

The Effect of Domestic Public Debt on Financial Market Development in The East African Community

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Abstract

Purpose -- The focus of this study was to investigate the relationship between public debt and financial market development in the East African Community Countries.

Methodology – The study adopted a descriptive study and used secondary data collected from the National Treasury, Central Bank of Kenya and the Kenya National Bureau of Statistics. The study period was between the financial years 2012 - 2016. The data was analyzed using descriptive and multiple regression analysis to test the relationship between Domestic Public Debt and Financial Market Development in East African Community Countries.

Findings – The results of the study found a negative relationship between domestic debt and financial markets development. Furthermore, there was a weak relationship between inflation rate and financial markets development. The study also revealed that there was a high variation on domestic debts due to various policies of debt management, Political instability, external debts and grants received from foreign donors, in the various countries in EAC community.

Implications – Most countries depend on external borrowings for their development projects and minimal domestic borrowings are acquired from the domestic market owing to the fact that domestic debt is has high interest rates when compared to the external debt which is acquired mainly on a concessional term, therefore it can be expensive to maintain. Domestic debt should be reduced by use of privatization programs, grants from donors. The government should, therefore, develop a framework to monitor and manage domestic public debt since it is growing at a high rate, reforms on private investments in Treasury bonds and treasury bills and commercial papers should be encouraged since it does not involve foreign currencies that have higher rate of interest.

Value – The study will be of great impact to the financial market sectors stakeholders would get a clear understanding of the major role they play in assisting the development of the country, how the domestic debt increases financial market development and reduces external public debt that tends to affect the country's interest rates. The government of Kenya being the main beneficiary of the domestic Public debt will clearly see and align their internal debt borrowings from the financial markets institutions to promote development in the financial markets. The investors in the Bond Markets and Financial Institutions will be informed of the factors that lead to Government issuance of Treasury Bonds and Treasury Bills to the market and the impact it has on financial markets development and the economy at large.

Key Words: *Domestic Public Debt, Financial Market Development, The East African Community*

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Introduction

Domestic public debt refers to the debt owed by a government to the holders of government securities. It is divided into public debt receipts and public debt disbursements. The difference between the receipts and disbursements is the net acceleration to the public debt. Public debt can be acquired internally or externally. Government domestic debt comprises of stock of securities and overdrafts at the Central Bank of Kenya (CBK). Government securities consist of T-Bills, T-Bonds, Infrastructure bonds and the Pre-1997 government debt. In the 2011/2012 financial year, the government of Kenya raised Ksh. 79.2 billion as net proceeds through borrowing. This borrowing was from the domestic market through the sale of T-bills, T-bonds and Infrastructure bonds (Babu, Kiprop & Kalio, 2015).

On behalf of the CBK, the National Treasuries auctions and administers the government's domestic debt. When each financial year starts, it decides on the budgetary gap that is to be financed through domestic debt. The National Treasury then formulates a borrowing plan which is implemented by auctioning T-bills and T-bonds. Additionally, the CBK manages the central securities depository and the domestic debt. It also contributes to the development of the secondary market for the government security. To moderate budget deficits, commercial banks, pension funds, insurance companies and corporate entities, individuals or retail market invest to raise funds (Central Bank of Kenya, 2017).

According to Kandie (2015), domestic debt is borrowed in local currency and it is protected from the foreign exchange risk while external debt is borrowed in foreign currency. External debt exposes a country to foreign exchange risks. This is because the repayment is done in foreign currency and in the event that the local currency depreciates, the debt levels will rise.

East African Community governments use both domestic and international public debts to finance their yearly budgets and expenditures that help in economic development at large through capital accumulation and productivity growth (Babu, 2015). It also uses taxes collected from the individuals and organizations to increase on its revenue collection and whenever a deficit exists after revenue collection it prompts the government to consider other sources of funding. Domestic debt can have severe implications on the economy if not well balanced with the levels of anticipated economic development. Domestic debt absorbs a major part of government revenues which would have been used in development projects to boost economic growth. Compared to the stock of internal debt, domestic public debt can be

more harmful to the economy of any government. This is due to the shrinking resources to fund development projects (Abbas & Christenses, 2007).

In the Barro's theory of neutrality, Barro and Grilli (1994) argued that the issuance of debt does not affect the wealth aggregate demand, interest rates and capital formation. They further observed that the only function of the neutrality theory is the provision flexibility for the government to balance public revenues and expenditures. Muth (1961) noted in the Expectations Hypothesis that forward interest rates are determined by the expectations of the market participants on future development in short-run interest rates and premium. Sachs (2002) argued that the growth of the economy cannot be sustained and maintained when the level of capital is below a specific threshold. He further noted that the economic growth can utilize the dual gap theory to borrow in order to fund deficits in existence.

The public debt has reached 52.8 percent of GDP in 2015 from 44.2 percent (IMF, 2016). There is a concern among policymakers that rapid increase in external debt in developing countries like Kenya has the potential of eroding the country's sovereign rating (Nord, Harris & Giugale, 2013).

The term '*Financial Market*' means a market in which people and entities can trade financial securities and commodities at prices that are determined by pure supply and demand principles. Financial markets act as a channel through which flow of loanable funds are directed from Supply side that has an excess of assets toward demand side which experiences a deficit of funds. Financial market development is essential for ensuring stable economic growth. A sound financial market allows a country's savings to be channeled into investments in a more effective way. More efficient financial markets also allow for longer-term loans for individuals and companies, such loans help boost investment in a more stable way, allowing the financial system to promote an efficient allocation of capital and transformation of maturities (Managing Public Debt and Its Financial Stability Implications, December 2010).

Financial markets form part of the economy and thus it is a section that affects the economic growth of a country at large. Financial markets give a credible assurance to growth and stability, they affect the economy through declining assets prices and tightening financial conditions with the re-pricing of risk. Strong local markets emerge as a result of savings and productive investment. Building strong Financial Markets the East African community will

need to apply a regularity framework to maintain strong financial supervision. The governments and regulators can deal with a number of steps to increase the demand for the supply of bonds that improve financial markets development. (IMF, 2007)

Debt instruments are important in Financial Market Development. The growth of domestic debt leads to an increase in debt servicing costs. The Government of Kenya relies on Treasury Bonds issued to the financial markets for funding of Long-term loans that are used to supplement the deficit in the existing financial year Approved Budget expenditures. Public debt has been the important source of funds to finance the development plans of the government of Kenya, as the budgetary situation of the government has always remained in deficit. Some portion of the deficit is met through domestic debt. As a result, the volume of the debt has also increased quite sharply in recent years. Even though raising sufficient funds in the form of public debt is important for sustained economic growth and to end prolonged poverty, a failure to meet debt obligations could lead to a serious economic crisis. (Maana, Owino & Mutai 2008)

Allen, (2002) proposes a framework that will explore the debt portfolio management and macroeconomic-financial stability by examining the implications of the alternative combination. Financial Markets are developed through a steady supply of a wide range of instruments to be traded. Increased demand for limited financial resources from commercial Banks and other non-financial investors drives interest rates up. The increase in interest rates increases the cost of borrowing and hence reduced credit to private sector which in turn reduces the private investment. Ngugi (2017) argued that the local borrowing is advantageous as it is faster and simple to administrate, but the main issue is that government competes with the private sector for funds from banks, which leads to crowding out of private sector and slowdown in economic growth as the contribution by the private sector to economic growth reduces.

Debt management affects stability of financial markets, stock of public debt through shocks, affects financial stability, since it affects variables that determine the value of debt instruments, high levels of debt should trigger policies to mitigate possible higher inflation rates which should be mitigated through monetary and fiscal policies. A well-functioning government debt market builds and develops efficient financial markets and a sound market allows savings of a country to be channeled into investment, efficient financial markets allow long-term loans to individuals and companies. Banks hold adequate quantity of government

paper to conserve on equity capital funding cost this shows the link between government finances and financial stability is symmetrical (IMF, 2010).

The East African Community EAC is one of the fastest growing regions in Africa. The growth rate have picked up strongly in the EAC countries over the two decades hence outdoing the sub-Saharan Africa since 2000. However, the EAC growth has been uneven since the Ugandan growth acceleration started earlier than in the other countries with a per capita income growth averaging 3.4 percent, growth in Rwanda and Tanzania has been strong since the early 2000 and after a period of stagnation Kenya's growth picked up.

Kenya being a developing country compliments its revenue through exports of primary commodities. Ochiel (2013) concentrated on the effects of domestic debt owing to the shifting composition of public debt in favor of domestic debt in Kenya. Financial development promotes economic growth, Levine and Zervos (1998), for instance, show that stock market development affects growth through capital accumulation and improvement in productivity.

Kenya has undertaken public development projects to improve the welfare of citizens and promote economic growth. To finance these projects the country has had to acquire public debt to supplement domestic savings due to scarcity of capital. It has over the years relied heavily on public debts, grants and foreign aid (Were, Ngugi & Makau, 2006). Impact of increasing levels of public debt stock on economic growth is of great concern to most developing countries (Thugge, Heller & Kiringai, 2008).

Economic theory suggests that reasonable levels of borrowing by a developing country are likely to enhance its economic growth (Patillo, Poirson & Ricci, 2002). Stieglitz (2000) stated that government borrowing can crowd out investment, which will reduce future output and wages. Citizen's welfare is affected and will be made vulnerable if the wages and salaries are not stable and if they keep on fluctuating. These claims deserve serious attention in the context of the country's crying need to generate faster employment growth, meet the Millennium Development Goals and attain the Vision 2030 goals (Achieng, 2010).

The EAC countries have used public debt and loans to finance the Infrastructure project. Burundi has financed its hydropower project through concessional lending and budget resources. In a lesser extent, the project is worth US \$270 million. Kenya's project is worth US \$47 Billion the fund is a semi concessional loan from China amounting to US \$3 billion.

The rest of the balance will be financed through development partners. Rwanda has borrowed US\$ 880. The amount will be financed through concessional, non-concessional borrowing and grants from donors. Tanzania's non-concessional borrowing is used for road projects and finally Uganda will finance its US \$9.2 billion through concessional and non-concessional loans (IMF, 2014).

The EAC treaty clearly states that the countries infrastructures need to be improved, Through the monetary and fiscal policies it will gauge how the invested money will be utilized in article 132,133 it shows that organizations require to have a budget in place in case of a deficit other budgetary resources are added to fill the deficit through grants, donations, funds for projects and programmes (East African Community, 2007).

Lumu (2017) found out that Uganda's domestic and external debt has hit US \$ 8.7 billion in the year 2017. The country's debt is equivalent to its GDP of 33.8 percent. Economic growth of 3.9% is higher than the average sub Saharan Africa growth rate in 2017. Urn, (2017) also found out that, Uganda in the last two years 2015, 2016 has borrowed at the rate of 17 percent annually from the National Social Security fund (NSSF) yet some of the banks in Uganda also borrowed from the same source this made the interest rate to remain at 23 percent. Uganda's government decided to reduce domestic borrowing through creation of more resources available to commercial banks so as to reduce the level of interest rate in the future.

Tanzania's public debt in the year 2015 was US\$ 18.9billion which is 39 percent of the GDP while the external debt was at US \$ 2.7billion this is 5.6 percent of its GDP. The public debt consisted of US \$ 6 billion of domestic debt. According to International Monetary Fund (IMF, 2017) Tanzania maintain a sustainable debt level that is the country faces a low risk of external and domestic public debt distress. Tanzania's domestic debt increased from US \$ 2billion in 2010 to US \$4billion in 2014 and US \$ 6billion in 2015, the domestic debt comprised mainly of marketable securities and non-marketable securities according to the United Nations Conference on Trade and Development (UNCTAD) a higher level of domestic debt in Tanzania can be sustained without compromising the country's economic growth (UNCTAD, 2017).

The National Bank of Rwanda maintains the public debt of the country and the current state of its public debt is not worrying because it's debt to GDP Ratio is below the radar and also provides room for more borrowing. Public debt in the fiscal year 2013/14 increased to US\$

2.295 billion from 2013 June to June 2014. The domestic debt was at \$ 541.3 million while the external debt was at 23.3 percent of the GDP. The main source of Rwanda's domestic debt is from the treasury bills (Agutamba, 2016)

The Kenyan government domestic debt has grown due to treasury bills and treasury bonds, Kenya's budget grew to Kenya shillings 2.6 billion and this made the country's public debt to grow more (CBK, 2017). Ngugi (2017) noted that public debt was at kshs.3.327 Trillion which is 51.50 percent of the GDP in December 2016. The World Bank warning came when the rate of debt is mounting while the IMF urged Kenya to lower her Budget deficit which was becoming unsustainable.

Research Objective

The main objective of this study was to investigate the relationship between public debt and financial market development in the East African Community Countries.

Methodology

The study used a descriptive study design that was intended to explain a characteristic behavior of one variable because of another variable. Kothari (2005) indicates that a descriptive survey explains the relationship between variables. This is because the study sought to establish the relationship between domestic public debt and financial market development. The study used the fifteen East African Community financial markets as the population since they share similar regulations and legislatives when it comes to Domestic public debt, factors and information on how Debt affects financial markets Development in EAC can be clearly understood from the study.

The study had a small population size thus no sampling was done. Secondary data for a five-year period between 2012 and 2016 was obtained from the Central Banks of the East African Community, the World Bank, the National Treasury Public Debt Department and the Kenya Bureau of Statistics since they are major players of the initiators of Public Debt and the Managers of the level of Public debt in the country.

The study used p-values to test the hypothesis. The a priori significance level set for the study was 95%. If the p-value is greater than or equal to 0.05, then the null hypothesis is true since this means that there is no statistically significant relationship between national debt and

economic growth. Similarly, if the p-value is less than 0.05, then the alternative hypothesis is considered true since this means that there is a statistically significant relationship between the dependent and the independent variables. Coefficient of determination (R^2) was used to provide a measure of how well the observed outcomes is replicated by the model, as the proportion of total variation of outcomes explained by the model.

Analytical Model

The study used a multiple regression model to establish effects of Domestic debt on the financial market's development in the East African Community. The study sought to extend the model that was adopted by (Bulle, 2014). The model was formulated as follows:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon$$

Where:

- a. Y= Economic/Financial Market Development (Measured by Market Capitalization/GDP).
- b. X_1 = Domestic Debt (Measured by log of total value in US \$).
- c. X_2 = Inflation Rates
- d. X_3 = Interest Rates
- e. ε = Error Term

Results and Discussions

Response Rate & Data Validity

The study sought to collect data concerning financial market development, domestic debt, inflation rate and interest rate from all the East African Community countries. All the data required for the study was collected through secondary method; hence the response rate was 100%. This was considered adequate for analyzing the variables in the Regression Analysis.

According to the multiple regression data analysis model adopted in the previous chapter, the data collected was found to be a valid analysis to aid in understanding whether domestic public debt has any effect on the financial markets' development in the members of East African Community.

Descriptive Statistics

Table 1: Descriptive statistics results.

	Minimum	Maximum	Mean	Std. Deviation
Financial Market Development	15.44	43.78	24.76	11.82
Domestic Debt	1.91	10.42	8.20	3.55
Inflation Rate	3.75	9.11	7.32	2.09
Interest Rate	5.53	14.26	10.35	3.61

Source: Research Findings

From the table, financial market development has a maximum and minimum of 15.44 and 43.78 respectively. It also indicates a mean and standard deviation of 24.76 and 11.82 respectively for the financial market development variable. Domestic debt has a minimum and maximum of 1.91 and 10.42 respectively. The mean and standard deviation for the domestic debt is 8.20 and 3.55 respectively. For the inflation rate, the minimum, maximum, mean and standard deviation as indicated is 3.75, 9.11, 7.32 and 2.09 respectively. Interest rate has a minimum and maximum of 5.53 and 14.26 respectively. The mean and standard deviation for the interest rate is 10.35 and 3.61 respectively.

Correlation Analysis

Table 1: Correlation Matrix

	Financial Market Development	Domestic Debt	Inflation Rate	Interest Rate
Financial Market Development	1.00			
Domestic Debt	-0.06	1.00		
Inflation Rate	0.39	-0.39	1.00	

Interest Rate -0.34 0.69 -0.48 1.00

Source: Research Findings

Table 2 presents the correlation coefficients of the dependent variable and the independent variables. From the table, the correlation between financial market development and domestic debt is very weak but negative at -0.06. The correlation between financial market development and inflation rate is very weak but positive at 0.39. Lastly, the correlation between financial market development and interest rate is very weak but negative at -0.34.

Regression Analysis and Hypothesis Testing

Regression analysis was conducted in order to examine the coefficient of determination, the statistical significance of the model used and the regression model. The results of the regression analysis are presented in the following tables.

Table 2: Regression Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.503 ^a	.253	-1.988	20.43341

a. Predictors: (Constant), Interest Rate, Inflation Rate, Domestic Debt

b. Dependent Variable: Financial Market Development

Table 3 indicates that the R Square is 0.253. This means that 25.3% of the financial market development is explained by domestic debt, inflation rate and interest rate. It also implies that 74.7% of the financial market development is explained by other factors not considered in this model.

Analysis of Variance

Table 3: Analysis of Variance (ANOVA)

Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	141.396	3	47.132	.113	.941 ^b
Residual	417.524	1	417.524		
Total	558.921	4			

a. Dependent Variable: Financial Market Development

b. Predictors: (Constant), Interest Rate, Inflation Rate, Domestic Debt

Source: Research Findings

From the table, the p-value obtained from the regression is 0.941 which is greater than 5% level of significance. Therefore, we fail to reject the null hypothesis that there is no statistically significant relationship between domestic public debt and financial market development.

Table 4: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	16.438	65.212		.252	.843
Domestic Debt	1.205	3.981	.361	.303	.813
Inflation Rate	1.814	5.585	.321	.325	.800
Interest Rate	-1.433	4.105	-.438	-.349	.786

a. Dependent Variable: Financial Market Development

Source: Research Findings

Table 5 indicates the regression model coefficients and the individual variable statistical significance. From the table, it is clear that domestic debt, inflation rate and interest rate are not individually statistical significance. The table also indicates that the regression constant is 16.438. The regression coefficients for domestic debt, inflation rate and interest rates are 1.205, 1.814 and -1.433 respectively. This can be summarized by the equation below.

$$Y = 16.438 + 1.205X_1 + 1.814X_2 - 1.433X_3$$

The descriptive statistics in table 1 shows a wide gap between the minimum and the maximum values, hence huge range figures for financial market development Domestic Debt, Inflation rate and Interest rate. The Standard deviation figures are low, meaning that there is low level of variability in the observations, since the sampled financial markets developments were not split into the various market capitalization classes in the study. The mean indicates that the independent variables have a weak impact on the financial markets development thus concluding that financial market development tend to be affected by other variables that were not considered in the analysis of the study.

The findings of the study support the theories of Keynesian model and Debt Overhang by Krugman. He defined the negative relationship between foreign debt and investment. The study found that there is a very weak effect of domestic public debt on financial market development.

Conclusions

Understanding the effect of domestic public debt on financial markets development is important to investors, financial market players and participants, policy makers and researchers as it has an implication on various financial models and debt management practices. The relationship between domestic public debt and financial market development was explored by the means of regression model which indicated that only 25.3 % of financial market development is explained by domestic debt. The study also found that we fail to reject the null hypothesis that there is no statistically significant relationship between Domestic

public debts and financially market development since the p-value obtained was 0.941 which was greater than the 5% level of significance.

Recommendations

The main objective of the study was to establish the effects of domestic public debt on financial markets development. Given that there exists a weak but significant relationship between variables, the study recommends that the financial markets participants and investors should not use the domestic public debt as the determinant of financial markets development; rather they should develop a more comprehensive model using other independent variables not considered in the study to get a clearer understanding on how they can affect the financial markets development.

Financial markets development has not been exhausted fully by the independent variables under analysis they were able to cover the effect on the development up to 25.3% leaving other factors a big percentage of 74.7%. For this reason, the study recommends that other factors be considered in future when measuring financial markets developments.

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