African development finance journal http://journals.uonbi.ac.ke/index.php/adfj
May Vol3 No.1, 2019 PP 153-166 ISSN 2522-3186

The Effect of External Public Debt Financing on the Economic Growth of East African Community Countries

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Abstract

Purpose - This paper sought to establish the effect of external debt financing on the economic growth of East African community countries.

Methodology - The study was modelled as a descriptive survey. A data collection sheet was used to collect secondary data from the population of the 6 member states of East Africa Community over a period from 2000 to 2017. The data was examined using descriptive, correlation and regression analysis.

Findings - The study established that 65.9% change in economic growth of Kenya is explained by its external debt, (p=0.000), 55.6% change in economic growth of Uganda is explained by its external debts (p= 0.000), 76.1% change in economic growth of Tanzania is explained by the level of external debts (p=000), 83.1% change in economic growth of Rwanda is explained by its external debt level (p= 0.000) and that 59.2% change in economic growth of Burundi is explained by its external debt (p= 0.000). On overall, 64.5% change in economic growth in East Africa Community is explained by the external debts of the member states. The study concludes that external debt significantly influenced economic growth of Kenya as a country. External debts significantly influenced economic growth of Uganda, Tanzania, Rwanda and Burundi. In general, external debts had most influence on economic growth of Rwanda followed by Tanzania, Kenya, Burundi and lastly Uganda. On overall, a significant change in economic growth in East Africa Community is explained by the external debts of the member states. External debt significantly influenced economic growth of the EAC.

Implications - Public debts play a crucial role in financing of deficit budget. However, too much debt may become unsustainable for the country since revenue will spend on repayment of the interest and the principal amount at the expense of encouraging investment and therefore economic growth. Too much external debts results into crowding out effect as it deters local and foreign investors from investing and this adversely harms the economy.

Value - The study will act as a guide to the National treasuries of member states of EAC in order to consider increasing the level of their external debts based on their ability to service and the overall capacity. Member countries of EAC should have clearly established threshold of a rise in level of external beyond which an alarm should be raised to signal danger. The member countries of EAC should borrow external debts for the purpose of economic growth. However, borrowing the debt with the aim of repaying another debt or for recurrent expenditure would not significantly influence economic growth of a country.

Key Words: *external public debt, economic growth, East Africa community*

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Introduction

A sustainable level of public debt is one of the predictors of economic growth. A rise in public debt on the other hand can become unsustainable and therefore slowing down economic growth. A rise in public debt slows down economic growth because a significant portion of revenue is spending on debt servicing instead of being spent on investment and therefore economic growth. However, when prudently borrowed, external debts can be used to finance projects like infrastructure and industries and this positively influence economic growth (Buchanan, 2016).

According to the Debt Over-Hang Theory, the estimated debt servicing is expected to be a growing function of the level of output of the country if the debt level will grow more than the ability to repay. The Debt overhang theory is of the views that a rise in external debt may become unbearable for the country resulting onto a slowdown in economic growth. In view of Keynesian Theory, public debt has no real burden and it does not significantly influence economic growth (Metwally & Tamaschke, 1994). The real burden of the debt occurs at the time of committing expenditure and this entails using up resources. In view of Ricardo's theory of public debts, the wasteful tendency of the public itself rather than the methods adopted for financing such expenditures formed the primary burden to the community (Roberts, 1942).

The level of public debts among East Africa Countries has been on a rise over the past decade. In a country like Kenya for instance, the country has borrowed more than Ksh200 billion, increasing the national debt to over Kshs4.5 trillion (National Treasury, 2018 & Capital Market Authority CMA, 2018). According to Regional Economic Outlook report (2016), International Monetary Finance IMF indicates that in sub-Saharan countries, the ratio of public debt to GDP stood at 52.6 per cent in 2016 and is expected to increase to 56.2 per cent in 2017 while Tanzania's increased from 37.4 per cent to 38.3 per cent while in Uganda, it rose from 38.6 per cent to 39.9 per cent.

External borrowing for productive investment results into macroeconomic stability besides providing capital inflow that positively influences domestic savings hence investment demand (Mogaka & Ochieng, 2018). A good example of external borrowing is issuance of sovereign bonds. According to statistics from the National Treasury (2018), Kenya raised Kshs. 202 billion ($2 billion) in a new Eurobond issue. The bond was listed on London Stock Exchange (LSE). Internal sources of financing a national budget include tax revenue, issue of corporate bonds and treasury bills. Tax revenue is the most significant source of internal financing of national budget. In Kenya for example, the statistics from Kenya Revenue Authority KRA indicates that for the 2016/2017 financial year, there was collection of Kshs. 1.365 trillion in comparison to Kshs. 1.210 trillion in the 2015/2016 financial year.

All debts, whether internal or external are classified as either productive or unproductive. Unproductive debts are also called dead weight debts. Productive debts are borrowed to increase asset stocks like factories, electricity and refineries. Unproductive or dead weight debts on the other hand are used to finance war and current expenditures. Therefore, it is important that debt financed investments should be well managed and productive in order to earn returns higher that cost of debt serving (Pianesell & Zaghini, 2014).

Economic growth is defined in terms of an increase in national income per capita. It is measured in terms of the changes recorded in Gross Domestic Product (GDP), Gross national Product (GNP), and National Income (NI) (Haller, 2012). It is perceived as the

process which results to an increase in the sizes of national economies, macro-economic indicators (Agrawal& Khan, 2011). Economic growth encompasses increases in a country's level of per capita income and real national income over a long period of time (Shah &Attullah, 2011).

Fuentes and Calderón (2013) established that external public debt had an inverse relationship with economic growth. This shows that as external debts increase, economic growth slows down. In another study in Malawi by Tchereni et al. (2013), it was noted that external debt had an inverse but insignificant effect on economic growth. Mukui (2013) found out that external public debts and debt servicing had inverse and significant influence on economic growth. Shabbir (2013) examined how external public debt affected economic growth using a case of seventy developing states. It was noted that an increase in external public debts reduce private capital formation and therefore low economic growth.

Using evidence from Tanzania, Said and Kasidi (2013) in the effect of external public debts in economic growth noted that external debt had direct and significant relationship with economic growth. Debt servicing on the other hand was inversely related with economic growth. A rise in the level of debt beyond the limit makes it unsustainable to service and the country become heavily indebted. In a highly indebted country, there is a likelihood of crowding out effect and uncertainty. A high level of external debt can act as a deterrent to investor which leads to crowding out effect. In terms of uncertainty, an increase in debt level increases the risk perceptions of investors in the country and therefore local and foreign investors are discouraged to invest hence a slow economic growth (Panizza&Presbitero, 2014).

There has been an increasing trend in the level of external debts among East African countries. The statistics by IMF (2013) indicates that Burundi is the first indebted country with 72.3% followed by Kenya with 53%, Tanzania at 34%, Uganda at 27% and lastly Rwanda at 22%. The report further ranks Kenya as second with 28.5% foreign debt service while Burundi is leading with 50%. Different scholars have examined a link between public debt and economic growth (Babu, Kiprop, Kalio&Gisore, 2014). Despite this level of external debt, economic growth of East African countries has been impressive. According to East African Economic Outlook report (2018), countries in East Africa realized the best economic performance in the continent for the year 2017. The value of Gross Domestic Product GDP growth of 5.9% compared to the continental average of 3.6% (African Development Bank, 2018). This growth according to the report was however attributed to Kenya, Ethiopia and Rwanda. The question therefore remains whether the external debt has affected economic growth of other three East Africa countries (Uganda, Southern Sudan and Burundi) and this has informed this study.

Public debts play a crucial role in financing of deficit budget. However, too much debt may become unsustainable for the country since revenue will spend on repayment of the interest and the principal amount at the expense of encouraging investment and therefore economic growth. Too much external debts result into crowding out effect as it deters local and foreign investors from investing and this adversely harms the economy (Herndon, Ash &Pollin, 2014). According to Mukui (2013), external debt has a negative influence on economic growth.

The level of public debt across East Africa countries has generally been on a rise. The statistics by IMF (2013) rates Burundi as the first indebted country with 72.3% followed by Kenya with 53%, Tanzania at 34%, Uganda at 27% and lastly Rwanda at 22%. This

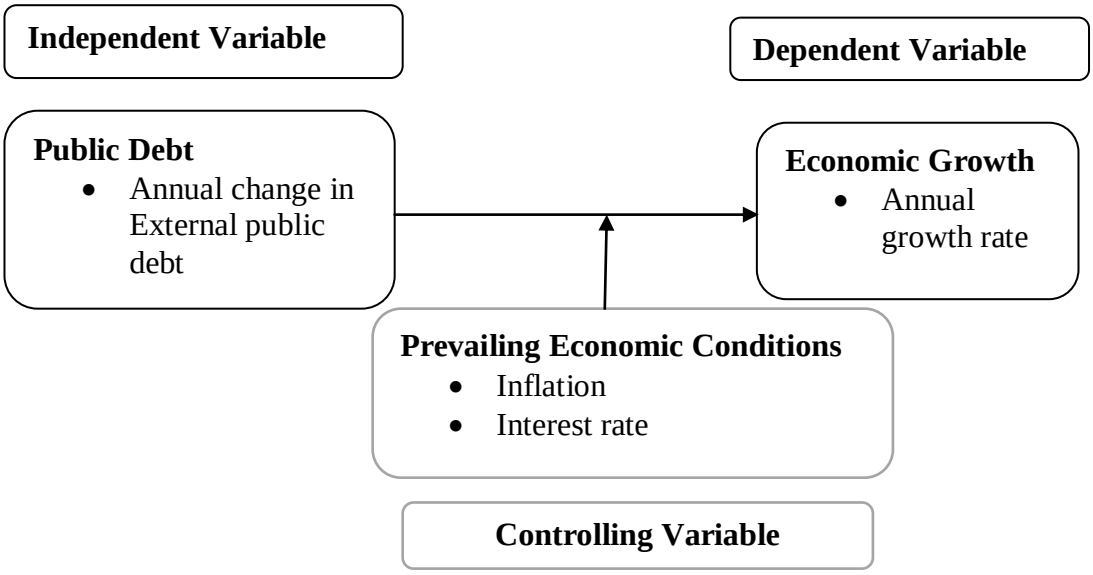
trend is worrying and if not controlled, it would become unsustainable and therefore affect economic growth of these countries. On average, the economy of Kenya grew by 5% over the period 2003-2013 which is much lower as compared to Uganda's growth of 7%, Tanzania's growth of 7%, Rwanda's growth of 7.1% and EAC average growth of 5.9% over the same period. East African countries have leveraged on public debts to finance long term projects in infrastructure, health and education. In Kenya for instance, out of the Kshs. 271 billion budgeted for 51 priority development projects in financial year 2014/2015, Kshs. 157 billion was to go to Standard Gauge Railway SGR. This amount was financed by the issued of Eurobond.

Several studies have been done on how public debt financing affect economic growth. Globally, Akram (2016) examined how public debt affected economic growth and noted that public debts negatively affect economic growth, neither external nor domestic debt servicing significantly affect income inequalities. In Swaziland, Ntshakala (2015) sought to determine how public debt affected economic growth and noted that external debt in Swaziland does not significantly influence economic growth unlike domestic debt that positively and significantly influenced economic growth. In Nigeria, Ndubuisi (2017) examined how external debt affected economic growth and established that external debts have an inverse effect on economic growth. Among South Asian countries, Akram (2016) sought to investigate how public debt affected economic growth. It was noted that public debt had inverse relationship with economic growth. In Pakistan, Jibran, Ali Hayat and Iqbal (2016) assessed how public debt affected economic growth. From the findings, external debts had an inverse and significant effect on Gross National Product and Gross National Product on short run and long run. These studies however were done in other countries some of which are advanced and developed like Pakistan and Swaziland and this creates a gap that the research seeks to fill.

Research Objective

The study sought to investigate the effect of external public debt financing on the economic growth of East African community countries.

Conceptual Framework



Methodology

The study adopted a descriptive research design. According to Creswell (2013), descriptive approach refers to research questions that apply descriptive statistics as opposed to inferential statistics. A descriptive design was appropriate in determination of how public debts affect economic growth of countries in East Africa community. The population of the study comprised of member countries of East Africa Community. According to EAC report, there were 6-member countries. The study collected secondary data. This data was collected using data collection sheet. The data was collected from reports of respective bureaus of the countries, the World Bank reports, the IMF reports and the Africa Development Bank AfDB reports. The study covered a period of 2000-2017. This period was sufficient to produce a sizeable panel data suitable for regression analysis. According to Westland (2010), the sample size of 30 elements is sufficient for regression and this justifies the period in this study. The study used secondary data because it was readily available and therefore saving on costs. The study was then tested for multicollinearity, normality and autocorrelation in the data set before embarking on analysis. Multicollinearity was detected using Variance of Inflation Factor VIF, where values between 1-10indicated absence of multicollinearity. Normality was detected using values of Skewness and Kurtosis. Autocorrelation was detected using Durbin Watson statistics.

Analytical Model

The effect of external public debt financing on the economic growth of East African Community countries was modelled using the following equation;

$$\mathbf{Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \acute{\varepsilon}}$$

Where:

Y= Economic growth
α = Constant
X_1 = Public debt
X_2= Prevailing economic condition (inflation)
X_3= Prevailing economic condition (interest rate)
$\acute{\varepsilon}$= Error Term
$\beta_1, \beta_2,$ = Coefficient

P values were used to determine significance of individual variables. P values less than 0.05 implied significance of the variables. An Analysis of Variance (ANOVA) was conducted at 5% level of significance. The value of F critical was compared with the calculated F to determine the overall significance of the model.

Results and Discussions

Table 1 below presents the descriptive statistics for all the variables. It shows the number of observation for all the variables, their arithmetic mean values and their standard deviation. It also shows the minimum and maximum values.

Table 1: Descriptive Statistics

	Min	Max	Mean	Std. Deviation
External Public Debt (ratio)	19.2	383.72	10.025	.030
Inflation (%)	-0.3	15.4	9.146	.199
Interest Rate (%)	-9,75	22.38	12.52	1.891
Economic Growth (%)	0.2	13.2	5.48	.471

From Table 1 indicates that on average countries in East Africa had external debts to GDP of 10.025%, annual inflation of 9.146%, interest rates of 12.52% and economic growth of 5.48%.

Diagnostic Tests

The statistical methods applied assumed that variables were normally distributed. Multivariate statistics were adopted with the assumption that the combination of variables follows a multivariate normal distribution. Since there was direct test for multivariate normality, the study tested each variable individually and assumed that they are multivariate normal if they are individually normal. Normality test were undertaken and the results were as shown in the table 2 below.

Normality Test

Normality test was detected using Skewness and Kurtosis as shown in Table 2.

Table 2: Normality Test

	N	Skewness		Kurtosis	
	Statistic	Statistic	Std. Error	Statistic	Std. Error
External Public Debt	90	.505	.174	.819	.346
Inflation	90	.441	.174	.202	.346
Interest Rate	90	.295	.174	.901	.346
Economic Growth	90	.091	.174	.357	.346

Table 2 indicates that values of Skewness and Kurtosis of the data that was used in the study. From the findings, all variables had Skewness and Kurtosis values within the range of +2 or -2. This shows that the data set was normally distributed and thus was not in violation of the regression assumptions.

Multicollinearity Test

Multicollinearity test sought to determine whether variables were correlated with each other as shown in Table 3.

Table 3: Multicollinearity Test

	Collinearity Statistics	
	Tolerance	VIF
External Public Debt	.871	1.147
Inflation	.337	2.967
Interest Rate	.712	1.404
Economic Growth	.267	3.775

The findings in Table 3 indicate that all the study variables had VIF values within the range of 1-10. This infers that there was no multicollinearity in the data set and therefore it was suitable for regression analysis.

Autocorrelation Test

Autocorrelation was tested by use of Durbin Watson Statistics as shown in Table 4.

Table 4: Autocorrelation Test

Model	Durbin-Watson
1	1.546

Source, Research Data (2018)

Table 4.4 indicates the value of autocorrelation as 1.546. This shows that the data set had no serial correlation and thus it was suitable for carrying out regression analysis.

Regression Results

To establish how external debts influenced economic growth of individual member countries of EAC, the researcher conducted regression analysis. The findings are shown in subsequent sections.

Regression for Kenya

The findings of regression analysis on how external debt influences economic growth of Kenya are summarized in Table 5.

Table 5: Regression for Kenya

	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	7.083	1.867		3.795	.000
External Public Debt	1.190	.079	.812	15.091	.000
Inflation	.786	.086	1.114	9.136	.000
Interest Rate	.466	.118	.758	3.943	.000
R=.812[a]	**R^2=.659**	**Adj. R^2=.656**	**F=227.740**	**Sig=.000**	**d.f=3, 14**

The coefficient of determination R square from Table 5 is 0.659. This shows that 65.9% change in economic growth in Kenya is explained by its external debt. The p values for external debt p= 0.000 is less than 0.05. This thus infers that external debts have significant influence on economic growth of Kenya.

Regression for Uganda

The findings of how external debts influence economic growth of Uganda are shown in Table 6.

Table 6: Regression for Uganda

	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	9.199	2.489		3.696	.000
External Public Debt	1.307	.108	.745	12.144	.000
Inflation	.029	.003	.367	8.619	.000
Interest Rate	.019	.003	.245	6.426	.000
R=.745[a]	**R^2=.556**	**Adj. R^2=.552**	**F=147.469**	**Sig=.000**	**d.f=3, 14**

From Table 6 above, 55.6% change in economic growth in Uganda is explained by its external debts. The p value p=0.000 indicates that external debts has significant influence on economic growth of Uganda. Inflation and interest rate were significant control variables in the relationship between external debts and economic growth. This is because their p values are 0.000 and 0.000 respectively which are less than 0.05.

Regression for Tanzania

The regression results of how external debts influence economic growth of Tanzania are shown in Table 7.

Table 7: Regression for Tanzania

	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**T**	**Sig.**
(Constant)	.414	.183		2.260	.025
External Public Debt	.133	.009	.915	14.926	.000
Inflation	.461	.101	.311	4.561	.000
Interest Rate	.304	.089	.625	3.422	.001
R=.875	**R^2=.766**	**Adj. R^2=.761**	**F =162.985**	**d.f=3, 14**	**Sig=.000**

The results in Table 4.7 indicate that 76.1% change in economic growth of Tanzania is explained by the level of external debts. The p value was 0.000 showing that external debts significantly influenced economic growth. Inflation and interest rate were significant control variables in the relationship between external debts and economic growth. This is because their p values are 0.000 and 0.000 respectively which are less than 0.05.

Regression for Rwanda

The regression results for Rwanda are shown in Table 8.

Table 8: Regression for Rwanda

	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**T**	**Sig.**
(Constant)	3.232	.345		9.375	.000
External Public Debt	.184	.009	1.263	19.707	.000
Inflation	2.347	.223	1.583	10.514	.000
Interest Rate	.663	.080	.844	8.250	.000
R=.914	**R^2=.835**	**Adj. R^2=.831**	**F=201.120**	**d.f=3, 14**	**Sig=.000**

From the findings in Table 8 above, 83.1% change in economic growth of Rwanda is explained by its external debt level. The p value was 0.000 which is less than 0.05 and thus external debt had significant influence on economic growth of Rwanda. Inflation and interest rate were significant control variables in the relationship between external debts and economic growth. This is because their p values are 0.000 and 0.000 respectively which are less than 0.05.

Regression for Burundi

The findings of regression analysis on the influence of external growth on economic growth of Burundi are shown in Table 9.

Table 4.9: Regression for Burundi

	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	11.611	2.492		4.660	.000
External Public Debt	1.241	.095	.770	13.097	.000
Inflation	.255	.076	.235	3.365	.001
Interest Rate	.160	.062	.111	2.574	.011
R=.770	**R^2=.592**	**Adj. R^2=.589**	**F=171.544**	**Sig=.000**	**d.f=3, 14**

From Table 9, the coefficientof determination is 0.592 which indicates that 59.2% change in economic growth of Burundi is explained by its external debt. Inflation and interest rate were significant control variables in the relationship between external debts and economic growth. This is because their p values are 0.000 and 0.000 respectively which are less than 0.05.

Overall Regression Findings for EAC Members

The regression findings of the overall effect of external debts on all EAC member countries are shown in Table 4.10.

Table 10: Overall Regression Findings for EAC Members

	Unstandardized Coefficients		Standardized Coefficients		
	B	**Std. Error**	**Beta**	**t**	**Sig.**
(Constant)	2.413	1.608		1.501	.136
External Public Debt	.895	.061	.803	14.640	.000
Inflation	.466	.118	.758	3.943	.000
Interest Rate	.635	.219	.768	2.905	.006
R=.803[a]	**R^2=.645**	**Adj. R^2=.642**	**F=214.338**	**Sig=.000**	**d.f=3, 86**

As shown in Table 10, 64.5% change in economic growth in East Africa Community is explained by the external debts of the member states. Inflation and interest rate were significant control variables in the relationship between external debts and economic growth. This is because their p values are 0.000 and 0.000 respectively which are less than 0.05.

Discussion of Results

From regression analysis at individual country level, the study revealed that 65.9% change in economic growth of Kenya is explained by its external debt. The p value p=0.000 which is less than 0.05. The finding is in line with Bal and Rath (2014) who examined a link between public debt and economic growth and revealed that in the long run, public debts affect economic growth.

In Uganda, 55.6% change in economic growth is explained by its external debts. The p value was 0.000 which is less than 0.05. The finding contradicts with Kobey (2016) whoexamined the effect of public debt on economic growth and established that inflation,

public debts and unemployment negatively affected economic growth, but not significant as indicators of economic growth.

In Tanzania, 76.1% change in economic growth is explained by the level of external debts. The p value p=0.000 which is less than 0.05. The findings contradict with Essien, Agboegbulem, Mba and Onumonu (2016) who assessed how public debts affected economic growth and revealed that the level of domestic and external debts did not significantly affect the output and the general level of prices over the study period.

For Rwanda, the study revealed that 83.1% change in economic growth is explained by its external debt level. The p value was 0.000 which is lower than 0.05. The finding is inconsistent with Ntshakala (2015) who sought to determine how public debt affected economic growth and noted that external debt in Swaziland does not significantly influence economic growth.

With regard to Burundi, 59.2% change in economic growth is explained by its external debt. The p value was 0.000 which is less than 0.05. The finding is in line with Mweni (2014) who critically examined how external debts influenced economic growth and noted that external debts had negative and positive effect on economic growth. Mukui (2013) also assessed how external debts affected economic growth and noted that external debts and debt servicing had negative and significant relationship with economic growth

In general, external debts had most influence on economic growth of Rwanda followed by Tanzania, Kenya, Burundi and lastly Uganda. The finding is in line with IMF (2013) that showed that economy of Kenya grew by 5% over the period 2003-2013 which is much lower as compared to Uganda's growth of 7%, Tanzania's growth of 7%, Rwanda's growth of 7.1% and EAC average growth of 5.9% over the same period.

Summary of the Findings

The aim of the study was to determine the effect of external public debts on economic growth of EAC. The study was informed by the Debt Overhang Theory, Keynesian Model and the Ricardo Theory of Public Debt. The study adopted a descriptive design with a population of six-member states of EAC. Data was collected from secondary sources covering a period from 2000 all through to 2017. Out of the six-member states of EAC, data was readily available from 5 countries.

Diagnostic tests were conducted on the data before analysis started. Normality was tested by use of Skewness and Kurtosis. From the findings, the established values were within the prescribed threshold implying that the data set was normally distributed. The VIF values during the test for multicollinearity were within the stipulated thresholds showing that the data set had no multicollinearity. The test for autocorrelation also yielded conclusive findings that there was no serial correlation in the dataset.

The descriptive statistics were conducted that included mean and standard deviations. From the findings, all member states of EAC on average had accumulated a significant level of external debts coupled with some inflationary pressure and relatively higher lower interest rates on lending. The economic growth of EAC on average however was impressive. This could imply that despite accumulation of large amount of external debts by EAC members, economic growth has been stable.

From regression analysis at individual country level, the study revealed that 65.9% change in economic growth of Kenya is explained by its external debt. The p value

p=0.000 which is less than 0.05. In Uganda, 55.6% change in economic growth is explained by its external debts. The p value was 0.000 which is less than 0.05. In Tanzania, 76.1% change in economic growth is explained by the level of external debts. The p value p=0.000 which is less than 0.05. For Rwanda, the study revealed that 83.1% change in economic growth is explained by its external debt level. The p value was 0.000 which is lower than 0.05. With regard to Burundi, 59.2% change in economic growth is explained by its external debt. The p value was 0.000 which is less than 0.05. On overall, 64.5% change in economic growth in East Africa Community is explained by the external debts of the member states. The p value p=0.000 which is less than 0.05. This shows that external debt significantly influenced economic growth of the EAC.

Conclusions

The study concludes that external debt significantly influenced economic growth of Kenya as a country. Ntshakala (2015) sought to determine how public debt affected economic growth and noted that external debt in Swaziland does not significantly influence economic growth unlike domestic debt that positively and significantly influenced economic growth. It was established that external debts significantly influenced economic growth of Uganda, Tanzania, Rwanda and Burundi. Jibran, Ali Hayat and Iqbal (2016) assessed how public debt affected economic growth. From the findings, external debts had an inverse and significant effect on Gross National Product and Gross National Product on short run and long run. In general, external debts had most influence on economic growth of Rwanda followed by Tanzania, Kenya, Burundi and lastly Uganda. On overall, a significant change in economic growth in East Africa Community is explained by the external debts of the member states. External debt significantly influenced economic growth of the EAC.

Recommendations

The study recommends that the National treasuries of member states of EAC should carefully consider increasing the level of their external debts based on their ability to service and the overall capacity. This is because a rise in external debt would significantly result into economic growth. Member countries of EAC should also have clearly established threshold of a rise in level of external beyond which an alarm should be raised to signal danger. This will act as a check and balance on the level of external debt so that it does not rise to an unsustainable level. It is recommended that the member countries of EAC should borrow external debts for the purpose of economic growth. However, borrowing the debt with the aim of repaying another debt or for recurrent expenditure would not significantly influence economic growth of a country. For economic growth of a recipient country, prudent spending should be put in place.

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