663 | -2.555 | 3.854 | 0.350 |
| | (4.567) | (2.072) | (2.242) | (4.807) | (3.086) | (1.697) | (7.069) | (4.012) |
| real GDP* Log schooling | -0.894** | 0.202 | 0.600** | 0.392 | -0.338 | 0.356* | -0.314 | -0.100 |
| | (0.433) | (0.227) | (0.251) | (0.340) | (0.331) | (0.183) | (0.720) | (0.422) |
| price index | 2.686*** | 0.0498 | -0.149 | 1.012* | 0.117 | 1.512 | 0.480 | -0.327* |
| | (0.848) | (0.123) | (0.254) | (0.478) | (0.0916) | (1.043) | (1.246) | (0.178) |
| trade | -0.230 | 1.192** | 1.348 | -1.162 | 0.0434 | 1.687*** | 4.221*** | 0.976 |
| | (0.695) | (0.483) | (1.284) | (1.272) | (0.694) | (0.595) | (1.192) | (1.099) |
| telephones | -1.331 | 0.0553 | -0.250 | -2.230** | 0.939* | 0.127 | -1.584** | 0.483 |
| | (0.983) | (0.187) | (0.207) | (0.863) | (0.470) | (0.357) | (0.619) | (0.452) |
| population | 3.092 | 1.463** | 5.770 | -25.46** | -0.281 | 2.966 | -0.691 | 2.533*** |
| | (2.010) | (0.679) | (4.408) | (11.00) | (1.420) | (3.057) | (1.325) | (0.769) |
| political stability | 0.00113 | -0.0475 | 0.255* | -0.448* | -0.232 | 0.306 | 0.430 | 0.00915 |
| | (0.169) | (0.120) | (0.143) | (0.218) | (0.221) | (0.201) | (0.253) | (0.255) |
| public investment | 2.584 | 1.320** | 1.062 | 2.378 | 1.558 | 2.084* | 1.518 | -0.614 |
| | (2.454) | (0.568) | (1.042) | (4.068) | (0.931) | (1.121) | (1.595) | (0.983) |
| Constant | -83.68*** | -11.09 | -61.69 | 470.8* | -0.806 | -11.66 | -42.71 | -48.83 |
| | (29.63) | (14.44) | (72.37) | (211.4) | (26.37) | (53.97) | (35.96) | (32.79) |
| Observations | 322 | 968 | 258 | 71 | 385 | 219 | 115 | 150 |
| R-squared | 0.358 | 0.445 | 0.506 | 0.675 | 0.462 | 0.494 | 0.737 | 0.547 |

Robust standard errors in parentheses,
Significance level: *** p<0.01, ** p<0.05, * p<0.1.
Note that all the independent variables are in log and lagged by 1 year

**Table A-10: Subsample regression Equation 1 including the interaction term. The dependent variable is Log FDI.**

| | (1) OECD | (2) Non-OED | (3) Africa | (4) Latin America | (5) Europe | (6) Asia | (7) Middle East | (8) Oil export |
|---|---|---|---|---|---|---|---|---|
| CCI | 0.144 | -0.372 | -3.102 | -9.640 | 2.281 | 13.00 | 3.125 | 0.101 |
| | (11.12) | (1.348) | (2.501) | (6.969) | (3.423) | (17.80) | (2.304) | (4.578) |
| real GDP | 3.913* | -0.496 | -2.188 | 0.746 | 2.073 | -4.502*** | 4.206 | 2.554 |
| | (2.236) | (0.999) | (1.661) | (1.891) | (1.754) | (1.288) | (3.212) | (2.233) |
| legal | -0.0143 | 0.0278 | -0.363 | -0.601 | 0.142 | 0.0948 | 1.028*** | 0.696 |
| | (0.111) | (0.161) | (0.463) | (0.586) | (0.319) | (0.313) | (0.195) | (0.746) |
| schooling | 8.097* | -1.816 | -5.416** | -6.303 | 3.447 | -2.657 | 3.845 | 0.350 |
| | (4.541) | (2.079) | (2.270) | (4.415) | (3.595) | (1.685) | (7.230) | (4.041) |
| real GDP* Log schooling | -0.891** | 0.202 | 0.580** | 0.104 | -0.415 | 0.365* | -0.320 | -0.100 |
| | (0.429) | (0.227) | (0.254) | (0.362) | (0.373) | (0.184) | (0.739) | (0.421) |
| price index | 2.688*** | 0.0473 | -0.188 | 1.174* | 0.135 | 1.522 | 0.461 | -0.330 |
| | (0.829) | (0.123) | (0.251) | (0.520) | (0.0978) | (1.061) | (1.256) | (0.242) |
| trade | -0.233 | 1.188** | 1.259 | -1.728 | 0.0198 | 1.595** | 4.361*** | 0.977 |
| | (0.720) | (0.480) | (1.214) | (1.668) | (0.661) | (0.579) | (1.274) | (1.144) |
| telephones | -1.330 | 0.0560 | -0.271 | -2.255** | 0.867* | 0.108 | -1.541** | 0.484 |
| | (0.988) | (0.187) | (0.214) | (0.898) | (0.460) | (0.353) | (0.606) | (0.449) |
| population | 3.095 | 1.475** | 4.572 | -17.74 | -0.318 | 2.573 | -0.655 | 2.537*** |
| | (2.016) | (0.703) | (4.744) | (11.10) | (1.379) | (2.982) | (1.316) | (0.732) |
| political stability | 0.000657 | -0.0479 | 0.251* | -0.490* | -0.218 | 0.287 | 0.435 | 0.00974 |
| | (0.170) | (0.120) | (0.138) | (0.237) | (0.221) | (0.198) | (0.261) | (0.253) |
| public investment | 2.147 | 1.040 | -0.762 | -5.352 | 3.149 | 13.76 | 3.311 | -0.668 |
| | (10.57) | (0.983) | (0.833) | (7.093) | (3.092) | (15.01) | (2.250) | (2.325) |
| CCI* public investment | 0.100 | 0.0832 | 0.782 | 2.119 | -0.413 | -2.851 | -0.678 | 0.0224 |
| | (2.382) | (0.301) | (0.559) | (1.539) | (0.737) | (3.833) | (0.528) | (1.051) |
| Constant | -81.62 | -10.01 | -36.18 | 360.5 | -10.99 | -58.55 | -52.96 | -48.65 |
| | (54.83) | (14.07) | (78.91) | (199.3) | (37.57) | (94.83) | (38.27) | (33.21) |
| Observations | 322 | 968 | 258 | 71 | 385 | 219 | 115 | 150 |
| R-squared | 0.358 | 0.445 | 0.510 | 0.684 | 0.463 | 0.497 | 0.738 | 0.547 |

Robust standard errors in parentheses, Significance level: *** p<0.01, ** p<0.05, * p<0.1.

**Table A-11: Subsample regression equation 2. The dependent variable is Log public investment**

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) |
|---|---|---|---|---|---|---|---|---|---|---|
| CCI | 0.00965 | -0.0162 | 0.0331 | 0.0204 | -0.0138 | 0.0223 | 0.0552 | 0.0192* | -0.0525** | -0.00462 |
| | (0.0382) | (0.0113) | (0.0198) | (0.0172) | (0.00831) | (0.0312) | (0.0409) | (0.00941) | (0.0227) | (0.00985) |
| GDP per capita | -0.124 | -0.229* | -0.328*** | -0.232*** | 0.0399 | -0.277*** | -0.397*** | 0.156 | 0.0254 | 0.00341 |
| | (0.167) | (0.121) | (0.0543) | (0.0585) | (0.0503) | (0.0753) | (0.134) | (0.109) | (0.0562) | (0.0873) |
| Legal | 0.0679 | 0.00646 | -0.0258* | 0.0303 | 0.00514 | 0.0405 | 0.122*** | -0.0183 | 0.00109 | 0.0308 |
| | (0.0595) | (0.0122) | (0.0145) | (0.0189) | (0.00966) | (0.0445) | (0.0406) | (0.0302) | (0.0205) | (0.0351) |
| trade | 0.111* | -0.0114 | -0.00367 | 0.0691* | -0.0862 | 0.167*** | -0.136** | -0.0797 | -0.151** | -0.0238 |
| | (0.0625) | (0.0249) | (0.0500) | (0.0409) | (0.0523) | (0.0519) | (0.0621) | (0.0520) | (0.0584) | (0.0336) |
| FDI | 0.00820 | 0.00805 | 0.00927** | 0.0103*** | 0.000335 | 0.00500 | 0.0114 | 0.00798 | 0.0101* | -0.000234 |
| | (0.00492) | (0.00505) | (0.00442) | (0.00304) | (0.00357) | (0.00409) | (0.00689) | (0.0113) | (0.00547) | (0.00353) |
| Political Stability | -0.0463 | -0.00876 | 0.00814 | -0.0173 | 0.00458 | -0.0432** | 0.0177 | 0.0204** | -0.0214 | 0.0116 |
| | (0.0325) | (0.00817) | (0.0181) | (0.0142) | (0.00933) | (0.0177) | (0.0197) | (0.00673) | (0.0359) | (0.0127) |
| population | -0.521* | -0.407** | -0.185** | -0.242*** | 0.116 | -0.298 | -0.644** | -0.541 | 0.0419 | -0.505* |
| | (0.288) | (0.180) | (0.0903) | (0.0673) | (0.150) | (0.278) | (0.264) | (0.698) | (0.0804) | (0.249) |
| dependency ratio | -0.158 | -0.0801 | 0.114 | 0.0606 | 0.143* | 0.125 | -0.328* | -0.0713 | -0.0141 | 0.128 |
| | (0.339) | (0.101) | (0.0764) | (0.0723) | (0.0788) | (0.190) | (0.191) | (0.521) | (0.0868) | (0.155) |
| Log urbanization | -0.0301 | 0.0183 | -0.766*** | 0.0279 | 0.317* | 0.00279 | -0.439 | 0.965 | -0.0245 | 0.204 |
| | (0.166) | (0.132) | (0.236) | (0.0835) | (0.182) | (0.142) | (0.301) | (0.741) | (0.0976) | (0.127) |
| Constant | 13.99*** | 13.07*** | 13.15*** | 9.169*** | 0.757 | 9.704** | 21.00*** | 8.608 | 4.627** | 11.54** |
| | (3.642) | (3.131) | (1.933) | (1.262) | (2.933) | (3.605) | (5.206) | (11.26) | (1.805) | (4.217) |
| Observations | 430 | 1,031 | 640 | 1,738 | 419 | 557 | 550 | 132 | 204 | 324 |
| R-squared | 0.224 | 0.140 | 0.426 | 0.177 | 0.188 | 0.301 | 0.380 | 0.490 | 0.307 | 0.131 |

Robust standard errors in parentheses, Significance level: *** p<0.01, ** p<0.05, * p<0.1. Note that all the independent variables are in log and lagged by 1 year.

**Table A-12: Overview papers**

| Paper | Data | Index | Estimation method | Impact FDI | Sample of countries |
|---|---|---|---|---|---|
| Asiedu (2006) | 1984-2000 | ICGR | FE | (-) | African |
| Cuervo-Cazurra (2006) | 1999 | CCI | Quasi FE | (-) | |
| Cuervo-Cazurra (2008) | 1999 | CPI | Quasi FE, TOBIT | (-) | Transition |
| Egger and Winner (2005) | 1995-1999 | CPI, ICGR, CCI | FE, GLS, RE | (+) | Developed, least developed |
| Egger and Winner (2006) | 1983-1999 | CPI | FE | (-) | |
| Everhart et al. (2009) | 1994-1999 | ICGR | OLS | (-) | Developing and transition |
| Habib and Zurawicki (2001) | 1994-1998 | CPI, ICGR | OLS | (-) | |
| Habib and Zurawicki (2002) | 1996-1998 | CPI | OLS, PROBIT | (-) | |
| Mauro (1995) | 1980-1983 | BI | OLS, IV-method | (-) | |

| Paper | Data | Index | Estimation method | Impact public investment | Measure public investment |
|---|---|---|---|---|---|
| **Total public investment** | | | | | |
| Everhart et al. (2009) | 1994-1999 | ICGR | OLS | No effect | Own calculation WB/GFS |
| Tanzi and Davoodi (1997) | 1980-1995 | ICGR | OLS | (+) | GFS |
| Keefer and Knack (2007) | 7975-1998 | ICGR | OLS, IV-method | (+) | GFS |

| Disaggregated public investment | Data | Index | Estimation method | Impact public investment | Measure public investment |
|---|---|---|---|---|---|
| Rajkumar and Swaroop (2008) | 1990, 1997, 2003 | ICGR | OLS | No effect | WB |
| De la Croix and Delavallade (2006) | 1996-2001 | WB | Three-Stage Least Squares | Change composition | GFS |
| Mauro (1998) | 1982-1995 | ICGR | OLS, IV-method | Change composition | GFS |