External Public Debt and Economic Growth in Kenya

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Abstract- This seeks to examine the relationship between external public indebtedness and economic growth in Kenya. It employs time series data for the period 1970 - 2010 from World Development Indicators and Kenya National Bureau of Statistics. The study objectives are estimated using Ordinary Least Square (OLS). The results reveal a negative significant relationship between external public debt and economic growth. Capital formation also has a significant positive contribution to economic growth. The study recommends that the policies of debt management in Kenya be reviewed and improved. The government should pay more attention to the debt management profile particularly on the expenditure items and diversify the economy to generate more revenue and avoid external borrowing to the extent possible.

Index Terms- Kenya, debt, growth

I. INTRODUCTION

Developing countries like Kenya strive to have a sustainable economic growth and sound macroeconomic environment. Despite the effort made, these economies commonly face burgeoning fiscal deficits mainly driven by external debt servicing and widening current account deficits (Reinhart et al., 2012). It is therefore necessary for economies to control their escalating fiscal deficits. In the process countries are confronted with the challenges of increasing revenues, curtailing non-essential public expenditures and expanding avenues for new investment that can drive these economies to higher growth while limiting the current account deficit to sustainable levels (Baum et al., 2013).

A public debt is a debt owed to both external and internal parties by a government of an independent country. External Public Debt is debt owed to external creditors which are multilateral creditors such as African Development Bank, World Bank, International Monetary Fund and bilateral creditors who are essentially governments of other countries and commercial creditors (Patenio and Tan-Cruz, 2007).

The effect of external debt accumulation on investment and economic growth of a country has been a key area of discussion by policymakers and academicians Rusike (2007). The evidence is mixed on the role of external debt on economic growth. Some researchers find external debt has favourable impact on economic growth (Reinhart et al., 2012) while others find it to have adverse effect on economic growth (Baum et al., 2013).

Kenya has been experiencing rapid growth of gross external debt over the years. The external debt problem in Kenya has been historical and has been increasing. External debt as percentage of GDP between years 1980 to 2000 ranged from 48% to 131.9%. , Over the same period GDP growth ranged from as low as -0.8% to 7.2%. From 2000 external debt began to decline until in 2011. Debt service remained above 5% between 1980 and 1997 and declined to 4.7% in 1998 then went back to over 5% in 1999. However, beginning 2000 debt service began to decline while GDP growth rate rose from as low as 0.6% in 2000 to reach 7% in 2007.

The highest debt ratio was experienced in 1993 while the lowest ratio was in 2008. 1993 recorded 131.9% while 2008 recorded 25%. The corresponding GDP growth rates were 0.6% and 1.5% in 1993 and 2008 respectively (see appendix 1). Also according to statistics compiled by IMF (2013), Kenya is the second most indebted country in the sub-Saharan Africa at 53% of GDP. This shows if the situation persists this trend may plunge the country into a debt crisis. However, the very opposite may occur. It is not immediately clear how rise in external debt affects the country's economic growth. This study seeks to establish how the growth in public external debt affects the country's economic growth.

II. LITERATURE REVIEW

Theoretical literature

Theoretical literature on external debt and economic growth is inconclusive. Neoclassical theory posits that debt is detrimental to economic growth in the long run. It further argues that revenue deficits lead to reduced volumes of saving and may negatively affect economic growth if not offset by private saving. Keynesian theory states that in the short run the debt has positive impact on the economic growth through a multiplier process. Furthermore, Ricardian approach to debt and economic growth state that debt has no effect on the economic growth.

Empirical literature

Empirical studies reviewed reveal mixed evidence on the impact of external debt on economic growth. Hameed et al. (2008) examine the dynamic effects of external debt servicing, capital stock and labour force on the economic growth in Pakistan for the period 1970-2003. Their findings reveal a negative relationship between external debt servicing and economic growth. They find an adverse effect of external debt servicing on labour and capital productivity. Similar results were found by Uma,Eboh and Obidike (2013) in Nigeria using data for period 1970-2010. Butts (2009) investigate the causal relationship between short term external debt and GDP growth rate for 27 Latin American and Caribbean countries over the period 1970-2003 and found evidence of granger causality meaning in 13 countries.

Using panel data Safia and Shabbir, (2009) analyzes relatively small sample of 24 developing countries in Africa over a period of 1976-2003. They further employed random and fixed effects estimations. The findings indicate a relatively causal negative relationship between the external public debts and economic growth to a certain threshold of borrowing. This was consistent with the study by Muhtar, (2004) who find external debt to have a negative impact on the economic growth.

III.   Ajayi and Oke (2012) investigate the effect of the external debt burden on economic growth and development of Nigeria. Their findings indicate that external debt burden hasd an adverse effect on the national income and per capital income of the country. High level of external debt led to devaluation of the nation currency, increase in retrenchment of workers, continuous industrial strike and poor educational system. This led to the economy of Nigeria getting depressed.Z

To analyze the relationship between external debt and economic growth the study adopts Ajayi and Oke (2012) model. The model is specified as follows,

$$Y = \beta_0 + \beta_1 K + \beta_2 L + \beta_3 IR + \beta_4 ED + \beta_5 DSP + \beta_6 IF + U$$
……………………………… (1)

Where,
Y = Gross Domestic Product
K= Capital stock
L= Labour force
IR = Interest Rate
ED= External debt measured as total external debt stocks in USD
DSP = Debt Services Payment
IF= Inflation as GDP deflator
U = Stochastic error term
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5, \beta_6$ = parameters to be estimated.

GDP is the dependent variable and is measures at current USD. The explanatory variable include capital stock which is the gross capital formation in USD, labour force which is total labour force, debt service payment which is total debt service on external debt in USD, External debt is total external debt stocks in USD, Interest rate on external debt and inflation rate measured as consumer prices.

IV.   EMPIRICAL ANALYSIS AND PRESENTATION OF RESULTS

Descriptive statistics

Table 1: Descriptive statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
GDP	41	10610.46	8008.554	1603.447	32198.15
K	41	1918.998	1345.201	282.5199	6095.2
L	41	6.250579	5.612978	0.627214	15.00589
IR	41	168.0454	100.4367	0.283	333.362
ED	41	4748.824	2550.84	282	8589.492
DSP	41	478.4265	252.343	11.00446	904.429
IF	41	9.893516	8.001668	-9.219158	41.98877

Source: Own computation

From the Table 4.1, the GDP current in USD for Kenya has a mean of 10610.46 million with a standard deviation of 8008.554and a maximum value of 32198.15million and a lowest value of 1603.447 million over a period of 41 years. Gross capital formation had a mean of 1918.99 million with a standard deviation of 1345.20 and had a minimum value of 282.52 million with maximum value of 6095.2 million. Total labour force over the same period had a mean of 6.25 with a standard deviation of 5.61. This variable had a minimum of 0.63 million and a maximum of 15.01 million. Interest payments on external debt had a mean of 168.04 with a standard deviation of 100.44 and had a maximum value of 333.36 million and a minimum value of 0.28 million over the same period. Total external debt stocks had a mean of 4748.83 with a standard deviation of 2550.84, while its minimum and maximum values in millions were 282 and 8589.49 respectively. External debt service had a mean of 478.43 with a standard deviation of 252.34 and had the minimum value of external debt service was 11 and a maximum value of 904.43.

Inflation had a mean of 9.89 with a standard deviation of 8.00 and had minimum and maximum values -9.22 and 41.99 respectively.

Unit root test

We carried out non stationarity test to avoid spurious regressions and inconsistent regression results. Table 2 below shows the results of Augmented Dickey Fuller (ADF) in establishing the order of integration of individual series.

Table 2 Test for Unit Root

Variables	Test Statistic at lags (0)	Test statistic at lags (0) after first differencing
GDP	2.925	-3.192

K	1.961	-4.810
L	-0.109	-6.176
IR	-1.674	-5.136
ED	-0.934	-5.273
DSP	-1.918	-7.480
IF	-4.776	--5.253

**Critical values at 1%, 5% and 10% is 3.648, 2.958 and 2.612 before first differencing and after first differencing are 3.655, 2.961 and 2.613.
Source: own computation

Upon conducting the stationarity test, Gross Domestic Product, capital, labour, interest rate, external debt, and debt service payment were found to be non stationary at lags zero but on first differencing, they turn out to be stationary. Inflation rate was the only variable which was stationary without first differencing.

Co-integration Test

Table 3: Engel Granger test for Cointegration

D.uhat	Coefficients	Std. Err.	T	P>t
L1.	-0.5697908	0.1914055	-2.98	0.005
LD.	-0.0988652	0.1725294	-0.57	0.570
_cons	449.9221	181.9036	2.47	0.018
Number of observation = 38 F(2, 35) = 8.44 Prob > F = 0.0010 R-squared = 0.3252 Adj R-squared = 0.2867 Root MSE = 696.34				

Source: Own computation

Co integration test results reveal a long run relationship between GDP and the explanatory variables.

Regression Results

The empirical model of the study is estimated using Newey West regression method to minimize the effects of multicollinearity and avoid biased results.

Table 4 Newey West regression results

The dependent variable is GDP

Variables	Coef	t-statistic	p>[t]
K	137.987	3.22	0.002
L	345.813	1.24	0.225
IR	-87.928	-0.52	0.605
ED	-50.671	-3.18	0.003
DSP	56.386	0.08	0.935
INF	3.028	0.18	0.860
CONSTANT	-1585.199	-0.47	0.644

Significance level at 5%; F STATISTIC = 10.12; Prob>Chi2=0.0021; R^2 =0.216; ADJ R^2=0.0777
Source: Own computation

The results reveal a significant negative relationship between GDP and external debt stock. This implies that an increase in external debt by I dollar will reduce the GDP by 50 USD. The effect of gross capital formation on GDP is significantly positive. The measure of goodness of fit, the R squared is 0.216 and the Adjusted R squared is 0.078 implying that 21 percent of the variations in GDP growth rate are explained by the independent variables in the model.

V.   DISCUSSION OF THE RESULTS

The impact of external debt on economic growth in Kenya is negative, high external debt in Kenya relative to GDP leads to a reduction in economic growth rate. This confirms Solow's argument that when capital increases relative to labour, this increases growth since people become more productive when working with more of capital. This also confirms Keynesian growth theory that economic growth is determined by investment and savings. A country with high external debts may experience a leakage in the circular flow of income through paying of the debts and interest rates. This may lower investments and affect the economic growth negatively.

The study results support empirical findings by Ajayi and Oke (2012) that external debt burden has an adverse effect on economic growth and development. Nigeria external debt burden has had an adverse effect on the national and per capital incomes giving a negative relationship between debt and growth. The results also support the empirical findings of Uma,Eboh and Obidike (2013)on debt and debt service implications on economic development. Nigeria's total domestic and external debts are inversely related to real gross domestic product, a proxy for economic development.

The results of this study contradict the findings of Hassan and Mamman (2013 and Egbetunde, (2012) whose empirical results indicate that external debt has a positive effect on

economic growth. Their findings suggest that increase in external debt leads to increase in GDP but our study has found a decrease in GDP.

VI. CONCLUSIONS AND POLICY RECOMMENDATIONS

This study examined the relationship between external public debt and economic growth in Kenya over the period 1970 to 2010. The empirical results showed that the relationship between public external debt and economic growth in Kenya is negative. As external public debt increase economic growth deteriorate. The impact of external debt is negatively felt in Kenya due to the fact that the funds are not always channelled to the real productive sectors. There is need for the government to manage external public debt properly and accelerate economic growth.

In consideration of the study findings some policy recommendations arise. Policy makers in Kenya should be cautious regarding raising the public debt level, since this may drive the country towards high debt ratio regimes associated with lower economic growth. The government need to pursue policies geared towards reducing the debt stock in order to reduce the adverse effects of debt on growth.

The government should pay more attention to the debt management profile particularly in its expenditure. Borrowed funds should be put into productive projects and programmes to improve the economy. There is great need for laws to guide sourcing, management and limits on loan-taking by the government. External debt should be tied to productive ventures rather than to social consumption.

The government need to diversify the economy so as to generate more revenue and avoid loans build-up. Since capital is a key determinant of economic growth, it is important for the government to put measures to increase capital formation. This would lead to increased investments hence growth of the economy.

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APPENDIX

Table 1: Trend in Kenya's External debt stocks and debt service as %GDP and GPD Annual Growth (%)

Year	Ext. Debt (% GDP)	Debt service (% GDP)	GDP growth (%)
1980	48.1	6.1	5.6

1981	48.6	7.3	3.8
1982	54.5	8.0	1.5
1983	62.7	8.9	1.3
1984	58.6	9.6	1.8
1985	70.6	10.5	4.3
1986	65.8	9.7	7.2
1987	75.2	8.9	5.9
1988	72.3	9.2	6.2
1989	73.4	8.8	4.7
1990	85.8	9.6	4.2
1991	95.8	9.2	1.4
1992	87.7	8.5	-0.8
1993	131.9	11.7	0.6
1994	105.0	12.9	2.6
1995	83.8	10.4	4.4
1996	57.6	7.1	4.1
1997	49.9	5.1	0.5
1998	48.9	4.7	3.3
1999	51.3	5.5	2.3
2000	49.3	4.7	0.6
2001	43.4	3.8	3.8
2002	47.4	4.1	0.5
2003	47.0	3.9	2.9
2004	47.3	2.2	5.1
2005	34.6	2.9	5.9
2006	29.8	1.9	6.3
2007	27.8	1.7	7.0
2008	25.0	1.4	1.5
2009	28.1	1.3	2.7

| 2010 | 27.5 | 1.3 | 5.6 |

Source: World Bank, 2012