

**IMPACT OF PRIVATE INVESTMENT ON ECONOMIC GROWTH OF  
BURUNDI(2000-2015)**

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**A RESEARCH DISSERTATION SUBMITTED TO THE COLLEGE OF ECONOMICS  
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### DECLARATION

I declare that this research dissertation has been my working and it has never been submitted to any institution for approval

Martine

Signature

20<sup>th</sup> October 2016

Date

### APPROVAL

This research report has been submitted to the under graduate degrees committee for the award of a Bachelor degree in Economics and Applied Statistics of Kampala International University with my approval as a supervisor.

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## **DEDICATION**

This dissertation is dedicated to my father Rutwe Sylvestre, my mother Nizigama Rosette and my siblings Irakoze Marie-Carelle and Ishimwe Stephane for their prayers, financial support and encouragement they gave me all through the study.

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## ABBREVIATION AND ACRONYMS

ADF:	Augmented Dickey-Fuller
DUM: regime	A dummy variable for inward looking and outward looking
EU:	European Union
GDP:	Gross Domestic Product
GNP:	Gross National Product
HCA:	Human capital
HQ:	Hannan-Quinn Information Criteria
IMF:	International Monetary Fund
JB:	Jarque-Berra
LAB:	Active Labor force
LDCs:	Less Developing Countries
UN:	United Nations
OLS:	Ordinary Least Square
PPP:	Purchasing Power Parity
RIG:	Real public investment
RIP:	Real private investment
SSA:	Sub-Saharan Africa countries
VAR:	Vector Auto regression
WB:	World Bank
WDR:	World Development Report
WTO:	World Trade Organization

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## ABSTRACT

This research report was set out to investigate the impact private investment on economic growth (measured by GDP) in Burundi (2000-2015), the study employed time series survey data. its objectives were to; Examine the trend of private investments in Burundi, Establish the trend of economic growth of Burundi through its GDP and Assess the impact of private investments on economic growth of Burundi. The hypothesis of the study was there is no significant relationship between private investment and GDP growth in Burundi. Time series analysis such as Correlation analysis and regression analysis mechanisms were used. The trend of private investment and GDP growth showed a general increase for years from 2005 to 2009. However there has been a decline since 2014. Using the correlation and regression approach, there was a strong positive correlation between Private investment and GDP growth( $r=0.58$ ), there was also significant relationship between the two variables at 0.05 level of significance). In conclusion the research revealed that private investment accounts hugely for the economic growth of Burundi. Finally recommendations suggested that there is need for peace as apriority in Burundi if investments are to be realized as it used to be before. Further the government needs to review its taxation policies so as to attract more investors.

## CHAPTER ONE

### INTRODUCTION

#### 1.1 Background of the Study

The theory of investment has remained to be one of the unsettled issues in economics. Different approaches have been used to explain the investment behavior mostly based on the experience of developed countries. Consequently, the term investment has been defined differently by different economists. Coen and Eisher (1992), for instance, defined it as follows: —Investment is capital formation-the acquisition or creation of resources to be used in production. In capitalist Economies much attention is focused on business investment in physical capital building, equipment and inventories.

But investment is also undertaken by government, non-profit institutions and households, and it includes the acquisition of human and intangible capital as well as physical capital. Investment is an important component of aggregate demand and a leading source of economic growth. Change in investment not only affect aggregate demand but also enhance the productive capacity of an economy. The investment plays an essential and vital role in expanding the productive capacity of the economy and promoting long term economic growth(Jongwanich and Kohpaiboon, 2008). Higher investment rate triggers the fast economic growth. Levine and Renelt (1992) have argued that investment in capital goods is the most robust and vital determinant of economic growth. Gross domestic investment boosts economic growth by increasing physical capital directly and indirectly through technological spillovers (De Long and Summers, 1995).

According to Maqbool, Maaida and Sofia (2010), in the process of investigating the economic performance of a country, one of the key determinants of economic growth is investment. Moreover, most of the countries that grow rapidly invest a considerable fraction of their Gross Domestic Product (GDP). In contrast, countries that develop slowly are those that invest slowly in their economies and remain poor (Solow, 1956).

According to the United Nation (UN, 2005), investment climate can be explained as access to basic physical infrastructure such as electricity, telephone, water and roads; access to information and advisory services; higher labor productivity; efficient tax administration and tax rates; access

to finance; availability and affordability of urban land; business regulations and trade facilitation services, among other elements. A good investment climate provides opportunities and incentives for investors to invest profitably, create jobs, and expand national output thereby increasing investment and economic growth (World Bank, 2004).

Investment in an economy is composed of public and private sector investment. Public investment refers to investment by the government sector primarily, not exclusively in the area of social and economic infrastructure. Private investment refers to investment by private business for the purpose of profit generation (Kumo, 2006).

On theoretical grounds, it is argued that private Investment positively affects growth because it lowers rental rate of capital, increases production via enhancing labor productivity, and introduces new technologies embedded in the capital by moving capital from capital-rich countries to capital-scarce economies. Private Investment inflows represent additional resources a country needs to improve its economic performance and provides both physical, capital and employment possibilities that may not be available in the host market (Seetanah and Khadaroo, 2005). As De Gregorio (1992) argued, by increasing capital stock private Investment can increase a country's output and productivity through a more efficient use of existing resources by absorbing unemployed resources. For that reason, many developing countries now see attracting investments as an important element in their strategy for economic development. Most probably, this is because private Investment is seen as an amalgamation of capital, technology, marketing and management.

Due to its acknowledged advantages as amplified by Asiedu (2001) and Obwona (2004), several countries in Sub-Saharan Africa, as a region now have to depend very much on private Investment. In fact it has been argued that the effort by many African countries to improve their business climate stems from the desire to Invest. Indeed, one of the pillars on which the New Partnership for Africa's Development (NEPAD) was launched was to increase available capital to US\$64 billion through a combination of reforms, resource mobilization and a conducive environment for investments.(Funke and Nsouli, 2003).Also Over the past two decades, African countries have made considerable efforts to improve their investment climate (UNCTAD, 1998). They have liberalized their investment regulations and have offered incentives to foreign investors. More importantly, many African countries have initiated economic reforms aimed at

increasing the role of the private sector, In addition, they have taken steps to restore and maintain macroeconomic stability through the devaluation of overvalued national currencies, the reduction of inflation rates and budget deficits. As part of these reforms, African countries have also improved their regulatory frameworks for foreign investments, which are now far more open to investors, permitting profit repatriation and providing tax and other incentives to attract investment.

Furthermore, realizing that because of a negative image of Africa as a whole, it may not be sufficient to improve the investment climate and have economic determinants in place to catch investors' attention, many African countries have established investment promotion agencies to change this image as well as facilitate investment in their countries. In the Southern African Development Community (SADC), for example, all 14 member states have established such agencies. Since 1995, Investment Promotion Agencies (IPAs) from 25 African countries had joined the World Association of Investment Promotion Agency (WAIPA) by the year 2007 in order to benefit from an exchange of information on best practices in investment promotion among the member agencies. Some African agencies such as the Burundi Investment Authority (UIA) are widely respected as successful agencies that adopt state-of-the-art practices in all areas of promotion (Tillett, 1996). According to UNCTAD (2005), further increases in private investment to developing countries are expected in the near future due to expected favorable economic growth wide spread consolidation, corporate restructuring, profit growth persistence and the continuation of the pursuit of new markets by industries in the source countries. However, Abdulhamid et al, (2003) notes that despite the several incentives, private investments in Africa are still small in absolute terms but nonetheless, they have greater impact on their economies. According to Asiedu (2002), the slow growth of investments in African countries is attributed to the fact that these countries are perceived as inherently risky and that can be a factor which likely keeps investors away from the region. Investors are concerned about risks associated with probability of adverse changes. These risks and pessimisms could involve contagion effects and are usually due to war, famine, massive corruption, failure of projects, and poor governance. Africa received only a modest amount of Foreign Investors even though the rate of return in many African countries has been higher than that of other developing countries. This suggests that the risks are perceived to be higher for Sub-Sahara African countries than for other regions (Bhattacharya et al., 1996).

In the 2005 World Development Report (WDR), Bernal et al. (2004) notes that improvements in the investment climate in developing countries are key to increasing the flow of investments and, consequently, a higher level of economic growth and development. However, in the poorest developing countries, such as Burundi, businesses frequently operate in investment climates that undermine their incentive to invest and grow. In line with this environment, Burundian investors complain about poor infrastructure, particularly power shortages; poor transport; poor telecom connectivity of business locations and lack of efficient tax administration (Mima and David, 2012; World Bank, 2004).

According to Keynes (1936), there is a need for government intervention to activate and regulate the economy on private investments in developing countries like Burundi. Therefore, both past and current governments of Burundi have made significant capital expenditures aimed at creating the social and economic infrastructures that expand opportunities for better economic growth (Tanzi, 1997). Similarly, the role of private investment in Burundi is one of the central issues with respect to the private investment and economic growth of the country. Actually, both public and private investments across the three regimes in Burundi were unpredictable in performance, because each government that came into power started afresh and followed a different political ideology. In addition to the aforementioned aspects of the country under consideration, there is no clear consensus on empirical evidence from both developed and developing countries with regard to whether public or private investment has a superior effect on economic growth.

## **1.2 Statement of the problem**

For less developed Countries (LDCs) like Burundi the fundamental challenge in the economy is how to achieve a large increase in output over a long period of time and improve the standard of living of their people so that there will be dramatic change in their economic, political and social conditions. To achieve this target, various tools are considered. Among these tools, promoting investment is the most common one. Though investment is the primary engine of growth, all investments undertaken in an economy cannot be taken as productive and crucial to economic growth. These discussions have provided immense insights into the relationship between private investment and economic growth. Most researchers claim that the contribution of private investment to economic growth is larger than that of public investment. This notion is based on



the contention that the marginal productivity of the former is greater than that of the latter (Khan and Reinhart, 1990; Serven and Solimano, 1992), although some studies have shown a possibly larger contribution of private capital to economic growth (Ram, 1996). With the rate at which private investments are taking place, we would theoretically expect economic growth to move in the same direction, but this is not the case for Burundi. The question then is: Does private investment have any impact on economic growth? Specifically does Burundi benefit from private investment? The little theoretical and empirical studies have not been able to generate consistent evidence. This study therefore, examined the significance of private investments to Burundi's economy.

### **1.3 Objectives of the Study**

This study aimed at examining the contribution of private investment to economic growth in Burundi over the past 15 years (2000-2015).

The specific objectives of the study are to:

1. Examine the trend of private investments in Burundi
2. Establish the trend of economic growth of Burundi through its GDP.
3. Assess the impact of private investments on economic growth of Burundi.

### **1.4. Hypothesis of the study**

There is no significant relationship between private investment and economic growth in Burundi.

### **1.5. Significance of the study**

A number of studies on investment especially in developing countries were carried out. Nevertheless, empirical evidences on the role of private investment on growth have been limited (Khan and Kumar, 1997). In Burundi, the presence of little empirical analysis in this context makes this study vital to show the role of the private investment in the economy and to help the policy formulation incentive provision to the sector.

Moreover, analysis of the role of private investment in Burundi is of interest both from a policy and academic point of view. Thus in due course, as policy is concerned, if private investment does have a markedly stronger impact on growth, it would further underscore the need to rationalize private investment, as well as provide additional support for the privatization of state-owned activities.

The study is also an important addition to the existing literature on the effects of private investment on economic growth

#### **1.7. Scope of the study**

The study covered private investment in millions of USD of Burundi and annual growth of GDP in billions of USD. The study was conducted in Burundi. The country is mainly consisted of plateau with rim of mountains.

## CHAPTER TWO

### LITERATURE REVIEW

#### 2.1. Theoretical Literature

The long history of ideas on economic growth started from the classical economists like Adam Smith, Robert Malthus, Ricardo and Marx. For more than three decades the Neoclassical and the endogenous growth theories were exploring the flow of economic growth from different point of view. The objectives of these growth theories are identifying a nation's sources of economic growth. The 20th century economist Keynes who transformed modern macroeconomics radically has also his own contribution in identifying sources of a nation's growth (James Cypher and Dietz 1998). From this time onwards, various studies were conducted to assess sources of economic growth and the role of various social, economic and political scenarios in the economic growth process. Though the history of economic growth can be traced back to the distant past, this study considers the recent models and studies on economic growth as a base for the analysis of growth condition in Burundi and its determinants.

The study of growth generally concerns the medium or long run. it is about the accumulation of physical capital, the progress of skills, ideas and innovation, the growth of population, how factors are used, combined and managed and so on (stern 1991). Economic growth can be defined as the growth rate of per capital GDP over some period. The trend of growth of real GDP can be considered as sustainable economic growth, while the short-run fluctuation of growth over the trend can be thought of as business cycles. Economic development includes economic growth, distribution of income, unemployment and poverty. Nowadays, development is being defined as transformation of societies (Stiglitz, 1994). To achieve the above goals of economic growth, various factors determining economic growth are assessed. Modern literature for analyzing the determinants of growth in a cross sectional, panel or time series data framework. Though there are various theories, as mentioned above, regarding economic growth, in this section we will address the most commonly applied models: the Neoclassical and Endogenous Growth Models

## Appendix VI: Regression Analysis of GDP and Private Investment of Burundi

Source	SS	df	MS	Number of obs = 16		
Model	462.141288	1	462.141288	F( 1, 14) = 7.19		
Residual	899.263086	14	64.2330776	Prob > F = 0.0179		
Total	1361.40437	15	90.7602916	R-squared = 0.3395		
				Adj R-squared = 0.2923		
				Root MSE = 8.0146		

GDPGrowth	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
PrivateInvestment	2.671009	.9957889	2.68	0.018	.5352539	4.806763
_cons	21.47072	11.19665	1.92	0.076	-2.543705	45.48514

### 2.1.1 The Neoclassical Growth Model

The Solow (1956) and Swan (1956) models of economic growth, which commonly represent the Neoclassical model are based on an aggregate production function (Cobb-Douglas) and a capital accumulation equation. These models do not account for technological progress and predict that the level of per capita income is determined by the population growth rate and the investment rate. Accordingly, economic growth can happen only temporarily and lasts only until capital per capita reached its steady state level. The second model introduced by Solow in 1957 incorporates an exogenous technology. The important implications of the neoclassical growth model are the level of per capita output is determined by the level of technology, investment rate and population growth rate. While sustained growth rate of per capita output overtime is determined by technological changes. Other temporary shocks such as policy changes can affect growth only temporarily just until a new steady state level is reached. Hence, according to Solow's model, per capita output differences across countries and overtime are explained by the country's population growth, investment rate and technology (Jones 1998, Romer 1996).

The other implication of the dynamic analysis of the neoclassical model is that the initial capital stock is far below the steady state rate of accumulation (until a new steady state is restored) is fast and accordingly output grows fast but at a lower rate as it approaches steady state level where growth ceases. This implies that poor economies with a lower stock of capital and output tend to catch up with the initially rich ones. The prediction, hence, is that poor economies grow faster than rich ones (Barro, 1997).

In this model, in the absence of technological progress, steady state per capita output does not grow and it depends on exogenous factors (that is technological progress and population growth). In this framework, in the short run, an increase in the savings rate raises per capita economic growth. However, due to diminishing returns to capital, per capita output in the long run grows at the rate of exogenously given technological progress. Although economic policies can affect the level of output (growth rate) when the economy is in transition from one steady state to another, they do not affect steady state economic growth.

One might object to the neoclassical mode on the grounds that it does not, in the end, shed light on economic growth. In the steady state of the neoclassical model, all growth is due to advances in technology, but model unravels the mystery of economic growth simply by assuming that

there is economic growth (Mankiw 1995). In other words, the neoclassical growth model is criticized on the grounds that it leaves technological growth as an exogenous factor and without technological growth, the model asserts that economic growth will, ultimately, cease.

### **2.1.2 Endogenous Growth Model**

The failure of the Neoclassical Growth Model to be consistent with empirical evidence in predicting that the output level of countries with similar technologies should converge to a given level in steady state and the inability of the model to show the mechanisms through which government policies can potentially influence the growth process, led to the development of endogenous growth theory that avoids the assumption of exogenous advance in technology. This new growth model addresses the limitations of the neoclassical model by proposing a variety of channels through which steady-state growth arises endogenously.

Two broad approaches have been followed in the New Growth literature to relax the assumption of diminishing returns to capital imposed in the basic neoclassical model. The first consists of viewing all production inputs as some form of reproducible capital including physical capital and human capital (Lucas 1988) or the state of knowledge (Romer 1986). The second approach to generate growth endogenously consists of introducing spillover effects or externalities in the growth process. Romer (1986) models technology growth (he termed it knowledge growth) as the outcome of competitive firms that invest in knowledge generation. The central idea that allowed this was that while individual firms face diminishing returns to invest in knowledge, at the social level returns to knowledge can be increasing that is knowledge is a function of the entire capital stock of the economy. The fact that knowledge can have positive externalities is at the center of the growth process. Romer (1986) develops these ideas into a competitive equilibrium model which yields long-run positive growth. The model also suggests that the competitive growth rate is below the socially optimal level due to the presence of knowledge externalities; large countries may grow faster and shocks to a country's growth may have permanent effects. One particular source of externalities that has been emphasized in the growth literature is the accumulation of human capital and its effect on the productivity of the economy. Lucas (1988) provides one of the best known attempts to incorporate the spillover impacts of

human capital accumulation, in a model built upon the idea that individual workers are pre productive, regardless of their skill level, if other workers have more human capital.

The important implication of the external effect captured in the model presented by Lucas's (1988) is that under a purely competitive equilibrium its presence leads to an under investment in human capital because private agents do not take into account the external benefits of human capital accumulation. The equilibrium growth rate is thus lower than the optimal growth rate due to the existence of this externalities. Equilibrium growth rate depends on the rate of investment in human capital the externality implies that growth would be higher with more investment in human capital. This leads to the conclusion that government policies (subsidies) are necessary to increase the equilibrium growth rate up to the level of the optimal growth rate. A government subsidy to human capital formation or schooling could potentially result in a substantial increase in the rate of economic growth. Various variables that are considered as determinants of a country's economic growth along with private and public investment are addressed in different studies. The main determinants that are emphasized by researchers are human capital, research and development, innovation and other macroeconomic an institutional factor with respect to the focus of the study concerned.

In analyzing the capital accumulation in a growth framework, the relative effect of public and private investment is useful from the policy and theoretical perspective. From the policy angle, if private investment has a stronger impact than public investment, it will help to rationalize policies related to public investment and privatization. From a theoretical perspective, most studies analyze the relationship between investment and economic growth by taking the aggregate role of investment for determination of steady state growth path and convergence rate.

Studies related to capital formation and economic growth focus on separating gross capital formation into public and private components. These studies have shown the impact of private investment on the performance of a given country's economy, or a group of countries. Hence, differences in economic growth even in developing regions in terms of levels and rate of per capita income seem to be associated more with differences in private than public investments rate. Public investment can have either a crowding in or a crowding out impact on private

investment, which may lead to a growth enhancing or growth deepening path. This depends on the availability of funds to undertake investments and the area to which the fund is devoted.

According to Khan and Reinhart (1990), Public sector investment can cause crowding out if it utilizes scarce physical and financial resources that would otherwise be available to the private sector, or if it produces marketable output that competes with private output. Furthermore, the financing of public sector investment, whether through taxes, issuance of debt, or inflation will lower the resources available to the private sector and thus depress private investment activity. Such crowding out would work in favor of strategies aimed at cutting back public sector investment as they would create a commensurate increase in private investment. On the other hand, public investment that is related to the development of infrastructure and the provision of public goods can clearly be complementary to private investment. Private investment of this type can enhance the possibilities for private output and ancillary services, and augment overall resource availability by expanding aggregate output and savings.

In empirical studies government investment has been approximated by the government's contribution to capital accumulation. The complementarity and the substitutability between public and private investment depends on the government's fiscal policy and its involvement in the economy. A large budget deficit will crowd out the private sector as a result of lower access to bank credit, higher real interest rates and a more appreciated real exchange rate. Many endogenous growth models have stressed the role of private firms in driving the growth process. This idea is linked to the often held view that too much interference from the government may be detrimental to efficient production and (high) rates of accumulation. This type of thinking hassled economists to empirically analyze the relationship between size of the private sector and economic growth (Rogers2003).

In economic growth studies, human capital is one part of the analysis. Nelson and Phelps (1966) stated that human capital can be thought of as affecting economic growth in two ways. First, if human capital is a factor of production, that is changes in Human capital will be correlated with changes in growth. For example, workers with higher levels of education or skills should, *ceteris paribus*, be more productive. Second, the level of human capital may affect the rate of



accumulation of other factors. For example Romer (1990) assumes that the growth of knowledge or technology depends on the level of human capital

This appeal to the idea that more educated and skilled people are more inventive and innovative. A higher level of human capital may also encourage capital accumulation, or may raise the rate of technological catch-up for the country.

Terms of trade are also one of the most important macroeconomic variables as an indicator of external shocks to the economy. Adverse movement in the terms of trade will increase the cost of import relative to income and will also reduce the purchasing power of exports. Unfavorable terms of trade, therefore, may worsen the ratio of current account deficit to GDP. An increase in the price of imported goods with large weight in the national import value will have a direct impact on consumer's prices. Depressed export price in the agricultural sub-sector, which is the main stay of the economy, will draw resources away from the sector, reducing export earnings and discouraging investment in the sector (Oshikoyo 1994).

## **2.2. Empirical Literature**

Most growth studies began their framework of analysis with the most influential works of Solow (1956 and 1957) in economic growth theory, which ignored the role of any capital formation to economic growth and took technical productivity as the only source of economic growth. In this analysis technical progress was explained outside the model and considered as manna from heaven. Following this work there have been various studies by different researchers that attempted to trace the possible source of a growth of nation. In these studies, a variable that is taken as a determinant of growth in one study is considered as a controlling variable in another study. Most of these growth analyses tried to show the relative contribution of various factors of production to the growth process. Cross country analysis and time series were used in all attempts to show possible sources of growth. Usually, growth related analyses are undertaken by using cross section and panel data evidence. Such data sets are criticized for taking samples of various countries differing widely in social, political and institutional characteristics on a common surface. Since the reappearance of growth theory in economic literature following Solow's pioneering work, various, empirical and theoretical studies relating investment to economic growth have been conducted. These studies show the different role of aggregate investment in

the long run growth and convergence across countries (Morgan, 1969), Barro, 1991, Barro and Sala-i-Martin, 1992, Mankiw, Romer and weill, 1992, De Long and Summer, 1991, Levine and Renelt, 1992, Collier and Gunning, 1997 and Barro and Lee, 1994) are some to mention. De Long and summer (1991), Levine and Renelt (1992), Collier and Gunning (1997) and Barro and Lee (1994) found that investment to GDP ratio has a strong influence of income growth.

The good performance of economies, which were governed by the state led economics in post war Europe and other socialist countries motivated most LDCs in Africa and Latin America to implement similar types of policy to public sector investment in 1950s. These LDCs invested scarce capital of their economy in large and medium scale industries, farming, mining, trade etc.

However, excessive involvement of the public sector in every sector of the economy caused great crisis to these economies. Consequently, there have been frequent calls towards private investment especially since late 1970s.

Following the structural Adjustment Program of the International Monetary fund and the world bank for newly liberalized market economies of LDCs most of these countries adopted privatization and private sector led growth as an alternative development strategy to boost economic growth. In this regard, the role of the state is limited to the formulation of policies and infrastructure investments like road, communication and energy whose service are essential since they tend to generate positive externalities for the private sector.

It is now widely accepted that the expansion of private investment should be the main impetus for economic growth, allowing private investment resources gradually to focus on social areas including alleviation of poverty and the upgrading of social capital and services (Chiber and Dailami, 1990). Empirical studies addressing the impact of private investment on economic growth in developing countries started to appear in economic literature following the 1980s and 1990s structural adjustment program. The robustness of investment to GDP ratio in explaining economic growth and economic policy through investment variables led most studies to focus their analysis from economic policy towards explaining cross-country differences in investment level Mankiw et al (1992) using the augmented Solow model, which includes accumulation of human as well as physical capital in the growth regression found that 80% of the cross country

growth variation in the model is explained by these variables. That is international variation in per capita income can well be explained using just these three variables.

In addressing the role of private and public investment in the economic growth process for 24 Latin American and Asian countries using a cross section sample, Khan and Reinhart (1990) found that private investment have a different effect on the long run rates of economic growth. Furthermore, they identified that private investment plays a much larger and more important role in the growth process than doe's public investment. In contrast, public investment has no statistically significant effect on growth.

However, the problem in this analysis was the quality of the methodology employed. The causal correlation between dependent variables and the independent variables was not addressed properly. The causality runs directly from private investment to economic growth. The correlation between private and public investment may cause private investment to contribute indirectly toGDP growth by providing the necessary infrastructure like roads, electricity, telecommunication and schools.

Although Coutinho and Gallo (1991), Serven and Solimano (1989) came to a similar conclusion, they have used a relatively small sample size and limited time period. Ram (1996) extended Khan and Reinhart's (1990) work by estimating their growth models to cover a considerably larger cross sectional sample and by including data for the 1970's and 1980's.

For the 1970's, like Khan and Reinhart (1990), private investment appears vastly more productive than public investment. For the 1980's however, public investment seems more productive than private investment in most cases. In this study considering the overall (average) picture for the two decades, productivity of some component of investment seems fairly similar, but the public investment parameter is slightly larger.

Another similar study, which tried to show the role of the private investment in economic growth, is that of Ghura (1997) for Cameroon. He used more than three decade's data to test the hypothesis and employed modern econometric tools of time series to avoid any spurious correlation. He found that private investment plays a crucial role in output expansion. The analysis established a significant robust causal linkage between private investment and economic growth implying that increases in private investment ratio boost economic growth. An increase

in the private investment ratio by one percentage point raises economic growth by about 1.4 percentage points; this impact is larger than that of an increase in government investment.

Ghali (1998) also attempted to address this issue in the neoclassical growth framework. He employed a Co-integrated Vector Autoregressive model to account for potential endogeneity and nonstationarity problems. Results suggest that private investment contrary to public investment has stimulated economic growth in Tunisia over the period from 1963-93. Badawi (2003) by using the same methodology as Ghali (1998) for Sudan found a positive contribution of private and public investment to economic growth. The impact of private investment was found to be more pronounced than that of public sector investment.

Khan and Kumar (1997) using pooled time series cross section data, which has a relatively larger number of country coverage (95 developing countries including Burundi) and a long time period (1970-1990) came up with similar positive contribution of private investment to economic growth. Their result reveals that there is a substantial difference in impact of private and public investment on economic growth. Private investment had a much larger impact compared to public investment especially during the 1980s. This relationship holds even when other determinants of per capita growth are taken into account such as population and technical change, human capital enrollment ratio (secondary) and fiscal balance.

Button and Sumlinshi (2000) confirmed Khan and Kumar's (1997) results and found an even larger coefficient for private investment and smaller coefficient for public investment. Ramirez and Nazmi (2003) also suggested that both public and private investment positively contribute to economic growth for nine major Latin American countries. Ashipala and Haimbodi (2003) observed that private investment plays a crucial role in long-term stabilization policies in South African countries. Calamitsis, Basu and Ghura (1999) using data for 1981-1997 for Sub-Saharan Africa found that private investment is large and statistically significant compared to government investment in growth analysis. This result underscores the crucial role played by private investment in boosting growth.

Although the magnitude of the impact of private investment declines once other factors influencing growth are taken into account, the coefficient remains statistically significant. The

effect of government investment is not robust. In most of the above studies except Ghura (1997), Ghali (1998) and Badawi (2003), the relationship between private investment and growth relationship is analyzed by using a cross section sample. There are also studies conducted in Burundi, which show various determinants of economic growth. Most of them, like others, focused on investigating the macro economic factors of growth.

Another study by Easterly (2002), which used a growth accounting framework, supports the statistically insignificant contribution of capital to economic growth. However, Alemayehu and Befekadu (2002) in their analysis of factors characterizing the Burundi economy using a growth accounting framework found that capital has contributed positively to economic growth. The contrast between the findings of Alemayehu and Befekadu (2002), and Easterly (2002) arose from the authors' assumption for the factor share of human and physical capital (0.65 and 0.35 respectively) based on cross country regression results as a benchmark instead of estimating them empirically (Seid and Berhnu, 2003). Paterson (2003) used data from 1981 to 2000 to analyse the relationship between growth in real GDP and investment in a simple Harrod-Domar growth model and found a positive connection between investment and GDP growth rate in Burundi. The result also suggests that investment from exports and capital inflow is a viable way to promote growth. However, the analysis and the conclusion are based on three explanatory variables (the ratio of investment to GDP, the ratio of export to GDP and the ratio of capital inflow to GDP) for a short period, which exposes the analysis to econometric problem like multicollinearity and endogeneity. Furthermore, the Harrod-Domar model is criticized for its assumption of a fixed coefficient production function, which does not allow for factor substitution and the saving ratio is assumed to be fixed. Though there exist a vast economic literature, which demonstrates the relationship between private investment and economic growth for groups of developing countries; country specific studies lack in most of these countries including Burundi. It is obvious for countries like Burundi private investment is good for sustained economic growth. Given this fact, it is useful to investigate the contribution of private investment to economic growth using long time series data and suggest what has to be done for this sector to enhance the country's development endeavor

## **CHAPTER THREE**

### **METHODOLOGY**

#### **3.1. Research design**

A time series analysis was adopted and quantitative techniques were used to analyze secondary data scientifically and critically conclude the research objectives. Secondary data was collected from Bank of Burundi, some quantification was necessary because of the need to tabulate data and use of statistical techniques to arrive at a dependable conclusion. Also inferences were drawn by fitting the regression model and testing for its significance using the statistic and also correlate the two variables and test for the relationship between the variables using Pearson's Correlation coefficient of determination for the private investment and the GDP of Burundi for 15 years (2000-2015).

#### **3.2. Research population**

The research took 15 year time series of study that is from 2000-2015 using data collected from Bank of Burundi.

#### **3.3. Research Instrument**

The record sheet was used to enter the year data on private investments and GDP growth in Burundi for 15 years that is from 2000 to 2015. This data was collected from Bank of Burundi.

#### **3.4. Data source**

This study conducted the empirical analysis by employing data sets for the period 2000- 2015. The data set is restricted to this period due to the availability of consistent information especially about the private sector. The data sources of the study are the national income accounts as prepared by the Ministry of Finance and Economic Development (MOFED), Statistical Bulletins of Ministry of Education, the data base of the National Bank of Burundi, Statistical Abstracts of the Central Statistical Agency, the data base of the Ethiopia investment agency and the data base of the World Bank Data for real private and real public investment is obtained from the National Bank of Burundi at 2000 constant price.

#### **3.6. Data Analysis**

Time series data Analysis

This study involved time series analysis to test the trend of both private investment and GDP. Data collected for a period of 15 years from (2000-2015) was entered into the Microsoft excel and STATA, a Statistical package for analysis.

Objective (I) and (ii) were analyzed by use of line graph which shows the trend of private investments and GDP, and tables will be used to summon data.

Testing for the strength of relationship between private investment and economic growth will be performed through correlation analysis.

### **3.6.1. Correlation and Regression Analysis**

This was used to analyze objective (iii) of the research study.

The researcher used Pearson's correlation to determine the strength of the relationship between GDP and Private Investment of Burundi.

The research also employed the OLS method to assess the hypothesis and to analyze the relationship between the dependent variable and the independent variable. The regression equation will be;

$$GDP = \alpha + \beta_0(\text{private investments}) + e_i$$

$$Y = \alpha + \beta_0 X_0 + e_i$$

Where y: Real GDP growth

$\alpha$ : Constant.

$\beta_0$ : The change in GDP as a result of private investments.

$x_0$ : Private investments.

### **3.7. Limitation of the study**

It was difficult to obtain secondary data that satisfies the topic at hand especially when Bank of Burundi officials tended to withhold data due to their own reasons into privacy and protection.

Existence of extraneous variables (other factors a part from private investments) affected the accuracy of the results and was not best controlled hence made the study hard

Lack of funds for transporting the researcher, typing the work and cost of gathering the required information. The research was entirely funded by the researcher.



## CHAPTER FOUR

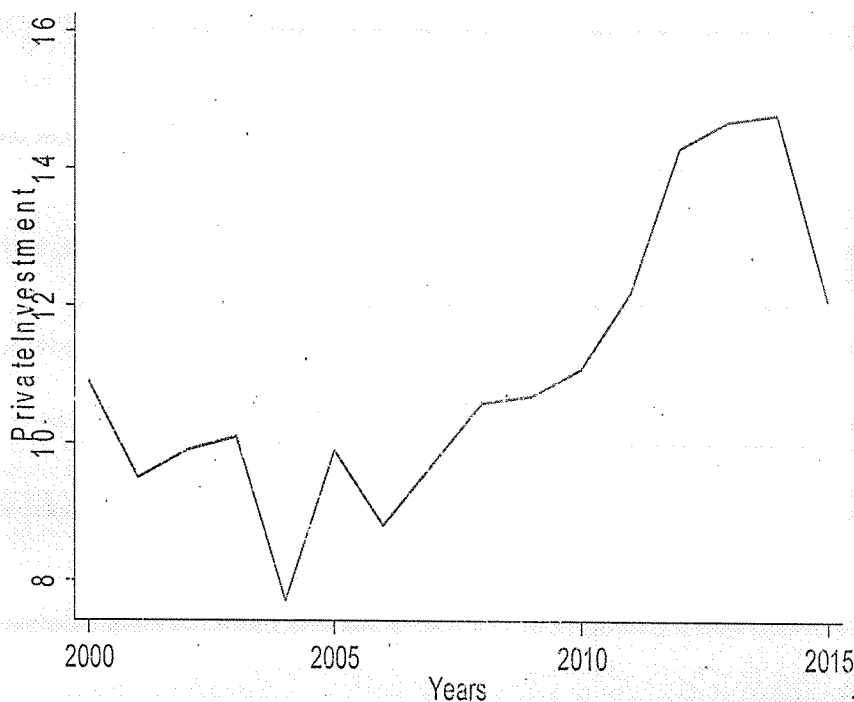
### DATA ANALYSIS AND DISCUSSION OF RESULTS

#### 4.0 Introduction

This chapter explains data analysis and discussion on the impact of private investment on economic growth of Burundi. The results of the analysis are presented using a combination of graphical displays and tables to completely analyze the objectives that were stated in chapter one. Furthermore, the hypothesis that were identified in the in the first chapter of the research is analyzed using the most appropriate tools as identified in the research methodology. The researcher presents a detailed analysis of the data using the procedures described in the third chapter.

#### 4.1 Examination of the trend of private Investment of Burundi

The study's first objective was to examine the trend of private Investment of Burundi and the researcher used a line graph to portray the trend of as shown below.



**Figure 4.1: Graph showing private investment trend of Burundi from 2000 to 2015**

Source: World Bank (2016)

From Figure 4.1, private investment in Burundi is seen to have decreased from year 2000 to 2001, however it increased in year 2002 to 2003 but again decreased further in 2004. From 2005 private investment had been increasing to 2008 at a very stable rate. Between year 2008 and 2009 the rate of increase of private investment was much smaller compared to how it had been increasing. This could have been accounted for by the rate of value of the Burundian currency at that particular time where the Burundian currency had greatly lost its value to the US dollar. However from 2009 to 2014 investment is seen to be increasing steadily till year 2015 when it dropped suddenly. The fall at the rate of investment from 2014 can be explained by the political instability that saw many investors leave the country from 2014 to date for fear of both their lives and their capital.

#### 4.2 Investigation of the trend of GDP growth rates in Burundi

The second study was to establish the trend of economic growth of Burundi through its GDP growth rate (2000-2015)

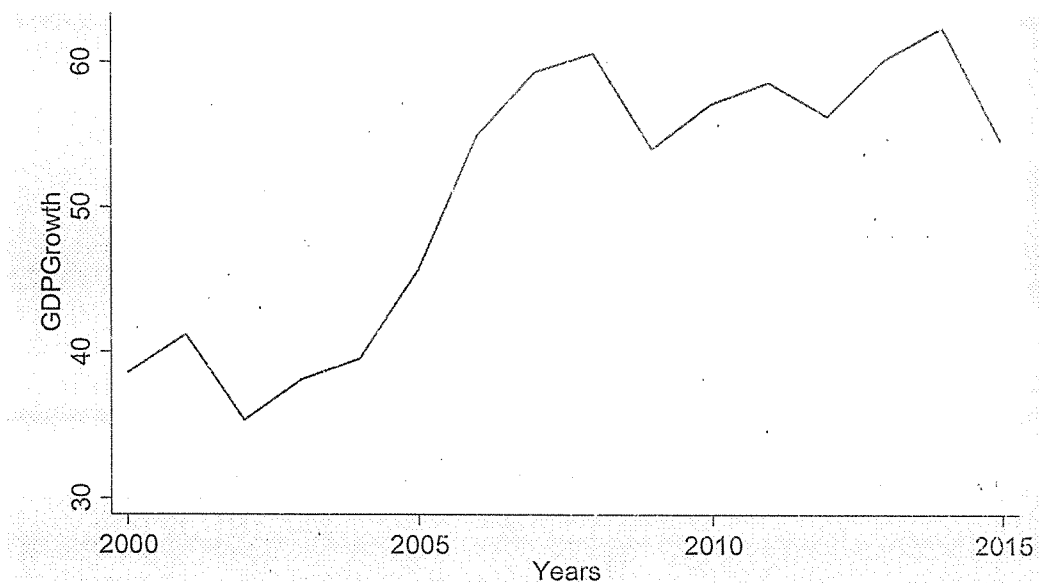


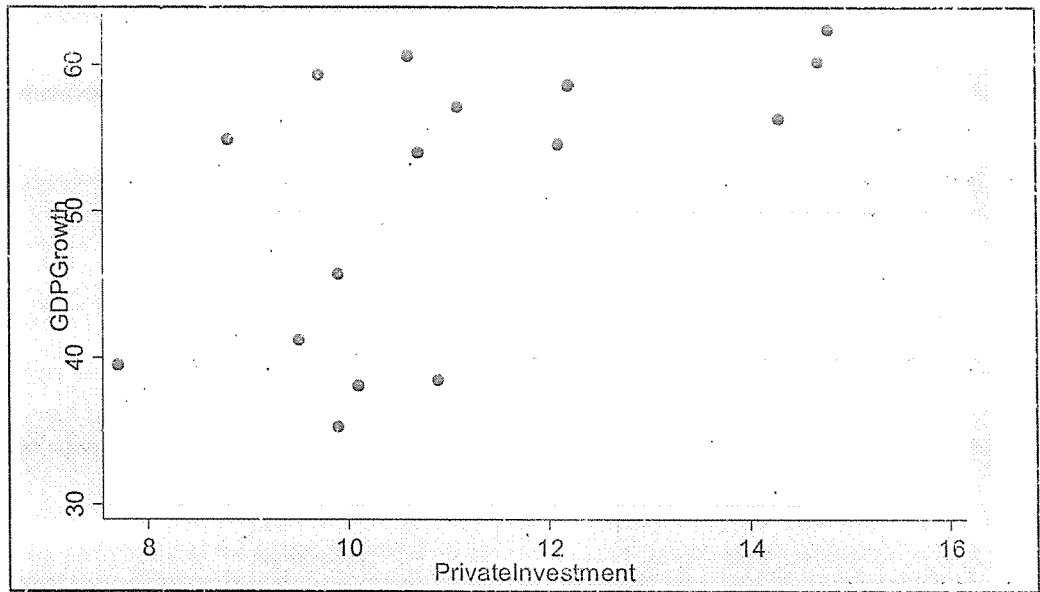
Figure 4.1: A Graph showing the trend of GDP growth rates in Burundi 2000-2015

Source: World Bank (2016)

From figure 4.2 above, the GDP growth rate of Burundi recorded an increase in year 2000 to 2001. However in 2002, there was a decrease as is portrayed in the graph. Year 2003 saw the beginning of steady increase in the GDP growth rate of Burundi right up to year 2008. For all this time the GDP growth rate had never declined implying that there was steady economic activity taking place in the country. This could have been due to conducive political environment that prevailed at that time. Year 2009 saw economic activity decline as can be seen by decline in GDP growth rate in the graph above. However the growth rate once more showed signs of steadiness in year 2010 and 2011 but that was short lived as it again declined in 2012. In 2013 the GDP growth rate increased again to year 2014 but sharply declined in year 2015. The decline in 2014 can be explained by the unfriendly economic atmosphere that existed in Burundi that saw much of economic activity come to a stand still in Burundi..

**4.3 Assess the impact of private investments on economic growth of Burundi**

The third study was to assess the impact of private investments on economic growth of Burundi. The researcher opted to use the scatter graph to show the nature of the relationship and later correlated in order to investigate the strength of the relationship that existed between GDP growth rate and private investment.



**Figure 4.3: A graph showing scatter Plot of GDP against Private Investment of Burundi 2000-2015**

Source: Results of Data Analysis (2016)

**Table 4.1: Correlation Analysis of GDP and Private Investments in Burundi**

	GDPGrowth	PrivateInv
GDPGrowth	1.0000	
PrivateInv	0.5826	1.0000

Source: Results of Data Analysis (2016)

From the correlation analysis above it can be observed that there is moderate positive relationship of 0.58 between GDP growth rate and private Investment meaning that when private investment increases, the GDP of Burundi also increases hence increase in economic growth too. This also implies that Private investment in Burundi accounts a lot for how the status of economy may look like. If private Investment is not boosted then there will be low GDP in Burundi and the people of Burundi are bound to suffer.

**Table 4.2: Regresion analysis GDP and private investment in Burundi**

Source	SS	df	MS	Number of obs = 16		
Model	462.141288	1	462.141288	F( 1, 14) =	7.19	
Residual	899.263086	14	64.2330776	Prob > F =	0.0179	
				R-squared =	0.3395	
				Adj R-squared =	0.2923	
Total	1361.40437	15	90.7602916	Root MSE =	8.0146	

GDPGrowth	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
PrivateInvestment	2.671009	.9957889	2.68	0.018	.5352539	4.806763
_cons	21.47072	11.19665	1.92	0.076	-2.543705	45.48514

Source: Results of Data Analysis (2016)

The researcher fitted the regression model using the information from table 2 above and this is represented by

$$GDPgrowthrate = 21.47072 + 2.67PrivateInvestment$$

Table 2 shows that, Private investment accounts for approximately 29 percent influence in the GDP growth rate. However a unit change private investment increases GDP by 2.67 while without private investment GDP grows in Burundi by 21.47 percent.

#### **4.3.1 Hypothesis Testing.**

From the output, the F-value is 7.19 and its corresponding p-value is 0.0179 which is less than the level of significance of 0.05, so we reject the null hypothesis and conclude that the model is statistically significant.

Also the t values for private investment which is the independent variables is greater than the t-critical values and it's corresponding p-values is less than 0.05 so we reject their null hypothesis and conclude that they is significant relationship between private investment and economic growth in Burundi

## CHAPTER FIVE

### CONCLUSIONS AND RECOMMENDATIONS

#### 5.0 Introduction

It presents a summary of the findings in chapter four and also the conclusion. It also makes recommendations as per the findings as well as suggestions for future research.

#### 5.1. Summary of Findings

The study aimed at establishing the impact of private investment on economic growth of Burundi. There were a number of objectives that were formulated to assist the investigator as indicated in chapter one. In an attempt to get answers to those objectives, the researcher had to gather the relevant data. The results of the study were analyzed and the results have been exhaustively discussed in chapter four.

The results of the scatter plot and the corresponding correlation analysis show a moderate positive correlation of 0.58 between the two variables GDP and private investment. From the ANOVA table, it can also be observed that there is significant mathematical relationship between private investment and economic growth. It was revealed from adjusted  $R^2$  that 29.23 percent of the variation in the GDP growth hence economic growth in Burundi is accounted for by private investment.

#### 5.2 Conclusions

The trend of Private Investments in Burundi shows that there has not been a clear pattern of how investments have been for the last 15 years. However there is a period in time from 2005 to 2008 where investments were steadily increasing in the country although this could not last for long because of the political atmosphere that become unconducive within the state. Actually the trend reveals it that in 2015 the investment drastically became low because of the political coup d'Etat that short lived in Burundi in 2014 that scared away many investors.

The figures GDP figures also reveal that within the same time period 2005 to 2008 the rate of economic activity in Burundi was high as compared to years like 2015 2014 and 2015 where the political situation in Burundi hindered economic activity to go on.

It was discovered that there exists a significant mathematical relationship between private investment and economic growth. This was tested to be quite significant.

From the correlation analysis we can also conclude that there was a moderate positive correlation between GDP and private investment of 0.58 meaning that investment is an important component of economic growth in Burundi. The regression analysis actually showed that private investments accounts for 29.23% of changes in GDP growth rate of Burundi.

From the hypothesis testing, we rejected the null hypothesis and concluded that there is a relationship between economic growth and private investment in Burundi since the p-value which was 0.017 was less than 0.05 level of significance.

### 5.3 Recommendations

The research has revealed that Burundi desperately needs private investment. The economic growth of Burundi hugely depends on the number of investments made in the country. Unfortunately of recent the political situation in Burundi seems to have scared most of investors away from the country leaving many people especially the youth unemployed. The investors have run away for fear of loss of their capital and lives and the effect is now felt by the common man in Burundi.

The first step the Burundian government needs to do is to provide conducive political atmosphere that can re-attract investor back to Burundi. This can be achieved through peace agreements with the political leaders and ensuring that no more wars are witnessed in the country. If peace can be achieved then investors can be attracted back to Burundi.

The next thing is taxation policies of the country; this could also have scared away investors thus there is need to re-visit the taxation policies so as to try and attract investors from the rest of the world to Burundi since this will increase economic growth of the nation.

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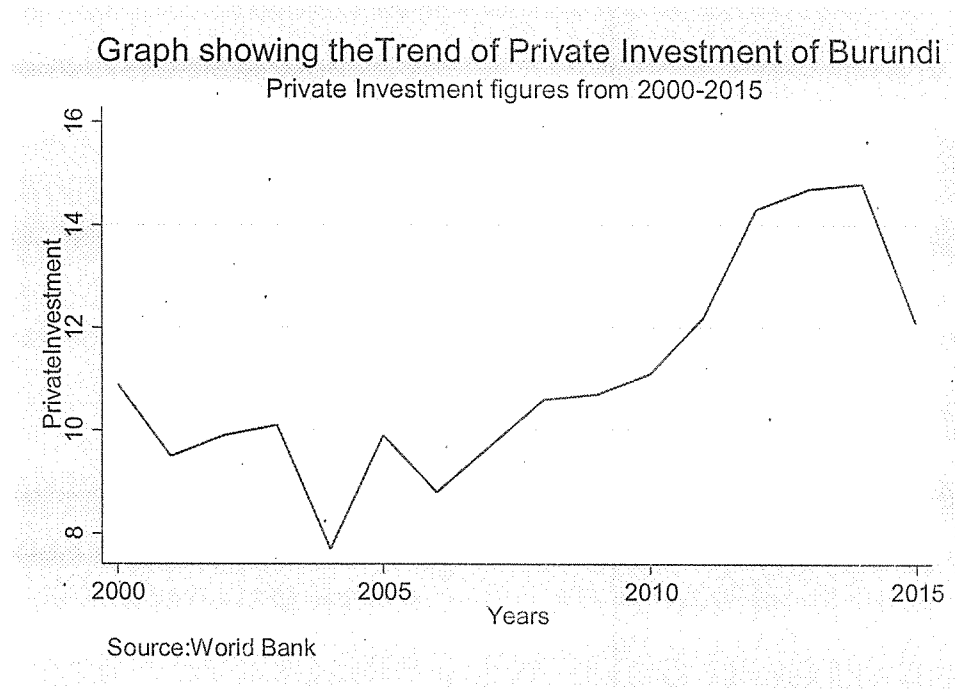
## APPENDICES

### Appendix I: Data for Gross Domestic Product and Private Investment of Burundi (2000-2015)

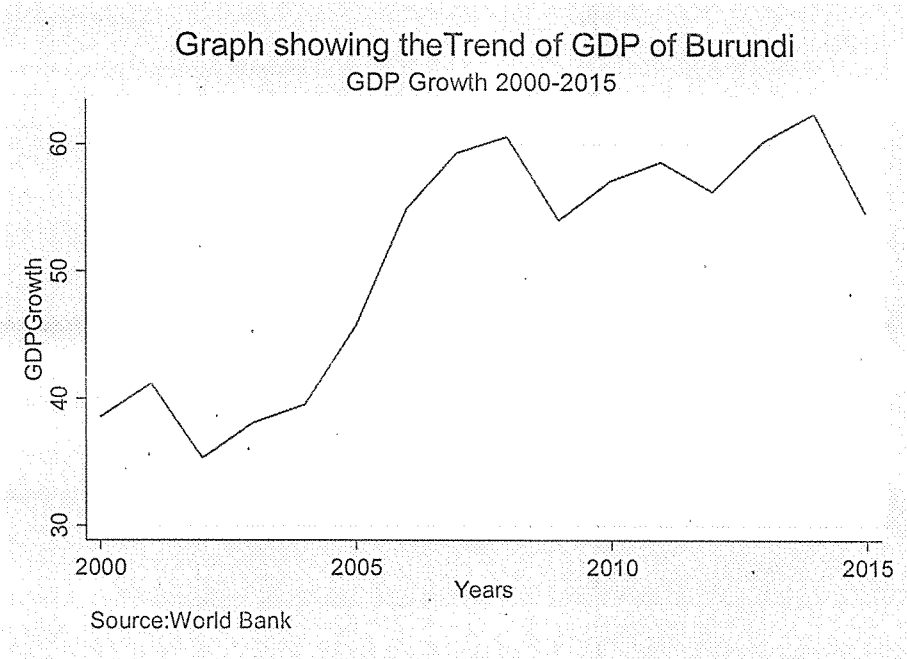
YEAR	PRIVATE INVESTMENT (In US Million Dollars)	GDP (In US Million Dollars)
2000	10.9	38.5
2001	9.5	41.2
2002	9.9	35.3
2003	10.1	38.1
2004	7.7	39.5
2005	9.9	45.7
2006	8.8	54.9
2007	9.7	59.3
2008	10.6	60.6
2009	10.7	54
2010	11.1	57.1
2011	12.2	58.6
2012	14.3	56.3
2013	14.7	60.2
2014	13.8	58.4
2015	8.6	54.6

Source: World Development Indicator (2016)

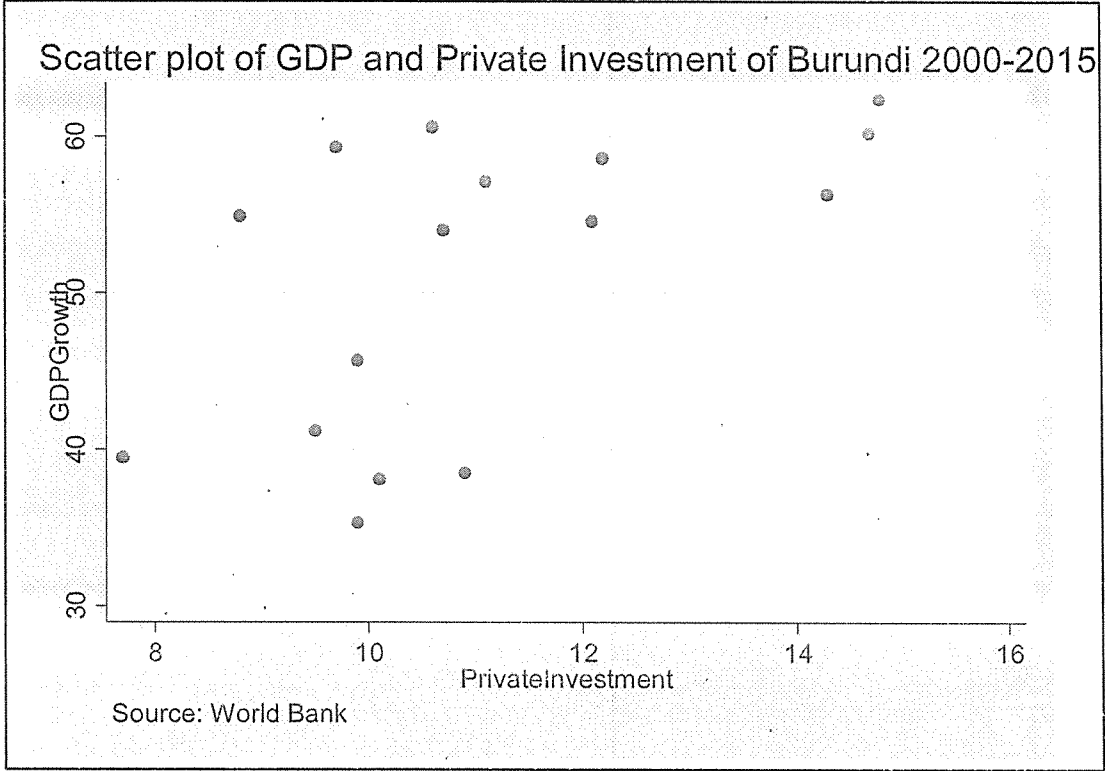
**Appendix II: A graph of trend of private investment in Burundi**



**Appendix III: A graph showing trend of GDP of Burundi**



Appendix IV: A scatter plot of private investment and GDP of Burundi



# Appendix V: Correlation of GDP and Private Investment

	GDPGrowth Privat~t	
GDPGrowth	1.0000	
PrivateInv~t	0.5826	1.0000