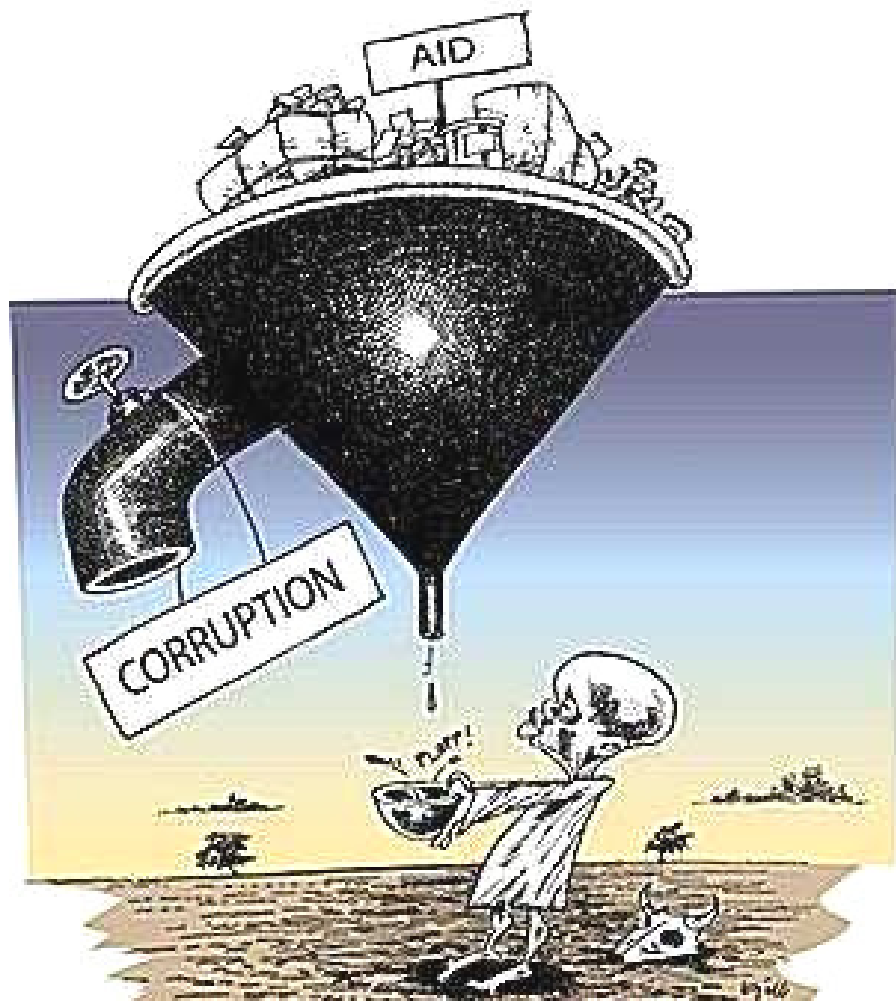


THE DOWNSIDE OF AID?

An analysis of the effect of foreign aid on
the level of corruption



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— When public money is stolen for private gain, it means fewer resources to build schools, hospitals, roads and water treatment facilities. When foreign aid is diverted into private bank accounts, major infrastructure projects come to a halt. Corruption enables fake or substandard medicines to be dumped on the market, and hazardous waste to be dumped in landfill sites and in oceans. The vulnerable suffer first and worst. —

Ban Ki-Moon, United Nations Secretary-General, message for the International Anti-Corruption Day, 9 December 2009

[United Nations, 2009]

ABSTRACT

A high level of corruption causes many problems. Especially in developing countries these problems are striking, because corruption hurts poor people disproportionately. Money that should be spent on basic needs is misused by some people for private gain. Therefore, the problem of corruption needs to be battled. In order to create a sustainable fight against corruption, it is important to establish what causes corruption. Subsequently, these factors that increase corruption have to be eliminated. This study discusses to what extent corruption in developing countries is caused by policies of the West. One of the most important roles the West plays in developing countries, is through the provision of foreign aid. Donors try to help countries, but what if this provision of aid is counterproductive? Aid might increase corruption and as a result decrease development. This quantitative study focuses therefore on the effect of foreign aid on the level of corruption. Several control variables are included to test whether a possible relationship between aid and corruption is not actually influenced by one of these variables. The results are controlled for the following variables: economic development, state regulation, trade openness, free press, political stability, British legal origin, Socialist legal origin, Protestant religion and gender equality. The selection of these variables is based on previous studies into factors that can be associated with corruption.

The results of the analysis show that there is a significant relation between aid and corruption, but this does not hold after the inclusion of the control variables. Therefore it is not clear that this relation is not influenced by other variables. Besides that, the causal direction between aid and corruption is not unambiguous. Therefore, it cannot be argued that aid influences the level of corruption. However, the negative correlation between aid and corruption does mean that in countries that receive more aid, the level of corruption is lower. This is not necessarily a causal relationship, but the association does show that aid goes to countries that are less corrupt. The multiple regression analysis shows that the main predictors of corruption are: a low level of economic development, limited free press, a low level of political stability, no British legal origin and a high percentage of Protestants in a country.

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PREFACE

In 2008 I spent a summer in Cameroon, to intern for a small NGO in Buea. This was a great experience for me, although it was difficult at times, due to differences in culture, rules and customs. It was my first time in Africa and the country and the people surprised me in a positive way. But I also got the chance to learn more about the problems in this country. My host family in particular, showed me the Cameroonian way of life and I had a lot of interesting talks with them. One of these discussions was about how elections are conducted in Cameroon. During the previous elections, their house had been used as an electoral office and only a day before the elections, people from the government stopped by the house to drop off buckets full of ballot papers, which had already been signed in favor of President Paul Biya. Of course I had read stories about this before, but it becomes so much more realistic when people tell you that in person. I was shocked that in this country, elections were apparently only held in order to satisfy the people, but were not fair at all. Of course there was no possibility for me to find out whether this was a common story across the country or not, but it still got to me.

Soon after that, I got the 'chance' to experience some of the governmental problems in this country myself. When I had applied for a Cameroonian visa in the Netherlands, they issued me a visa for a month (while I was going for two months), and they told me that I could easily get it extended in Cameroon. However, this turned out to be much more difficult than I had been told in the Netherlands. In order to get your visa extended, you need to know people, who know other people who can arrange this for you. This is a very nontransparent process, in which a lot of bribes are involved. I however, did not want to contribute to the corruption in this country and therefore I wanted to do it the official way. However, in reality there is no official way of arranging your visa in a fast manner. I realized that the sometimes criticized bureaucracy in the Netherlands is not so bad at all, because at least you know where you have to go and how long procedures take. There are rules, and people stick to these rules. In Cameroon rules were often not followed, if you even managed to find out what they were.

This experience triggered my interest in the subject of corruption. I wondered how a country could overcome the problem of corruption (because most people are harmed by it), when it is so imbedded in a society. In order to find out how to solve the problem of corruption, it is important to establish what causes it. Therefore I decided in the beginning of 2009 to write a thesis on the causes of corruption in

developing countries. However, before I actually started to write my thesis, I did an internship with the United Nations Development Programme (UNDP) in Geneva. During this internship I realized that the effectiveness of foreign aid is also something I am very interested in. Therefore I decided to focus my thesis on the effect of foreign aid on the level of corruption.

This thesis symbolizes the end of 6 years of studying at the Erasmus University Rotterdam, with interventions in Sydney, Cameroon and Geneva. My hope is to be able to show in this thesis how much I have learned during these past years. I could however not have written it without the help of a number of people. I would like to take this opportunity to mention a number of them explicitly. I want to thank my parents, Jan and Marja, for their continuous support and patience, especially during times when I got the idea to take up another challenge or journey, while they secretly wanted me to focus on my studies. They taught me how important it is to always look at things from the positive side, and to approach problems like challenges. My sister and brother have also been of a lot of help during these past years. My sister Rianne has been the perfect example for me and stimulated me so much in working hard and getting good grades. She is the one I can always count on for advice and fun activities. And my brother Mark encouraged me to broaden my horizons and to follow my dreams. Besides that, I want to thank my roommates Jelena and Linde, who were of great support during these last months of thesis writing, and Coosje, for who it must not have been much fun to live in a house with three girls under thesis-stress. I also want to thank my good friends Annet, Tom and Archie, for their time devoted to proofreading this thesis and for creating fun times during thesis breaks.

A special thanks goes to my supervisor, Markus Haverland, who always believed in me and this thesis. His support and comments have been essential for the realization of this thesis. I also want to thank Geske Dijkstra, my second supervisor, for her useful comments and her flexibility, which made it possible to finish this thesis in time.

Even though it was tough at times, I really enjoyed writing this thesis, and I hope you as reader will enjoy it just as much.

Yvonne Wilmer

Rotterdam, 26 July 2010

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1 THE PROBLEM OF CORRUPTION

What is the problem of corruption? Why is it a problem? And how can and should it be battled? This first chapter provides an introduction to the topic of corruption. In the first two paragraphs a background analysis is carried out that tries to provide answers to these questions. The third paragraph presents an overview of the objectives of this study. Paragraph 1.4 deals with the central research question. The practical and academic relevance of this study are reviewed in paragraph 1.5. The sixth paragraph explains and defines the central concepts of this research, followed by a short introduction into the research design. The last paragraph contains a reading guide and will explain what is discussed in each chapter.

1.1 Why is corruption a problem?

“Bribery and price-fixing are unduly influencing global public policy and costing countries billions of dollars lost in revenues [...]” (BBC, 2009, p. 1).

Transparency International’s (TI) Global Corruption Report (2009) describes, in agreement with the above-mentioned quote, that corruption is a major problem: the massive scale of global corruption, which is not confined to developing countries, costs billions of dollars, has a negative influence on sustainable growth and has many other negative effects. In the aftermath of the economic and financial crisis and with the vast majority of countries scoring below 5 on a scale from 0 (perceived to be highly corrupt) to 10 (perceived to have low levels of corruption) in TI’s Corruption Perceptions Index (CPI) 2009, it is obvious that the challenge of corruption needs to be taken on. “At a time when massive stimulus packages, fast-track disbursements of public funds and attempts to secure peace are being implemented around the world, it is essential to identify where corruption blocks good governance and accountability, in order to break its corrosive cycle” (Labelle, 2009, p. 1).

Until the second half of the 90s, scholars were still debating whether corruption was a negative or positive phenomenon. However, in recent years, it has become widely accepted that corrupt practices have a negative effect on the development of a country. Mauro (1995) undoubtedly contributed to this conviction, because he was the first one to “[report] evidence of a long-suspected link between higher

corruption and slower economic growth” (Treisman, 2007, p. 212). His research demonstrates the enormous economic costs of corruption. Since his research, there have been many academic contributions to the consequences of corruption. Research has shown that corruption not only hinders economic growth (Mauro, 1995), but also distorts market conditions (Pieth, 1997), discourages foreign and domestic investments, increases income inequality, and enhances inflation and currency depreciation (Akçay, 2006). Besides these economic consequences of corruption, research has also been carried out on the effects of corruption on human development, resulting in an endless list of negative effects of corruption. For example, it reduces social services such as education and health, and fosters an anti-democratic environment characterized by uncertainty, unpredictability and declining moral values and disrespect for constitutional institutions and authority. Furthermore, it undermines chances of achieving the Millennium Development Goals (MDG’s) and it violates human rights (United Nations Development Programme, 2004). Huguette Labelle declares in the CPI 2008 report: “In the poorest countries, corruption levels can mean the difference between life and death, when money for hospitals or clean water is in play” (Corruption Perception Index, 2008c, p. 1).

The Global Corruption Report 2009 shows that the presence of corruption is not limited to the developing world (Global Corruption Report, 2009). However, that does not mean that corruption is not more widespread in developing countries and that it does not hurt the people living in developing countries disproportionately. According to the CPI the problem of corruption occurs more frequently in developing countries than in developed countries (Corruption Perceptions Index, 2008a). Furthermore, Kofi Annan said, as Secretary General of the United Nations, that “by diverting funds intended for development, undermining a Government’s ability to provide basic services, feeding inequality and injustice and discouraging foreign aid and investment” (Annan, 2004, p. iii), corruption is more destructive in developing countries and the poor people that live in these countries. On the most recent International Anti-Corruption Day (9 December 2009), the United Nations warned that corruption kills development, and is one of the biggest impediments to achieving the Millennium Development Goals. “Corruption undermines governments' ability to act and serve their people. It siphons off the finance intended to reduce poverty and discourages investment in economies," said Helen Clark, Administrator of the United Nations Development Programme (United Nations Development Programme, 2009, p. 1).

The CPI described corruption as a primary reason for the lack of progress in poverty reduction (Corruption Perceptions Index, 2008b). Corruption diminishes a country's prospects for development, because countries that need every penny for important social and economic programs lose a large amount of money because of it. If the level of corruption in these countries stays as high as it is, it will be very difficult for them to develop, both economically and humanitarian. Therefore it is important that developing countries get extra attention in the fight against corruption.

1.2 How to battle corruption

In order to battle corruption, whether this is in developing or developed countries, we need to know what causes the problem. We can try to reduce the consequences, but corruption cannot be tackled in a sustainable matter as long as we do not eliminate the causes. Therefore academic research increasingly focuses on the causes of corruption. It is also important to know who is and who feels responsible for tackling the problem of corruption. Foremost, the governments of countries that are facing the problem of corruption in the government, political parties or lobbyists, are responsible for dealing with these problems in their sovereign states. These governments need to implement institutional reforms and anti-corruption strategies. In order to be successful at this, they "need to learn the right lessons from the international experience and they need to create feasible governance reform agendas appropriate and feasible for their own circumstances" (Khan, 2006, p. 1).

The Western World (the developed countries and international organizations) tries to help developing countries in battling corruption, preferably together with the governments of these specific countries. "Efforts to combat corruption directly support goals of eradicating poverty and promoting human security for all, and contribute to the UN's global agenda of assisting countries in achieving the MDG's" (United Nations Development Programme, 2004, p. 1). Furthermore, multilateral and bilateral foreign aid is more effective when there is less corruption, because it is more likely that foreign aid will reach the right place and persons. Therefore, it is also in the interest of the Western world if corruption in developing countries decreases.

However, the efforts of the West to assist developing countries in eradicating poverty, promoting human security and achieving the MDG's, might actually have a perverse effect. What if Western help

(generally based on the provision of foreign aid) actually increases the level of corruption in developing countries, instead of diminishing it? It has already been discussed that corruption has many negative effects, which means that if the assistance of the West increases the level of corruption, the provision of foreign aid might be counterproductive. Foreign aid is an important source of revenue in many developing countries and therefore it is problematic if it undermines its own effectiveness through inducing corruption.

1.3 Research objectives

The objective of this study is to identify the relationship between the activities and help of Western countries and corruption in developing countries. The focus is on the West because it tries to help developing countries, mainly through the provision of foreign aid, but it might actually (unintentionally) lead to a deterioration of the situation (Moyo, 2009). Furthermore, most other possible causes of corruption (which is elaborated on in chapter 2) cannot be changed by the West. Therefore this study concentrates on the relation between foreign aid and corruption: does foreign aid lower the level of corruption, does it increase the level of corruption, or are the two concepts not correlated? Even though corruption exists in developed countries as well, developing countries have been chosen as subjects. Corruption hurts the people living in these countries disproportionately and therefore corruption is a bigger problem in developing than in developed countries.

This research aims to recommend whether foreign aid, in its current form, should continue being one of the main policies of the West towards developing countries. If this research identifies that the provision of aid induces corruption in the recipient countries, the donors should use this information to reconsider their foreign aid policies. This, in the end, will contribute to the reduction of corruption and the development of developing countries.

1.4 Research question

Following the problem analysis and the research objectives, the central research question of this thesis is:

Does foreign aid provided by the West, increase the level of corruption in the receiving developing countries?

In this research, corruption is the dependent variable and foreign aid the independent variable. The central concepts of this research question (corruption, the West, developing countries and aid) will be discussed in paragraph 1.6. The specific hypothesis that will be studied will be discussed in chapter 3.

1.5 Practical and academic relevance

1.5.1 Practical relevance

Many studies have shown that corruption has a negative effect on the (economic) development of a country. In order to battle corruption effectively, we need to tackle the problem at its roots. The causes of corruption need to be established and subsequently eliminated. Foreign aid is possibly one of these causes of corruption.

“More than US\$2 trillion of foreign aid has been transferred from rich countries to poor over the past fifty years” (Moyo, 2009, p. 28). In 2009 alone, over US\$119 billion was spent by Western countries on aid to developing countries (OECD Statistics). It is known that a big part of foreign aid has been misused through corrupt practices and does not end up where it was targeted for. Money has often been wasted by the receiving governments, despite good intentions from donor countries, and in many cases the recipient countries have not been held accountable for this (Moyo, 2009).

However, the debate about the effectiveness of aid is becoming increasingly important in Western countries. Discussions amongst politicians about the effectiveness of the provision of aid become more and more common, since it is known that a large amount of aid is not being used properly. An important aspect of this debate should be whether aid has an effect on the level of corruption in the recipient countries. The Western world tries to increase the standard of living in developing countries through aid. However, if the provision of aid stimulates corruption, it means at best that its provision is less

effective, but at worst that the West actually slows the development of developing countries, depending on how strong the relation is between aid and corruption. Therefore it is important to determine the effect of foreign aid on the level of corruption in recipient countries.

Is the provision of aid by the West, with the aim to eradicate poverty and to promote human security, actually capable of achieving this? If it is hindered by the side-effect of increasing corruption, poverty and human insecurity will only increase. As a result, aid would not reach its goals and therefore the Western world would need to undertake the assignment of rethinking its policies towards developing countries. This might not only provide governments and international organizations with the right tools to lower the level of corruption in developing countries, it might also lead to policies that will actually stimulate economic growth and human development in developing countries, assuming that aid would not be the correct strategy for this.

1.5.2 Academic relevance

In recent years, an increasing amount of research has been devoted to finding the causes of corruption and the relation between these causes and the policies of the concerned governments. Chapter 2 provides more details and references of the most relevant studies concerning this topic. A smaller amount of research has been dedicated to the influence of the policies of the Western world, of which the provision of aid is a part, on the level of corruption in developing countries. On the other hand, much research has been carried out concerning the effects of foreign aid. However, the link between foreign aid and corruption has not been made very often. Research that does cover this topic, mostly looks at how much money, disbursed for aid, is lost through corruption.

Only a few academics have studied the effect of aid on corruption. Research in this area is important because it gives more information on the causes of corruption, which can help in finding suitable solutions to the problem of corruption. The authors that do mention aid as a determinant for corruption, do not always provide statistical evidence for this. The few cross-country data analyses that have been conducted on the effect of aid on the level of corruption, use data that is now outdated, with the most recent data coming from 2001. After almost a decade, the aid and corruption levels have most

likely changed and there are more refined ways of collecting data, which means that more accurate aid - and especially corruption - levels can be identified.

Another important difference between this research and the research that has been carried out in the past about this topic, is that most of these studies are based on a different database: the International Country Risk Guide (ICRG). This database forecasts the financial, economic and political risks of 140 countries, as a predictive tool for international investments, and includes numbers for the level of corruption in a country. The numbers for corruption are part of the political risk assessments and “are made on the basis of subjective analysis of the available information” (The PRS Group, n.d., p. 2). Critics of the ICRG argue that this guide “does not depict corruption itself but the political instability that increases with corruption, but also with the public’s intolerance towards corruption” (Lambsdorff, 2005, p. 3). Therefore the measurement validity of the ICRG is not ensured. It is however important to note that this remark is made by Lambsdorff, who is the creator of the Corruption Perception Index, and is therefore probably more critical of the ICRG.

Many academics have based their studies on the ICRG, because it includes time-series with data on corruption. Furthermore, the database previously included the widest sample of countries in comparison to other databases. Because this research is a cross-sectional design and does not take different time periods into account, there is no necessity to use a database that includes time-series. This gives us the opportunity to use a database that covers more countries and contains more accurate data.

The database with these qualities is Transparency International’s Corruption Perception Index (CPI), which measures the perceived level of public-sector corruption. The CPI covers 180 countries and territories throughout the world, which is a larger amount than the ICRG covers. Numbers of corruption from the CPI database are more reliable, because it is a ‘survey of surveys’. This means that 13 different expert and business surveys are combined, in order to create a reliable picture of the level of corruption in these countries. Only the countries that have a minimum of 3 reliable sources of corruption-related data are included and therefore this index is more solid than an index based on one single survey. In previous years, research on corruption has not often been based on the CPI, because for example in 2001 the CPI only covered 91 countries. For other countries the required 3 reliable sources to be included in the database were not available. In recent years however, the database has expanded

greatly, due to the increasing availability of useful polls and surveys. This research is amongst the first to study the effect of aid on corruption, based on the more comprehensive Corruption Perception Index from Transparency International. A review of studies into factors associated with corruption, and the effect of aid on corruption in particular, can be found in chapter 2.

1.6 Central research concepts

In the literature different definitions of *corruption* are being used. These definitions can focus on the law, on the public interest or on public opinion. Carl Friedrich formulates corruption as “deviant behavior associated with a particular motivation, namely that of private gain at public expense” (Friedrich, 2002, p. 15). Harvard political scientist Nye argues that corruption is “behavior which deviates from the normal duties of a public role because of private-regarding [...], pecuniary or status gains; or violates rules against the exercise of certain types of private-regarding influence. This includes such behavior as bribery [...]; nepotism [...]; and misappropriation” (Nye, 1967, p. 966). But these definitions have limitations. One of the main problems with defining corruption is that the concept has different meanings in different countries, in different settings and in different periods of time.

However, albeit differences in nuances, there is a common understanding of the basic form of corruption, which is the following: “corruption is the abuse of public office for private gain” (Corruption Perceptions Index, 2008c, p. 13). This means that public power is misused for private benefit, whether this is for the individual official or for groups or parties to which he or she belongs (Treisman, 2007). Transparency International mentions examples of this situation: “bribery of public officials, kickbacks in public procurement, embezzlement of public funds or questions that probe the strength and effectiveness of anti-corruption efforts, thereby encompassing both the administrative and political aspects of corruption” (Corruption Perceptions Index, 2008c, p. 14). It is important to use this more broad definition, in contrary to the definitions that some scholars use, because like most databases and indexes on the level of corruption in different countries, the CPI uses this definition. In order to work with the CPI, it is important to use the same definition.

Concerning the relationship between the dependent variable corruption and each of the independent variables, it is important to note that when this study mentions a positive relationship between a variable and corruption, it means that a higher level of this variable is associated with a higher level of

corruption. When this study mentions a negative relationship between a variable and corruption, it means that a higher level of this variable is associated with a lower level of corruption.

This research focuses on the policies of *the West* towards developing countries, but which countries are part of this Western world? The West consists of the “rich governments in North America and Western Europe who largely control international agencies” (Easterly, 2006, p. 7). Countries that have close political and / or cultural relations with North America and Western Europe, like Japan and Australia, are in this research also considered as the West. Important to note is that the West does not only exist of countries. International political organizations, like the United Nations (UN), International Monetary Fund (IMF), European Union (EU), World Bank and North Atlantic Treaty Organization (NATO), are also considered as the West (Van den Doel, 2004).

Developing countries are by the World Bank defined as countries with low (US\$755 or less in 1999) or middle (between US\$756 and US\$9,265 in 1999) levels of GNP per capita. This includes the 49 countries that are classified by the United Nations as Least Developed Countries (LDC's). More than 80 percent of the world's population lives in the 144 developing countries (The World Bank, 2004). For a comprehensive list of developing countries, see appendix A.

Another central concept of this research is *foreign aid*. In general, there are three types of foreign aid: humanitarian/emergency aid, charity-based aid and systematic aid. Humanitarian or emergency aid is aid that is “mobilized and dispensed in response to catastrophes and calamities” (Moyo, 2009, p. 7), for example after natural disasters. Charity-based aid is disbursed “by charitable organizations to institutions or people on the ground” (Moyo, 2009, p. 7). Because emergency aid and charity aid only represent a small segment of the money transferred as aid and the concerned actors and/or circumstances are different, this research deals with the third category of foreign aid: systematic aid. Systematic aid, also referred to as ‘official aid’, consists of two elements: bilateral and multilateral aid. Bilateral aid is aid provided directly by governments to an aid-recipient country, while multilateral aid is provided by an international organization active in development, like the World Bank (Riddell, 2007). Systematic aid can have the form of concessional loans (money lent at interest rates that are below the market interest rates), grants (money that does not have to be paid back) or debt relief (when money

was given with the intention that it had to be paid back, but when the donor later on decides that it does not have to be paid back). When this study mentions aid, it refers to foreign aid, which is defined as the sum of concessional loans, grants and debt relief.

1.7 Design of the study

This research will test a hypothesis about aid and corruption, according to the method of deduction. Deduction is the model “in which specific expectations of hypotheses are developed on the basis of general principles” (Babbie, 2004, p. 25). This means that a hypothesis is based on a theoretical framework, which is then tested by observations. This thesis will study whether there is a link between the amount of foreign aid a developing country receives and the level of corruption in this country. The effect of aid on corruption is explained and this study is therefore an X-oriented explanatory research. Does aid (the independent variable X) increase the level of corruption (the dependent variable Y)? The research is carried out on the level of countries, developing countries to be specific, and therefore ‘countries’ is the unit of analysis.

The research design of this study is a cross-sectional non-experimental design with a large N. This means that the strategy for collecting information and data (that will be used to test hypotheses), is the non-experimental design. This method is chosen because there is a “lack of researcher control over application of the independent variable [and it is not possible] to measure the dependent variable before and after exposure to the independent variable occurs” (Buttolph Johnson & Reynolds, 2008, p. 180). As a result, there is no treatment of the variables and the study relies entirely on observations and statistic control.

This research design is a large N design. This indicates that a large amount of cases is included: out of a population of 144 countries, 100 countries are chosen for the sample.

Furthermore, this study is a cross-sectional design, because both the dependent variable and independent variables are measured at approximately the same time. The independent variables and the conditions under which the independent variables are experienced are not controlled for.

Chapter 4 contains an extensive description of the research design.

The link between aid and corruption will be tested through quantitative research. The bivariate correlation between corruption (based on data from the CPI) and aid (based on data from the World Bank) is calculated. This relation is subsequently statistically controlled for other independent variables in a multiple regression analysis. Chapter 4 will also elaborate on this statistical procedure.

1.8 Reading guide

This first chapter has focused on the problem analysis, the research objectives and the research question of this study on corruption.

Chapter 2 provides a review of the literature that studies the causes of, or at least the factors that are associated with, corruption. These possible causes or determinants of corruption are divided in economic, political, historical and geographical, and cultural factors. Empirical studies on the relationship between aid and corruption are included as well. The studies that are mentioned in this chapter are used to identify needs for future research.

Chapter 3 presents the theory of this study and on which arguments concerning aid and corruption this is based. It shows as well how our hypothesis and the selected control variables are built on the studies that have been reviewed in the second chapter.

The fourth chapter presents an overview of the research design of this study. It also provides more information on the sample and the statistical procedures. The second part of chapter 4 presents the operational definitions of the dependent variable corruption, the independent variable aid, and the control variables.

The fifth chapter deals with the empirical part of the study: what are the research findings and how can these be interpreted? It also discusses the assumptions for multiple regression analysis and how these are met.

The final chapter, the conclusion, answers the central research question and provides the policy and academic implications of this research.

2 LITERATURE REVIEW

Since the end of the 90s especially, numerous scholars have conducted research on the factors that are associated with corruption. To be able to identify the relation between corruption and aid, it is important to use other possible predictors for corruption as control variables. Therefore, this chapter provides an overview of the different empirical studies into the factors associated with corruption. A division has been made between economic factors, political factors, historical and geographical factors, and cultural factors. A special focus exists upon empirical studies that deal with the relation between the provision of aid and the level of corruption, because this shows the results of similar studies and illustrates how this research can fill a gap. Studies that deal with the theoretical relation between aid and corruption, on which our theory is built, are discussed in chapter 3. The final paragraph of this chapter, paragraph 2.6, provides a summary of the factors that are, according to the academics, associated with corruption.

2.1 Economic factors and corruption

Is there a relation between *economic development* and the level of corruption? Most academics have found empirically that higher economic development correlates strongly with lower perceived corruption: countries with a higher GDP per capita (as indicator for economic development) have less perceived corruption than countries with a lower GDP per capita (Ades & Di Tella, 1999; La Porta, Lopez-de-Silanes, Shleifer & Vishny, 1999; Montinola & Jackman, 2002; Paldam, 2002; Treisman, 2000 and 2007). La Porta et al. (1999) studied the determinants of the quality of governments, which shows a strong positive correlation between per capita income and government performance. In their research, the quality of government is based on a broader set of indicators. Level of corruption is one of these indicators. Treisman (2000) interprets the results for the quality of government as the results for the level of corruption, and concludes that economic development decreases corruption. Treisman (2007) tests the relation between economic development and perceived corruption for several controls (ethnolinguistic fractionalization, latitude, region, culture, democracy, religion, trade, inequality, inflation and various policy variables) and finds a strong and robust correlation. Paldam (2002) finds in his study into the cross-country pattern in TI's CPI in 1999, that GDP per capita is the most important determinant for corruption. Montinola and Jackman (2002) also show in their study that covers 66

countries selected from all continents, that higher levels of GDP are associated with lower levels of corruption.

As with more variables, the direction of causation between economic development and corruption can be difficult to establish. Does economic development reduce corruption, or is it corruption that slows economic development? Previous studies have found that corruption decreases economic growth. Gray and Kaufmann (1998) argue that corruption creates uncertainty and higher transaction costs, which usually leads to inefficient economic outcomes, for example through the discouraging of foreign and domestic investments. In 1995, Mauro's empirical study into corruption and growth supports that corruption lowers investment, and thereby reduces economic growth. Consequently, academics need to establish the direction of causation before they are able to conclude that lower economic development, in turn, increases corruption. Treisman (2000) argues that this can be done by testing if another cause of economic development, that cannot be affected by corruption, leads to lower corruption. He chooses the country's latitudinal distance from the Equator as this third variable, because corruption cannot influence a country's latitude, but research has shown that closeness to the Equator is likely to reduce growth. His research shows that latitudinal location is significantly related to corruption levels, and therefore Treisman concludes that "whatever the effect of corruption on growth, higher economic development does itself reduce corruption" (Treisman, 2000, p. 434). There are however certain objections to using the countries' distance from the Equator as an instrument for economic development. Treisman presumes in his earlier study that distance from the Equator cannot affect corruption other than via economic development. In following research he however admits that this is open to objections, because latitude is correlated with many other variables that determine development. Therefore it is difficult to state what latitude is precisely instrumenting for (Treisman, 2007).

Besides the correlation between economic development and corruption, studies display another factor that is associated with corruption: *inflation*. Paldam (2002, p. 222) argues that "one aspect of high inflation is that it causes large and seemingly arbitrary redistributions of wealth [which] is likely to cause a further drop in public morale". His research shows that periods of high inflation increase corruption: when inflation increases with 10 times, corruption increases with 1.5 points on TI's CPI. Braun and Di

Tella (as cited in Treisman, 2007) and Treisman (2007) state that variable and unpredictable inflation increases corruption, because it makes it more difficult to monitor public spending and contracts. Their statistical analysis supports this. Regression analysis from Gerring and Thacker (2005) indicates that long-term inflation leads to higher levels of corruption. It is important to note that all the above-mentioned academics mention the association between high inflation and corruption, but they focus on different elements of inflation: the unpredictability of inflation, the presence of periods of high inflation, and the length of periods of high inflation. Another important factor is that these academics assume a causal direction from inflation to corruption while they have not tested for this.

Another economic factor that can influence the level of corruption is *income inequality*. However, both Paldam (2002) and Treisman (2007) who have studied this phenomenon, could not find a significant relation between income inequality and corruption. Paldam's regression analysis shows a relation between more income inequality and more corruption, but this result is not robust. Treisman also mentioned that he could not find a significant relationship, but he stresses that this does not mean that there is no relationship; he just did not manage to find one based on his dataset.

Will the level of corruption in a country decrease when more tasks are given out to the market or when there is more government regulation? Many academics have contributed to the body of research concerning this question. Ades and Di Tella (1997), Tanzi (1998) and Djankov, La Porta, Lopez-de-Silanes and Shleifer (as cited in Treisman, 2007) argue that more *state regulation* entails more procedures, more time and more official costs to register a business. This leads to higher entry barriers to the market and it will give more monopoly power to the officials who carry out the authorizations. This will increase the level of corruption in a country. Paldam (2002) and Gerring and Thacker (2005) state that more regulations, and therefore little economic freedom and a less open country, will create a less competitive market environment, and will therefore stimulate corruption. The empirical studies from Gerring and Thacker and Paldam support this hypothesis, although they do not test for causal direction and Paldam's regression lacks robustness. Treisman (2002) finds in his study in 28 post-communist countries no significant correlation between greater state intervention and corruption either.

Related to state regulation is *trade openness*. When there are trade restrictions, “the necessary import licenses become very valuable and importers will consider bribing the officials who control their issue” (Mauro, 1997, p. 4) and it will “increase the opportunities for earning extra rents by gaining access to trade allowances” (Pellegrini & Gerlagh, 2008, p. 250). Trade openness, on the other hand, will enhance market competition and will reduce monopoly power. When there is competition from foreign firms, rents enjoyed by domestic firms are reduced, which reduces the rewards from corruption. Therefore, it is argued that open trade and investment policies decrease corruption (Lambsdorff, 2005; Mauro, 1997). Gerring and Thacker (2005) state that these open trade and investment policies can be measured by looking at the levels of imports, exports and foreign investment. High levels of imports, exports and foreign investment reflect open trade policies. The correlation between open trade and investment and corruption is empirically tested by amongst others Ades and Di Tella (1999), Gerring and Thacker (2005) and Treisman (2000 and 2007). These studies find that open trade and investment policies are associated with lower corruption. Contrary to most studies, Treisman (2002) found no evidence in his study in post-communist countries that foreign trade restrictions and corruption are related.

Some researchers also make the link between corruption and *national resources*. Gray and Kaufmann (1998), Lambsdorff (2005) and Mauro (1997) state that more export of natural resources is associated with a higher level of corruption. Ades and Di Tella (1999) find evidence of a significant positive correlation between the export of natural resources, like fuels, metals and minerals, and corruption. Montinola and Jackman (2002) find similar results, even when control variables are included. Rose-Ackerman (1999) explains that wealth through an abundance of natural resources can make reform seem unimportant, because “the state can finance itself through royalties [...] and because there may be few sources of alternative employment for laid-off civil servants in the private sector” (Rose-Ackerman, 1999, p. 213). Individuals will try to rule the state, in order for them to use it for their own benefit. A public career, through which people can start rent-seeking, is preferred over working in the private sector: productive investment and entrepreneurial talent are changed into corrupt behavior and no one is interested in an effective public sector. Rose-Ackerman concludes that an abundance of natural resources stimulates corruption. Treisman (2000) however, while using the variables Ades and Di Tella

(1999) used, could not find a significant correlation between natural resources and corruption, once he controlled for income and democracy.

Other causes of corruption could be the *provision of goods and services at below-market prices* and to have a system of *multiple exchange rates*. When governments provide goods, services and resources at below-market prices to some, but for normal prices to others, it creates incentives for people “to bribe officials to maintain the flow of such goods or to acquire an unfair share at the below-market price” (Mauro, 1997, p. 5). There is limited supply of the below-market priced good, but a high demand, which will lead to corruption. The same argument is valid for multiple exchange rates, where for example importers, tourists and investors all get a different exchange rate. People will try to get as much as possible against the lower rate, even if this is more than their fair share, and they may be willing to bribe officials for this. Therefore this will induce corruption (Mauro, 1997; Rose-Ackerman, 1997; Tanzi, 1998). No empirical studies have however been done into the association between corruption and either the provision of goods and services at below market prices or a system of multiple exchange rates.

2.2 Political factors and corruption

Much research has been carried out on the relationship between *democracy* and corruption, with different results. Paldam (2002) uses the Gastil index for democracy, which indicates the average level of democracy in a country over 15 years, to test whether democracy causes low corruption. In his cross-country study, higher levels of democracy seem to be associated with lower levels of corruption. It is however difficult to establish what the independent effect is of democracy on corruption, because both variables interact strongly with the level of transition. Montinola and Jackman (2002) conclude in their empirical research that partially competitive democracies are associated with higher corruption levels than non-democracies. Only beyond the point of intermediate democracies, lower levels of corruption can be observed. Treisman (2002) finds in his study in post-communist countries no evidence that the degree of democracy in these countries and the level of corruption are correlated.

However, many researchers find that long-established democracies do have less perceived corruption (Gerring & Thacker, 2004; Gerring & Thacker, 2005; Treisman, 2000). According to the empirical research of Pellegrini and Gerlagh (2008), it will take at least 30 years of uninterrupted democracy,

before democratic institutions translate into lower levels of corruption. Treisman (2007) finds a non-linear relationship between democracy and corruption, where democracy may increase corruption in the short run. However, he concludes as well that after a certain amount of time, democracy prevents corruption. Sandholtz and Koetzle (2000) conclude, based on their empirical research, that more political democratization leads to less corruption, and not only after a certain amount of time. They argue that “democratic institutions provide the citizenry, and elected leaders, with the means to monitor, expose, and penalize corrupt acts” (Sandholtz & Koetzle, 2000, p. 46), which will decrease the level of corruption. They also find, in agreement with the studies mentioned before, that when countries have longer experience with democratic governance, they become more hostile to corruption.

Related to the time a country has been a democracy, is the level of *free press* in a country. Brunetti and Weder (2003) study the hypothesis that a free press can be a powerful control on corruption, because independent journalists have strong incentives to investigate issues and to reveal stories of corrupt practices. A free press increases transparency and makes it more likely that corrupt actions by government officials are discovered. Brunetti and Weder find that there is a strong correlation between a low level of press freedom and a high level of corruption. Other researchers have found similar results (Lederman, Loayza & Reis Soares, as cited in Lambsdorff, 2005; Pellegrini and Gerlagh, 2008; Treisman, 2007). Brunetti and Weder also test for the causal direction and conclude that press freedom is a powerful control on corruption: “Theoretical considerations, estimations with various instruments as well as panel data evidence suggest that the causation runs from more press freedom to less corruption” (Brunetti & Weder, 2003, p. 1821).

Gerring and Thacker (2004) studied the effect of the *political system model* on the level of corruption: are parliamentary or presidential systems better in combating corruption? They find that parliamentarism is associated with lower levels of corruption and presidential systems, where a directly elected president has significant powers, are associated with higher levels of perceived corruption. Lederman et al. (as cited in Lambsdorff, 2005), Panizza (as cited in Lambsdorff, 2005) and Treisman (2007) have found similar results in their empirical studies. Treisman (2002) did not find any significant relationship between parliamentary regimes and corruption, when he studied post-communist

countries. Persson, Tabellini and Trebbi (2003) find that *larger electoral districts* are associated with lower levels of corruption, because there are lower barriers to entry. Some studies also show that in countries where people *vote for individual candidates* rather than for party lists, corruption is lower, because there is more individual accountability (Kunicová and Rose-Ackerman, 2005; Persson et al., 2003).

Related to representation systems, Treisman (2002) shows that in post-communist countries more political *decentralization* leads to more corruption: “the more elected tiers of sub-national government, the greater was the frequency with which businessmen reported buying legislative and regulatory decisions” (Treisman, 2002, p. 219). Other studies point out that decentralization could actually battle corruption. Lambsdorff (2005) argues that research has shown that there is a positive correlation between corruption and a country’s size. Therefore smaller countries might have a better monitoring system and can battle corruption better as a result. Knack and Azfar (2003) however find no relation between corruption and population and they say that the research, concerning the impact of a country size on governance, should have a greater cross-country coverage. Gerring and Thacker (2005) have found insignificant results for the size of the public sector and the level of corruption.

Some authors show that more fiscal decentralization in government expenditure, by which they mean the share of sub-national expenditure in total public spending, leads to less corruption (Fisman & Gatti and Huther & Shah, as cited in Lambsdorff, 2005), but the study of Treisman (2007) finds that this link is not robust. La Palombara (as cited in Elliott, 1997) studied the effect of the total government expenditures, measured by its share of GDP, on corruption. La Palombara argues that a large government budget could indicate a large bureaucracy, which might create more opportunities for corruption. His research, based on 83 countries, however shows that a small government budget is correlated to a high level of corruption.

Treisman (2000) studies the effect of decentralization through comparing federal and centralized states. He concludes that *federalism* is significantly related to higher perceived corruption: federal states are more corrupt than centralized or unitary states. This is supported by other studies (Gerring and Thacker, 2004; Goldsmith, 1999; Kunicová and Rose-Ackermann, 2005). Adsera, Boix and Payne (2000) do

recognize that a federal state seems to be associated with more corruption, but their research cannot find any statistically significant results for this.

Research has also been conducted into the effect of *political stability* on the level of corruption. Political instability is seen as the chance that a government will lose its stability or gets overthrown as a consequence of violence. Pellegrini and Gerlagh (2008) argue that when administrations are politically stable, “bureaucrats face less chances of dismissal and have more opportunity for long-run advancement in their careers” (Pellegrini & Gerlagh, 2008, p. 251). This will give them an incentive to be open and honest. Their research, that shows that more political instability is associated with higher levels of corruption, is in accordance with their hypothesis. Adsera et al. (2000) empirically test the associations between corruption and various political accountability mechanisms. They find as well that political instability (often fostered by ethnic conflict) is associated with a lower quality of government and more corruption.

As last political factor associated with corruption, we mention the effect of the role of public officials, and specifically the *civil service wages*, on corruption. This is not a clear political cause, but since the role of public officials is in many cases determined by the political situation in a country, it is considered a political factor. Rose-Ackerman (1978) is amongst the firsts to suggest that the jurisdictions of officials should be overlapping, to make it possible for an unsatisfied client to go to another official. This system should be accompanied by an appropriate incentive payment system, otherwise it might promote laziness amongst officials. Relatively higher civil service wages lower the level of corruption, because the incentive of becoming corrupt has been taken away and when public servants get higher salaries they will lose more when they get caught and fired. Kaufmann (1997) and Mauro (1997) agree with the hypothesis that countries with low civil service wages, especially when these wages are not competitive with the private sector, induce corruption. The study of Pellegrini and Gerlagh (2008) provides the statistical evidence for this. The relationship between wages and corruption has also been tested by Van Rijckeghem and Weder (as cited in Lambsdorff, 2005), who took a sample of 31 developing countries. They found that when the civil service wage is doubled, corruption will improve with one point. However, the authors already mention themselves that the causality is not clear. Additionally, Van Rijckeghem and Weder use ICRG’s corruption index and, as mentioned in paragraph 1.5.2, this database

might lack measurement validity. Other research that has been done concerning the relative wages in the public sector and the level of corruption, fail to show a significant link (Manow and Swamy et al. as cited in Lambsdorff, 2005; Treisman, 2000; Treisman, 2007).

2.3 Historical and geographical factors and corruption

Regarding the relation between historical factors and corruption, colonialism is especially interesting. The main existing studies deal with the relation between *British colonialism* and corruption. Treisman (2000) concludes, based on his regression analysis, that countries that used to be British colonies, in comparison with other colonies, have lower levels of perceived corruption. Swamy et al. (as cited in Lambsdorff, 2005) find the same result. Treisman (2000) argues that this can be caused by a common law system or by the way the law is administered and enforced, because he says that the British system has “a preoccupation with procedural fairness even at the expense of social hierarchy” (Treisman, 2000, p. 46). Gerring and Thacker (2004) also find that countries with an English legal origin might have less corruption, but they state that this effect is not particularly robust. Important to note is that Treisman (2000) does not find evidence that countries that were never colonized are less corrupt.

Another historical factor, which is for example researched by Treisman (2002), might also have a relation with corruption: a history of *socialist rule*. Treisman (2002) finds that the longer a country has been under socialist rule, the higher the level of corruption is. He does report however that “the close correlation between geography and duration of socialist rule makes it hard to separate the impact of the two” (Treisman, 2002, p. 217). Gerring and Thacker (2005) find in their study as well that countries with a socialist legal tradition have higher levels of perceived corruption.

Geographical factors and corruption are researched by amongst others Sandholtz and Gray (as cited in Lambsdorff, 2005), who show that corruption in a country is associated with the level of corruption in *surrounding countries*: countries that are surrounded by corrupt neighbors have higher levels of corruption.

Another important geographical factor is the availability and export of natural resources. Research that has been conducted into this area has been discussed in paragraph 2.1.

2.4 Cultural factors and corruption

Besides the abovementioned causes of corruption, academics have also made the link between several cultural factors and the level of corruption. A hypothesis that deals with *religion* is that countries with mainly hierarchical religions, like Catholicism, Eastern Orthodox and Islam, have higher levels of corruption than traditionally Protestant countries. Countries where a high percentage of a population is Protestant have less corruption, amongst others because Protestantism is said to have a positive impact on economic development and on a stable democracy and because the Protestant church has traditionally been separated from the state and it has always opposed mishandlings in government (Treisman, 2000). Pellegrini and Gerlagh (2008, p. 249) argue that the Protestant religion is “less prone to tolerance towards power abuses and corruption”. Empirical research from Pellegrini and Gerlagh (2008), La Porta et al. (1999) and Treisman (2000, 2002) supports the hypothesis that a higher percentage of Protestant people in a country is associated with a lower level of corruption.

In paragraph 2.2 the link has been made between ethnic conflict and political instability, which is associated with more corruption. Mauro (1995, 1997) suggests that more *ethnically fractionalized* countries tend to be more corrupt. Pellegrini and Gerlagh (2008, p. 250) state that “in ethnically divided societies civil servants and politicians would exploit their positions to favor members of their own ethnic group”, which would lead to a higher level of corruption.

Another important aspect of the causes of corruption deals with *gender equality*. There is a hypothesis that countries, in which a larger share of legislators or government ministers is female, tend to have lower perceived corruption (Dollar, Fisman & Gatti, and Swamy, Knack, Lee & Azfar, as cited in Treisman, 2007). However, Sung (2003) argues that both corruption and female participation might be influenced by other factors, for example by modern liberal democracy. He provides statistical evidence for his argument: once controlled for variables as press freedom, democracy and the rule of law, the impact of

gender equality on corruption is not robust. He however does conclude that female participation in government and lower levels of corruption may be correlated under some circumstances.

Other empirical studies dealing with cultural aspects and corruption show that in countries with a higher level of *trust* among people, there is a lower level of corruption (Adsera et al., 2000; La Porta et al., as cited in Lambsdorff, 2005). When there is more trust amongst people, it will be easier for bureaucrats to work with each other and with private citizens.

2.5 Aid and corruption

The previous paragraphs discussed research that has been conducted on the several factors that can be associated with the level of corruption in a country. One factor that can be associated with corruption has not been mentioned yet: the effect of aid on corruption. This paragraph discusses the empirical studies that have conducted into the relation between aid and corruption. The main theoretical arguments for this relation are discussed in the next chapter.

Only in the beginning of the 21st century, academics started to carry out cross-country data-analysis concerning aid and corruption. Alesina and Weder (2002) study whether corrupt governments receive less or more foreign aid. They demonstrate that corrupt governments are not discriminated against by most countries or multilateral organizations (with the exception of Australia and the Scandinavian countries). There is no evidence that aid goes disproportionately to less corrupt governments. If anything, it is the corrupt governments that receive more aid. Alesina and Weder are also among the first academics who study aid and corruption and look at the reverse direction of causality. They state that “it is hard to argue that aid should go to more corrupt countries to help reduce corruption [and therefore if this relationship is found, this can be safely interpreted as] a failure in the decision process allocating aid amongst developing countries” (Alesina & Weder, 2002, p. 1127). They however cannot fully resolve the question of causality, because in theory a more corrupt country could be more successful in attracting aid, by bribing or presenting incorrect data to the donor. Their conclusion is nevertheless, that they interpret their results as supportive of the thesis that higher aid leads to more rent seeking and corruption.

Knack (2001, p. 310) empirically studies the effect of aid on the quality of governments, which he measures by indices of bureaucratic quality, corruption and the rule of law. He finds that higher aid levels erode the quality of government. Svensson (2000) shows that the effect of aid depends on the political equilibrium of the recipient country. He argues that aid increases corruption, when countries are more likely to suffer from powerful competing social groups and when there is the expectation to get aid in the future.

The study of Tavares (2003) however, gets different results: his cross-country data-analysis shows that aid actually decreases corruption. He acknowledges that many criticisms associate foreign aid with corruption, but his research, that uses the recipients country's geographical and cultural proximity to the OECD donor countries as instrumental variables to assess the causality, reports that when aid increase with 1% of GDP, the corruption decreases with about 0.2 points out of 10. Tavares argues that his results are significant and robust to the following control variables: GDP, fractionalization, oil exporter, ever a colony, public expenditure, population and political rights. Important to note is that in his research the corruption data is based on the ICRG database, and therefore differs from our study.

2.6 Conclusion

This chapter has identified which factors are in previous studies seen as causes of or as associated with corruption. These factors are important, because they will be used to control for the relation between aid and corruption, to make sure that a possible correlation between aid and corruption is not influenced by another factor. Important to note is that most above-mentioned studies carry out multiple regression analysis, which do not test for causal direction. Only when the academics have instrumented for this causal direction or when, based on common-sense, causality can only run one way, it is possible to conclude that one factor causes the other. Therefore we talk most of the time about factors that are associated with corruption, instead of causes of corruption. Appendix B provides a schematic overview of the studies that deal with the factors associated with corruption, and their conclusions. A brief schematic overview of the general agreements amongst academics is presented in table 2.1. These results are based on empirical research, unless stated otherwise.

FACTOR	CORRELATION	RESULT
ECONOMIC		
<i>Economic development</i>	Negative correlation	Lower economic development is associated with higher levels of corruption
<i>Inflation</i>	Positive correlation	High inflation is associated with higher levels of corruption, based on level, unpredictability or length of periods of inflation
<i>Income inequality</i>	No significant relationship	
<i>State regulation</i>	Positive correlation	More state regulation is associated with higher levels of corruption
<i>Trade openness</i>	Negative correlation	Less trade openness is associated with higher levels of corruption
<i>Export of natural resources</i>	Positive correlation	More export of natural resources is associated with higher levels of corruption
<i>Provision of goods and services at below-market prices</i>	Positive correlation	A hypothetical relation that provision of goods and services at below-market prices is associated with a higher level of corruption
<i>System of multiple exchange rates</i>	Positive correlation	A hypothetical relation that a system of multiple exchange rates is associated with higher levels of corruption
POLITICAL		
<i>Democracy</i>	No agreement	
<i>Long-established democracies</i>	Negative correlation	Long-established democracies are associated with lower levels of democracy
<i>Free press</i>	Negative correlation	Limited free press is associated with or causes higher levels of corruption
<i>Political system model</i>	Positive correlation	Presidentialism is associated with higher levels of corruption

FACTOR	CORRELATION	RESULT
<i>Size of voting districts</i>	Negative correlation	One academic shows that smaller voting districts are associated with higher levels of free press
<i>Voting for individual candidates</i>	Negative correlation	A few academics show that voting for party lists instead of individual candidates is associated with higher levels of corruption
<i>Decentralization</i>	No agreement	
<i>Federalism</i>	Positive correlation	Federalism is associated with higher levels of corruption
<i>Political stability</i>	Negative correlation	Political instability is associated with higher levels of corruption
<i>Level of civil service wages</i>	No agreement	
HISTORICAL & GEOGRAPHICAL		
<i>Colonialism</i>	No significant relationship	Countries that were never colonized are not associated with lower levels of corruption
<i>British colonialism</i>	Negative correlation	British colonies are, in comparison with other colonies, associated with lower levels of corruption
<i>History of Socialist rule</i>	Positive correlation	A (long) history of socialist rule is associated with higher levels of corruption
<i>Corruption in surrounding countries</i>	Positive correlation	One academic states that countries surrounded by corrupt neighbors are associated with higher levels of corruption
CULTURAL		
<i>Protestant religion</i>	Negative correlation	A lower percentage of protestants is associated with a higher levels of corruption
<i>Ethnic fractionalization</i>	Positive correlation	Hypothetical relationship that more ethnically fractionalized countries are associated with higher levels of corruption

FACTOR	CORRELATION	RESULT
<i>Gender equality</i>	Negative correlation	Countries with a lower share of female legislators and government ministers are associated with higher levels of corruption
<i>Trust</i>	Negative correlation	A few academics show that lower levels of trust among people are associated with higher levels of corruption
AID		
<i>Aid and corruption</i>	Positive correlation	Most academics show that countries that receive more aid are associated with higher levels of corruption
	Negative correlation	One academic shows that aid decreases corruption

Table 2.1 Schematic overview of general agreements amongst academics

Most studies that include economic factors and corruption, have shown empirically that a low GDP per capita, more state regulation, a low level of trade openness and export of natural resources are all individually correlated to a high level of corruption. Inflation seems to be associated with a high level of corruption as well, but important to note is that academics focus on different aspects of inflation: one focuses for example on the level of inflation, while another focuses on the unpredictability of it. No significant relationship could be found between income inequality and corruption. The relationship between corruption and the provision of goods and services at below-market prices and a system of multiple exchange rates are purely hypothetical relationships and have not been empirically proven. Therefore low economic development, state regulation, export of natural resources and absence of trade openness are seen as the most important economic factors associated with corruption.

An important political factor is the government form, and therefore many academics have conducted research into this topic. There are different opinions amongst them about the association between the level of democracy and corruption, but there is agreement that long-established democracies have less corruption than non-democratic countries. A limited free press is shown to cause a high level of

corruption, or at least a correlation. Other studies into the relation between political factors and corruption show that federalist states, presidential systems and political instability are all individually associated with higher levels of corruption. When people vote for individual candidates rather than for party lists and when the electoral districts are smaller, corruption seems to be lower as well. However not enough research has been carried out concerning these last two factors, to make it a strong argument. Arguments in favor of or against decentralization as an instrument in the battle against corruption are not consistent, and seem to be dependent on how decentralization is defined. The effect of the level of civil service wages and the level of corruption is not clear: for example Van Rijckeghem and Weder (as cited in Lambsdorff, 2005) have found a relationship between the two variables, but their research is based on a sample of no more than 31 countries. Most other quantitative studies fail to show this link.

A limited free press, no long-term democracy, federalism, presidentialism and political instability are seen as the main political factors associated with corruption.

There is much agreement amongst academics about the historical factors that are associated with corruption. It is not evident that countries that were colonized have a higher level of corruption than non-colonized countries, but amongst the colonized countries the British colonies are less corrupt. The British legal origin of these countries is associated with lower levels of corruption. A significant relationship has also been found between countries with a socialist legal origin and corruption: the shorter a country has been under socialist rule, the lower the level of corruption, with non-socialist countries displaying the lowest levels of corruption. Only one study discusses that countries that are surrounded by corrupt countries have higher levels of corruption. Consequently, not enough research has been carried out into this topic to make it a strong argument.

Therefore having a non-British legal origin and a (long) history under socialist rule (and because of that a socialist legal origin) are seen as the most important historical factors associated with corruption. Geographical causes of corruption are not included.

Cultural factors are also associated with the level of corruption in a country. The studies that deal with this, show that mainly Protestant countries and countries where a larger share of legislators, parliament members or government ministers is female, have less corruption. Some academics have also shown that corruption decreases when there is more trust among people, but there has not been enough research into this topic to make this a solid argument. The relation between ethnical fractionalization and corruption is purely hypothetical and has not been empirically proven.

Therefore popularity of non-Protestant religions and a low level of females in governmental positions are seen as the main cultural factors associated with corruption.

The above-mentioned economic, political, historical, geographical and cultural factors are all associated with the level of corruption, and are therefore also part of the solution to corruption. From the above-mentioned factors, the West can only directly influence the level of aid, and therefore the relation between aid and corruption is calculated (while the other factors are used as control variables). Most studies conclude that higher levels of aid are associated with higher levels of corruption. Only Tavares (2003), one of the few studies that deals with the direct effect of aid on corruption, concludes that aid decreases corruption. But since this is only one study, which is based on outdated information and is not based on the more comprehensive TI database, we cannot conclude from this that aid indeed decreases corruption. More research is necessary to show the effect of aid on the level of corruption in developing countries.

3 THEORETICAL FRAMEWORK

This chapter discusses the theory that is being tested in this research. Paragraph 3.1 displays the theoretical argument on which this study is based and presents the main hypothesis that is studied. The second paragraph discusses which independent variables are included to control for factors that might influence the level of corruption, besides aid.

3.1 Hypothesis

As chapter two shows, possible factors associated with corruption abound. This research focuses on one of these factors: the provision of aid. Several academics consider the link between aid and corruption to be valid, supported by various arguments. This study will add to the existing body of knowledge by testing the following hypothesis:

More foreign aid provided by the West to developing countries leads to more corruption in the recipient countries.

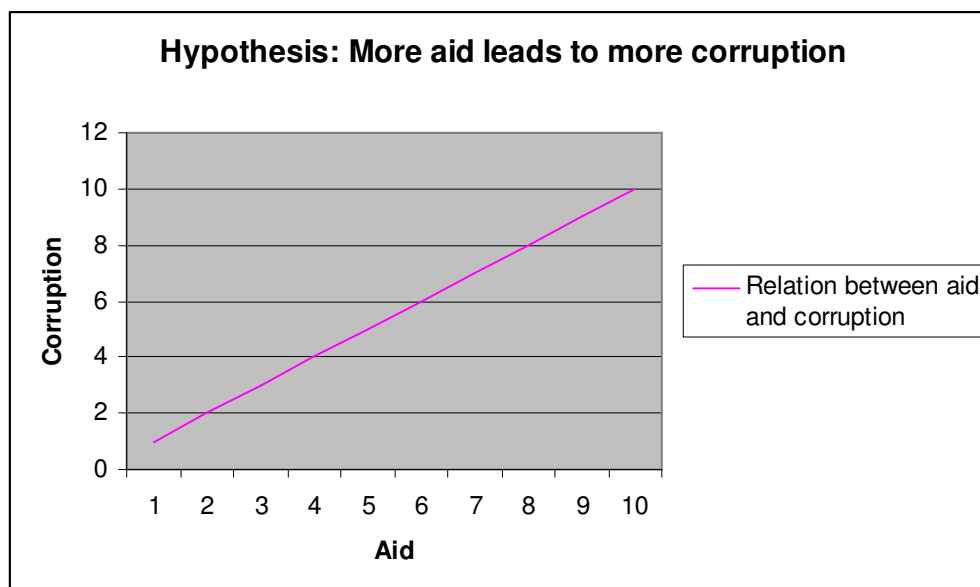


Figure 3.1 Hypothetical relation between aid and corruption

The hypothesized relationship between aid and corruption is illustrated in figure 3.1. This hypothesis is chosen because various reasons support the argument that aid is one of the determinants for corruption. These reasons are related to problems that can occur when aid is provided. First of all, in agreement with what amongst others Dambisa Moyo (2009) and Roger Riddell (2007) have stated, the provision of aid leads to fungibility. Moyo (2009) argues that foreign aid increases the level of corruption because “foreign aid is fungible - easily stolen, redirected or extracted - which facilitates corruption” (Moyo, 2009, p. 52). Riddell (2007) explains this concept of fungibility as: “using the opportunity that the inflow of additional (aid) funds provides to reorder overall spending priorities and finance a range of non-developmental projects and programmes” (Riddell, 2007, p. 227). This means that when aid is allocated to a certain sector, it is easier for the government to use the money that they had originally allocated to this sector themselves, for something else. According to Hancock (1989), food aid and project aid are in particular subject to fungibility. Of course the problem of fungibility can also occur when money comes from for example tax-payers, but Moyo, Riddell and Hancock state that money provided through aid is especially at risk for fungibility. When the recipient government feels less responsible for the money, the temptation is higher to use the money that was originally intended for these sectors for other consumption or capital expenditure priorities. Aid only helps when governments use it as extra money to invest in something and not if they take out their own funds. Quite often the government chooses that last option, which according to Moyo makes the government’s own funds available for ‘private investments’ and corruption is thus stimulated. It has to be noted though, that fungibility does not directly have to lead to corruption, because when money is redirected to other sectors it does not mean that it goes directly into people’s pockets. However, we do want to argue that when money starts shifting, it becomes more difficult to maintain overview and to identify who is responsible for the money. This makes the money more susceptible for corruption.

Transparency International (2007) and Riddell (2007) argue that aid increases corruption when there are inadequate monitoring systems, it is provided outside the range of citizen overview and the accountability is low. Most types of aid create governments that are depending on international partners (international institutions or other countries) instead of depending on their own tax payers, because “the inflow of aid funds and the assurance of more aid to come in the future have been shown

to have resulted in recipient-country governments reducing commitments to raise taxes” (Riddell, 2007, p. 226). Despite the fact that there is monitoring and control from the donor countries, there is in general much more control on a government’s actions and the distribution of its finances when it can be held accountable by its own tax payers. International partners usually have different ways of monitoring and controlling the recipient countries, and are not as strict in penalizing corrupt governments. This does not give these governments a reason to try to reduce corruption. Important is to note that this argument is not valid for all types of aid, because for example when aid is provided directly to NGOs, it is possible that aid leads to more monitoring from citizens. Some of the greatest strengths of NGOs lie in advocacy and participatory models, through which they can create local accountability (Chege, 1999).

Thirdly, countries do not feel as responsible, and are therefore not as cautious with spending their money as they should be, when they have not earned that money themselves, but it has just been handed to them. Many academics compare aid with natural resources: the availability of aid has the same effects as the abundance of natural resources, which has been discussed in paragraph 2.1. “A secure source of foreign aid is a little like a diamond mine or an oil deposit” (Rose-Ackerman, 1999, p. 213-214). Easterly argues that there is an ‘aid-curse’, just as there is a ‘natural-resource curse’. “High aid revenues going to the national government benefit political insiders, often corrupt insiders, who will vigorously oppose democracy that would lead to more equal distribution of aid” (Easterly, 2006, p. 120). Djankov, Montalvo and Reynal-Querol (2006) study the effect of foreign aid on economic growth, investment and government consumption. They find that foreign aid increases government consumption and decreases economic growth and investment. An explanation for this can be that foreign aid creates easy resources and thereby induces corruption. Foreign aid can be seen as a sudden windfall of resources, just like the abundance of natural resources, which is therefore vulnerable to corruption. Tornell and Lane (1999, p. 22) talk about a ‘voracity effect’ “by which a shock, such as a terms of trade windfall, perversely generates a more-than-proportionate increase in fiscal redistribution and reduces growth”. When a poor country gets a large foreign aid package, “the political struggle becomes a fight for control of the state’s wealth” (Rose-Ackerman, 1999, p. 214) and the wealth for the political insiders will increase, but the wealth for the ordinary people will decrease. Therefore many

people will try to get a share of the rents (and will start engaging in corrupt behavior), instead of pursuing productive entrepreneurship.

Furthermore, Rose-Ackerman (1999) argues that especially when aid lacks conditionality, it will mask underlying problems and it will help countries to avoid reform. Conditionalities are applied “when a country borrows [...] [and] its government agrees to adjust its economic policies to overcome the problems that led it to seek financial aid from the international community in the first place” (International Monetary Fund, 2010, p. 1). Transparency International (2007) argues however that program aid, aid provided to governments with policy conditions, can create new opportunities for corruption. Conditionalities oblige the government to implement rules, but they do not create the conditions that are necessary for a successful implementation of these rules. Transparency International mentions the downsizing of the public sector as an example: “where aid-driven cuts in government budgets and staffing have not been accompanied by support for improved public sector efficiency and effectiveness, they have contributed to reduced oversight and delivery capacity and increased vulnerabilities to corruption” (Transparency International, 2007, p. 5). Hancock (1989) mentions as well that program aid leads to extreme vulnerability, because conditionalities mostly hurt the poor. Besides that, with program aid, countries do not necessarily feel that they have to spend their money wisely, because they will get money again next year (Hancock, 1989). These statements conflict with Rose-Ackerman’s statement that supports program aid.

The countries that provide aid do not have the intention of increasing corruption, but due to the above-mentioned reasons I argue that the provision of aid, sometimes beyond the influence of the donor countries, increases corruption

3.2 Control variables

Studies show that corruption can be associated with many factors, and therefore aid is most likely not the single determinant for corruption. If this study finds that aid and corruption are correlated, we need to be sure that this is a real relationship which is not influenced by other factors. To demonstrate a valid connection between the dependent variable corruption and the independent variable aid, possible alternative explanations for this observed relationship need to be eliminated. Therefore several control variables are included in this research, to test whether corruption and aid influence each other, or whether their relation is influenced by one or more other variables. The selection of the control variables is based on previous studies about the factors associated with corruption, of which an overview can be found in chapter 2. Variables are included when they meet certain requirements. First of all there has to be agreement amongst more than two academics that this variable is, empirically proven, significantly correlated to corruption. Secondly it is important that no multicollinearity exists, which means there are no independent variables that measure (approximately) the same. The last criterion is the availability of recent data that covers enough countries to be used in this research. Variables that meet these 3 requirements are included; variables that fail to meet one or more of these requirements are excluded.

3.2.1 Economic control variables

To control for economic factors associated with corruption, the following control variables meet all the above-mentioned requirements and are therefore included in this research: economic development, state regulation and trade openness. The relation between aid and corruption will not be controlled for: inflation, income inequality, provision of goods and services at below-market prices, a system of multiple exchange rates and export of natural resources.

Inflation is not included as control variable because, despite the fact that academics agree on the association between high inflation and high corruption, they differ on their statements of which component of inflation increases corruption: the unpredictability of corruption, the presence of periods of high inflation and the length of periods of high inflation. One study focuses for example on the unpredictability of inflation, while another focuses on the length of a period of high inflation. These arguments and the fact that inflation is known for its periodic fluctuations, mean that a measurement of

this variable is only valid when a longer period of time is taken into account. This is difficult to establish in a cross-sectional research, in which all the measurements should be taken at roughly the same time in order to be comparable. This, in combination with the lack of agreement amongst researchers, leads to the non-inclusion of inflation as control variable.

Income inequality does not meet the requirements, because previous studies have not found a significant correlation between income inequality and corruption. The relationship between corruption and the provision of goods and services at below-market prices and a system of multiple exchange rates are purely hypothetical relationships. This does not meet the requirements because possible relationships have not been empirically proven.

The export of natural resources is difficult to measure, because most data (for example the World Development Indicators (WDI) database) only deals with the export of oil and gas and does not take minerals and other non-fuel products into account. Even if using this data would be a sufficient measure for natural resources, research into the WDI database shows that not all countries are covered. When data from over 40, out of a total of 144 countries, is missing, there is not enough data available to include this variable. Ades and Di Tella (1999), who have carried out extensive research into the relation between the export of natural resources and the level of corruption, use data from the 1993 Human Development Report looking at the export of fuel and primary non-fuel products. This data has not been renewed since 1993 however, and therefore there is no sufficient en recent data available to use in this study. As a result, the export of natural resources does not meet the requirements to be included as a control variable.

As a result, economic development, state regulation and trade openness are chosen as the economic control variables.

3.2.2 Political control variables

To control for political factors associated with corruption, the following control variables meet all the above-mentioned requirements and are therefore included in this research: free press and political stability. The relation between aid and corruption will not be controlled for: voting for individual candidates, size of voting districts, level of civil service wages, decentralization, the time a country has been a democracy, federalism, and political system model.

Voting for individual candidates and size of voting districts do not meet the requirements, because insufficient research has been conducted into the correlation between these variables and corruption. Concerning the civil service wages and level of decentralization, there is no agreement amongst academics about how these variables correlate with corruption.

Many researchers have concluded that long-established democracies have a lower level of corruption. However, the data that academics have used to measure the period of democracy is not valid to use in this study, because it does not include recent data. For example Treisman (2007) uses the number of consecutive years since 1930 the system had been democratic, for those countries democratic in 2000, as classified by Beck, Clarke, Groff, Keefer and Walsh (2001). This data however does not include the last decennium and especially in developing countries it is possible that a country changes from a democratic status to a non-democratic status or the other way around, within a relative short period of time. Other sources, like the CIA's World Factbook, do not include specific data about this either and therefore it is not possible to complete this dataset. Federalism and political system model also fail to meet the third requirement, because reliable data that covers recent years could not be found.

As a result, the level of free press and the level of political stability are chosen as the two political control variables.

3.2.3 Historical and geographical control variables

To control for historical and geographical factors associated with corruption, the following control variables meet all the above-mentioned requirements and are therefore included in this research: British legal origin and Socialist legal origin. The relation between aid and corruption will not be controlled for: general colonialism and the level of corruption in surrounding countries.

General colonialism fails to meet the first requirement, because previous studies have not found a significant correlation between this variable and corruption. Insufficient studies deal with the level of corruption in surrounding countries as a cause of corruption, and therefore this variable does not meet the first requirement either.

As a result, only British legal origin and Socialist legal origin are used as historical control variables. There is no geographical variable included as control variable.

3.2.4 Cultural control variables

To control for cultural factors associated with corruption, the following control variables meet all the above-mentioned requirements and are therefore included in this research: Protestant religion and gender equality. The relation between aid and corruption will not be controlled for: trust and ethnical fractionalization.

Trust is not included as control variable, because it fails to meet the first requirement: insufficient research has been conducted into the relationship between trust and corruption. The variable ethnical fractionalization fails to meet the second requirement of no multicollinearity, because this variable is said to be closely related to political instability. Besides that, the relation between ethnical fractionalization and corruption is hypothetical and not empirically proven.

As a result, only Protestant religion and gender equality are chosen as the two cultural control variables.

3.2.5 Conclusion

The selected control variables are, just like aid, independent variables in this research. The schematic relation between the dependent variable Y (corruption), the main independent variable X (aid) and the other independent variables (the above-mentioned control variables) can be shown as follows:

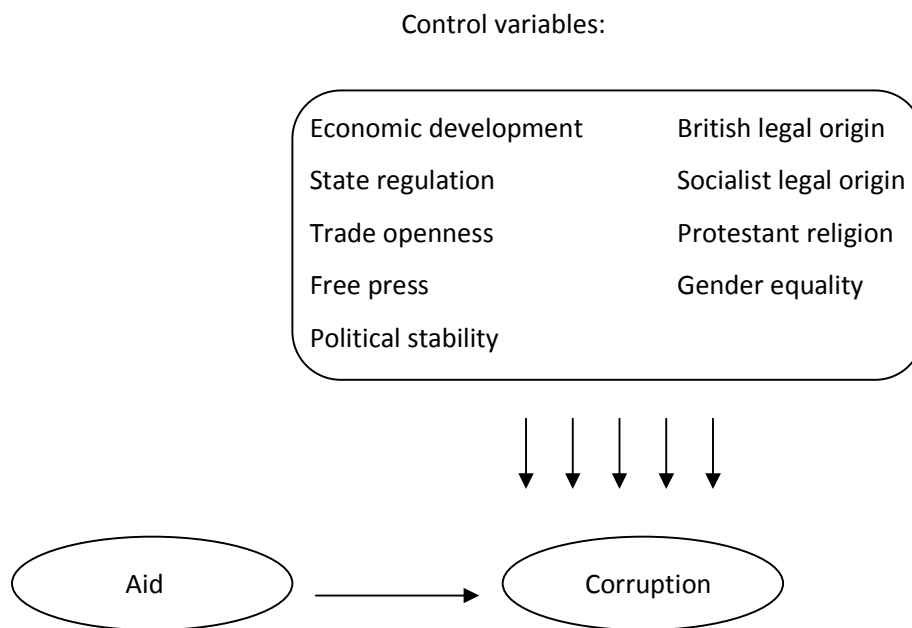


Figure 3.2 Relation between dependent and independent variables

4 RESEARCH DESIGN

The design of this study will be discussed in this chapter. The first paragraph discusses the research design and the statistical procedure of this study. Paragraph 4.2 deals with the operationalization. What are the operational definitions of the concepts? How do we define the concepts so that they accurately measure what we want to know? And how do we ensure their validity and reliability? This paragraph describes how the dependent variable corruption and the ten independent variables are exactly measured. Appendix C contains an overview of the description of the variables.

4.1 Research design

4.1.1 Cross-sectional non-experimental large N design

As mentioned in the first chapter, the research design of this study is a cross-sectional non-experimental large N design.

In an experiment, it is required “to control exposure to [an independent variable], the assignment of subjects to different groups, and the observation or measurement of responses and behavior” (Buttolph Johnson & Reynolds, 2008, p. 127). It is difficult to carry out an experiment or quasi experiment in this thesis, because the unit of analysis is countries and the topic is corruption. Countries are complicated to use in a (quasi)experiment, because we cannot control the application of the independent variable and we cannot assign subjects to different groups. Corruption is a very complex situation, which cannot be measured before and after exposure to the independent variable. Furthermore, it is not possible to control the context or environment of corruption. As a result, this is a non-experimental design, which solely relies on observations and statistic control. A disadvantage of non-experimental designs is that “these methods are not as strong for making causal inferences” (Buttolph Johnson & Reynolds, 2008, p. 147). However, this is the only design that makes it possible to study a realistic problem like corruption and that allows us to study countries.

The large N design corresponds to the large amount of cases that is included in the sample. This design is used instead of a comparative or single case-study, because it is important in this research that many countries are investigated. In comparative or single case-studies one or a few cases are studied in depth.

Because the context of corruption is very different across countries, it is difficult to use the results for the entire population, when only a few cases are investigated. A large N design focuses on many countries, which makes it easier to identify general trends, and therefore increases the external validity. Our case selection makes it possible to generalize to the entire population, because when the results are based on 2/3 of the cases, it is plausible to assume that the other 1/3 would display the same results, as long as some requirements are met (which will be dealt with in paragraph 5.2.2).

The third feature of this research design is that it is a cross-sectional design. The advantages of using a cross-sectional design, instead of an experimental design, are that “it allows observation of phenomena in more natural, realistic settings, increases the size and representativeness of the population studies, and allows the testing of hypotheses that do not lend themselves easily to experimental treatment” (Buttolph Johnson & Reynolds, 2008, p. 156). This increases the external validity; however the causal effects are more difficult to measure. “Cross-sectional designs improve external validity at the expense of internal validity” (Buttolph Johnson & Reynolds, 2008, p. 156).

The other non-experimental large N design is a longitudinal (time-series) design. This design measures the variables at different points in time, and makes it therefore possible to measure changes in the level of variables and to possibly establish the direction of causation. However, a time-series design requires many observations at many points in time. The CPI database has only been expanded in recent years, and therefore this index does not contain sufficient data to be used in a time series design. The use of the CPI is nevertheless preferred over for example the ICRG, as it covers more countries and has a higher level of measurement validity, due to the fact that it combines 13 surveys. Furthermore, Paldam (2002) calculated the annual movements for some years of the CPI, and found that most of the changes are less than 0.1 points on the index of 1 to 10. Therefore a time-series design would not be suitable for this study.

Because the chosen design is cross-sectional, the measurements should be taken at roughly the same time. Therefore all the gathered data is from the year 2007. An exception is the data about the level of corruption. This data originates from the Corruption Perception Index 2009, which is based on surveys and polls from the years 2008 and 2009. CPI’s latest version is chosen because the main hypothesis in

this study states that aid stimulates corruption, but it is not likely that aid has a direct effect (in time) on corruption. According to the theory aid leads to fungibility, it decreases the accountability effect from citizens and it makes government officials less careful with money. These results are unlikely to occur at the same time that aid has been given; there will be a lag-effect (the time it takes for aid to have an effect on the level of corruption). It is however not possible in this study to figure out what the exact lag-effect is, because we do not work with time-series. Using the CPI from 2008 would however not be sufficient, because this would assume there is no lag-effect at all (the CPI from 2008 is based on surveys from 2007 en 2008). Therefore the choice is made to work with the CPI from 2009, based on data from 2008 and 2009.

4.1.2 Population and sample

The total population exists of all 144 developing countries, as classified by the World Bank (Appendix A). The sample of the population should, in this research, be as big as possible to increase to external validity. Therefore only the countries for which not all the values of the dependent variable and independent variables are known, are excluded. In this study there is enough data available to work with 100 out of the 144 countries, and therefore the sample consists of 100 developing countries, from all parts of the world. In the sample, all the regions with developing countries are covered: 12 out of 23 developing countries in East Asia and Pacific; 12 out of 24 developing countries in Europe and Central Asia; 23 out of 29 developing countries in Latin America and the Caribbean; 7 out of 13 developing countries in the Middle East and North Africa; 8 out of 8 developing countries in South Asia; 38 out of 47 developing countries in Sub-Saharan Africa. It is indicated in appendix A which specific countries are part of the sample. It is important that all regions are covered adequately, because this controls for regional differences, and makes it more plausible to generalize the results from the sample to the population. If only certain regions were included, a regional bias could occur, which would decrease the external validity.

4.1.3 Bivariate correlation coefficient

To assess whether aid and corruption are related, there are certain steps that need to be taken and statistical procedures that need to be carried out. The program that is used to carry out these statistical procedures is SPSS. The first statistical procedure that will be carried out, after presenting a short description of the data, is to calculate the bivariate correlation coefficient between aid and corruption. It is important to find out whether there is a correlation between aid and corruption, because this can answer the questions whether more aid is correlated to more corruption, or less aid is correlated to more corruption, or the two variables are not significantly correlated. The correlation shows the intensity and the direction of the relation between the variables. Pearson's correlation coefficient is used, because it shows the linear relation between interval and ratio (scale) variables. This measure is constrained to lie between 0 (no relation) and 1 (a perfect relation). It should be noted that with Pearson's correlation coefficient the variables can also be categorical variables, as long as they only have two categories. The bivariate correlation indicates the relation between variables, but does not provide information about the direction of causality and does not examine whether this result is significant when other variables are included.

4.1.4 Multiple regression analysis

The statistical procedure that is used to control a possible relation for other variables is multiple regression analysis. This "is essentially a toolbox of methods for describing how, how strong, and under what conditions an independent and dependent variable are associated" (Buttolph Johnson & Reynolds, 2008, p. 477). Simple linear regression analysis calculates the association between independent variable X and dependent variable Y. However, in this study there are different independent variables, which means there are several predictors for Y. Therefore we use the statistical procedure of multiple linear regression analysis, which is a way of predicting an outcome from several predictor variables (Field, 2005). Multiple regression analysis has the following equation:

$$\text{Predicted } Y = B_0 + B_1 * X_1 + B_2 * X_2 + \dots + B_n * X_n$$

Y is the outcome variable (the dependent variable *corruption*), B_0 is the *constant* term and B_n is the coefficient of the n th independent variable (X_n) (De Vocht, 2007).

Two basic methods of predictor selection are available: forced entry method and stepwise method. This study uses the forced entry method, in which all predictors, also the non-significant ones, are forced into the model simultaneously. The stepwise method, which includes just the significant predictors, can only be chosen when there is a hierarchy in importance between the independent variables. Since all our independent variables are equally important and it is essential that all variables are included, not only the significant ones, the forced entry method is chosen.

In order to carry out a multiple regression analysis, and to make it possible to generalize the regression model to the wider population, several assumptions have to be met. One of these assumptions is the requirement of a normal distribution of the residuals (the full list of assumptions is described and dealt with in chapter 5). Residuals are “the difference between the score predicted by the model and the actual scores that we have for the variables” (Miles & Shevlin, 2001, p. 84). They illustrate the extent to which the model is incorrect (smaller residuals represent a stronger relation between the variables and a higher quality of the model). Residuals are assumed to have the same distribution as their original variables, and therefore multivariate distributions are considered in terms of the distribution of their residuals. It is important to consider the outliers and shape of the *joint* distribution. This is in contrast to a univariate distribution, where the normal distribution of the variable itself needs to be checked (Miles & Shevlin, 2001). In a multivariate distribution, the “predictors do not need to be normally distributed” (Field, 2005, p. 170). A normal distribution of the residuals is sufficient to meet the assumption of a normal distribution of Y-values for every combination of values of the independent variables (De Vocht, 2007, p. 199).

A non-normal distribution can be caused by outliers and influential cases, or by skewness or kurtosis. Skewness and kurtosis are based on the shape of the distribution. There is skewness when the scores are not symmetrically distributed. Kurtosis occurs when the distribution of data is too flat or too peaked. Outliers are unusual scores that lie outside the range of scores we would expect for a certain variable. When outliers are included in the model, they can affect the estimated regression coefficients and negatively influence the validity of the study. Therefore outliers need to be detected. When some cases have large standardized residuals (when their real score is far from the predicted score), this could

indicate that they are outliers. The general rule is that there is cause for concern if there are standardized residuals with a value greater than 3, if more than 1% of standardized residuals in the sample has a value greater than 2.5, or if more than 5% of cases have standardized residuals with a value greater than 2 (Field, 2005, p. 164).

Influential cases are cases that disproportionately influence the parameters of the model. These influential cases manipulate the regression coefficients and therefore have to be detected. Two statistical procedures will be used for this. The first procedure is Cook's distance, which calculates the change in the regression coefficients when that case is excluded from the regression analysis. Cases that have a Cook's distance that is larger than 1 are perceived as influential cases. The second procedure is the Leverage, which calculates the distance from every value of every independent variable to the mean of the remaining cases. Cases that have a leverage that is larger than 0.5 are perceived as influential cases.

When the normality-assumption is not met, some of the individual independent variables have to be transformed, in order to create a normal distribution of the residuals. When the residuals meet the assumptions of normality, homoscedasticity and linearity (more information about homoscedasticity and linearity can be found in chapter 5), the individual independent variables do not have to be transformed (De Vocht, 2007, p. 210).

4.1.5 Reliability and validity

In order for the measurements to be as accurate as possible, the reliability and measurement validity need to be ensured. The measurements are reliable when the "measuring procedure yields the same results on repeated trials" (Buttolph Johnson & Reynolds, 2008, p. 94). The results should be consistent across time and users. To guarantee measurement validity it is important that you measure what you are supposed to measure. How the retrieved data ensures the reliability and measurement validity is discussed per variable in the operationalization (paragraph 4.2).

In order for the results of this research to be valid, the internal and external validity need to be ensured. Internal validity means that the independent variable causes the dependent variable, and this cause-

effect relation is not effected by another factor. Causality can be a difficult issue in multiple regression analysis. According to Miles and Shevlin (2001) causation can be established when three criteria are satisfied. First of all, there has to be statistical *association*, which means there should be either a correlation or a regression coefficient between the two variables. This will be analyzed in this study. Secondly, the *direction of causality* needs to be established: does A (the independent variable aid) cause B (the dependent variable corruption), does B cause A, or are they both caused by a third variable. To establish this correctly, it has to be demonstrated that A precedes B. "This temporal precedence cannot be observed in non-experimental or cross-sectional research where all data are usually collected at one point in time" (Miles & Shevlin, 2001, p. 115). Due to measuring only at one moment in time, it is difficult to determine whether the independent variable caused the dependent variable or the other way around. In this study, causal direction can only be established based on common sense or previous studies. The possible presence of a third variable that influences both A and B, reflects the third criteria of *isolation*. The dependent variable corruption needs to be isolated from all influences other than the independent variable aid. All other possible causes of corruption need to be held constant. This is possible through statistically controlling for the influence of potentially extraneous variables with regression analysis. Nine control variables are added to the study, to isolate the influence of aid. In this study, the association and isolation requirement can be met, but it is very difficult in a multiple regression analysis to establish the direction of causality.

External validity stands for the extent to which the results can be generalized to the rest of the world. The large sample of 100 developing countries makes it plausible to generalize to the population of 144 developing countries. Within a sample of this size it is easier to identify general trends. Furthermore, when results are based on 100 countries, and all regions are represented (which ensures the absence of a regional bias), we can assume that the same results will be retrieved across the other 44 countries.

4.2 Operationalization

4.2.1 Dependent variable corruption

The dependent variable in this research is corruption. This concept is theoretically defined as “the abuse of public office for private gain” (Corruption Perceptions Index, 2008c, p. 13). Measurement validity is difficult to ensure when we look at the concept of corruption, because it is complicated to obtain objective data concerning the level of corruption that covers the actual level of corruption. An objective measure is for example the number of prosecutions or court cases directly related to corruption. This does however not accurately reflect the level of corruption, because in most developing countries corruption might be widespread, but there is no culture in which corruption cases are brought to court. If we would use these figures, we would measure the quality of a country’s legal system instead of the level of corruption.

The CPI is a perception-based index, which measures the level of corruption as how it is perceived by experts, It compiles cross country data that draws “on the experience and perceptions of those who are most directly confronted with the realities of corruption in a country” (Corruption Perceptions Index, 2008c, p. 14). This index contains important information that is often not captured by objective indicators, particularly in developing countries. Therefore perceived corruption is the best indicator for measuring the level of corruption.

The difficulty with using the level of perceived corruption as indicator of corruption, is that the perceived corruption level depends on the perception of the person that fills out the survey. This makes it difficult to retrieve the same results on repeated trials. The CPI however ensures its reliability, by combining the results of 13 different surveys (from ten independent organizations) that measure the level of perceived corruption. Only the countries for which data is available from a minimum of three different sources, are included in the CPI.

Each of the 180 countries that is included in this index has been given a score from 1 to 10 on their level of corruption. In the original index, a score of 10 corresponds to a low level of corruption, while a score of 1 corresponds to a high level of corruption. It is important that all variables are formulated in the same direction, to be able to compare them. Because this indicator is a negatively formulated (a high score means a low value of the indicator), the scale needs to be reversed: each score is subtracted from

the highest score. For the re-scaled variable, a score of 1 means hardly any or no corruption; a score of 10 means an extremely high amount of corruption.

The countries are also ranked according to their score, which means New Zealand is ranked as number 1 (it has the least corruption with an original score of 9.4) and Somalia is ranked as number 180 (it has most corruption with an original score of 1.1). In this study however, the score (instead of the rank) is used to indicate the level of corruption. Because the data is based on a scale from 1 to 10, where the intervals between the values have meaning and there is an assumption that a value of zero (after recoding) represents the absence of corruption, the level of measurement is the ratio level.

4.2.2 Independent variables

a. Aid

Aid is in this study theoretically defined as the total of bilateral and multilateral aid. To measure the level of aid a country receives, we look at the net Official Development Assistance (ODA) which “consists of disbursements of loans made on concessional terms (net of repayments of principal) and grants by official agencies of the members of the Development Assistance Committee (DAC), by multilateral institutions, and by non-DAC countries to promote economic development and welfare in countries and territories in the DAC list of ODA recipients” (The World Bank, 2010b).

The ODA per capita is used instead of the ODA per country, because a country could receive a large amount of ODA, but if this country has a large population, it is comparatively less. In order to be able to compare the different ODA levels, it is important that this indicator is displayed per capita. This is calculated by dividing the net received ODA by the World Bank midyear population estimate. When a case displays a higher ODA score, it means that this case receives more ODA. The level of measurement of the *net ODA received per capita in current US\$* is the ratio level. This indicator has a high level of measurement validity, because ODA measures the level of aid that a country receives very specifically. It looks at both bilateral and multilateral aid, received from both DAC and non-DAC member countries. Furthermore, ODA is known to be the most common measure for received aid.

The data on the levels of ODA is retrieved from the World Development Indicators Database (WDI) from the World Bank and the indicator is called: net ODA received per capita (in current US\$). The WDI is the primary World Bank database for data concerning development, with more than 900 economic, social and environmental indicators, and is one of the main data sources of this research. The data is based on data gathered by the World Bank itself and by more than 30 other officially-recognized international sources. This leads to high consistency in the World Bank's data, which means a high level of reliability. The database covers 210 countries, amongst which all the developing countries. The classification of countries as developing countries in this research is based on the World Bank classification, and therefore it is straightforward to use the WDI, which includes all these countries. A choice for, for example, the OECD database would not be sufficient, because this mainly presents data about OECD countries and only limited data about the countries that are in this study classified as developing countries. Apart from aid, the WDI is used for the variables economic development, state regulation, trade openness and gender equality.

b. Economic development

Most studies into the factors associated with corruption measure economic development by the level of GDP. GDP stands for "the value of all final goods and services produced in a country in one year" (The World Bank, 2004). This study measures economic development as *GDP per capita in current US\$*. The measurement validity for this indicator is ensured, because it is carefully selected to make sure that it measures what it is supposed to measure.

First of all, we want to measure the GDP per capita, and not for the whole population in a country. A country can have a high GDP, but if it has a large population, the average GDP per person can still be very low. The relative numbers of GDP per capita make it possible to compare with other countries.

Secondly, it is possible to look at the growth in GDP or at the level of GDP (constant GDP). For this research it is important to include constant GDP, because the growth in developing countries is in general very high: their GDP is lower, which means they need relatively less extra GDP to achieve a high growth number. However, the people in developing countries might still have a very low income per person, despite high growth. Therefore we do not focus on GDP growth.

The next choice is whether we look at GDP in real prices or at GDP in PPP prices (Purchasing Power Parity). The latter compares the standard of living between countries by taking into account the impact of their exchange rates. "The PPP conversion factor shows how much of a country's currency is needed in that country to buy what US\$1 would buy in the United States" (The World Bank, 2004). This makes it easier to compare countries. There are however some problems with PPP. There is for example not always a US equivalent to a good or service in another country, which means that in these cases the PPP estimates are based on only a small set of goods and services (Index Mundi, 2009). Therefore GDP in real prices per capita is in this study chosen as indicator for economic development, instead of GDP in PPP prices.

Finally, we measure GDP in current US\$, which is similar to Net ODA received per capita in current US\$. This ensures that they are measured against the same value of the dollar, which makes it more reliable to compare them.

GDP per capita (in current US\$) is a ratio variable and a higher value means a higher level of GDP. An issue with this variable is that the distance between the highest and the lowest case is very large. This means that if the value of corruption changes with 1, it is likely that no change will be observed. The regression coefficient might display a score of 0, while there actually is a score higher than 0. The real value cannot be observed due to a unit of measurement that is too large. Therefore we divide the level of GDP per capita by 1000, to make it possible to observe changes. This indicator has a high level of measurement validity, because ODA measures the level of aid that a country receives very specifically. The data is retrieved from the WDI, and therefore this indicator has the same level of reliability as is explained in section *a*.

c. State regulation

State regulation means that the state decides to carry out tasks instead of the market. This can be measured by looking at the ease of starting a business, because more state regulation leads to higher entry barriers to the market. The ease of starting a business is determined by the amount of procedures, costs and time necessary to register a business. To ensure the measurement validity, we create our own ease of starting a business index, by aggregating the standardized values of the procedures, costs and time. These variables have to be standardized, because their different units of measurement make it impossible to aggregate the unstandardized values. Through standardization the values of a variable are converted into Z-scores with a standard unit of measurement, which shows the relative position of a value within a distribution. The Z-scores show how many standard deviations the values deviate from the mean. This displays the relative score of the data within the distribution and creates an opportunity to compare and aggregate them.

The data about these individual variables is derived from the WDI: *start up procedures to register a business (number)*, *cost of business start up procedures (% of GNI per capita)* and *time required to start a business (days)*. When their Z-scores are combined, a higher score means more state regulation, while a lower score means less state regulation. This variable is a ratio variable. Reliability is ensured because this indicator is based on WDI data, as is argued in section *a*.

d. Trade openness

Trade openness is defined by market-friendly, open trade and open investment policies. Based on the argument of Gerring and Thacker (2005) that these policies are reflected by the levels of imports, exports and foreign investment, these levels are used to measure trade openness. This variable is, as well as state regulation, a combined indicator. It is based on the WDI data on 'exports of goods and services (% of GDP)', 'imports of goods and services (% of GDP)' and 'foreign direct investments, net inflows (% of GDP)'. Because these three indicators are all based on percentage of GDP, we can calculate the average % of export, import and foreign direct investment (FDI) of a country. This generates a new indicator for the level of trade openness with a high level of measurement validity. A high score means more trade openness, and a low score less trade openness. This variable is on the ratio level and the reliability is again ensured because it is based on the WDI database.

e. Free press

The level of free press is based on Freedom House's Freedom of Press Index. This survey scores 195 countries from 0 (ultimate free press) till 100 (no free press) on the basis of their legal, political and economic environment towards free press. It examines for example the laws and regulations that could influence the content in the media (legal environment), censorship from politics (political environment) and the structure of media ownership (economic environment). This scale of the data from the Freedom of Press Index is reversed to make sure that a higher value indicates more free press. For the re-scaled variable, a score of 100 corresponds to ultimate free press, while a score of 1 corresponds to no free press. The 2008 Freedom of the Press index is used, because this survey covers the level of free press between 1 January 2007 and 31 December 2007.

The level of measurement for this indicator is the ratio level. This index is not like for example the CPI, based on different surveys, but it is founded on a multilayered process of analysis and evaluation. "Conclusions are reached after gathering information from professional contacts in a variety of countries, staff and consultant travel, international visitors, the findings of human rights and press freedom organizations, specialists in geographic and geopolitical areas, the reports of governments and multilateral bodies, and a variety of domestic and international news media" (Freedom House, 2007). The scores are based on a set of 23 methodology questions, concerning their legal, political and economic environment of free press. When it turns out that the result is very different from the findings in the previous year, it is subject to more research, to make sure the change is justified. Cross-regional assessments also take place, to ensure comparability and consistency in the index. This improves the reliability of the free press indicator. The measurement validity is ensured because the Freedom of Press Index measures the level of free press in the legal, political and economic environment, which is what we want to measure.

f. Political stability

The level of political stability is measured by the level of political stability and absence of violence indicator from the Worldwide Governance Indicators (WGI) database. The Worldwide Governance Indicators (WGI) covers six governance indicators for 212 countries. The six indicators are aggregates of hundreds of individual variables measuring various dimensions of governance. These variables come from 35 data sources provided by 33 different organizations and it is made sure that they reflect the views of the public sector, the private sector, NGO experts and citizens. This makes the data reliable and increases the chance that results will be the same on repeated trials. One of these aggregate governance indicators is the level of political stability and absence of violence, which is used for the independent variable *political stability*.

The level of political stability for each country in this database gets scored on a scale from approximately -2.5 to approximately 2.5, in which higher values correspond to more political stability. The level of measurement is on the ratio level. WGI “measures the perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including domestic violence and terrorism” (Worldwide Governance Indicators, 2009). This indicator is based on perceptions, and not on for example the actual amount of times that a government has been overthrown. The objective numbers would not represent the actual level of political instability, because in a country where the government has never been overthrown, the threat can still be very high. Therefore the WGI, which is based on perceptions and uses a definition that is similar to our definition of political stability, has a higher level of measurement validity.

g. Legal origin

To measure whether a country has had a British colonial history or a history of Socialist rule, we look at the legal origin of countries. The legal origin is something that presents itself in the current legal system of countries and therefore measures best which country (United Kingdom, France, Germany, Scandinavian countries, or the Socialist regime) had most impact on this country. A country could for example have been colonized by Britain, but if it has been colonized by the French after that and their role was more essential, the legal origin will be French instead of British. Therefore the legal origin is a suitable way to measure the current effect of either a British or Socialist history. This ensures the measurement validity of these variables.

The Development Research Institute at the New York University has edited several growth and development indicators in the Global Development Network Growth Database, based on amongst others the WDI, UNDP's Human Development Report and CIA's World Factbook, which ensures the reliability. This database contains information on whether countries have a British, French, Scandinavian, German or Socialist legal origin, and is therefore used for the variables British legal origin and Socialist legal origin.

From the Global Development Network Growth Database, the data about the British and Socialist legal origin is converted into two separate variables. This is possible because these variables are exclusive: there is no country that has a British legal origin and a Socialist legal origin. To select these two variables, they are changed into nominal variables with two categories: value 0 and value 1. These new variables are called 'dummy-variables'. "Dummy coding is a way of representing groups of people using only zeros and ones" (Field, 2005, p. 208). Concerning British legal origin, a score of 1 corresponds with a British legal origin; a score of 0 corresponds with no British legal origin. Concerning Socialist legal origin, a score of 1 corresponds with a Socialist legal origin, while a score of 0 corresponds with no Socialist legal origin. Previous studies point out that the longer a country has been under Socialist rule, the more corruption it has. The NYU data does not indicate the time period it has been under Socialist rule, but it is assumed that the longer a country has been under Socialist rule, the more likely it is to display the Socialist history in its legal origin.

h. Protestant religion

The Quality of Government database from the Quality of Government Institute at the University of Gothenburg lists amongst others how many people in a country are Protestant, Catholic, Muslim or from another denomination, and is therefore used to measure the variable *religion*. The database combines several cross-sectional data sources and is therefore a reliable source.

Because previous studies point out that Protestantism decreases corruption, we use the percentage of people that are Protestant as indicator for the variable religion. A high value corresponds to a high percentage of Protestant people; a low value corresponds to a low percentage of Protestant people in a country. The variable is on the ratio level of measurement. As this indicator shows, the percentage of 3 main religions, including Protestantism (which is filtered out), it measures what we want to measure. This ensures the measurement validity.

i. Gender equality

The final control variable is gender equality, because according to previous studies countries where a larger share of legislators or government ministers is female, tend to have lower perceived corruption. Because there is no data available that measures the amount of female legislators or ministers, we use an indicator that is closely related to this: the amount of women in national parliaments. This ensures the measurement validity. The WDI indicator is called: proportion of seats held by women in national parliaments (%), and measures “the percentage of parliamentary seats in a single or lower chamber held by women” (The World Bank, 2010b, p. 1). This is a ratio variable, in which a higher value corresponds with a higher percentage of women in parliaments and a lower value corresponds with a lower percentage of women in parliaments. Due to the fact that this indicator is derived from the WDI, the reliability is ensured, as explained in paragraph section *a*.

4.2.3 Prediction regression equation

Based on the above-mentioned dependent and independent variables, the prediction regression equation in this study is:

$$\text{Predicted CORR09R} = B0 + B1(\text{AID07}) + (B2*\text{EC10}) + (B3*\text{ZEC3}) + (B4*\text{EC4B}) + (B5*\text{POL108R}) + (B6*\text{POL407B}) + (B7*\text{BRIT1}) + (B8*\text{SOC1}) + (B9*\text{CUL1}) + (B10*\text{CUL2}).$$

CORR09R is the value of the level of corruption.

AID07 is the value of aid per capita.

EC10 is the value of GDP per capita, which measures economic development.

ZEC3 is the aggregated value of the standardized time, costs and procedures to start-up a business, which measures state regulation.

EC4B is the average percentage of GDP towards import, export and FDI, which measures trade openness.

POL108R is the score of free press

POL407B is the value of the level of political stability.

BRIT1 is the presence of a British legal origin or another legal origin.

SOC1 is the presence of a Socialist legal origin or another legal origin.

CUL1 is the percentage of Protestants, which measures Protestant religion.

CUL2 is the percentage of seats held by women in national parliament, which measures gender equality.

(Appendix C provides a schematic overview of the variables and their operationalization)

5 ANALYSIS

This chapter deals with the analysis of this study. What happens when we carry out the statistical procedures? Can our hypothesis be accepted or does it have to be rejected? The first paragraph presents a descriptive analysis, in order to organize and summarize the data. The next paragraph contains the exploratory analysis, with the bivariate correlation coefficient, the assumptions for multiple regression analysis and the results of the multiple regression model.

5.1 Descriptive analysis

First of all, it is important to explore the sample data that we are working with. What are their minimum and maximum scores, what are their means and medians and how well do these scores represent the data (which is indicated by the standard deviation). A summary of the descriptive statistics of the ratio variables is displayed in table 5.1, rounded on two decimals. Every variable is based on 100 cases (N=100), because the cases of which data is missing have already been excluded. Please note that appendix D contains the complete dataset.

<i>Variable</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Median</i>	<i>Std. Deviation</i>
Corruption (CORR09R)	4.00	9.70	7.84	8.15	1.21
Aid (AID07)	1.08	604.10	70.92	47.59	95.22
Economic development (EC10)	0.13	10.73	2.70	1.69	2.55
State regulation (ZEC3)	-2.62	9.92	0.00	-0.47	2.10
Trade openness (EC4B)	-10.18	93.36	29.77	27.91	15.85
Free press (POL108R)	10.00	86.00	47.25	45.00	19.08
Political stability (POL407B)	-2.45	1.27	-0.40	-0.25	0.85
Protestant religion (CUL1)	0.00	64.20	9.81	1.90	15.68
Gender equality (CUL2)	0.00	48.80	15.30	13.45	9.19

Table 5.1 Descriptive statistics of scale variables

Because it is only possible to explore scale (interval or ratio) variables, frequency tables are generated for the nominal variables British legal origin and Socialist legal origin. Because N (the amount of cases) is still 100, the percentages are equal to the frequency.

		<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Valid	No British legal origin	68	68	68	68
	British legal origin	32	32	32	100
	Total	100	100	100	

Table 5.2 Frequency table British legal origin

		<i>Frequency</i>	<i>Percent</i>	<i>Valid Percent</i>	<i>Cumulative Percent</i>
Valid	No Socialist legal origin	84	84	84	84
	Socialist legal origin	16	16	16	100
	Total	100	100	100	

Table 5.3 Frequency table Socialist Legal origin

The two legal origin variables are dummy variables, and therefore only the values 1 or 0 are possible. Out of the 100 cases, 32 cases have a British legal origin and 16 have a Socialist legal origin. This means that 52 cases have a different legal origin than a British or Socialist one.

The descriptive statistics of the two main variables, corruption and aid, are examined more in depth. Concerning the main independent variable, table 5.1 shows that the minimum amount of aid a country gets is US\$1,08 per capita, while the maximum is US\$604,10 per capita. This shows that there is a large difference between the amounts of aid countries receive per capita, which indicates an unequal distribution of aid by the developed countries. This data however does not tell us which countries receive more or less aid. It is for example possible that countries with higher economic development receive less foreign aid, but it is also possible that more aid goes to a few Western favorites, the so-called 'donor darlings'.

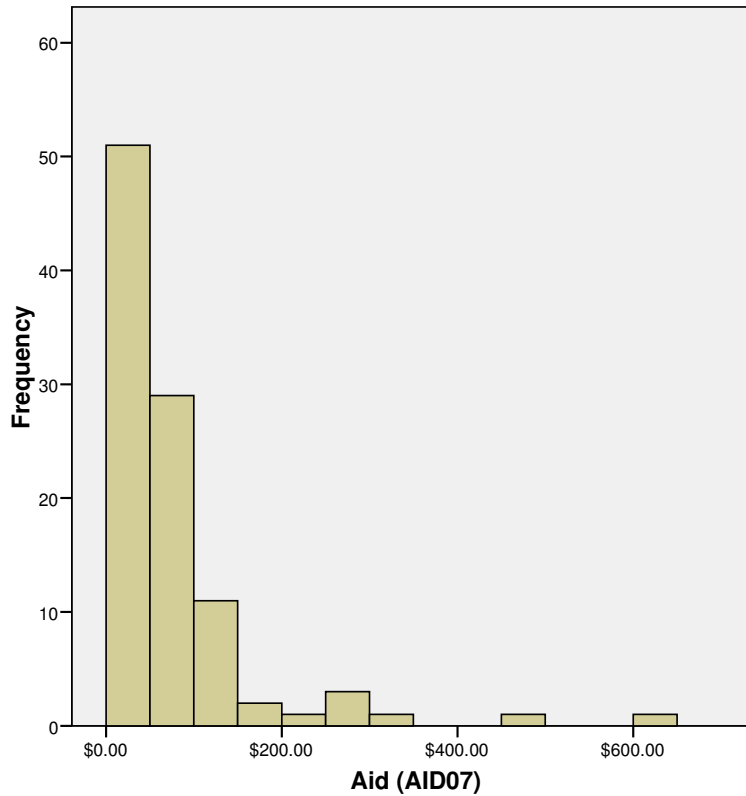


Figure 5.1 Histogram of independent variable aid

Figure 5.1 displays how many countries get a certain amount of aid, divided in classes of US\$50. It is clear that most countries get a small amount of aid: approximately 90 countries receive between US\$0 and US\$150 aid per capita. Only a few countries get more than this, with two possible outliers: one country receives between US\$450 and US\$500 per capita and one country even receives between US\$600 and US\$650 aid per capita. The data displays that these countries are the Solomon Islands, with an amount of US\$493.84 aid per capita, and St. Vincent and the Grenadines, with an amount of US\$604.10 aid per capita.

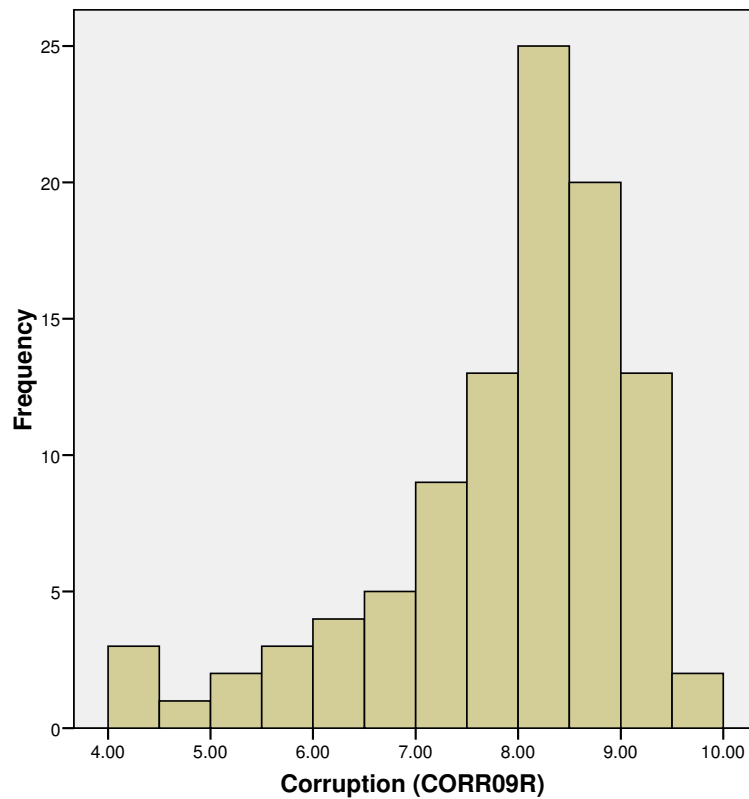


Figure 5.2 Histogram of dependent variable corruption

The frequency of the occurrence of corruption scores (with a minimum of 1, and a maximum of 10) is displayed in figure 5.2. Most countries have a rather high corruption score, because 71 countries have a score between 7.5 and 9.5. Two countries even display a corruption level between 9.5 and 10 (Sudan with a score of 9.5 and Afghanistan with a score of 9.7), and 4 countries have a corruption score between 4 and 5, which means relatively low corruption (St. Lucia with a score of 4, Chile and Uruguay with a score of 4.3 and St. Vincent and the Grenadines with a score of 4.6). No countries have less corruption than 4 out of 10.

5.2 Explanatory analysis

5.2.1 Bivariate correlation coefficient

In this study it is important to determine the relation between the dependent variable corruption and the main independent variable aid. Pearson's correlation coefficient, which presents the intensity and direction of a relationship, is used for calculating the bivariate correlation between these variables.

		Corruption (CORR09R)	Aid (AID07)
Corruption (CORR09R)	Pearson Correlation		-0.265(**)
	Sig. (2-tailed)		0.008
	N		100
Aid (AID07)	Pearson Correlation	-0.265(**)	
	Sig. (2-tailed)	0.008	
	N	100	

** Correlation is significant at the 0.01 level (2-tailed).

Table 5.4 Bivariate correlation corruption and aid

Table 5.4 displays a correlation coefficient between corruption and aid of -0.265.

First of all, this indicates that the direction of the relation between aid and corruption is negative, which means that countries who receive more aid have lower levels of corruption. This does not predict a causal relation, but simply states that countries that receive more aid, display lower levels of corruption. This is an important aspect, because this is not supportive of the hypothesis that more foreign aid leads to more corruption. Secondly, the correlation coefficient indicates the strength of the relationship. A correlation of -0.265 represents a medium relationship: not a very weak and not a very strong relationship. Lastly, the level of significance of the correlation shows us the probability that this correlation coefficient has occurred by chance. Test results with significance levels smaller than or equal to 0.05 will be included in the study, because the probability that these results can occur by chance is very low. In table 5.4 it is shown that the bivariate correlation between corruption and aid is significant for the 0.01 level, which is even more precise than the 0.05 level. Therefore it is possible to conclude with 99% certainty that this result is not based on chance. This diminishes the chance of a Type I error, which occurs when a correct H_0 is incorrectly rejected.

5.2.2 Assumptions for multiple regression analysis

The above-mentioned correlation cannot predict if aid causes corruption, if corruption causes aid, or if they are both influenced by another variable. The direction of causality can only be established when we can state there is temporal precedence of one of the two variables. As discussed in paragraph 4.1.5, this is not possible within a cross-sectional design. We can however isolate the relation between aid and corruption from other possible causes of corruption, by adding 9 control variables to the multiple regression analysis, a technique for modeling the relationships between several variables. To assess to what extent the sample of 100 developing countries is representative of the population of 144 developing countries, several assumptions have to be met (De Vocht, 2007; Miles & Shevlin, 2001; Lewis-Beck, 1980). In case these assumptions are not met, the results of the regression analysis cannot be generalized to the wider population. The first two assumptions will only be discussed shortly, because they have already been dealt with in earlier chapters.

a. Assumption 1 – Measurement level

The first assumption is that all variables are quantitative (either on the interval or ratio level of measurement). For the independent variables it is also possible to use dichotomous variables. As explained in chapter 4, most of the variables are on the ratio level. An exception is the legal origin (British or Socialist), because this is turned into two dichotomous variables. It is however stated that independent variables can also be on the categorical level, as long as they contain only two categories. Therefore the assumption of quantitative variables is met.

b. Assumption 2 – Theoretical causal relation

Assumption two assumes that there is in theory a causal relation between dependent variable Y and every independent variable. Chapter 2 describes several studies that have been carried out into the factors associated with corruption. The independent variables are based on the factors that academics have pointed out as possible causes or at least predictors of corruption. Therefore, there is a theoretical causal relationship present between corruption and all the independent variables.

c. Assumption 3 – Normal distribution

The first assumption of multiple regression analysis that has not been dealt with earlier in this study, is that at each value of the dependent variable there is a normal distribution. As explained in paragraph 4.1.4, this assumption is met when all the residuals are approximately normally distributed. When the histogram based on standardized residuals (residuals divided by their estimated standard deviation) displays a normal curve and when in the normal probability plot based on standardized residuals, the residuals are situated around the diagonal line, there is a normal distribution. The advantage of working with residuals is that a residual plot is not limited to one independent variable, but includes all independent variables.

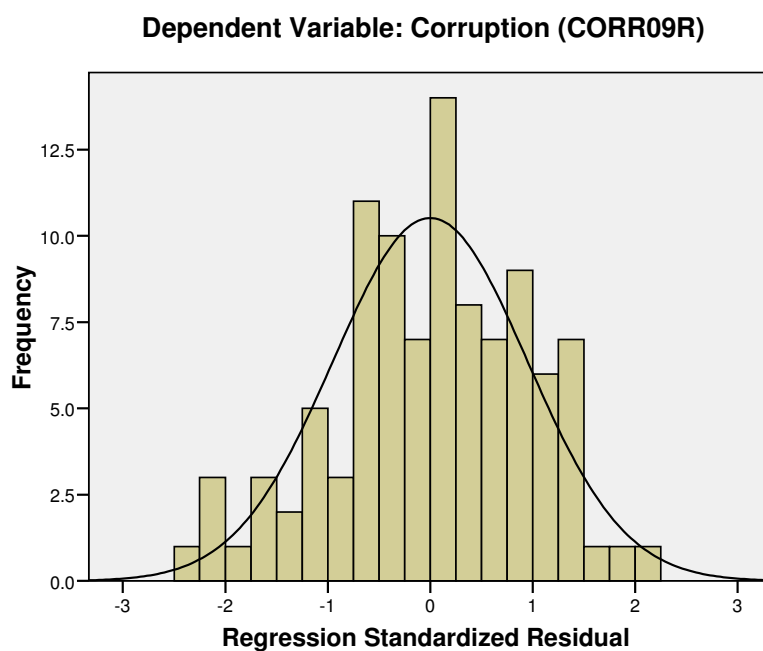


Figure 5.3 Histogram standardized residual

Figure 5.3 shows the histogram based on the standardized residuals and the predicted standardized residuals. This histogram displays that there is no positive or negative skew (the scores are symmetrically distributed) and no high kurtosis (the distribution is not too flat or too peaked). Outliers are absent as well. This points towards a normal distribution.

To make sure the residuals are normal distributed, a second test is carried out. Figure 5.4 shows the normal probability plot of the standardized residuals. When the points are approximately situated on a straight line, the residuals are normally distributed.

Dependent Variable: Corruption (CORR09R)

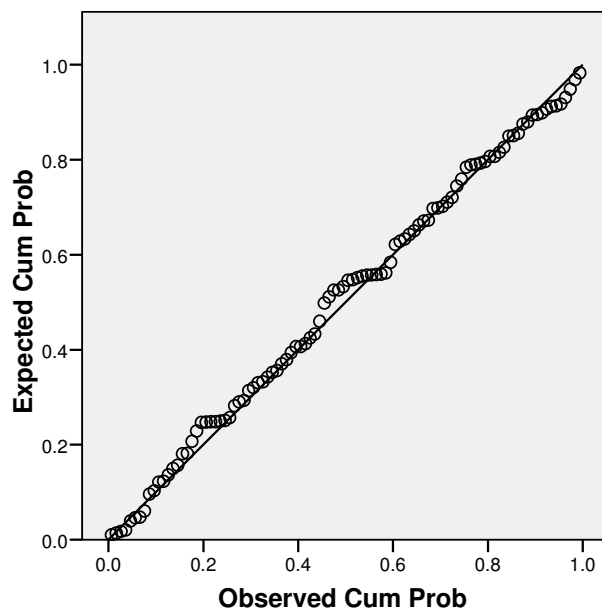


Figure 5.4 Normal P-Plot regression standardized residual

Figure 5.4 shows that the points are approximately situated on a straight line and therefore this displays a normal distribution as well.

The histogram and normal p-plot of the residuals do not display any outliers. To get a more specific illustration of the possible occurrence of outliers, the residual statistics are calculated as well.

	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>N</i>
Predicted Value	5.563	10.644	7.840	0.971	100
Std. Predicted Value	-2.345	2.887	0.000	1.000	100
Residual	-1.745	1.598	0.000	0.717	100
Std. Residual	-2.306	2.114	0.000	0.948	100

Table 5.5 Residual statistics

The predicted values are the predicted Y values, while the residuals are, as mentioned before, the differences between the predicted and observed Y-values. Table 5.5 shows that the biggest outliers amongst the residuals are -1,745 and 1.598. Their standardized values are -2.306 and 2.114. To study the exact values of the standardized residuals, the casewise diagnostics are calculated (table 5.6).

<i>Case Number</i>	<i>Std. Residual</i>	<i>CORRO9R</i>	<i>Predicted Value</i>	<i>Residual</i>
23	-2.042	9.100	10.644	-1.544
46	-2.306	6.000	7.743	-1.743
56	2.114	8.500	6.902	1.598
83	-2.103	4.000	5.590	-1.590
96	-2.195	4.300	5.960	-1.660

Table 5.6 Casewise diagnostics of outliers

Table 5.6 displays the standardized residuals that have a value above 2.0. There are five cases that have a value between 2.0 and 2.5. There are no residuals with a standardized value greater than 2.5. The five standardized residuals that have value greater than 2, represent 5% of the cases. This is exactly the percentage of residuals that is allowed to have a standardized value greater than 2. Therefore the level of error is acceptable, according to the rules described in paragraph 4.1.4, and no outliers have to be excluded from the sample.

Besides outliers, there can be cases that have a large effect on the outcome of the calculation. These cases are called influential cases. Cook's distance and Leverage values are calculated to identify these influential cases.

	<i>Minimum</i>	<i>Maximum</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>N</i>
Cook's Distance	0.000	0.248	0.015	0.031	100
Leverage Value	0.014	0.368	0.100	0.062	100

Table 5.7 Summary of Cook's distance and Leverage value for influential cases

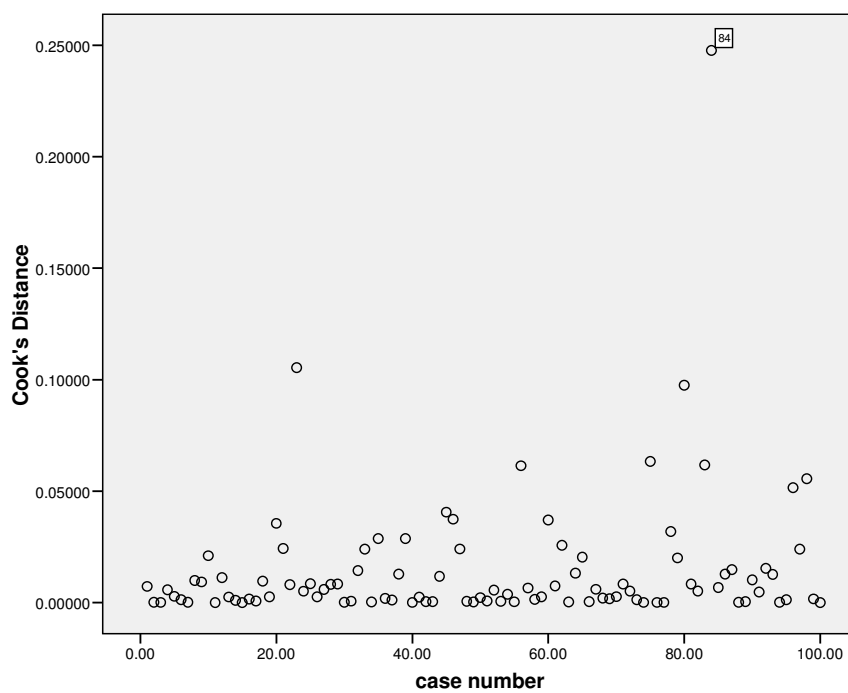


Figure 5.5 Scatterplot of Cook's distances

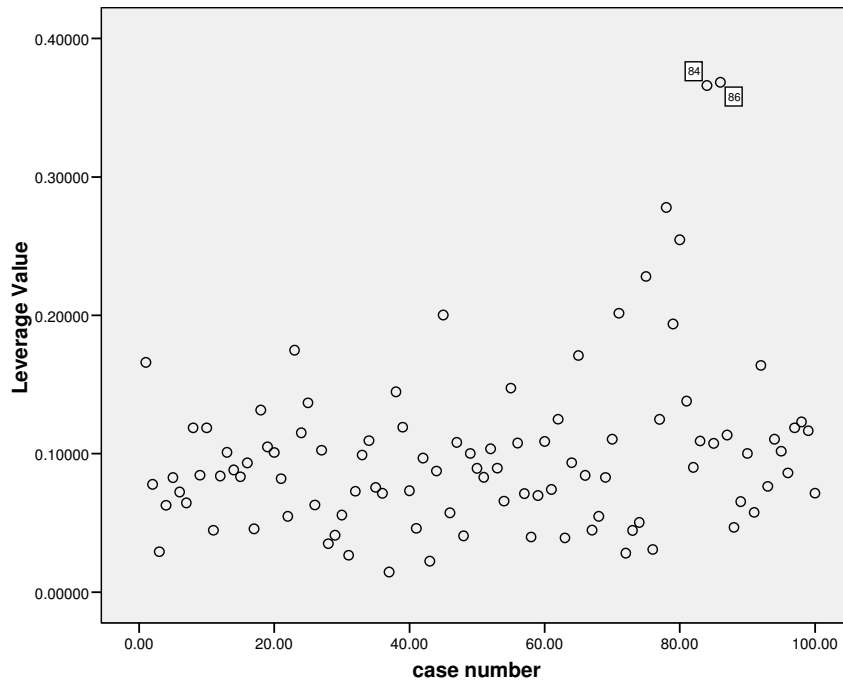


Figure 5.6 Scatterplot of Leverage values

Table 5.7 shows that the maximum Cook's distance is 0.248, which belongs to case 84: St. Vincent and the Grenadines (Figure 5.5). Cases that have a Cook's distance above 1 have too much influence on the model (De Vocht, 2007), but this is not the case here, and therefore no cases have to be excluded. The maximum Leverage value is 0.368. Figure 5.6 shows that two cases have a high Leverage value: case 84 (St. Vincent and the Grenadines) and case 86 (Suriname). According to De Vocht (2007), cases with a Leverage value above 0.5 are too influential for the model. Because St. Vincent and the Grenadines and Suriname are still under the Leverage value of 0.5, these cases do not have to be excluded.

The abovementioned explorations show that there is no exceptional skew or kurtosis amongst the standardized residuals, and there are no outliers or influential cases.

To confirm that the residuals do not deviate from normality, and that therefore this assumption is met, a Kolmogorov-Smirnov test is carried out on the standardized residuals. The Kolmogorov-Smirnov test assesses whether the distribution of the sample is significantly different from a normal distribution.

When the test is non-significant (when the significance level is larger than 0.05) the assumption of a normal distribution is met.

<i>Kolmogorov-Smirnov</i>			
	Statistic	df	Sig.
Standardized Residual	0.057	100	0.200*

* This is a lower bound of the true significance

Table 5.8 Kolmogorov-Smirnov test on Standardized Residuals

Table 5.8 shows a significance level of 0.200. Because this value is larger than 0.05, the Kolmogorov-Smirnov test confirms that the standardized residuals are normally distributed. Therefore we can conclude that the residuals, and consequently each value of the dependent variable, have a normal distribution. Paragraph 5.1 shows that aid and corruption are respectively positively and negatively skewed. However, as is argued in paragraph 4.1.4, these variables do not have to be transformed, because the standardized residuals are normally distributed. Assumption 3 is met.

d. Assumption 4 – Linearity

The fourth assumption is that the expected values of the residuals are equal to zero for every Y value. In other words: the residuals should display a linear relationship. According to De Vocht (2007) this can be checked by constructing a scatterplot of the residuals. When the residuals in the scatterplot do not follow a certain pattern (like a parabola) the regression model is linear. The residuals should all be situated in a balanced way around the reference line. Figure 5.7 shows that there is a reasonable amount of linearity, because there is no clear pattern amongst the residuals. Therefore this assumption is met.

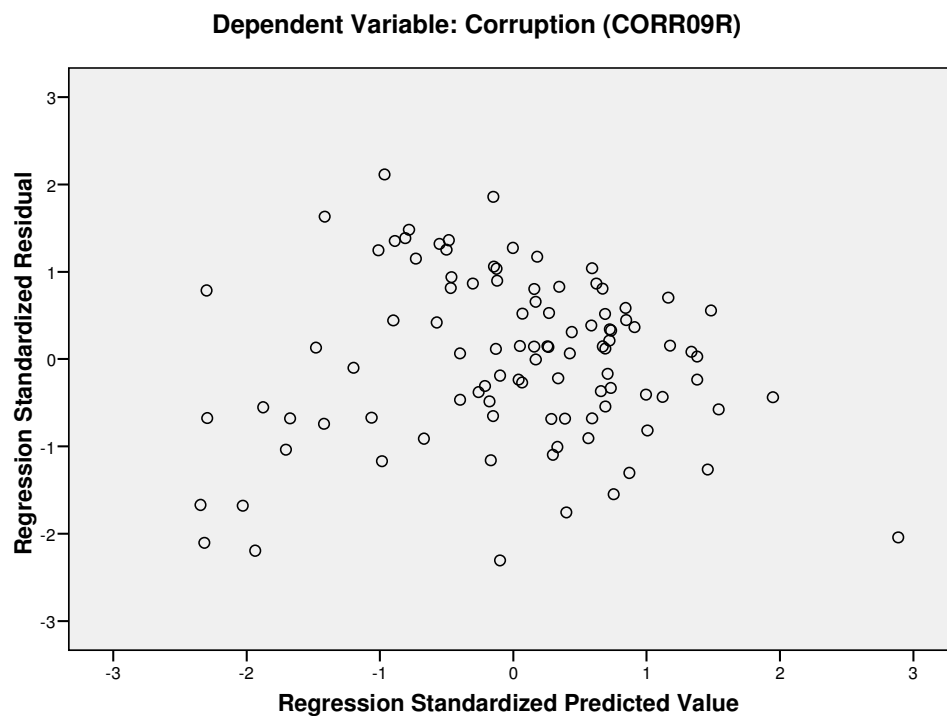


Figure 5.7 Scatterplot standardized residual

e. Assumption 5 – No multicollinearity

The assumption of no multicollinearity means that there are no independent variables that measure (approximately) the same. The absence of multicollinearity can be tested through two methods. The first method is to calculate the bivariate correlation coefficient for every two of the independent variables. There should be no perfect correlation between any two independent variables. Perfect correlation is assumed when the correlation amongst these variables is higher than or equal to 0.9 (De Vocht, 2007, p. 199). The levels of significance of the correlations are in this aspect not important.

	<i>AID07</i>	<i>EC10</i>	<i>ZEC3</i>	<i>EC4B</i>	<i>POL108R</i>	<i>POL407B</i>	<i>BRIT1</i>	<i>SOC1</i>	<i>CUL1</i>	<i>CUL2</i>
<i>AID07</i>										
<i>EC10</i>	-0.035									
<i>ZEC3</i>	-0.041	-0.151								
<i>EC4B</i>	0.068	0.183	-0.282							
<i>POL108R</i>	0.419	0.231	-0.079	-0.043						
<i>POL407B</i>	0.394	0.375	-0.173	0.321	0.469					
<i>BRIT1</i>	0.264	-0.127	-0.151	0.031	0.260	0.097				
<i>SOC1</i>	-0.053	-0.012	-0.147	0.229	-0.299	0.063	-0.299			
<i>CUL1</i>	0.399	-0.011	0.038	-0.027	0.419	0.267	0.508	-0.266		
<i>CUL2</i>	-0.054	0.058	0.073	-0.070	-0.024	0.074	-0.124	0.028	-0.092	

Table 5.9 Correlations between independent variables

Table 5.9 displays that the highest correlation that exists is between religion (CUL1) and British legal origin (BRIT1). These two independent variables have a correlation of 0.508. As this does not come near the 0.9 level of correlation that implies multicollinearity, this test shows that there is no multicollinearity.

Lewis-Beck (1980, p. 60) argues that calculating multicollinearity in this way “fails to take into account the relationship of an independent variable with all the independent variables”. Therefore we use a second method, suggested by him, to make sure no multicollinearity exists. In the second method each independent variable is regressed on all the other independent variables. When any R^2 (squared correlation) is near 1.0, high multicollinearity exists.

	<i>R square</i>	<i>Adjusted R square</i>
Aid (AID07)	0.318	0.250
Economic development (EC10)	0.238	0.162
State regulation (ZEC3)	0.162	0.078
Trade openness (EC4B)	0.233	0.156
Free press (POL108R)	0.437	0.381
Political stability (POL407B)	0.463	0.410
British legal origin (BRIT1)	0.360	0.296
Socialist legal origin (SOC1)	0.250	0.175
Protestant religion (CUL1)	0.405	0.346
Gender equality (CUL2)	0.045	-0.050

Table 5.10 Regression between independent variables

Table 5.10 includes the squared correlations and the adjusted squared correlations, adjusted for the number of independent variables and the size of the sample. Political stability has the highest squared and adjusted squared correlation with 0.463 and 0.410. These scores are not close to one, and therefore we can conclude that this test points out as well that there is no multicollinearity. Assumption 5 is met.

f. Assumption 6 – Homoscedasticity

The last assumption argues that there should be homoscedasticity. This means that the variance of the residual terms should be constant for all independent variables. When we draw a plot and all values are situated around the horizontal zero-line in a balanced way, there is homoscedasticity. When the variances are very unequal, there is heteroscedasticity.

To interpret the residuals in the correct way, figure 5.7 can be used. This scatterplot compares the standardized residuals with the predicted residuals, which shows whether the variance of the residuals is constant (homogeneous). Figure 5.7 shows that the residuals slightly form the shape of a funnel (from right to the left the residuals keep going further from the zero line). However this shape is not very clear and the residuals are spread randomly enough in the plot, to conclude that the regression model is homoscedatic. This means the last assumption is met as well.

Because all assumptions for multiple regression analysis are met, the regression analysis can be carried out, without transformation of the variables, and the results of the sample can be generalized to the wider population.

5.2.3 Multiple regression model

For carrying out the multiple regression analysis, the forced entry method is used. This method includes all control variables, even those that might not be significant. This is described in more detail in paragraph 4.1.4.

<i>R</i>	<i>R Square</i>	<i>Adjusted R Square</i>	<i>Std. Error of the Estimate</i>
0.805	0.647	0.608	0.756

Table 5.11 Multiple regression analysis – model summary

The multiple regression output contains 3 tables: the model summary, the ANOVA and the coefficients. The model summary, table 5.11, gives more information about the quality of our model with 10 independent variables. *R* stands for the multiple correlation: the correlation between the observed *Y* values and the predicted *Y* values. “The multiple *R* represents the correlation between actual scores on the dependent variable and predicted scores based on the regression equation” (Kirkpatrick & Feeney, 2006). The total correlation in our model is 0.805, which means there is a relatively high correlation between the variables. This leads to a relatively large *R* square, which represents the total amount of variance of the dependent variable that can be explained by the independent variables. The *R* square is 0.647, which means approximately 65% of the variance can be explained by the independent variables in this study. However, in order to estimate the value of *R* square in the total population, the adjusted *R* square, which is a reduced value for *R* squared, is measured. This is necessary because “if another independent variable is added it is very unlikely that the correlation between that independent variable and the dependent variable will be exactly zero” (Miles & Shevlin, 2001). The model summary presents an adjusted *R* square of 0.608, which means that 60.8% of the variance of corruption is determined by our 10 independent variables.

	<i>Sum of Squares</i>	<i>df</i>	<i>Mean Square</i>	<i>F</i>	<i>Sig.</i>
Regression	93.372	10	9.337	16.337	.000
Residual	50.868	89	0.572		
Total	144.240	99			

Table 5.12 Multiple regression analysis - ANOVA

The second source of information within the regression analysis is the ANOVA. This table contains the variance analysis, which shows the total amount of variance in the dependent variable. For this analysis it is most important to look at the last column, which contains the significance value of R square. With this significance value it is possible to test how significant the whole model is. Table 5.12 shows that in our regression analysis there is a significance level of 0.000. Because this is smaller than 0.05, we can conclude that the model as a complete entity is significant.

	<i>Unstandardized B</i>	<i>Unstandardized Std. Error</i>	<i>Standardized Beta</i>	<i>t</i>	<i>Sig.</i>
(Constant)	8.781	0.400		21.932	0.000**
Aid (AID07)	-0.001	0.001	-0.076	-0.992	0.324
Economic Development (EC10)	-0.184	0.034	-0.387	-5.370	0.000**
State regulation (ZEC3)	0.058	0.040	0.101	1.464	0.147
Trade openness (EC4B)	0.001	0.005	0.013	0.177	0.860
Free press (POL108R)	-0.015	0.005	-0.244	-2.906	0.005**
Political stability (POL407B)	-0.540	0.123	-0.378	-4.398	0.000**
British legal origin (BRIT1)	-0.439	0.203	-0.171	-2.169	0.033*
Socialist legal origin (SOC1)	0.326	0.238	0.100	1.370	0.174
Protestant religion (CUL1)	0.020	0.006	0.255	3.126	0.002**
Gender equality (CUL2)	0.000	0.008	0.002	0.034	0.973

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 5.13 Multiple regression analysis – coefficients

Table 5.13 includes the third table of the regression analysis: the coefficients. This table contains the actual regression. The unstandardized B displays the regression coefficients for the *constant* term and for each independent variable, corrected for the influence of the other independent variables. It shows how much Y changes when that specific independent variable increases with 1 unit of measurement, while the effect of the other independent variables is being held constant. The *constant* term (B_0) is the level of corruption (Y), when all the independent variables have a value of zero.

Besides the unstandardized B coefficients and the *significance*, it is important to look at the standardized $Beta$ coefficient. B displays the direction of the relation, but the relative strength of the relationship cannot be deduced from this. All the variables have different measurement units, and it is therefore difficult to compare which one has more influence. Therefore the B coefficients are standardized in the $Beta$, which measures the relative importance of a predictor in the model. The $Beta$ includes the number of standard deviations that the outcome will change as a result of one standard deviation change in the predictor.

5.2.4 Interpretation of the multiple regression model

What exactly does this multiple regression analysis tell us about the causes of corruption? There were theoretical relations between corruption and each of the independent variables, but to what extent is our statistical evidence in accordance with these relations? First of all, the effect of aid on the level of corruption is discussed, followed by the effect of each of the control variables on the level of corruption.

a. Aid and corruption

In paragraph 5.2.2 we have already seen that the correlation coefficient between aid and corruption is significant and of medium strength. This means that our hypothesis is therefore not true, because more aid is present, when less corruption is present. It is important to test whether this result holds when the effects of the other independent variables are taken into account. The coefficients table of the multiple regression analysis displays an unstandardized B of -0.001. This negative relationship is in correspondence with the correlation coefficient and indicates that a lower level of aid would correspond to a higher level of corruption, if the effects of the other independent variables are held constant.

However, the regression coefficient of aid is not significant. The significance level for the regression coefficient of aid is 0.324, which means that the probability that this result has occurred by chance is too high. The estimates for the current model are not likely to be representative of the true population value, and therefore aid cannot be included in our prediction for the level of corruption.

Our hypothesis stated that more foreign aid leads to more corruption, but our results are not in agreement with this statement. Tavares (2003) finds that when aid increases with 1% of GDP corruption decreases with 0.2 points out of 10. Our study however includes more control variables and finds that there is no robust relation between aid and corruption, when controlled for the effects of nine control variables. Even though the regression coefficient between aid and corruption is not significant, we can conclude from the negative significant correlation coefficient between aid and corruption that countries with more corruption do not receive more aid. If anything, it shows that aid goes to countries that are less corrupt. This is in contrast with Alesina and Weder (2002), who argue that they could not find evidence that aid goes to less corrupt governments, but that, if anything, it is the corrupt governments that receive more aid. Our study conflicts with Alesina and Weder's statement.

b. Economic development and corruption

The unstandardized B shows that the regression coefficient of economic development is negative: less economic development is associated with higher levels of corruption. This score is significant for the 0.01 level. The score of -0.184 indicates that, as long as the other independent variables are held constant, when GDP per capita decreases with US\$1000 (1 measurement unit stands for US\$1000), corruption increases with 0.184 point on a scale of 1 to 10. This is in accordance with the results of previous studies into the relation between economic development and corruption.

The $Beta$ of the level of economic development is relatively high. The $Beta$ score of -0.387 is the highest $Beta$ in the regression. This means that, once controlled for the different units of measurement, economic development is the most important predictors for corruption. It is however not possible to conclude if low economic development causes corruption, or if corruption causes low economic development.

c. State regulation and corruption

Previous studies have identified that state regulation increases corruption. In agreement with these studies, the regression coefficient between state regulation and corruption in this study is positive. However, the results are not significant, and therefore state regulation cannot be identified as a predictor for corruption.

d. Trade openness and corruption

Trade openness is said to reduce the level of corruption. The regression coefficient in the multiple regression analysis is slightly positive. This would indicate that more trade openness is associated with higher levels of corruption, which would conflict with previous studies. However, since the result is not significant, the probability that it has occurred by chance is too high. Trade openness can therefore not be identified as predictor for corruption.

e. Free press and corruption

The regression coefficient of free press is significant at the 0.01 level and displays a negative direction: a lower level of free press is associated with a higher level of corruption. This in accordance with what previous literature has stated about this. The unstandardized coefficient B indicates that when the level of free press increases with 1%, corruption decreases with 0.015 point on a scale of 1 to 10. The $Beta$ is relatively low and indicates that, once controlled for units of measurement, economic development, level of political stability and Protestant religion are more important in determining the level of corruption. It is not possible to conclude if limited free press causes corruption, or if corruption causes limited free press.

f. Political stability and corruption

Previous studies have argued that low levels of political stability increase the level of corruption. This is in accordance with the regression coefficient of political stability in this study, which has a negative direction. The result is significant for the 0.01 level and indicates that when the level of political stability increases with 1 point (on a scale of -2.5 to 2.5), the level of corruption decreases with 0.54 point on a scale of 1 to 10. Political stability has the largest unstandardized B and is with a $Beta$ of -0.378 one of the most important predictors of corruption in this study: only economic development has a higher $Beta$ score. It is however not possible to conclude if political instability causes corruption or if corruption causes political instability.

g. British legal origin and corruption

The regression coefficient of British legal origin also displays to be significant. Even though this is at the 0.05 level instead of the 0.01 level, the probability that this result has occurred by chance is still very low, and therefore this variable can be included. Previous studies have found that colonies with a British legal origin display lower levels of corruption, which is confirmed by this study because the direction of the regression coefficient is negative. The score of -0.439 indicates that when a country has a British legal origin, instead of having no British legal origin, corruption decreases with 0.439 point on a scale of 1 to 10. The causal direction can be established for this variable, because it is highly unlikely that corruption causes a non-British legal origin. British legal origin has a large unstandardized B , but as soon as the units of measurement are controlled for, this variable is (with a $Beta$ of -0.171) the least important one amongst the predictors of corruption.

h. Socialist legal origin and corruption

The unstandardized B of Socialist legal origin is 0.326 and therefore positive. This is in agreement with previous studies that state that a Socialist legal origin increases the level of corruption. This result is however not significant, and can therefore not be used as a determinant for corruption.

i. Protestant religion and corruption

Protestant religion is the only significant variable that has a positive direction towards corruption: a higher percentage of the population that is Protestant, is associated with more corruption. The unstandardized B is 0.020, which indicates that when the number of protestant people in a country increases with 1%, corruption increases with 0.02 point on a scale of 1 to 10. Protestant religion is therefore the only variable in this model that increases the level of corruption. This is an interesting finding, because research from amongst others Pellegrini and Gerlagh (2008), La Porta et al. (1999) and Treisman (2000 and 2002) shows that traditionally Protestant countries exhibit lower levels of corruption. Our study shows the opposite: Protestant countries exhibit higher levels of corruption. The causal direction between protestant countries and corruption can be established, because it is highly unlikely that corruption causes a higher percentage of the people to become Protestant. This result is significant at the 0.01 level.

The standardized $Beta$ value for Protestant religion is 0.255, which means that it is not the most important predictor of corruption. Political stability and economic development are more important, but free press and British legal origin are less important in determining the level of corruption.

j. Gender equality and corruption

Gender equality displays an unstandardized B of 0.000 and a standardized $Beta$ of 0.002. This means that, even once there is controlled for the units of measurement, gender equality and corruption hardly show any relation. The small relation that presents itself at the $Beta$ is positive, which would mean that more gender equality increases corruption. This is not in agreement with previous studies. The results are however not significant, and therefore gender equality cannot be identified as a predictor of corruption.

The above-mentioned results show that 60.8 % of the variance of corruption can be explained by the significant variables. Although it is for most variables not possible to indicate the causal direction, we can conclude that corruption can be predicted by (from most important to least important): low economic development, low level of political stability, high percentage of Protestants, limited free press, and the absence of a British legal origin.

6 CONCLUSION

The last chapter of this study discusses the answer to the central research question and possible explanations. This is dealt with in paragraph 6.1. The second paragraph of this chapter describes the limitations of this research. Paragraph 6.3 and 6.4 cover respectively the policy implications of this study and the implications of this study for further research.

6.1 Central research question

The central question of this research is:

Does foreign aid provided by the West, increase the level of corruption in the receiving developing countries?

The main hypothesis states that more foreign aid provided by the West to developing countries leads to more corruption in the recipient countries. To make sure that a possible relationship between aid and corruption is indeed a relationship between these two variables, multiple regression analysis is carried out, in which is controlled for 9 control variables. These control variables are chosen on the basis of previous literature on factors associated with corruption, which states that high levels of corruption are related to: low economic development, high state regulation, low trade openness, limited free press, low political stability, no British legal origin, a Socialist legal origin, a low percentage of Protestant inhabitants and a low percentage of women in parliamentary and legislative functions.

When the bivariate correlation between corruption and aid is calculated, the result is of medium strength and it is significant. Important to note is that this significant relation between aid and corruption is negative, which means that countries with more aid have less corruption and countries with less aid have more corruption. This is not in agreement with our hypothesis.

This result is also conflicting with a study from Alesina and Weder (2002), who argue that countries that receive with more corruption receive more aid. This study shows that aid goes to countries that are less corrupt.

The relation between aid and corruption is not robust when the 9 control variables are added in the multiple regression analysis. Therefore we cannot conclude that aid decreases corruption, but we can state that people who argue that more aid goes to more corrupt countries are incorrect.

A possible explanation for this difference can be that aid and corruption have been more frequently on the political agenda in recent years and it has been more critically evaluated. Countries might have adjusted their development cooperation strategies and programs and they might, for example, require a better explanation of the expenditures or give smaller amounts of money on a structural basis. More qualitative research will however be necessary, in order to establish why more aid is related to less corruption.

Even though this study does not show that corruption is caused by aid, it does provide more information about what does predict the level of corruption in a country. The regression equation shows that corruption can be predicted by, in order of importance (with the most important variable at first): low economic development, a low level of political stability, a high percentage of Protestants in a country, limited free press, and no British legal origin. The results for the other control variables were in general in agreement with previous studies, but they are not significant. It is therefore not proven that they influence the level of corruption in a country. Exceptions amongst the non-significant variables are trade openness and gender equality, because our research shows that, in contrast with previous studies, more trade openness and more gender equality lead to more corruption. However, because these variables are not significant, the probability is too high that these results are based on chance. Therefore, these variables cannot be included as predictors of corruption.

Economic development, free press, political stability and British legal origin do influence the level of corruption in accordance to what previous studies have found. An exception is religion. Research from amongst others Pellegrini and Gerlagh (2008), La Porta et al. (1999) and Treisman (2000 and 2002) shows that countries where more people are Protestant, display lower levels of corruption. They argue that Protestantism has a positive impact on economic development and on a stable democracy and that the religion is less tolerant towards power abuses and corruption. Our research however shows the opposite: Protestantism causes corruption. This study therefore points towards the loss of this positive

impact or might mean that other religions are creating a more positive impact than Protestantism has done in the past. More qualitative research should be carried out into this subject, to find out the real reasons for the negative impact of Protestantism on corruption.

If we look at what this study indicates as predictors of the level of corruption (lower economic development, limited free press, low level of political stability, no British legal origin and higher percentage of Protestants), we can state that, as an answer to the central research question, foreign aid provided by the West does not increase the level of corruption in the receiving developing countries. When the other independent variables are controlled for, there is no robust significant relationship between aid and corruption present. Besides that, the bivariate correlation shows that more aid is related to less corruption, which means that foreign aid provided by the West, does not increase corruption.

6.2 Limitations of the research

There are certain limitations to this research, and to the extent these results can be generalized to the wider population. This study is based on a cross-sectional design, and therefore studies the data concerning 1 year: 2007. It is interesting to discover the development of the relation between aid and corruption. In order to do that, however, one would have to work with a time-series design. This was however not possible within the scope of this thesis.

A second limitation in studying the relation between aid and corruption, is that it is difficult to establish the causal relationship. Does aid lead to less corruption? Or is it the lower level of corruption that results in higher levels of aid from Western countries? Corruption and aid are negatively correlated (which means there is an association), but this result does not hold when the effects of the other independent variables are taken into account. Therefore the effect of aid on corruption cannot be isolated. Besides that, it is difficult to determine which one of the two variables came first. This is related to the first limitation, because a time-series design provides more information about the causal direction of variables, than a cross-sectional design does. Therefore it is not possible to indicate the causal direction for most of the variables that are in this research identified as predictors for corruption. Out of the three criteria of causation, the criteria of association and isolation are met for these variables, but the

criterion of causal direction is not met. Therefore we cannot establish that these variables are, besides predictors for corruption, also causes of corruption.

6.3 Policy implications

This study shows that there is no evidence that aid increases corruption. If anything, we can conclude that low levels of corruption are related to high levels of aid. This is an important conclusion, because for example in the Netherlands, development cooperation and especially the provision of aid, have recently been criticized in public debate (Canoy, De Groot & Slob, 2010; NCDO, 2010; Ontwikkelingshulp moet op de schop, 2010). The Netherlands is one of the few countries that spend 0.8% of its GDP on development cooperation, which accounts for more than US\$5 billion (Koch, 2009). However, recently this has been debated more and more and it was an especially important topic of debate during the June 2010 parliament elections. In the political debates that preceded the national elections, politicians that are critical of development cooperation and aid, have used the argument that aid stimulates corruption and that more corrupt countries receive more aid, and that the budget for development cooperation should therefore be reduced. This study shows that these statements cannot be proven and that, if anything, it is the more corrupt countries that receive less aid. Therefore this research should be used to make sure that cuts in the development cooperation budget are not made on the basis of arguments that are incorrect.

In the first chapter of this thesis, it was stated that the Western world tries to improve the living standard in developing countries through aid, but when aid stimulates corruption, this can be counterproductive and might actually lower the living standard. This research, however, has not found that more aid is related to more corruption, and therefore aid is not found to be counterproductive. It has, however, also not proven the effectiveness of aid, and therefore it is important that donors keep evaluating their aid policies, in order to reach their goals.

6.4 Research implications

As mentioned in paragraph 6.1, this study shows two aspects that are not in agreement with previous research. First of all, more aid is related to less corruption, instead of previous studies that show that more aid is related to more corruption. Secondly, Protestantism actually increases the level of corruption, instead of diminishing it. More research should be done into these aspects, to clarify these changes compared to previous studies.

Besides that, the relation between aid and corruption is not significant when controlled for the 9 control variables, and therefore more specific research into this topic could be useful. The bivariate correlation shows a relation between the two, and it is interesting to find out to what extent this relationship exists. Thirdly, this research could be carried out within a time-series design that would describe the recent developments within the relation between aid and corruption. Most time-series designs that describe this relation are based on outdated data, and therefore it is interesting to discover recent changes.

Lastly, it is necessary that more research is done into how corruption can be battled. Besides the focus on the causes of corruption, it is important to focus on how to reduce the effects. The latter might lead to better short-term results, while research on the causes of corruption focuses more on the long-term results. We should not forget that corruption has very negative effects on society and on the living standards of people and therefore it is important to battle this problem both on the short- and long-term. If we can find a way to battle the causes and effects of corruption, it will be possible to make this world a better place for everyone.

LIST OF ABBREVIATIONS

CIA	Central Intelligence Agency
CPI	Corruption Perception Index
DAC	Development Assistance Committee
EU	European Union
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GNI	Gross National Income
GNP	Gross National Product
ICRG	International Country Risk Guide
IMF	International Monetary Fund
LDC	Least Developed Country
NATO	North Atlantic Treaty Organisation
NGO	Non-governmental Organization
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development
TI	Transparency International
UN	United Nations
UNDP	United Nations Development Programme
WDI	World Development Indicators
WGI	World Governance Indicators

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APPENDIX A. LIST OF DEVELOPING COUNTRIES

East Asia and Pacific (developing countries: 23, in sample: 12)

American Samoa	Malaysia	Samoa
Cambodia	Marshall Islands	Solomon Islands
China	Micronesia, Fed. Sts	Thailand
Fiji	Mongolia	Timor-Leste
Indonesia	Myanmar	Tonga
Kiribati	Palau	Vanuatu
Korea, Dem. Rep.	Papua New Guinea	Vietnam
Lao PDR	Philippines	

Europe and Central Asia (developing countries: 24, in sample: 12)

Albania	<i>Kosovo</i>	Romania
Armenia	Kyrgyz Republic	Russian Federation
Azerbaijan	Latvia	Serbia
Belarus	Lithuania	Tajikistan
Bosnia and Herzegovina	Macedonia, FYR	Turkey
Bulgaria	Moldova	Turkmenistan
Georgia	Montenegro	Ukraine
Kazakhstan	Poland	Uzbekistan

Latin America and the Caribbean (developing countries: 29, in sample: 23)

Argentina	Ecuador	Panama
Belize	El Salvador	Paraguay
Bolivia	Grenada	Peru
Brazil	Guatemala	St. Kitts and Nevis

Chile	Guyana	St. Lucia
Colombia	Haiti	St. Vincent and the Grenadines
Costa Rica	Honduras	Suriname
Cuba	Jamaica	Uruguay
Dominica	Mexico	Venezuela, RB
Dominican Republic	Nicaragua	

Middle East and North Africa (developing countries: 13, in sample: 7)

Algeria	Jordan	Tunisia
Djibouti	Lebanon	West Bank and Gaza
Egypt, Arab Rep.	Libya	Yemen, Rep.
Iran, Islamic Rep.	Morocco	
Iraq	Syrian Arab Republic	

South Asia (developing countries: 8, in sample: 8)

Afghanistan	India	Pakistan
Bangladesh	Maldives	Sri Lanka
Bhutan	Nepal	

Sub-Saharan Africa (developing countries: 47, in sample: 38)

Angola	Gambia, The	Nigeria
Benin	Ghana	Rwanda
Botswana	Guinea	São Tomé and Príncipe
Burkina Faso	Guinea-Bissau	Senegal
Burundi	Kenya	Seychelles
Cameroon	Lesotho	Sierra Leone

Cape Verde	Liberia	Somalia
Central African Republic	Madagascar	South Africa
Chad	Malawi	Sudan
Comoros	Mali	Swaziland
Congo, Dem. Rep.	Mauritania	Tanzania
Congo, Rep	Mauritius	Togo
Côte d'Ivoire	Mayotte	Uganda
Eritrea	Mozambique	Zambia
Ethiopia	Namibia	Zimbabwe
Gabon	Niger	

(The World Bank, 2010a)

Total number of developing countries: 144

Total number of developing countries in sample (marked with green): 100

APPENDIX B: OVERVIEW OF LITERATURE

Type	Factor	Author	Hypothetical or empirical*	Conclusion
Economic	Economic development	La Porta et al., 1999	Empirical	Lower economic development is associated with higher levels of corruption
		Ades & Di Tella, 1999		
		Treisman, 2000, 2007		
		Paldam, 2002		
		Montinola & Jackman, 2002		
	Inflation	Paldam, 2002	Empirical	Periods of high inflation are associated with higher levels of corruption
		Braun & Di Tella (as cited in Treisman, 2007)	Empirical	Variable and unpredictable inflation is associated with higher levels of corruption
		Treisman, 2007		
	Gerring & Thacker, 2005	Empirical	Long-term inflation is associated with higher levels of corruption	
	Income inequality	Paldam, 2002	Empirical	No significant relationship
Treisman, 2007				
State regulation	Ades & Di Tella, 1997	Hypothetical	More state regulation is associated with higher levels of corruption	
	Tanzi, 1998			
	Djankov et al. (as cited in Treisman, 2007)			
Paldam, 2002	Gerring & Thacker, 2005	Empirical	More state regulation is associated with higher levels of corruption	
				Treisman, 2002

Type	Factor	Author	Hypothetical or empirical*	Conclusion	
	Trade openness	Lambsdorff, 2005 Mauro, 1997	Hypothetical	Less trade openness is associated with higher levels of corruption	
		Ades & Di Tella, 1999 Gerring & Thacker, 2005 Treisman, 2000, 2007	Empirical	Less trade openness is associated with higher levels of corruption	
		Treisman, 2002	Empirical	No significant relationship	
	Export of natural resources	Gray & Kaufmann, 1998 Lambsdorff, 2005 Mauro, 1997 Rose-Ackermann, 1999	Hypothetical	More export of natural resources is associated with higher levels of corruption	
		Ades & Di Tella, 1999 Montinola & Jackman, 2002	Empirical	More export of natural resources is associated with higher levels of corruption	
		Treisman, 2000	Empirical	No significant relationship	
	Provision of goods and services at below-market prices	Mauro, 1997	Hypothetical	More provision of goods and services at below-market prices is associated with a higher level of corruption	
	Multiple exchange rates	Mauro, 1997 Rose-Ackermann, 1997 Tanzi, 1998	Hypothetical	A system of multiple exchange rates is associated with higher levels of corruption	
	Political	Democracy	Paldam, 2002 Sandholtz & Koetzle, 2000	Empirical	Lower levels of democracy are associated with higher levels of corruption

Type	Factor	Author	Hypothetical or empirical*	Conclusion
		Montinola & Jackman, 2002	Empirical	Not fully competitive democracies are associated with higher levels of corruption and fully competitive democracies are associated with lower levels of corruption
		Treisman, 2002	Empirical	No significant relationship
	Long-established democracies	Gerring & Thacker, 2004, 2005 Treisman, 2000, 2007 Pellegrini & Gerlagh, 2008 Sandholtz & Koetzle, 2000	Empirical	Long-established democracies are associated with lower levels of corruption
	Free press	Lederman et al. as cited in Lambsdorff, 2005 Pellegrini & Gerlagh, 2008 Treisman, 2007	Empirical	Limited free press is associated with higher levels of corruption
		Brunetti & Weder, 2003	Empirical	Press freedom is a powerful control on corruption
	Political system model	Gerring & Thacker, 2005 Lederman et al., as cited in Lambsdorff, 2005 Panizza, as cited in Lambsdorff, 2005 Treisman, 2007	Empirical	Presidentialism is associated with higher levels of corruption
		Treisman, 2002	Empirical	No significant relationship
	Size of voting districts	Persson et al., 2003	Empirical	Smaller voting districts are associated with higher levels of free press

Type	Factor	Author	Hypothetical or empirical*	Conclusion
	Voting for individual candidates	Persson et al., 2003 Kunicová & Rose-Ackerman, 2005	Empirical	Voting for party lists instead of individual candidates is associated with higher levels of corruption
	Decentralization	Treisman, 2002	Empirical	More political decentralization is associated with higher levels of corruption
		Lambsdorff, 2005	Empirical	Larger countries are associated with higher levels of corruption
		Knack & Azfar, 2003	Empirical	No significant relationship between country size and corruption
		Gerring & Thacker, 2005	Empirical	No significant relationship between public sector size and corruption
		Fisman & Gatti, as cited in Lambsdorff, 2005 Huther & Shah, as cited in Lambsdorff, 2005	Empirical	Less fiscal decentralization is associated with higher levels of corruption
		Treisman, 2007 La Palombara, as cited in Elliott, 1997	Empirical Empirical	No significant relationship between fiscal decentralization and corruption Lower government expenditures are associated with higher levels of corruption

Type	Factor	Author	Hypothetical or empirical*	Conclusion
	Federalism	Treisman, 2002 Gerring & Thacker, 2004 Goldsmith, 1999 Kunicová & Rose-Ackerman, 2005	Empirical	Federalism is associated with higher levels of corruption
		Adsera et al., 2000	Empirical	No significant relationship
	Political stability	Pellegrini & Gerlagh, 2008 Adsera et al., 2000	Empirical	Political instability is associated with higher levels of corruption
	Level of civil service wages	Rose-Ackerman, 1978 Kaufmann, 1997 Mauro, 1997	Hypothetical	Low civil service wages are associated with higher levels of corruption
		Pellegrini & Gerlagh, 2008 Van Rijckeghem & Weder, as cited in Lambsdorff, 2005	Empirical	Low civil service wages are associated with higher levels of corruption
		Manow, as cited in Lambsdorff, 2005 Swamy et al., as cited in Lambsdorff, 2005 Treisman, 2000, 2007	Empirical	No significant relationship

Type	Factor	Author	Hypothetical or empirical*	Conclusion
Historical and geographical	British colonialism	Treisman, 2000 Swamy et al., as cited in Lambsdorff, 2005	Empirical	British colonies are, in comparison with other colonies, associated with lower levels of corruption
		Gerring & Thacker, 2004	Empirical	No significant relationship
		Treisman, 2000	Empirical	Countries that were never colonized are not associated with lower levels of corruption
	History of Socialist rule	Treisman, 2002 Gerring & Thacker, 2005	Empirical	A (long) history of socialist rule is associated with higher levels of corruption
	Corruption in surrounding countries	Sandholtz & Gray, as cited in Lambsdorff, 2005	Empirical	Countries surrounded by corrupt neighbors are associated with higher levels of corruption
Cultural	Protestant religion	Pellegrini & Gerlagh, 2008 La Porta et al., 1999 Treisman, 2000, 2002	Empirical	A lower percentage of protestants is associated with a higher level of corruption
	Ethnic fractionalization	Mauro, 1995, 1997 Pellegrini & Gerlagh, 2008	Hypothetical	More ethnically fractionalized countries are associated with higher levels of corruption
	Gender equality	Dollar et al., as cited in Treisman, 2007 Swamy et al., as cited in Treisman, 2007	Hypothetical	Countries with a lower share of female legislators and government ministers are associated with higher levels of corruption

Type	Factor	Author	Hypothetical or empirical*	Conclusion
		Sung	Empirical	Lower female participation in government is in some circumstances associated with high levels of corruption
	Trust	Adsera et al., 2000 La Porta et al., as cited in Lambsdorff, 2005	Empirical	Lower levels of trust among people are associated with higher levels of corruption
Aid	Aid and corruption	Alesina & Weder, 2002 Knack, 2001 Svensson, 2000	Empirical	Countries that receive more aid are associated with higher levels of corruption
		Tavares , 2003	Empirical	Aid decreases corruption

* When the relation is empirically proven, there is mostly a hypothetical relation behind it as well. In these cases only the empirical relation is shown in the table. Hypothetical relations are only shown when this relation is not empirically proven.

APPENDIX C: DESCRIPTION OF VARIABLES

Variable name	Variable code	Description	Level of measurement	Database	Website
<i>Corruption</i>	CORR09R	The level of perceived corruption, based on surveys that cover 2008 and 2009. In our database, on a scale from 1 to 10, 1 corresponds to hardly any corruption, 10 corresponds to an extremely high amount of corruption.	Ratio	Corruption Perception Index	http://www.transparency.org/policy_research/surveys_indices/cpi/2009
<i>Aid</i>	AID07	Net ODA received per capita in current US dollars in 2007.	Ratio	World Development Indicators	http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers
<i>Economic development</i>	EC10	GDP per capita in current US dollars, in 2007. The probability is expressed as a rate per 1.000.	Ratio	World Development Indicators	http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers
<i>State regulation</i>	ZEC3	The ease of starting a business in 2007, measured by the aggregated amount of standardized start up procedures to register a business in number, standardized time required to start a business in days, and standardized cost of business start up procedures as % of GNI per capita.	Ratio	World Development Indicators	http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers

Variable name	Variable code	Description	Level of measurement	Database	Website
<i>Trade openness</i>	EC4B	Measured by the average % of GDP of exports of goods and services, imports of goods and services, and net inflows of FDI as % of GDP in 2007.	Ratio	World Development Indicators	http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers
<i>Free press</i>	POL108R	The score of free press in 2007 on a scale of 1 to 100, where in our database 1 corresponds to worst score, and 100 corresponds to best score of free press.	Ratio	Freedom of Press Index	http://www.freedomhouse.org/template.cfm?page=251&year=2009
<i>Political stability</i>	POL407B	The level of political stability and absence of violence, where a score of approximately -2.5 corresponds to a low level of political stability and a score of approximately 2.5 to a high level.	Ratio	Worldwide Governance Indicators	www.govindicators.org
<i>British legal origin</i>	BRIT1	Measured by the main legal origin in a country in 2007. A score of 1 corresponds to a British legal origin; a score of 0 corresponds to no British legal origin.	Nominal (dichotomous)	Global Development Network Growth Database	http://dri.as.nyu.edu/object/dri.resources.growthdatabase
<i>Socialist legal origin</i>	SOC1	Measured by the main legal origin in a country in 2007. A score of 1 corresponds to a Socialist legal origin; a score of 0 corresponds to no Socialist legal origin.	Nominal (dichotomous)	Global Development Network Growth Database	http://dri.as.nyu.edu/object/dri.resources.growthdatabase

Variable name	Variable code	Description	Level of measurement	Database	Website
<i>Protestant religion</i>	CUL1	The percentage of people in a country that are Protestant in 2007.	Ratio	Quality of Government Database	http://www.qog.pol.gu.se/
<i>Gender equality</i>	CUL2	The percentage of parliamentary seats in a single or lower chamber held by women in 2007.	Ratio	World Development Indicators	http://ddp-ext.worldbank.org/ext/DDPQQ/member.do?method=getMembers

APPENDIX D: DATA SET – SAMPLE

		<i>CORR09R</i>	<i>AID07</i>	<i>EC10</i>	<i>ZEC3</i>	<i>EC4B</i>	<i>POL108R</i>	<i>POL407B</i>	<i>BRIT1</i>	<i>SOC1</i>	<i>CUL1</i>	<i>CUL2</i>
1	Afghanistan	9.7	140.29	0.36	-2.41	25.42	30	-2.35	0	0	0	27.3
2	Albania	7.8	97.72	3.46	-0.54	29.98	51	-0.22	0	1	0	7.1
3	Algeria	8.2	11.53	4.02	0.5	23.67	39	-1.12	0	0	0	7.7
4	Angola	9.1	14.03	3.38	3.42	39.44	38	-0.47	0	0	19.8	15
5	Armenia	8.3	113.92	3	-1.24	21.98	35	-0.08	0	1	0	9.2
6	Azerbaijan	8.7	26.25	3.85	-0.02	27.43	24	-0.69	0	1	0	11.3
7	Bangladesh	8.6	9.6	0.43	-0.53	15.81	33	-1.4	1	0	0.2	15.1
8	Belarus	8.6	8.63	4.67	-0.5	44.03	10	0.22	0	1	0	29.1
9	Benin	8.1	56.53	0.66	-0.38	17.46	70	0.35	0	0	2.8	8.4
10	Bhutan	6	132.86	1.71	-1.13	38.84	40	0.69	1	0	0	2.7
11	Bolivia	8.3	50.06	1.38	2.01	26.28	62	-0.99	0	0	2.3	16.9
12	Botswana	5.4	56.9	6.52	0.63	29.05	65	0.92	1	0	26.8	11.1
13	Brazil	7.3	1.69	7.01	3.46	9.47	59	-0.17	0	0	4	8.8
14	Burkina Faso	7.4	64.63	0.46	-1.66	5.08	60	0.04	0	0	1.6	15.3
15	Burundi	9.2	60.37	0.13	1.31	0.05	27	-1.32	0	0	4.9	30.5
16	Cambodia	9	47.09	0.6	1.27	49.44	41	-0.52	0	1	0.1	9.8
17	Cameroon	8.8	102.27	1.11	1.16	14.89	36	-0.33	0	0	18.1	14.1
18	Cape Verde	5.9	335.9	2.76	0.42	31.11	73	0.9	0	0	3	15.3
19	Chad	9.4	33.28	0.66	4.01	39.11	27	-1.89	0	0	11.6	6.5
20	Chile	4.3	7.26	9.85	-1.09	29.39	71	0.59	0	0	1.9	15
21	China	7.4	1.13	2.57	0.29	24.79	17	-0.28	0	1	0	20.3

		<i>CORR09R</i>	<i>AID07</i>	<i>EC10</i>	<i>ZEC3</i>	<i>EC4B</i>	<i>POL108R</i>	<i>POL407B</i>	<i>BRIT1</i>	<i>SOC1</i>	<i>CUL1</i>	<i>CUL2</i>
22	Colombia	7.3	16.29	4.68	-0.18	14.09	42	-1.57	0	0	0.9	8.4
23	Congo, Dem. Rep.	9.1	19.85	0.16	5.22	24.11	20	-2.45	0	0	29	8.4
24	Congo, Rep.	9.1	33.42	2.15	0.35	58.77	50	-0.94	0	0	24.9	7.4
25	Costa Rica	5.7	13.04	5.89	0.62	36.55	82	0.75	0	0	5.8	38.6
26	Cote d'Ivoire	8.9	8.5	0.98	0.29	30.64	35	-2.12	0	0	4.7	8.5
27	Dominica	5.1	266.64	4.68	-2.42	41.64	79	0.86	1	0	8.3	12.9
28	Dominican Republic	8	12.55	4.21	-1	24.27	62	0.12	0	0	1.4	19.7
29	Ecuador	8.8	16.29	3.43	1.16	23.26	60	-0.91	0	0	1.9	25
30	Egypt, Arab Rep.	8.2	13.83	1.63	-1.84	24.65	42	-0.65	0	0	0.2	2
31	El Salvador	7.6	14.42	3.34	-0.66	27.7	59	0.01	0	0	2.4	16.7
32	Ethiopia	8.3	32.59	0.24	-1.65	15.32	25	-1.73	0	0	3.8	21.9
33	Gabon	8.1	35.99	8.14	-0.57	32.49	32	0.15	0	0	18.8	12.5
34	Gambia, The	8.1	45.29	0.4	0.86	31.1	22	-0.03	1	0	0.4	9.4
35	Georgia	6.9	87.23	2.33	-2.58	35.45	41	-0.7	0	1	0	9.4
36	Ghana	7.1	50.47	0.65	-0.03	37.58	74	0.23	1	0	25.8	10.9
37	Guatemala	7.6	34.03	2.55	-0.2	23.26	43	-0.72	0	0	4.9	12
38	Guinea-Bissau	9.1	79.37	0.25	7	25.84	48	-0.23	0	0	0.6	14
39	Guyana	8.4	167.48	1.41	-0.64	56.1	70	-0.27	1	0	18	29
40	Haiti	9.2	72.18	0.64	4.27	17.24	45	-1.33	0	0	12.8	4.1
41	Honduras	8.5	64.72	1.67	0.47	46.76	50	-0.43	0	0	2.6	23.4
42	India	7.6	1.23	1.05	0.73	16.01	66	-0.98	1	0	1.1	8.3
43	Indonesia	8.2	3.98	1.92	1.4	18.82	47	-1.08	0	0	4.8	11.3

		<i>CORR09R</i>	<i>AID07</i>	<i>EC10</i>	<i>ZEC3</i>	<i>EC4B</i>	<i>POL108R</i>	<i>POL407B</i>	<i>BRIT1</i>	<i>SOC1</i>	<i>CUL1</i>	<i>CUL2</i>
44	Iran, Islamic Rep.	9.2	1.44	4.03	-1.43	18.1	16	-1.27	0	0	0	4.1
45	Jamaica	8	10.49	4.8	-2.31	6.74	86	-0.07	1	0	55.5	13.3
46	Jordan	6	92.51	2.97	-0.86	52.52	38	-0.32	0	0	0.3	5.5
47	Kazakhstan	8.3	13.19	6.77	-1.5	34.22	23	0.34	0	1	2	15.9
48	Kenya	8.8	35.03	0.72	0.35	21.94	41	-1.08	1	0	19.3	7.3
49	Kyrgyz Republic	9.1	52.45	0.73	-1.49	46	31	-1.07	0	1	0	0
50	Lao PDR	9	65.02	0.71	-0.72	31.38	18	-0.04	0	1	0.2	25.2
51	Lesotho	7.7	63.39	0.82	-0.61	53.89	55	-0.02	1	0	29.8	23.5
52	Macedonia. FYR	7.2	98.47	3.89	-1.27	43.25	54	-0.43	0	1	1	28.3
53	Madagascar	8	48.08	0.39	-2.55	29.14	53	-0.01	0	0	22	8
54	Malawi	7.7	51.39	0.25	0.62	16.26	46	-0.01	1	0	31.5	13.6
55	Malaysia	6.5	7.53	7.03	-1.07	68.2	36	0.23	1	0	1.4	9.1
56	Maldives	8.5	124.27	3.51	-2.58	62.8	35	0.1	1	0	0	12
57	Mali	8.2	82.22	0.55	0.06	21.84	74	-0.1	0	0	0.2	10.2
58	Mauritania	8.5	108.92	0.84	0.38	42.76	45	-0.38	0	0	0	17.9
59	Mauritius	5.6	54.63	5.97	-2.35	44.08	75	0.72	0	0	0.9	17.1
60	Mexico	7.7	1.08	9.72	-1.38	20.31	50	-0.5	0	0	1.2	22.6
61	Moldova	7.7	72.8	1.23	-1.13	52.28	35	-0.23	0	1	0	21.8
62	Mongolia	8.3	91.38	1.5	-1.94	46.39	63	0.65	0	1	0	3
63	Morocco	7.7	34.35	2.37	-2.17	28.11	37	-0.43	0	0	0	10.5
64	Mozambique	8.5	81.3	0.37	-0.66	29.96	61	0.24	0	0	6.8	34.8
65	Namibia	6.5	104.09	4.23	0.27	27.49	71	0.91	1	0	64.2	26.9

		<i>CORR09R</i>	<i>AID07</i>	<i>EC10</i>	<i>ZEC3</i>	<i>EC4B</i>	<i>POL108R</i>	<i>POL407B</i>	<i>BRIT1</i>	<i>SOC1</i>	<i>CUL1</i>	<i>CUL2</i>
66	Nepal	8.7	21.29	0.36	-1.23	14.8	44	-1.88	1	0	0	17.3
67	Nicaragua	8.5	150.19	1.02	-1.13	35.68	58	-0.19	0	0	4.4	18.5
68	Niger	8.1	38.32	0.3	0.65	3.04	38	-0.67	0	0	0	12.4
69	Nigeria	8.5	13.24	1.12	-0.67	23.53	48	-2.09	1	0	15.8	7
70	Pakistan	8.6	13.8	0.88	-0.45	13.15	35	-2.39	1	0	0.8	21.3
71	Papua New Guinea	8.9	50.52	0.99	-0.91	50.41	73	-0.7	1	0	58.4	0.9
72	Paraguay	8.9	17.62	1.99	-1.15	35.45	41	-0.45	0	0	1.9	10
73	Peru	7.3	9.12	3.77	-0.03	18.72	57	-0.72	0	0	2.7	29.2
74	Philippines	8.6	7.29	1.62	1.4	28.94	56	-1.31	0	0	3.8	22.4
75	Rwanda	7.7	76.4	0.36	-0.1	13.13	17	-0.11	0	0	11.6	48.8
76	Senegal	8	73.34	0.95	0.32	25.23	52	-0.19	0	0	0.1	22
77	Serbia	7.5	113.65	5.44	-0.5	29.82	62	-0.71	0	1	1	20.4
78	Seychelles	6.2	102.67	10.73	-0.95	93.36	42	0.97	0	0	1.1	23.5
79	Sierra Leone	8.8	100.6	0.31	6.75	18.12	42	-0.23	1	0	4.8	12.9
80	Solomon Islands	8.2	493.84	1.09	-0.92	12.38	71	0.43	1	0	39.8	0
81	South Africa	6.3	16.94	5.93	-1.37	22.68	73	0.04	1	0	39	32.8
82	Sri Lanka	7.9	30.62	1.62	-2.22	23.49	34	-1.89	1	0	0.4	4.9
83	St. Lucia	4	115.48	5.7	-2.05	48.35	85	0.62	1	0	6.3	5.6
84	St. Vincent and the Grenadines	4.6	604.1	5.09	-1.47	43.04	84	0.79	1	0	40.7	18.2
85	Sudan	9.5	52.22	1.14	-0.27	16.41	23	-2.29	1	0	0.1	18.1
86	Suriname	7.3	295.61	4.75	9.92	-10.18	78	0.24	0	0	36.6	25.5
87	Swaziland	7.4	44.01	2.56	0.85	53.1	25	0.1	1	0	33.9	10.8

		<i>CORR09R</i>	<i>AID07</i>	<i>EC10</i>	<i>ZEC3</i>	<i>EC4B</i>	<i>POL108R</i>	<i>POL407B</i>	<i>BRIT1</i>	<i>SOC1</i>	<i>CUL1</i>	<i>CUL2</i>
88	Syrian Arab Republic	8.4	4.15	2.02	0.73	26.43	18	-0.6	0	0	0.2	12
89	Tajikistan	9	33.01	0.55	0.7	32.26	24	-0.92	0	1	0	17.5
90	Tanzania	8.4	68.31	0.42	0.16	3.85	53	-0.18	1	0	11.2	30.4
91	Togo	8.2	19.26	0.4	2.19	35.45	27	-0.48	0	0	6.1	7.4
92	Tonga	8	299.42	2.52	-2.62	28.64	70	0.41	1	0	61.9	3.3
93	Tunisia	6.8	31.41	3.42	-0.99	38.35	20	0.23	0	0	0	22.8
94	Turkey	6.6	10.85	8.87	-2.25	17.74	50	-0.77	0	0	0	9.1
95	Uganda	8.5	56.7	0.4	2.39	17.77	48	-1.09	1	0	1.9	29.8
96	Uruguay	4.3	11.13	7.3	0.03	20.78	71	0.81	0	0	1.9	11.1
97	Vanuatu	7.8	248.63	2.23	-0.93	32.83	78	1.27	1	0	54.6	3.8
98	Venezuela, RB	9.1	2.83	8.3	2.79	18.72	27	-1.2	0	0	1	18.6
99	Vietnam	8.3	29.49	0.81	-0.07	59.8	19	0.28	0	1	0.2	25.8
100	Zambia	8	81.08	0.93	-1.83	29.78	37	0.14	1	0	31.9	14.6

