THE RELATIONSHIP BETWEEN PUBLIC DEBT AND LEVEL OF ECONOMIC GROWTH IN KENYA

BY

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DECLARATION

I hereby declare that this Research project Paper is my original work and has never been submitted to any other institution for the purpose of examination or academic credit.

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This Research project Paper has been submitted for examination with my approval as the University Supervisor.

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ABSTRACT

Public Debt is one of the major macroeconomic indicators, which forms a countries' image being one of the inward foreign direct investment flow determinants of an economy. A prudent Public Debt Management helps economic growth and stability through mobilizing resources with low borrowing cost and limiting financial risk exposure. Kenya being a developing country compliments its revenue through export of primary commodities. In attempt to add to available domestic resources, successive governments have acquired huge sums of Public Debt to finance National Development Plans. A high level of debt in Kenya poses a great challenge for the economy because a large portion of revenues is devoted to servicing the debt instead of being put into domestic investment, thus reducing the prospects of economic growth. The conventional view is that a high level of debt may lead to crowding out and also constrain the scope of counter cyclical fiscal policies like taxation and public expenditure, which may result in higher volatility and adversely affect economic performance. This study is thus an effort geared towards determining the relationship between Public Debt and Economic Growth in Kenya. This study used a linear regression model to analyse economic growth, public debt, inflation and unemployment data from the fiscal years 1993/1994 to 2014/2015. The study used GDP growth rate as a function of Public Debt while taking Inflation and Unemployment rate as control variables.

The study results indicated that Public Debt, Unemployment rate and Inflation rate were inversely related to Economic Growth, and hence not very significant as indicators of Economic Growth as depicted by the equation $Y = 79.348 + -1.276X1 + -6.068X2 + -0.008X3 + \varepsilon$. Of key concern is that public debt as an independent variable is statistically insignificant in predicting the variations in Economic Growth in Kenya.

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FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GNP	Gross National Product
GOK	Government of Kenya
HIPCs	Highly Indebted Poor Countries
IDA	International Development Association
IMF	International Monetary Fund
JICA	Japan International Cooperation Agency
LICs	Low Income Countries
MDRI	Multilateral Debt Relief Initiative
NI	National Income
R&D	Research and Development

CHAPTER ONE : INTRODUCTION

1.1 Background of the study

A group of low-income countries have continued to experience difficulties in managing and servicing their huge stocks of external debt. Most of these countries including Kenya are in Sub-Saharan Africa and belong to the Heavily Indebted Poor Countries (HIPC) class. The relatively high level of Kenya's external indebtedness and rising debt burden has serious implications on the country's development and debt sustainability initiatives. While the economic performance continue to deteriorate, there has been significant net outflow of resources to meet the debt obligations in the 1990s and post millennium era. This paper examines the structure of Kenya's debt and its implications on economic growth

Kenya has worked for economic stability since its independence from Britain in 1964. Despite efforts of the Government in collaboration with the Central Bank, the country remains in a pattern of external debt and domestic deficits with sluggish Gross Domestic Product (GDP) growth. This sluggish growth pattern coupled with low domestic savings and world market factors, has prevented Kenya from repaying its external debt, maintaining and expanding domestic infrastructure and fully funding Government-Sponsored Social Programs (Dunne and Asaly, 2005).

Higher taxes result in lower present consumption, which may mean a slowdown of the Economic Growth (Abbas, 2007). According to Martin (2009), Public Debt can also serve as a means of delaying taxation, that way reducing current distortions and project current income and revenues for the government. The government will thus have two choices for covering financial needs which is the budget deficit in financing its current recurrent and capital expenditure.

Any resources which are borrowed should be used efficiently and productively to increase the capacity to service debt through optimization of available resources. A misuse of resources may easily lead to a build-up of debt to unsustainable levels, which has been a major impediment to growth in many small underdeveloped and emerging economies. The analysis of Public Debt in developing countries has traditionally focused on external debt. Past research has focused on external debt for two reasons; first, while external borrowing can increase a country's access to resources, domestic borrowing only transfer resources within the country. Hence, only external debt generates a "transfer" problem (Keynes, 1929). Second, since central banks in developing countries cannot print the hard currency necessary to repay external debt, external borrowing is usually associated with vulnerabilities that may lead to debt crises (Panizza, 2009).

In most of sub-Saharan Africa, there is a high degree of being indebted, poor infrastructure, high unemployment, absolute poverty and poor economic performance. All this is despite a previous culture of massive foreign aid acquired over the years. Averagely, the per capita income in the region has fallen since the years 1970 despite the high aid inflows and hence prompting aid donor agencies and experts to revisit their earlier discussions on the effectiveness of foreign aid on economies and their growth (Lancaster, 1999).

1.1.1 Public Debt

Public Debt refers to the total financial obligations incurred by all governmental bodies of a nation and which covers debts of local, state and national governments, indicating how much public spending is financed by borrowing instead of taxation (Chowdhury, 2001). Government debt is one methods of financing government operations, though not the only method as governments can also create money to monetize their debts, thereby removing the need to pay interest accruing on the debt (Martin, 2009).

Nevertheless, this practice simply reduces government interest costs rather than truly cancelling government debt and can result in hyperinflation if used unsparingly. Government debt is created through various instruments including Bonds, Treasury Bills, borrowing from commercial banks and overdraft from the Central Bank. Klein (1994) and Ariyo (1997) noted that a fundamental factor causing debt to rise is the reliance on external resources to complement capital formation in the domestic economy.

The higher the interest payment and the heavier the deficit on the current account, the heavier the debt burden (Ayres et al., 2006). Debt sourced finance represents funds with fixed contractual obligations, which will require pledging future resources of the nation as collateral. In order to cope adequately in the end with servicing requirement, a nation's debt service capacity must grow at a rate higher than that of its financial risk exposure. The non-debt resources on the other hand represent funds flow without fixed or compulsory obligations on the government. The magnitude and regularity of such resources however, depend on foreign investors' perception of the investment environment in the recipient country (Matiti, 2013).

Public debt can influence the economy in the short-run and in the long-run. The conventional view is that debt which reflects deficit financing can stimulate aggregate demand and output in the short-run but crowds out capital and reduces national income in the long-run (Elmendorf and Mankiw 1999). High levels of debt are likely to constrain the scope of counter cyclical fiscal policies resulting in higher volatility and further lower growth (Aghion and Kharoubi, 2007).

1.1.2 Economic Growth

Economic growth refers to the growth of that thing we call the economy. Economy is the physical subsystem of our world made up of stock of population and wealth, and the flow of production and consumption (Daly, 2010). It is also defined as an increase in the capacity of an economy to produce goods and services, compared from one period of time to another. Abbas

(2005) defined Economic Growth as an increase in the production and consumption of goods and services. It refers primarily to national economies and is usually measured in terms of Gross Domestic or Gross National Product (GNP).

Investment is the most fundamental determinant of Economic Growth identified by both neoclassical and endogenous growth models (Podrecca & Carmeci, 2001). However, the neoclassical model of 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 (Easterly, 2002 and Bond, 2002). Nevertheless, findings are not conclusive.

This Economic Growth can either be positive or negative. While positive Economic Growth can be explained by the expansion an economy, negative Economic Growth can be explained by the shrinking of the economy. In addition, negative growth is associated with economic recession and economic depression. Gross National Product is sometimes used as an alternative measure to Gross Domestic Product. In order to compare multiple countries, the statistics may be quoted in a single currency, based on either prevailing exchange rates or purchasing power parity. Then, in order to compare countries of different population sizes, the Per Capita figure is quoted. To compensate for changes in the value of money (inflation or deflation) the GDP or GNP is usually given in "real" - or inflation adjusted - terms rather than the actual money figure compiled in a given year, which is called the nominal or current figure (Ayres et al. 2006).

Reinhart and Rogoff (2010) showed that high levels of Public Debt are negatively correlated with Economic Growth, but that there is no link between debt and growth when Public Debt is

below 90% of GDP. Many commentators and policymakers did give a causal interpretation to their findings and used the debt-growth link as an argument in support of fiscal consolidation. The link between Public Debt and Economic Growth could be driven by the fact that it is low Economic Growth that leads to high levels of debt. While there is evidence that Public Debt is negatively correlated with Economic Growth, correlation does not necessarily imply causality. Minea and Parent (2012) study the relationship between debt and growth by using a statistical technique that allows for a gradual change in the estimated relationship between debt and growth. They find complex non-linearity which may not be captured by models that use a set of exogenous thresholds.

Kourtellos et al. (2013) relax the assumption that the relationship between debt and growth is either constant across countries or only varies with debt levels. They find that the estimated relationship between Public Debt and Economic Growth depends on institutional quality, but they do not find evidence of debt thresholds. Panizza and Presbitero (2012), did test for causality and found no evidence in support that debt causes Economic Growth. While the study was aware that techniques for assessing causality are never watertight, there was confidence in stating that still there is no paper that can make a strong case for a causal relationship between debt and growth. It is hoped that this study will stimulate more research aimed at uncovering possible causality.

1.1.3 Public Debt and Economic Growth

Though there is no link between debt and growth when Public Debt is below 90% of GDP, high levels of Public Debt are negatively correlated with Economic Growth (Reinhart and Rogoff 2010). Additionally, many policymakers and commentators have given a causal interpretation to their findings using the debt-growth link as a basis in support of fiscal consolidation.

The link between Economic Growth and Public Debt could be driven by the fact that low Economic Growth leads to high levels of debt and vice versa. While evidence is available, Public Debt is negatively correlated with Economic Growth, correlation does not necessarily imply causality. Minea and Parent (2012) study the relationship between debt and growth by using a statistical technique that allows for a gradual change in the estimated relationship between debt and growth. They find complex non-linearity which may not be captured by models that use a set of exogenous thresholds.

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1.1.4 Public Debt and Economic Growth in Kenyan Economy

The Kenyan Internal Loans Act (Cap 420) which provides the legal framework for the Finance ministry to borrow on behalf of the government from the domestic market through issuance of Treasury Bills and Treasury Bonds. The government overdraft at the Central Bank of Kenya is the only aspect of domestic debt borrowing that seems to be limited by law. Domestic borrowing through Treasury bills and bonds do not seem to have a limit in law. This is different from external borrowing where the External Loans and Credit Act, CAP. 422 of the Laws of

Kenya limits the total indebtedness in respect of principal amount to Ksh. 500 billion or such higher sum as the National Assembly may by resolution approve. Despite the lack of legal limit on domestic borrowing, the Minister is required by provisions of the Internal Loans Act to "report to the National Assembly in writing, the amount of indebtedness outstanding at the end of each financial year in respect of each manner of borrowing specified in section 3 of the Internal Loans Act".

Kenya's net domestic debt stood at 20 percent of GDP (Ksh 708,000 Million) at end-2012, around the average for 2006-2012. It is mostly held by commercial banks in the form of T-Bills and Government Bonds (comprising of 30 percent and 70 percent of domestic debt, respectively). Despite the relatively large size of the domestic debt, rollover risks appear moderate as Kenya has focused on extending the average maturity of its debt, which is now 5.6 years.

The details of Kenya's debt burden continue to be disheartening, as of August 2008, the Public Debt stood at Ksh. 867 billion in a country with a population of 36 million people with numerous challenges. Since 2003, debt composition in government securities has been skewed in favour of long-term borrowing through Treasury bonds. Interest rates within the period were sticky below 13% (Putunoi & Mutuku, 2013). Given Kenya's economic circumstances, it can be stated that the challenge is to succeed in creating a dynamic economy which is able to compete regionally and internationally, increase real GDP growth by more than the increase in population, reduce dependence on external transfers, reduce poverty and unemployment and finally, to reduce the external debts overhang. This is why current economic policies are committed to the principle of economic liberalization, which includes: Export promotion, private sector development, foreign direct promotion, privatization, and infrastructure.

1.2 Research 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 major question is however, if the essence of debt acquisition is to finance development projects, why would external debts cause a reduction on economic growth?

For the past five decades, a number of studies have been carried out to establish the relationship between debt and economic growth (Schclarek, 2004; Pattillo 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).

Several scholars and researchers have reviewed the concept of government debt and its effects on the economy. Harmon (2012) looked at the impact of Public Debt on inflation, GDP growth and interest rates in Kenya. The study concluded that a Public Debt, inflation, GDP growth and interest rates link could not be found in a single analysis. Moki (2012) did an analysis of the relationship between Public Debt and Economic Growth in Africa. Moki's (2012) findings indicate Public Debt has a significant positive relationship on Economic Growth. Investment however, is not a significant predictor of Economic Growth. Makau (2008) did an empirical analysis on external Public Debt servicing and Economic Growth in Kenya. The empirical results in the short run indicated that the coefficients of external debt to GDP, savings to GDP

and debt service to GDP had the correct sign and were significant while the coefficients of interest to GDP and growth in labour force were insignificant. Koka (2012) reviewed the relationship between Government Bond issues and Economic Growth in Kenya.

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 debt and growth relationship. 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. This study therefore sought to bridge the existing gap by answering the question: 'What is the relationship between Public Debt and level of Economic Growth in the Kenyan Economy?'

1.3 Research Objectives

To determine the relationship between public debt and the level of economic growth in Kenya.

1.4 Value of the Study

The study was founded on the understanding that Kenya, like other developing countries is suffering from debt burden problem. This study will be important to several stakeholders. To scholars and academicians; this study aimed at increasing the body of knowledge of Public Debt and its relationship with Economic Growth in the Kenyan Economy. It also suggests areas for further research so that future scholars can pick up these areas and study further. Furthermore the study will be important to the Government in making policy decisions with the overall objective to influence the level of economic activity, economic growth and management of public Debt. Generally, this study constructs a framework for rationalization of the relationship between public debt and economic growth over the period of twenty two years beginning fiscal years1993/94 to 2014/15.

CHAPTER TWO : LITERATURE REVIEW

2.1 Introduction

This chapter outlines literature review on public debt and it relationship with Economic Growth as established by other scholars. Specifically, this study enumerates the theoretical framework on which it is grounded before presenting empirical literature by various scholars seeking to establish the relationship between the two variables.

2.2 Theoretical Literature Review

Over the years, the theory of economic growth has evolved from simplest models to complex economic modelling techniques. Many countries, regardless of their social and political systems have pursued economic growth by applying different strategies based on theories that are suitable to their economic conditions. These theories include the following:

2.2.1 Dual Gap Analysis Theory

Dual Gap Analysis Theory developed by Chenery and Strout (1966) holds that for undeveloped economy, to attain some particular growth rate, there are two separate and independent types of obstacles, which he calls saving gap and foreign exchange gap. According to him, such gaps will be filled up through the flow of foreign resources and a desirable targeted rate of economic growth will be attained. According to this economist, in the light of national income accounting, these gaps remain equal in the export sense, but they are not equal in the ex-ante sense.

In summary, the theory explained that development is a function of investment and that such investment which requires domestic savings, if savings is not sufficient to ensure that development/economic growth takes place then there must be the possibility of obtaining from abroad the amount that can be invested in any country which is identical with the amount that is saved and obtaining this amount from abroad forms debt.

2.2.2 Keynesian Model

Keynesian Model came about as a result of the Great Depression (1929-1939). Economist John Maynard Keynes in his book 'The general theory of employment, Interest rates and money' observed that the economy is not always at full employment. In other words, the economy can be below or above its potential. During the Great Depression, unemployment was widespread, many businesses failed and the economy was operating at much less than its potential.

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" and 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).

2.2.3 Debt Overhang Theory

Public debt overhang has been found as a result of the development of a database concerning fiscal crises in recent years. Before the development of data by Reinhart et al. (2012), it was not known that the balance of public debt affects economic growth. For example, Barro and Sala-i-Martin (1995) empirically showed that the ratio of government consumption to GDP has a negative impact on per-capita GDP. However, it was not confirmed whether the amount of public debt has a significant impact. Meanwhile, Fischer (1991) empirically showed that a fiscal deficit has a negative impact on per-capita GDP but did not confirm whether or not the amount of public debt affects per-capita GDP (Kobayashi, 2015).

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 nonlinear impact on economic growth can be extended to cover the impact of public debt. 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 to the economy of a nation.

2.2.4 Dynamic Theory of Public Spending, Taxation, and Debt

The theory builds on the well-known tax smoothing approach to fiscal policy pioneered by Barro (1979). This approach predicts that governments will use budget surpluses and deficits as a buffer to prevent tax rates from changing too sharply (Battaglini and Coate, 2008). Thus, governments will run deficits in times of high government spending needs and surpluses when needs are low. Underlying the approach are the assumptions that governments are benevolent, that government spending needs to fluctuate over time, and that the deadweight costs of income taxes are a convex function of the tax rate (Battaglini and Coate, 2006). The economic environment underlying this theory is similar to that in the tax smoothing literature. However, the key departure is that policy decisions are made by a legislature rather than a benevolent planner. Moreover, this theory introduces the friction that legislators can distribute revenues back to their districts via pork-barrel spending (Bohn, 1998).

The legislature can raise revenues in two ways: via a proportional tax on labour income and by borrowing in the capital market. Borrowing takes the form of issuing one period bonds. The legislature can also purchase bonds and use the interest earnings to help finance future public spending if it so chooses. Public revenues are used to finance the provision of a public good that benefits all citizens and to provide targeted district-specific transfers, which are interpreted as pork barrel spending. The value of the public good to citizens is stochastic, reflecting shocks such as wars or natural disasters. The legislature makes policy decisions by majority (or super-majority) rule and legislative policy-making in each period is modelled using the legislative bargaining approach of Baron and Ferejohn (1989). The level of public debt acts as a state variable, creating a dynamic linkage across policy-making periods hence affecting the economic growth in that this debt is interest bearing and must be repaid whether used for public good or not.

2.3 Determinants of 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.

2.3.1 Investment

Investment is the most fundamental determinant of economic growth identified by both neoclassical and endogenous growth theories. 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 has led to an enormous amount of empirical studies examining the relationship between investment and economic growth Nevertheless, findings are not conclusive. 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 theories. 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 (Borensztein et al., 1998; Hermes and Lensink, 2000; Lensink and Morrissey, 2006).

Endogenous growth theories assign an important role to investment both in the short term and in the long run. Levine and Renelt (1992) and Sala-i-Martin (1997) identify investment as a key determinant of economic growth. High investment ratios do not necessarily lead to economic growth. The quality of its investments, its productivity, and existence of appropriate policy, political and social infrastructure are all determinants of effective investments (Hall and Jones, 1999; Fafchamps, 2000; Artadi and Sala-i-Martin, 2003). Private investments are the engine that drives the economy while government investments provide the infrastructure.

2.3.2 Economic Policies

Economic policies and macroeconomic conditions have, also, attracted much attention as determinants of economic performance (Kormendi & Meguire, 1985; Barro, 1991; Fischer, 1993; Barro and Sala-i-Martin, 1995), 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.

2.3.3 Macroeconomic Conditions

Macroeconomic conditions are regarded as necessary but not sufficient conditions for economic growth (Fischer, 1993). In general, a stable macroeconomic environment may favour growth, especially, through reduction of uncertainty, whereas macroeconomic instability may have a negative impact on growth through its effects on productivity and investment (e.g. higher risk). Several macroeconomic factors with impact on growth have been identified in the literature,

but considerable attention has been placed on inflation, fiscal policy, budget deficits and tax burdens.

2.3.4 Political Factors

Interest in the relation between political factors and economic performance was raised by Lipset (1959) triggering the conduction of numerous studies which conclude that the political environment plays an important role in economic growth (Kormendi and Meguire 1985; Scully 1988; Grier and Tullock 1989; Brunetti 1997; Lensink et al. 1999; Lensink 2001). Researchers usually assess the political environment using variables such as political stability and degree of democracy. At the most basic form, political stability would reduce uncertainty, encouraging investment and eventually advancing economic growth. The degree of democracy is also associated with economic growth, though the relation is much more complex, since democracy may both retard and enhance economic growth depending on the various channels that it passes through (Alesina and Perotti, 1996).

Political environment play an important role in economic growth (Kormendi and Mcguire, 1985) political stability does reduce uncertainty encouraging investment and eventually advancing economic growth though the relation is much more complex, since democracy may retard or enhance economic growth depending on the various channels it passes through (Alesina and Perotti, 1996).

2.3.5 Human Capital

Human capital is another important determinant of growth (Barro and Sala-i-Martin, 1995). It principally refers to the workers' acquisition of skills and know-how through education and training. Majority of studies (Barro and Sala-i-Martin, 1995; Brunetti et al, 1998, Hanushek and Kimko, 2000) have measured the quality of human capital using proxies related to education like school-enrolment rates, tests of mathematics and scientific skills among others.

Human capital is the main source of growth in several endogenous models as well as one of the key extensions of the neo-classical growth model since the term human capital refers principally to workers' acquisition of skills and know how through education and training. A large number of empirical studies have found evidence suggesting educated population is the key determinant of economic growth.

2.3.6 Public debt

According to Karazijienė and Sabonienė (2009), public borrowing is inevitable and not reprehensible phenomenon of economic growth. It is a way to stimulate economic growth by injecting money from foreign investors (external debt) into it as well as distributing assets (internal debt) among those who has more than they can use at the moment and those who lack assets for developing economic initiative or other needs. Since state bonds, treasury bills and loans to governments are considered to be one of the safest financial instruments, the interest rate is much lower than in case of public borrowing. This is beneficial to the economy and generates additional surplus if public debt stream is being controlled efficiently. Public debt is one of the main macroeconomic indicators, which forms countries' image in international markets. It is one of the inward foreign direct investment flow determinants.

Moreover, since governments borrow mainly by issuing securities, their term, interest rates and overall costs of debt financing has significant impact on economy, future of the enterprises and social welfare for not only present, but also future generations. According to Martin (2009), public debt can also serve as means of delaying taxation, that way reducing current distortions. Thus, government has two choices for covering financial needs (budget deficit). First one implies taxation system. Higher taxes results in lower present consumption, which may mean slowdown of the economic growth.

2.3.7 Unemployment rate

Unemployment may be associated with structural change and subsequent economic growth. Here, we focus on the mechanisms through which high and persistent unemployment may directly hinder economic growth. In the short run, economic growth and unemployment are inversely related along the business cycle. However, structural unemployment mainly depends on factors related to the characteristics of the labour market. Moreover, when unemployment becomes high and persistent there are economic costs that can become detrimental to long-run growth.

Unemployment not only represents a high social cost for the individual, it also represents a high economic cost for the society (Sanchis-i-Marco, 2011). In the first place, high unemployment implies an inefficient use of resources and wasted work, not performed by the unemployed, which can never be recovered. Secondly, high unemployment also implies a lower aggregate demand; not only is consumption lower, harming current growth, but private investment in physical and human capital is also reduced, harming future production capacities. In this line, Bean and Pissarides (1993) analyse how unemployment may have an adverse effect on growth through lower savings available for investment.

On the other hand, Chatterjee and Corbae (2007) report welfare costs of the Great Depression unemployment through lower consumption in the long-run. In parallel to this, high unemployment increases fiscal burden, through lower income revenues and higher welfare spending. A higher fiscal burden is likely to reduce public investment and to increase public debt, which handicaps future growth capacities. In the third place, unemployment can lead to an erosion of human capital; people unemployed for long periods may become de-skilled, as their professional skills become obsolete in an era of rapid technological change and associated rapidly changing job market (Pissarides, 1992). Martin and Rogers (2000) suggest that when

growth is generated by learning-by-doing, short-term macroeconomic instability reduces human capital accumulation and therefore growth.

Relatedly, Andrienko and Guriev (2004) found that high unemployment results in liquidity constraints, restricting labour migration and resulting in persistent unemployment and lower economic growth. Finally, high and persistent unemployment erodes individual self-esteem and life satisfaction, and confidence in the society as a whole (Ochsen and Welsch, 2011). Lower confidence and socio-economic deprivation, exclusion and marginalization from unemployment increase social dislocation, leading to unrest and conflict (ILO, 2011) and decreasing labour market performance (Mares and Sirovátka, 2005), thus harming long-run growth.

2.3.8 Inflation rate

Inflation can lead to uncertainty about the future profitability of investment projects (especially when high inflation is also associated with increased price variability). This leads to more conservative investment strategies than would otherwise be the case, ultimately leading to lower levels of investment and economic growth. Inflation may also reduce a country's international competitiveness, by making its exports relatively more expensive, thus impacting on the balance of payments. Moreover, inflation can interact with the tax system to distort borrowing and lending decisions. Firms may have to devote more resources to dealing with the effects of inflation (Gokal and Hanif, 2004).

The following empirical studies have attempted to examine whether the relationship between inflation and long-run growth is linear; non-linear; casual or non-existent. Studies by Dewan et al (1999) and Dewan & Hussein (2001) revealed some insights into the inflation growth relationship. Dewan et al (1999) found that changes in the difference between actual GDP and potential GDP (output gap) had a bearing on inflation outcome. In another study, Dewan &

Hussein (2001) found in a sample of 41 middle-income developing countries that inflation was negatively correlated to growth.

2.4 Empirical Review

Most of the studies that have looked at the impact of external debt on economic growth in developing economies have been driven by the "debt overhang" hypothesis, a situation where country's debt service burden is so huge that a large portion of output accrues to foreign lenders and consequently creates disincentives to invest (Krugman, 1988). Imbs and Ranciere (2009) and Pattilo et al. (2004) used a two staged least squares and differenced Generalized Method of Moments (GMM) to estimate a standard growth model over the period 1969-1998. They found a non-linear effect of external debt on economic growth, i.e. a negative and significant impact on growth at high debt levels (typically, over 60% of GDP), but an insignificant impact at low debt levels. In contrast, Cordella et al. (2005) found evidence of debt overhang for intermediate debt level, but an insignificant debt growth relationship at very low and very high levels of debt.

Putunoi and Mutuku (2013) studies the impact of domestic debt on economic growth of Kenya over the period 2000-2010 using the Engle-Granger (1987) residual based and Johansen (1988) VAR based co-integration tests and revealed that domestic debt markets play an increasingly important role in supporting economic growth. They find that domestic debt expansion has a positive long-run and significant effect on economic growth.

Maana et al. (2008) explores the impact of domestic debt on Kenya's economy covering the period 1996 to 2007 using a modified Barro Growth Regression model. The study established that domestic debt expansion had a positive but not significant effect on economic growth during the period. However, the study found no evidence that the growth in domestic debt crowds-out private sector lending in Kenya.

Abbas and Christensen (2007) analyzed optimal domestic debt levels in low-income countries and emerging markets between the period 1975-2004 using Granger Causality Regression model and found that moderate levels of marketable domestic debt as a percentage of GDP have significant positive effects on economic growth. The study also provided evidence that debt levels exceeding 35 % of total bank deposits have negative impact on economic growth.
Adoufu and Abula (2010) examine the effect of external debt on the Nigerian economy during the period 1986-2005 using OLS technique. The findings reveal that domestic debt has negatively affected the growth of the economy and recommends that the government should introduce efforts to resolve the outstanding domestic debt.

Kumar and Woo (2010) examined a panel of advanced and developing economies for the period 1970-2007 by regressing per capita GDP growth against lagged values of the debt –GDP ratio to address the causality issue. Their result showed that there is an inverse relationship between initial debt and the subsequent growth. They argued that an increase in 10% in the initial debt – GDP ratio leads to a decrease in annual real per capita GDP growth of 0.2% points per year.

Cohen (1993) argues that servicing of high debt levels might cause greater obstacle on growth, and investment. Debt servicing soaks up a significant amount of the scanty government revenues thus reducing the available resources to finance public investment in infrastructure. The private sector could also suffer financial challenges because countries that have large stock of domestic debt and undeveloped financial markets, then realizing of credit might lead to reduced savings. The negative impact of debt servicing on economic growth is due to the reduction of government expenditure resulting from debt induced liquidity constraints.

Reinhart and Rogoff (2010) examined the effect of public debt on economic growth for forty four developed and developing countries over the last hundred years. They concluded that high levels of public debt in relation to GDP of over 90% is accompanied by a lower levels of

economic growth in both developed and developing countries. Consequently, in the case of developing countries external debt levels of over 60% of GDP negatively affects economic growth.

Focusing on Heavily Indebted Poor Countries (HIPC), Were (2001) analyzed the debt overhang problem in Kenya and tried to find evidence for its impact on economic growth. Using time series data from 1970-1995, this study did not find any adverse impact of debt servicing on economic growth; however, it confirmed some crowding-out effects on private investment.

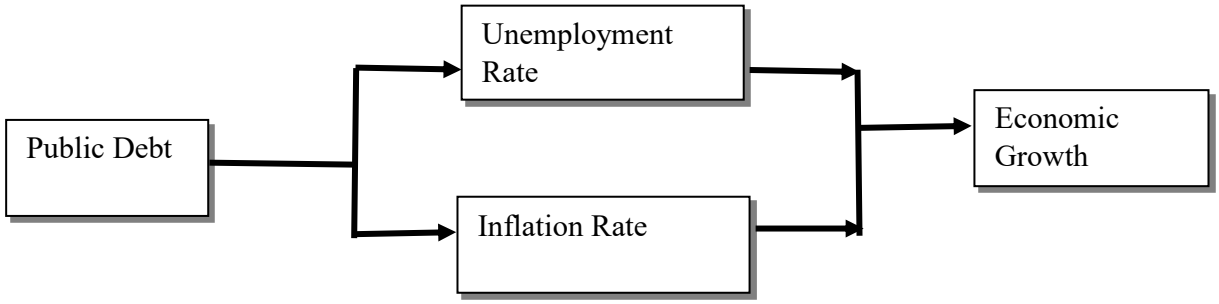
Ali and Mustafa (2010) analyzed long run and short impacts of public debt on economic growth in Pakistan for the period 1970-2010. They used extended production function by measuring Gross National Product as a function of annual education expenditure (proxy of human capital), capital labour force and external debt as a percentage of GNP. They used co-integration analysis to capture the long run effects of debt on GDP. Their result indicated that external debt has a significant effect in both long run and short run while labour force negatively affects GNP in both short and long run. They also found that human capital and increases in capital formation have positive impact on GNP in the long run and short run but the positive impact of capital is greater than that of human capital.

2.5 Conceptual Framework

The study seeks to examine the relationship between public debt and economic growth in Kenya operationalized by Public debt, Unemployment rate and Inflation rate as the Independent variables and Economic Growth as the Dependent variable.

The studies conceptual framework is shown by the below figure 2.1

Independent variables **Control Variables** **Dependent variable**



Source: Author 2016

2.6 Summary of the Literature Review

As a summary of the literature review the link between economic growth and public debt has not been explicitly given. Some studies have given consistent results of inverse relationship on effects of public debt on economic development; others have also shown positive relationship on same phenomenon while also instances of no relationship were also noted. Public debt and investment are negatively related, because most of people prefer to deposit savings in banks which further are used for non-production purposes. Hence, if deposits in banks increase, they will further increase non-production borrowing of loans, which will be used for consumption mainly. If investment in production and industrial sector increases, then capital in banks will reduce which will reduce borrowing power of banks and this will decrease domestic debt level. In nut shell, investment (gross fixed domestic capital formation) has negative relation with domestic debt. Another reason for negative relation of domestic debt and investment is that when governments borrow domestically, they use domestic savings hence funds available for private lending are reduced. When there will be fewer funds in markets, they will raise the cost

of capital for private borrowers, which will again reduce private investment demand (Diamond, 1965).

Reinhart and Rogoff (2009) found that public debt has a negative effect on the economic growth; Kumar & Woo (2010) found inverse relationship on the impact of Public Debt on Economic Growth; Makau (2008) on the influence of External Public Debt on Economic Growth found that there was no significant effect; Checherita and Rother (2010) confirmed Non-Linear relationship between the Public Debt and Economic growth; Karagol (2002) on his study of the impact of Long & Short-run Relationship between Economic Growth and Debt Service using multivariate analysis found a mixed impact with some showing that public debt impede economic growth while others confirm that public debt positively affects economic growth; Muhdi and Sasaki (2009) on the roles of External and Domestic Debt impact on economic growth found a positive effect of Debt both on Investment and Economic Growth; Were (2001) on his study on the Impact of Public Debt on Economic Growth found that there was no adverse effect of debt servicing on economic growth. However, it confirmed only some crowding out effect on private investment. Degefe's (1992) study about the effects of Public Debt on Growth found a positive effect on short run and negative impact thereafter.

It can be noted from the above discussion that the effect of public debt on economic growth has been looked into by various researchers for various countries but the issue of the relationship between public debt and economic growth has not been explicitly resolved. This paper is an attempt to investigate the relationship between public debt and economic growth using a linear model which has GDP growth rate as a function of Public debt. The study will also use the other studies reviewed for the purpose of comparing the regression results for policy recommendations.

CHAPTER THREE : RESEARCH METHODOLOGY

3.1 Introduction

This study, chapter presents the research methodology adopted in the study, how data was collected, analyzed and additionally describes the data types and sources.

3.2 Research Design

The study adopted a descriptive research design. This is because it is an empirical and systematic inquiry into which the researcher does not have a direct control of independent variable as their manifestation has already occurred or because they inherently cannot be manipulated. Descriptive research design was more appropriate because the study sought to build a profile about the relationship between public debt and economic growth by conducting a census survey for the fiscal period 1993/94 to 2014/15. A census was more ideal due to the need to include public debt data, unemployment and inflation data from all years in this period.

3.3 Data Collection

Secondary data which was collected from the Central Bureau of Statistics was used to analyze public debt. Data on economic development was collected from Economic survey report 2015. The data on Inflation rate and Unemployment rate in Kenya over the study period was collected from World Bank statistics. A data collection sheet was used which was edited and cleaned (Appendix 1). The study period was chosen because of the many changes in government policies that occurred within the economy that had far reaching implications on the macroeconomic variables in Kenya. The study used annual data because Government Budgets are drawn annually and the deficits and surplus which are key determinants of borrowing are then developed.

3.4 Data Analysis

The study used SPSS and MS Excel's analysis tool pack to aid in data analysis. Results of the regression analysis included indicators that help determine the significance level of the study variables in the prediction of the dependent variable. The coefficients were used to show that the independent variables positively or negatively influence the dependent variable or if there is no relation at all. Furthermore one indicator (R square) was used to show to what extent the model explains the variation in the dependent variable. The analysis was conducted at 0.05 level of significance.

3.4.1 Analytical Model

The model was adopted from the augmented **Solow linear growth model (**Solow, R. 1956**)**. This took the form of a regression model. All the indicators of economic growth were regressed against economic growth and hence a multiple linear regression of the form;

$Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \varepsilon$

Where:

Y = Economic Growth (Measured in percentage of the GDP in Kenyan shillings as Calculated by Central Bureau of statistics)

X1 = Public Debt (measured by the natural logarithm of the total value in Kenyan shillings)

X2 = Unemployment rate (measured as a percentage of the labor force)

X3 = Inflation rate (measured as a percentage increase in the price level from year to year)

$\beta 1$, $\beta 2$and $\beta 3$ = Partial coefficients of GDP with respect to X1, X2 and X3 respectively

ε = Stochastic error term

α = Constant term

The control variables which were used in this model are Unemployment rate and inflation rate.

3.4.2 Test of Significance

The study conducted an Analysis of Variance (ANOVA) to test the significance of the model in establishing the relationship between public debt and economic performance. The researcher sought to look at the significance value by extracting the ANOVA statistics. The study was conducted at a confidence level of 95% and significance level of 5%. This model is significant in explaining a relationship when the significance F is less.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND DISCUSSION

4.1 Introduction

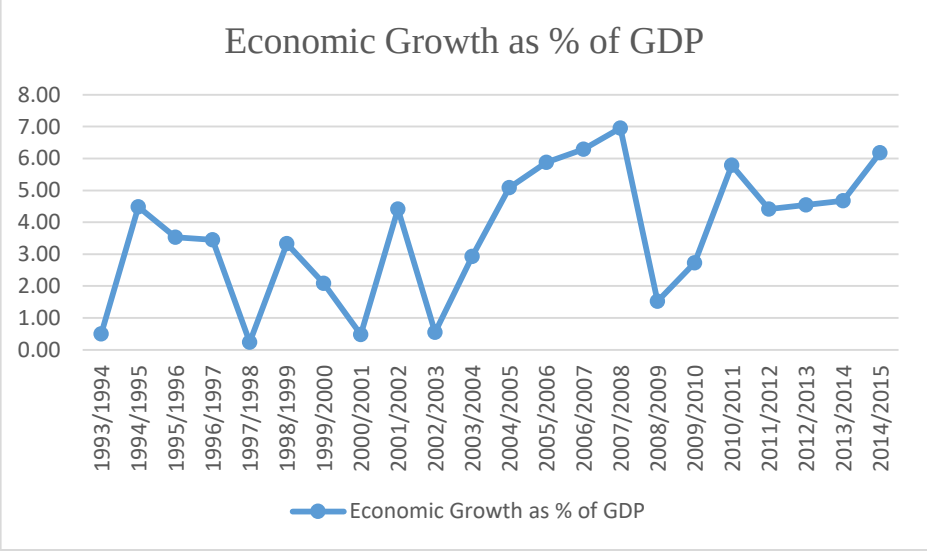
This is a presentation of the relationship between public debt and level of economic growth in Kenya and the interpretation of data findings for the fiscal years under study. Data used here was derived from the statistical bulletin archives and Economic Survey Report 2015 from the Central Bureau of Statistics.

4.2 Data presentation of Key variables

This section presents Statistical data on the Economic Growth rate in Kenya, Public Debt, Unemployment rate and Inflation rate as they are variables to the economic growth model according to section 3.4.1.

4.2.1 Economic Growth

Figure 4. 1 Economic Growth



Source: Research Findings

The study sought to establish the level of Economic Growth rate of the country in the study period (from 1993/1994 to 2014/2015) expressed as a percentage GDP. The previous year was used as the base year to calculate the percentage GDP. The trend of GDP is illustrated in appendix II, figure 4.1 above and Table 4.1 below.

From the above figure 4.1, it is evident that the economic growth of the country shows a pattern ebbing and flowing at different times of the study period. At the beginning, 1993/1994 economic year, the country recorded 0.5 % economic growth, one of the low values. Up to the 2009/2010 financial year economic growth was roughly between 3% and 7% with some extreme lows (under 1%) in the 1997/1998, 2000/2001 and 2002/2003 financial years. After 2010, the economic growth rate is steady between 4% and 6.2% of the GDP.

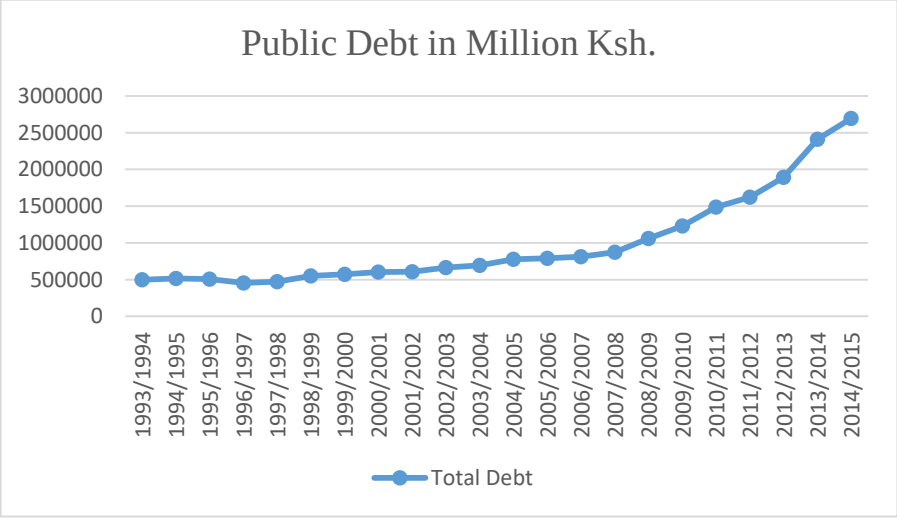
Table 4.1 Economic Growth

Fiscal Year	Economic Growth % GDP		Fiscal Year	Economic Growth % GDP		Fiscal Year	Economic Growth in % GDP
1993/1994	0.50%		2001/2002	4.40%		2009/2010	2.70%
1994/1995	4.50%		2002/2003	0.60%		2010/2011	5.80%
1995/1996	3.50%		2003/2004	2.90%		2011/2012	4.40%
1996/1997	3.40%		2004/2005	5.10%		2012/2013	4.50%
1997/1998	0.20%		2005/2006	5.90%		2013/2014	4.70%
1998/1999	3.30%		2006/2007	6.30%		2014/2015	6.20%
1999/2000	2.10%		2007/2008	7.00%			
2000/2001	0.50%		2008/2009	1.50%			

The table 4.1 above shows the calculated values of the Growth rate of the Economy in the study period.

4.2.2 Public Debt

Figure 4. 2 Public Debt



Source: Research Findings

The study analysed data to establish the trend of Public Debt in the country over the study period and is shown in table 4.2 below, figure 4.2 above and Appendix I

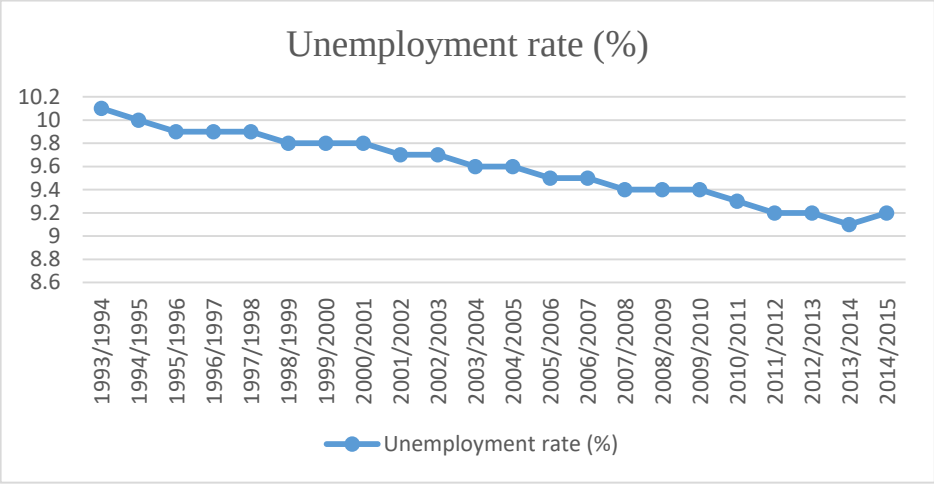
The steady increase in the level of public debt of the kenya from beginning till the end of the study period is depicted in Figure 4.2. In financial year 1993/1994 Ksh. 499 Billion was recorded. Public debt has grown tremendously in the subsequent years. At the end of the study period, 2014/2015 financial year, the debt was 5.4 times higher, almost Ksh. 2,693 Billion. Table 4.2 below shows the yearly calculated values of the public debt in total during the study period.

Table 4.2 Public Debt

Fiscal Year	Public Debt in Million Ksh.	Natural Log of Public Debt		Fiscal Year	Public Debt in Million Ksh.	Natural Log of Public Debt
1993/1994	499,200	13.12		2004/2005	775,221	13.12
1994/1995	516,300	13.15		2005/2006	789,076	13.15
1995/1996	505,480	13.13		2006/2007	809,977	13.13
1996/1997	455,600	13.03		2007/2008	874,117	13.03
1997/1998	471,521	13.06		2008/2009	1,059,383	13.06
1998/1999	549,814	13.22		2009/2010	1,229,406	13.22
1999/2000	572,824	13.26		2010/2011	1,487,110	13.26
2000/2001	604,142	13.31		2011/2012	1,622,802	13.31
2001/2002	606,820	13.32		2012/2013	1,894,118	13.32
2002/2003	664,128	13.41		2013/2014	2,409,511	13.41
2003/2004	695,208	13.45		2014/2015	2,693,944	13.45

4.2.3 Unemployment rate

Figure 4. 3 Unemployment rate



Source: Research Findings

The study also established the trend of the Unemployment rate within the fiscal period of study whose findings are elaborated in the above figure 4.3 and table 4.3 below.

At the start of the study (1993/1994 financial year), the Unemployment rate was recorded at 10.1% of the total workforce. Since then the rate steadily declined and reached 9.1% in financial year 2013/2014. After that a light increase was recorded, 9.2% in financial year 2014/2015. The below Table 4.3 shows the yearly recorded percentages of the Unemployment rate during the study period.

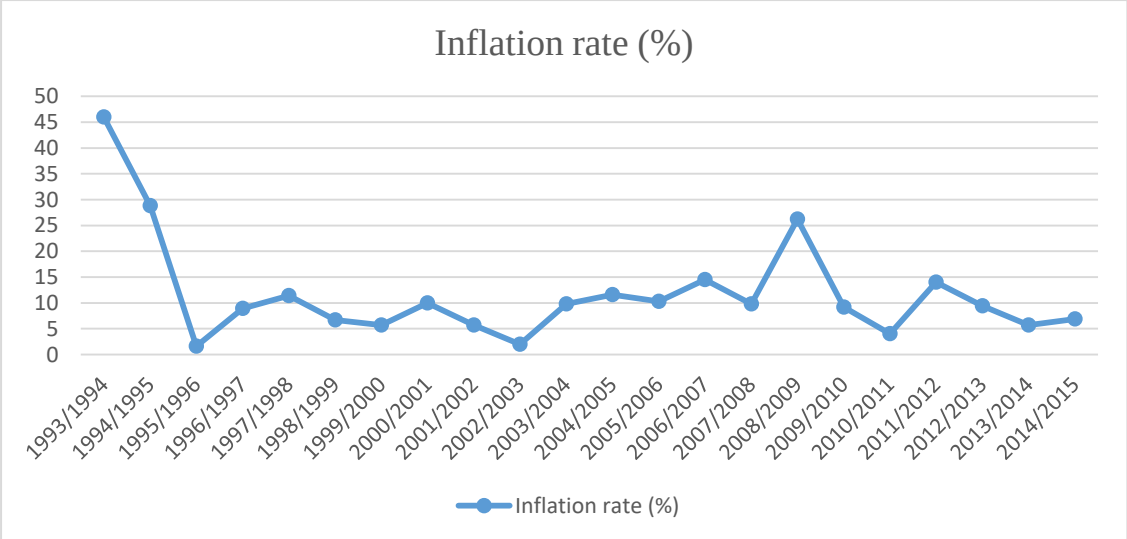
Table 4.3 Unemployment rate

Fiscal Year	Rate of Unemployment (%)		Fiscal Year	Rate of Unemployment (%)		Fiscal Year	Rate of Unemployment (%)
1993/1994	10.1		2001/2002	9.7		2009/2010	9.4
1994/1995	10		2002/2003	9.7		2010/2011	9.3
1995/1996	9.9		2003/2004	9.6		2011/2012	9.2
1996/1997	9.9		2004/2005	9.6		2012/2013	9.2
1997/1998	9.9		2005/2006	9.5		2013/2014	9.1
1998/1999	9.8		2006/2007	9.5		2014/2015	9.2
1999/2000	9.8		2007/2008	9.4			
2000/2001	9.8		2008/2009	9.4			

Source: Research Findings

4.2.4 Inflation rate

Figure 4. 4 Inflation rate



Source: Research Findings

The study collected data to establish the trend of the Inflation rate in the country over the study period. The findings are cascaded in the above figure 4.4 as well as in table 4.4 below.

The Above figure 4.4 shows an ebbing and flowing of Inflation rate from beginning till the end of the study period. In financial year 1993/1994 an extremely high 46% was recorded. The inflation rate then went down to 1.6% in financial years 1995/1996. In the next two years it grew to 11.4%. From then on the Inflation rate could be found between 5.7% and 14.5%, with outliers of 2% in 2002/2003, 26.2% in 2008/2009 and 4% in 2010/2011 financial years. The below table shows the annually recorded Inflation rate value during the period of study.

Table 4.4 Inflation rate

Fiscal Year	Rate of Inflation (%)		Fiscal Year	Rate of Inflation (%)		Fiscal Year	Rate of Inflation (%)
1993/1994	46		2001/2002	5.7		2009/2010	9.2
1994/1995	28.8		2002/2003	2		2010/2011	4
1995/1996	1.6		2003/2004	9.8		2011/2012	14
1996/1997	8.9		2004/2005	11.6		2012/2013	9.4
1997/1998	11.4		2005/2006	10.3		2013/2014	5.7
1998/1999	6.7		2006/2007	14.5		2014/2015	6.9
1999/2000	5.7		2007/2008	9.8			
2000/2001	10		2008/2009	26.2			

Source: Research Findings

4.3 Inferential Statistics

Below is summary of this statistics for the model equation $Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \varepsilon$.

Table 4.5 Model Summary

Regression Statistics	Multiple R	R Square	Adjusted R Square	Standard Error	Observations
	0.569019	0.323782	0.211079	1.831938	22

Source: Research Findings

a) Predictors: (Constant), Public Debt, Unemployment rate and Inflation rate

b) Dependent variable: GDP growth rate.

This regression summary shows the strength of the linear trend between all the variables in the model of study. The Correlation coefficient of 0.569019 depicts that there exists a linear relationship between the variables in the model under study. From the regression model above the measure of goodness fit, R square is 0.324 and the adjusted R square is 0.211 implying that only 32.4 % of the variations in GDP growth rate is explained by the independent variables; Public Debt, Unemployment rate and Inflation rate. The remaining 67.6 % could be due to other factors not included in this model and which from the equation seem to have more predictive power on the Economic growth rate as compared to public debt, unemployment rate and inflation rate. Such factors will include Investment, economic policies, political factors and human capital among many other factors affecting economic growth.

The standard error of estimation 1.8% is insignificantly low and could due to multiple rounding errors and standardization of results.

Table 4.6 Showing Analysis of Variance (ANOVA)

	Df	Sum of Squares(SS)	Mean Square(MS)	F	F Significance
Regression	3	28.92415	9.641385	2.872883	0.064998
Residual	18	60.40793	3.355996		
Total	21	89.33208			

Source: Research Findings

a) Predictors: (Constant), Public Debt, Unemployment rate and Inflation rate

b) Dependent Variable: Economic Growth measured by GDP percentage.

The significance value when checked against a predetermined computed f-value shows whether the changes in the dependent variable are accompanied by changes in independent variable and their significance level if any.

Table 4.6 ANOVA results above show that F= 2.873 which was statistically significant at 0.065 in the model, which indicated that the independent variables in the regression equation Public

debt, Unemployment rate and Inflation rate were insignificantly related to the value of the GPD growth. $F = 2.873$, $P < 0.065$.

This also indicates that there is an insignificant linear relationship amongst the variables which can be further analysed using the correlation coefficients shown below and generate a regression equation for predictions of the dependent variable-Economic growth rate.

The Significance of 0.064998 show that the rate of Economic growth realized significantly varies with the amount of public debt, rate of unemployment and inflation rate.

Table 4.7 Model of Coefficients

Column1	Coefficients	Standard Error	t-Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	79.348	72.468	1.095	0.288	-72.901	231.597	-72.901	231.597
Public Debt (natural log.)	-1.276	2.282	-0.559	0.583	-6.071	3.519	-6.071	3.519
Unemployment rate	-6.068	4.436	-1.368	0.188	-15.387	3.25	-15.387	3.25
Inflation rate	-0.008	0.045	-0.174	0.863	-0.102	0.087	-0.102	0.087

Source: Research Findings

$Y = \alpha + \beta 1X1 + \beta 2X2 + \beta 3X3 + \varepsilon$

$Y = 79.348 + -1.276X1 + -6.068X2 + -0.008X3 + \varepsilon$

a) Predictors: (Constant), Public Debt, Unemployment rate and Inflation rate

b) Dependent Variable: Economic Growth measured by GDP percentage.

The actual p-values are all higher than the maximum allowed 0.065 (table 4.6 significance F). Therefore all the independent variables do not explain the variation in Economic Growth in Kenya.

4.4 Interpretation of study Findings

The result of Table 4.5 explains the measure of goodness of fit. In the regression model R square is 0.324 and the Adjusted R square is 0.211 implying that 32.4 % of variation in Economic Growth is explained by variation in Public Debt, Unemployment rate and Inflation rate. From the regression result, it is evident that all variables are statistically insignificant in determining the GDP growth rate.

ANOVA results of Table 4.6 tells whether the regression coefficients were statistically different than 0.065. In order to be statistically significant, the significance level must be less than the conventional level of statistical significance (i.e. 0.05). F= 2.873 which was statistically insignificant at 0.065 in the model indicated that the independent variables regression equation, Public Debt, Unemployment rate and Inflation rate were insignificantly related to the value of the GPD growth. Therefore any predictions of future Economic Growth cannot be done using these independent variables.

The regression model indicates that Public Debt has a negative effect on Economic Growth as indicated by the negative value of its coefficient in table 4.7. Therefore increasing Public Debt leads to a decrease of Economic Growth. An increase of one percent in Public Debt is linked to a decrease of 1.276 percent in GDP growth rate in Kenya. Similarly the coefficients in table 4.7 show that the Unemployment rate and the Inflation rate are inversely related to Economic Growth. One percent increase in Unemployment rate or Inflation rate is linked to a decrease of 6.1 and 0.008 percent in Economic Growth respectively.

CHAPTER FIVE : SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter provides a summary, conclusion and the recommendations arrived at from the study findings.

5.2 Summary

In a bid to establish the relationship between Public debt and Economic growth, Public Debt, Inflation rate and Unemployment rate were employed in a multi linear regression analysis whose results depict that these three variables are not very significantly related to the GDP growth rate hence depicting the inverse relationship which exists between economic growth Public Debt, Inflation rate and Unemployment rate. Table 4.7 shows that the computed p-values for Public Debt (0.583), Unemployment rate (0.188) and Inflation rate (0.863) are higher than the significance F (0.065) generated in table 4.6. This indicates that the independent variables are all statistically insignificant as predictors of variations on Economic Growth.

The coefficients generated by the regression model indicate a negative value for all independent variables. This means that Public Debt has a relationship which is inverse on Economic Growth. This implies that by increasing Public Debt will lead to a decrease of Economic Growth. Additionally, an increase of one percent in Public Debt is linked to a decline of 1.28 % in GDP growth rate in Kenya. Similarly the coefficients show that the Unemployment rate and the Inflation rate are negatively linked to Economic Growth. One percent increase in Unemployment rate or Inflation rate is linked to a decrease of 6.1 and 0.008 percent in Economic Growth respectively as depicted in Table 4.7 on Coefficients.

These results confirm to the theoretical implication that whenever the government is faced with the problem of debt burden, it will increase taxes in the future to finance the high level of

payments geared the debt service. (Krugman, 1985 and 1987; Sachs, 1984 and 1986). The findings were also in line with the empirical and theoretical literature by Ali and Mustafa (2010) who findings suggest that there exists a negative relationship between debt and growth. This was a study of the long run and short run impacts of public debt on economic growth in the country of Pakistan. Additionally, the results support the empirical findings of Were (2001) who did a study of the debt overhang problem in Kenya. However, the results are contrary with the findings of Degefe (1992) whose empirical results indicates that external debt has a positive effect on economic growth. His findings suggest that an increase in public debt leads to increase in GDP.

5.3 Conclusion

This study has used a linear model to analyse the effect of Public Debt on Economic Growth in Kenya over the fiscal year 1993/94 to 2014/15, considering GDP growth rate as a function of Public Debt, Unemployment rate and Inflation rate. The empirical results revealed that Public Debt exerts an inverse growth impact on Economic Growth; clearly indicating that higher Public Debt discourages Economic Growth. However, the regression model also shows that Public Debt, as independent variable is insignificantly linked to variations in Economic Growth in Kenya.

The correlation coefficient for Inflation rate in this study showed only a week negative link with Economic Growth. Dewan and Hussein (2001) also found out in a sample of 41 middle-income developing countries that inflation was negatively correlated to growth. This finding will provide some basis for Kenyan policy makers on the value of maintaining a low inflation, in order to facilitate higher Economic Growth. Additionally, it is also clearly evident that other factors are coming into play.

The study indicates a negative link between changes in Economic Growth rate and Unemployment rate. This negative relationship is supported by Okun's Law, stating that when Unemployment rate rises by 1%, GDP falls by 2 %. Although the regression results show a strong negative coefficient (-6.2) for Unemployment rate, still the relationship proved to be not significant in predicting Economic Growth.

5.4 Policy Recommendations

This study aimed at investigating the relationship between public debt and level of economic growth in Kenya.The regression results indicated that Public Debt, Unemployment rate and Inflation rate have no significant effect in determining Economic Growth in Kenya.

The coefficient of public debt as a variable is negative and quite significant though not strong as a predictor of economic growth. Despite this being the case, the government needs to pursue policies that are geared towards reducing the debt stock in order to reduce this effect on economic growth. There is need for improvement of policies on public debt so as to have a reversal of the negative effect of debt on growth.

Countries that are heavily indebted like Kenya need to articulate strategies meant to reduce debt stock and problems associated with debt service. Debt relief strategies used by Sub-Saharan countries some of which Kenya can adopt include debt rescheduling, reduction in debt servicing and debt restructuring. The government should pay more attention to the debt management profile particularly for its expenditure items. The government should put borrowed funds into productive projects and programs which can improve the economy.

Moreover the government should establish a transparency of loan cycle that covers the activities for project identification, appraisal and approval, loan negotiations and contracting, loan disbursements, project implementation monitoring and evaluation as well as loan repayment.

Finally, the government should provide a policy framework that is credibly creating an environment that will encourage investors' confidence for both local and foreign to invest in the country. Additionally there is dire need of close monitoring and consistent debt management strategies to avoid wastage of public debt on projects which don't spur economic growth.

5.5 Limitations of the Study

A study of this nature is wide and involves a number of stakeholders purpose like Central bureau of statistics and National Treasury to consult for accurate data and reporting. In addition, relevant data on components of Public Debt, like Government Advances and Government Overdraft were not made available hence use of scanty estimates available from earlier fiscal years 1992/93 to 2002/03 because this data was considered confidential, very sensitive and hence not disclosed for use in research.

5.6 Suggestions for Further Research

The study of factors affecting Economic Growth is broad, complicated and involves all the areas in the scope of Government Finance and Government politics. Areas that should be considered for future research are the relationship between corruption and economic growth, the relationship between political instability and economic growth, the relationship between government expenditure and economic growth, relationship between private debt and economic growth and the impact of Global issues, like the Global financial crisis on local economies growth.

Additionally, it would be specifically interesting to research why in the financial years 1997/1998, 2000/2001, 2002/2003 and 2008/2009 economic growth was extremely low.

Maybe it is partly explained by political elections that have a great impact on economic growth in Kenya; the year after elections no public funds are left to aid the economy.

There is also the need to do an investigation on debt sustainability for Kenya so as to find out whether debts are sustainable or not. This will provide a strong ground for Kenya to decide whether to ask for debt forgiveness or not. Another area of study would be the effect of external debt on private investments as this will be important because it will offer some information to policy makers to decide whether it would be appropriate to re-schedule debt to minimize use of resources for debt service payment and use much of the available resources for domestic investment.

It is clearly evident that independent variables should be used in determining variations in Economic Growth. Therefore other scholars should research the effects of other variables such as: corruption, political instability, insecurity and government expenditure.

REFERENCES

Abbas A. (2005). Public Debt Sustainability and Growth in sub-Saharan Africa: The Role of Domestic Debt. Paper for GDNet's 2004/05 project on Macroeconomic Policy Challenges of Low Income Countries.

Abbas, A. (2007). Public Domestic Debt and Economic Growth in Low Income Countries. Mimeo, Department of Economics, Oxford University.

Ali. R. and Mustafa, U., (2010). External Debt Accumulation and Its Impact on Economic Growth in Pakistan. The Pakistan Development Review 51:4 Part II, pp. 79–96.

Battaglini. M. and Coate, S. (2006). *A Dynamic Theory of Public Spending, Taxation and Debt. NBER Working Paper No. w12100, National Bureau of Economic Research, Inc*.

Checherita, C. and Rother, P. (2010). *The impact of high and growing government debt on economic growth - an empirical investigation for the euro area. ECB Working Paper No. 1237, forthcoming in European Economic Review*.

Chowdhury, K. (1994), A Structural Analysis of External Debt and Economic Growth: Some Evidence from Selected Countries in Asia and the Pacific, Applied Economics, Vol. 26, pp. 1121, 1131.

Clements, B., Bhattacharya, R. and Nguyen, T.Q. (2003). *External debt, public investment, and growth in low-income countries, IMF Working paper 03/249.*

Dewan, E. and Hussein, S., (2001). *Determinants of Economic Growth (Panel Data Approach). Working Paper 01/04. Economics Department Reserve Bank of Fiji, Suva Fiji.*

Easterly, W. (2002). *What Did Structural Adjustment Adjust? The Association of Policies and Growth with Repeated IMF and World Bank Adjustment Loans. Working paper, Center for Global Development; available at (www. cgdev.org).*

Fischer, S. (1993). *The role of macroeconomic factors in growth. Journal of Monetary Economics 32 (3), pp. 485-511.*

Fosu, A. K. (1999*). The external debt burden and economic growth in the 1980s: evidence from sub-Saharan Africa, Canadian Journal of Development Studies 20 (2): 307-318.*

Gokal, V. and Hanif, S., (2004), *Relationship between Inflation and Economic Growth. Working Paper 2004/04. Economics Department Reserve Bank of Fiji, Suva Fiji.*

Harmon, E. Y (2012). The impact of public debt on inflation, GDP growth and Interest rates in Kenya. Unpublished MBA Project, University of Nairobi.

Hermes N. and Lensink R. (2000). *Foreign direct investment, financial development and economic growth. Journal of development studies, 40(1), pp. 142-163.*

Iyoha, M. (1999). *External debt and economic growth in sub-Saharan African Countries: An econometric study. AERC Research Paper 90 African Economic Research Consortium, Nairobi*

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.

Klein, T. M. (1994). *External Debt Management. World Bank. Paper No. 245.*

Kobayashi, K. (2015). Public Debt Overhang and Economic Growth. Policy Research Institute, Ministry of Finance, Japan, Public Policy Review, Vol.11, No.2.

Kourtellos, A., Stengos, T. and Tan, C. M. (2013*). The effect of public debt on growth in multiple regimes. Journal of Macroeconomics 38, pp. 35–43*

Krugman, P. (1988). *Financing Vs. Forgiving a Debt Overhang. Journal of Development Economics, No.29, pp. 253-268.*

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

Lancaster, C. (1999) Aid effectiveness in Africa: *The Unfinished Agenda. Journal of African Economies, 8 (4): 487-503.*

Layard, R., Nickell, S. and Jackman, R. (1991). Unemployment: Macroeconomic Performance and the Labour Market. Oxford University Press.

Maana, I., Owino, R. and Mutai, N. (2008). *Domestic Debt and its Impact on the economy – The case of Kenya paper presented during the 13th Annual African Econometric Society Conference in Pretoria, South Africa.*

Makau, J.K. (2008). External Public Debt Servicing and Economic Growth In Kenya: An Empirical Analysis. Unpublished MBA Project, University of Nairobi.

Matiti, C. (2013). *The relationship between public debt and economic growth in Kenya. International Journal of Social Sciences and Project Planning Management, Vol.1,Issue 1, 65-86.*

Mugenda, O. and Mugenda, A. (2003). Research methods: Quantitative and qualitative Approaches. African Centre for Technology Studies. Acts Press, Nairobi.

Panizza, U. and Presbitero, A.F. (2012). Public debt and economic growth: is there a causal effect? MoFiR working papers, No. 65.

Pankaj, S., Varun, A. and Vishakha, B. (2011). Determinants of Public Debt for middle income and high income group countries using Panel Data regression. University of Delhi.

Pattillo, C., Poirson, H. and Ricci, L. (2004*). What are the Channels Through Which External Debt Affects Growth, IMF Working Paper 04/15.*

Putunoi, G. K. and Mutuku, C. M. (2013). *Domestic Debt and Economic Growth Relationship in Kenya. Current Research Journal of Economic Theory, Vol. 5, Issue 1,1-10.*

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

Reinhart, C., Reinhart, V. and Rogoff, K. (2012). *Public Debt Overhangs*: *Advanced-Economy Episodes since 1800. Journal of Economic Perspectives*, Vol. 26, No. 3, pp. 69–86.

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

Solow, R. (1956) '*Contribution to the Theory of Economic Growth'*. T*he Quarterly Journal of Economics*, Vol. 70(1) pp 45-70.

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

Economic survey 2015, Kenya Central Bureau of statistics (www.knbs.or.ke)

APPENDICES

APPENDIX I: DATA ON PUBLIC DEBT, UNEMPLOYMENT RATE AND INFLATION RATE

Year	Public Debt (in Million Ksh.)	Public Debt (natural logarithm)	Unemployment rate (%)	Inflation rate (%)
1993/1994	499,200	13.12	10.1	46
1994/1995	516,300	13.15	10	28.8
1995/1996	505,480	13.13	9.9	1.6
1996/1997	455,600	13.03	9.9	8.9
1997/1998	471,521	13.06	9.9	11.4
1998/1999	549,814	13.22	9.8	6.7
1999/2000	572,824	13.26	9.8	5.7
2000/2001	604,142	13.31	9.8	10
2001/2002	606,820	13.32	9.7	5.7
2002/2003	664,128	13.41	9.7	2
2003/2004	695,208	13.45	9.6	9.8
2004/2005	775,221	13.56	9.6	11.6
2005/2006	789,076	13.58	9.5	10.3
2006/2007	809,977	13.6	9.5	14.5
2007/2008	874,117	13.68	9.4	9.8
2008/2009	1,059,383	13.87	9.4	26.2
2009/2010	1,229,406	14.02	9.4	9.2
2010/2011	1,487,110	14.21	9.3	4
2011/2012	1,622,802	14.3	9.2	14
2012/2013	1,894,118	14.45	9.2	9.4
2013/2014	2,409,511	14.69	9.1	5.7
2014/2015	2,693,944	14.81	9.2	6.9

Sources :The National Treasury and World Bank

APPENDIX II: DATA ON ECONOMIC GROWTH

Year	Current Price (in Million Ksh.)	Constant Price (in Million Ksh.)	GDP (%)
1993/1994	428,108.00	824,336.00	0.5
1994/1995	537,998.00	861,297.00	4.5
1995/1996	602,454.00	891,744.00	3.5
1996/1997	685,583.00	922,501.00	3.4
1997/1998	767,420.00	924,723.00	0.2
1998/1999	848,352.00	955,535.00	3.3
1999/2000	902,833.00	975,477.00	2.1
2000/2001	963,111.00	980,116.00	0.5
2001/2002	1,023,403.00	1,023,403.00	4.4
2002/2003	1,035,450.00	1,029,041.00	0.6
2003/2004	1,134,798.00	1,059,190.00	2.9
2004/2005	1,277,668.00	1,113,009.00	5.1
2005/2006	1,420,547.00	1,178,421.00	5.9
2006/2007	1,628,875.00	1,252,570.00	6.3
2007/2008	1,840,826.00	1,339,700.00	7
2008/2009	2,115,080.00	1,360,082.00	1.5
2009/2010	2,384,032.00	1,397,221.00	2.7
2010/2011	2,579,489.00	1,478,068.00	5.8
2011/2012	3,057,709.00	1,543,276.00	4.4
2012/2013	3,417,192.00	1,613,449.00	4.5
2013/2014	3,809,165.00	1,688,912.00	4.7
2014/2015	4,760,454.00	1,793,313.00	6.2

Source: Central Bureau of Statistics