THE RELATIONSHIP BETWEEN PUBLIC DEBT AND ECONOMIC GROWTH IN KENYA

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ABSTRACT

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. A prudent public debt management helps economic growth and stability through mobilizing resources with low borrowing cost and limiting financial risk exposure. The objective of this study was to establish the relationship between public debt and economic growth in Kenya. The study used secondary data collected from various sources collected from the Kenya National Bureau of Statistics and the Central Bank of Kenya. The study period included 2002/2003-2011/2012 financial periods. The data was collected using data collection sheet which was edited, coded and cleaned. Data was obtained covering the period 1992/1993-2011/2012 financial periods. To establish the relationship between public debt and economic development, the study conducted a regression analysis. Domestic debt is characterized by higher interest rates compared with those on external debt, which is contracted mainly on concessional terms, and it is therefore expensive to maintain. Domestic debt reduction could be achieved using proceeds from the privatization programme of public corporations, or the use of externally borrowed resources which are mainly on concessional terms to retire more expensive domestic debt. The government should therefore develop a framework for recording and monitoring all contingent liabilities and also formulate and implement a policy for management of the contingent liabilities. The government should therefore continue to implement wider reforms that promote investment in Treasury bonds, and encourage institutional investors such as pension funds and insurance companies to invest in Treasury bonds.

Key Words: *public debt, economic growth, Kenya*

INTRODUCTION

Government needs resources for public expenditure. While taxes generally provide the bulk of the revenue, public borrowings bridge the resource gap between receipt and expenditure. Public borrowing could be in the domestic market or abroad. However, where local markets are not developed, external sources provide the bulk of funding for the resource gap (Charan, 1999). Domestic debt can have severe implications for the economy if not well balanced with the levels of anticipated economic development. Domestic debt servicing absorbs a major part of government revenues which would have been used in development projects to boost economic growth thereby meaning that 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 because of the shrinking resources to finance development projects (Abbas and Christensen, 2007). 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.

The impact of domestic public debt on economic growth of many nations remains a controversial issue in both academic and policy making fora (Cashell, 2007). Empirical and theoretical studies try to analyze the question of whether the rising of domestic debt shows positive or negative effects on the growth rate of an economy. According to Abbas (2007), Excess government sector demand for domestic fund tends to push up domestic interest rates. The higher interest rates increase the cost of financing new private investment " crowding – out " and hence limit economic growth. The higher interest rate may also have an adverse effect on the trade balance which is an important parameter of economic growth. Since The government assets become more attractive to foreign investors, so the demand for local currency will increase which tends to push up the price of domestic currency in terms of other currencies, the imports will rise and the exports tend to decline (it became more expensive), hence large trade deficit will ensue which ultimately hinder the economic growth (Blavy, 2006).

Public Debt

Public debt refers to the total of the nation's debts which covers debts of local and state and national governments indicating how much public spending is financed by borrowing instead of taxation (Makau, 2008). Government debt is one method 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 (Martin, 2009). But this practice simply reduces government interest costs rather than truly canceling 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. 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 long run, 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 servicing 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.

Economic Growth

Economic growth is defined as 'a rise in the total output (goods or services) produced by a country'. It is an increase in the capacity of an economy to produce goods and services, compared from one period of time to another (Abbas, 2005). Economic growth occurs whenever people take resources and rearrange them in ways that are more valuable. Economic

growth refers only to the quantity of goods and services produced; it says nothing about the way in which they are produced. Economic growth can be measured in nominal terms, which include inflation, or in real terms, which are adjusted for inflation i.e. by the percent rate of increase in the gross domestic product (GDP). Economic growth measures growth in monetary terms and looks at no other aspects of development (Ayres, and Warr, 2006).

Economic growth can be either positive or negative. Negative growth can be referred to by saying that the economy is shrinking. Negative growth is associated with economic recession and economic depression. Gross national product (GNP) 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, Robert, Warr, and Benjamin 2006).

Relationship between Public Debt and Economic Growth

A prudent public debt management helps economic growth and stability through mobilizing resources with low borrowing cost and limiting financial risk exposure. Domestic debt may have positive as well as negative impacts on economic growth. In less developed countries, governments use public debt as an imperative tool to finance its expenditures. Economic growth can be increased by effective and proficient utilization of resources to achieve macroeconomic goals. However, if the public debt is not properly utilized, it would restrict economic growth and become the biggest curse for the economy. Domestic debt can have severe implications for the economy if not well utilized because its servicing absorbs a major part of government revenues thereby creating a persistent deficit meaning that the Government has fewer resources to spend on development projects (Ayres and Warr, 2010). 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.

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. When governments borrow domestically, they use up domestic private savings that would otherwise have been available for private sector lending (Ayres and Warr, 2010). In turn, the smaller residual pool of loanable funds in the market raises the cost of capital for private borrowers, reducing private investment demand, and hence capital accumulation, growth and welfare (Diamond, 1965). In shallow financial markets, especially where firms have limited access to international finance, DD issuance can lead to both swift and severe crowding out of private lending.

Public Debt in Kenya

The Internal Loans Act (Cap 420) provides the legal framework for the Minister for Finance (cabinet secretary to finance) 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.

The 1990s 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. These led to a debt crisis in the country in the early 1990s which turned Kenya into a highly indebted nation. The debt problem was exacerbated by macroeconomic mismanagement in the 1990s such as the Goldenberg scandal which fleeced Kenyans billions of shillings leading to a reduction of donor inflows. 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 continue to be disheartening, as of August 2008 the public debt stood at Kshs 867 billion in a country with a population of 36 million people with numerous challenges. Debt composition in government securities since 2003 has been skewed in favour of long term borrowing through Treasury bonds. Interest rates within the period were sticky below 13% (Putunoi and Mutuku, 2013).

RESEARCH PROBLEM

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 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.

Several scholars have reviewed the relationship between public debt and economic development. Moki (2012) did analyze the relationship between public debt and economic growth in Africa. Study findings indicate public debt has a significant positive relationship on economic growth. Investment however, was not a significant predictor of economic growth. Achieng (2010) looked at domestic debt and private investment in Kenya: 1963-2009. The regression results after the 1st difference showed that the exports government expenditure ratio, debt service and the stock of domestic debt were all significant at 5 percent. The inflation rate, fiscal deficit and GOP growth were insignificant. These variables explained 40.51 percent of the private investment changes. The stock of domestic debt and terms of trade negatively influence private investment. Kibui (2012) looked at the impact of external debt on public investment and economic growth in Kenya (1970-2007). The findings indicate that debt service ratio is significant at explaining the GDP growth in Kenya. From the above discussion, it evident that limited studies have reviewed the relationship between public debt and economic development especially for the period 2007/208 to 2011/2012. This study therefore sought to fill this research gap by investigating the relationship between public debt and economic growth in Kenya. To achieve this, the study sought to answer one research question: what is the relationship between public debt and economic growth in Kenya?

RESEARCH OBJECTIVE

To establish the relationship between public debt and economic growth in Kenya

LITERATURE REVIEW

Keynesian Theory

The Keynesian theory (1935) stated that some microeconomic-level actions if taken collectively by a large proportion of individuals and firms can lead to inefficient aggregate macroeconomic outcomes, where the economy operates below its potential output and growth rate. Most Keynesians advocate an activist stabilization policy to reduce the amplitude of the business cycle, which they rank among the most serious of economic problems (Mankiw, 1992). Keynes argued that the solution to the Great Depression was to stimulate the economy ("inducement to invest") through some combination of two approaches: a reduction in interest rates and government investment in infrastructure. Investment by government injects income, which results in more spending in the general economy, which in turn stimulates more production and investment involving still more income and spending (Keynes, 1935). The initial stimulation starts a cascade of events, whose total increase in economic activity is a multiple of the original investment.

A central conclusion of Keynesian economics is that, in some situations, no strong automatic mechanism moves output and employment towards full employment levels (Mankiw, 1992). This conclusion conflicts with economic approaches that assume a strong general tendency towards equilibrium. In the 'neoclassical synthesis', which combines Keynesian macro concepts

with a micro foundation, the conditions of general equilibrium allow for price adjustment to eventually achieve this goal (Mankiw, 1992). More broadly, Keynes saw his theory as a general theory, in which utilization of resources could be high or low, whereas previous economics focused on the particular case of full utilization.

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 fluctuate over time, and that the deadweight costs of income taxes are a convex function of the tax rate (Battaglini and Sargent, 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 theory considers a political jurisdiction in which policy choices are made by a legislature comprised of representatives elected by single-member, geographically-defined districts. The legislature can raise revenues in two ways: via a proportional tax on labor 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 modeled 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.

Determinants of Economic Growth

The basic aim of each country is conceiving an adequate economic concept and thereafter implementation of suitable economic measures which are acceptable for a given country at a given moment in time. In theoretical terms, analyzing influence of fundamental economic variables on the economic growth and development is based on the basic macroeconomic relation that represents expenditure based approach for calculating gross domestic product. The key determinants of economic growth include investment levels in an economy, human capital adequacy, economic policy and macroeconomic variables, Openness to trade, Foreign Direct investment, political factors and demographic factors.

Investment is the most fundamental determinant of economic growth identified by both neoclassical and endogenous growth models (Levine and Renelt, 1992). 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 (Podrecca and Carmeci, 2001).

Foreign Direct Investment (FDI) plays a crucial role of internationalizing economic activity and it is a primary source of technology transfer and economic growth (Hermes and Lensink, 2000). This major role is stressed in several models of endogenous growth theory. The empirical literature examining the impact of FDI on growth has provided more-or-less consistent findings affirming a significant positive link between the two (Lensink and Morrissey, 2006)

Human capital is another main source of growth in several endogenous growth models as well as one of the key extensions of the neoclassical growth model (Krueger and Lindahl, 2001). 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 like school-enrolment rates, tests of mathematics and scientific skills (Pritchett, 2001). A large number of studies has found evidence suggesting that educated population is key determinant of economic growth (Barro and Sala-i-Marin, 1995; 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 (Topel, 1999).

Another key determinant of an economy's growth is the political condition. 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. 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 et al, 1994). In the recent years a number of researchers have made an effort to measure the quality of the political environment using variables such as political instability, political and civil freedom, and political regimes. Brunetti (1997) distinguishes five categories of relevant political variables: democracy, government stability, political violence, political volatility and subjective perception of politics.

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 (Rodrik, 1999), it is not until recently that such factors have been examined empirically in a more consistent way (Hall and Jones, 1999). According to Rodrik

(2000) highlights five key institutions include: 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. It is on these grounds that Easterly (2001) argued that none of the traditional factors would have any impact on economic performance if there had not been developed a stable and trustworthy institutional environment. The most frequently used measures of the quality of institutions in the empirical literature include government repudiation of contracts, risk of expropriation, corruption, property rights, the rule of law and bureaucratic quality (Knack and Keefer, 1995).

An economy's Economic policies and macroeconomic conditions play a key role in the determination of its economic development (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 and so on (although there is disagreement in terms of which policies are more conductive to growth). Macroeconomic conditions are regarded as necessary but not sufficient conditions for economic growth. 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 like 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.

Openness to trade has been used extensively in the economic growth literature as a major determinant of growth performance (Sachs and Warner, 1995). 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 (Edwards, 1998). Openness is usually measured by the ratio of exports to GDP. There is a substantial and growing empirical literature investigating the relationship between openness and growth. On the one hand, a large part of the literature has found that economies that are more open to trade and capital flows have higher GDP per capita and grew faster (Dollar and Kraay, 2000). On the other hand, several scholars have criticized the robustness of these findings especially on methodological and measurement grounds (Vamvakidis, 2002).

EMPIRICAL REVIEW

Several scholars have studied the concept of domestic debt and economic development of a nation. Alshara, Khateeb and Majd (1991) analyzed the size and composition of external public debt and examined its affect on specific economic variables such as private consumption, public

consumption, gross investment, gross tax revenues, direct tax revenues, indirect tax revenues, imports, Gross National Product (GNP), and disposable income. They reported that external loans positively affect consumption, investment, imports and GNP.

Fry (1997) studies 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.

Charan (1999) investigated the relationship between domestic debt and economic growth for India using the co-integration and Granger causality tests for India for the period 1959-95. Co-integration 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.

Kemal (2001) explains the debt accumulation and its implications for growth and poverty in Pakistan. The study shows that debt accumulation (domestic and external) and debt servicing affects the poor adversely. The findings of the study illustrate that even though debt burden as a percentage of GDP of Pakistan exceeds that of all South Asian countries but it is not still so high as to go for debt write off. This means that Pakistan has the capacity to service the debt.

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.

Abbas and Christensen (2007) highlight the impact of domestic debt on economic growth for ninety three low-income countries from the period of 1975-2004 by applying Granger Causality Regression model. The analysis shows that moderate levels of marketable domestic debt as a percentage of GDP have significant positive, non-linear impacts on economic growth, but debt

levels exceeding thirty five percent of total bank deposits have negative impact on economic growth.

Makau (2008) did an empirical analysis on the external public debt servicing and economic growth in Kenya. The study used a single growth equation model estimated using Ordinary least Square (OLS) method with annual time series data covering the period 1970 - 2003. The findings of the study indicated that Kenya's external debt is mainly official, of which a bigger proportion is from multilateral sources. External debt accumulation has been rising over the years with debt burden indicators increasing steadily in the early 1990s. A "specification associated with error correction modeling (ECM) was applied. By using Cointegartion and error correction model, the study established both the short run and long run equilibrium. The estimated model was a single regression equation with the growth rate of Gross Domestic Product as the dependent variable and explanatory variables were savings as-a ratio of GDP, stock of external debt as a ratio of GDP, debt service as a ratio of GDP, interest payment as a ratio of GDP and the annual growth rate of labour force. The empirical results in the short run estimated model indicated that the coefficients of external debt to GDP, savings to GDP and debt service to GDP had the correct sign and significant while the coefficients of interest to GDP and growth in labour force were insignificant. In the long run estimated model, the coefficients of debt to GDP, debt service to GDP and savings to GDP were significant while the coefficient for growth in labour force and interest to GDP were insignificant.

Kibui (2009) studied the impact of external debt on public investment and economic growth in Kenya (1970-2007). The study used time series data for the period 1970-2007 and reduced form growth model augmented with debt variables to examine the impact of external debt on public investments and economic growth in Kenya. The findings of the study indicate that the key debt indicators have been above the critical level since 1982. The Empirical results of the time series data analysis for the period 1970-2007 indicate that debt service ratio is significant at explaining the GDP growth in Kenya. Public investment has a negative relationship with both the stock of external debt expressed as a percentage of GDP and debt service ratio. The results indicate that debt relief could act as a catalyst for investment recovery and economic growth in Kenya. The Kenyan government should also embark on an aggressive poverty reduction drive, focus on growth enhancing policies that will lead to increased export earnings, provide a stable environment for investments and implement measures that will increase investor confidence in local investments.

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.

Checcherita and Rother (2010) determine the average impact of government debt on per capita GDP growth for twelve euro area countries over a period of about 40 years from 1970-2009. The channels through which government debt impact the economic growth are private savings, public investment, total factor productivity and real interest rates. The study shows non-linear negative impact of government debt on economic growth.

Rabia and Kamran (2012) examined the impact of domestic and external debt on the economic growth of Pakistan. They examined the determinants of economic growth for Pakistan, the impact of domestic debt and external debt on the economic growth of Pakistan separately over period of 1980 to 2010, using Ordinary Least Square (OLS) approach to Cointegration, Unit Root Testing, Serial Correlation Testing, test for checking Heteroskedasticity and CUSUM test of stability. The findings suggested an inverse relationship between domestic debt and economic growth and also the relationship between external debt and economic growth was found to be inverse. These relationships were found to be significant as well. The results also concluded that external debt amount slows down economic growth more as compared to domestic debt amount. The negative effect of external debt is stronger on the economic growth in comparison to domestic debt. Some policy

RESEARCH METHODOLOGY

Research Design

The study adopted a descriptive research design. Mugenda and Mugenda (2003) describes descriptive research design as a systematic, empirical inquiring into which the researcher does not have a direct control of independent variable as their manifestation has already occurred or because the inherently cannot be manipulated. Descriptive studies are concerned with the what, where and how of a phenomenon hence more placed to build a profile on that phenomenon (Mugenda and Mugenda, 2003). Descriptive research design is more appropriate because the study seeks to build a profile about the relationship between domestic debt and economic growth.

Data Collection

The study used secondary data from the Kenya National Bureau of Statistics while data on domestic debt was collected from the Central Bank of Kenya. Data on economic development was collected from the Kenya National Bureau of Statistics while data on domestic debt will be collected from the Central Bank of Kenya. The data was collected using data collection sheet which was edited, coded and cleaned. The study period included 2002/2003-2011/2012 financial periods. This period was chosen because of the many changes that occurred within the economy that had far reaching implications on the macroeconomic variables in Kenya. Some of these changes include changes in country presidency, post election violence and diminishing grants from donors. 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.

Data Analysis

The study used Statistical Package for Social Sciences Version 21.0 to aid in data analysis. The paired t-test, a non-parametric test of differences developed by Sir Williams Gosset (Mugenda & Mugenda, 2003) will be used in this study as a test of significance. The analysis will be at 0.05 level of significance. In order to determine the relationship between public debt and economic growth in Kenya, the researcher conducted a multiple regression analysis. The study was based on Harrod-Domar growth model which gives insights into the dynamics of growth which holds that the level of savings and capital are functions of the level of GDP in an economy. In order for any government to invest its resources in development, it must have met the recurring expenditure. Hence the amount available for long term investment largely depends on amount of income available to the government both form taxes and debt in forms of domestic and external.

The model is based on several studied including: Abbas and Christensen (2007) who studied the impact of domestic debt on economic growth for ninety three low-income countries from the period of 1975-2004 by applying Granger Causality Regression model with variables including different components of domestic debt. Adofu and Abula (2010) also used the components of domestic debt in investigating the relationship between domestic and economic growth in Nigeria for the period 1986-2005. Checherita and Rother (2010) use both domestic and external debt in the determination of the average impact of government debt on per capita GDP growth for twelve Euro area countries over a period of about 40 years from 1970-2009. Rabia and Kamran (2012) used domestic and external debt to examine the impact government debt on the economic growth of Pakistan. The model is listed below:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \text{\euro}$$

Where: Y= Economic growth (Measured by GDP)

             X1= Domestic Debt (Measured by total value in Kshs.)

             X2= External Debt (Measured by total value in Kshs.)

             €= Error Term

This model was expanded into the following model:

In order to determine t the relationship between domestic debt and economic growth in Kenya, the researcher conducted a multiple regression analysis using the following regression model

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \text{\euro}$$

Where: Y= Economic growth (Measured by change in GDP)

             X1= Treasury Bonds (Measured by total value in Kshs.)

             X2= Treasury Bills (Measured by total value in Kshs.)

             X3 = Government Stock (Measured by total value in Kshs.)

             X4 = Overdraft at the Central Bank of Kenya (Measured by total value in Kshs.)

X5 = Advances from Commercial banks (Measured by total value in Kshs.)

X6= External Debt

In order to test the significance of the model in measuring the relationship between public debt and economic performance, this study will conduct an Analysis of Variance (ANOVA). On extracting the ANOVA statistics, the researcher will look at the significance value. The study will be tested at 95% confidence level and 5% significant level. If the significance number found is less than the critical value (α) set 2.4, then the conclusion will be that the model is significant in explaining the relationship.

RESEARCH RESULTS

Regression analysis

In order to how advances from commercial banks , government stock , treasury bills , overdraft at the central bank of Kenya and treasury bonds (independent variables) contributes to Economic Growth (dependent variable), multiple linear regression analysis. The study conducted a multiple regression analysis. The findings were as shown in the table 1 below:

Table 1: Model Summary

Model Summary			
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.992[a]	.985	.962	38651.09391

a. Predictors: (Constant), External Debt, Advances from Commercial banks , Government Stock , Treasury Bills , Overdraft at the Central Bank of Kenya , Treasury Bonds

Coefficient of determination explains the percentage of variation in the dependent variable that is explained by the independent variables. It is used to explain the extent to which changes in the dependent variable can be explained by the change in the independent variables.

From the analysis, the independent variables (commercial banks, government stock, treasury bills, overdraft at the central bank of Kenya and treasury bonds and public debts) in this study contributed to 98.5% of the variation in economic growth as explained by adjusted R^2 of 0.985.

The study conducted an Analysis of Variance, in order to test the significance of the model. The findings were as shown below:

Table 2: ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.872E11	6	6.453E10	43.193	.001[a]
	Residual	5.976E9	4	1.494E9		
	Total	3.931E11	10			

a. Predictors: (Constant), External Debt, Advances from Commercial banks, Government Stock, Treasury Bills, Overdraft at the Central Bank of Kenya, Treasury Bonds

b. Dependent Variable: Economic Growth measures by GDP

From the ANOVAs results, the probability value of .001[a] was obtained implying that the regression model was significant in predicting the relationship between Economic Growth and the predictor variables as it was less than $\alpha=0.05$.

Table 3: Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1048220.737	150117.857		6.983	.002
	Treasury Bonds	1.381	.449	1.109	3.074	.037
	Treasury Bills	1.312	1.026	.172	1.279	.270
	Government Stock	-36.648	95.083	-.067	-.385	.020
	Overdraft at the Central Bank of Kenya	-2.461	5.369	-.100	-.458	.071
	Advances from Commercial banks	-25.250	23.369	-.150	-1.080	.341
	External Debt	-.465	.294	-.329	-1.582	.089

a. Dependent Variable: Economic Growth measures by GDP (Million Kenya Shillings)

The researcher conducted a regression analysis so as to determine the relationship between independent variables and Economic Growth (dependent variable). The following regression equation was obtained:

$$Y= 1048220.737+1.381X_1+1.312X_2-36.648X_3-2.461X_4-25.250X_5-0.465X_6$$

From the regression model obtained above, holding all the other factors constant, the economic growth will be 1048220.737. A unit change in treasury bonds holding the other factors constant will lead to change the economic growth by 1.381; a unit change in treasury bills holding the

other factors constant will change economic growth by 1.312. A unit change in government stock holding the other factors constant will change economic growth by -36.648. A unit change in overdraft at the central bank of Kenya holding other factors constant will change economic growth by -2.461. A unit change in advances from commercial banks holding the other factors constant will change the economic growth by -25.250 while a unit change in public debts holding the other factors constant will change the economic growth by -0.465. This implied that treasury bonds had the highest influence on economic growth followed by treasury bills, then external debts, then overdraft at the central bank of Kenya, then advances from commercial banks and finally Government Stock.

The obtained regression equation further implied that there was a direct relationship between economic growth and treasury bonds as well as treasury bills while there was an inverse relationship between economic growth and Overdraft at the Central Bank of Kenya, government stocks, advances from commercial banks and external debts.

INTERPRETATION OF FINDINGS

From the findings above, it can be noted that public debt greatly affects economic growth in Kenya. According to Manmohan and Jaejoon (2010), public debt has important influence over the economy both in the short- and the long run. The findings as shown in the regression analysis shows that public debt affected economic growth in Kenya up to 96.20%. These findings are consistent with those of Alshara, Khateeb and Majd (1991) who analyzed the size and composition of external public debt and examined its affect on specific economic variables and established that external loans positively affect consumption, investment, imports and GNP.

Analysis of the individual components of both public and domestic debt with the exception of treasury bills and treasury bonds, all other variables had negative relationship with economic development. These findings are consistent with those of Abbas (2007) and Abbas and Christensen (2010) who 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 findings in this study also show that domestic debt has moderate effects on economic growth in Kenya. These included treasury bills and treasury bonds.

From the findings, it can be noted that treasury bonds and treasury bills increased since the inception of the study. Domestic debt is important components of economic growth and more especially treasury bills and treasury bonds. Governments use these instruments to control several macro economic variables including money in circulation through controlling interest rates and controlling inflation. Treasury bonds are normally used to raise funds for specific capital project and are long term in nature. Such capital expenditure are important components of economic growth as they provide infrastructure necessary to spur economic development. The

analysis also reveals a decline in Government stocks while government overdrafts at the Central Bank of Kenya increased. Advances from commercial banks also declined while external debt increased.

SUMMARY OF FINDINGS

The objective of this study was to investigating the relationship between public debt and economic growth in Kenya. The study combined domestic and external debt to make up public debt using their proxies. The exact variables for domestic debt included treasury bills, treasury bonds, and Government stock, overdrafts from commercial banks and advances from commercial banks. The study used descriptive research design because it sought to build a profile about the relationship between public debt and economic growth. The study used secondary data collected from the Central bank of Kenya. In order to establish the relationship between public debt and economic growth the study conducted a regression analysis and used co-efficient of determinations to explain the rates of change in dependent variable following a unit change in each independent variable.

From the findings, the study established that a unit change in treasury bonds holding the other factors constant will lead to change the economic growth by 1.381; a unit change in treasury bills holding the other factors constant will change economic growth by 1.312.

A unit change in overdraft at the central bank of Kenya holding other factors constant will change economic growth by -2.461. a unit change in public debts holding the other factors constant will change the economic growth by -0.465.

CONCLUSIONS

From the findings, the study concludes following improved economic performance and robust performance of the revenue in the study period, Kenya's domestic debt was reasonably sustainable. However, domestic borrowing consumed a significant proportion of government revenue which poses a risk to fiscal sustainability. Domestic debt is characterised by higher interest rates compared with those on external debt, which is contracted mainly on concessional terms, and it is therefore expensive to maintain. There is therefore urgent need for the government to formulate and implement debt reduction schemes for domestic debt. Such schemes should recognize the fact that outright reductions in domestic debt could increase liquidity in the system which may pose a risk to macroeconomic stability.

Domestic debt reduction could be achieved using proceeds from the privatization programme of public corporations, or the use of externally borrowed resources which are mainly on concessional terms to retire more expensive domestic debt. Cape Verde established a donor financed trust fund to finance domestic debt reduction. The foreign exchange from the fund is used to retire domestic debt without injecting liquidity in the system as the foreign exchange

transaction absorbs liquidity. This would keep the cost of domestic borrowing at sustainable levels and also provide room for shocks.

Following the significant extension of the maturity profile of domestic debt, and the widening of the investor base to include institutional and other non-bank investors in the domestic debt market, commercials' banks holdings of domestic debt have generally dropped. This contributed to the stability in interest rates during the period.

RECOMMENDATIONS

Contingent liabilities represent a potential risk, and burden on the government budget and a risk to domestic debt sustainability. The government should therefore develop a framework for recording and monitoring all contingent liabilities and also formulate and implement a policy for management of the contingent liabilities. Periodic reporting of the outstanding liabilities will also ensure transparency to the public and donor countries on the management of these debts.

Although the government made commendable progress in restructuring domestic debt from the short dated Treasury bills to the longer dated Treasury bonds during the period, the need to continue with this process is even higher. Despite the higher domestic debt service costs due to higher yields on longer dated bonds, the market and rollover risks on the debt have reduced significantly. The government should therefore continue to implement wider reforms that promote investment in Treasury bonds, and encourage institutional investors such as pension funds and insurance companies to invest in Treasury bonds. Sound corporate governance for these institutional investors is also necessary for their continued investment in government securities.

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