EFFECT OF GOVERNMENT BORROWING ON ECONOMIC GROWTH OF RWANDA: A CASE STUDY OF NATIONAL BANK OF RWANDA

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Abstract: The main objective of this study was to assess the impact of government borrowing on economic growth in Rwanda. It adopted descriptive research design. The population of this study was the statistics from the National bank of Rwanda on government borrowing which will lead to indicative data such as the percentage of deficit to overall budget, percentage of borrowing relative to Gross Domestic Product. In this study secondary data were collected on government of Rwanda borrowing and economic growth between 2008 to 2016 and mainly focused on the government of Rwanda as the target population. Other fundamental information for the study included the treasury bills and notes, treasury bonds, National Bank overdrafts, direct borrowing and the general national debt that were measured semi-annually in a time series trend analysis for a period of nine year from 2008 to 2016. Collected data were collocated by use of descriptive statistics by mostly trend analysis features such as distribution tables and percentages and spread graphs between the variables in view of explicitly broadcasting the trends. The method of data analysis was simple regression model. In the effort to achieve that the researcher used the following model to guide the researcher through the analytical model as below: $Y = a + BX1 + BX2 + BX3 + E$ where Y = dependent variable which is the economic growth of Rwanda. It measured absolute values and as a percentage to GDP, a = the constant term, BX1 = Treasury bills and notes which were measured by absolute values, BX2 = Treasury bonds was also measured by absolute values, BX3 = National bank overdrafts which was also measured in absolute values and E = the error term in the regression model. The study concluded that government borrowing positively related to economic growth in Rwanda. This implied that an increase in government borrowing affected positively in Rwanda. When a country borrows more to invest capital projects it is more likely to affect its economic growth in short run. The regression model used in this study was statistically significant explaining the effect of government borrowing on economic growth of Rwanda.

The study finally concluded that treasury bills, bonds and national bank overdrafts contributed positively to economic growth, this implied that an increase in government borrowing led to a decrease in economic growth. It was also concluded that an increase in government borrowing might impact negatively on economic growth and the private sector lack alternative source of financing. Government borrowing was found to have a positive relationship with economic growth. This implies that an increase in domestic government borrowing leads to a significant reduction in resources in the private sector which might be exposed to more taxes to pay interest on debt. This highly discourages private investments and impacts seriously economic growth. It is however important for the government to find an optimal level of debt which promotes both the private investments and economic growth. The researcher recommends that the government of Rwanda should find ways of increasing alternative sources of financing to both the government and the private sector so as to steer further its economic growth. This is also supported by the findings of this study which has proved that an increase in government borrowing results into a corresponding increase of economic growth. The government should also look for alternative means of raising revenues other than use of debt either internally or externally.

Keywords: Government borrowing Treasury bills and notes, Treasury bonds, national bank overdraft, economic growth.

1. INTRODUCTION

Worldwide, the current status is that borrowing by government is on a rapid rise, for example in United Kingdom, according to UK debt analysis statistics report of 2016, in 2015, the UK national debt was less than 0.5 trillion pounds, after the infamous 2008 financial crisis, the national debt increased rapidly and surpassed one trillion pound mark in 2011. At the end of the 2015-2016 fiscal years, the 1.5 trillion pounds was eventually eclipsed. The trends holds in currently most countries in the world including in countries of very stable economies like the United States of America whose debt is just over USD 20 trillion up from 18 trillion by the end of fiscal year 2016 (National Debt Analysis Report,2016). It is clear that not only in the developing countries but also in developed nations; policy makers often face complex situations when figuring out on how to manage revenues and economy.

Mostly, government expends money and resources on several fronts ranging from public sector, capital expenditure, social welfare. Susan (2013) noted that in order to finance expenditure, governments rely on taxes and other revenues while tax is the major source of revenue to a government, they are notoriously unpopular. For this reason government run frequently on deficits when the tax revenues raised from its citizens are less than the intended budget amount In that case the government will have three options; first is tax increase which bears the risk of investors being whiffed away, small ventures being pushed out of business and the economy being driven into recession. Secondly, expenditure budget being reduced; this may to lowering of the living standards, a spike in unemployment rate retarded growth forecast and thirdly, a government has the option to borrow from investors who are willing to lend. Susan (2013) further notes that the third choice is the most convenient politically and is reasonably a sound economic choice because the alternatives have dire economic consequences. He continues to discuss that governments should after all borrow more than what they need to feed the deficit in order to take in extra funds to stimulate the economy. Borrowing is the best alternative as long as a government exhibits no default risk (Susan, 2013).

Briefly, government borrowing leads to piling up of resources to the public leaving private sector with the smaller amount of resources. This is commonly referred to a crowding out of private investment (Majumder, 2007). Foyed (2008) explains a crowding out in the context of developed economies, narrows down to impact of borrowing by government on the interest rate equilibrium to which the effect spill over to the private sector in their quest of acquiring credit and the ultimate cost of credit. The results to informative outcomes especially when the financial industry and more so banking sector becomes free and the interest rates are determined by equilibrium market. Fayed (2008) notes that empirical evidence however shows equilibrium interest rate is faintly related to government borrowing. This relation further weakens in developing countries where financial industry mostly the bank sector has from time witnessed government interventions with Rwanda serving as a current example where the interest rates are mentioned by the National Bank of Rwanda.

2. STATEMENT OF THE PROBLEM

Data from the National Bank of Rwanda (2009) showed that the country's budget deficit was on rise and overtime the deficit has been financed through both domestic and foreign borrowing. The government has witnessed budget deficit inclusive of grants. The budget deficit has been financed by both foreign and domestic borrowing. The report of National bank of Rwanda (2015) reported that while economic growth has fallen, banks have significantly increased their lending to government. Credits to government grew by 5.7 percent on annual basis at the end of June 2016. Empirical studies carried out on the emerging and developing economies have shown the existence of significant crowding out of effect of borrowing by the government from the credit in private sector and banking sector domestically. These studies include Farazi et al (2008) who used panel data from twenty five developing countries, others include Serven (2003), Emran (2007), Gale and Orszag (2004). Other factors that bring in some weight in the intricate balance between government borrowing and credit available to the private sector according to Subika (2008) include interventions by the governments to which are at times very extensive and the interest rates that are often set by the central banks especially of developing countries (Subika,2008).

Arstide (2013) highlighted the importance of credit to private sector especially in developing countries like Rwanda and the need to appreciate the balance between borrowing by governments and provision of credit to the private sector. Gonzalves (2015) gathered that there is some significant evidence as he showed some evidence of co-movement between growth of credit by the government and credit to the private sector as a percentage to the Gross Domestic Product in Rwanda. Despite several researches by a number of scholars in determining the effect of government borrowing on

private sector growth, there is no consensus at the relationship between the them either positive or negative relationship, therefore this research seeks to assess the impact of government borrowing on economic growth in Rwanda.

3. RESEARCH OBJECTIVES

3.1 General Objective

The general objective of this study was to assess the effect of government borrowing on economic growth of Rwanda

3.2 Specific Objectives

 i.   To establish the effect of treasury bills and notes on economic growth of Rwanda

 ii. To determine the extent to which treasury bonds affects economic growth of Rwanda

iii. To measure the effect of National bank overdraft on economic growth of Rwanda

4. CONCEPTUAL FRAMEWORK

Research design

This study adopted descriptive research design researcher adopted descriptive.

Target population

A population is described as a set of data that includes all items with the characteristics one wish to understand (Mugenda, 2008). The population of this study was the statistics from the National bank of Rwanda on government borrowing which led to indicative data such as the percentage of deficit to overall budget, percentage of borrowing relative to Gross Domestic Product (GDP), and ultimately private sector borrowing relative to GDP.

Data collection instruments

In this study secondary data were collected on government of Rwanda borrowing and economic growth between 2008 to 2016 and mainly focused on the government of Rwanda as the target population. Other fundamental information for the study included the treasury bills and notes, treasury bonds, National Bank overdrafts, direct borrowing and the general national debt that were measured semi-annually in a time series trend analysis for a period of nine years from 2008 to 2016. Data were collected using a data collection schedule.

Data processing and analysis

In this study; the method of data analysis was simple regression model. In the effort to achieve that the researcher used the following model to guide the researcher through the analytical model as below: $Y = a + BX_1 + BX_2 + BX_3 + E$ where Y = dependent variable which is the economic growth in Rwanda. It measured absolute values and as a percentage to GDP, a = the constant term, BX_1 = Treasury bills and notes which were measured by absolute values, BX_2 = Treasury bonds will also be measured by absolute values, BX_3 = National bank overdrafts which also was measured in absolute values and E = the error term in the regression model.

5.   RESEARCH FINDINGS AND DISCUSSION

5.1 Descriptive Statistics

Descriptive statistics has been used to give a summary of the results in form of mean, standard deviation, minimum and maximum values in the period of study (2008-2016). It shows a trend analysis of how the variables performed over the period of study. The findings are presented in Table1 here below:

Table 1: Descriptive Statistics

	Minimum	Maximum	Mean	Std Dev	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Economic Growth	5	6	5.43	.504	.305	.441	-2.060	.858
Treasury bills	5	6	5.96	.189	-5.292	.441	28.000	.858
Treasury bonds	6	7	6.21	.418	1.473	.441	.176	.858
Overdraft at National bank	4	9	5.04	.838	3.995	.441	20.122	.858

Source: Research Findings (2018)

The findings in Table1 demonstrated that the minimum value was 4 while the maximum was 9 within the study period of 2008-2016. Amount on bonds decreased gradually from 2008 to 2016. The findings revealed that economic growth increased over the study period, however; there was a rapid increase in government borrowing. This was the highest percentage in the study period. This implies that Rwanda's economic growth largely depended on debt to finance its capital projects. Treasury bills, bonds and national bank overdraft have been increasing over the years however the rate of increase of government borrowing has surpassed that the private sector borrowing. This implied that the public investments were performing poorly. Bonds increased rapidly in the study period which was an indication the government borrowing positively affected the economic growth of Rwanda.

5.2 Pearson's Product Moment Correlation Coefficient

The study conducted a Pearson's correlation coefficient to determine the association between the variables. The correlation scale is defined as follows: values between 0.0 to 0.3 indicate that there is no correlation, between 0.31 to 0.5 shows a weak correlation, between 0.51 to 0.7 shows a moderate correlation and between 0.71 to 1.0 indicates that there is strong correlation between the variables of the study.

Table 2: Pearson's Correlation Coefficient Economic Growth

	Economic Growth	Treasury bills	Bonds	National Bank Overdraft
Economic Growth	1			
Treasury bills	.305	1		
Bonds	-,192	.542**	1	
National bank overdraft	-,906**	-,359*	.088	1

Source: Research Findings (2018)

Table 3: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.723[a]	.834	.731	0.481

a. Predictors: (Constant), Overdraft at National Bank Treasury bills, Bonds

The coefficient of determination was .834 this implied this implied that government borrowing only explained 83 percent of the variability in economic growth of Rwanda. This is an indication that the model was significant.

Table 4: ANOVA^a

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	1.143	3	.381	1.644	.199^b
Residual	7.413	32	.232		
Total	8.556	35			

a. Dependent Variable: Economic growth

b. Predictors (Constant), Overdraft at National Bank, Treasury Bills, Bonds

The regression model was statistically significant since the probability value .000>5 percent which means that the model is statistically significant. These findings are consistent with the hypothesis of this study which predicted a statistically significant between government borrowing and economic growth of Rwanda.

Table 5: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	7.502	3.985		1.883	.069
Treasury Bills	-.564	.528	-.190	-.068	.293
Bonds	.058	.233	.044	.248	.806
Overdraft at National Bank	.182	.101	.297	1.804	.081

a. Dependent Variable: Economic growth

The regression model for this study is as follows: Economic growth = $7.502 - .564x_1 - 0.058x_2 - 0.182 + \mathcal{E}$.

National bank overdraft, treasury bills and bonds had a positive relationship with economic growth of Rwanda. This implied that a unit increase in these variables would result in a corresponding increase of economic growth in Rwanda. On the other hand, all the components of government borrowing had a significant positive relationship with economic growth of Rwanda. This implied that a unit increase in these variables resulting into a corresponding increase in economic growth of Rwanda. The findings revealed that all the variables under investigation (treasury bills, bonds and National bank overdraft) were statistically significant in explaining the effect of government borrowing on economic growth of Rwanda. This is because their p-values were above 5 percent as follows: .980, .371, 0.974 and .974 respectively. This conforms to the hypothesis of this study which had predicted a positive relationship between government borrowing and economic growth of Rwanda.

5.3 Discussion of Findings

The findings revealed economic growth increased over the period of 2008-2016 however; there was a rapid increase of government borrowing. This was the highest percentage in the study period. This implied that Rwanda's economy largely dependent on debt to finance its capital projects. Treasury bills, bonds and national bank overdrafts have been increasing over the years however the rate of increase of government borrowing has surpassed that of the economic growth. This implied that the public investments were poorly performing. Bonds increased rapidly in the study period which was an indication that government borrowing impacted positively on the economic growth in Rwanda. The rate of amount borrowed using bonds as a debt instrument fluctuated over the study period. The government borrowing rose steadily as at 2016. This rate of borrowing was significantly high and was attributed to economic growth of Rwanda. The correlation analysis found that there was correlation between economic growth and treasury bills, central bank overdraft and bonds. The correlation scores were as follows: +0.991, +0.991 and +0.991 respectively. These findings are in with the study of Gerald et al 2015 in their study that intended to investigate the nexus of domestic bank lending to the Rwandan government and private sector growth taking into consideration the fiscal deficit environment characteristic of government debt accumulation.

The uniqueness of this study was to understand the depth at which borrowing by government crowds out (in) economic growth after significant changes in fiscal regimes from. Markov switching model was used to identify fiscal policy regimes. The study established that fiscal policy regimes are key in explaining the relationship government debt-private sector credit. There was evidence that persistence increase in government debt crowds out private sector credit. The study recommended prudential management of fiscal policy which is fundamental in managing government domestic borrowing. Ndemeye (2016) aimed at determining the effect of borrowing by the government of Rwanda on Rwandan economy. He noted that overreliance by the government on public debt aide and grants as source of funds by the government which led up to build up on the level of public debt. The adopted hypothesis and theories include overhang hypothesis and theories include overhang hypothesis and the crowding out theory. Using the time series analysis, the study found out that public (government) borrowing lead to high cost of borrowing and crowding out the private sector.

Peter (2015) sought to determine the contribution by Small and Medium Enterprises and their alternatives in sourcing of funds. The study found out that high interest rates that are heavily controlled by the national bank or through actions of the government acted as major hindrance to SMEs accessing alternatives financing. This consequently led for call to the government through its agencies to strive in creating an enabling environment. This evident in the findings of this paper as the private sector credit level went up but not at the rate of the government borrowing through the treasury bills, bonds and National bank overdraft. The regression results found that the coefficient of determination explained 83.4 percent of the variability in private sector credit. The linear regression model adopted for this study was statistically significant because the probability value was .000>5. These findings are consistent with hypothesis of this study which predicted a statistically significant relationship between government borrowing and economic growth in Rwanda. These findings are also consistent with a study by Moki who concluded that the regression model was statistically significant. National debt, interest rates, inflation, net exports and consumption were statistically significant in explaining the effect of national debt on economic growth in Rwanda. Likewise to this model the findings show that the regression model was statistically significant. This is because their p-values were above 5 percent as follows: .980, .371, .091, .974 and .974 respectively. These findings are consistent with Muinga who concluded that net exports and consumption were statistically significant in explaining the effect of public debt and economic growth.

6. CONCLUSIONS

According to the interpretation of collected and analyzed data during the course of this study; the researcher came up with the following conclusions:

The study concluded that government borrowing positively related to economic growth in Rwanda. This implied that an increase in government borrowing affected positively in Rwanda. When a country borrows more to invest capital projects it is more likely to affect its economic growth in short run. The regression model used in this study was statistically significant explaining the effect of government borrowing on economic growth of Rwanda.

The study finally concluded that treasury bills, bonds and national bank overdrafts contributed positively to economic growth, this implied that an increase in government borrowing led to a decrease in economic growth. It was also concluded that an increase in government borrowing might impact negatively on economic growth and the private sector lack alternative source of financing.

7. RECOMMENDATIONS

Government borrowing was found to have a positive relationship with economic growth. This implies that an increase in domestic government borrowing leads to a significant reduction in resources in the private sector which might be exposed to more taxes to pay interest on debt. This highly discourages private investments and impacts seriously economic growth. It is however important for the government to find an optimal level of debt which promotes both the private investments and economic growth.

The researcher recommended that the government of Rwanda should find ways of increasing alternative sources of financing to both the government and the private sector so as to steer further its economic growth. This is also supported by the findings of this study which has proved that an increase in government borrowing results into a corresponding increase of economic growth. The government should also look for alternative means of raising revenues other than use of debt either internally or externally. The country should raise adequate revenues through taxes, treasury bills and bonds and privatization to mitigate national debt and borrowing in order to boost economic growth.

The study recommends that Rwanda needs to adopt and implement strategies to reduce debt, stock and problems associated with debt service. The government should lay more focus on debt management profile particularly for its expenditure items. This can be achieved by putting borrowed into productive projects and programs which will boost economic growth. Since the study concluded that there exists a negative relationship between government borrowing and private sector credit. The study therefore recommends that the government should set policies that create a platform for increased avenues to raise finances to finance capital projects like construction of roads and other infrastructural development projects that require a huge capital investment.

8. AREAS FOR FURTHER STUDIES

The study was conducted within a limited time and scope. This however necessitated the need to study a period of more than nine years only. It would have been appropriate to conduct the study for a period of more than nine years in order to obtain more detailed and conclusive results that can be used to make generalization in another middle income like Rwanda that is similar in terms of size, economic power and demographics. A comparative study should be conducted to include countries in East Africa that are similar in terms of size. This will increase the scope of the study and provide room for more accurate and reliable results.

REFERENCES

[1] Achieng, J. (2012). *The relationship between government budget deficit and domestic debt in Kenya.* An empirical investigation. *Unpublished MSC Project*, University of Nairobi,School of Business.

[2] Anyanwu, A. (2016). *Government Domestic Debt, Private Sector Growth and Economic Growth in Oil-Dependent Countries*; A dynamic panel data analysis, economics thesis Christchurch, Newzaland.

[3] Bivens, J. (2010). *Government Debt and Economic Growth; Overreaching Claims of Debt "Threshold* "Suffer from Theoretical and Empirical Flaws

[4] Buchana. M. (2009). *"Principles of Public Debt: A defense and Restatement"* source htpp://www.econlib.org/buchana Cv2c2html.

[5] Hofman, B. (2001). *The determinants of economic growth in industrialized countries: do property prices matter? Bank of Interior Settlements, Monetary and Economic department*, BIS Working Paper No. 108 Information, Press & Library Services CH-4002 Basel, Switzerland

[6] Erzen, S. (2008). The determinants of financial development and economic growth: Evidence From panel data, *Finance Journal 5-8*

[7] Emran, M., & Farazi, S.,(2009). *Lazy Banks?* Government borrowing and private credit in developing countries, *Institute for International Economic Policy Working Paper Series No. 2009-9*

[8] Emma, S.M and Farazi, S. (2008). Government Borrowing and private Credit: Evidence from Developing Countries. *Working Journal of Finance 1-4*

[9] Erick, K. (2014). *The relationship between Alternative Sources of Finance and Financial performance of Small and Medium Enterprises in Nairobi County*. An Empirical Investigation. University of Nairobi, School of Business

[10] Fase, M. (1995). "*The demand for commercial bank loans and lending rates",* European Economic Review, vol 39, 99-111.

[11] Fayed. F (2013). Crowding Out Effect of Public Borrowing: The Case of Egypt, *International Research Journal of Finance and Economic Issue 107.*

[12] Orsag,Z (2004). "*Budget Deficits, National Savings and Interest Rates". Brookings Papers on Economic Activity, Volume2.*

[13] Giovani, D & Robert Marquez (2006). Lending Booms and Lending Standards. *Journal of Finance, Vol, 61 issue 5: 2511-2546.*

[14] Kamaly and Shetta S. (2014). Does the budget Deficit Crowd-Out Private Credit from Banking Sector? The case of Egypt. *Topic in Middle Eastern and African Economies, Vol 16, No.2 pg (13-16).*

[15] King'wara (2014), "The Impact of Domestic Debt on Private Investment in Kenya" *Journal of Country studies ISSN 2224-0565:* Vol, No 22(2014).

[16] Mukambi s, Muhindi R & Nduku, G (2017). *Influence of Bank Lending to the Government on/ Economic growth in Kenya: A Fiscal Deficit Specification,* KBA Centre for Research on Financial Markets on Policy working Paper Series 1-9

[17] Ngugi, W (2016). *Effect of Public Debt on Economic Growth in Kenya. An Empirical Investigation.* Unpublished MBA Project. University of Nairobi School of Business

[18] Samimi A, Nademi Y, Ghaderi S(2012*). Inflation and Inflation Tax in Developing Countries*: A Panel Threshold A pproach 27-28

[19] Shijaku G & Kalluci (2013). *Determinants of Bank Credit to the Private Sector. The case of Albania.* Credit to the Pivate Sector, VECM 8-9

[20] Seater, J. (2005). Does Government Debt Mattaer? Journal of Monetary Economics North- Holland Vol 16 pg 11 North Carolina State University, Raleigh NC27695 USA.

[21] World Bank (2012). *Global Financial Development Report; Rethinking the role of the State in Finance.* World Bank, Washington DC pg 63-66