

**EFFECT OF DOMESTIC PUBLIC DEBT ON ECONOMIC
GROWTH IN KENYA**

By

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DECLARATION

This research proposal is my original work and has not been presented for a degree in any other institution.

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DEDICATION

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LIST OF ABBREVIATIONS

ANOVA	Analysis of Variance
CPI	Consumer Price Index
FDI	Foreign Direct Investments
GDP	Gross Domestic Product
GNP	Gross National Product
HIPC	Highly Indebted Poor Countries
IMF	International Monetary Fund
LIC	Low Income Countries
OOP	Out of Pocket
R&D	Research and Development

ABSTRACT

The shift in the composition of overall public debt in favor of domestic debt in sub-Saharan Africa countries has brought to the fore the need for governments to formulate and implement prudent domestic debt management strategies to mitigate the effects of the rising debt on the economy. Literature on the effect of public domestic debt on the economy in Kenya, and Africa in general, is scanty as most studies have largely focused on developed countries. This study aims at filling the gap occasioned by studies putting more emphasis on external debt as opposed to public domestic debt by using the most recent data to analyze the effect of domestic debt on the Kenyan economy. Causal research design was employed in conducting this study. The study used real quarterly time series data for 11 years from 2003 to 2013 which translates into 44 observations. Data for GDP, Domestic Debt, Private Sector Credit and Interest rates was obtained from the Central Bank of Kenya, the Treasury and the Kenya National Bureau of Statistics. The data was summarized in form of tables and graphs to reveal the trends of variables evolution overtime. To capture the relationship between the variables, a co-integrating regression model was utilized on the time series data. From the findings, the Mean for total debts was 61 billion USD with public domestic debt being 53.4 billion USD. Inflation and unemployment rates were 8.6 and 9.4% respectively for the 11 years observed while change in public domestic debt and total debt averaged at 0.3% and 1% respectively. Maximum GDP was found to be 8.6 with minimum of -0.4. Inflation was highest at 15.1% and lowest at 4.3% while unemployment rate was ranging between 9.2% and 9.6% respectively. The regression results indicated that the constant stood at 84.0 with coefficients being -0.75, -0.40, 5.91 and -6.03 for inflation, unemployment rate, public domestic debt and change in total debt respectively and respective significant level being 0.09, 0.39, 0.36 and 0.35. From the correlation analysis, it was noted that the correlation between GDP and all the four explanatory variables under consideration is negative while total debts has positive correlation between inflation and public domestic debt. The probability value for the regression model was 0.04 was obtained indicating the significance of the model in explaining the relationship between the GDP and the predictor variables considered. It was also inferred that there is negative correlation between debt and growth but show that debt does not have a causal effect on economic growth. The study makes recommendation among others that the government should make sure that the total debt for the country is kept at the lowest level possible. If the government has to borrow, it should consider domestic borrowing for the benefit of the economy of the nation.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Heavy indebtedness of the developing economies is one of the major challenges at the beginning of 21st century. The debt levels, particularly among the Highly Indebted Poor Countries (HIPCs), and Low-Income Countries (LICs) generally, have for a long time raised major concerns among international financial institutions and bilateral lenders, resulting in several initiatives from the developed countries and from the international financial institutions to ease the debt burden that was threatening to cripple the economies of HIPCs. The initiatives range from measures to ease the debt burden through debt rescheduling to outright debt forgiveness. Among the most successful initiatives in relieving the debt burden of most low income countries are the Debt Initiative for Heavily Indebted Poor Countries (HIPC Initiative) and the Multilateral Debt Relief Initiative (MDRI) by the World Bank and the International Monetary Fund (IMF). These two initiatives build “on instruments already available to the international community to deal with the external debt problems of low income countries and allows them to exit from repeated debt rescheduling”. These initiatives, however, have concentrated on addressing the external debt burden. External debt has therefore historically received the attention it deserves. However, domestic debt has not received a lot of attention from the international development agencies. Until the late 1990s even low income countries themselves did not pay much attention to the potential risks and challenges of domestic

debt. This led in some countries to the substitution of external debt for domestic debt. Countries like Kenya have been running net repayments of external debt for more than a decade while at the same time accumulating domestic debt at fairly rapid rates, implying domestic borrowing is used to service external debt.

According to Quarterly Budget Reviews for 1995/96 and 2006/07, foreign financing of the budget deficit increased from a net repayment of 0.01 percent of GDP to a net repayment of 0.11 percent of GDP during the period. Many developing countries like Kenya have been unable to constrain the growth of their public domestic debt to ensure that sufficient revenues remain available after debt service payments to finance other vital government recurrent and development expenditures. Stagnating real revenue receipts, unending expenditure pressures and reduced external donor support especially in the 1990s among other factors, have resulted in accumulation of high stocks of domestic debt in developing countries. According to the IMF (2007), domestic debt accounted for 23 percent of total debt in sub-Saharan Africa between 1995 and 2000, up from an average of 20 percent between 1990 and 1994. Furthermore, the domestic debt to GDP ratio for these countries increased considerably from 12 percent to 16 percent in the same period. The shift in the composition of overall public debt in favour of domestic debt in sub-Saharan Africa countries has brought to the fore the need for governments to formulate and implement prudent domestic debt management strategies to mitigate the effects of the rising debt on the economy.

Needless to point out, government can finance its budget and development efforts by borrowing or taxing the output. However, taxes tend to distort the structure of relative prices. Borrowing, if pushed beyond the carrying capacity of an economy creates

problems of intergenerational equity, and it can cause a transfer of resources that tends to be undermining growth. Yet borrowing has to be done to finance public expenditure to increase social welfare and promote economic growth. Government domestic debt is contracted for various reasons. First, it is used to finance the budget deficit when the government is not able to meet its expenditure commitments using domestically raised revenue and externally sourced grants and borrowing. Second, domestic debt is contracted during implementation of monetary policy through open market operations. Third, debt instruments are important in financial markets development. In order to develop and deepen the financial markets, there is need for a steady supply of a wide range of instruments to be traded. Government debt provides a benchmark for issuance of private sector securitized debt such as corporate bonds. The government starts by issuing short term Treasury bills to build investor confidence through guaranteed or secure return, and thereafter financial deepening is achieved by issuing longer dated instruments. Extensive use of domestic borrowing can have severe implications on the economy. Domestic interest payments consume a significant part of government revenue more so if the associated interest rates are higher compared to those on external debt. In shallow financial markets, the interest cost on domestic debt increases with the debt stock as a large proportion of the debt is held in short term instruments.

Literature on the effect of public debt on the economy in Kenya, and Africa in general, is scanty as most studies have largely focused on developed countries. Recent studies used old domestic debt databases which are unlikely to yield results which reflect the current situation in the Kenyan economy. Furthermore, studies on public debt and economic growth have typically focused on external debt.

1.1.1 Domestic Public Debt

A country occasionally needs to borrow from institutional and individual investors for budgetary purposes. Top officials, such as central bankers, may also engage in debt transactions on securities exchanges to implement monetary policies. Domestic debt, otherwise known as national debt, consists of liabilities that a country's citizens and government owe. For example, Kenya's domestic debt includes Treasury notes, bonds and bills. The debt also includes credit card debts, student loans, mortgages and business loans that individuals and corporations owe.

Domestic public debt is not a new phenomenon for developing countries. Guidotti and Kumar (1991) studied the case of 15 emerging market countries and show that their domestic public debt-to-GDP ratio went from 10 per cent in 1981 to 16 per cent in 1988. They also point out that, while the ratio of domestic debt to total public debt remained more or less constant over the period (at about 30 per cent), there were important differences in the process that led to the accumulation of domestic and external debt. The increase in domestic debt was mainly due to new borrowing and that of external debt was due to accumulation of arrears. This suggests that if emerging market countries had not been shut down from the international capital market, they would have probably accumulated more external and less domestic debt. This view is consistent with the one put forward by Borensztein, Cowan, Eichengreen and Panizza (2007), who found that crises play a key role for the development of the domestic bond market. Christensen (2005) shows that also low income countries have a tradition of domestic borrowing (in his sample of sub-Saharan African countries, domestic public debt was about 10 per cent of GDP in 1980). Most of the domestic debt issued by low income sub-Saharan African

countries is held by commercial banks and has short maturity (average maturity is ten months and the majority of bonds have a 3-month maturity).

In a study of 17 West African countries, Beaugrand, Loko and Mlachila (2002) found that most medium term debt was not issued at market conditions and consisted of securitization of arrears. However, they found that Mali, Benin, and Senegal did place some medium term bonds at market rates. Abbas (2007) and Abbas and Christensen (2007) show that bank holdings of domestic public debt in low income countries were about 5.5 per cent of GDP in the 1975-1985 period and increased to 8.4 per cent of GDP in the 1996-2004 period. The increase was particularly large in emerging market countries, where bank-holdings of public debt went from 7.8 to 14.3 per cent of GDP. As in the case of emerging market countries, also in low income countries external factors are among the main drivers of the accumulation of domestic public debt which, somewhat paradoxically, can be driven by either too little foreign aid or too much foreign aid. Countries that run a budget deficit which is not fully matched by donor flows often issue domestic debt because the standard policy advice of the international financial institutions is to limit external borrowing at commercial rate. In fact, for countries that have an IMF programme, there are explicit limits on external borrowing at commercial rate.

1.1.2 Economic Growth

Economic growth, according to the World Bank, refers to the quantitative change or expansion in a country's economy. The economic growth of a nation is measured as the percentage increase in its gross domestic product during one year. Economic growth

occurs in two distinct ways. Economic growth of a nation occurs when a nation grows extensively by using more physical, natural or human resources or intensively by using resources more efficiently or productively. Economic growth is generally considered to be either extensive or intensive in nature. Extensive economic growth refers to growth scenarios in which an increase in the gross domestic product is absorbed by a population increase without any increase in per capita income. Intensive economic growth refers to growth scenarios in which gross domestic product growth exceeds population growth creating a sustained rise in living standards as measured by real income per capita (Snowdon, 2006). According to the World Bank's approach to promoting and facilitating the economic growth of nations, intensive economic growth of nations requires economic development.

Economic growth is a focus of study and concern for economists, governments, and private sector development organizations. Economists are concerned with forecasting and measuring economic growth. Governments and private sector development organizations focus on forecasting and promoting economic growth of regions and nations. Economic growth is generally promoted through efforts to increase labor productivity. Labor productivity growth is crucial to the strength and growth of economies. Labor productivity is promoted in four main ways, (Vanhoudt & Onorante, 2001): Expand the physical capital of workers through the purchase of better machines, tools, and infrastructure, Improve the knowledge capital of the workforce through education and training, Foster a new economy by introducing new technologies to improve the productivity of all workers, Strengthen relations between public and private sectors to

facilitate the working of the labor market and limit economic distortions caused by taxes and passive labor market policies.

1.1.3 Indicators of Economic Growth

The gross domestic product (GDP) is the godfather of the indicator world. As an aggregate measure of total economic production for a country, GDP represents the market value of all goods and services produced by the economy during the period measured, including personal consumption, government purchases, private inventories, paid-in construction costs and the foreign trade balance (exports are added, imports are subtracted). Presented only quarterly, GDP is most often presented on an annualized percent basis. Most of the individual data sets will also be given in real terms, meaning that the data is adjusted for price changes, and is therefore net of inflation. Real GDP is the one indicator that says the most about the health of the economy and the advance release will almost always move markets. It is by far the most followed, discussed and digested indicator out there - useful for economists, analysts, investors and policy makers. The general consensus is that 2.5-3.5% per year growth in real GDP is the range of best overall benefit; enough to provide for corporate profit and jobs growth yet moderate enough to not incite undue inflationary concerns. If the economy is just coming out of recession, it is OK for the GDP figure to jump into the 6-8% range briefly, but investors will look for the long-term rate to stay near the 3% level. The general definition of an economic recession is two consecutive quarters of negative GDP growth.

While the value of both exports and imports are included in the GDP report, imports are subtracted from total GDP, meaning that all consumer purchases of imported items are

not counted as contributions toward GDP. The "corporate profits" and "inventory" data in the GDP report are a great resource for equity investors, as both categories show total growth during the period; corporate profits data also displays pre-tax profits, operating cash flows and breakdowns for all major sectors of the economy.

Income distribution is another indicator of economic growth. The focus on income inequality and economic growth began in the 1950's when Simon Kuznets presented his idea to the American Economic Association of an inverted U relationship between per capita GNP and inequality in the distribution of income. Based upon income distribution data available at that time, Kuznets suggested that as per capita income rose in lesser developed countries, income inequality also rose, reached a maximum, and then declined as income levels rose to further. Kuznets developed this theory by studying data estimating income distribution in a few rich and a few poor countries and by studying trends in distribution in a few European countries over time (Perkins et al, 129). His findings were later described as an "inverted-U hypothesis." Following this groundbreaking theory, many developing countries tolerated rising income inequality arguing that income would become more equally distributed with advanced development, as Kuznets observed. If Kuznets was correct in his original hypothesis and income inequality reduces with economic development, developing countries facing high income inequality need not to be concerned with rising inequality.

If, however, income inequality did not reverse itself with advanced development, it is important to understand the possible effects of income inequality on the economy. Whatever may be the theoretical justification of the Kuznets hypothesis, the empirical validity of this phenomenon still remains open to question. A prominent case study

displaying a possible relationship between income inequality and economic growth is that of South Korea and the Philippines. As discussed by Benabou (1996), South Korea and the Philippines looked similar in the early 1960's as indicated by many macroeconomic factors, including GDP per capita, populations, urbanization, and primary and secondary school enrollment. They differed, however, in their distribution of income. It has been argued that income inequality and the accumulation of wealth in a small proportion of individuals would result in higher growth in the future. From this 'trickle down' theory, the mass poor are told to just wait and they will receive transfers of the accumulated wealth through redistribution. The redistribution of wealth eventually puts everyone in a better position than they were before and income inequality is acceptable (Clark, 1995). However, there could be a negative impact of inequality on growth as argued by others. If a country experiences high income inequality, there is great pressure from the poor masses to redistribute the wealth accumulation. The high taxes levied to redistribute the wealth lower the rate of return on private assets, which restricts capital accumulation and slows growth (Clark, 1995). During the last fifty years, many statisticians and economists researched the relationship between income inequality and economic growth with varying results.

Literacy has been conceptualized traditionally as having a major role in developing a nation. Literacy helps to spread awareness among the people of their rights. People with good literacy skills enjoy a higher standard of living, have better opportunities of finding jobs, and are able to continue to learn new skills that will help them in the workplace. A nation with high literacy rate is more likely to attract a large pool of investors and entrepreneurs as well as the inflow of money which in turn has a great impact on the

nation's economy. A society's economic prosperity and literacy have great influence on each other as they jointly grow together.

While countries such as Japan and South Korea have benefited from globalization, the initial literacy levels attained by the population were high. Apart from natural resources such as oil and minerals, an increase in production of goods demanded in developed countries entails a mix of production technology with skill levels of the labour force. The availability of high skilled labour in countries such as India has raised productivity levels in the information and technology sectors and has had spin offs in the production of goods and services. At a general level, one is likely to see beneficial effects of globalization in countries with a skilled labour force though the time profile of the development processes are likely to differ. Some developing countries, for example, might initially become exporters of low-priced garments though with the import of technology, they can compete with producers in developed countries. While disaggregated data on exports and imports are seldom available, empirical analyses can model the potential synergisms between literacy levels and the imports and exports of developing countries.

Health is considered as a fundamental human right and the achievement of the highest possible level of health is one of the most important worldwide social goals. This can be partly attributed to the fact that poor health can have a significant economic impact on any households. Poor health can make households property exhausted, indebted, and reduce their essential consumption because people with poor health are not only having productivity and income losses, but also out-of-pocket (OOP) expenses for needed healthcare services.

The implementation of user fees is likely a barrier to access adequate health services in poor settings. Some opinions suggest that user charges can generate vital resources at the local level and helps to provide better quality services; however, others opinions highlight its' negative effects, particularly the inequity for the poor people .In many low- and middle-income countries, the level of government spending on health is low compared with other sectors and out of pocket expenditure is the principal source of health financing in those nations. OOP expenditure accounts for more than 80% of the private expenditure on health in many developing countries which likely has catastrophic economic effects on individuals and their families, as well as limits their possibilities to receive adequate healthcare.

Theoretically, a higher social security tax rate reduces the after-tax wage rate and increases the tax burden on future generations, and therefore may have opposing effects on household decisions and economy growth. The reduced after-tax wage rate means a lower opportunity cost of raising children and a lower rate of return to education investment, tending to raise fertility and lower education investment per child. At the same time, however, the increased future tax burden would reduce the welfare per child, inducing altruistic parents to reduce the number of children and increase bequests and education investment for each child. Thus, if the taste for the welfare of children is strong enough relative to the number of children, social security can accelerate growth by reducing fertility and increasing education investment without changing the saving rate.

1.1.4 Domestic Public Debt and Economic Growth

Sustainable economic growth has crucial importance for all economies especially for the developing economies like Kenya, which faces many different challenges as compared to developed countries in boosting up its economic growth in order to lower its debt burden. In developing countries, external debt is the main part of public debt structure. However, recently many developing countries have changed their debt structure by adopting the policies to substitute the public external debt with domestically issued debt. Domestic debt can have severe implications for the economy. Domestic debt servicing absorbs a major part of government revenues. So, government has fewer resources to spend on development projects. In this way, internal debt servicing is more harmful for the economic growth than the stock of internal debt. Moreover, in shallow financial markets, as the domestic debt increases, the interest cost also rises due to holding a large amount of debt in short term instruments.

Domestic debt may have positive as well as negative impacts on economic growth. The impacts of domestic debt on economic growth can be analyzed in the context of two different views i.e. traditional and Ricardian view. In the traditional view, a tax cut financed by government borrowing would have many effects on the economy. The immediate impact of the tax cut would be to motivate consumer spending. Higher consumer spending affects the economy in both short run and long run. In the short run, higher consumer spending would raise the demand for goods and services and thus raise output and employment. As the marginal propensity to consume is higher than marginal propensity to save, the increase in private savings falls short of government dissaving. This increases the real interest rate in the economy encouraging capital inflow from

abroad. In the long run, the higher interest rate would discourage investment and thus crowd out private investment. The lower domestic savings mean a smaller capital stock. The inflow from abroad would result in greater foreign debt. The higher aggregate demand results in a higher price level that adjusts over time and the economy returns to a natural rate of output. The lower investment eventually leads to a lower steady state capital stock and a lower level of output. Therefore, the overall impact when considering the long run period would be smaller total output and eventually lower consumption and reduced economic welfare. This is also referred to as the burden of public debt, as each generation burdens the next, by leaving behind a smaller aggregate stock of capital (Meltzer, 1951; Modigliani 1961; Ferguson, 1964).

In the Ricardian view, government debt is considered equivalent to future taxes (Barro, 1974). Bearing in mind that consumers are rational and forward-looking, the discounted sum of future taxes is equivalent to the current deficit. So, the shift between taxes and deficits does not produce aggregate wealth effects. The increase in government debt does not affect consumption. The rational consumer facing current deficits saves for future rise in taxes and consequently total savings in the economy are not affected. A decrease in government dissaving is matched by increase in private savings. In view of unchanged total savings, investment and interest rates are also unaffected and so is the national income. Proponents of domestic debt stress its positive impact on growth, inflation, and savings from deeper and more sophisticated capital markets which increase the volume and efficiency of private investment. They are of the view that moderate levels of non-inflationary domestic debt exert a positive impact on economic growth enhancing private savings and financial intermediation.

1.1.5 Debt History in Kenya

In the 1980's and the years preceding, Kenya was among the major aid recipients in Africa, largely to put up infrastructure so as to integrate the large rural economy into the then emerging import substitution Kenyan economy. The 1990's witnessed a steady decline in development assistance to Kenya occasioned by a perception of poor governance and mismanagement of public resources and development assistance. Other factors include the end of the cold war and the collapse of the soviet Union. The debt problem was exacerbated by macroeconomic mismanagement in the 1990's such as Goldenberg scandal which fleeced Kenyans billions of shillings leading to a reduction of donor inflow. The government thus resorted to occasional debt rescheduling and expensive short term domestic borrowing to finance its expenditures. The details of Kenya's debt burden has been dynamically changing over the years with net public debt-to GDP-ratio having declined in years 2011-2012 as a result of prudent fiscal policy and a stable macroeconomic environment. At end of 2012, this ratio stood at 43 percent, down from 48 percent at the end of 2011. Overall public debt is almost evenly split between domestic and external creditors. Kenya's net domestic debt which 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) stood at 20 percent of GDP (KShs 708 billion) at end of 2012.

However, the share of domestic debt held by non-banks has increased from 40.8 percent to 43 percent of the total between 2011 and 2012, reflecting a diversification of the domestic investor base. 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. This study analyses the effect that public domestic debt has had on the economy of Kenya for the period between 2003 to 2013 with the aim of filling the gaps occasioned by overemphasis on external debt over the years.

1.2 Research Problem

In developing countries, policy makers and international organizations have given domestic debt far less attention as compared with external indebtedness. Issuing domestic debt, whether to finance fiscal deficit or to mop up monetary liquidity, involves a complex assessment of the costs and benefits to the economy. The justification behind creation of domestic debt in poor countries is that it kindles development of deep and liquid internal financial markets, protect countries from unfavorable external shocks, and mitigate foreign exchange risk (Del, 2003; Aizenman, 2004; Kumhof, 2005). Domestic debt can crowd in risky private sector investment by protecting bank balance sheets and profitability (Barajas, 1999; 2000). As such, investments are more proficient compared with investment associated with low risk.

Most important concern about domestic debt is crowding out effect on private investment. When governments borrow domestically, they use domestic private savings, otherwise that may have been on hand for private sector lending. In turn, smaller residual pool of loan able funds is available in market to elevate the cost of capital for private borrowers. It results in dropping private investment demand, and therefore capital accumulation, growth and welfare (Diamond, 1965). Domestic debt is also viewed as more expensive in comparison to concessionary external financing (Burguet, 1998). As a result, interest load of domestic debt may absorb important government revenues and thus crowd-out pro-poor and growth enhancing expenditures.

High-yielding government domestic debt held by banks can make them self-satisfied about costs and decrease their efforts to mobilize deposits and fund private sector projects (Hauner, 2006). According to the IMF (2007), domestic debt accounted for 23 percent of total debt in sub-Saharan Africa between 1995 and 2000, up from an average of 20 percent between 1990 and 1994. Furthermore, the domestic debt to GDP ratio for these countries increased considerably from 12 percent to 16 percent in the same period.

The shift in the composition of overall public debt in favor of domestic debt in sub-Saharan Africa countries has brought to the fore the need for governments to formulate and implement prudent domestic debt management strategies to mitigate the effects of the rising debt on the economy. Literature on the effect of public domestic debt on the economy in Kenya, and Africa in general, is scanty as most studies have largely focused on developed countries. Recent studies used old domestic debt databases of up to 2004 which are unlikely to yield results which reflect the current situation in the Kenyan economy. Furthermore, studies on public debt and economic growth have typically focused on external debt. This study sought to bridge the gap by answering the question: “what is the effect of public domestic debt on economic growth in Kenya?”

1.3 Research Objectives

This study aims at filling the gap occasioned by studies putting more emphasis on external debt as opposed to public domestic debt by using the most recent data to analyse the effect of domestic debt on the Kenyan economy.

1.4 Value of the Study

The findings of this study will be of considerable significance to several groups of people including government policy makers, general public, human right group and other researchers.

Government policy makers will reach informed decisions as to whether and to what level of domestic debt to take up to finance government budgets in Kenya drawing from the findings of this study.

The general public will also be informed of the effect public debt has on their lives through evaluation of resultant GDP.

Human right groups that are concerned with citizen's welfare will also benefit from the findings as they are able to tell whether public domestic debt is having a positive or negative impact on the lives of the citizens. Consequently, their campaigns will have a solid base.

The findings of this study will also benefit other researchers carrying out similar studies.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter examines both theoretical and empirical literature on the impact of public domestic debt on economic growth. Theoretical literature review will concentrate on the scientific theories while empirical literature review will be based on findings from experiments and observations by other researchers. The literature, in particular the empirical part, on the relationship between government debt and economic growth is scarce. Most studies on this topic emphasize the impact of external debt and debt restructuring on growth in developing countries.

2.2 Theoretical Literature Review

In this section, a discussion on the theoretical issues on domestic debt and its relationship with economic growth is presented. The two views of domestic debt and growth prevalent are discussed. The impact of domestic debt on economic growth can be analyzed in the context of two contrasting views-Traditional and Ricardian.

2.2.1 Traditional View

In the traditional view, an increase in government debt is a burden on the economy. In the short run, in view of the increase in government debt, the consumer would consider himself to be wealthier and therefore would resort to higher spending. The increased demand for goods and services, in view of sticky prices in the short run, will raise output and employment. As the marginal propensity to consume is higher than the marginal

propensity to save, the increase in private savings falls short of the government dissaving. The real interest rate would rise in the economy encouraging capital inflow from abroad. In the long run, the higher interest rate would discourage investment and thus crowd out private investment. The lower domestic savings mean a smaller capital stock. The inflow from abroad would result in greater foreign debt. The higher aggregate demand results in a higher price level which adjusts over time and the economy returns to a natural rate of output. The lower investment eventually leads to a lower steady state capital stock and a lower level of output. Therefore, the overall impact when considering the long run period, would be smaller total output and eventually lower consumption and reduced economic welfare. This is also referred to as the burden of public debt, as each generation burdens the next by leaving behind a smaller aggregate stock of capital (Meltzer, 1951; Modigliani, 1961; Ferguson, 1964; Patinkin, 1965).

2.2.2 Ricardian View

In the Ricardian view, government debt is considered equivalent to future taxes (Barro, 1974). Considering that consumers are rational and forward looking, the discounted sum of future taxes is equivalent to the current deficit. Thus, the shift between taxes and deficits does not generate aggregate wealth effects. The increase in government debt does not affect consumption. The rational consumer facing current deficits saves for future rise in taxes and therefore total savings in the economy are not affected. A decrease in government dissaving is matched by increase in private savings. In view of unchanged total savings, investment and interest rates are also unaffected and so also the national income. Buchanan (1985) suggests that the incurrence of domestic debt results in the postponement of tax liability from current to future generations. This shift from

current to future taxation could imply a shifting of tax burden from current to future generations. Barro (1978a) argues that the shift from current to future taxation implied by debt issue does not involve a burden on later generations due to the phenomenon of operative inter-generational transfers. The assumption of infinite lives and other assumptions, like the timing of taxation, public debt and capitalized future taxes are perfect substitutes and the imperfections in the capital market are discussed in Barro (1989). Other theories postulating the relationship between public domestic debt and economic growth are discussed below.

2.2.3 Keynesian Model

Keynesian model is a macroeconomic model based on the principles of Keynesian economics that is used to identify the equilibrium level of, and analyze disruptions to, aggregate production and income (King, 1993). This model identifies equilibrium aggregate production and income as the intersection of the aggregate expenditures line and the 45-degree line. The Keynesian model comes in three basic variations designated by the number of macroeconomic sectors included two-sector, three-sector, and four-sector. The Keynesian model is also commonly presented in the form of injections and leakages in addition to the standard aggregate expenditures format. This model is used to analyze several important topics and issues, including multipliers, business cycles, fiscal policy, and monetary policy.

The model postulates that there is no real burden associated with public debt and it has no effect on economic growth (Metwally & 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).

According to the model, when the government enters the capital market to borrow money, it finds the banks have an ample supply of cash. Because of the depressed state of the economy, businesses, which are the banks' traditional customers for loans, are reluctant to borrow money for plant and equipment investments due to the existence of excess capacity. They cannot sell what they can produce now with existing capacity so they do not need to borrow money to build newer factories. Because of this lack of private sector demand for investment funds, bankers will readily lend money to finance the increase in government spending without any upward pressure on interest rates. Interest rates will not rise when the government borrows the money and as a result there should be no crowding-out of private sector demand. The increase in G will not be offset by equivalent declines in investments (I) and Consumption(C) as suggested in the Classical model, and thus an increase in government expenditure (G) increases aggregate demand and shifts the Aggregate demand (AD) curve to the right (Lucas, 1976).

2.2.4 Debt Overhang Hypothesis

The adverse effect of public debt stock on economic growth has largely been explained by debt overhang hypothesis. Krugman (1988) thus defines debt overhang as a situation in which investments are reduced or postponed since the private sector anticipates that the returns from their investment will serve to pay back creditors. Implying that, the expected future public debt service of a country is likely to be an increasing function of the Country's output level. Therefore, huge accumulation of public debt stock creates uncertainty behavior among investors on the actions and policies that the Government will adopt to meet its debt service obligations. In this regard, Krugman (1988) contends that most potential investors will assume that Government will finance its debt service obligations through distortionary tax measures, thus they will adopt a wait and see attitude which will affect Private investments and therefore economic growth.

2.3 Determinants of Economic Growth

Hundreds of empirical studies on economic growth across countries have highlighted the correlation between growth and a variety of variables that determine economic growth. A large empirical literature on the determinants of economic growth in transition economies appeared in the 1990s and 2000s, including Fischer, Sahay and Vegh (1998), Havrylyshyn, Izvorski & Van Rooden (1998), Berg et al. (1999) and Havrylyshyn and van Rooden (2000). The studies have identified a variety of microeconomic, structural, and institutional factors of economic growth in transition economies in general.

Investment is the most fundamental determinant of economic growth identified by both neoclassical and endogenous growth models (Podrecca & 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. For instance, Bond et al (2001) and Mankiw (1992). 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, for example 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 (Krueger & 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 for instance Lichtenberg (1992) and 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 & 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 & 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 & Knack, 2001; Barro & 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 conducive to economic growth (Knack & 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 & 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/ethnic 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 & 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 for instance Rodrik et al (2002); Easterly and Levine (2003) found no effect of geography on growth after controlling for institutions.

2.4 Empirical Literature Review

Empirical literature on the relationship between domestic debt and economic growth is limited as most researchers focus on external debt. Barro (1980) investigated the effect of domestic debt on economic growth using the unanticipated component of domestic debt, or the debt stock and growth. He concludes that the unanticipated component of domestic debt affects growth. The other empirical work is that of Kormendi (1984). Kormendi used a cross-section study of 34 countries. The sample extends widely from the highly developed countries (the USA, the UK, Japan and Australia) to the underdeveloped countries (Sri Lanka). He concludes that debt and growth are not related. However, many of his critics viewed that the aggregation of such diverse groups may not yield meaningful results.

Charan (1999) investigated the relationship between domestic debt and economic growth for India using the cointegration and Granger causality tests for India for the period 1959-95. Cointegration and Granger causality tests support the Ricardian equivalence hypothesis between domestic debt and economic growth. Ricardian equivalence suggests that it does not matter whether a government finances its spending with debt or a tax increase; the effect on total level of demand in an economy is the same. Christensen (2005) used a cross country survey of the role of domestic debt markets in sub-Saharan Africa based on a new data set of 27 sub-Saharan African countries during the 20 year period (1980-2000) and found out that domestic markets in these countries are generally small, highly short term and often have a narrower investor base. He also found out that domestic interest rate payments present a significant burden to the budget with significant crowding-out effects.

In another study, Abbas (2007) and Abbas and Christensen (2010) analyzed optimal domestic debt levels in low income countries (including 40 sub-Saharan Africa countries) and emerging markets between 1975 and 2004 and found that moderate levels of marketable domestic debt as a percentage of GDP have significant positive effects on economic growth. The study provided evidence that debt levels exceeding 35% of total bank deposits have negative impact on economic growth. Gurley and Shaw (1956) observed that mounting volume of public debt is a necessary feature of a strong and healthy financial structure of an economy and some secular increase in public debt should be planned by every government.

Fry (1997) studied the impact of alternative deficit financing strategies on economic growth for sixty six low-income countries and emerging markets for the period of 1979-

1993. The study shows that market based domestic debt issuance is the least cost method of financing the budget deficit as contrasting with external borrowing and seignorage. All of these methods reduce growth, domestic savings and increase inflation.

Singh (1999) explored the relationship between domestic debt and economic growth in India by applying co integration technique and Granger causality test for the period of 1959-95. The author considers two theoretical views of domestic debt and economic growth one is traditional view of long-run negative impacts of domestic debt on economic growth and second is Ricardian Equivalence hypothesis that shows neutrality of domestic debt to growth. The results of the Engle-Granger co integration test indicate that the domestic debt and economic growth are not co-integrated. The study supports the Ricardian equivalence hypothesis between domestic debt and growth in India.

Adofu and Abula (2010) investigated the relationship between domestic and economic growth in Nigeria for the period 1986-2005. Their findings showed that domestic debt has affected the growth of the Nigerian economy negatively and recommended that it be discouraged. They suggested that the Nigerian economy should instead concentrate on widening the tax revenue base.

In Kenya, Maana et al (2008) analyze the economic impact of domestic debt on Kenya's economy. Authors examine the impacts of domestic debt on private sector lending by applying ordinary least square technique using annual data over the period 1996 to 2007. The study finds that domestic debt does not crowd out private sector lending in Kenya during the period due to substantial level of financial development in Kenya. The study also examines the effects of domestic debt on real output by using a modified Barro

growth regression model. The results indicate that increase in domestic debt has a positive but insignificant effect on economic growth during the period. The study suggests that government should employ wider reforms that promote investment in treasury bonds and encourage institutional investors.

2.5 Summary of Literature Review

Several theoretical and empirical theories and views on the subject have been considered in this study. The findings of these theories and views have differed on several occasions. While some have found a positive relationship between public domestic debt and economic growth, others have concluded a negative relationship yet others have concluded there is no relationship at all for example in the Keynesian model. It is very clear that most of the data on literature review was extracted from external studies and theories. Even where the study was conducted locally like in the case of Maana et al. (2008) the data used is old to be replicated in the current economic situation in Kenya. Thus, this study is designed to fill the gap by focusing on the effect of public debt on the Kenyan economy by using the latest data covering ten years from 2003 upto 2013.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter highlights the research methodology that was used for this study. The research methodology presents the research design, sample design, data collection and the data analysis. Since this was a case study looking at the impact of public domestic debt on economic growth in Kenya, the issue of population and sample design was not applied.

3.2 Research Design

Causal research design was employed in conducting this study. Causal research design was chosen since it is the best method in determining the cause-and-effect relationships. In this case focus was to determine the effect that public domestic debt have on economic growth in Kenya.

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 studies are associated with greater levels of internal validity due to systematic selection of subjects.

3.3 Data collection

The study used real quarterly time series data for 11 years from 2003 to 2013 which translates into 44 observations. Data for GDP, Domestic Debt, Private Sector Credit and

Interest rates was obtained from the Central Bank of Kenya, the Treasury and the Kenya National Bureau of Statistics.

3.4 Data Analysis

The data collected was first checked for accuracy and completeness. The data was then summarized in form of tables and graphs to reveal the trends of variables evolution overtime. To capture the relationship between the variables, a co-integrating regression model was utilized on the time series data. In preliminary analysis, the study tested variable normality using the Jacque Bera (JB) test. Since the study employed time series data, the test for stationarity and the order of integration was necessary thus the use of the Augmented Dickey-Fuller (ADF) test. The presence of long run relationship between the variables was tested using the two step Engel-Granger and Johannestest for cointegration. The strength of the relationship between the independent and dependent variables was determined using analysis of variance (ANOVA), t-test and an f-test at 5% confidence level.

3.4.1 Regression Model

In line with past studies and to better analyze the impact of domestic debt on economic growth, a multivariate statistical model specification which used variables like public domestic debt, unemployment rate and inflation rate shown empirically to be robust determinants in this relationship. Therefore, using a modified version of Adofu and Abula (2010), the Classical Linear Normal Regression Model (CLRM) was in the following form:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + E$$

Where:

Y = Economic growth

X1 = Total debt

X2= Public domestic debt

X3= Unemployment rate

X4 = Inflation rate

E= Error or random term

β_0, β_i = Constant Slope co-efficients of X1 , X2 , X3 and X4 .

Economic Growth was measured through the use of GDP. GDP was measured using the following formula;

$$\text{GDP} = C + G + I + \text{NX}$$

Where, C is equal to all private consumption, or consumer spending, in a nation's economy, G is the sum of government spending, I is the sum of all the country's investment, including businesses capital expenditures and NX is the nation's total net exports, calculated as total exports minus total imports (NX = Exports - Imports). This will further be expressed as a ratio using the following formula;

$$(\text{GDP in year 2} / \text{GDP in year 1}) - 1$$

Total debt represents all the total bonds and treasury bills that have been issued by the national government regardless of who holds the debt (lender or creditor). To measure

Kenya's total debt and its effect on economic growth, it was expressed as a percentage of GDP as follows: Total debt/GDP.

Public domestic debt only represents a debt that is acquired locally. This will be measured using a ratio expressed as follows; Total domestic debt/ GDP.

Unemployment rate represents the number of adults not working but willing and able to work. It is a cost to the economy in terms of deficiency in production. This was measured as a ratio as in the following formula;

Unemployment rate = Number of unemployed persons / Labor force.

Labor force represents number of adults working and unemployed.

Inflation rate was measured using the CPI (Consumer Price Index). Inflation influences the interest rate received and paid. Inflation is the rate of increase in prices for goods and services. Since CPI of multiple goods and services was calculated, the following formula was employed;

$$CPI = \sum_{i=1}^n CPI_i * weight_i$$

CPI of a single item is measured as follows:

$$CPI = \frac{\text{updated cost}}{\text{base period cost}} \times 100$$

CHAPTER FOUR

DATA ANALYSIS, INTERPRETATION AND DISCUSSION

4.1 Introduction

This chapter comprises of data analysis, presentation and interpretation. The chapter also gives a detailed discussion of the results in relation to the reviewed literature.

4.2 Descriptive Findings

Table 4.1: Descriptive Findings

Variable	Observations	Mean	Std. Deviation	Minimum	Maximum
GDP growth rate	44	5.1	2.7	-0.4	8.6
Inflation rate	44	8.6	3.8	4.3	15.1
Unemployment rate	44	9.4	0.1	9.2	9.6
Public Domestic Debt (Billion USD)	44	53.4	8.0	46.3	74.3
Total Debts (Billion USD)	44	61.0	7.7	53.4	80.2
Public Domestic Debt	44	0.3	16.9	-32.4	23.8
Total Debt	44	1.0	15.4	-29.0	22.1

Table 4.1 gives descriptive findings including mean, standard deviation, minimum values as well as maximum values. A total of 44 observations were made which entailed quarterly analysis of the variable for 11 years from 2003 to 2013. Mean for total debts was 61 billion USD with public domestic debt being 53.4 billion USD. Inflation and unemployment rates were 8.6 and 9.4% respectively for the 11 years observed while change in public domestic debt and total debt averaged at 0.3% and 1% respectively.

Maximum GDP was found to be 8.6 with minimum of -0.4. Inflation was highest at 15.1% and lowest at 4.3% while unemployment rate was ranging between 9.2% and 9.6% respectively. These results show that for the period between 2003 and 2013, Kenya's average uptake of debt had been very high while at the same time the average economic growth was very minimal. Average percentage of public debt to GDP was as high compared to other borrowings as indicated by the difference between the total debts and public domestic debts. Inflation as GDP deflator was also very high during this period as evidenced by high mean value giving an indication that the economic growth is critical.

4.3 Analytical Model

4.3.1 Summary of coefficients

Table 4.2: Summary of coefficients

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	84.0	80.0		1.05	0.34
Inflation rate	-0.5	0.2	-0.75	-2.14	0.09
Unemployment rate	-7.8	8.4	-0.40	-0.93	0.39
Public Domestic Debt	0.9	0.9	5.91	1.01	0.36
Total Debt	-1.0	1.0	-6.03	-1.03	0.35
Dependent Variable: GDP growth rate					

Table 4.2 illustrates the summary of coefficients where standardized values were used.

Results indicates that the constant stood at 84.0 with coefficients being -0.75, -0.40, 5.91

and -6.03 for inflation, unemployment rate, public domestic debt and change in total debt respectively and respective significant level being 0.09, 0.39, 0.36 and 0.35. This implies that regardless of the level of inflation, domestic debt, total debt and unemployment rate, economic growth would still change but to only to 84% of any change. This is because the economic growth does not only get influenced by public domestic debts, total debts, employment and inflation but also by other factors such as higher initial schooling and life expectancy, lower fertility, lower government consumption, better maintenance of rule of law, and improvements in the terms of trade (Barro, 1996).

Since the large percentage of variations in GDP was explained by total debts, this means that total debts has strong contribution to economic growth (GDP) of Kenyan economy. Moreover, the summary of the results showed that the impact of inflation on economic growth is statistically significant at 5 percent level for its absolute t-values was greater than two (Gujarati, 2004). The regressor inflation, unemployment and total debts has the sign that accord with prior expectations, the said variables have a negative impact on economic growth. The opposite was found true for public domestic debts.

The results therefore reveals that there was negative relationship between inflation, unemployment and total debts and the economic growth in Kenyan economy for the 44 quarterly periods between 2003 and 2013. The results implied that as the general level of prices increases, the GDP decreases. This means that an increase in the general price level (inflation rate) by 1% results in a decrease of GDP by 0.75%. This could imply that an increase in the general price level was harmful to economic growth. In addition, the study decided to regress inflation against GDP in order to know the nature of relationship when Inflation was dependent variable and GDP was independent variable.

On the other hand the When governments borrow, they will issue Treasury bonds with varying maturities. This debt is owed to whoever has purchased the Treasury bonds; for many countries, a substantial amount is purchased by domestic citizens, meaning that the country borrows from itself and thus must pay back its own citizens in the future. Excessive borrowing by a government can cause economic difficulties. Sometimes private lenders worry that the government may become insolvent (i.e., unable to repay its debts) in the future. In this case, creditors may demand a higher interest rate to compensate for the higher perceived risk. To prevent that risk, governments sometimes revert to the printing of money to reduce borrowing needs. However, excessive money expansion is invariably inflationary and can cause long-term damage to the economy.

4.3.2 Analytical Model

The researcher used the following model to analyze the effects of public debt on domestic product

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + E$$

Where:

Y = Economic growth

X1 = Total debt

X2= Public domestic debt

X3= Unemployment rate

X4= Inflation rate

E= Error or random term

β_0, β_i = Constant Slope co-efficient of X_1, X_2, X_3 and X_4 .

Given the results in Table 4.2, the model can be constituted as follows:

$$Y = 84 - 6.0X_1 + 5.9X_2 - 0.4X_3 - 0.75X_4 + E$$

In summary, a change in 1(one) unit of total debts would lead to a *negative* change in 6.0 units of domestic product while a change in 1 unit of public domestic debts would lead to a *positive* change in 5.9 units of domestic product. At the same time, a change in 1 unit of unemployment would lead to a *negative* change in 0.4 units of domestic product. Finally, in 1 unit of inflation would lead to a *negative* change in 0.75 units of domestic product.

As Kannan and Singh (2009) postulates, fiscal deficits and debt have an adverse impact on all the macroeconomic variables under consideration in the medium to long run. In nutshell, a vast knowledge on the behavior of domestic debt and inflation is not available as there are few studies on the topic. Nonetheless, basic economic logic should give us the idea that internal borrowing is likely to increase the price level.

4.4 Correlation

Table 4.3: Variable Relationship

		GDP growth rate	Inflation rate	Unemployment rate	Change in Public Domestic Debt	Change in Total Debt
Pearson Correlation	GDP growth rate	1.000	-0.604	-0.035	-0.161	-0.162
	Inflation rate	-0.604	1.000	-0.109	0.103	0.084
	Unemployment rate	-0.035	-0.109	1.000	-0.046	-0.092
	Public Domestic Debt	-0.161	0.103	-0.046	1.000	0.997
	Total Debt	-0.162	0.084	-0.092	0.997	1.000
Sig. (1-tailed)	GDP growth rate	.	0.032	0.461	0.328	0.327
	Inflation rate	0.032	.	0.382	0.388	0.409
	Unemployment rate	0.461	0.382	.	0.449	0.400
	Public Domestic Debt	0.328	0.388	0.449	.	0.000
	Total Debt	0.327	0.409	0.400	0.000	.

Table 4.3 shows that, the correlation between GDP and all the four explanatory variables under consideration is negative while total debts has positive correlation between inflation and public domestic debt. Another positive correlation was between inflation and public domestic borrowing (0.103) and total debts (0.084). Results further show that, there is a low significant level at 95% level where the significant level is less than 2 for all the variable relationships. It is worth noting that, variables Correlation, does not imply causation. The link between debt and growth could be driven by the fact that it is low economic growth that leads to high levels of public debt (Krugman, 2010). Establishing

the presence of a causal link going from debt to growth requires finding what economists call an ‘instrumental variable’.

Table 4.3 therefore confirms the oft-noted negative correlation between debt and growth, but show that debt does not have a causal effect on growth. On the other hand, the fact that we do not find a negative effect of public domestic debt (as shown in Table 4.2 but a negative on Table 4.3) on growth does not mean that countries can sustain any level of debt. There is clearly a level of debt beyond which debt becomes unsustainable, and a debt-to-GDP ratio at which debt overhang, with all its distortionary effects, kicks in. What our results seem to indicate, however, is that the Kenya as a developing country is still below the threshold at which debt starts having a negative effect on growth. We believe that there is a subtle channel through which high levels of public debt can have a negative effect on growth. In presence of multiple equilibriums, a fully solvent government with a high level of debt may decide to put in place restrictive fiscal policies aimed at reducing the probability that a change in investors’ sentiments would push the country towards the bad equilibrium.

Table 4.4: Coefficient of Determination

R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change
0.70	0.49	0.09	2.56	0.49	1.22	4	5	0.41
Predictors: (Constant), Change in Total Debt, Inflation rate, Unemployment rate, Change in Public Domestic Debt								

As indicated in Table 4.4, 49% of any change in gross domestic product in Kenya is explained by total debts, public domestic debt, unemployment rate as well as inflation in cluster. The other 51% is explained by variables not considered in this study.

4.5 ANOVA

Table 4.5: Analysis of Variance

	Sum of Squares	df	Mean Square	F	Sig.
Regression	31.9	4	8.0	1.2	0.04
Residual	32.7	5	6.5		
Total	64.6	9			
Predictors: (Constant), Change in Total Debt, Inflation rate, Unemployment rate, Change in Public Domestic Debt					
Dependent Variable: GDP growth rate					

According to the ANOVAs results, the probability value for the regression model was 0.04 was obtained. Since this is less than $\alpha=0.05$, it implies that the regression model was significant in predicting the relationship between GDP growth rate and the predictor variables (Change in Total Debt, Inflation rate, Unemployment rate and Public Domestic Debt).

4.6 Summary of Findings

This study was an effort to determine the effect of public debt on economic growth in Kenya. Specifically, the study tried to answer the questions whether public debt and debt servicing payment have any significance effect on economic growth in Kenya. In doing this the study used a linear model to analyze Kenyan data from 2003 to 2013 by expressing the GDP growth rate as a function of Total debt, Public domestic debt, Unemployment rate and Inflation rate. The result indicates that while total debt has negative effects on economic growth, public domestic debts have positive effects on the GDP. Other factors found to affect growth negatively include, unemployment and inflation rate.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.1. Introduction

This chapter presents the summary of the study and its conclusions. It also presents the policy implications of the findings and areas for further research.

5.2. Summary

This study was informed by the consistent rising of the public debt levels while the economic growth levels have remained lower than what is stipulated to make Kenya a newly industrializing middle-income economy by the year 2030. This is despite various measures being undertaken to regulate the debt levels and promote private investments and economic growth. Various literatures reviewed also presented conflicting results on the role that debt plays in determining the levels of private investments and economic growth. This study was therefore carried out to find out the effect of public debt on economic growth in Kenya. The analysis was guided by the two contrasting context views on public debt; the Traditional view and the Ricardian view, Keynesian model and the Debt overhang hypothesis. Changes in inflation, unemployment rate, public domestic debt and change in total debt were used as the predictor variables while GDP was the dependent variable. Data for all the variables were collected for 11 years from 2003 to 2013. The data was obtained from the Kenya economic surveys and the World Bank publications on quarterly basis. Consequently, a total of 44 observations were collected.

From the findings, the Mean for total debts was 61 billion USD with public domestic debt being 53.4 billion USD. Inflation and unemployment rates were 8.6 and 9.4% respectively for the 11 years observed while change in public domestic debt and total debt averaged at 0.3% and 1% respectively. Maximum GDP was found to be 8.6 with minimum of -0.4. Inflation was highest at 15.1% and lowest at 4.3% while unemployment rate was ranging between 9.2% and 9.6% respectively.

Regression results indicated that the constant stood at 84.0 with coefficients being -0.75, -0.40, 5.91 and -6.03 for inflation, unemployment rate, public domestic debt and change in total debt respectively and respective significant level being 0.09, 0.39, 0.36 and 0.35. therefore, the findings revealed that a change in 1(one) unit of total debts would lead to a *negative* change in 6.0 units of domestic product while a change in 1 unit of public domestic debts would lead to a *positive* change in 5.9 units of domestic product. At the same time, a change in 1 unit of unemployment would lead to a *negative* change in 0.4 units of domestic product. Finally, in 1 unit of inflation would lead to a *negative* change in 0.75 units of domestic product.

From the correlation analysis, it was noted that the correlation between GDP and all the four explanatory variables under consideration is negative while total debts has positive correlation between inflation and public domestic debt. From the ANOVAs results, the probability value for the regression model was 0.04 was obtained indicating the significance of the model in explaining the relationship between the GDP and the predictor variables considered.

5.3 Conclusion

These results showed that for the period between 2003 and 2013, Kenya's average uptake of debt had been very high while at the same time the average economic growth was very minimal. The average percentage of public debt to GDP was as high compared to other borrowings. Inflation as GDP deflator was also very high during this period. Regardless of the level of inflation, domestic debt, total debt and unemployment rate, economic growth would still change but to only to 84% of any change. Since the large percentage of variations in GDP was explained by total debts, it is inferred that total debts has strong contribution to economic growth (GDP) of Kenyan economy.

The results also revealed that there was negative relationship between inflation, unemployment and total debts and the economic growth in Kenyan economy for the 44 quarterly periods between 2003 and 2013. From the findings, it was concluded that as the general level of prices increases, the GDP decreases. Inference was made that change in 1(one) unit of total debts leads to a six times negative change in units of domestic product while a unit change in public domestic debts leads to a positive change in 5.9 units of domestic product. At the same time, a change in a unit of unemployment results to a negative change in domestic product by 0.4 units. Finally, a unit change in inflation leads to a negative change in GDP by 0.75 units of GDP.

It was also inferred that there is negative correlation between debt and growth but show that debt does not have a causal effect on economic growth. Additionally, it can be concluded that total debts, public domestic debt, unemployment rate as well as inflation explain nearly half of the change in gross domestic product in Kenya.

5.4 Recommendations Policy and Implications

This study found out that an increase in the general price level (inflation) has been detrimental to sustainable economic growth in Kenya. These results have important policy implications for both domestic policy makers and development partners, implying that controlling inflation is a necessary condition for promoting economic growth for the country. Thus, policy makers should focus on maintaining inflation at a low rate (single digit) for a healthy economic growth.

The study also noted that an increase in the total debt has a negative effect on the GDP in Kenya. However, domestic debts change has a positive effect on the GDP. The important policy implication in this is that the government should make sure that the total debt for the country should be kept at the lowest level possible. If the government has to borrow, it should consider domestic borrowing for the benefit of the economy of the nation.

The Kenya Revenue Authority which is mandated to collect revenue should also make policies to ensure optimal revenue collection. This will contribute positively to the economic growth of the country since it will help to reduce the amount of debt that may be needed to finance the national budget.

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APPENDICES

Appendix 1: Input Data

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
GDP growth rate	2.80	4.60	5.50	5.60	8.00	0.40	2.60	8.60	7.60	4.60	4.60
GDP (Billion Dollars)	14.90	16.10	18.70	22.50	27.20	30.50	30.60	32.20	34.30	40.30	44.10
Inflation rate	5.98	8.38	7.82	6.04	4.27	15.10	10.55	4.31	14.02	9.38	5.72
Unemployment rate	9.60	9.60	9.50	9.50	9.50	9.40	9.40	9.30	9.30	9.20	9.20
Public Domestic Debt (Billion USD)	60.00	74.30	50.20	50.50	48.70	58.30	46.30	50.90	49.90	51.40	53.50
Total Debts (Billion USD)	65.70	80.22	56.99	57.89	55.38	65.01	53.38	58.70	57.84	60.35	64.51
Change in Public Domestic Debt	-	23.83	32.44	0.60	3.56	19.71	20.58	9.94	1.96	3.01	4.09
Change in Total Debt	-	22.10	28.96	1.58	4.34	17.39	17.89	9.97	1.47	4.34	6.89