Massoud Valipoor
Flemming Bakke

BI NORWEGIAN BUSINESS SCHOOL

MASTER THESIS

The effects of political institutions on economic development in Sub-Saharan Africa

Date of submission:
01.09.2016

Campus:
BI Oslo

GRA 19003 Master Thesis

Supervisor:

Anne Welle-Strand

Program:
Master of Science in Business
Majors in Economics and Leadership and Change

Acknowledgements

This thesis concludes the end of our Master of Science in Business at BI
Norwegian Business School. There have been many ups and downs throughout
the process of writing this thesis, but the good times have far outweighed the bad,
and valuable skills and knowledge have been gained.

We would like to thank our supervisor Anne-Welle Strand. Her help and insights
in the subject have been invaluable.

Finally, we are very pleased to submit a thesis we can be proud of.

Oslo, August 31st 2016

_____   _____
Flemming Bakke   Massoud Valipoor

Abstract

This thesis examines the effects of political leadership on economic development in Sub-Saharan Africa. In order to measure economic development, GDP growth per capita is used as a proxy. Moreover, political leadership is operationalized thorough the quality of political institutions. The quality of political institutions is measured by the way of the World Banks' six World Governance Indicators.

By using panel data and a fixed effect model, with growth of GDP per capita as the dependent variable, this study is finding that institutional quality matters for economic growth in Sub-Saharan Africa. Moreover, Foreign Direct Investment, trade and foreign aid is found to be significant for economic growth in Sub-Saharan Africa. Interestingly, Foreign Direct Investment is found to have a greater effect on GDP per capita growth than foreign aid in Sub-Saharan Africa.

Table of contents

List of abbreviations

CoC   –   Control of Corruption

ELF   –   Ethno-linguistic fractionalization

FAGDP –   Official aid received relative to GDP

FDI   –   Foreign direct investment

GCF   –   Gross capital formation

GDP   –   Gross domestic product

GE   –   Government Effectiveness

GGPC   –   Gross domestic product growth per capita

IQ   –   Institutional Quality

LFDI   –   Lagged foreign direct investment

LGCF   –   Lagged gross capital formation

LGGPC –   Lagged gross domestic growth per capita

PS   –   Political Stability and Absence of Violence

RoL   –   Rule of Law

RQ   –   Regulatory Quality

SSA   –   Sub Saharan Africa

V&A   –   Voice and Accountability

WGI   –   World Governance Indicators

List of figures and tables

PART I: Introduction

1.1 Motivation and purpose of the study

Norway has long been recognized as one of the countries that are in the forefront of the dispersal of monetary aid to developing countries. A big portion of this aid, in conjunction with aid from other sources, is funneled towards Sub Saharan African (SSA) countries. Although the combined worldwide aid amounts to USD 46.1 billions in 2014 (World Bank 2016b), it does not appear to have materialized in a tangible increase in economic development proportionate to this massive influx of aid. This makes SSA an interesting area of study. SSAn countries are particularly interesting when compared to the so-called "Asian Tigers", which comprises of the countries of South-Korea, Singapore, Taiwan and Hong Kong. These groups both encompassed impoverished countries that received monetary aid but while (Ibid) the latter group went on to become so-called "growth miracles", the former seems to be stuck in an economic stalemate.

As the cases of SSAn countries and Asian Tigers seems to suggest, economic development in aid-receiving nations seems to be moderated by some other dynamic than the amount of aid received. This thesis proposes that political institutions moderate economic development, measured through gross domestic product (GDP) growth. The effects of leadership and corruption again mediate the relationship between political institutions and economic development.

Throughout modern history there have been many cases where authoritative and undemocratic leaders have led their respective countries to what is considered growth miracles. Examples of such countries are China, South-Korea, Singapore, Taiwan and Chile. This might seem as an inconvenient paradox, going against the belief that economic development should go hand in hand with political freedom and democracy. One may argue that it is actually the other way around, and that as a country develops economically, a better quality of life for the inhabitants will follow, which in turn might lead to a surge in demand for more personal freedom and political transparency. Hopefully, by attempting to answer the chosen research question, this thesis will also help shed some light on this apparent inconsistency.

1.2 Background

Africa is a continent characterized by rich natural resources, emerging markets and high levels of corruption (International 2014). Corruption, for the purpose of this paper, is defined as "the abuse of entrusted power for private gain" (International 2016). GDP per capita was (current USD) 1570 on average for Sub-Saharan Africa (World Bank 2015a), while the world average was (current USD) 10 000 (Ibid). The well-known idea of convergence in economics implies that poorer countries have the ability to grow faster than rich countries, because they can replicate technology and methods of richer countries. In addition, they will experience a smaller degree of diminishing returns (especially in capital). Considering how poor SSA is (low average GDP per capita), they do not display the degree of growth one would expect. This is especially evident when one compares this lack of growth with the meteoric rise of the Asian Tigers in 1960-70's with a peak growth of 13,9 in Singapore in 1970 compared to the average growth of 4.4 in SSA between 2006-2015 (World Bank 2016e). 4.4 % annual growth is not so small, however, when looking at GDP growth per capita (GGPC). GDP growth can be defined as a measure of the rate of change of a countries overall output of goods and services from one year to the next. SSA has had a GGPC of 1.78% during the last ten years. It is deemed likely that unstable politics, corruption and poor governance limit SSAs economic development. The following graphs demonstrate the economic growth of the Asian Tigers from 1966 to 1984, and the growth of SSA during the last 20 years. The remarkable difference between the two is undeniable.

Figure 1: Asian Tigers' GDP per capita in thousand dollars
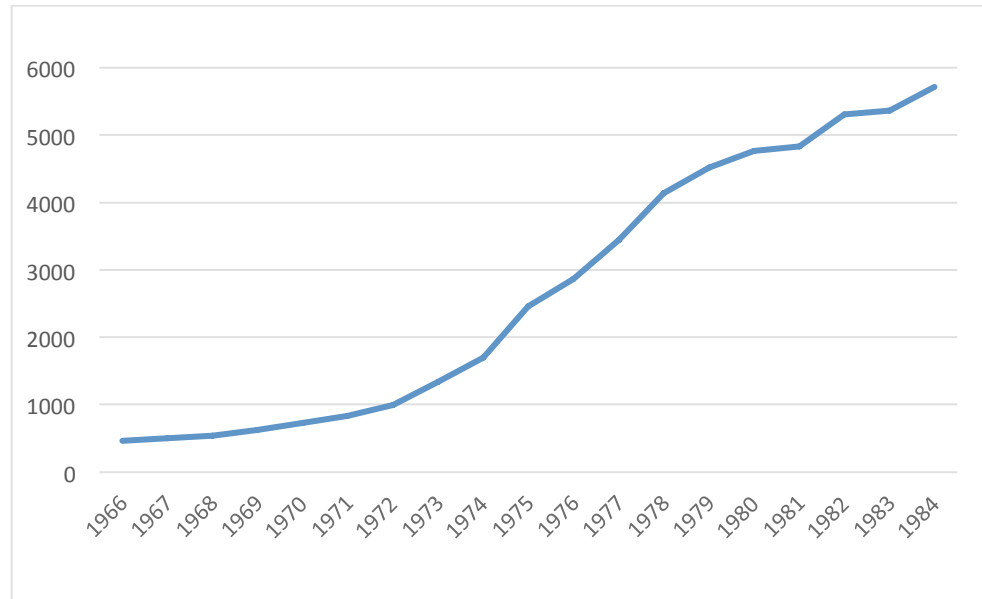
Source: worldbank.org

Figure 2: SSAs' GDP per capita in thousand dollars
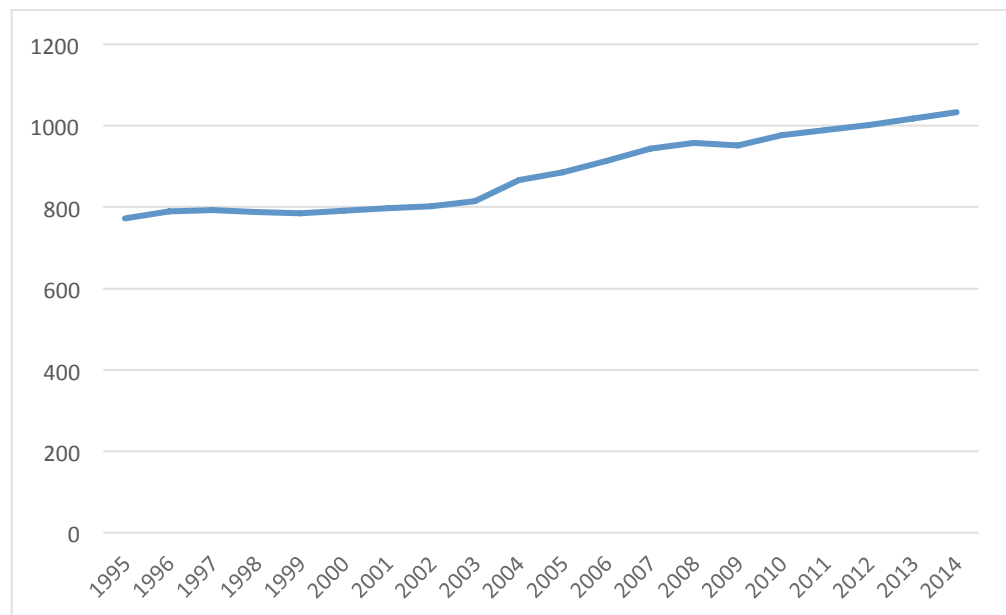
Source: worldbank.org

As aforementioned, SSAn nations receive large amounts of foreign aid. A big proportion of this aid is meant to support the economic development. If the foreign aid recipient is a country deemed corrupt, the marginal benefit of this aid is most likely less than if the beneficiary was a country considered less corrupt.

Thus, it is very interesting and potentially beneficial to look at economic growth linked to corruption. Corruption affects the quality and stability of political institutions. Poorly run institutions can in turn lead to a possible decrease in economic growth and development.

At this point it is worth pointing out the large discrepancy in economic growth amid countries in SSA. Countries like Botswana have experienced a large growth in GDP the last years, and Transparency International also rates the country amongst the least corrupt SSAn. In contrast, many other African countries have little growth and high levels of corruption, and there is most likely a link between the high levels of corruption and low economic growth (Patton 2014). Political leadership might explain this large divergence concerning growth and levels of corruption. African nations are known for large variations in political leadership styles, ranging from benevolent leaders like Nelson Mandela to infamous leaders like Idi Amin. This variation in leadership styles can have a profound effect on the stability and efficiency of political institutions and economic growth. A case comparison between the SSAn countries of Rwanda and Burundi that exemplifies the effects of political leadership on economic development will follow later in the theoretical background part.

1.3 Development and aid

SSA is the region in the world that receives most foreign aid. This aid is largely meant to boost economic development. Foreign aid can potentially help improve economic development by making more capital available for investments, which again can improve productivity. Foreign aid can be defined as: "...*the international transfer of capital, goods, or services from a country or international organization for the benefit of the recipient country or its population*" (Williams 2015). This thesis will not encompass humanitarian aid, but merely focus on aid meant for economic development.

In 2013, SSA received a total of 46.8 billion dollars (World Bank 2016c). Norway gave 31.7 billion NOK in total foreign aid in 2013, which amounts to 0.99 percent of their gross national income (Norad 2015). This makes Norway considered to be the country that gives most aid per capita in the world. The sheer amount of this

foreign aid underlines the importance of measuring and evaluating the effects of aid, in order to maximize the impact. Thus, due to the trust-based nature of aid and the highly detrimental effects that corruption and mismanagement can have on the intended effects of aid, scrutinizing the political leadership and political institutions in aid-receiving countries should be of vital interest. For corrupt leaders monetary aid may simply mean "free money", suitable for fattening their and their supporters pockets.

Foreign aid is meant to benefit a country's inhabitants. Even though wealthier countries donate enormous amounts of aid to boost economic development in poorer states, the results of this aid are still intangible. Despite Africa being the continent that receives most foreign aid, it has not shown the economic development in par with the aid received. The aid and the idea of convergence (poor countries grow faster) imply that SSA should experience a much higher growth than what is currently the case. Some of the underlying explanations for this phenomenon will hopefully be brought forward with the conclusion of this thesis.

1.4 Research question and subject of research

Based on the abovementioned, the following research question is proposed:

"How will economic development in Sub-Saharan African countries be mediated by the effect of their political leadership?"

As already stated, economic development is a crucial variable telling of a country's quality of life. Economic development can be defined as progress in the economy. It usually refers to the adoption of new technologies, transition from an agriculture based to an industry based economy and general improvements of living standards (Dictionary 2016). Unfortunately, economic development is hard to measure. Therefore, for the purposes of this thesis, economic growth will be used as a proxy for economic development. By looking at year-to-year changes in GDP, economic growth can be assessed. It can be defined as $(GDP_{+1}-GDP)/GDP$. However, this will not distinguish between growth resulting from an increase in productivity, and growth resulting from population increase.

Consequently, year-to-year changes in GDP per capita will be used as a measure for economic growth.

As aforesaid, the purpose of this thesis is to look at how political leadership affects economic development. It is believed that political leadership affects the quality of institutions, and that the quality of institutions highly affects economic growth. Correspondingly, a comparison amongst a sample of seemingly comparable aid-receiving countries with a divergent political leadership would be highly fitting for the purpose of this thesis. More specifically, when comparing nations with many initial similarities, the likelihood for any unobserved variables influencing economic development is reduced, which in turn is expected to strengthen the explanatory effects of the selected countries' political leadership. Accordingly, this thesis will use a sample of 40 countries considered to be developing countries, situated in SSA (see appendix A). The aim is to measure the effects of political leadership by assessing the link between economic growth, quality of institutions, aid and corruption. The causes of economic growth are a vast subject, thus this thesis will have clear limitations in the variables considered. Also, due to the sheer size of the sample, disparities in some key areas like population size, culture, infrastructure and resources are expected. Nevertheless, it is believed that meaningful results will be found.

PART II: Theoretical background

In this part of the paper theories and models relevant for this thesis will be elaborated upon. Firstly, some theory and background information concerning the elusive concept of leadership will follow. Secondly, relevant growth theories will be expounded. Thirdly, a comprehensive literature review presenting some of the major findings in the field will ensue. Lastly, this part will be summed up by a case example shedding light on the effects of political leadership on economic development.

2.1 Leadership and political institutions

The literature shows a clear gap in addressing the effects of political leadership on economic development. This is presumably due to the fact that leadership is inherently challenging to define and measure. Quantifying the essence of leadership is highly difficult. Consequently, this paper proposes that the quality of leadership can be indirectly measured through the quality of political institutions. Researchers Bruce E. Winston and Kathleen Patterson did a study addressing "the elephant in the room" in social sciences; the elusiveness of the term *leadership* and its myriad of definitions. Their study identified 90 variables that together cover the whole of leadership (Winston and Patterson 2006). What follows are the first sentences of this integrated definition of leadership:

"A leader is one or more people who selects, equips, trains, and influences one or more follower(s) who have diverse gifts, abilities, and skills and focuses the follower(s) to the organization's mission and objectives causing the follower(s) to willingly and enthusiastically expend spiritual, emotional, and physical energy in a concerted coordinated effort to achieve the organizational mission and objectives." (Winston and Patterson 2006, 7)

With this integrated definition in mind it is not farfetched to imagine the profound impact that different political leaders' personalities can have on their respective nations' stability and political institutions and thus, returning to an issue accentuated in the initial part of this thesis, presumably to some degree also explain the large differences in growth and corruption levels witnessed in SSA.

Professor Carl J. Friedrich of Harvard University accentuates the link between leadership and political institutions with the following: "In order to become a ruler, the leader's stabilized power has to be institutionalized, that is to say structured" (Friedrich 1961, 9). The keyword here is *institutionalization*, as that is what bridges leadership with rule. A political structure, he ensues, is comprised of political institutions. Institutions can be defined as: "…a set of social factors, rules, beliefs, values and organizations that jointly motivate regularity in individual and social behavior" (Greif 2006, as quoted by Alonso and Garcimartín 2013). Moreover, following empirical research, the researchers Alonso and Garcimartín identified the most important determinants of institutional quality in a given country to be: income per capita and income allocation, the tax systems' efficiency and the educational level in the population (Alonso and Garcimartín 2013). These findings are somewhat reflected in the variables used in the ensuing regression analysis.

Consequently, it is implied by the abovementioned that leaders have a huge impact on their followers in the way they select, influence and train them. Leaders in turn become rulers when their power becomes institutionalized in political institutions. Thus, a "good" ruler will pave the way for high quality political institutions, whilst a "bad" one will lead to poor political institutions. Accordingly, the quality of political leadership can be measured by the improvement or decline in political institutions. The quality of political institutions will again correlate with the levels of growth and corruption in a given country, directly affecting the inhabitants' wellbeing through income per capita, fair tax systems and educational levels. Henceforth, institutional quality will function as a proxy for political leadership.

Next, different growth theories that will be applied to explain some of the results of the regression analysis will follow.

2.2 Growth theories

Economic growth is a complex phenomenon. There are many different theories on growth, but none of them is universally acknowledged as the right one. In this

thesis, three growth theories are used to constitute the framework. These theories are expected to help explain why growth in the aid-recipient countries scrutinized in this thesis, behave in the way they do.

2.2.1 Classical growth theory

The generalized classical theory on growth is a combination of the contributions from the classical economists like Adam Smith, Robert Malthus and David Ricardo. These great economists of past times differ in many beliefs, but on some points, they agree. They believe that the economy has a subsistence level (Jain and Bojaj 2008). If GDP goes above this level (the growth is above its steady state) the population will increase. When the population goes above its subsistence level, GDP will in turn decrease, due to limited resources. This in turn will cause the population to decrease (Ibid).

2.2.2 The Harrod-Domar model

The Harrod-Domar model is a growth model that emphasizes the importance of saving and investment (Ibid). The level of growth depends on the national level of saving and the productivity of capital investment. The former have a duel character in this model. Firstly, it will generate income, and secondly it will augment the productivity of capital by increasing the capital stock. If investment is positive, real income and output will continue to grow. But in order to maintain a full employment equilibrium level of income, the expansion of both real income and output is needed at the same rate as the productive capacity of the capital stock. This model states that if these are not equal, the economy will move away from its equilibrium growth path. Since foreign aid will increase the capital stock, this model is deemed useful for this thesis.

2.2.3 Neo-classical growth theory/Solow Swan model

Neoclassical growth theory is a theory, which was developed independently by Solow and Swan in the 1950s. The model is micro founded, which means that the underlying assumption is based on individual choices and preferences and rational

behavior amongst agents is assumed. The model identifies three factors that explain growth: *capital*, *labor* and *technology*. The model emphasizes technology as a driver of growth. The model also explains how growth depends on the investment rate of inhabitants in a country. Since aid will potentially increase the investment rate in a country, this is considered relevant to this thesis. The model is criticized for assuming rational human behavior. Since foreign aid can be defined as inflow of capital to a country, it can be valuable to look at the effects of this in the light of the Solow-Swan model (David 2011, 10-30).

2.2.4 Endogenous growth

The last growth theory we will look at is the theory of endogenous growth. It states that growth is the result of internal processes, government, human capital and access to capital (Helpman 1992). It is developed in the 1990s with Romer and Lucas being among the most important contributors. Supporters of this theory claim that it explains the difference in productivity in industrialized countries, compared to the productivity of emerging markets. The endogenous growth model is the first to include human capital. Human capital has increasing returns to scale, since humans learn from each other. This is in contrast to exogenous growth models, where economic growth is primarily determined by exogenous factors.

It is expected that all of the growth theories will be of some relevance. The classical theories, although they might be considered to be slightly outdated, can give an understanding of how growth and population behaves. The neo-classical theories can potentially help to explain how capital accumulation and growth is linked. The endogenous theory is useful because it emphasizes the value of human capital, and how growth in a country can be endogenous.

2.2.5 Business cycles

The theory of business cycles states that an economy will experience fluctuations over a period of time (Arnold 2002). The economic activity will go in cycles. GDP will expand, reach a peak, then contract, reach a trough, then repeat the cycle. If business cycles are present in our sample, it is very likely that last year GDP is an explanatory factor for present year GDP.

2.3 The case of Rwanda and Burundi

In order to better illustrate how political leadership might affect economic development, a case example highlighting this potentially causal relationship will now ensue.

The reasoning for the choice of these two SSAn countries was rooted in their strikingly similar prerequisites, leading nevertheless to a currently vastly different economic situation. Rwanda and Burundi are two central/east African countries with a common border. They are two of the smallest countries situated in mainland Africa and roughly of the same geographic size and population. They share a common history, with both being former German and Belgian colonies, with the latter ruling the two countries as a European colony named Ruanda-Urundi. Correspondingly, they both have a bloody past with some of the most brutal human calamities of recent times (Kiwuwa 2015). Furthermore, both countries are members of the East African Community. Also, both countries have received relatively high degree of foreign aid relative to GDP and per capita (World Bank 2016a). They are also both resource-poor countries with agricultural economies. According to the World Bank, Rwanda and Burundi had an aid relative to GDP of approximately 16.25% and 19% (World Bank 2016b, 2015b). Nonetheless, the startling similarities seem to come to an abrupt halt at this point. Following the devastating genocide of 1994, Rwanda's economy has seen an exponential surge. The country is frequently voted as the least corrupt country in the region with a rank of 44 amongst 167 countries on Transparency Internationals' corruption perceptions index (International 2015), and the best to conduct business in (Fitzgerald 2010). Contrastingly, Burundi has a rank of 150 on the same index, and is deemed the most corrupt country in the East African Community (Kiwuwa 2015). Also, almost 70 percent of the countries population are below the poverty line (Joel Tokindang and Gbetnkom 2014). The following graph shows GDP per capita for Rwanda and Burundi from 2002 to 2013. Clearly, Rwanda is the most successful in terms of growth per capita.

As briefly mentioned above, the differences in the occurrence of corruption are sizable. In 2005, Burundi had a corruption score of 23 (scale goes form 0-100 with 0 being most corrupt), and Rwanda had 31 (International 2015). In 2015, Burundi had a score of 21, and Rwanda had a score of 54 in the same scale. In

another source of corruption indicators obtained from the World Bank (World Bank 2015c), the scale goes from 2.5+ to -2.5 with -2.5 being the most corrupt. In 2005, under the presidency of president Pierre Nkurunziza, Burundi had a score of -0.9. This decreased (more corruption) to -1.19 in 2014. In the year 2000, when president Paul Kagame took office, Rwanda on the other hand had a corruption score of -0.65. 14 years later, in 2014, the corruption index was 0.83.

In addition to differences in level of corruption, the two nations also differ in terms of economic growth. The ensuing graph shows GDP in Burundi and Rwanda during the last 20 years. There seems to be a clear pattern.

Figure 3: Burundi and Rwanda GDP in thousand dollars
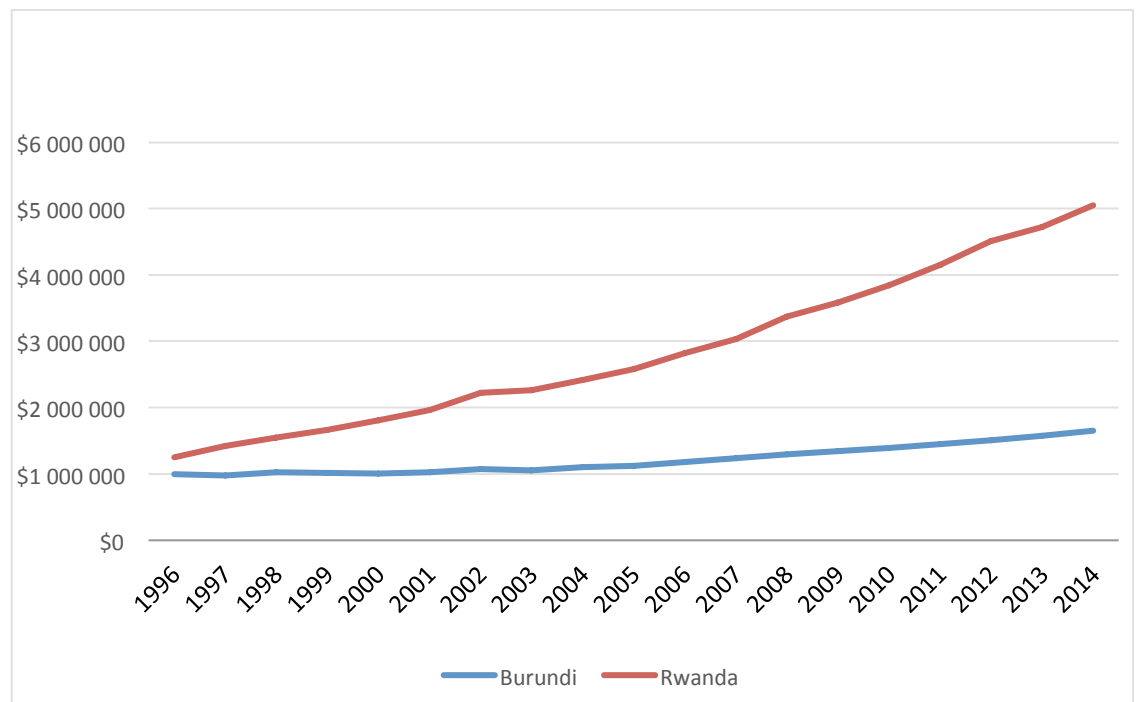
Source: worldbank.org

Economic growth is an important determinant for the quality of life of a country's inhabitants. However, increased economic growth can also be due to an increase in population. As a country experiences population growth, this growth may also be reflected in terms of GDP as well, without necessarily making the inhabitants any richer. Therefore, it is important to look at GGPC. Even though a country can experience GGPC without necessarily making the median of their inhabitants better off due to income inequalities, GGPC is still a very important determinant

of a country's economic success. The subsequent graph shows a huge difference amid the two countries' GDP per capita.

Figure 4: Burundi and Rwanda GDP per capita in thousand dollars
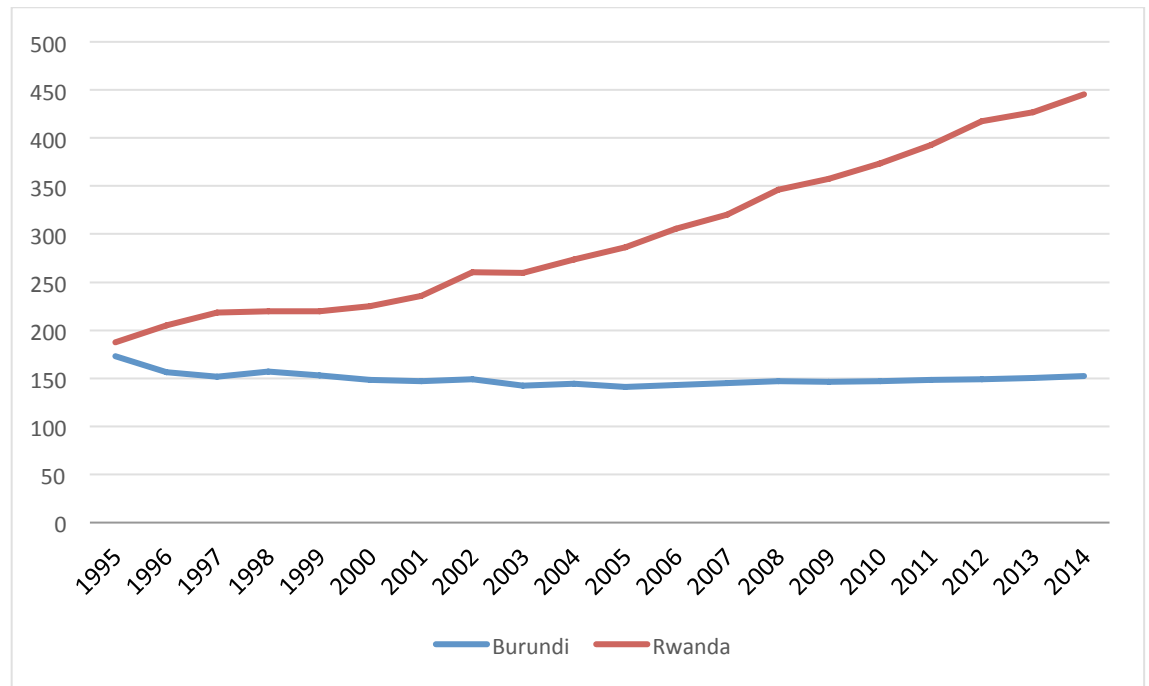
Source: worldbank.org

The present leader of Rwanda, the incumbent president Paul Kagame, has both been praised for his socioeconomic successes in transforming the country into a modern state as well being accused for veering towards authoritarianism, resulting in increased suppression of the press and the political opposition, with assassinations and disappearances following in the wake. Recently, Kagame has also started to campaign for a constitutional amendment in order to pave the way for a third presidential term, a possibility he previously had categorically dismissed.

President Kagame seems to display several traits distinctive to autocratic leadership. The rapid economic rise of Rwanda seems at the onset to have been made on the back of individual liberties. Whether this surge has necessitated an autocratic leader or not is an interesting inquiry. Pierre Nkurunziza, the president of Burundi, has some characteristic differences with the Rwandan president. Whereas president Kagame is well known internationally as a charismatic and forceful leader, president Nkurunziza is his obscure counterpart, rarely heard of on

the international political scene. As is currently desired by Kagame, Nkurunziza has been sworn in for a third term, something that is considered unconstitutional under Burundian law.

Although this case example proves no casual links, as there might be other underlying reasons explaining the differences in Rwanda and Burundi's current economic situation. Nevertheless, this case comparison indicates that there might be a possible correlation between the two presidents' leadership styles and the degree of corruption present in their respective countries. The much higher rate of growth and overall healthier economic development displayed by Rwanda is a probable sign of the dyadic effects of political leadership on corruption, which in turn affects economic growth. This case example will be revisited in part IV of this paper. Next, the literature review will be presented.

PART III: Literature review

In order to be able to understand the connection between economic development and the leadership of aid-receiving countries, it is appropriate to pinpoint some of the underlying reasons for why there exists a divide between rich and poor countries in the first place. As initially mentioned, for the purpose of this thesis, economic growth will be used as a substitute for economic development. If one were to follow neo-classical economic thinking, the variations in economic growth between different countries are positively correlated with the differences in the way the respective countries amass capital. While Solow (1956) explains this difference in growth with variations in saving rates amongst countries, Cass-Koopmans on the other hand believe that disparities in preferences between leisure and consumption can explain the this difference (Koopmans 1965; Cass 1965). Later, Romer (1986) and Lucas (1988) introduced the notion that human and physical capital accumulation also can be used to explain economic growth. Moreover, Romer (1989) expanded upon the neo-classical models by also including innovation, deeming the level of innovation in a country to be directly relevant to economic prosperity. Although these models provide useful insights of various economical mechanics, they fail to give a thorough explanation of economic growth.

3.1 Growth and political institutions

In a bid to offer a more fundamental explanation for economic growth instead of only proximate ones, North and Thomas (1973) proposed differences in institutions as an explanation for variations in growth. According to North: "Institutions are the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction" North (1990, 3). In the words of Acemoglu, Johnson and Robinson: "Of primary importance to economic outcomes are the economic institutions in society such as the structure of property rights and the presence and perfection of markets" Acemoglu, Johnson and Robinson (2005, 389). The researchers claim that without well-functioning institutions, individuals are not provided with the incentives to invest or embrace more proficient technologies. Institutions are also vital in helping to assign

resources to where they will have the most effect. Furthermore, they decide who gets the profit, proceeds and the remaining right of control (Acemoglu, Johnson and Robinson 2005). In other words, good institutions are essential to a healthy economic environment, and this in turn is likely correlated with economic growth. Conclusively, bringing attention back to this chapters' initial inquiry into why there exists a divide between rich and poor countries, Acemoglu, Johnson and Robinson suggest that the answer to this question is strongly correlated with the state of the institutions in the respective countries (Ibid). One cannot say anything meaningful about the former without also considering the latter.

3.2 Political power and institutions

It is vital to point out that institutions are endogenous; they are intertwined with the society in which they exist, with the purpose to serve this society. However, it is not given that inhabitants of a country are a homogenous group. Countries may have more than one group. These groups have different preferences, and thus a conflict of interest may arise. In a fractionalized country the balance of political institutions is determined by each groups political power. Consequently, the group with the most political authority is prone to secure the set of institutions that it favors (Ibid). This means that political power determines political institutions.

Acemoglu, Johnson and Robinson (Ibid) divide political power into two parts: *de jure* and *de facto political power*. De jure political power in a society encompasses power that stems from political institutions. Examples are the form of government (autocratic/democratic), and the degree of restraints placed on politicians. De facto political power on the other hand goes beyond political institutions. Individuals that wield de facto political power are not necessarily allotted power by the political institutions. Examples can be peasants in an agricultural society that revolt against authority or dictators that seize power through a coup d'etat (Ibid). It is evident from the literature that economic growth is determined by the state of a country's political institutions, which again is mediated by the presiding political power in the country.

3.3 Corruption and growth

According to Mauro (1995) some researchers, starting with Leff (1964) and Huntingon (1968), suggest that corruption might increase growth. This happens mainly through two mechanisms. Firstly, corrupt practices such as speed money might help individuals avoid bureaucratic delay. Secondly, government employees might work harder if they are allowed to levy bribes, especially when the bribes act as a piece rate. While the former will raise the probability that growth will increase when bureaucratic regulations are cumbersome, the latter will have effect regardless of the bureaucratic efficiency.

Contrastingly, Shleifer and Vishny (1993) argue that corruption tends to lower economic growth. They identify two reasons for why corruption will slow economic growth. The first reason is the weakness of central government. A weak central government will allow other government agencies and bureaucracies to enforce independent bribes. When a foreign investor needs to bribe numerous government agencies to be able to operate in a country, the cumulative bribe price will be high, thus lowering the incentive for foreign investment in that country. The second reason is that corruption demands secrecy. This can shift investments away from high value projects, towards lower value projects. This is due to the fact that the inherently secretive nature of corruption makes the probability of keeping corruption a secret decisive when choosing projects.

In the attempt to measure the extent to which government institutions affect economic growth, one has to recognize that institutions and economic variables evolve jointly: not only do institutions affect economic performance, but economic variables may also affect institutions (Mauro 1995). To address the case of this endogeneity, Mauro uses the ethno-linguistic fractionalization index as an instrument, arguing that ethno-linguistic fractionalization is highly correlated with both corruption and other institutional variables. Moreover, Mauro states that ethno-linguistic fractionalization can be said to be exogenous to both corruption and other institutional variables. Ethno-linguistic fractionalization is the probability that two random individuals from the same country do not belong to the same group of people. Furthermore, Mauro finds evidence that corruption lowers private investments, thus reducing economic growth. This result holds even for countries where bureaucratic delay is very cumbersome. He finds a statistical significant negative link between corruption and investment, and

corruption and growth. Mauro says that corruption lowers investments because investors see bribes as an additional tax, hence lowering the incentive to invest.

3.4 Economic growth and aid

The researcher Victor Levy found evidence for a positive and significant correlation between aid and economic growth and investment in SSA, using both time series and cross sectional observations (Levy 1988). The study also established that capital accumulation contributed to sustained economic growth. This last finding the researcher states, is contrary to the common understanding that capital investment had failed to generate income growth in the early 1970's (Ibid).

In another study investigating whether SSA is affected differently by factors affecting Foreign direct investment (FDI), Elizabeth Asiedu (2002) arrived at results indicating that Africa is indeed different, implying that successfully implemented policies from other regions will not necessarily create the same results when applied to SSA. More specifically the researcher state, FDI is encouraged to non-SSAn countries by the way of a more developed infrastructure and a higher return on capital, whereas these same factors have no effect on FDI directed at SSA (Ibid). Additionally, even though the factor openness to trade encourages FDI to SSAn and non-SSAn countries alike, the marginal benefit from the said factor is higher for non-SSAn countries than SSAn countries. This, according to the researcher, suggests that liberalization of trade is more valuable for non-SSAn countries than for SSAn ones, resulting in an increase in FDI to non-SSAn countries. Asiedu also underscores another finding, which is that, ceteris paribus, a country placed in SSA will receive less FDI based on its geographical location alone (Ibid).

The researcher suggests three implications for policies, derived from her study: the first one being the need for SSAn countries to change their trade regimes by liberalizing them, consequently improving their FDI streams. In order to achieve this, the reforms need to be considered credible and permanent by potential investors. Secondly, successful policies from other regions cannot be blindly applied in SSA as their impact may be different here than in non-SSA. Lastly, Asiedu suggests that international organizations like the World Bank can play a

vital role in the changing of perception towards African countries. Thus, paving the way for increased FDI by altering the impression that Africa is inherently risky, a notion somewhat based on ignorance in the researchers' view (Ibid). Asiedu's findings seems to suggest that FDI to SSA is hampered by their image of high risk and non-liberal trade regimes. This leads to a downward spiral where the negative image lessens the marginal benefit of a more open trade regime in SSA in terms of increased FDI, which again makes the SSAn governments less inclined to implement the said liberalization.

In another study attempting to determine whether there exists a long-term and a short-term correlation between foreign aid and economic growth, Mallik Girijasankar (2008) found that there is indeed a long-term link between international aid and the living standards in the six poorest SSAn countries. Although no significant short-term correlation were established, a significant negative long-term effect between foreign aid as a percentage of real GDP and real GDP per capita was found in five of the six countries examined (Ibid).

Although the researcher does no attempt to examine the underlying reasons for the findings in his paper, he speculates, amongst other things, that a big portion of the aid given to the impoverished countries included in the study goes to meet humanitarian needs, rather than to expand the productivity of the economy (Ibid). The researchers' conjectures would imply that aid-receiving nations must carry their impoverished populations past a certain threshold, before any aid received can help grow their economies instead of merely catering to their residents' humanitarian needs.

3.5 Aid and political institutions

In their study, the researchers Stephen Knack and Deborah A. Bräutigam (2004) ask how dependence on substantial amounts of aid affects governance in SSAn countries. They categorized their findings in three parts: first, there is a strong correlation between high aid levels in African countries and declines in governance. Second, there is an equally strong relationship between high aid levels and a lesser tax share of GDP. And lastly, increased GDP per capita is associated with enhanced governance (Ibid). The researchers also argue that large

amounts of aid over a long period of time can weaken governmental institutions. To combat this, the researchers suggest that official aid needs to be much more selective in terms of the recipients. Also, extensive aid programs must be temporary instruments for development (Ibid).

In another study, Alberto Alesina and Beatrice Weder (1999) examined whether corrupt governments received less foreign aid. Their research paper concluded that less corrupt governments do not necessarily receive more foreign aid. In fact, depending on the measurement used, more corrupt governments obtain more aid. Furthermore, the researchers did not find any evidence for reduced corruption as a consequence of increased foreign aid (Ibid). Other interesting findings were that Scandinavian donors reward less corrupt recipients, and that the United States seems to favor democracies, but pays no mind to the recipient countries' quality of governance (Ibid). All in all, the researchers give a resounding no to their initial inquiry. Contrastingly, Mauro (1997) says that it is a possibility that corruption may reduce the effectiveness of aid flow through the diversion of funds from their intended projects. Consequently, this has led to some donor countries scaling back their monetary assistance.

Peter Boone did a study looking at the effectiveness of foreign aid when related to the political regime of beneficiary countries. He found that aid does not increase economic development significantly, nor does it benefit the poor when improvement is gauged in human development indicators (Boone 1996). Furthermore, the researcher found that aid in fact increases the size of government, and that there is no correlation between degree of political freedom (liberal democratic versus highly repressive) and the impact of aid (Ibid). Also, Boone found that liberal political regimes and democracies have averagely 30% less infant mortality when compared to highly repressive regimes. This, the researcher states, may possibly point to short-term aid in support of new political regimes being the most effective way to reduce poverty (Ibid). In the end, the researcher states that his results are in agreement with a model where the politicians increase the welfare of a wealthy elite (Ibid).

Conclusively, Boones' findings do not seem to bare well for the advocacy of aid for the purpose of economic development, having instead an un-intentional bloating effect on the recipient countries government/elite. These findings seems

to support Knack and Brautigams' abovementioned findings, giving credence to the hypothesis of short-term aid being the most effective way to ensure effective governments while reducing poverty.

"Foreign Aid and Regime Change: A Role for Donor Intent" is the name of a study conducted by the researcher Sarah Blodgett Bermeo (2011). As the name implies, the paper examines whether there is any correlation between foreign aid and the probability of democratization in the countries receiving the aid. The data analyzed in the study was extracted from the AidData database, which is a substantial collection of development finance information. The researcher states that evidence points to the characteristics of the aid donor playing a moderating role in the relationship between aid and democratization in the recipient country (Ibid). Upon further elaboration, the researcher states that although aid from democratic donors is positively correlated with the probability of a democratic transition within recipient countries, countries receiving aid from authoritarian donors are less likely to undergo the same type of transition.

Restraining from drawing hasty conclusions, Bermeo explains that the abovementioned positive correlation between aid from democratic donors and democratization within recipient countries cannot necessarily be assigned to the direct effects of the aid, rather it might be a case where donors are disproportionally directing aid to countries where democracy is deemed more likely to blossom (Ibid). Likewise, Bermeo states that in instances where donors unconditionally give aid to authoritarian recipients, this helps entrench the incumbent regime (Ibid).

To summarize this literature review, the research seems to suggest that corruption and weak political institutions are negatively correlated with economic development, by the way of growth. Aid does not seem to necessarily increase economic growth, nor does it lead to democracy.

Next, presentation of data will follow.

PART IV: Presentation of data

Here, a portrayal of the different variables used in the thesis will follow. Also, the case example of Burundi and Rwanda will be reassessed, before ending this part of the paper with a brief discussion of shortcomings amongst the variables.

4.1 Variables

As mentioned in part I, the sample consists of 40 SSA countries. The variables used are based on data gathered from worldbank.org and the World Governance Indicators (WGI) project, which comprises of six dimension of governance based on a research program of the World Bank (see appendix C). For the purpose of this study, it was deemed fitting to apply the WGIs six dimensions of governance in order to describe institutional quality, as they are believed to garner the most essential components of quality institutions, namely the effects of corruption, political stability, accountability and the effectiveness of government. The WGIs were measured biannually up until the 2000.

From the aforementioned growth theories, it is reasoned that growth is the result of internal processes, government, technology, human capital and access to capital. The variables described below are chosen in order to capture these aspects. Some of the variables are self-explaining and require little clarification, while others are more complex, resulting in more in-depth depictions.

4.1.1 GDP growth per capita (GGPC)

GGPC is used as the dependent variable in the regressions. This variable defines yearly growth rate of GDP per capita in percentage, based on a constant native currency (World Bank 2016d). Including population as an independent variable was initially considered, but since the effects of a population increase or decrease already will be captured in *GGPC*, it is not included in the regression. It is believed using *GGPC*, instead of GDP (not per capita) as the dependent variable with population as an independent variable, will get better estimates for economic development. The mean for this variable is 2.03 with a standard deviation 5.91 (see appendix D). The large standard deviation points to large variations in

GGPC. In the regressions, lagged *GGPC (LGGPC)* will be added as an independent variable. The rational behind this is that growth could have a momentum effect with the previous year's growth explaining the present year. This is also supported by the theory of business cycles.

4.1.2 Gross Capital Formation (GCF) as % of GDP

Gross Capital Formation *(GCF)* depicts the percentage of GDP used to add to the fixed assets of the economy, i.e. investments. These assets involve constructions of roads, railways, hospitals, schools, residential and office buildings and so on World Bank (2016d). This variable has a mean of 20.3% with a standard deviation on 9.84, which means that on average, 20.3% of the GDP is used each year to invest (see appendix D).

4.1.3 FDI net inflows as % of GDP

According to the World Bank definition of *FDI*, they are the: "…net inflows of investment to acquire a lasting management interest in an enterprise operating in an economy other than that of the investor." World Bank (2016d). Economic reasoning, along with many growth theories, supports this variable as an important determinant of economic growth. Countries with low production due to lack of capital will potentially have large benefits resulting from *FDI*. This variable has a mean on 4.34, with a standard deviation on 9 (see appendix D). The relatively low mean with the high standard deviation means that some countries in some time periods get a high amount of *FDI*, while other observations gets very low *FDI*.

4.1.4 Official aid received as % of GDP (FAGDP)

This variable describes the net official development assistance and official aid received in 2013 USD World Bank (2016d). The development assistance entails concessional loans by member countries of the Development Assistance Committee (DAC) and non-DAC countries alike, as well as multilateral institutions. The loans are meant to endorse welfare and economic development in the recipient countries (Ibid). Aid can be used to invest, and according to some growth theories, this capital formation should increase economic growth. In the

regression analysis, official foreign aid received will be divided by GDP *(FAGDP)* in order to estimate the amount of aid received compared to the size of the economy in the respective nations. It is important to keep in mind that *FAGDP* will be relatively higher in countries with lower GDP, than it will in countries with a higher GDP. This variable has a mean of 0.13 and a standard deviation of 0.20 (see appendix D).

4.1.5 Inflation, consumer prices

This variable encompasses inflation as measured by way of the consumer price index. It measures the yearly changes in cost to the average consumer of attaining a certain good or service World Bank (2016d).

4.1.6 Trade % of GDP

This is the totality of imports and exports of services and goods measured as a part of the GDP (Ibid). This can be used as a measurement of how open a country is to trade. A potential weakness in this variable is that it does not separate import and export. The mean is 72, with a standard deviation on 37 (see appendix D).

4.1.7 Population

This variable describes the number of inhabitants in a nation. The variable is included in order to determine whether there is a relationship between populous countries and high levels of corruption and political instability. However, as this variable is not included in the regression, it is mostly used for descriptive purposes.

4.1.8 Ethno-linguistic fractionalization (ELF)

ELF is a variable that measures the probability that two individuals, chosen at random in a given country, will not be part of the same ethno-linguistic group. A country with a homogenous population will have a low *ELF*, while a country with many different ethno-linguistic groups will have a high *ELF*. As mentioned in the literature review, Mauro found that *ELF* correlates strongly with corruption and institutional efficiency (Mauro 1995). A high degree of *ELF* in a country may lead

to ethnic conflicts, which again can pave the way for political instability, and ultimately, civil war (Ibid, 693). The mean for this variable is 0.68, with a 20.8 standard deviation (see appendix D). These scores are relatively high compared to countries in other regions (Roeder 2001). A list of the ethno-linguistic fractionalization scores in different countries is provided in the appendix. The numbers are from 1985 and the score goes from 0 to 1 (see appendix E). *ELF* will not be featured in the regressions; rather it will function in a descriptive manner in order to provide additional information.

4.1.9 Coastline

The reasoning for the inclusion of this variable is based on the assumption that there is a prevailing positive correlation between countries with a coastline and economic development, and the same correlation being negative in the case of landlocked countries. Correspondingly, an UN study shows that landlocked developing countries have less average per-capita income, inferior governance, poorer health outcomes and higher poverty headcount than their comparative coastal developing countries (UN-OHRLLS 2013). As was the case with *ELF* and *Population*, this variable will be used as a descriptive source.

4.2 Institutional Quality variables

As abovementioned, institutional quality will be based on the WGI dimensions. These dimensions consisted of *Voice and Accountability (V&A)*, *Political Stability and Absence of Violence (PS)*, *Government Effectiveness (GE)*, *Regulatory Quality (RQ)*, *Rule of Law (RoL)* and *Control of Corruption (CoC)* (see appendix C). The WGI dimensions are scored from -2.5 to +2.5. A detailing of the six dimensions will follow next. For the remainder of this thesis the acronym WGI will be substituted by the term *Institutional Quality (IQ)*.

4.2.1 Voice and Accountability (V&A)

This dimension describes the degree to which countries inhabitants can affect their government, as well as capturing perceptions of freedom of expression and association and a free media (see appendix C1). This variable is dualistic: one part captures the inhabitants' individual freedoms, while the second part encompasses

the degree of reliability of the state and public sector. The mean is -0.60, with a standard deviation of 0.71 (see appendix D).

4.2.2 Political Stability and Absence of Violence (PS)

Here, the perceived likelihood for political instability and politically motivated violence (terrorism) is measured (see appendix C2). These types of violence can be both internal and external conflicts. E.g. violent demonstrations (riots), coup d'état, social unrest, conflict with external party. The variable also measures the intensity of internal conflicts. For this variable, the mean is -0.58, with a standard deviation of 0.91 (see appendix D).

4.2.3 Government Effectiveness (GE)

This dimension encapsulates the perceived quality of public and civil services like public transportation, roads and highways, public schooling, drinking water, waste disposal and so forth, as well as the credibility of the governments' commitment to implement the various policies while avoiding succumbing to political pressures i.e. the quality of bureaucracy and red tape (see appendix C3). The mean is -0.73, with standard deviation of 0.60 (see appendix D).

4.2.4 Regulatory Quality (RQ)

The *RQ* dimension condenses the governments perceived ability to promote private sector development by articulating and employing sound regulations and policies (see appendix C4). Important concepts measured are discriminatory taxation, burden of government regulations and ease of starting business. Here, the mean is -0.66, with a standard error of 0.62 (see appendix D).

4.2.5 Rule of Law (RoL)

RoL captures discernments of the degree to which parties have trust in and abide by the rules of society. These societal rules encompass property rights, the police, the courts and the quality of contract enforcement. More specifically this variable measures the business costs of crime and violence, the level of security of goods and persons and the degree of the independence of the courts. *RoL* also measures

whether the state provides compensation in instances of expropriation and breach of contracts (see appendix C5). The mean is -0.72, with a standard deviation of 0.65 (see appendix D).

4.2.6 Control of Corruption (CoC)

This variable expresses discernments of the degree to which public power is wielded for personal gain. This *incorporates* both simple and large kinds of corruption, in addition to instances where the state in essence is "hijacked" by private interest groups and elites. The variable is constructed by a number of different data sources amassed by the WGI project (see appendix C6). It is important to notice that this variable communicates control of corruption and not corruption itself. Thus, countries scoring highly in the *CoC* variable in the regression analysis display low degrees of corruption. The mean for this variable is -0.61, with a standard deviation of 0.58 (see appendix D).

4.3 Institutional Quality (IQ) in Burundi/Rwanda

In the light of the *IQ* dimensions, it would be fitting to revisit the Burundi/Rwanda case example in order to see how they apply to that particular case. Below, the *IQ* dimensions relative to GGPC in the Burundi/Rwanda example are shown. Notice the improvement of the *IQ* valuables seen in Rwanda. The differences in the IQ variables can both be systemic and random. As the *IQ* variables range from -2.5 to +2.5, a difference in 1 in the *IQ* scores (20%) is deemed highly unlikely to be random. The *IQ* variables relative to *GGPC* in Rwanda will follow next.

Table 1: *IQ* relative to GGPC Rwanda

	V&A	PS	GE	RQ	RoL	CoC	GGPC
1996	-1,56	-1,95	-1,20	-1,47	-1,73	-0,93	9,33
1997							6,70
1998	-1,31	-2,15	-0,92	-1,12	-1,54	-0,78	0,50
1999							-0,05
2000	-1,52	-1,81	-0,65	-1,05	-1,35	-0,65	2,42
2001							4,66
2002	-1,47	-1,78	-0,93	-0,75	-0,93	-0,46	10,72
2003	-1,29	-1,16	-0,74	-0,74	-0,88	-0,60	-0,27
2004	-1,31	-1,17	-0,56	-0,66	-0,81	-0,48	5,22
2005	-1,16	-0,97	-0,89	-0,94	-0,92	-0,74	4,78
2006	-1,17	-0,68	-0,29	-0,62	-0,66	-0,17	6,60
2007	-1,20	-0,31	-0,20	-0,64	-0,57	0,01	4,77
2008	-1,30	-0,30	-0,14	-0,50	-0,48	0,14	8,09
2009	-1,28	-0,47	-0,17	-0,31	-0,49	0,13	3,36
2010	-1,31	-0,20	-0,05	-0,18	-0,30	0,46	4,51
2011	-1,31	-0,14	0,07	-0,13	-0,31	0,43	5,17
2012	-1,26	-0,20	-0,06	-0,10	-0,26	0,65	6,16
2013	-1,18	-0,08	0,04	0,00	-0,15	0,64	2,22

Source: WGI and worldbank.org

Paul Kagame entered office in Rwanda in 2000. At this point in time, the numbers testify to a bad economic environment. The following years and up to 2013, there appears to have been a strengthening of all the *IQ* variables, and a satisfying *GGPC*. At a closer look, *CoC* has had an increase of 1.29 in the period that Kagame has been in office. In the same period, *RoL* and *RQ* have had an increase of 1.2 and 1.05 respectively. The variable showing the biggest improvement is *PS*, with an increase of 1.73. Assuming the link between leadership and institutional quality mentioned in part 2.1 holds true, president Kagame seems to have done a good job, with a resulting decrease in corruption and a relatively high and steady growth. The *IQ* variables relative to *GGPC* in Burundi are presented on the following page.

Table 2: *IQ* **relative to GGPC Burundi**

	V&A	PS	GE	RQ	RoL	CoC	GGPC
1996	-1,75	-2,24	-1,73	-1,67	-1,72	-1,39	-9,37
1997							-2,92
1998	-1,61	-2,43	-1,66	-1,59	-1,48	-1,15	3,28
1999							-2,68
2000	-1,63	-2,15	-1,44	-1,22	-1,56	-1,01	-2,96
2001							-0,58
2002	-1,22	-2,39	-1,45	-1,32	-1,39	-0,94	1,34
2003	-1,24	-2,31	-1,47	-1,22	-1,54	-1,05	-4,44
2004	-1,31	-2,51	-1,31	-1,20	-1,60	-0,97	1,27
2005	-0,64	-1,51	-1,26	-1,36	-1,18	-0,90	-2,57
2006	-0,75	-1,40	-1,08	-1,21	-0,97	-1,07	1,74
2007	-0,74	-1,32	-1,24	-1,24	-1,09	-1,12	1,14
2008	-0,71	-1,63	-1,09	-1,23	-1,05	-1,02	1,39
2009	-0,71	-1,27	-1,03	-1,15	-1,16	-1,07	-0,11
2010	-0,94	-1,60	-1,10	-1,10	-1,19	-1,11	0,24
2011	-0,93	-1,78	-1,05	-1,00	-1,12	-1,12	0,69
2012	-0,89	-1,69	-1,31	-0,96	-1,08	-1,44	0,58
2013	-0,95	-1,31	-1,03	-0,89	-1,05	-1,37	1,18

Source: WGI and worldbank.org

Pierre Nkurunziza assumed office in Burundi in 2005. The previous year's growth has been unstable and low. The *IQ* variables in Burundi have a low score in 2005, and they lack the positive trend exhibited by Rwanda. There is a notable decrease in *V&A* with .31, and corruption has increased with .47. There is a slight decrease in the other *IQ* variables. The data presented above is by no means clear evidence that the differences in both *GGPC* and the *IQ* variables are resulting from the differences in the two nations' leadership. However, there is an undeniable disparity between these two countries' *IQ* and growth scores, making it at the very least plausible that leadership is a determinant for institutional quality.

4.4 Shortcomings in variables

While some of the abovementioned variables were ultimately used in the regression, others merely acted as sources for descriptive information.

As already mentioned, political leadership will be measured by changes in *IQ*. This proxy obviously has limitations. It is likely that other factors than political leadership affects the *IQ* variables. And likewise, it is likely that a political leader can increase *GGPC* in a country, even though no noticeable difference in *IQ* is

present. Still, the objective and quantitative qualities of *IQ* as a proxy on political leadership makes it a good fit.

In neo-classical growth theories, technology is considered as an important factor of growth. However, no suitable variable were found in order to capture this aspect. Moreover, human capital is a hard variable to quantify. The inclusion of the variable *"gross enrollment ratio, secondary"* that was meant to function as a proxy for human capital, turned out to prove problematic. It was missing too many observations, so it was removed from the analysis. It was not possible to find a good substitute for this variable. The potentially similar variable *"labor force, secondary"* (labor force with secondary education) also had many missing observations. Further, the *IQ* variables include data from 1996, 1998, 2000-2013. A larger timespan would be more beneficial. Likewise, the variable "*tax revenue (% of GDP)"* was initially meant to be included in the regression as it was believed to be an explanatory factor in growth, but it was ultimately excluded due to an excessive amount of missing observations. As mentioned in part 2.1, the findings of Alonso and Garcimartín disclosed that a healthy tax system is positively associated with institutional quality, providing needed funds in order to create quality institutions. However, data on taxes proved to be difficult to find as all our sample countries are developing, with inadequate data.

PART V: Methodology

In this part of the thesis, the chosen research strategy and research design is presented, before moving on to a depiction of the analytical statistics used.

5.1 Research strategy

In social sciences it is common to make a distinction between two types of research strategies; *quantitative* and *qualitative* research strategy (Bryman and Bell 2011). Qualitative research encompasses a relationship between research and theory that is inductive. This means that new theory is generated as a result of observations. Quantitative research on the other hand is of deductive nature. This entails that theory in a particular field of research forms the premises for a hypothesis or hypotheses, which in turn leads to data collection and testing of the data in order to obtain findings that either confirm or reject the hypotheses. These findings may again necessitate the revision of contemporary theory. It is evident that the last part of the described process of deduction involves induction, where the former leads to the latter, which, depending on the findings may or may not lead to a new process of deduction. In this thesis, a quantitative deductive research strategy will be applied. Consequently, a quantitative deductive-based approach can be applied to answer a hypothesis found by applying the qualitative method (Ibid). A quantitative method concerns data that can be analyzed in a statistical setting, and can give empirical support for a hypothesis.

5.2 Research design

A research design is used as a framework in order to gather and analyze data. In this thesis, the design of choice is the longitudinal design. In this type of design a chosen sample is examined and then re-examined on at least one further occasion (Ibid). There are two main types of longitudinal design: the *cohort study*, and the *panel study*, with the latter being applied in this thesis.

As abovementioned, panel data is a type of longitudinal data, containing both cross-sectional data and time series (Ibid). In the sample, data from all SSA countries from 1996 to 2013 was included. However, the sample was very

unbalanced. Some countries had very few observations and were removed from the sample (Sao Tome, Somalia, South Sudan, Central African Republic and Reunion, Cape Verde and Ethiopia). The advantages of panel data are that it enables one to understand how the sample is causally influenced over time (Ibid). On the other hand, a problem with longitudinal data is related to its very nature. Due to the fact that the sample is surveyed over a long period of time, sample erosion may be experienced, and indeed this was also the case with the sample used in this very thesis.

5.3 Panel data estimation method

There are many methods of doing a multivariate regression but the three most common is *Pooled OLS*, *Fixed effects* and *Random effects*. Pooled OLS can be used when the study subjects are homogenous. Pooled OLS is clearly unfit, since countries in SSA are very heterogeneous. The choice must be between fixed and random effects.

5.3.1 Fixed and Random effects

Fixed effects estimation measures differences in intercept for each country. This estimation technique is best used when there are distinctive differences between countries that do not change over time, like distance to equator, whether or not the country has a coast, ethno-linguistic fractionalization, colonial history etc. The fixed effect estimations add a dummy variable for each country, where the distinctive differences are accounted for (H. Stock and W. Watson 2015, 418). A random effect regression is best if it is believed to be no fixed effects separating the countries, with the changes in time being random.

It seems likely that a fixed effect estimation method is best fitted to the data presented in this thesis. To be sure, a *Hausman test* was conducted in Stata (Stata 2016). The null hypothesis is that both methods are possible to use. The alternative hypothesis says that fixed effects estimation is possible to use, while random effect is not. The output is provided on the next page.

Figure 5: Hausman test, Stata output

```
            —— Coefficients ——
              (b)         (B)         (b-B)      sqrt(diag(V_b-V_B))
              fe          re          Difference       S.E.

   LGGPC    .0773322    .1875804    -.1102482         .0124563
     FDI    -.097587    -.1062329    .0086459         .0183554
   Trade    .0360433    .0067269     .0293164         .010778
Inflation  -.0001831   -.0001956     .0000125         .0000217
   FAGDP    4.359234    3.042736    1.316498         1.558967
     GCF    .1029521    .132771     -.0298189         .023582

            b = consistent under Ho and Ha; obtained from xtreg
     B = inconsistent under Ha, efficient under Ho; obtained from xtreg

   Test:  Ho:  difference in coefficients not systematic

        chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                =      103.73
        Prob>chi2 =     0.0000
```

Source: worldbank.org

This output advocates to reject the null hypothesis and use fixed effect estimation. The regressions used have *GGPC* as the dependent variable, while *FDI*, *GCF*, *inflation*, *trade*, *FAGDP* and *LGGPC* act as independent variables. Adding the *IQ* variables or lagging *GCF* and *FDI* (more about this in part 5.5.3) to the regressions do not alter the outcome of this test, so fixed effect estimation is clearly the better option.

5.4 Unit root

A variable has a unit root if the mean or variance changes over time. If it does not change over time, the variable is stationary (Bjørnland and Thorsrud 2014). If variables with a unit root are included, the estimates may be biased. Variables can be screened for unit roots doing an augmented *Dickey Fuller test* in Stata (Ibid).

The output shows that the null hypothesis cannot be rejected, signifying that the growth rate of GDP per capita does not include a unit root (see appendix B). All the other variables, which will be used in the regression, were checked and none contained an unit root. However, a trend term had to be added when *trade* was tested. *Trade* is trend-stationary. This could potentially lead to wrong estimate of the coefficient in the subsequent regression, and/or wrong significance level. We

can make *trade* stationary (not just trend-stationary) by using yearly differences, or removing the trend in the data. This however would lead to loss of information, thus it was decided to keep *trade* as it is.

5.5 Statistical challenges

When doing a multivariate regression, one wants to find out how the dependent variable is affected by the independent variables. The ideal is to get the true relationship between the variables. However, there are many pitfalls. Variables can be omitted, variables can be wrongly measured and simultaneous causality and multicollinearity can be present. All this may lead to biased coefficients and a low validity of the regression. Below, the most common problems and ways intended to diminish the effect of these problems are presented.

5.5.1 Multicollinearity

Perfect multicollinearity is when one of the independent variables is a perfect linear combination of the other independent variables. Imperfect multicollinearity arises when one of the independent variables is highly correlated, but not perfectly, with the other independent variables. If highly correlated variables are used in a regression, at least one variable will be imprecisely estimated (H. Stock and W. Watson 2015, 248-51).

5.5.2 Omitted variables

Omitted variables occur when the regression model leaves out one or more important factors. When an explanatory variable is omitted from the regression, the results will be biased (Ibid, 365). It is likely that the regressions have many omitted variables. If the model were to have no omitted variables, all variables explaining economic growth per capita would have to be included. This is clearly not feasible, so omitted variable bias will be present in this study.

5.5.3 Simultaneous causality

Simultaneous causality arises when causality runs from the dependent variable to any of the independent variables (Ibid, 372-75). That is if GDP per capita growth

affects any of the independent variables, and not just the other way around. There are two ways to mitigate this problem, with the first and most relevant being the use of instrumental variables. The other is to design and implement a randomized controlled experiment, but this is beyond the scope of this thesis. It is likely that simultaneous causality exists in this study. GGPC might affect FDIs: when investors see that a country is growing they might be inclined to invest in that country. It also seems likely that GCF can be affected by GGPC. No good instrument variable for FDI was found for these variables. To diminish this problem, lagged values of these two variables are used in the regression. Lagged values means that the previous year's values are used in the regression analysis. The use of lagged values may also seem more fitting from an economical perspective since it is deemed reasonable that the effects of investments may take a year to affect the GGPC. *Trade* is another variable that might be exposed to simultaneous causality. This is due to the possibility that a high GGPC with its corresponding high economic activity (e.g. investments in real capital) can lead to an increase in *trade*.

5.5.4 Reliability of data

As briefly mentioned in the introduction of part I, the data used will be based on 40 suitable SSA countries. Most of the data used in the regressions will come from worldbank.org. They get much of their data, which is survey based, from statistical agencies in their respective countries. As many of the countries used in the sample are places where there is less transparency, the accuracy of the data attained might be questionable. This has the potential to compromise the validity of this thesis. Moreover, another potential inadequacy in the data is related to measurement error. Measurement error occurs when the data is measured wrong. The countries in the sample are developing, so the likelihood of measurement error is large. GDP is hard to measure in countries where much of the economy is based on inhabitants consuming what they produce. Thus, it is hard to give a precise estimation of the value of each country's actual production.

Next, the presentation of data part will follow. Here, the variables applied in the continuation of the study will be presented.

PART VI: Findings

In the subsequent part, a correlation and regression analysis will be conducted and their respective findings presented. Furthermore, the regression findings will be conversed in the discussion part before ending this part of the paper with potential limitations and implications for further study.

6.1 Correlation analysis

In order to gain a clearer picture of the relationship between the variables, a correlation analysis was performed. The following table will show the correlations between the different variables. It is important to keep in mind that the correlations are calculated without considering the aspect of time and countries. The calculations treats the data as it were purely cross-sectional. Nevertheless, the analysis is still expected to contribute to this thesis.

Table 3: Correlation table

	GGPC	LGGPC	LFDI	LGCF	FAGDP	Inflat~n	Trade	V&A	PS	GE	RQ	RoL	CoC	ELF	Popula~n	Coast
GGPC	1.0000															
LGGPC	0.2337	1.0000														
LFDI	0.1412	-0.0553	1.0000													
LGCF	0.2028	0.2009	0.3804	1.0000												
FAGDP	0.0578	0.0505	0.2457	-0.0550	1.0000											
Inflation	-0.0705	-0.0703	-0.0219	-0.0985	-0.0139	1.0000										
Trade	0.0897	-0.0301	0.4736	0.3266	0.2624	0.0114	1.0000									
V&A	0.1476	0.1246	-0.0178	0.3083	-0.0505	-0.0733	0.2158	1.0000								
PS	0.1256	0.0672	0.0129	0.3547	-0.1005	-0.0322	0.2355	0.7378	1.0000							
GE	0.1782	0.1696	-0.0784	0.3770	-0.2180	-0.0459	0.1136	0.7740	0.6928	1.0000						
RQ	0.1573	0.1731	-0.0800	0.3926	-0.2242	-0.1250	0.0428	0.7689	0.6839	0.8870	1.0000					
RoL	0.1712	0.1418	-0.0331	0.4323	-0.1624	-0.0823	0.1999	0.8342	0.8102	0.8877	0.8764	1.0000				
CoC	0.1472	0.1420	-0.0142	0.3661	-0.0765	-0.0643	0.2226	0.7653	0.7220	0.8531	0.7930	0.8677	1.0000			
ELF	0.0049	-0.0205	0.0709	-0.1583	-0.0231	-0.0445	-0.1441	-0.0888	-0.2291	-0.1308	0.0049	-0.1817	-0.2987	1.0000		
Population	0.1454	0.1191	-0.0794	-0.1929	-0.1474	-0.0059	-0.2330	-0.0979	-0.3688	-0.0586	-0.0589	-0.1726	-0.2158	0.3762	1.0000	
Coast	-0.0142	-0.0932	0.0836	-0.0945	-0.0988	-0.0645	0.1259	0.0617	0.0614	-0.0124	0.0105	-0.0334	-0.0606	0.3211	0.1639	1.0000

Source: worldbank.org

There are many interesting correlations. As expected, there is a strong correlation between all the *IQ* variables. The lagged *FDI (LFDI)* variable has a .47 correlation

with *trade*. *LFDI* does not correlate much with the *IQ* variables. *Population* is negatively correlated with all the *IQ* variables. This may indicate that more populous countries in SSA have worse quality of institutions than the less populous.

All the *IQ* variables have high correlations with each other. This implies, due to the problem of imperfect multicollinearity, that if they are present in the same regression, at least one of the coefficients will be biased. There is a relatively strong correlation between *ELF* and *Population* signifying that countries with large populations tend to be more diverse. The negative correlation between *Population* and the *CoC* and *PS* is noteworthy. *ELF* displaying the same pattern, indicating that a large and diverse population might lead to more corruption, political instability and violence, with a small and homogenous populace having the opposite effect, compounds this. This is also in accordance with Mauro's (1995) findings discussed in part 3.3. Another interesting aspect regarding *ELF* is the relative high correlation between *ELF* and *Coastline* (0.32). A likely explanation for this is related to countries with a coastline being more accessible and or desirable for immigrants due to their sea access.

FAGDP correlates with *LFDI* (0.25) and *trade* (0.26). The correlation with *FDI* might imply that when a country receives aid it is regarded as more desirable by investors. The correlation with *trade* may simply be due to countries receiving aid having more money to trade with. A causal link between *FAGDP* and *trade* and *FAGDP* and *FDI* cannot be inferred from a correlation analysis, merely that a high level of *FAGDP* is associated with a high level of *trade* and *FDI*.

6.2 Regression analysis

In the following part, 7 different regressions are presented. The difference between them is that they include different *IQ* variables. The "Basic" regression does not contain any *IQ* variables. While the other 6 regressions are similar to *Basic* except that they include their respective *IQ* variable. The output from Stata is found in appendix F. Many different regressions were conducted, but since the only difference is the *IQ* variables, which are highly correlated, the results between the different regressions will be fairly similar. However, it is believed

that the magnitude of the coefficient and the level of signifiance will give an indication of the importance of each *IQ* variable relative to *GGPC*.

The regressions results are presented in the following page. The standard deviations are provided in the parenthesises. The coefficients of each regression are provided in the vertical columns, with each regression given a different number. There is a constant term and an R-squared value. The R-squared value indicates the degree of which the variation in *GGPC* is explained by the variation in the independent variables. The range is from 0 to 1, with 0 indicating that the regression has no explanatory value, while 1 signifies that the independent variable fully explaines the variation of *GGPC*. The R-squared must be regarded with some scepticism, as the value can always be increased by increasing the number of independent variables. Thus, in the case of this thesis, the regression #1 *(Basic)* will have the lowest R-squared value. All the different regressions are provided in appendix F. On the following page, the Stata output from the regresions are provided.

Table 4: Regressions

	Basic (1)	CoC (2)	PS (3)	RoL (4)	GE (5)	V&A (6)	RQ (7)
LGGPC	.0853 (.0403) **	.0910 (.0460) **	.0825 (.0456) *	.0865 (.0459) *	.0902 (.0461) *	.0608 (.0464)	.0875 (.0463) *
LFDI	.1015 (.0334) ***	.1071 (.0348) ***	.0940 (.0347) ***	.1054 (.0346) ***	.1061 (.0349) ***	.1123 (.0345) ***	.1066 (.0350) ***
LGCF	.0171 (.0305)	.0219 (.0334)	.0276 (.0331)	.0158 (.0333)	.0174 (.0335)	.0175 (.0331)	.0132 (.0339)
Inflation	-.0002 (.0002)	-.0002 (.0002)	-.0002 (0.0002)	-.0001 (.0002)	-.0002 (.0002)	-.0002 (.0002)	-.0002 (.0002)
Trade	.0360 (.0118) ***	.0353 (.0126) ***	.0348 (.0124) ***	.0308 (.0125) **	.0358 (.0127) ***	.0271 (.0126) **	.0346 (.0127) ***
FAGDP	.054 (.0203) ***	.0501 (.0217) **	.0458 (.0214) **	.0533 (.0214) **	.0522 (.0217) **	.0455 (.0215) **	.0533 (.0218) **
CoC		1.9705 (.9193) **					
PS			1.8759 (.5076) ***				
RoL				2.9352 (1.0216) ***			
GE					1.6358 (1.0072)		
V&A						3.1523 (.8675) ***	
RQ							1.2955 (1.0294)
Constant	-2.4324 (.8741) ***	-1.2676 (1.0961)	-1.3020 (1.0034)	.428 (1.2784)	-1.2718 (1.183)	.0898 (1.1748)	-1.4849 (1.196)
R-square	.0332	.064	.0428	0.0567	.0536	.0467	.0477

Asterisk indicates level of significance: *** means 1% significance level, ** means 5% significance level and * means 10% significance level

The *LFDI* variable is significant at a 1% level in all regressions and has a positive effect. In regression #1 *(Basic)*, the *LFDI* coefficient of .1015 means that among the sample countries, a 1% increase of FDI relative to GDP is linked to a .1015 increase in *GGPC* (see appendix F). The coefficient ranges from .094 to .1123. The *FDI* result indicates that in order to increase *GGPC,* lawmakers should make it more desirable for foreign investors.

LGGPC is significant in all the regressions except #6 *(V&A)*. Excluding regression #6 *(V&A)*, the coefficients ranges from .0825 to .0910. This means that the last years' *GGPC* seems to determine some of the current years' *GGPC*. This is in accordance with the theory of business cycles.

Trade is significant at least at the 5% level in all the regressions. The coefficient ranges from .0271 to .0360. Inflation was not found to be significant in any of the seven regressions.

FAGDP is significant at a 1% level in regression 1 and at a 5% level in all the other regressions. The coefficients range from .0455 to .0539. Notice that the coefficients are much smaller than the coefficients of *LFDI* (approximately half). This implies that the effect of *LFDI* on *GGPC* is larger than the effect of *FAGDP* on *GGPC*. This is an interesting finding, which will be further discussed in the next part of the paper.

PS has a coefficient of 1.8759 and is significant at a 1% level. This means that an increase of one point in this variable (*IQ* variables range from -2.5 to +2.5) is linked to an increase of 1.8759 in *GGPC*. *RoL* has as coefficient of 2.9362, and is significant at a 1% level. Moreover, *V&A* has a coefficient of 3.1523 and is significant at the 1% level. Thus, *RoL* and *V&A* have the highest coefficient and both are significant at 1% level, and given the sample and regression model, they seem to be the two variables with the biggest impact on *GGPC*.

The coefficients of *GE* and *RQ* are not significant and have coefficients of 1.6358 and 1.2955. The lack of significance and comparatively low coefficients might indicate that *GE* and *RQ* are less important for *GGPC* than the other *IQ* variables.

The coefficient of *CoC* is 1.9705, and it is significant at a 5% level. These results are supported by the findings of Shleifer and Vishny (1993) and Mauro (1995), who stated that corruption is has a negative effect on growth. Based on the literature, it was expected that *CoC* would be the *IQ* variable with the greatest effect on *GGPC*. However *RoL* and *V&A* proved to have a bigger effect.

The R-squared does not change much between regressions, indicating that no regression is more valid than the others in terms of validity measured in the R-squared term. The R-squared value ranges from .0332 to .064, which is relatively low, but this is not uncommon for regressions on growth. These numbers might be considered low seeing that R-squared can reach a value of 1, but this is not uncommon in growth regressions.

6.3 Discussion

Based on the results found in the regressions, the quality of institutions, thus political leadership, seems to matter for economic growth. As *GGPC* functions as a proxy for economic development, an improvement of the *IQ* variables will potentially lead to more economic development. As all the *IQ* variables are strongly correlated it is hard to determine which one is the most important in order to achieve high economic development. Nevertheless, *RoL* and *V&A* distinguished themselves with the highest coefficients of the *IQ* variables. As the sample countries consist of developing nations with relatively poor quality of institutions, it appears by the regression that an improvement of the two abovementioned *IQ* variables will have the biggest marginal benefit in SSA. On the other hand *RQ* and *GE* appear to be the less important *IQ* variables. An explanation for this might be that the marginal benefit of an improvement in *RQ* and *GE* is lower in poor countries than in wealthier ones. E.g. it is likely that it is hard to run and grow a business in a country with a low score on *RoL*, where representatives have little confidence in the quality of contract enforcement and property rights as well as the police and the courts. In this case, an effective government *(GE)* and good regulatory quality *(RQ)* is not expected to have a strong effect on growth, as other *IQ* variables will be more important for the GGPC. Contrastingly, in a developed country where the *IQ* variables are generally high, the marginal benefit from an improvement of *RQ* and *GE* could be higher.

The *V&A* variable, which incorporates the existence and the degree to which inhabitants can affect their government (in essence the presence of democracy), has the largest coefficient of the *IQ* variables in the regression. As this variable measures both individual freedoms and the reliability of the state and public sector, it is not hard to conceive that *V&A* will have a strong effect on *GGPC*. An explanation for this might be that if a state is not perceived to be reliable, the supposed risk for foreign (and domestic) investors will be higher. Thus, a low score in *V&A* will reduce the incentives for investors to invest. This seems to fall in line with the findings of Elizabeth Asiedu discussed in part 3.4. She established that due to bad reputation, SSAn nations receive less FDI as they are perceived to be inherently more risky to invest in, with the actual risk being lower (2002). Moreover, she suggested a liberalization of trade regimes as a way to amend this, but most importantly, these amendments need to be to be *perceived as credible and permanent* by potential investors. Perhaps by scoring highly on the *V&A* variable the perceived risk of foreign investors, which as Asideu mentions is tainted by the bad reputation of SSA, will be reduced, consequently leading to more FDI and in turn GGPC.

The regression shows that an improvement in the *CoC* variable is related to an increase in *GGPC*. This is supported by the findings of Shleifer and Vishny (1993) and Mauro (1995) presented in part 3.3, who argued that corruption is inclined to lead to lower economic growth. According to the researchers, institutionalized corruption leads to higher operating costs for investors, thus lowering the return of investment and therefore reducing the incentives to invest. Subsequently, a low *CoC* means that many potentially good investments, which could possibly lead to *GGPC*, will not be made. Moreover, as presented in the same chapter, Mauro (1995) found evidence that corruption lowers private investments, leading to a reduction in economic growth.

Looking at the correlation between *FAGDP* and the *IQ* variables, a positive correlation was not found. This implies that countries with good *IQ* variables do not receive more foreign aid relative to their GDP. It is not unlikely that if a corrupt, unstable, and ineffective government receives foreign aid, that some of this aid will be wasted or used ineffectively. Correspondingly, Knackwurst and Bräutigam found a strong relationship between high aid levels and deteriorations

in governance (2004). Furthermore, corrupt governments may in fact receive as much as aid as less corrupt ones (Alesina and Weder 1999). Therefore, in contract with the findings of Knackwurst and Bräutigam (2004), this thesis advocates more selectivity in the choice of aid recipients, as it seems probable that foreign aid is more likely to have the intended effect in countries with good *IQ*. Thus, although giving a proportionately larger amount of aid to poorer countries might seem fair, the marginal benefits of this aid could prove to be greater in countries with better *IQ*.

The positive coefficient and high significance level on *LFDI* level was expected; as FDIs are made, the country gets an inflow of capital, which according to many growth theories like the Harrod-Damar and Solow-Swan model discussed in part II, should lead to growth. The findings on *LFDI* are in conjunction with the abovementioned theories, which state that capital accumulation is an important determinant of growth. However, these findings are contradicted by the results on *LGCF*, as *LGCF* was far from being significant in any of the regressions (see appendix F).

Another interesting observation is the 0.41 correlations between *trade* and *FDI*. It would be fitting to illustrate this correlation by the way of an example: a foreign investor wants to start a business. When the investment is made the business will need to convert its foreign financial capital into real capital (machines, factory, materials etc.) and the business will have to either buy from the country it is located in, or import from other countries. This factor will potentially increase *trade* as a result from the increase in *FDI*. When the business starts production, it will (unless it can sell all its goods within the country) increase export, and therefore also *trade*. This of course depends on the degree of which it buys and sells within the country.

As mentioned in the regression analysis the coefficients on *LFDI* were about twice the size of the *FAGDP* coefficients. This implies that *FDI* has a greater effect on *GGPC* than foreign aid does. However, even though GGPC has been used as a proxy for economic development, a proxy is only a substitution, meaning that FAGDP might still have a greater effect on economic development than FDI does.

The findings involving *trade* indicates that *trade* is positive for *GGPC*. Thus, the decision makers/lawmakers should maximize the potential of trade (e.g. removing customs barriers, making trade agreements etc.). This is supported by the research of Asiedu (2002).

Regarding the case example of Rwanda and Burundi, a connection between an improvement in the IQ variables and GGPC was expected. The results in the regression support this notion.

The poor levels of growth in SSA despite the high levels of aid, might be explained by the high levels of ethno-linguistic fractionalization displayed in SSA, with both the literature and the findings contained in this thesis showing ethno-linguistic fractionalization being correlated to more corruption and less political stability. To amend this, conditional aid could be increased in order to improve institutional quality, making them more robust in the face of high ethno-linguistic fractionalization.

Finally, it is important to keep in mind that the regression results should be regarded with some reservation. Nations scoring highly on *IQ* variables will not automatically display high *GGPC*. Rather, high *IQ* is likely to lay the foundation for a good economic environment, potentially facilitating economic development. A claim supported by Acemoglu, Johnson and Robinson (2005), who said that good institutions lead to a healthy economic environment, which again leads to economic growth.

6.4 Limitations/implications

In this thesis, it has been assumed that political leadership will manifest itself by the way of the quality of political institutions. Political institutions have again been measured by using the World Banks' World Governance Indicators. A potential limitation in this assumption is the fact that the *IQ* (WGI) variables can be affected by other factors than solely political leadership. This means that a country might have a good leader, even though no increase in the *IQ* variables is present and vice versa. For instance, as many of the sample countries are undemocratic societies with various power clusters and little transparency,

determining the influence of the political leadership over institutions may prove difficult or impossible to gauge.

When looking at other potential limitations of this thesis, the relative small sample used is an obvious restraint. A bigger sample was desired but as the *IQ* variables were based on the WGI dimensions, the sample was limited by the number of observations included in the WGI data. Also, several countries had to be excluded due to insufficient data. It is also important to keep in mind that since the *IQ* variables are so heavily correlated, a significant and big coefficient could be the result of the variable being correlated with other *IQ* variables, with these variables potentially being responsible for the growth. Moreover, a positive coefficient displayed by any of the *IQ* variables could be the result of imperfect multicollinearity. E.g. it is a possibility that a positive coefficient on *PS* can just be due to the variable correlating strongly with another *IQ* variable, with the latter being responsible for the positive (and significant) coefficient.

Trade is significant and has a positive coefficient in all the regressions. However, the high significance might be due to the variable not being stationary but only trend-stationary.

Another likely limitation, briefly conferred in part 4.6.2, is the problem of omitted variables. The lack of variables in the regression measuring taxation and human capital are examples of such variables. As mentioned in part 3, Romer and Lucas argued that human capital accumulation could impact *GGCP* (Romer 1986; Lucas 1988). Also, as discoursed in the article review, Alonso and Garcimartín disputed that the efficiency of the tax system was one of the determinants of institutional quality (2013). Thus, omitting these variables from the regression will bias the regression. However, even if these variables were included, omitted variables would still occur, simply due to the practical impossibility to include all variables that have an effect on *GGPC*.

As mentioned in part 5.5.4, the reliability of the data is a another concern. The *IQ* variables are partially determined by surveys, and this is a minefield of biases. In less democratic countries respondents may be overtly and covertly coersed into giving the "correct" responses. Alos, measurement error on the *GDP* variable is

highly likely: when a big portion of a country´s economy is based on agriculture with most inhabitants cosuming what they produce, it is very hard to give a correct value on what the country actually produces.

In terms implications for further studies, one interesting aspect to look further into would be whether aid leads to an improvement of the *IQ* variables. Also, given the high correlation between *FAGDP* and *FDI* and *FAGDP* and *trade* seen in correlation table, it would be highly interesting to do a future study in order to determine whether there is a causal link between these variables. Lastly, although some *IQ* variables are more significant and have bigger coefficients than others, it is more likely that it is a combination of improvements in these variables that will increase *GGPC*. A future study could determine the combination of *IQ* variables with the biggest impact.

PART VII: Conclusion

This thesis has attempted to establish the effects that political leadership has on economic development in SSA. Changes in quality of political institutions have been used as a proxy in order to measure political leadership. Moreover, the quality of political leadership is operationalized by the World Banks' World Governance Indicators. From the regressions, a positive and significant effect of the institutional quality variables on economic development were found in all of the variables, except Government Effectiveness (GE) and Regulatory Quality (RQ).

Bearing that the assumption that political leadership can be measured through the changes in the quality of political institutions is true, it can be concluded that leadership does indeed affect economic development in Sub-Saharan Africa. This infers that improvements in political institutions are very likely to lead to economic development in the sample studied.

Also, the regressions showed that in Sub-Saharan Africa, Foreign Direct Investment has a larger effect on economic growth per capita than foreign aid. Thus, it can be concluded that, at least in a short-term perspective, Foreign Direct Investment can have a greater effect on economic growth than aid.

Bibliography

Acemoglu, Daron, Simon Johnson and James A. Robinson. 2005. "Chapter 6 Institutions as a Fundamental Cause of Long-Run Growth." 1: 385-472. doi: 10.1016/s1574-0684(05)01006-3

Alesina, Alberto and Beatrice Weder. 1999. *Do corrupt governments receive less foreign aid?*: National bureau of economic research

Alonso, José Antonio and Carlos Garcimartín. 2013. "The determinants of institutional quality. More on the debate." *Journal of International Development,* 25 (2): 206-226.

Arnold, Lutz G. 2002. "Business cycle theory." *OUP Catalogue.*

Asiedu, Elizabeth. 2002. "On the Determinants of Foreign Direct Investment to Developing Countries: Is Africa Different?" *World Development,* 30 (1): 107-109.

Bermeo, Sarah Blodgett. 2011. "Foreign aid and regime change: A role for donor intent." *World Development,* 39 (11): 2021-2031.

Bjørnland, Hilde Christiane and Leif Anders Thorsrud. 2014. *Applied Time Series for Macroeconomics*: Gyldendal akademisk

Boone, Peter. 1996. "Politics and the effectiveness of foreign aid." *European economic review,* 40 (2): 289-329.

Bryman, A. and E. Bell. 2011. *Business Research Methods*. 3rd ed: OUP Oxford. https://books.google.nl/books?id=YnCcAQAAQBAJ

Bräutigam, Deborah A.; Knack, Stephen 2004. "Foreign Aid, Institutions, and Governance in Sub-Saharan Africa." *Economic Development and Cultural Change,* 52 (2): 255-285.

Cass, David. 1965. "Optimum growth in an aggregative model of capital accumulation." *The Review of economic studies,* 32 (3): 233-240.

David, Romer. 2011. *Advanced macroeconomics*. 4th ed. New York: MacGraw-Hill

Dictionary, Business. 2016. "Economic Development". WebFinance Inc. Accessed August 9th 2016. http://www.businessdictionary.com/definition/economic-development.html

Fitzgerald, Mary 2010. "Rwanda made me think again about positive discrimination". The Guardian Accessed january 6th 2016. http://www.theguardian.com/commentisfree/2010/jun/20/positive-discrimination-rwanda

Friedrich, Carl J. 1961. "Political leadership and the problem of the charismatic power." *The Journal of Politics,* 23 (01): 3-24.

Greif, Avner. 2006. *Institutions and the path to the modern economy: Lessons from medieval trade*: Cambridge University Press

H. Stock, James and Mark W. Watson. 2015. *Introduction to Econometrics*. Third ed. Essex, England: Pearson Education Limited

Helpman, Elhanan. 1992. "Endogenous macroeconomic growth theory." *European Economic Review,* 36 (2-3): 237-267.

Huntington, Samuel, P. 1968. *Political Order in Changing Societies*. New Haven: Yale University Press

International, Transparency. 2014. "Corruption by country/territory". Transparency International Accessed january 6th 2016. https://www.transparency.org/country/ - RWA

———. 2015. "CORRUPTION PERCEPTIONS INDEX 2015". Transparency
        International Accessed April 21. 2016.
        http://www.transparency.org/cpi2015 - results-table

———. 2016. "What is corruption?". Transparency International Accessed june
        30th 2016. http://www.transparency.org/what-is-corruption/ - define

Jain, T.R. and Balbir Kaur Bojaj. 2008. *Development Economics*: Vk
        Publications

Joel Tokindang, Sibaye and Daniel Gbetnkom. 2014. "Burundi". African
        Economic Outlook Accessed january 6th 2016.
        http://www.africaneconomicoutlook.org/fileadmin/uploads/aeo/2014/PDF/
        CN_Long_EN/Burundi_EN.pdf

Kiwuwa, David E. . 2015. "Burundi and Rwanda at 53: what sets the conjoined
        twins apart". The Conversation Accessed january 6th 2016.
        http://theconversation.com/burundi-and-rwanda-at-53-what-sets-the-
        conjoined-twins-apart-44197

Koopmans, Tjalling C. 1965. "On the concept of optimal economic growth."

Leff, Nathaniel H. 1964. "Economic development through bureaucratic
        corruption." *American behavioral scientist,* 8 (3): 8-14.

Levy, Victor. 1988. "Aid and growth in Sub-Saharan Africa: The recent
        experience." *European Economic Review,* 32 (9): 1777-1795.

Lucas, Robert E. 1988. "On the mechanics of economic development." *Journal of
        monetary economics,* 22 (1): 3-42.

Mallik, Girijasankar. 2008. "Foreign Aid and Economic Growth: A Cointegration
        Analysis of the Six Poorest African Countries." *Economic Analysis and
        Policy,* 38 (2): 251-260. doi: 10.1016/s0313-5926(08)50020-8

Mauro, Paolo. 1995. "Corruption and growth." *The quarterly journal of
        economics*: 681-712.

———. 1997. "The effects of corruption on growth, investment, and government
        expenditure: a cross-country analysis." *Corruption and the global
        economy,* 83.

Norad. 2015. "Hvor gikk pengene i 2014?". Norad Accessed january 5th 2016.
        https://www.norad.no/aktuelt/nyheter/2015/norskbistanditall2014/

North, Douglass C. 1990. *Institutions, institutional change and economic
        performance*: Cambridge university press

North, Douglass C and Robert Paul Thomas. 1973. *The rise of the western world:
        A new economic history*: Cambridge University Press

Patton, Mike. 2014. "Government Corruption And Economic Growth: The 21
        Least Corrupt Nations". Forbes Accessed January 12th 2016.
        http://www.forbes.com/sites/mikepatton/2014/01/24/government-
        corruption-and-economic-growth-the-21-least-corrupt-nations/

Roeder, Philip G. 2001. Ethnolinguistic fractionalization (ELF) indices, 1961 and
        1985. Department of Political Science,

University of California, San Diego: February.

Romer, Paul. 1989. *Endogenous technological change*: National Bureau of
        Economic Research

Romer, Paul M. 1986. "Increasing returns and long-run growth." *The journal of
        political economy*: 1002-1037.

Shleifer, Andrei and Robert W. Vishny. 1993. "Corruption." *The Quarterly
        Journal of Economics,* 108 (3): 599-617.

Solow, Robert M. 1956. "A contribution to the theory of economic growth." *The
        quarterly journal of economics*: 65-94.

Stata. 2016. "hausman — Hausman specification test". Stata Accessed August
        11th 2016. http://www.stata.com/manuals13/rhausman.pdf
UN-OHRLLS. 2013. "The development economics of landlockedness:
        Understanding the development costs of being landlocked". UN-OHRLLS
        Accessed june 13th 2016. http://unohrlls.org/custom-
        content/uploads/2013/10/Dev-Costs-of-landlockedness1.pdf
Williams, Victoria 2015. "Foreign aid". Encyclopædia Britannica, Inc. Accessed
        january 6th 2016. http://www.britannica.com/topic/foreign-aid
Winston, Bruce E and Kathleen Patterson. 2006. "An integrative definition of
        leadership." *International journal of leadership studies,* 1 (2): 6-66.
World Bank, The. 2015a. "GDP per capita (current US$)". The World Bank
        Group Accessed August 9th 2016.
        http://data.worldbank.org/indicator/NY.GDP.PCAP.CD?locations=1W
———. 2015b. "World Development Indicators database: Gross domestic product
        2014". World Bank Accessed January 13th 2016.
        http://databank.worldbank.org/data/download/GDP.pdf
———. 2015c. "Worldwide Governance Indicators ". The World Bank Group
        Accessed April 21. 2016.
        http://info.worldbank.org/governance/wgi/index.aspx - home
———. 2016a. "Net official development assistance and official aid received
        (current US$)". The World Bank Group Accessed january 6th 2016.
        http://data.worldbank.org/indicator/DT.ODA.ALLD.CD
———. 2016b. "Net official development assistance and official aid received
        (current US$)". The World Bank Group Accessed January 13th 2016.
        http://data.worldbank.org/indicator/DT.ODA.ALLD.CD?order=wbapi_dat
        a_value_2013+wbapi_data_value+wbapi_data_value-last&sort=desc
———. 2016c. "World Development Indicators". World Bank Group Accessed
        January 13th 2016.
        http://databank.worldbank.org/data/reports.aspx?source=2&country=&seri
        es=DT.ODA.ALLD.CD&period=
———. 2016d. "World Development Indicators". The World Bank Accessed june
        13th 2016. http://databank.worldbank.org/data/reports.aspx?source=world-
        development-indicators
———. 2016e. "World Development Indicators". The World Bank Group
        Accessed january 5th 2016.
        http://databank.worldbank.org/data/reports.aspx?source=world-
        development-indicators

Appendices

Appendix A – List of nations

Angola	Burkina Faso
Benin	Botswana
Kenya	Democratic republic of Congo
Tanzania	Mozambique
Ghana	Nigeria
Uganda	Sudan
Senegal	Zambia
Malawi	Liberia
Zimbabwe	Niger
Cameroon	Burundi
Togo	Chad
Madagascar	Sierra Leone
Mauritania	Namibia
Central African Republic	Lesotho
Republic of Congo	Guinea
Angola	Mauritius
Djibouti	Gambia
Eritrea	Guinea-Bissau
Comoros	Eritrea
Swaziland	Mali
Gabon	The Gambia

Appendix B – Unit-root test

1.   GGPC

```
Fisher-type unit-root test for ggpc
Based on augmented Dickey-Fuller tests
──────────────────────────────────────

Ho: All panels contain unit roots          Number of panels       =      42
Ha: At least one panel is stationary        Avg. number of periods =   17.69

AR parameter: Panel-specific                Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Not included
Drift term:   Not included                  ADF regressions: 0 lags
────────────────────────────────────────────────────────────────────────
                                 Statistic      p-value
────────────────────────────────────────────────────────────────────────
 Inverse chi-squared(84)    P      518.5565      0.0000
 Inverse normal             Z      -16.1844      0.0000
 Inverse logit t(214)       L*     -21.6843      0.0000
 Modified inv. chi-squared  Pm      33.5268      0.0000
────────────────────────────────────────────────────────────────────────
 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
```

2.   Voice

```
Fisher-type unit-root test for Voice
Based on augmented Dickey-Fuller tests
──────────────────────────────────────

Ho: All panels contain unit roots          Number of panels  =      42
Ha: At least one panel is stationary        Number of periods =      15

AR parameter: Panel-specific                Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Not included
Drift term:   Not included                  ADF regressions: 0 lags
────────────────────────────────────────────────────────────────────────
                                 Statistic      p-value
────────────────────────────────────────────────────────────────────────
 Inverse chi-squared(84)    P      213.5968      0.0000
 Inverse normal             Z       -4.9631      0.0000
 Inverse logit t(214)       L*      -6.7930      0.0000
 Modified inv. chi-squared  Pm       9.9986      0.0000
────────────────────────────────────────────────────────────────────────
```

3.   GCF

```
Fisher-type unit-root test for gcf
Based on augmented Dickey-Fuller tests
_____

Ho: All panels contain unit roots          Number of panels      =     42
Ha: At least one panel is stationary        Avg. number of periods =  17.07

AR parameter: Panel-specific                Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Not included
Drift term:   Not included                  ADF regressions: 0 lags
_____

                                    Statistic      p-value
_____

 Inverse chi-squared(82)   P        174.5860       0.0000
 Inverse normal            Z         -3.5317       0.0002
 Inverse logit t(209)      L*        -4.6429       0.0000
 Modified inv. chi-squared Pm         7.2298       0.0000
```

4.   FDI

```
Fisher-type unit-root test for fdi
Based on augmented Dickey-Fuller tests
_____

Ho: All panels contain unit roots          Number of panels      =     42
Ha: At least one panel is stationary        Avg. number of periods =  17.83

AR parameter: Panel-specific                Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Not included
Drift term:   Not included                  ADF regressions: 0 lags
_____

                                    Statistic      p-value
_____

 Inverse chi-squared(84)   P        277.9149       0.0000
 Inverse normal            Z         -7.9241       0.0000
 Inverse logit t(214)      L*        -9.6960       0.0000
 Modified inv. chi-squared Pm        14.9609       0.0000
_____

 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
```

5.   Inflation

```
Fisher-type unit-root test for inf
Based on augmented Dickey-Fuller tests
─────────────────────────────────────

Ho: All panels contain unit roots        Number of panels      =      41
Ha: At least one panel is stationary      Avg. number of periods =  17.17

AR parameter: Panel-specific              Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Not included
Drift term:   Not included               ADF regressions: 0 lags
─────────────────────────────────────────────────────────────────────

                                    Statistic      p-value
─────────────────────────────────────────────────────────────────────
 Inverse chi-squared(82)   P        676.4941        0.0000
 Inverse normal            Z        -19.2978        0.0000
 Inverse logit t(204)      L*       -29.3735        0.0000
 Modified inv. chi-squared Pm        46.4222        0.0000
─────────────────────────────────────────────────────────────────────

 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
```

6.   Trade

```
Fisher-type unit-root test for trade
Based on augmented Dickey-Fuller tests
─────────────────────────────────────

Ho: All panels contain unit roots        Number of panels      =      42
Ha: At least one panel is stationary      Avg. number of periods =  17.45

AR parameter: Panel-specific              Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Included
Drift term:   Not included               ADF regressions: 0 lags
─────────────────────────────────────────────────────────────────────

                                    Statistic      p-value
─────────────────────────────────────────────────────────────────────
 Inverse chi-squared(84)   P        110.1242        0.0295
 Inverse normal            Z         -1.4407        0.0748
 Inverse logit t(209)      L*        -1.5620        0.0599
 Modified inv. chi-squared Pm         2.0155        0.0219
─────────────────────────────────────────────────────────────────────

 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
```

7.   Stability

```
Fisher-type unit-root test for Stability
Based on augmented Dickey-Fuller tests
─────────────────────────────────────────

Ho: All panels contain unit roots          Number of panels  =      42
Ha: At least one panel is stationary        Number of periods =      15

AR parameter: Panel-specific                 Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Not included
Drift term:   Not included                   ADF regressions: 0 lags
─────────────────────────────────────────────────────────────────────

                                   Statistic      p-value
─────────────────────────────────────────────────────────────────────
 Inverse chi-squared(84)    P      191.2968      0.0000
 Inverse normal             Z       -5.0491      0.0000
 Inverse logit t(214)       L*      -5.9475      0.0000
 Modified inv. chi-squared  Pm       8.2781      0.0000
─────────────────────────────────────────────────────────────────────

 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
```

8.   Government effectiveness

```
isher-type unit-root test for GovernmentEffectivness
ased on augmented Dickey-Fuller tests
─────────────────────────────────────────

o: All panels contain unit roots          Number of panels  =      42
a: At least one panel is stationary        Number of periods =      15

R parameter: Panel-specific                 Asymptotics: T -> Infinity
anel means:  Included
ime trend:   Not included
rift term:   Not included                   ADF regressions: 0 lags
─────────────────────────────────────────────────────────────────────

                                   Statistic      p-value
─────────────────────────────────────────────────────────────────────
Inverse chi-squared(84)    P      197.0037      0.0000
Inverse normal             Z       -4.4804      0.0000
Inverse logit t(214)       L*      -5.9198      0.0000
Modified inv. chi-squared  Pm       8.7184      0.0000
─────────────────────────────────────────────────────────────────────

P statistic requires number of panels to be finite.
Other statistics are suitable for finite or infinite number of panels.
```

9.   RQ

```
Fisher-type unit-root test for RegulatoryQuality
Based on augmented Dickey-Fuller tests
_____

Ho: All panels contain unit roots        Number of panels  =      42
Ha: At least one panel is stationary      Number of periods =      15

AR parameter: Panel-specific              Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Not included
Drift term:   Not included                ADF regressions: 0 lags
_____

                                    Statistic      p-value
_____

 Inverse chi-squared(84)   P        168.0776       0.0000
 Inverse normal            Z         -3.0999       0.0010
 Inverse logit t(214)      L*        -4.2069       0.0000
 Modified inv. chi-squared Pm         6.4867       0.0000
_____

 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
```

10.   RoL

```
Fisher-type unit-root test for Ruleoflaw
Based on augmented Dickey-Fuller tests
_____

Ho: All panels contain unit roots        Number of panels  =      42
Ha: At least one panel is stationary      Number of periods =      15

AR parameter: Panel-specific              Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Not included
Drift term:   Not included                ADF regressions: 0 lags
_____

                                    Statistic      p-value
_____

 Inverse chi-squared(84)   P        187.3766       0.0000
 Inverse normal            Z         -4.0451       0.0000
 Inverse logit t(214)      L*        -5.1453       0.0000
 Modified inv. chi-squared Pm         7.9757       0.0000
_____

 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
```

11.   FAGDP

```
. xtunitroot fisher FAGDP, dfuller lags(0)
(2 missing values generated)

Fisher-type unit-root test for FAGDP
Based on augmented Dickey-Fuller tests
─────────────────────────────────────────
Ho: All panels contain unit roots          Number of panels      =      41
Ha: At least one panel is stationary        Avg. number of periods =  17.95

AR parameter: Panel-specific                Asymptotics: T -> Infinity
Panel means:  Included
Time trend:   Not included
Drift term:   Not included                  ADF regressions: 0 lags
─────────────────────────────────────────────────────────────────────────
                                 Statistic       p-value
─────────────────────────────────────────────────────────────────────────
 Inverse chi-squared(82)    P      303.2714        0.0000
 Inverse normal             Z       -8.4719        0.0000
 Inverse logit t(209)       L*     -11.5683        0.0000
 Modified inv. chi-squared  Pm      17.2784        0.0000
─────────────────────────────────────────────────────────────────────────
 P statistic requires number of panels to be finite.
 Other statistics are suitable for finite or infinite number of panels.
─────────────────────────────────────────────────────────────────────────
```

Appendix C – World Governance Indicators

1.   V&A

Voice and Accountability

Voice and accountability captures perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media. This table lists the individual variables from each data sources used to construct this measure in the Worldwide Governance Indicators

Representative Sources

EIU	Democracy Index
	Vested interests
	Accountablity of Public Officials
	Human Rights
	Freedom of association
FRH	Political Rights (FRW)
	Civil Liberties (FRW)
	Press Freedom Index (FRP)
	Media (FNT)
	Civil Society (FNT)
	Electoral Process (FNT)
GCS	Transparency of government policymaking
	Freedom of the Press
	Favoritism in Decisions of Government Officials
	Effectiveness of Law-Making Body
GWP	Confidence in honesty of elections
IPD	Freedom of elections at national level
	Are electoral processes flawed?
	Do the representative Institutions (e.g. parliament) operate in accordance with the formal rules in force (e.g.Constitution)?
	Freedom of the Press (freedom of access to information, protection of journalists, etc.)
	Freedom of Association
	Freedom of assembly, demonstration
	Respect for the rights and freedoms of minorities (ethnic, religious, linguistic, immigrants...)
	Is the report produced by the IMF under Article IV published?
	Reliability of State budget (completeness, credibility, performance...)
	Reliability of State accounts (completeness, audit, review law...)
	Reliability of State-owned firms' accounts
	Reliability of basic economic and financial statistics (e.g. national accounts, price indices, foreign trade, currency and credit, etc.).
	Reliability of State-owned banks' accounts
	Is the State economic policy (e.g. budgetary, fiscal, etc.)... communicated?
	Is the State economic policy (e.g. budgetary, fiscal, etc.)... publicly debated?
	Degree of transparency in public procurement
	Freedom to leave the country (i.e. passports, exit visas, etc.)
	Freedom of entry for foreigners (excluding citizens of countries under agreements on free movement, e.g. Schengen Area, etc.)
	Freedom of movement for nationals around the world
	Genuine Media Pluralism
	Freedom of access, navigation and publishing on Internet
PRS	Military in politics
	Democratic accountability
RSF	Press Freedom Index

Non-representative Sources

AFR	How much do you trust the parliament?
	Overall, how satisfied are you with the way democracy works in your country?
	Free and fair elections
BTI	Political Participation (SI)
	Stability of Democratic Institutions (SI)

CCR	Political and Social Integration (SI)
	Civil Liberties
	Accountability and public voice
GII	Elections
	Public Management
	Access to Information and Openness
	Rights
IFD	Policy and legal framework for rural organizations
	Dialogue between government and rural organizations
IRP	Africa Electoral index
LBO	Satisfaction with democracy
	Trust in Parliament
MSI	Media Sustainability Index
OBI	Open Budget Index
VAB	Trust in parliament
	Satisfaction with democracy
WCY	Transparency of government policy
WJP	Factor 1: Limited Government Powers
	Factor 4: Fundamental Rights
	Factor 5: Open Government

Code	Data Source Name
ADB	African Development Bank Country Policy and Institutional Assessments
AFR	Afrobarometer
ASD	Asian Development Bank Country Policy and Institutional Assessments
BPS	Business Enterprise Environment Survey
BTI	Bertelsmann Transformation Index
CCR	Freedom House Countries at the Crossroads
EBR	European Bank for Reconstruction and Development Transition Report
EIU	Economist Intelligence Unit Riskwire & Democracy Index
FRH	Freedom House
GCB	Transparency International Global Corruption Barometer Survey
GCS	World Economic Forum Global Competitiveness Report
GII	Global Integrity Index
GWP	Gallup World Poll
HER	Heritage Foundation Index of Economic Freedom
HUM	Cingranelli Richards Human Rights Database and Political Terror Scale

2.   PS

Political Stability and Absence of Violence/Terrorism

Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically-motivated violence, including terrorism. This table lists the individual variables from each data sources used to construct this measure in the Worldwide Governance Indicators

Representative Sources

EIU	Orderly transfers
	Armed conflict
	Violent demonstrations
	Social Unrest
	International tensions / terrorist threat
GCS	Cost of Terrorism
HUM	Political terror scale
IJT	Security Risk Rating
IPD	Intensity of internal conflicts: ethnic, religious or regional
	Intensity of violent activities…of underground political organizations
	Intensity of social conflicts (excluding conflicts relating to land)
PRS	Government stability
	Internal conflict
	External conflict
	Ethnic tensions
WMO	

Protests and riots. The risk that the nature and impact of protests and riots (excluding those related to labour) cause damage to assets or injure or detain people, particularly if these disrupt normal movement, business operations, and activity.

Terrorism. The risk that the activities of any non-state armed group or individual cause (or are likely to cause) property damage and/or death/injury through violence. This risk definition includes terrorism, which uses violence (or the threat of) to advance a political cause, and similar tactics used by "for profit" organised crime.

Interstate war. This risk measures resultant impacts (death/property damage) and means, covering the spectrum from targeted military strikes against limited targets to full-scale war with the aim of changing the government and/or occupation.

Civil war. The risk of intra-state military conflict, in the form of an organised insurgency, separatist conflict, or full-blown civil war, in which rebels/insurgents attempt to overthrow the government, achieve independence, or at least heavily influence major government policies.

Non-representative Sources

WCY	The risk of political instability is very high
WJP	Factor 3.2: Civil conflict is effectively limited (Order and Security)

Code	Data Source Name
ADB	African Development Bank Country Policy and Institutional Assessments
AFR	Afrobarometer
ASD	Asian Development Bank Country Policy and Institutional Assessments
BPS	Business Enterprise Environment Survey
BTI	Bertelsmann Transformation Index
CCR	Freedom House Countries at the Crossroads
EBR	European Bank for Reconstruction and Development Transition Report
EIU	Economist Intelligence Unit Riskwire & Democracy Index
FRH	Freedom House
GCB	Transparency International Global Corruption Barometer Survey
GCS	World Economic Forum Global Competitiveness Report
GII	Global Integrity Index
GWP	Gallup World Poll
HER	Heritage Foundation Index of Economic Freedom
HUM	Cingranelli Richards Human Rights Database and Political Terror Scale
IFD	IFAD Rural Sector Performance Assessments
IJT	iJET Country Security Risk Ratings

IPD	Institutional Profiles Database
IRP	IREEP African Electoral Index
LBO	Latinobarometro
MSI	International Research and Exchanges Board Media Sustainability Index
OBI	International Budget Project Open Budget Index
PIA	World Bank Country Policy and Institutional Assessments
PRC	Political Economic Risk Consultancy Corruption in Asia Survey
PRS	Political Risk Services International Country Risk Guide
RSF	Reporters Without Borders Press Freedom Index
TPR	US State Department Trafficking in People report
VAB	Vanderbilt University Americas Barometer
WCY	Institute for Management and Development World Competitiveness Yearbook
WJP	World Justice Project Rule of Law Index
WMO	Global Insight Business Conditions and Risk Indicators

3.   GE

Government Effectiveness

Government effectiveness captures perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies. This table lists the individual variables from each data sources used to construct this measure in the Worldwide Governance Indicators

Code	Concept Measured
Representative Sources	
EIU	Quality of bureaucracy / institutional effectiveness
	Excessive bureaucracy / red tape
GCS	Infrastructure
	Quality of primary education
GWP	Satisfaction with public transportation system
	Satisfaction with roads and highways
	Satisfaction with education system
IPD	Coverage area: public school
	Coverage area: basic health services
	Coverage area: drinking water and sanitation
	Coverage area: electricity grid
	Coverage area: transport infrastructure
	Coverage area: maintenance and waste disposal
PRS	Bureaucratic quality
WMO	

Infrastructure disruption. This reflects the likelihood of disruption to and/or inadequacy of infrastructure for transport, including due to terrorism/insurgency, strikes, politically motivated shutdowns, natural disasters; infrastructure includes (as relevant) roads, railways, airports, ports, and customs checkpoints.

State failure. The risk the state is unable to exclusively ensure law and order, and the supply of basic goods such as food, water, infrastructure, and energy, or is unable to respond to or manage current or likely future emergencies, including natural disasters and financial or economic crises.

Policy instability. The risk the government's broad policy framework shifts over the next year, making the business environment more challenging. This might include more onerous employment or environmental regulation; local content requirements; import/export barriers, tariffs, or quotas; other protectionist measures; price controls or caps; more "political" control of monetary policy, or simply more direct intervention into the operations and decisions of private companies etc

Code	Concept Measured
Non-representative Sources	
ADB	Quality of public administration
	Quality of budgetary and financial management
	Efficiency of revenue mobilization
AFR	Government handling of public services
	Health
	Education
ASD	Quality of public administration
	Efficiency of revenue mobilization
	Quality of budgetary & financial management
BPS	How problematic are telecommunications for the growth of your business ?
	How problematic is electricity for the growth of your business?
	How problematic is transportation for the growth of your business?
BTI	Consensus Building (MI)
	Governance Capability (MI)
	Resource Efficiency (MI)
GII	Civil Service Integrity
	Public Management
	Business Environment & Infrastructure
	Welfare
	Health and Education
IFD	Allocation & management of public resources for rural development

LBO	Trust in Government
PIA	Quality of public administration
	Quality of budgetary and financial manangement
	Efficiency of revenue mobilization
WCY	Government economic policies do not adapt quickly to changes in the economy
	The public service is not independent from political interference
	Government decisions are not effectively implemented
	Bureaucracy hinders business activity
	The distribution infrastructure of goods and services is generally inefficient
	Policy direction is not consistent

Code	Data Source Name
ADB	African Development Bank Country Policy and Institutional Assessments
AFR	Afrobarometer
ASD	Asian Development Bank Country Policy and Institutional Assessments
BPS	Business Enterprise Environment Survey
BTI	Bertelsmann Transformation Index
CCR	Freedom House Countries at the Crossroads
EBR	European Bank for Reconstruction and Development Transition Report
EIU	Economist Intelligence Unit Riskwire & Democracy Index
FRH	Freedom House
GCB	Transparency International Global Corruption Barometer Survey
GCS	World Economic Forum Global Competitiveness Report
GII	Global Integrity Index
GWP	Gallup World Poll
HER	Heritage Foundation Index of Economic Freedom
HUM	Cingranelli Richards Human Rights Database and Political Terror Scale
IFD	IFAD Rural Sector Performance Assessments
IJT	iJET Country Security Risk Ratings
IPD	Institutional Profiles Database
IRP	IREEP African Electoral Index
LBO	Latinobarometro
MSI	International Research and Exchanges Board Media Sustainability Index
OBI	International Budget Project Open Budget Index
PIA	World Bank Country Policy and Institutional Assessments
PRC	Political Economic Risk Consultancy Corruption in Asia Survey
PRS	Political Risk Services International Country Risk Guide
RSF	Reporters Without Borders Press Freedom Index
TPR	US State Department Trafficking in People report
VAB	Vanderbilt University Americas Barometer
WCY	Institute for Management and Development World Competitiveness Yearbook
WJP	World Justice Project Rule of Law Index
WMO	Global Insight Business Conditions and Risk Indicators

4.   RQ

Regulatory Quality

Regulatory quality captures perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. This table lists the individual variables from each data sources used to construct this measure in the Worldwide Governance Indicators

Code   **Concept Measured**

Representative Sources
EIU   Unfair competitive practices
               Price controls
               Discriminatory tariffs
               Excessive protections
               Discriminatory taxes
GCS   Burden of government regulations
               Extent and effect of taxation
               Prevalence of Trade Barriers
               Intensity of Local Competition
               Ease of starting a new business
               Effectiveness of anti-trust policy
               Stringency of environmental regulations
HER   Investment Freedom

               Financial Freedom
IPD   Ease of starting a business governed by local law?
               Ease of setting up a subsidiary for a foreign firm?
               Share of administered prices
               Does the State subsidize commodity prices (i.e. food and other essential goods, excluding oil)?
               Does the State subsidize the price of petrol at the pumps?

               Importance, de facto, of barriers to entry for new competitors in markets for goods and services (excluding the financial sector and beyond the narrow constraints of the market)… related to the administration (red tape etc.)

               Importance, de facto, of barriers to entry for new competitors in markets for goods and services (excluding finance and beyond the narrow constraints of the market)… related to the practices of already established competitors
               Efficiency of competition regulation in the market sector (excluding financial sector)
PRS   Investment profile
WMO

               Regulatory burden. The risk that normal business operations become more costly due to the regulatory environment. This includes regulatory compliance and bureaucratic inefficiency and/or opacity. Regulatory burdens vary across sectors so scoring should give greater weight to sectors contributing the most to the economy.

               Tax inconsistency. Tax inconsistency also captures the risk that fines and penalties will be levied for non-compliance with a tax code that appears disproportionate or manipulated for political ends.

Non-representative Sources
ADB   Trade policy
               Regional integration
               Business regulatory environment
ASD   Trade policy
               Business regulatory environment
BPS   How problematic are labor regulations for the growth of your business?
               How problematic are tax regulations for the growth of your business?
               How problematic are customs and trade regulations for the growth of your business?
BTI   Organization of the Market and Competition
EBR   Price liberalisation
               Trade & foreign exchange system
               Competition policy
IFD   Enabling conditions for rural financial services development
               Investment climate for rural businesses

PIA	Access to agricultural input and product markets
	Business regulatory environment
	Trade policy
WCY	Protectionism in the country negatively affects the conduct of business
	Competition legislation in your country does not prevent unfair competition
	Price controls affect pricing of products in most industries
	Access to capital markets (foreign and domestic) is easily available
	Ease of doing business is not a competitive advantage for your country
	Financial institutions' transparency is not widely developed in your country
	Customs' authorities do not facilitate the efficient transit of goods
	The legal framework is detrimental to your country's competitiveness
	Foreign investors are free to acquire control in domestic companies
	Public sector contracts are sufficiently open to foreign bidders
	Real personal taxes are non distortionary
	Real corporate taxes are non distortionary
	Banking regulation does not hinder competitiveness
	Labor regulations hinder business activities
	Subsidies impair economic development
	Easy to start a business
WJP	Factor 6: Regulatory Enforcement

Code	Data Source Name
ADB	African Development Bank Country Policy and Institutional Assessments
AFR	Afrobarometer
ASD	Asian Development Bank Country Policy and Institutional Assessments
BPS	Business Enterprise Environment Survey
BTI	Bertelsmann Transformation Index
CCR	Freedom House Countries at the Crossroads
EBR	European Bank for Reconstruction and Development Transition Report
EIU	Economist Intelligence Unit Riskwire & Democracy Index
FRH	Freedom House
GCB	Transparency International Global Corruption Barometer Survey
GCS	World Economic Forum Global Competitiveness Report
GII	Global Integrity Index
GWP	Gallup World Poll
HER	Heritage Foundation Index of Economic Freedom
HUM	Cingranelli Richards Human Rights Database and Political Terror Scale
IFD	IFAD Rural Sector Performance Assessments
IJT	iJET Country Security Risk Ratings
IPD	Institutional Profiles Database
IRP	IREEP African Electoral Index
LBO	Latinobarometro
MSI	International Research and Exchanges Board Media Sustainability Index
OBI	International Budget Project Open Budget Index
PIA	World Bank Country Policy and Institutional Assessments
PRC	Political Economic Risk Consultancy Corruption in Asia Survey
PRS	Political Risk Services International Country Risk Guide
RSF	Reporters Without Borders Press Freedom Index
TPR	US State Department Trafficking in People report
VAB	Vanderbilt University Americas Barometer
WCY	Institute for Management and Development World Competitiveness Yearbook
WJP	World Justice Project Rule of Law Index
WMO	Global Insight Business Conditions and Risk Indicators

5.   RoL

Rule of Law

Rule of law captures perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence. This table lists the individual variables from each data sources used to construct this measure in the Worldwide Governance Indicators

Code   **Concept Measured**

Representative Sources

EIU
Violent crime
Organized crime
Fairness of judicial process
Enforceability of contracts
Speediness of judicial process
Confiscation/expropriation
Intellectual property rights protection
Private property protection

GCS
Business Cost of Crime and Violence
Cost of Organized Crime
Reliability of Police Services
Judicial Indepdendence
Efficiency of Legal Framework for Challenging Regulations
IPR protection
Property Rights
Informal Sector

GWP
Confidence in the police force
Confidence in judicial system
Have you had money property stolen from you or another household member?
Have you been assaulted or mugged?

HER
Property Rights

IPD
Degree of security of goods and persons

by criminal organizations (drug trafficking, weapons, prostitution...)

Degree of judicial independence vis-à-vis the State

Degree of enforcement of court orders

Timeliness of judicial decisions

Equal treatment of foreigners before the law (compared to nationals)

Practical ability of the administration to limit tax evasion

Efficiency of the legal means to protect property rights in the event of conflict between private stakeholders?

Generally speaking, does the State exercise arbitrary pressure on private property (e.g. red tape...)?

Does the State pay compensation equal to the loss in cases of expropriation (by law or fact) when the expropriation concerns land ownership?

Does the State pay compensation equal to the loss in cases of expropriation (by law or fact) when the expropriation concerns production means?

Degree of observance of contractual terms between national private stakeholders
Degree of observance of contractual terms between national and foreign private stakeholders

In the past 3 years, has the State withdrawn from contracts without paying the corresponding compensation... vis-à-vis national stakeholders?

In the past 3 years, has the State withdrawn from contracts without paying the corresponding compensation... vis-à-vis foreign stakeholders?

Respect for intellectual property rights relating to... trade secrets and industrial patents

Respect for intellectual property rights relating to... industrial counterfeiting

Does the State recognize formally the diversity of land tenure system?

PRS Law and Order

TPR Trafficking in People

WMO

Expropriation. The risk that the state or other sovereign political authority will deprive, expropriate, nationalise, or confiscate the assets of private businesses, whether domestic or foreign.

State contract alteration. The risk that a government or state body alters the terms of, cancels outright, or frustrates (usually through delay) contracts it has with private parties without due process.

Contract enforcement. The risk that the judicial system will not enforce contractual agreements between private-sector entities, whether domestic or foreign, due to inefficiency, corruption, bias, or an inability to enforce rulings promptly and firmly.

Non-representative Sources

ADB Property rights and rule based governance

AFR Over the past year, how often have you or anyone in your family feared crime in your own home?

Over the past year, how often have you or anyone in your family had something stolen from your house?

Over the past year, how often have you or anyone in your family been physically attacked?

How much do you trust the courts of law?

Trust in police

ASD Property rights and rule based governance

BPS How often is following characteristic associated with the court system: Fair and honest?

How often is following characteristic associated with the court system: Enforceable?

How often is following characteristic associated with the court system: Quick?

How problematic is crime for the growth of your business?

How problematic is judiciary for the growth of your business?

BTI Separation of powers

Independent Judiciary

Civil rights

CCR Rule of Law

FRH Judicial framework and independence (FNT)

GII Public Management

Rights

Gender

IFD Access to land

Access to water for agriculture

LBO Trust in Judiciary

Trust in Police

Have you been a victim of crime?

PIA Property rights and rule based governance

VAB Trust in supreme court

Trust in justice system

Trust in police

Have you been a victim of crime?

WCY Tax evasion is a common practice in your country

Justice is not fairly administered in society

Personal security and private property are not adequately protected

Parallel economy impairs economic development in your country

Patent and copyright protection is not adequately enforced in your country

WJP Factor 3.1: Crime is effectively controlled (Order and Security)

Factor 7: Civil Justice

Factor 8: Criminal Justice

Code	Data Source Name
ADB	African Development Bank Country Policy and Institutional Assessments
AFR	Afrobarometer
ASD	Asian Development Bank Country Policy and Institutional Assessments
BPS	Business Enterprise Environment Survey
BTI	Bertelsmann Transformation Index
CCR	Freedom House Countries at the Crossroads

EBR	European Bank for Reconstruction and Development Transition Report
EIU	Economist Intelligence Unit Riskwire & Democracy Index
FRH	Freedom House
GCB	Transparency International Global Corruption Barometer Survey
GCS	World Economic Forum Global Competitiveness Report
GII	Global Integrity Index
GWP	Gallup World Poll
HER	Heritage Foundation Index of Economic Freedom
HUM	Cingranelli Richards Human Rights Database and Political Terror Scale
IFD	IFAD Rural Sector Performance Assessments
IJT	iJET Country Security Risk Ratings
IPD	Institutional Profiles Database
IRP	IREEP African Electoral Index
LBO	Latinobarometro
MSI	International Research and Exchanges Board Media Sustainability Index
OBI	International Budget Project Open Budget Index
PIA	World Bank Country Policy and Institutional Assessments
PRC	Political Economic Risk Consultancy Corruption in Asia Survey
PRS	Political Risk Services International Country Risk Guide
RSF	Reporters Without Borders Press Freedom Index
TPR	US State Department Trafficking in People report
VAB	Vanderbilt University Americas Barometer
WCY	Institute for Management and Development World Competitiveness Yearbook
WJP	World Justice Project Rule of Law Index
WMO	Global Insight Business Conditions and Risk Indicators

6.   CoC

Control of Corruption

Control of corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests. This table lists the individual variables from each data sources used to construct this measure in the Worldwide Governance Indicators

Code	Concept Measured
Representative Sources	
EIU	Corruption among public officials
GCS	Public Trust in Politicians
	Diversion of Public Funds
	Irregular Payments in Export and Import
	Irregular Payments in Public Utilities
	Irregular payments in tax collection
	Irregular Payments in Public Contracts
	Irregular Payments in Judicial Decisions
	State Capture
GWP	Is corruption in governmnent widespread?
IPD	Level of "petty" corruption between administration and citizens
	Level of corruption between administrations and local businesses
	Level of corruption between administrations and foreign companies
PRS	Corruption
WMO	*Corruption.* The risk that individuals/companies will face bribery or other corrupt practices to carry out business, from securing major contracts to being allowed to import/export a small product or obtain everyday paperwork. This threatens a company's ability to operate in a country, or opens it up to legal or regulatory penalties and reputational damage.
Non-representative Sources	
ADB	Transparency, accountability and corruption in public sector
AFR	How many elected leaders (parliamentarians) do you think are involved in corruption?
	How many judges and magistrates do you think are involved in corruption?
	How many government officials do you think are involved in corruption?
	How many border/tax officials do you think are involved in corruption?
ASD	Transparency, accountability and corruption in public sector
BPS	How common is it for firms to have to pay irregular additional payments to get things done?
	Percentage of total annual sales do firms pay in unofficial payments to public officials?
	How often do firms make extra payments in connection with taxes, customs, and judiciary?
	How problematic is corruption for the growth of your business?
BTI	Anti-Corruption policy
	Prosecution of office abuse
CCR	Anti-Corruption and Transparency
FRH	Corruption (FNT)
GCB	Frequency of household bribery - paid a bribe to one of the 8/9 services
	Frequency of corruption among public institutions: Political parties
	Frequency of corruption among public institutions: Parliament/Legislature
	Frequency of corruption among public institutions: Media
	Frequency of corruption among public institutions: Legal system/Judiciary
	Frequency of corruption among public institutions: Public officials
GII	Accountability
IFD	Accountability, transparency and corruption in rural areas
LBO	Frequency of corruption
PIA	Transparency, accountability and corruption in public sector
PRC	To what extent does corruption exist in a way that detracts from the business environment for foreign companies?
VAB	Frequency of corruption among government officials

| WCY | Bribing and corruption exist in the economy |
| WJP | Factor 2: Absence of Corruption |

Code	Data Source Name
ADB	African Development Bank Country Policy and Institutional Assessments
AFR	Afrobarometer
ASD	Asian Development Bank Country Policy and Institutional Assessments
BPS	Business Enterprise Environment Survey
BTI	Bertelsmann Transformation Index
CCR	Freedom House Countries at the Crossroads
EBR	European Bank for Reconstruction and Development Transition Report
EIU	Economist Intelligence Unit Riskwire & Democracy Index
FRH	Freedom House
GCB	Transparency International Global Corruption Barometer Survey
GCS	World Economic Forum Global Competitiveness Report
GII	Global Integrity Index
GWP	Gallup World Poll
HER	Heritage Foundation Index of Economic Freedom
HUM	Cingranelli Richards Human Rights Database and Political Terror Scale
IFD	IFAD Rural Sector Performance Assessments
IJT	iJET Country Security Risk Ratings
IPD	Institutional Profiles Database
IRP	IREEP African Electoral Index
LBO	Latinobarometro
MSI	International Research and Exchanges Board Media Sustainability Index
OBI	International Budget Project Open Budget Index
PIA	World Bank Country Policy and Institutional Assessments
PRC	Political Economic Risk Consultancy Corruption in Asia Survey
PRS	Political Risk Services International Country Risk Guide
RSF	Reporters Without Borders Press Freedom Index
TPR	US State Department Trafficking in People report
VAB	Vanderbilt University Americas Barometer
WCY	Institute for Management and Development World Competitiveness Yearbook
WJP	World Justice Project Rule of Law Index
WMO	Global Insight Business Conditions and Risk Indicators

Appendix D – Descriptive statistics

Variable		Mean	Std. Dev.	Min	Max	Observations	
GGPC	overall	2.034115	5.907521	-37.28493	91.67289	N =	743
	between		2.216504	-1.727606	8.799329	n =	42
	within		5.484976	-38.10774	84.90768	T =	17.6905
GCF	overall	20.25351	9.848344	-2.424358	74.82202	N =	717
	between		7.900799	5.738153	47.45409	n =	42
	within		6.953167	3.424848	59.51329	T-bar =	17.0714
FDI	overall	4.345987	9.011683	-82.8921	89.47596	N =	749
	between		4.603303	.1339261	27.77769	n =	42
	within		7.766417	-106.3238	66.04426	T-bar =	17.8333
Inflat~n	overall	56.20561	934.2433	-35.83668	24411.03	N =	704
	between		264.8518	1.658341	1683.682	n =	41
	within		899.2195	-1625.845	22783.55	T-bar =	17.1707
Trade	overall	72.56018	37.62665	17.85861	321.6317	N =	733
	between		32.72529	32.169	170.1089	n =	42
	within		19.18522	-42.95172	228.541	T-bar =	17.4524
FAGDP	overall	.1378334	.1535753	-.0033734	1.868381	N =	737
	between		.1176654	.0035873	.670601	n =	42
	within		.1004318	-.4468099	1.335614	T =	17.5476
V_A	overall	-.6025567	.7171825	-2.176104	1.024631	N =	630
	between		.6859303	-1.891659	.8620516	n =	42
	within		.233072	-1.881921	.2231812	T =	15
PS	overall	-.5827903	.9187393	-2.994749	1.186454	N =	630
	between		.8407212	-2.299356	.9734567	n =	42
	within		.3911542	-2.467623	.8953712	T =	15
GE	overall	-.7341642	.6015912	-1.982005	.9513338	N =	630
	between		.5747129	-1.688239	.6719105	n =	42
	within		.1974048	-1.489477	.1978034	T =	15
RQ	overall	-.6623931	.6237102	-2.412734	.9835665	N =	630
	between		.5926169	-1.822838	.6208789	n =	42
	within		.2136267	-1.520892	.5311923	T =	15
RoL	overall	-.7211149	.651471	-2.229847	1.056726	N =	630
	between		.6262607	-1.706478	.9492667	n =	42
	within		.20234	-1.690536	.1407066	T =	15
CoC	overall	-.609882	.5864339	-2.057458	1.249671	N =	630
	between		.5450632	-1.452621	.8928404	n =	42
	within		.2311352	-1.415189	.4721946	T =	15
Coast	overall	.6666667	.4717166	0	1	N =	756
	between		.4771187	0	1	n =	42
	within		0	.6666667	.6666667	T =	18
ELF	overall	.6863704	.2080389	.084	.922	N =	756
	between		.2103335	.084	.922	n =	42
	within		.0060126	.5258148	.6958148	T =	18
Popula~n	overall	1.77e+07	2.52e+07	399508	1.73e+08	N =	756
	between		2.51e+07	462769.6	1.39e+08	n =	42
	within		4217169	-1.06e+07	5.11e+07	T =	18

Appendix E – Ethno-linguistic fractionalization list

COUNTRY	ELF85
USA	0,575
Canada	0,769
Bahamas	0,408
Cuba	0,638
Haiti	0,011
Dominican Rep	0,483
Jamaica	0,424
Trinidad	0,639
Barbados	0,077
Mexico	0,219
Guatemala	0,758
Honduras	0,12
El Salvador	0,159
Nicaragua	0,39
Costa Rica	0,458
Panama	0,48
Colombia	0,596
Venezuela	0,524
Guyana	0,57
Surinam	0,734
Ecuador	0,657
Peru	0,51
Brazil	0,576
Bolivia	0,74
Paraguay	0,18
Chile	0,515
Argentina	0,288
Uruguay	0,375
United Kingdom	0,389
Ireland	0,029
Netherlands	0,345
Belgium	0,589
Luxembourg	0,426
France	0,318
Switzerland	0,586
Spain	0,46
Portugal	0,007
Germay (United)	0,111
West Germany	0,141
East Germany	0,014
Poland	0,035
Austria	0,153
Hungary	0,013
Czechoslovakia	0,507
Czech Republic	0,107
Slovakia	0,238
Italy	0,114
Malta	0,067
Albania	0,064
Yugoslavia	0,581
Macedonia	0,511

Croatia	0,416
Yugoslavia (United)	0,801
Bosnia	0,701
Slovenia	0,179
Greece	0,085
Cyprus	0,329
Bulgaria	0,225
Moldova	0,547
Romania	0,208
Russia	0,333
USSR	0,701
Estonia	0,528
Latvia	0,61
Lithuania	0,353
Ukraine	0,422
Belarus	0,374
Armenia	0,128
Georgia	0,493
Azerbaijan	0,31
Finland	0,129
Sweden	0,137
Norway	0,064
Denmark	0,061
Iceland	0,033
Cape Verde	0,546
Guinea-Bissau	0,784
Eq Guinea	0,465
Gambia	0,716
Mali	0,833
Senegal	0,791
Benin	0,525
Mauritania	0,319
Niger	0,682
Ivory Coast	0,896
Guinea	0,751
Burkina Faso	0,712
Liberia	0,897
Sierra Leone	0,767
Ghana	0,874
Togo	0,707
Cameroon	0,879
Nigeria	0,857
Gabon	0,808
CAR	0,826
Chad	0,856
Congo (B)	0,684
Zaire	0,902
Uganda	0,922
Kenya	0,882
Tanzania	0,919
Burundi	0,313
Rwanda	0,26
Somalia	0,032
Djibouti	0,713
Ethiopia (United)	0,693
Eritrea	0,645
Ethiopia	0,766
Angola	0,783

Mozambique	0,698
Zambia	0,807
Zimbabwe	0,472
Malawi	0,606
South Africa	0,886
Namibia	0,722
Lesotho	0,218
Botswana	0,399
Swaziland	0,267
Madagascar	0,871
Comoros	0,084
Mauritius	0,489
Morocco	0,399
Algeria	0,299
Tunisia	0,05
Libya	0,268
Sudan	0,731
Iran	0,75
Turkey	0,255
Iraq	0,375
Egypt	0,025
Syria	0,21
Lebanon	0,356
Jordan	0,455
Israel	0,287
Saudi Arabia	0,3
Yemen (United)	0,05
North Yemen	0,017
South Yemen	0,162
Kuwait	0,788
Bahrain	0,501
Qatar	0,758
UAE	0,242
Oman	0,142
Afghanistan	0,668
Turkmenistan	0,463
Tajikistan	0,55
Kyrgyzstan	0,661
Uzbekistan	0,478
Kazakstan	0,692
China	0,131
Mongolia	0,349
Taiwan	0,274
Korea, North	0,004
Korea, South	0,003
Japan	0,014
India	0,878
Bhutan	0,563
Pakistan (United)	
Bangladesh	0,043
Pakistan	0,537
Myanmar	0,421
Sri Lanka	0,422
Maldives	0
Nepal	0,659
Thailand	0,634
Kampuchea	0,238
Laos	0,548

Vietnam (United)	0,231
Malaysia	0.719
Singapore	0,398
Brunei	0,54
Philippines	0,859
Indonesia	0,757
Australia	0,437
Papua-New Guinea	0,984
New Zealand	0,421
Vanuatu	0,34
Solomon	0,954
Fiji	0,684
Samoa	0,036

Appendix F – Regressions

(Note: the *FAGDP* variable is multiplied by 100)

1.   Basic (1)

```
. xtreg ggpc lggpc lfdi lgcf inf trade FAGDP, fe

Fixed-effects (within) regression              Number of obs    =         632
Group variable: ID                             Number of groups =          40

R-sq:                                          Obs per group:
     within  = 0.0807                                        min =           1
     between = 0.0056                                        avg =        15.8
     overall = 0.0332                                        max =          18

                                               F(6,586)         =        8.58
corr(u_i, Xb)   = -0.5764                       Prob > F         =      0.0000


        ggpc |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       lggpc |   .0853486   .0402899     2.12   0.035     .0062184    .1644787
        lfdi |   .1015165   .0334129     3.04   0.002     .0358928    .1671401
        lgcf |   .0170909   .0304506     0.56   0.575    -.0427146    .0768965
         inf |  -.0001918   .0001846    -1.04   0.299    -.0005543    .0001708
       trade |    .035986   .0118232     3.04   0.002     .0127649    .0592071
       FAGDP |   5.398858   2.026748     2.66   0.008     1.418283    9.379434
       _cons |   -2.43248   .8741234    -2.78   0.006    -4.149277   -.7156842
-------------+----------------------------------------------------------------
     sigma_u |   2.831909
     sigma_e |  4.3202464
         rho |  .30054104   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(39, 586) = 2.46                  Prob > F = 0.0000
```

2.   CoC (2)

```
. xtreg ggpc lggpc lfdi lgcf inf trade FAGDP Controlof, fe

Fixed-effects (within) regression              Number of obs    =         537
Group variable: ID                             Number of groups =          40

R-sq:                                          Obs per group:
     within  = 0.0947                                        min =           1
     between = 0.0323                                        avg =        13.4
     overall = 0.0464                                        max =          15

                                               F(7,490)         =        7.32
corr(u_i, Xb)   = -0.6379                       Prob > F         =      0.0000


             ggpc |    Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----------------+----------------------------------------------------------------
            lggpc |  .0909539   .0460229    1.98   0.049     .0005273    .1813805
             lfdi |  .1071083   .0348155    3.08   0.002     .0387023    .1755143
             lgcf |  .0219349   .0334186    0.66   0.512    -.0437266    .0875964
              inf | -.0001573   .0001893   -0.83   0.406    -.0005291    .0002146
            trade |   .035367    .012628    2.80   0.005     .0105552    .0601788
            FAGDP |  5.009486   2.169489    2.31   0.021     .7468372    9.272134
ControlofCorruption|  1.970445   .9193489    2.14   0.033     .1640926    3.776797
            _cons | -1.267583   1.096131   -1.16   0.248     -3.42128    .8861142
-----------------+----------------------------------------------------------------
          sigma_u |  3.0405364
          sigma_e |  4.3833096
              rho |  .32485683   (fraction of variance due to u_i)
----------------------------------------------------------------------------------
F test that all u_i=0: F(39, 490) = 2.45                  Prob > F = 0.0000
```

3.   PS (3)

```
Fixed-effects (within) regression            Number of obs      =          537
Group variable: ID                           Number of groups   =           40

R-sq:                                         Obs per group:
     within  = 0.1110                                     min =            1
     between = 0.0145                                     avg =         13.4
     overall = 0.0428                                     max =           15

                                              F(7,490)           =         8.74
corr(u_i, Xb)  = -0.6817                      Prob > F           =       0.0000

------------------------------------------------------------------------------
        ggpc |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       lggpc |   .0825904   .0456727     1.81   0.071    -.0071481    .1723289
        lfdi |   .0939734   .0347066     2.71   0.007     .0257812    .1621656
        lgcf |   .0276298    .033169     0.83   0.405    -.0375413    .0928009
         inf |  -.0001699   .0001873    -0.91   0.365    -.0005379    .0001981
       trade |   .0348037   .0124684     2.79   0.005     .0103056    .0593018
       FAGDP |   4.585073   2.144019     2.14   0.033     .3724682    8.797679
   Stability |   1.875926   .5076773     3.70   0.000      .878433    2.873419
       _cons |   -1.30201   1.003499    -1.30   0.195    -3.273702    .6696816
-------------+----------------------------------------------------------------
     sigma_u |  3.3316339
     sigma_e |  4.3437054
         rho |  .37039332   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(39, 490) = 2.75                    Prob > F = 0.0000
```

4.   RoL (4)

```
Fixed-effects (within) regression            Number of obs      =          537
Group variable: ID                           Number of groups   =           40

R-sq:                                         Obs per group:
     within  = 0.1014                                     min =            1
     between = 0.0627                                     avg =         13.4
     overall = 0.0567                                     max =           15

                                              F(7,490)           =         7.89
corr(u_i, Xb)  = -0.6701                      Prob > F           =       0.0000

------------------------------------------------------------------------------
        ggpc |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
       lggpc |   .0865526   .0458876     1.89   0.060     -.003608    .1767133
        lfdi |   .1053938   .0346967     3.04   0.003     .0372211    .1735665
        lgcf |   .0158855   .0333138     0.48   0.634      -.04957    .0813409
         inf |  -.0001459   .0001887    -0.77   0.440    -.0005166    .0002248
       trade |     .03083   .0125418     2.46   0.014     .0061877    .0554723
       FAGDP |   5.329078   2.136434     2.49   0.013     1.131376    9.526779
   Ruleoflaw |     2.9352   1.021674     2.87   0.004     .9277973    4.942602
       _cons |    .042899   1.278385     0.03   0.973    -2.468894    2.554691
-------------+----------------------------------------------------------------
     sigma_u |   3.084156
     sigma_e |  4.3671808
         rho |  .33277088   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0: F(39, 490) = 2.48                    Prob > F = 0.0000
```

5.   GE (5)

```
Fixed-effects (within) regression            Number of obs     =        537
Group variable: ID                           Number of groups  =         40

R-sq:                                        Obs per group:
    within  = 0.0910                                    min =          1
    between = 0.0476                                    avg =       13.4
    overall = 0.0536                                    max =         15

                                             F(7,490)          =       7.01
corr(u_i, Xb)  = -0.5865                      Prob > F          =     0.0000
```

ggpc	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
lggpc	.0901604	.0461246	1.95	0.051	-.000466	.1807869
lfdi	.1060619	.0349039	3.04	0.003	.0374821	.1746416
lgcf	.0174301	.0335109	0.52	0.603	-.0484126	.0832729
inf	-.0001614	.0001897	-0.85	0.395	-.0005341	.0002114
trade	.0358169	.0127359	2.81	0.005	.0107932	.0608406
FAGDP	5.223246	2.1718	2.41	0.017	.9560556	9.490435
GovernmentEffectivness	1.635794	1.013824	1.61	0.107	-.3561857	3.627773
_cons	-1.271822	1.183254	-1.07	0.283	-3.596699	1.053055
sigma_u	2.8008077					
sigma_e	4.3921562					
rho	.28908648	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(39, 490) = 2.25                      Prob > F = 0.0000
```

6.   V&A (6)

```
Fixed-effects (within) regression            Number of obs     =        537
Group variable: ID                           Number of groups  =         40

R-sq:                                        Obs per group:
    within  = 0.1102                                    min =          1
    between = 0.0199                                    avg =       13.4
    overall = 0.0467                                    max =         15

                                             F(7,490)          =       8.67
corr(u_i, Xb)  = -0.6957                      Prob > F          =     0.0000
```

ggpc	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
lggpc	.0607922	.0464136	1.31	0.191	-.0304022	.1519865
lfdi	.1122894	.034534	3.25	0.001	.0444364	.1801424
lgcf	.0174561	.0331264	0.53	0.598	-.0476313	.0825434
inf	-.0001505	.0001875	-0.80	0.423	-.000519	.0002179
trade	.0270591	.0125606	2.15	0.032	.0023799	.0517382
FAGDP	4.550659	2.147303	2.12	0.035	.3316019	8.769716
Voice	3.152362	.8675127	3.63	0.000	1.447858	4.856866
_cons	.0898371	1.174821	0.08	0.939	-2.218472	2.398146
sigma_u	3.4275206					
sigma_e	4.3456447					
rho	.38351058	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(39, 490) = 2.69                      Prob > F = 0.0000
```

7.   RQ (7)

```
Fixed-effects (within) regression            Number of obs      =        537
Group variable: ID                           Number of groups   =         40

R-sq:                                        Obs per group:
     within  = 0.0892                                      min =          1
     between = 0.0236                                      avg =       13.4
     overall = 0.0477                                      max =         15

                                             F(7,490)           =       6.85
corr(u_i, Xb)  = -0.5586                      Prob > F           =     0.0000
```

ggpc	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
lggpc	.0874776	.0462857	1.89	0.059	-.0034654	.1784205
lfdi	.1066065	.0349369	3.05	0.002	.0379618	.1752511
lgcf	.0131523	.0339446	0.39	0.699	-.0535427	.0798473
inf	-.0001598	.0001902	-0.84	0.401	-.0005335	.000214
trade	.034611	.0126927	2.73	0.007	.0096721	.0595499
FAGDP	5.330608	2.176533	2.45	0.015	1.054117	9.607098
RegulatoryQuality	1.295529	1.029408	1.26	0.209	-.7270697	3.318127
_cons	-1.484953	1.196005	-1.24	0.215	-3.834883	.864978
sigma_u	2.8000966					
sigma_e	4.3967082					
rho	.28855664	(fraction of variance due to u_i)				

```
F test that all u_i=0: F(39, 490) = 2.32                 Prob > F = 0.0000
```

Massoud Valipoor: **0913696**
Flemming Bakke: **0912850**

Preliminary Master Thesis report

- The effects of leadership on economic development -

Hand-in date:
15.01.2016

Campus:
BI Oslo

GRA 1902 Preliminary Master Thesis Report

Supervisor:

Anne Welle-Strand

Program:
Master of Science in Business

Table of contents

PART I: Introduction

1.1 Motivation and purpose of the study

Little research has been conducted on the effects of leadership on economic development. This is especially true in the case of developing countries. Throughout modern history there have been many cases where authoritative and undemocratic leaders have led their respective countries to what is considered growth miracles. Examples of such countries are China, South-Korea, Singapore, Taiwan and Chile. This might seem as an inconvenient paradox, going against the belief that economic development should go hand in hand with political freedom and democracy. One way argue that the order is reversed, and that as a country develops economically, a better quality of life for the inhabitants will follow, which in turn might lead to demand for more personal freedom and political transparency. This thesis aims to help diminish some of this research gap on the subject.

The purpose of this study will be to see how political leadership can affect economic development in aid receiving countries. The effects of foreign aid will primarily be measured by looking at economic development, via GDP growth in the respective countries. In this respect, south-Saharan Africa with its high inflow of foreign aid is deemed an interesting area of study.

As we come from two different business majors, Economics and Leadership and Change, we will incorporate competencies attained throughout the two majors in order to best answer our chosen research question. Thus, we will include both a quantitative and a qualitative part in our final thesis.

1.2 Economic situation of Africa

Africa is a continent characterized by rich natural resources, emerging markets and high levels of corruption. GDP per capita was 1045$ on average for Sub-Saharan Africa, while the world average was 8008$. Sub-Saharan Africa had an average growth rate of 3,7% in 2015, down from 4,6% in 2014 (Bank 2015a). It is deemed likely that unstable politics, corruption and poor governance limit Africa's economic development.

Economic development is perhaps the most important variable telling of a

country's quality of life. Economic development can be defined as progress in the economy. It usually refers to the adoption of new technologies, transition from an agriculture based to a industry based economy and general improvements of living standards. Unfortunately, economic development is hard to measure. Therefore, we will use economic growth as a proxy for economic development. By looking at year-to-year changes in GDP, economic growth can be assessed. It can be defined as $(GDP_{+1}-GDP)/GDP$. However, this will not distinguish between growth resulting from an increase in productivity, and growth resulting from population increase. Therefore, we will use year-to-year changes in GDP per capita as our measure for economic growth.

There is a large discrepancy within countries in sub-Saharan Africa. Countries like Botswana have experienced a large growth in GDP the last years, and Transparency International also rates the country amongst the least corrupt sub-Saharan African countries. In contrast, many other African countries have little growth and high levels of corruption, and there is most likely a link between the high levels of corruption and low economic growth (Patton 2014). Political leadership might explain the large discrepancy concerning growth and levels of corruption. African nations are known for large variations in political leadership styles, ranging from benevolent leaders like Nelson Mandela to infamous leaders like Idi Amin Dada.

Sub-Saharan African nations receive large amounts of foreign aid. A big proportion of this aid is meant to support the economic development. If the foreign aid recipient is a country deemed corrupt, the marginal benefit of this aid is most likely less than if the beneficiary was a country considered less corrupt. Thus, it is very interesting and potentially beneficial to look at economic growth linked to corruption.

1.3 Development and aid

As already mentioned, aid to Sub-Saharan Africa is largely meant to boost economic development. Foreign aid can potentially help improve economic development by making more capital available for investments, which again can improve productivity.

Foreign aid can be defined as "...*the international transfer of capital, goods, or*

services from a country or international organization for the benefit of the recipient country or its population" (Williams 2015). It can be in the form of a grant or a loan. The most common forms of foreign aid are unilateral aid, bilateral aid, project aid and tied aid. *Tied aid* is foreign aid that must be spent in the donor country. *Project aid* is earmarked money to a particular project. *Bilateral aid* is foreign aid that is capital flow from one country to another. *Multilateral aid* is assistance from one government to an organization, which later is transferred to developing countries with the goal of reducing poverty (Economist 2015).

Sub-Saharan Africa is the region in the world that receives most foreign aid. In 2013 they received a total of 46,8 billion dollars (Bank 2016b). Norway gave 31.7 billion NOK in total foreign aid in 2013, which amounts to 0.99 percent of their gross national income (Norad 2015). The sheer amount of this foreign aid underlines the importance of measuring and evaluating the effects of aid, in order to maximize the impact. With Chinas' increasing inroads into the African markets, with its "no strings attached" aid approach, the traditional western conditional-aid schemes are increasingly scrutinized to see whether they truly have the intended effects or not. Consequently, we believe our thesis can be a contributing factor in shedding some light on this important aspect of aid in.

1.4 Research question and subject of research

Based on the abovementioned, we propose the following research question:

"To what extent will economic development in aid-receiving countries, be mediated by the effect of their political leadership?"

As the purpose of this paper is to examine, with the goal to explain, the influence of a recipient countries political leadership on the effects of aid received, a comparison between two seemingly comparable aid-receiving countries with a somewhat divergent political leadership would be highly useful. More specifically, when comparing two nations with many initial similarities, the likelihood for any unobserved variables explaining the effects of aid are reduced, which in turn is expected to strengthen the explanatory effect of the two countries political leadership. For this task, countries that receive large amounts of foreign aid relative to their GDP were of interest. In order to find fitting candidates, all sub-Saharan African countries were included in an Excel-sheet were they were

ranked after aid relative to their GDP (See appendix 1). The ideal subjects would be countries that have many similarities in terms of economic, geographic, demographic and cultural aspects, while differing in political leadership.

PART II: Theoretical background

In this part of the paper theories and models relevant for this thesis will be elaborated upon. Firstly, different behavioral theories will be discussed before key growth theories will be presented. Secondly, an article review will ensue, assessing some of the most pertinent research findings in the field of foreign aid.

2.1 Leadership theories

Behavioral theories will be applied in order to assess the political leadership styles of the chosen research countries. Although it is presently expected that the focus will be on the two diverging styles of autocratic and laissez-faire leadership, other theories might be applied in the final thesis.

2.1.1 Autocratic leadership

The autocratic leader takes unilateral decisions without the consultation of his or her team. According to Van Vugt et al.: "… autocratic style leaders will do whatever they feel is necessary to provide the common good" (2004, 2). It is a leadership style fitting when time is of the essence, and decisions need to be made rapidly. As initially mentioned in this paper, there are and have been several countries displaying this type of leadership in past and present history.

The "Asian tigers", which encompasses the countries of Taiwan, South Korea, Hong Kong and Singapore, are good examples of such nations. These are all countries that boasted fairly authoritative political systems in the initial parts of their economic development during the 20th century, before gradually transforming into more democratic and open societies.

It is expected that many leaders in sub-Saharan Africa will display this type of leadership. Therefore, autocratic leadership theories are expected to play a pivotal role in explaining the behaviors of sub-Saharan African leaders.

2.1.2 Laissez-faire leadership

The laizze-faire leader does not get unnecessarily involved in the nitty-gritty details of decision-making, and can leave his/her followers to decide for themselves (Van Vugt et al. 2004, 2). They are perfectly fine with letting their team make a majority of the decisions. This can be either because of a highly capable team or the laziness of the leader.

As practically all countries today have some sort of regulations in their economic and political systems, there are arguably no countries that completely adhere to the principles of Laissez-faire. Still, there are and have been leaders known for their hands-off style of leadership, including names like Apple Inc. founder Steve Jobs and former democratic president Martin Van Buren.

2.2 Growth theories

Economic growth is a complex phenomenon. There are many different theories on growth, but none of them is universally acknowledged as the right one. In this thesis, three growth theories are used to constitute the framework. These theories are expected to help explain why growth in the aid-recipient countries scrutinized in this thesis, behave in the way they do.

2.2.1 Classical growth theory

The generalized classical theory on growth is a combination of the contributions from the classical economists like Adam Smith, Robert Malthus and David Ricardo. These great economists of past times differ in many beliefs, but on some points, they agree. They believe that the economy has a subsistence level (Jain and Bojaj 2008). If GDP goes above this level (the growth is above its steady state) the population will increase. When the population goes above its subsistence level, GDP will in turn decrease, due to limited resources. This in turn will cause the population to decrease (Ibid).

2.2.2 The Harrod-Domar model

The Harrod-Domar model is a growth model that emphasizes the importance of saving and investment (Ibid). The level of growth depends on the national level of saving and the productivity of capital investment. The former have a duel character in this model. Firstly, it will generate income, and secondly it will augment the productivity of capital by increasing the capital stock. If investment

is positive, real income and output will continue to grow. But in order to maintain a full employment equilibrium level of income, the expansion of both real income and output is needed at the same rate as the productive capacity of the capital stroke. This model states that if these are not equal, the economy will move away from its equilibrium growth path. Since foreign aid will increase the capital stock, this model is deemed useful for this thesis.

2.2.3 Neo-classical growth theory/Solow Swan model

Neoclassical growth theory is a theory, which was developed independently by Solow and Swan in the 1950s. The model is micro founded, which means that the underlying assumption is based on individual choices and preferences and rational behavior amongst agents is assumed. The model identifies three factors that explain growth: Capital, Labor and Technology. The model emphasizes technology as a driver of growth. The model also explains how growth depends on the investment rate of inhabitants in a country. Since aid will potentially increase the investment rate in a country, this is considered relevant to this thesis. The model is criticized for assuming rational human behavior. Since foreign aid can be defined as inflow of capital to a country, it can be valuable to look at the effects of this in the light of the Solow-Swan model (David 2011, 10-30).

2.2.4 Endogenous growth

The last growth theory we will look at is the theory of endogenous growth. It states that growth is the result of internal processes, government, human capital and access to capital. It is developed in the 1990s with Romer and Lucas being among the most important contributors. Supporters of this theory claim that it explains the difference in productivity in industrialized countries, compared to the productivity of emerging markets. The endogenous growth model is the first to include human capital. Human capital has increasing returns to scale, since humans learn from each other. This is in contrast to exogenous growth models, where economic growth is primarily determined by exogenous factors.

It is expected that all of the growth theories will be of some relevance. The classical theories, although they might be considered to be slightly outdated, can give understanding of how growth and population behaves. The neo-classical theories can potentially help to explain how capital accumulation and growth is linked. The endogenous theory is useful because it emphasis the value of human

capital, and how growth in a country can be endogenous. Since it is very likely that two countries will be compared, and the exogenous factors the two countries face will probably be very similar, an endogenous model will let us assess the differences.

2.3 Variables

Some of the variables that will be used in this study are population, annual GDP growth per capita, exchange rates, tax rates, interest rates, inflation and unemployment. These variables are common in macroeconomic analysis, and will be highly relevant when analyzing the economic environment. Foreign aid received will, of course, be highly relevant. Variables that indicate the level of development like income distribution, education, infant mortality rate, healthcare and social security data might also be useful. The evolution of these variables can be examined to check if there is a surge in economic development, for instance in the aftermath of a foreign aid shock. Institutional quality, degree of trade openness and budget surplus are considered to be important factors in determining growth (Chakravarti 2006, 43). With these variables a good statistical analysis on development in aid receiving countries can be conducted.

2.4 The case of Rwanda and Burundi

With the aforementioned Excel-sheet at hand, having a highly similar political and economical starting point, the countries of Rwanda and Burundi with deviating economic progresses sparked an immediate interest. According to the World Bank, Rwanda and Burundi had an aid relative to GDP of approximately 16.25% and 19% (Bank 2016a, 2015b). This made them good candidates.

Rwanda and Burundi are two central/east African countries with a common border. They are two of the smallest countries situated in mainland Africa and roughly of the same geographic size and population. They share a common history, with both being former German and Belgian colonies, with the latter ruling the two countries as a European colony named Ruanda-Urundi. Correspondingly, they both have a bloody past with some of the most brutal human calamities of recent times (Kiwuwa 2015). Furthermore, both countries are members of the East African Community, which is group of former British colonies (Community 2016). Also, both countries receive relatively high degree of

foreign aid relative to GDP and per capita (Group 2016). They are also both resource-poor countries with agricultural economies.

Nonetheless, the startling similarities seem to come to an abrupt halt at this point. Following the devastating genocide of 1994, Rwanda's economy has seen an exponential surge. The country is frequently voted as the least corrupt country in the region with a score of 55 of 175 on Transparency Internationals' corruption perceptions index (International 2014), and the best to conduct business in (Fitzgerald 2010). Contrastingly, Burundi has a score of 55 on the same index, and is deemed the most corrupt country in the East African Community (Kiwuwa 2015). Also, almost 70 percent of the countries population are below the poverty line (Joel Tokindang and Gbetnkom 2014). The graph below shows GDP per capita for Rwanda and Burundi from 2002 to 2013. Clearly, Rwanda is the most successful in terms of growth per capita.
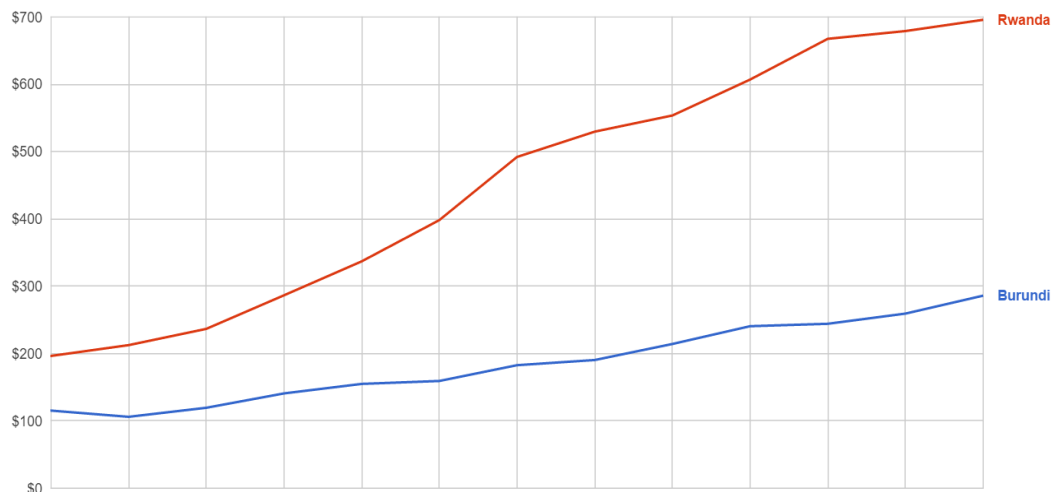
(Bank 2014)

2.4.1 Leadership in Rwanda and Burundi

The present leader of Rwanda, the incumbent president Paul Kagame, has both been praised for his socioeconomic successes in transforming the country into a modern state as well being accused for veering towards authoritarianism, resulting in increased suppression of the press and the political opposition, with assassinations and disappearances following in the wake. Recently, Kagame has

also started to campaign for a constitutional change in order to pave for a third presidential term, a possibility he previously had categorically dismissed.

President Kagame seems to display several traits distinctive to autocratic leadership. The rapid economic rise of Rwanda seems at the onset to have been made on the back of individual liberties. Whether this surge has necessitated an autocratic leader or not is an interesting inquiry.

Pierre Nkurunziza is the president of Burundi. Whereas president Kagame is well known internationally as a charismatic and forceful leader, president Nkurunziza is his obscure counterpart, rarely heard of on the international political scene. As currently desired by Kagame, Nkurunziza has been sworn in for a third term, something that is deemed unconstitutional under Burundian law.

The elusive presidency of Nkurunziza makes it hard to categorize his leadership style. Although further research is necessitated in order to be able to say anything conclusive about his type of leadership, his hands off style seems to display some traits characteristic to laizze-faire leadership.

3.1 Article review

In this section of the paper, different findings in the area of sub-Saharan aid research considered relevant for this thesis will be assessed and discussed.

3.1.1 The political effects of aid

In his study, Thierry Kangoye (2011) looks at the effects of aid on the quality of democracy. His findings showed that aid lessens the effect of instability on democracy, where education were found to be the most influential indicator of democracy (Ibid). Instability in this instance was deemed as terms-of-trade fluctuations, as most developing countries rely on export of primary products, making them particularly volatile to fluctuation on the world markets. The theoretical explanation given for the findings was that aid dampens the effect if income instability (terms-of-trade fluctuations) by making growth more stable (Ibid). In conclusion, Kangoye states that aid has no promoting nor undermining effect on democratic processes, but rather it is having an indirect positive long term effect on democracy by diminishing the unfavorable effects of terms-of-trade

instability (Ibid). One should expect Kangoyes' findings to be replicable in the case of most agricultural based economies, as they are all volatile to the world market fluctuations.

Peter Boone did a study looking at the effectiveness of foreign aid when related to the political regime of beneficiary countries. He found that aid does not increase economic development significantly, nor does it benefit the poor when improvement is gauged in human development indicators (Boone 1996). Furthermore, the author found that aid in fact increases the size of government, and that there is no correlation between degree of political freedom (liberal democratic versus highly repressive) and the impact of aid (Ibid). Also, Boone found that liberal political regimes and democracies have averagely 30% less infant mortality when compared to highly repressive regimes. This, the author states, may possibly point to short-term aid in support of new political regimes being the most effective way to reduce poverty (Idib, 294-98). Rather pessimistically, the author concludes that his results are in agreement with a model where the politicians increase the welfare of a wealthy elite (Idib, 322). Conclusively, Boones' findings do not seem to bare well for the advocacy of aid for the purpose of economic development, having instead an un-intentional bloating effect on the recipient countries government/elite.

"Foreign Aid and Regime Change: A Role for Donor Intent" is the name of a study conducted by the author Sarah Blodgett Bermeo. As the name implies, the paper examines whether there is any correlation between foreign aid and the probability of democratization in the countries receiving the aid. The data analyzed in the study was extracted from the AidData database, which is a substantial collection of development finance information (Wikipedia 2014). The author states that evidence points to the characteristics of the aid donor playing a moderating role in the relationship between aid and democratization in the recipient country (Bermeo 2011, 2021). Upon further elaboration, the author states that although aid from democratic donors is positively correlated with the probability of a democratic transition within recipient countries, countries receiving aid from authoritarian donors are less likely to undergo the same type of transition. Restraining from drawing hasty conclusions, Bermeo explains that the abovementioned positive correlation between aid from democratic donors and democratization within recipient countries cannot necessarily be assigned to the

direct effects of the aid, rather it might be a case where donors are disproportionally directing aid to countries where democracy is deemed more likely to blossom (Idib, 2029-30). Likewise, Bermeo states that in instances where donors unconditionally give aid to authoritarian recipients, this helps entrench the incumbent regime (Idib). This last finding does seem to tip the balance in favor of the aforementioned conditional western aid model, to the detriment of the non-conditional Chinese one.

3.1.2 The effects of aid on investment and economic growth

The author Victor Levy found evidence for a positive and significant correlation between aid and economic growth and investment in Sub-Saharan Africa, using both time series and cross sectional observations (Levy 1988). The study also found that capital accumulation contributed to sustained economic growth. This last finding the author states, is contrary to the common understanding that capital investment had failed to generate income growth in the early 1970's (Idib, 1789). The area of Levy's research resembles the one in this paper. It would be interesting to know how influential the recipient countries leadership was to Levy's results, something this paper hopefully will shed more light on.

In a study investigating whether sub-Saharan Africa (SSA) is affected differently by factors affecting Foreign Direct Investment (FDI) (2002), Elizabeth Asiedu found results indicating that Africa is indeed different, implying that successfully implemented policies from other regions will not necessarily create the same results when applied to sub-Saharan Africa. More specifically the author state, FDI is encouraged to non-SSAn countries by the way of a more developed infrastructure and a higher return on capital, whereas these same factors have no effect on FDI directed at SSA (Idib, 115-17). Additionally, even though the factor openness to trade encourages FDI to SSAn and non-SSAn countries alike, the marginal benefit from the said factor is higher for non-SSAn countries than SSAn countries. This, according to the author, suggests that liberalization of trade is more valuable for non-SSAn countries than for SSAn ones, resulting in an increase in FDI to non-SSAn countries. Asiedu also underscores another finding, which is that, ceteris paribus, a country placed in SSA will receive less FDI based on its geographical location alone (Idib, 116). The author suggests three implications for policies, derived from her study: the first one being the need for sub-Saharan African countries to change their trade regimes by liberalizing them,

consequently improving their FDI streams. In order to achieve this, the reforms need to be considered credible and permanent by potential investors. Secondly, successful policies from other regions cannot be blindly applied in SSA as their impact may be different here than in non-SSA. Lastly, the author suggests that international organizations like the World Bank can play a vital role in the changing of perception towards African countries, paving the way for increased FDI by altering the impression that Africa is inherently risky, a notion somewhat based on ignorance in the authors view (Idib, 116). Asiedu's findings seems to suggest that FDI to SSA is hampered by their image of high risk and non-liberal trade regimes, leading to a downward spiral where the negative image lessens the marginal benefit of a more open trade regime in SSA in terms of increased FDI, which again makes the SSAn governments less inclined to implement the said liberalization.

In a study attempting to determine whether there exists a long-term and a short-term correlation between foreign aid and economic growth, the author Mallik Girijasankar (2008) found that there is indeed a long-term link between international aid and the living standards in the six poorest sub-Saharan African countries. Although no significant short-term correlation were established, a significant negative long-term effect between foreign aid as a percentage of real GDP and real GDP per capita was found in five of the six countries examined (Idib, 259). Although the author does no attempt to examine the underlying reasons for the findings in his paper, he speculates, amongst other things, that a big portion of the aid given to the impoverished countries included in the study goes to meet humanitarian needs, rather than to expand the productivity of the economy (Idib). The authors' conjectures would imply that aid-receiving nations must carry their impoverished populations past a certain threshold, before any aid received can help grow their economies instead of merely catering to their residents' humanitarian needs.

The author Timothy S. Nyoni (1998) looked at the relationship between foreign aid and economic performance in Tanzania. He found that aid increased the openness of the economy, and that foreign aid has not caused Dutch disease in the country of Tanzania (Idib, 1235). One possible explanation of this finding may be that foreign aid can increase economic activity in recipient countries, as the subsequent increase in money supply resulting from increase in aid may in turn

lead to lower interest rates and more spending.

These articles have deepened the understanding of the political effects on aid, aid related to growth, and aid related to governance. They also provide a gateway into more literature about the topics of interest.

3.1.3 Aid and governance

The authors Stephen Knack and Deborah A. Brautigam ask how dependence on substantial amounts of aid affects governance in sub-Saharan African countries. They categorized their findings in three parts: first, there is a strong correlation between high aid levels in African countries and declines in governance. Second, there is an equally strong relationship between high aid levels and a lesser tax share of GDP. And lastly, increased GDP per capita is associated with enhanced governance (Knack and Bräutigam 2004, 276). The authors argue that large amounts of aid over a long period of time can weaken governmental institutions. To combat this, the authors suggest that official aid needs to be much more selective in terms of the recipients. Also, extensive aid programs must be temporary instruments for development (Idib, 276-78). These findings seems to support Boones' (1996) abovementioned findings, giving credence to the hypothesis of short-term aid being the most effective way to ensure effective governments while reducing poverty.

Alberto Alesina and Beatrice Weder (1999) examined whether corrupt governments received less foreign aid. Their research paper concluded that less corrupt governments do not necessarily receive more foreign aid. In fact, depending on the measurement used, more corrupt governments obtain more aid. Furthermore, the authors did not find any evidence for reduced corruption as a consequence of increased foreign aid (Idib, 2). Other interesting findings were that Scandinavian donors reward less corrupt recipients, and that the United States seems to favor democracies, but pays no mind to the recipient countries' quality of governance (Idib, 20). All in all the authors give a resounding no to their initial inquiry. Again, these findings may be partly explained by the opposing aid attitudes of western countries and China, where the absence of corruption in governments is not a prerequisite for aid reception in the latter.

Lastly, William Easterly (2003) concludes that the aid agencies should be more

modest in their goals instead of expecting the *"Next Big Idea"* to turn a little amount of foreign aid into a spark that will ignite the economic rocket of the poor nations of the world (Idib, 39-40). He ends by the way of an anecdote, describing a trip to Ethiopia where he visited Water Aid, a British aid organization. Through a project exclusively run by Ethiopians, Water Aid installed a water pipe providing fresh drinking water to a village in the Great Rift Valley. Facilitating the day-to-day lives of children and farmers alike who no longer had to travel two miles a day in order to fetch water from a polluted river, Easterly hailed the story as an example where *"some aid dollars can reach some very needy people some of the time"* (Idib, 40-41).

PART IV: Methodology

4.1 Research design

The research question of the thesis will be answered by having two different research strategies, a qualitative part and a quantitative part. The qualitative part has an induction-based approach. The qualitative approach will give an understanding of our research question, and potentially help us develop a hypothesis. It is expected that the qualitative part will contain second hand data, and no interviews or focus groups.

A quantitative deductive-based approach can be applied to answer a hypothesis found by applying the qualitative method (Bryman and Bell 2011). A Quantitative method concerns data that can be expressed in numbers, analyzed in a statistical setting, and can give empirical support of a hypothesis. The quantitative part will include panel data. More specifically it will contain time series from two or more countries.

For the purpose of this thesis, a time series research design will be applied. Quarterly data of the variables of interest are expected to be attainable (GDP, foreign aid received, inflation, interest rate, unemployment, exchange rate). Some experimentation will be done with the variables in order to find the optimal vector auto regression, which is hypothesized to result in a structural vector auto regression, which again will enable an assessment of the economic effect following a shock to foreign aid. A structural vector auto regression (SVAR) will

enable the arrangement of the variables in such a way that it can for example let inflation and GDP (or other variables of interest) not react contemporaneously to shocks to foreign aid. The optimal order and which variables to include must be found by the process of trial and error. Since it is assumed that foreign aid received is not affected by the other variables, as it is exogenous, there will be imposed a restriction on foreign aid received. More research must be done in order to find the optimal way to restrict foreign aid received in our SVAR.

4.2 Data collection

The worldbank.org, and the World Governance Indicators will be used for data collection. Although at the time of this writing, the countries of Rwanda and Burundi are expected to play the focal points of this thesis, alterations might be done in the final thesis, should the data gathering process prove more difficult than expected. Also, data from additional countries might be applied to get a baseline. As abovementioned, since the plan is to include time series analysis in the final thesis, quarterly data would be optimal.

4.3 Shortcomings and challenges

Most of our data will come from worldbank.org. They get much of their data from statistical agencies in their respective countries. As these are countries where there is less transparency, the accuracy of the data attained might be questionable. This has the potential to compromise the validity of this thesis.

4.4 Expectations

A link between styles of political leadership, foreign aid and growth is expected. More specifically, it is anticipated that countries that are seen to be more corrupt due to their political leadership, will see less economic growth due to foreign aid.

PART V: Progression plan

5.1 Plan for thesis progression

	Work plan	Meet the supervisor
15. January – 1. February	• Read up on the leadership and of the two countries and	

	the current situation	
	• Read up on relevant theories of growth and leadership	
1. February – 1. March	• Finnish the intro • Write up on theories	17. February
1. March – 1. April	• Write up on methodology and start experimenting with the data	1. April
1. April – 1. May	• Write up on results and conclusions	1. May
1. May – 1. June	• Polish and revise the paper	1. June
1. June –	• Finish the paper	

Bibliography

Alesina, Alberto and Beatrice Weder. 1999. *Do corrupt governments receive less foreign aid?*: National bureau of economic research

Asiedu, Elizabeth. 2002. "On the Determinants of Foreign Direct Investment to Developing Countries: Is Africa Different?" *World Development,* 30 (1): 107-109.

Bank, The World. 2014. "Public Data: GDP per capita (current US$)". World Bank Accessed January 13th 2016. https://www.google.com/publicdata/explore?ds=d5bncppjof8f9_&hl=en&dl=en - !ctype=l&strail=false&bcs=d&nselm=h&met_y=ny_gdp_pcap_cd&scale_y=lin&ind_y=false&rdim=region&idim=country:BDI:RWA&ifdim=region&tstart=1010876400000&tend=1389567600000&hl=en_US&dl=en&ind=false

———. 2015a. "Africa Overview". The World Bank Group Accessed January 12th 2016. http://www.worldbank.org/en/region/afr/overview

———. 2015b. "World Development Indicators database: Gross domestic product 2014". World Bank Accessed January 13th 2016. http://databank.worldbank.org/data/download/GDP.pdf

———. 2016a. "Net official development assistance and official aid received (current US$)". The World Bank Group Accessed January 13th 2016. http://data.worldbank.org/indicator/DT.ODA.ALLD.CD?order=wbapi_data_value_2013+wbapi_data_value+wbapi_data_value-last&sort=desc

———. 2016b. "World Development Indicators". World Bank Group Accessed January 13th 2016. http://databank.worldbank.org/data/reports.aspx?source=2&country=&series=DT.ODA.ALLD.CD&period=

Bermeo, Sarah Blodgett. 2011. "Foreign aid and regime change: A role for donor intent." *World Development,* 39 (11): 2021-2031.

Boone, Peter. 1996. "Politics and the effectiveness of foreign aid." *European economic review,* 40 (2): 289-329.

Bryman, A. and E. Bell. 2011. *Business Research Methods 3e*. 3rd ed: OUP Oxford. https://books.google.nl/books?id=YnCcAQAAQBAJ

Bräutigam, Deborah A.; Knack, Stephen 2004. "Foreign Aid, Institutions, and Governance in Sub-Saharan Africa." *Economic Development and Cultural Change,* 52 (2): 255-285.

Chakravarti, A. 2006. *Aid, Institutions and Development: New Approaches to Growth, Governance and Poverty*: Edward Elgar. https://books.google.no/books?id=IJ4BEtx9Dx0C

Community, The East African. 2016. "About EAC". The East African Community Accessed january 6th 2016. http://www.eac.int/index.php?option=com_content&view=article&id=1:welcome-to-eac&catid=34:body-text-area&Itemid=53

David, Romer. 2011. *Advanced macroeconomics*. 4th ed. New York: MacGraw-Hill

Easterly, William. 2003. "Can foreign aid buy growth?" *The journal of economic perspectives,* 17 (3): 23-48.

Economist, Intelligent. 2015. "Types of Foreign Aid". Intelligent Economist Accessed january 6th 2016. http://www.intelligenteconomist.com/types-of-foreign-aid/

Fitzgerald, Mary 2010. "Rwanda made me think again about positive discrimination". The Guardian Accessed january 6th 2016. http://www.theguardian.com/commentisfree/2010/jun/20/positive-discrimination-rwanda

Group, The World Bank. 2016. "Net official development assistance and official aid received (current US$)". The World Bank Group Accessed january 6th 2016. http://data.worldbank.org/indicator/DT.ODA.ALLD.CD

International, Transparency. 2014. "Corruption by country/territory". Transparency International Accessed january 6th 2016. https://www.transparency.org/country/ - RWA

Jain, T.R.   and Balbir Kaur   Bojaj. 2008. *Development Economics*: Vk Publications

Joel Tokindang, Sibaye and Daniel Gbetnkom. 2014. "Burundi". African Economic Outlook Accessed january 6th 2016. http://www.africaneconomicoutlook.org/fileadmin/uploads/aeo/2014/PDF/CN_Long_EN/Burundi_EN.pdf

Kangoye, Thierry. 2011. "Does foreign aid promote democracy?" *UNU-WIDER working*.

Kiwuwa, David E. . 2015. "Burundi and Rwanda at 53: what sets the conjoined twins apart". The Conversation Accessed january 6th 2016. http://theconversation.com/burundi-and-rwanda-at-53-what-sets-the-conjoined-twins-apart-44197

Levy, Victor. 1988. "Aid and growth in Sub-Saharan Africa: The recent experience." *European Economic Review,* 32 (9): 1777-1795.

Mallik, Girijasankar. 2008. "Foreign Aid and Economic Growth: A Cointegration Analysis of the Six Poorest African Countries." *Economic Analysis and Policy,* 38 (2): 251-260. doi: 10.1016/s0313-5926(08)50020-8

Norad. 2015. "Hvor gikk pengene i 2014?". Norad Accessed january 5th 2016. https://www.norad.no/aktuelt/nyheter/2015/norskbistanditall2014/

Nyoni, Timothy S. 1998. "Foreign aid and economic performance in Tanzania." *World Development,* 26 (7): 1235-1240.

Patton, Mike. 2014. "Government Corruption And Economic Growth: The 21 Least Corrupt Nations". Forbes Accessed January 12th 2016. http://www.forbes.com/sites/mikepatton/2014/01/24/government-corruption-and-economic-growth-the-21-least-corrupt-nations/

Van Vugt, Mark, Sarah F Jepson, Claire M Hart and David De Cremer. 2004. "Autocratic leadership in social dilemmas: A threat to group stability." *Journal of Experimental Social Psychology,* 40 (1): 1-13.

Wikipedia. 2014. "AidData". Wikipedia Foundation Inc, February 19th, 2014 Accessed March 13th 2015. http://en.wikipedia.org/wiki/AidData

Williams, Victoria 2015. "Foreign aid". Encyclopædia Britannica, Inc. Accessed january 6th 2016. http://www.britannica.com/topic/foreign-aid

Appendix

Appendix 1

	Population	Aid	Country	GDP	Aid per capi	Aid/GDP
	79,8	5,5	Dem, rep ko	33	6,89223058	16,6666667
	90,1	3,5	Ethipia	54,8	3,8845727	6,38686131
	43	2,5	Kenya	53,4	5,81395349	4,68164794
	47,4	2,4	Tanzania	49,1	5,06329114	4,88798371
	25,7	2,1	Mozambiqu	16,4	8,17120623	12,804878
	27	1,8	Ghana	38,7	6,66666667	4,65116279
	174	1,8	Nigeria	569	1,03448276	0,31634446
	34,9	1,6	Uganda	26,3	4,58452722	6,08365019
	33,3	1,5	Morocco	107	4,5045045	1,40186916
	22,7	1,4	Côte d'Ivoire	34,3	6,16740088	4,08163265
	90,2	1,4	Egypt	292	1,55210643	0,47945205
	55	1,4	South Africa	353	2,54545455	0,39660057
	14,5	1,3	Mali	12	8,96551724	10,8333333
	10,5	1,3	Rwanda	8	12,3809524	16,25
	38,4	1,1	Sudan	64	2,86458333	1,71875
	12,3	1,1	Somalia		8,94308943	#DIV/0!
	8,3	1,1	South Sudar	13	13,253012	8,46153846
	14,4	1,1	Senegal	16	7,63888889	6,875
	15,5	1	Zambia	27	6,4516129	3,7037037
	18,5	1	Burkina Fas	13	5,40540541	7,69230769
	11	0,9	Tunisia	47	8,18181818	1,91489362
	16,8	0,8	Malawi	4	4,76190476	20
	3,5	0,75	Liberia	2	21,4285714	37,5
	13,1	0,72	Zimbabwe	14	5,49618321	5,14285714
	10	0,69	Benin	9	6,9	7,66666667
	17,3	0,65	Niger	8	3,75722543	8,125
	6,1	0,64	Libya	41	10,4918033	1,56097561
	21,9	0,61	Cameroon	33	2,78538813	1,84848485
	9,8	0,57	Burundi	3	5,81632653	19
	6,2	0,54	Togo	5	8,70967742	10,8
	11	0,46	Chad	14	4,18181818	3,28571429
	22,4	0,44	Madagascar	11	1,96428571	4
	6,3	0,43	Sierra Leone	5	6,82539683	8,6
	3,7	0,38	Mauritania	5	10,2702703	7,6
	2,3	0,29	Namibia	13	12,6086957	2,23076923
	3,9	0,27	Central Afric	2	6,92307692	13,5
	1,9	0,26	Lesotho	2	13,6842105	13
	3,7	0,26	Congo, Rep.	14	7,02702703	1,85714286
	0,5	0,25	Cape Verde	2	50	12,5
	10,6	0,2	Guinea	7	1,88679245	2,85714286
	24,4	0,19	Angola	131	0,77868852	0,14503817
	40,4	0,19	Algeria	214	0,47029703	0,08878505
	1,3	0,185	Mauritius	13	14,2307692	1,42307692
	0,9	0,141	Djibouti	2	15,6566667	7,05
	1,9	0,135	Gambia	1,5	7,10526316	9
	6,5	0,129	Eritrea	4	1,98461538	3,225
	1,1	0,124	Swaziland	3,5	11,2727273	3,54285714
	2	0,12	Botswana	16	6	0,75
	1,5	0,119	Guinea-Biss	1	7,93333333	11,9
	1,8	0,0725	Gabon	17	4,02777778	0,42647059
	0,2	0,072	São Tomé a	0,5	36	14,4
	0,8	0,051	Comoros	0,5	6,375	10,2