AN ANALYSIS OF THE RELATIONSHIP BETWEEN PUBLIC DEBT AND ECONOMIC GROWTH IN AFRICA
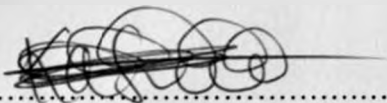
BY:

MESHACH MOKI

DEPARTMENT OF FINANCE AND ACCOUNTING

SCHOOL OF BUSINESS

UNIVERSITY OF NAIROBI

NOVEMBER 2012

DECLARATION

This is my original work and has not been submitted to any institution or university for examination.
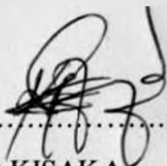
Signed: .... Date: $19|11|2012$

MESHACH MOKI

This research project has been presented for examination with my approval as university supervisor

Signed: .... Date: $20|11|2012$

DR. SIFUNJO KISAKA

SCHOOL OF BUSINESS

UNIVERSITY OF NAIROBI

DEDICATION

To my mother Elizabeth, who inspires and enlightens me that is the wonder of you. To my family, a reminder of what persistence and fortitude can yield. I dedicate this work to you.

ACKNOWLEDGEMENT

Work such as this must be the fruit of many minds. In the text and in the bibliography, some of the authors from whom I have derived my ideas are named. Although I have been even more influenced by discussions with friends and colleagues, I am deeply grateful to my Supervisor, Dr. Sifunjo Kisaka who has read my work in whole and guided me accordingly and must share the credit for any merit this work may have.

ABSTRACT

Almost all developing country governments face budget deficit due to high expenditure and fewer revenues. Governments can get revenue by increasing taxes, printing money, domestic or external borrowing and using previous budget surplus. When the government decides to borrow instead of introducing additional tax measures, to finance the budget deficit. it creates a liability on itself known as public debt.

The purpose of this study was to investigate the relationship between national debt and the economic growth of African countries. The findings from this study are important to policy makers, politicians and the academic community. First, the findings will inform policy makers and national planners on the long run effect of debt on economic growth. This can inform their future policy and decision making on matters relating to national debt. This also can inform government officials on how debt affects the economy and can inform their decisions on how to deal with past and present debts.

The causal research design was used to carry out this study. The target population of this study was all the 53 recognized countries. The study covered data spanning a period of 30 years from 1980-2010. The study utilized the SPSS software Version 20 to do a multiple regression analysis. Dependent variable was economic growth as measured using GDP while independent variables were public debt, investments, human capital. monetary policy, trade openness, foreign direct investment and political climate.

Study findings indicate public debt has a significant positive relationship on economic growth. Investment however, is not a significant predictor of economic growth. Human capital is another factor which positively influences the economic growth. Monetary policy which was measured using inflation rates had a negative relationship with GDP but this relationship was not significant at 10% level. Trade openness which was measured using net exports is another factor which showed a significant positive effect on economic growth. FDI is another factor which showed a significant positive effect on economic growth while political risk indicated to have a significant negative relationship with economic growth.

From the study results, the following recommendations are made. First, African countries should manage their public debt levels for investment in capital projects to improve their economic growth. Secondly African countries should improve on human capital development, FDI inflows and political risk to have a positive improvement on their economic growth and development. This can be done by having public policies and laws that encourage investments. property ownership, dispute resolution and encouraging the rule of law and democratic institutions.

TABLE OF CONTENTS

LIST OF TABLES

ABBREVIATIONS

2SLS	Two Stage Least Square
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GNP	Gross National Product
OLS	Ordinary Least Squares
R&D	Research and Development
WDI	World Bank Development Indicators

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

1.1.1 Theoretical Background

Almost all governments face budget deficit due to high expenditure and fewer revenues. Governments can get revenue by increasing taxes, printing money, domestic or external borrowing and using previous budget surplus. When the government decides to borrow instead of introducing additional tax measures, to finance the budget deficit, it creates a liability on itself known as public debt. Therefore all external obligations and liabilities of some known maturity and outstanding at a particular point in time and payable in form of any commodity is known as public debt. A government has various alternatives to borrow for the purpose of financing fiscal deficit. One way is to borrow directly from the central bank which is equivalent to printing of money. The other alternatives are; borrowing from domestic commercial banks, borrowing from domestic non-bank sector and borrowing from external sources. Each method has its own implications for various aspects of the economy.

Governments usually adopt a mix strategy and utilizes a number of options at the same time that have more benefit for the present situation of the country. With money growth and income taxation expansion generally being held at legislative limitation, fiscal deficits have largely been financed by issuing bonds to the private sector and foreigners. Most of the developing countries are deficient in capital in the private sector, which have led to government authorities to finance fiscal deficit via foreign debt. The economic and

1

political studies (e.g. Hansen 2004, Sundaram 2006, Cassimon and Campenhout 2007) have hotly debated the dependence of economic performance on foreign borrowing for developing countries.

Economic growth is increase in average income of an economy measured through various factors most notably gross domestic product (GDP). Debt can be used to acquire technology and other factors of production to increase employment opportunities and national productivity. The works of early development economists such as Higgins (1959), Pearson (1968), Chenery and Strout (1966) provided a foundation for the development of a comprehensive theory of debt and growth. They all shared the common view that the transfer of foreign resources (through loans, aids and grants) to less developed countries would help to transform their economies, characterized by low or zero growth rates, into economies capable of adequate and sustainable growth. Their contributions show that the transfer of foreign resources to developing countries is necessary and serves to supplement domestic resource gaps with positive effects on growth.

The consequence of the foregoing is that a strand of thought runs through the early contributions on external debt and economic growth that reasonable levels of borrowing by a country are likely to enhance its economic growth. Countries at early stages of development have small stocks of capital and are likely to have investment opportunities with rates of return higher than those in advanced economies. As long as they use the borrowed funds for productive investment, growth should increase and allow for timely

debt repayments. This explains the short-term positive relationship that exists between external debt and growth for countries that will glide through the debt cycle within a reasonable time.

The limitation of the early contributions is that the long-term effect of debt on growth, which is the debt overhang, is not explained. This has motivated the formulation of a comprehensive theory of external debt and economic growth. The major theory that explains this long-term effect is the debt overhang hypothesis. A graphical explanation of this theory became known as the debt Laffer curve. In order to proffer a solution to the debt overhang problem, which is clearly understood by the existing theories, economists have shifted their attention towards finding the optimal debt stock for any nation. This is the level of debt that a country can sustain without having a debt overhang problem or in other words without being trapped in the debt cycle. This is the debt level that promotes and sustains economic growth.

Several theoretical contributions have focused on the adverse impact of debt on the economy and the circumstances under which such impact arises. In this line of research Krugman (1988) coins the term of "debt overhang" as a situation in which a country's expected repayment ability on external debt falls below the contractual value of debt. Cohen's (1993) theoretical model posits a non-linear impact of foreign borrowing on investment (as suggested by Clements et al. (2003), this relationship can be arguably extended to growth). Thus, up to a certain threshold, foreign debt accumulation can

promote investment, while beyond such a point the debt overhang will start adding negative pressure on investors' willingness to provide capital.

1.1.2 Contextual Background

If properly used, borrowed external resources can greatly benefit a developing country and contribute to its growth. This is through adding to the total resources available to an economy over a given period. However, such borrowing is desirable when it is used to finance investment that is expected to yield an adequate rate of return or to smoothen consumption in the face of an uneven aggregate supply, since it can provide a level of economic welfare that could not otherwise be obtained. It is important to stress that if debt problems are to be avoided, the investments financed by foreign borrowing must have a real economic rate of return that is at least equal to the real rate of interest. And since the borrowing is presumably in foreign currency, the required equal rate of return must also be expressed in foreign currency (Obadan and Iyoha, 1999). If the conditions for optimal borrowing are violated then external debt becomes a burden and the country can no longer sustain the existing level of debt stock. The concept of external debt sustainability has occupied center stage in recent analysis of the effect of debt on developing nations.

Debt burden in Africa can be traced to so many factors in the past which has affected the growth of the economies of affected countries in diverse ways. The issue of external debt in relation to other macroeconomic variables has brought about an increasing literature regarding the determinants of external debt burden and its impact on the economy as well

4

as the policy lessons. Anyanwu (1994) stated that total indebtedness and debt service payments have risen over the years which are detrimental to the growth of the economies of West African countries. Ojo (1994) observed that the magnitude of the debt stock of African countries is accompanied by an equal increase in debt service payment and negative effects on economic growth. The policy lesson from Ojo (1994) is that the best strategy for reducing the African debt burden is a radical shift in the continent's debt management strategy.

Oshikoya (1994) investigated the macroeconomic determinants of private investment in some African countries for which adequate statistics were readily available. Raheem (1990) acknowledged the fact that debt management has to be conceived within a comprehensive and macro-policy framework that emphasizes the need to enhance domestic saving rate, generate current account surplus, and improve the efficiency of resource allocation. Raheem (1994) came up with an econometric-based debt management model with balance of payment blocks that could be integrated into an economy-wide macro-econometric model to determine the levels of debt and balance of payments, as well as their impact on the entire economy.

Essien and Onwioduokit (1998) suggested that the government should embark on appropriate debt management strategies with feasibility study of projects such as loan acquisition and deployment. The author further stated that projects should be financed with external loans since the potential of economic growth in the country can be improved through external resources invested on viable ventures. Ndekwu (2003),

Pearson (1999), Symonds (2000), Lewis (2004), Singer (1999), Kaldor (1999), and Berger (2005) came to the conclusion that foreign resources transferred to less developed countries will help improve the economies that have low growth rate to grow into economies capable of adequate and sustainable growth. Ndekwu (1996) found out that international financial institutions and international creditor countries should cooperate and make the various debt management strategies to function effectively to make debt have positive effects on developing country economies.

1.2 Statement of the Problem

The factors affecting economic growth in developing countries have been a topic of continuing debate over the last few decades. In early 1960s and 1970s, economists have argued that debt and its proper utilization is one of the factors that contribute to economic growth in developing countries of Africa. Geiger (1990), Chowdhury (1994), Karagol (1999), Were (2001), Kalima (2002), Pattillo et al. (2004), and Schclarek (2004) studied the role of foreign debt in economic growth in different countries. The findings of these studies show varying results and it has been concluded that the effectiveness of debt on economic growth differs from country-to-country.

For the past five decades, a number of studies have been carried out to establish the nexus between external debt and economic growth (Schclarek, 2004; Patillo et al. 2002). Further, since early 1980's, debt crisis has been a major issue for many nations especially developing nations of Africa. By conventional propositions, it is expected that external borrowing will serve as a source of capital formation which spurs economic growth.

However, economic performance of many debtor countries has been undermined by huge debt accumulation (Adegbite et al (2008). Given the increasingly growing concern of the debilitating impact of debt on growth, especially among developing countries, this study will investigate the presence of mixed findings on the external debt and growth nexus. In the midst of mixed findings, it may not be totally clear of the impact of debt on economic growth. However, although the relationship between public debt and economic growth is a major concern for policymakers, and public opinion in general, there is little empirical work investigating this relationship. Furthermore, there is even less evidence on the specific channels through which debt affects growth.

The study sought to bridge this gap by answering the question: 'what is the relationship between debt and economic growth in Africa?' The study was expected to give results that indicate the relationship that exists between debt, investments, human capital, monetary policy, trade openness, foreign direct investment and political climate on economic growth.

1.3 Objective of the Study

The objective of this study was to investigate the relationship between national debt and the economic growth of African countries.

1.4 Value of the Study

The findings from this study will be important to policy makers, politicians and the academic community. First, the findings will inform policy makers and national planners

on the long run effect of debt on economic growth. This can inform their future policy and decision making on matters relating to national debt. This also can inform government officials on how debt affects the economy and can inform their decisions on how to deal with past and present debts.

Secondly, the findings can shed more light on the debt-economic growth nexus and hence inform their contributions and debate on the issue on formal and informal forums. These politicians can use the results from this study to mobilize the electorate for or against debt as a budget deficit fixing policy.

Lastly, the findings would be useful to the different publics including the media, general public and human rights groups. These publics advocate for human rights and justice and the findings from this study can inform their crusade for or against debt.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter examines both theoretical and empirical literature on public debt and its effect on economic growth. In this chapter, the first section 2.2 examines theoretical literature on public debt and economic growth, section, 2.3 reviews findings from earlier studies on effects of public debt on economic growth while section 2.4 discusses the factors that influence economic growth. Section 2.5 is a summary.

2.2 Theoretical Literature

The theoretical literature on the relationship between public debt and economic growth tends to point to a negative relationship. Growth models augmented with public agents issuing debt to finance consumption or capital goods tend to exhibit a negative relationship between public debt and economic growth, particularly in a neoclassical setting. Modigliani (1961), refining contributions by Buchanan (1958) and Meade (1958), argued that the national debt is a burden for next generations, which comes in the form of a reduced flow of income from a lower stock of private capital. Apart from a direct crowding-out effect, he also pointed out to the impact on long-term interest rates, possibly in a non-linear form.

Modigliani (1961) postulated that if the government operation is of sizable proportions it may significantly drive up long-term interest rates since the reduction of private capital will tend to increase its marginal product. Even when the national debt is generated as a

counter-cyclical measure and in spite of the easiest possible monetary policy with the whole structure of interest rates reduced to its lowest feasible level, the debt increase will generally not be costless for future generations despite being advantageous to the current generation. Modigliani considered that a situation in which the gross burden of national debt may be offset in part or in total is when debt finances government expenditure that could contribute to the real income of future generations, such as productive public capital formation.

Diamond (1965) adds the effect of taxes on the capital stock and differentiates between public external and internal debt. He concludes that, through the impact of taxes needed to finance the interest payments, both types of public debt reduce the available lifetime consumption of taxpayers, as well as their saving, and thus the capital stock. In addition, he contends that internal debt can produce a further reduction in the capital stock arising from the substitution of government debt for physical capital in individual portfolios.

Adam and Bevan (2005) find interaction effects between deficits and debt stocks, with high debt stocks exacerbating the adverse consequences of high deficits. In a simple theoretical model integrating the government budget constraint and debt financing, they find that an increase in productive government expenditure, financed out of a rise in the tax rate, will be growth-enhancing only if the level of domestic public debt is sufficiently low. Saint-Paul (1992) and Aizenman et al. (2007) analyze the impact of fiscal policy, proxied among others by the level of public debt, in endogenous growth models and find a negative relation as well.

2.2.1 Keynesian Model

The Keynesian model postulates that there is no real burden associated with public debt and it has no effect on economic growth (Metwally and Tamaschke, 1994). The real burden occurs at the time when the expenditure is made: that's when real resources are used up. Internal public debt is "debt we owe to ourselves". It adds nothing to our real resource base. External debt is different: it does add real resources to the economy, and those resources will have to be repaid some time.

Substituting public debt for current taxation has an immediate macro-expansionary effect: an increase in public expenditure financed by a tax increase invokes a different and lower multiplier than does debt-financed public expenditure (and indeed, in macro terms, public debt invokes no contractionary force (Savvides, 1992).

2.2.2 Debt Overhang Theory

Krugman (1988) coins the term of "debt overhang" as a situation in which a country's expected repayment ability on external debt falls below the contractual value of debt. Cohen's (1993) theoretical model posits a non-linear impact of foreign borrowing on investment as suggested by Clements et al. (2003) who indicates that this relationship can be arguably extended to growth. Thus, up to a certain threshold, foreign debt accumulation can promote investment, while beyond such a point the debt overhang will start adding negative pressure on investors' willingness to provide capital. In the same vein, the growth model proposed by Aschauer (2000), in which public capital has a non-linear impact on economic growth can be extended to cover the impact of public debt.

11

Assuming that government debt is used at least partly to finance productive public capital, an increase in debt would have positive effects up to a certain threshold and negative effect beyond it.

2.2.3 Buchanan Theory

This theory postulates that debt involves a postponement of the burden of taxation to future generations (future time-periods) (Geiger, 1990). There can be no burden at the time when the expenditure is made because bond-purchasers act totally voluntarily. The burden must be borne in the future when coercive taxation is levied to service and redeem the debt.

Internal debt and external debt are the same in this respect. Because future taxpayers are not around to defend their interests, public expenditure will be predictably higher under debt (Cohen, 1993). More generally, debt-financing is a violation of basic democratic principle – because it off-loads the cost of current expenditures onto the shoulders of a necessarily un-enfranchised future.

2.3 Empirical Literature

Empirical findings on the relationship between public debt and economic growth are diverse, a significant number of recent studies suggest that high debt and deficits may contribute to rising sovereign long-term interest rates and yield spreads thus hampering economic growth. In Krugman's (1988) specification, the external debt overhang affects economic growth through private investment, as both domestic and foreign investors are

deterred from supplying further capital. Other channels may be total factor productivity, as proposed in Patillo et al. (2004), or increased uncertainty about future policy decisions, with a negative impact on investment and further on growth, as in Agenor and Montiel (1996) and in line with the literature of partly-irreversible decision making under uncertainty (Dixit and Pindyck 1994).

The empirical findings of Afxentiou and Serletis (1996), for developing countries, shows that there exists a negative relationship between indebtedness and national productivity from 1980-1990. This was attributed to excess debt accumulation from 1970-1980 when foreign loans were taken to cushion the shock from oil price increases in early 1970. Earlier findings of Geiger (1990) also assert this using some highly indebted South American countries. The result of the study showed existence of a statistically significant inverse relationship between debt and economic growth from 1974 to 1986.

Using Ordinary Least Squares (OLS) technique, Fosu (1996) examined the degree to which debt had a negative impact on economic growth in Sub-Saharan African countries. The result confirmed that debt directly and negatively affects growth by reducing productivity and, on average, a high debt country experiences almost 1 percent of reduction in GDP growth rate annually. His findings seemed to be consistent with the 'direct effect of debt hypothesis' which theoretically states that for countries facing large debt repayment, debt outstanding and servicing will directly and negatively impede growth even if it does not affect investment. Fosu (1999) study reaffirmed his earlier findings that external debt directly affects Sub-Saharan African Countries negatively.

13

Further evidence from his work also showed a weak negative effect of debt on investment levels. On the contrary, there have been few studies like Cohen (1993) who for a large dataset of developing countries found no implicative evidence of a negative effect of debt on economic growth for the period 1965 - 1989.

The degree to which external debt affects an economy varies by country. Chowdhury (1994) investigated the extent of external debt impact on GDP and vice versa using a system of simultaneous regressions. The study employed panel data for the period 1970-1988 on selected Asian and Pacific countries which include Bangladesh, Indonesia, Malaysia, Philippines, South Korea, Sri Lanka and Thailand. Results obtained from the standard simultaneous equation model showed that external debt (private and public) had only small effects on the GNP. Hence, by his findings, it could be summarized that external debt has no significant effect on economic growth.

Metwally and Tamaschke (1994) investigated the interaction between debt servicing, capital inflows and growth for 3 North African Countries (Algeria, Egypt and Morocco) for the period of 1975-1992. Using standard OLS and the Two Stage Least Square (2SLS) methods, they examined simultaneous models. Their result suggests that there was a two way relationship between debt servicing and growth. Furthermore, they discovered that debt servicing affected economic growth negatively. High growth rate was also found to accelerate capital inflow which again enhances economic growth. This was observed to have a positive effect on productivity as it leads to reduction in

overdependence on external borrowings as well as reducing adverse effects of debt servicing on an economy.

Furthermore, Savvides (1992) claimed that debtor nations who were unable to pay their external debts would have any debt payment to be negatively linked to economic performance. Their finding is suggestive that economic benefits that accrue to the debtor nation in terms of increments in output or exports is minimized due to debt servicing requirements.

Some findings also suggest external debt and economic growth to be linearly related. However, some researchers have found the existent relationship to be nonlinear. Among these are Patillo et al (2002) whose study empirically investigates the relationship between total external debt and growth rate of GDP for developing countries over a period of 29 years, starting from 1969. They keenly conclude that the relationship between external debt and economic growth is nonlinear in the form of an inverted U shaped curve. By implication, at low levels of external debt, growth is affected positively but at higher levels of total debt, the relationship becomes negative. The authors were able to determine the exact turning point which was put at 35-40 percent of debt to GDP ratio and between 160-170 percent for debt export ratio. Besides, Patillo et al (2004) paper which establish a nonlinear relationship between debt and growth, other studies which find the existence of a nonlinear effect include Cohen (1997), and Elbadawi et al (1997).

However, Schclarek (2004) conducted a similar study like that of Patillo et al (2002) but using 9 developing and 24 industrial countries with datasets obtained from World Bank Development Indicators (WDI) dataset. For developing countries, the study found lower levels of external debt to be related to higher growth rates. Notwithstanding, the study did not find existence of an inverted U shape relationship between total external debt and economic growth as claimed by Patillo (2002). In the case of industrial countries, the study found no significant relationship between total government debt and economic growth. Adegbite et al (2008) was also unable to find any significant nonlinear relationship between external debt and economic growth for Nigeria.

Among many studies, several find support for a non-linear impact of external debt on growth, with deleterious effects only after a certain debt-to-GDP ratio threshold. Pattillo et al. (2002) used a large panel dataset of 93 developing countries over 1969-1998 and found that the impact of external debt on per-capita GDP growth is negative for net present value of debt levels above 35-40% of GDP. Clements et al. (2003) investigated the same relationship for a panel of 55 low-income countries over the period 1970-1999 and found that the turning point in the net present value of external debt is at around 20-25% of GDP. Other previous empirical studies that have found a non-linear effect of external debt on growth include Smyth and Hsing (1995) and Cohen (1997). On the other hand, Schclarek (2004) found a linear negative impact of external debt on per-capita growth in a panel of 59 developing countries over the period 1970-2002. Schclarek (2004) also investigated the relationship between gross government debt and per capita GDP growth in developed countries. No robust evidence of a statistically significant

relationship was found for a sample of 24 industrial countries with data averaged over seven 5-year periods between 1970 and 2002. In contrast, a recent study by Reinhart and Rogoff (2010), which analyzed through simple correlation statistics, the developments of public debt and the long-term real GDP growth rate in a sample of 20 developed countries over a period spanning about two centuries (1790 - 2009), f0und that: (i) the relationship between government debt and long-term growth is weak for debt/GDP ratios below a threshold of 90% of GDP; (ii) above 90%, the median growth rate falls by one percent and the average by considerably more. A similar change in the behaviour of GDP growth in relation to the debt ratio is also found by Kumar and Woo (2010).

2.4 Factors Determining Economic Growth

A wide range of studies has investigated the factors underlying economic growth. Using differing conceptual and methodological viewpoints, these studies have placed emphasis on a different set of explanatory parameters and offered various insights to the sources of economic growth.

Investment is the most fundamental determinant of economic growth identified by both neoclassical and endogenous growth models (Podrecca and Carmeci, 2001). However, in the neoclassical model investment has impact on the transitional period, while the endogenous growth models argue for more permanent effects. The importance attached to investment by these theories has led to an enormous amount of empirical studies examining the relationship between investment and economic growth (e.g. Easterly, 2002: Bond, 2002). Nevertheless, findings are not conclusive.

Human capital is the main source of growth in several endogenous growth models as well as one of the key extensions of the neoclassical growth model. Since the term 'human capital' refers principally to workers' acquisition of skills and know-how through education and training, the majority of studies have measured the quality of human capital using proxies related to education e.g. school-enrolment rates, tests of mathematics and scientific skills. A large number of studies have found evidence suggesting that educated population is key determinant of economic growth (e.g. Hanushek and Kimko, 2000). However, there have been other scholars who have questioned these findings and, consequently, the importance of human capital as substantial determinant of economic growth (e.g. Krueger and Lindahl, 2001; Pritchett, 2001).

Innovation and R&D activities can play a major role in economic progress increasing productivity and growth. This is due to increasing use of technology that enables introduction of new and superior products and processes. This role has been stressed by various endogenous growth models, and the strong relation between innovation/R&D and economic growth has been empirically affirmed by many studies (e.g Lichtenberg, 1992; Ulku, 2004).

Economic policies and macroeconomic conditions have, also, attracted much attention as determinants of economic performance since they can set the framework within which economic growth takes place. Economic policies can influence several aspects of an

economy through investment in human capital and infrastructure, improvement of political and legal institutions.

Openness to trade has been used extensively in the economic growth literature as a major determinant of growth performance. There are sound theoretical reasons for believing that there is a strong and positive link between openness and growth. Openness affects economic growth through several channels such as exploitation of comparative advantage, technology transfer and diffusion of knowledge, increasing scale economies and exposure to competition. Openness is usually measured by the ratio of exports to GDP. A large part of the literature has found that economies that are more open to trade and capital flows have higher GDP per capita and grew faster (Dollar and Kraay, 2000). On the other hand, several scholars have criticized the robustness of these findings especially on methodological and measurement grounds (Vamvakidis, 2002).

Foreign Direct Investment (FDI) has recently played a crucial role of internationalizing economic activity and it is a primary source of technology transfer and economic growth. This major role is stressed in several models of endogenous growth theory. The empirical literature examining the impact of FDI on growth has provided more-or-less consistent findings affirming a significant positive link between the two (Lensink and Morrissey, 2006).

Another important source of growth highlighted in the literature is the institutional framework. Although the important role institutions play in shaping economic

performance has been acknowledged long time ago (Lewis, 2004; Ayres, 1962), it is not until recently that such factors have been examined empirically in a more consistent way (Acemoglu et al, 2002). Rodrik (2000) highlights five key institutions (property rights, regulatory institutions, institutions for macroeconomic stabilization, institutions for social insurance and institutions of conflict management), which not only exert direct influence on economic growth, but also affect other determinants of growth such as the physical and human capital, investment, technical changes and the economic growth processes. The relation between political factors and economic growth has come to the fore by the work of Lipset (1959) who examined how economic development affects the political regime. Since then, research on the issues has proliferated making clear that the political environment plays an important role in economic growth (Lensink, 2001). At the most basic form, political instability would increase uncertainty, discouraging investment and eventually hindering economic growth.

There has been a growing interest in how various social-cultural factors may affect growth (Zak and Knack, 2001; Barro and McCleary, 2003). Trust is an important variable that belongs to this category. Trusting economies are expected to have stronger incentives to innovate, to accumulate physical capital and to exhibit richer human resources, all of which are conductive to economic growth (Knack and Keefer, 1997). Ethnic diversity, in turn, may have a negative impact on growth by reducing trust, increasing polarization and promoting the adoption of policies that have neutral or even negative effects in terms of growth (Easterly and Levine, 1997). Several other social-cultural factors have been examined in the literature, such as ethnic composition and fragmentation, language,

religion, beliefs, attitudes and social/ethic conflicts, but their relation to economic growth seems to be indirect and unclear.

The important role of geography on economic growth has been long recognized. Researchers have used numerous variables as proxies for geography including absolute values of latitude, distances from the equator, proportion of land within 100km of the coast, average temperatures and average rainfall, soil quality and disease ecology (Easterly and Levine, 2003). Armstrong and Read (2004) affirmed that natural resources, climate, topography and 'landlockedness' have a direct impact on economic growth affecting (agricultural) productivity, economic structure, transport costs and competitiveness. However, others (e.g. Rodrik et al, 2002; Easterly and Levine, 2003) found no effect of geography on growth after controlling for institutions.

2.5 Summary

Various theoretical and empirical studies have been reviewed in this section which indicates conflicting theories and findings between public debt and economic growth. Some literature indicate a positive impact, others a negative whereas others indicate a U shape effect between the two variables. The reviewed studies have been from diverse settings with various sources of data. This study was therefore designed to establish the effect of public debt on economic growth where the focus was all the African countries for the past twenty years. These findings gave a more current view of the effect of debt on economic growth.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology that was adopted in this study. The chapter is organized as follows. First research design is presented in section 3.2, section 3.3 analyzes the population and sample size while section 3.4 is presents data collection methods. Section 3.5 presents data analysis

3.2. Research Design

The causal research design was used to carry out this study. According to Cooper and Schindler (2006), a causal study is designed to establish the influence of one variable(s) on another variable(s) which depicts causation.

Causal research is typically structured with a clearly stated objective of discovering associations and causal relationships among different variables. The causal study was necessary in this case to establish the effect of public debt on economic growth.

3.3 Population and Sample of Study

The target population of this study was all the 53 recognized countries in Africa as at 31st December 2010. The study covered data spanning a period of 30 years from 1980-2010.

Countries which have not been there for that long like South Sudan were excluded from the study. Such a country was incorporated into the country it belonged to before it

became a sovereign state. Due to the small number of countries under study, and the fact that the study was using secondary data, there was no sampling and all the countries that fit the selection criteria were selected.

3.4 Data Collection

The study will use secondary data on levels of public debt and real GDP levels form World Bank. Data will be collected from the period 1980 to 2010 and care will be taken to enter the data accurately so that to have reliable results.

3.5 Data Analysis

The study utilized the SPSS software Version 20 to do the analysis as this involved quantitative analysis. The data and information obtained through the data collection exercise will first be checked for accuracy and completeness.

The data after the check was coded and all the data entered into statistical package for social sciences and analyzed based on descriptive statistics. The descriptive statistics that used were from regression analysis.

3.5.1 Conceptual Model

The regression model was developed after a careful analysis of literature on public debt and economic growth.

The Regression model was of the form:

G = f (D, I, H, M, O, F, P)   (1)

Where G = economic growth

    D = public debt

    I = Investments

    H = Human capital

    M = Monetary Policy

    O = Trade openness

    F = Foreign direct investment

    P = Political Risk

Economic growth was measured through real GDP, Investment was measured using capital growth per year and Human capital was indicated by school-enrolment rates. Monetary policy was indicated by Inflation rates, where high inflation indicated weak monetary policy and vice versa. Openness to trade was measured by the ratio of exports to GDP. Foreign Direct Investment (FDI) was indicated by net inward capital flow to a country in a given year. Political risk was measured using risk rates provided by World Bank.

The study expected to find a negative relationship between public debt and economic growth. Investments are expected to have a positive effect on economic growth. Human capital is expected to have a positive relationship with economic growth while sound monetary policy is expected to affect economic growth positively. Trade openness,

foreign direct investment and political climate arte all expected to have a positive relationship with economic growth.

3.5.2 Analytical Model

The model was in form of a regression model where all the indicators of economic growth were regressed against economic growth. The model was a multiple linear regression of the form;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \varepsilon \tag{2}$$

Where Y = economic growth

X_1 = public debt

X_2 = Investments

X_3 = Human capital

X_4 = Monetary Policy

X_5 = Trade openness

X_6 = Foreign direct investment

X_7 = Political Risk

ε = Error or random term

β_0 and β_i = Constants

The strength of the relationship between the independent and dependent variables was determined using analysis of variance, t-test and an f-test. The analyzed data was presented using tables.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

This chapter presents the analysis of data, findings and discussion of the findings. Part 4.2 presents data collection and analysis as well as how the data was tested to ascertain its conformity with regression assumptions while 4.3 presents findings from the study. Part 4.4 presents discussion of the findings.

4.2 Data Collection and Analysis

Data was collected for 53 countries in Africa from UN, World Bank records and development reports. Data collected included information on GDP, capital growth per year, school-enrolment rates, inflation rates, ratio of exports to GDP, net inward capital flow to a country and governance rankings.

Data for 9 countries (Equatorial Guinea, Western Sahara, Swaziland, Liberia, Lesotho, South Sudan, Namibia, Libya and Somali) were not complete the reason why they were not included in the regression analysis. This resulted to the regression model containing data for 46 countries. The data collected was entered into SPSS and regression analysis performed. The descriptive statistics for the data is provided in table 4.1. The table indicates the minimum, maximum, mean and standard deviation for each of the variables.

Table 4.1: **Descriptive Statistics**

	N	Minimum	Maximum	Mean	Std. Deviation
GDP	1353	90713554.5400 000000	363910000000. 0000000000	12805067745.2 18882000000	30881931255.5 301440000000
Public Debt	1353	29057000.0000 000000	46121736000.0 000000000	5732467305.24 7606000000	8144068336.05 43660000000
Investment	1353	-50.2480671100	35.2240783100	3.47155013815 9	5.46320625951 09
Human Capital	1353	1.5584400000	133.149680000 0	51.8154292531 63	25.5479765867 954
Monetary Policy	1353	-29.1726624900	26762.0183300 000	49.8349546924 53	758.899966144 2745
Trade Openess	1353	- 935000000000. 0000000000	1370000000000 .0000000000	15071935511.8 78984000000	136401196066. 4722300000000
FDI	1353	- 3227211182.00 00000000	11578100000.0 000000000	290453237.590 236700000	943719248.869 6780000000
Political Risk	1353	.1053427240	134.099964000 0	17.0040982625 65	14.4513261676 390

Before the regression analysis was done, data was tested for the assumptions to establish whether the linear regression assumptions were valid in relation with the data. The assumptions were: data is of the same level of integration, Normality, homogeneity of variance and independence.

Data was tested for integration by ensuring that all data was using the measurement scale and were in similar values. Normality was measured using Shapiro wilk test. All the variables indicated a significance level of above 0.05 indicating that they satisfied the normality test at 5% significance level.

Table 4.2: Tests of Normality

Variables	Kolmogorov-Smirnov			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
GDP	.360	3	.	.809	3	.136
Public Debt	.212	3	.	.990	3	.812
Investment	.318	3	.	.887	3	.345
Human Capital	.303	3	.	.909	3	.416
Monetary Policy	.362	3	.	.805	3	.126
Trade Openess	.361	3	.	.807	3	.131
FDI	.315	3	.	.892	3	.359
Political Risk	.329	3	.	.869	3	.292
GDP	.342	3	.	.845	3	.227

4.3 Estimated or Empirical Model

The regression analysis was performed with the independent variables being capital growth per year, school-completion rates, inflation rates, net exports, net inward capital flow to a country and political risk. GDP which indicated economic growth was the dependent variable. Results are as indicated in tables 4.3 to 4.6.

The r-squared for the regression model was 0.608. The model therefore is explaining 61% of the change in GDP using the seven independent variables. These findings indicate that the seven independent variables selected can explain 61% of the change in GDP of the selected African countries.

Table 4.3: Regression Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.781	.610	.608	19345031717.443

Analysis of variances in the regression model is presented in table 4.2. The f-value was 300.065 which was significant at 1% level of significance indicating that the regression model provided some explanatory power and the overall model is significant. This indicates that capital growth per year, school-completion rates, inflation rates, net exports to GDP, net inward capital flow to a country and political risk can be used to predict GDP.

Table 4.4: Analysis of Variances in the Regression Model

Source of variation	Sum of Squares	df	Mean Square	F	Sig
Regression	786054163612147900000 000	7	112293451944592540000 0000	300.065	.000
Residual	503339689140237800000 000	1345	374230252148875660000 0		
Total	128939385275238560000 0000	1352			

The test of the statistical significance of the independent variables in the model was done using the t-tests. Results are presented in table 4.3 which indicates that public debt has a positive relationship with GDP (B = 1.774) and has a t-statistic of 23.483 which is significant at 1% level of significance. This indicates that Public debt is a significant predictor of GDP. It has a positive relationship with GDP and hence as public debt increases, GDP is expected to rise and vice versa.

Investment was not a significant predictor of GDP (t-statistic = -.224) which was significant at 82.3%. Investment had a negative relationship with GDP (B = -21739762.623) indicating that increase in capital growth per year would results to decrease in GDP and vice versa.

Human capital had a positive relationship with GDP (B= 95096750.55) indicating that increase in school completion rates would result into growth in GDP. Human capital had a t-statistic of 4.363 which was significant at 1% level of significance. This indicates that human capital is a significant predictor of GDP at 1% level of significance.

Monetary policy which was measured using inflation rates had a negative relationship with GDP (B = -1028723.164) indicating that rise in inflation rates will cause a slump in GDP. However, the t-statistic was -1.479 which was not significant at 10% level of significance. This indicates that monetary policy measured using inflation rates was not a significant predictor of GDP at 10% level of significance.

Trade openness which was measured using net exports had a negative relationship with GDP (B = .009) indicating that a rise in net exports would result to increase in GDP and vice versa. The t-statistic was 2.225 which was significant at 5% significance level. This indicates that trade openness is a significant predictor of GDP.

FDI had a positive relationship with GDP (B =13.388) indicating that rise in FDI results in growth in GDP and vice versa. The t-test statistic for FDI was 20.663 which was significant at 1%. This result indicates that FDI was a significant predictor of GDP at 1% level of significance.

Political risk had a negative relationship with GDP (B = -133378050.145) which indicates that high political risk causes GDP to decrease. The t-test statistic for political

risk was -3.473 which was significant at 1%. This result indicates that political risk was a significant predictor of GDP at 1% level of significance.

Table 4.5: Test of Significance of Independent variables

Variable	Coefficient	Std. Error	t	Sig.
Constant	-3914189947.043	1478050298.154	-2.648	.008
Public Debt	1.774	.076	23.483	.000
Investment	-21739762.623	97241467.770	-.224	.823
Human capital	95096750.550	21797154.309	4.363	.000
Monetary Policy	-1028723.164	695339.499	-1.479	.139
Trade openness	.009	.004	2.225	.026
FDI	13.388	.648	20.663	.000
Political Risk	-133378050.145	38399273.213	-3.473	.001

4.4 Discussion

Public debt has a positive relationship with GDP (B = 1.774) and has a t-statistic of 23.483 which is significant at 1% level of significance. This indicates that Public debt is a significant predictor of GDP and has a positive relationship with GDP and hence as public debt increases, GDP is expected to rise and vice versa. This disagrees with the finding of Aizenman et al. (2007) who analyzed the impact of fiscal policy, proxied among others by the level of public debt, in endogenous growth models and found a negative relationship. Another study with similar findings was by Patillo et al. (2004) who indicated that public debt causes increased uncertainty about future policy decisions, with a negative impact on investment and further on growth. The empirical findings of Afxentiou and Serletis (1996), for developing countries, shows that there exists a negative relationship between indebtedness and national productivity from 1980-1990 which concurs with the findings from this study. However, a study by Fosu (1996) which

examined the degree to which debt had an impact on economic growth in Sub-Saharan African countries found that debt increased growth in some countries but hampered growth in others.

However, the findings agree with the Keynesian model which postulates that there is no real burden associated with public debt and it has no effect on economic growth according to Metwally and Tamaschke (1994). The findings of Savvides (1992) also disagree with the study findings. Savvides (1992) had established that debt-financed public expenditure invokes no contractionary force. Another study by Patillo et al (2002) disagrees with these study findings. Patillo et al (2002) whose study empirically investigated the relationship between total external debt and growth rate of GDP for developing countries over a period of 29 years, starting from 1969 keenly concluded that the relationship between external debt and economic growth is nonlinear in the form of an inverted U shaped curve. This study found a significant linear relationship.

Investment was not a significant predictor of GDP (t-statistic = -.224) which was significant at 82.3%. Investment had a negative relationship with GDP (B = -21739762.623) indicating that increase in capital growth per year would results to decrease in GDP and vice versa. This result disagrees with findings from a study by Podrecca and Carmeci (2001) which established that investment is the most fundamental determinant of economic growth identified by both neoclassical and endogenous growth models. The study results also disagrees with findings from Easterly (2002) and Bond

(2002) which also found a significant positive relationship between investment and economic growth

Human capital had a positive relationship with GDP (B= 95096750.55) indicating that increase in school completion rates would result into growth in GDP. Human capital had a t-statistic of 4.363 which was significant at 1% level of significance. This indicates that human capital is a significant predictor of GDP at 1% level of significance. Other studies which have had similar results include Krueger and Lindahl (2001), Pritchett (2001) and Hanushek and Kimko (2000) which established that an educated population is key determinant of economic growth.

Monetary policy which was measured using inflation rates had a negative relationship with GDP (B = -1028723.164) indicating that rise in inflation rates will cause a slump in GDP. However, the t-statistic was -1.479 which was not significant at 10% level of significance. This indicates that monetary policy measured using inflation rates was not a significant predictor of GDP at 10% level of significance. These findings agree with earlier studies by Dollar and Kraay (2000) and Vamvakidis (2002) which found that economies that are more open to trade and capital flows have higher GDP per capita and grew faster.

FDI had a positive relationship with GDP (B =13.388) indicating that rise in FDI results in growth in GDP and vice versa. The t-test statistic for FDI was 20.663 which was significant at 1%. This result indicates that FDI was a significant predictor of GDP at 1%

level of significance. This result agrees with earlier empirical literature like Lensink and Morrissey (2006) examining the impact of FDI on growth which has provided more-or-less consistent findings affirming a significant positive link between the two.

Political risk had a negative relationship with GDP (B = -133378050.145) which indicates that high political risk causes GDP to decrease. The t-test statistic for political risk was -3.473 which was significant at 1%. This result indicates that political risk was a significant predictor of GDP at 1% level of significance. This concurs with finding of Lensink (2001) who established that political instability increase uncertainty, discouraging investment and eventually hindering economic growth.

4.5 Summary

Results from the study indicate that the model was statistically significant and can be used to explain 61% of the change in GDP using the seven independent variables. The f-value was 300.065 was significant at 1% level of significance. The test of the statistical significance of the independent variables in the model using t-tests indicate that public debt has a positive relationship with GDP and is a significant predictor at 1% level of significance. Investment was not a significant predictor of GDP and had a negative relationship with GDP indicating that increase in capital growth per year would results to decrease in GDP and vice versa. Human capital had a positive relationship with GDP and was significant at 1% level of significance. Monetary policy had a negative relationship with GDP. However, it was not significant at 10% level of significance. Trade openness had a positive relationship with GDP and was also a significant predictor

at 5% significance level. FDI had a positive relationship with GDP and it was a significant predictor of GDP at 1% level of significance. Political risk had a negative relationship with GDP and was a significant predictor of GDP at 1% level of significance.

35

35

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

In this chapter, the researcher presents the summary, conclusions and the recommendations made from the study findings. In part 5.2, summary of findings are presented. Part 5.3 presents conclusions made from the study findings while 5.4 presents recommendations made after considering the study findings. Part 5.5 presents suggestions for any further studies that may be done in relation to public debt and its effect in affected countries.

5.2 Summary of findings

Results from the study indicate that the model was statistically significant and can be used to explain 61% of the change in GDP using the seven independent variables. The f-value was 300.065 which was significant at 1% level of significance indicating that the regression model provided some explanatory power and the overall model is significant. This indicates that capital growth per year, school-completion rates, inflation rates, net exports, net inward capital flow to a country and political risk can be used to predict economic growth (GDP).

The test of the statistical significance of the independent variables in the model was done using the t-tests. Results are presented in table 4.3 which indicates that public debt has a positive relationship with GDP and is a significant predictor at 1% level of significance. Investment was not a significant predictor of GDP and had a negative relationship with

GDP indicating that increase in capital growth per year would results to decrease in GDP and vice versa. Human capital had a positive relationship with GDP and was significant at 1% level of significance. Monetary policy which was measured using inflation rates had a negative relationship with GDP. However, it was not significant at 10% level of significance. Trade openness which was measured using net exports had a positive relationship with GDP and was also a significant predictor at 5% significance level. FDI had a positive relationship with GDP and it was a significant predictor of GDP at 1% level of significance. Political risk had a negative relationship with GDP and was a significant predictor of GDP at 1% level of significance.

5.3 Conclusions

From the study findings, the following conclusions are made. Public debt has a significant positive relationship on economic growth. This indicates that rise in public debt for a country improves economic growth. Investment is not a significant predictor of economic growth indicating that the level of capital growth hampers economic growth. However, this is against Keynesian and investment theory. Human capital is another factor which positively influences the economic growth. This indicates that rise in school completion rates has a positive influence on economic growth. Monetary policy which was measured using inflation rates had a negative relationship with GDP but this relationship was not significant at 10% level. This indicates that the relationship between inflation and economic growth is not conclusive.

Trade openness which was measured using net exports is another factor which has a positive effect on economic growth. The more a country exports in relation to its GDP, the more it improves its economic growth. FDI and political risk are other factors which have a positive effect on economic growth. Improvements in FDI inflows and good political risk have a positive relationship with GDP.

5.4 Limitations of the Study

From the study results, the following limitations were met. First, data was missing for some variables in respect to 9 African countries. This was solved by eliminating these countries from the regression analysis. The regression analysis was therefore for 44 countries.

Secondly, availability of data was a challenge which made the researcher liaise with various international bodies and commissions to get all the sets of data required. The British council, World Bank and UN websites were of importance in this respect.

5.5 Recommendations for Further Research

This study was aimed at establishing the effect of public debt on economic growth of African countries. For further research in the area other analysis models should be encouraged such as having country by country analysis since different countries can be affected differently by public debt. This would further give an insight into how each and every country is affected by public debt and hence have policies which would suit each particular case.

REFERENCES

Acemoglu D., Johnson S. and Robinson J. (2002). Reversal of fortune: geography and institutions in the making of the modern world income distribution. *Quarterly Journal of Economics,* 117(4), 1231–94.

Adam, C. S. and D. L. Bevan (2005). Fiscal deficits and growth in developing countries. *Journal of Public Economics*, Vol. (4), pp. 571-597.

Adegbite, E. O., Ayadi, F. S. and Ayadi, O. F. (2008). The Impact of Nigeria's External Debt on Economic Development. *International Journal of Emerging Markets*, Vol. 3, 3, 2008, pp. 285-301.

Afxentiou, P. C. and Serletis, A. (1996). Growth and Foreign Indebtedness in Developing Countries: An Empirical Study Using Long-term Cross-Country Data. *The Journal of Developing Areas*, 31, Fall, pp. 25-40.

Agenor, P-R and P. Montiel (1996). *Development Macroeconomics*, Princeton University press.

Aizenman, J., K. Kletzer and B. Pinto (2007). *Economic growth with constraints on tax revenues and public debt: implications for fiscal policy and cross-country differences.* NBER Working Paper 12750.

Armstrong H. and Read R. (2004). *The Economic Performance of Small States and Islands: The Importance of Geography.* Paper presented at Islands of the World VIII International Conference, Taiwan

Aschauer, D. A. (2000). Do states optimize? Public capital and economic growth. *The Annals of Regional Science,* 34(3), pp 343-363.

Ayres C. (1962). *The theory of economic progress. A study of the Fundamental Economic Development and Cultural Change.* New York: Schocken.

Barro R. and McCleary, R. (2003). *Religion and Economic Growth.* NBER Working Paper no. 9682.

Bond, S. (2002). *Dynamic panel data models: A guide to micro data methods and practice.* Institute for Fiscal Studies Working Paper No. 09/02, London.

Buchanan, J. M. (1958). *Public Principles of the Public Debt.* Homewood, Illinois.

Chenery, H.B. and Strout, A. (1966). Foreign Assistance and Economic Development. *American Economic Review*, Vol. 56, pp. 679-733.

Chowdhury, K. (1994). A structural analysis of external debt and economic growth: some evidence from selected countries in Asia and the Pacific. *Applied Economics*, 26, pp. 1121-1131.

Clements, B., Bhattarcharya, R. and Nguyen, T.Q. (2003). *External Debt, Public Investment, and Growth in Low-Income Countries*. IMF Working Paper No. 03/249, IMF, Washington, DC.

Cohen, D. (1993). Low Investment and Large LDC Debt in the 1980s. *American Economic Review*, Vol. 83 (3), pp. 437–49.

Cohen, D. (1997). *Growth and external debt: A new perspective on the African and Latin American tragedies*. Centre for Economic Policy Research Discussion Paper, No. 1753.

Cooper, D.R. and Schindler, P.S., (2006). *Business research methods*. 8th ed. McGraw-Hill/Irwin, Boston.

Diamond, P. (1965). National Debt in a Neoclassical Growth Model. *American Economic Review*, 55 (5), pp. 1126-1150.

Dixit, A. and R. Pindyck (1994). *Investment under uncertainty*. Princeton University Press.

Dollar D. and Kraay A. (2000). *Trade, Growth and Poverty*. The World Bank Development Research Group, Washington.

Easterly W. and Levine R. (1997). Africa's Growth Tragedy: Policies and Ethnic Divisions. *Quarterly Journal of Economics* 112(4), 1203-50.

Easterly W. and Levine R. (2003). Tropics, germs and crops: how endowments influence economic development. *Journal of Monetary Economics*, 50(1), 3-39.

Easterly, W. (2002). How Did Heavily Indebted Poor Countries get Heavily Indebted? Reviewing Two Decades of Debt Relief. *World Development*, Vol. 30, 10, pp. 1677-1696.

Elbadawi, I.A., Ndulu, B.J. and Ndungu, N. (1999). Debt Overhang and Economic Growth in Sub-Saharan Africa. *External Finance for Low-income Countries*, IMF Institute, Washington, DC, Ch. 5.

Elmendorf, D. and N. Mankiw (1999). Government Debt, in Taylor, J. and Woodford, M. (eds.), *Handbook of Macroeconomics*, vol. 1C, 1615-1669, North-Holland.

Fosu, A. K. (1996). The Impact of External Debt on Economic Growth in Sub-Saharan Africa. *Journal of Economic Development*, Vol. 21, 1, pp. 93-118.

Fosu, A. K. (1999). The External Debt Burden and Economic Growth in the 1980s: Evidence from Sub-Saharan Africa. *Canadian Journal of Development Studies*, Vol. 20, 2, pp. 307-318.

Geiger, L. T. (1990). Debt and Economic Development in Latin America. *The Journal of Developing Areas*, 24, pp. 181-194.

Hanushek E. and Kimko D. (2000). Schooling, Labor-Force Quality, and the Growth of Nations. *American Economic Review*, 90, 1184-1200

Kaldor N. (1999). The Case for Regional Policies. *Scottish Journal of Political Economy*, 17, 337-348.

Kalima Barbara (2002). *Gender and Debt*. African Forum and Network on Debt and Development, June.

Karagol, E. (2002). The Causality Analysis of External Debt Service and GNP: The Case of Turkey'. Central Bank Review, Vol. 2, 1, pp. 39-64.

Knack S. and Keefer, P. (1997). "Does social capital have an economic impact? A cross-country investigation." *Quarterly Journal of Economics*, 112, 4, 1252-88.

Krueger A. and Lindhal M. (2001). Education for Growth: Why and For Whom?" *Journal of Economic Literature* 39(4), 1101-36.

Krugman, P. (1988). Financing Versus Forgiving a Debt Overhang. *Journal of Development Economics*, Vol. 29, 3, pp. 253–68.

Kumar. M. and J. Woo (2010). *Public Debt and Growth*. IMF Working Paper 10/174.

Lensink R. (2001). Financial development, uncertainty and economic growth. *De Economist*, 149 (3), 299-312.

Lensink W. and Morrissey O. (2006). Foreign Direct Investment: Flows, Volatility and the Impact on Growth. *Review of International Economics*, 14, 3, 478-493.

Lewis A. (2004). *The Theory of Economic Growth*. George Allen and Unwin, London.

Lichtenberg F. (1992). *R&D Investment and International Productivity Differences*. NBER Working Paper, No. 4161.

Lipset S, (1959). Some Social requisites of Democracy: Economic Development and growth. *Journal of Monetary Economics*, 22, 3- 42.

Meade, J. E. (1958). Is the National Debt a Burden? *Oxford Economic Papers, New Series*, Vol. 10(2), pp. 163-183.

Metwally, M. M. and Tamaschke. R. (1994). The interaction among foreign debt, capital flows and growth; case studies. *Journal of Policy Modelling*, Vol. 16, 6, pp. 597-608.

Modigliani, F. (1961). Long-Run Implications of Alternative Fiscal Policies and the Burden of the National Debt. *Economic Journal*, 71 (284), pp. 730-755.

Patillo, C., Poirson, H., and Ricci, L. (2002). *External debt and growth*. IMF Working Paper 02/69, IMF, Washington, DC.

Podrecca E. and Carmeci G. (2001). *Fixed Investment and Economic Growth: New results on Causality. Applied Economics* 33, 177-182.

Reinhart, C. M. and K. S. Rogoff (2010). *Growth in a Time of Debt*. NBER Working Paper No. 15639.

Rodrik D. (2000). Institutions for High-quality Growth: What they are and How to Acquire them. *Studies in Comparative International Development* ,35, 3–31.

Rodrik D. Subramanian A. and Trebbi F. (2002). *Institutions rule: the primacy of institutions over geography and integration in economic development.* NBER Working Paper, no. 9305.

Saint-Paul, G. (1992). Fiscal policy in an Endogenous Growth Model. *Quarterly Journal of Economics*, No. 107, pp. 1243-1259.

Savvides, A. (1992). Investment Slowdown in Developing Countries During the 1980s: Debt Overhang Or Foreign Capital Inflows. *Kyklos*, Vol. 45, 3, pp. 363-378.

Schclarek Alfredo (2004). *Debt and Economic Growth in Developing and Industrial Countries*. Department of Economics, Lund University.

Smyth, D. and Hsing, Y. (1995). In search of an optimal debt ratio for economic growth. *Contemporary Economic Policy*, 13:51–59.

Ulku H. (2004). *R&D Innovation and Economic Growth: An Empirical Analysis*. IMF Working Paper 185.

Vamvakidis A. (2002). How Robust is the Growth-Openness Connection? Historical Evidence. *Journal of Economic Growth*, 7, 57–80

Were, M. (2001). *The Impact of External Debt on Economic Growth in Kenya: An Empirical Assessment*. UNU/ WIDER Discussion Paper No. 2001/120, Helsinki.

APPENDIX: LIST OF COUNTRIES IN AFRICA

1. Algeria (People's Democratic Republic of Algeria)
2. Angola (Republic of Angola)
3. Benin (Republic of Benin)
4. Botswana (Republic of Botswana)
5. Burkina Faso
6. Burundi (Republic of Burundi)
7. Cameroon (Republic of Cameroon)
8. Cape Verde (Republic of Cape Verde)
9. Central African Republic (Central African Republic)
10. Chad (Republic of Chad)
11. Comoros (Union of the Comoros)
12. Côte d'Ivoire (Republic of Côte d'Ivoire)
13. Djibouti (Republic of Djibouti)
14. Egypt (Arab Republic of Egypt)
15. Equatorial Guinea (Republic of Equatorial Guinea)
16. Eritrea (State of Eritrea)
17. Ethiopia (Federal Democratic Republic of Ethiopia)
18. Gabon (Gabonese Republic)
19. Gambia (Republic of The Gambia)
20. Ghana (Republic of Ghana)
21. Guinea (Republic of Guinea)
22. Guinea-Bissau (Republic of Guinea-Bissau)
23. Kenya (Republic of Kenya)
24. Lesotho (Kingdom of Lesotho)
25. Liberia (Republic of Liberia)
26. Libya (Great Socialist People's Libyan Arab Jamahiriya)
27. Madagascar (Republic of Madagascar)
28. Malawi (Republic of Malawi)
29. Mali (Republic of Mali)
30. Mauritania (Islamic Republic of Mauritania)
31. Mauritius (Republic of Mauritius)
32. Morocco (Kingdom of Morocco)
33. Mozambique (Republic of Mozambique)
34. Namibia (Republic of Namibia)
35. Niger (Republic of Niger)
36. Nigeria (Federal Republic of Nigeria)
37. Republic of the Congo (Republic of the Congo)
38. Rwanda (Republic of Rwanda)
39. Sao Tome and Principe
40. Senegal (Republic of Senegal)
41. Seychelles (Republic of Seychelles)
42. Sierra Leone (Republic of Sierra Leone)
43. Somalia (Somali Republic)

44. South Africa (Republic of South Africa)
45. Sudan (Republic of Sudan)
46. Swaziland (Kingdom of Swaziland)
47. Tanzania (United Republic of Tanzania)
48. Togo (Togolese Republic)
49. Tunisia (Tunisian Republic)
50. Uganda (Republic of Uganda)
51. Western Sahara (Sahrawi Arab Democratic Republic)
52. Zambia (Republic of Zambia)
53. Zimbabwe (Republic of Zimbabwe)