

An Evaluation of the Effect of Domestic Debt and External Debt on Economic Growth in Kenya

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Abstract

During the period 1963 to 2008, Kenya's economy went through cyclical booms and depressions. As a result, the Kenyan government turned to external and domestic borrowing to finance the budget deficits. However, this has negatively affected the country - leading to high dependency ratio as compared to the previous years. Therefore, this study assessed the effects of domestic borrowing and external borrowing on economic growth in Kenya for the period between 1988 and 2019. The study was anchored on the Keynesian theory of economic growth and the dynamic theory of public spending. Autoregressive Distributed Lag (ARDL) model was used to analyze data, with the aid of SPSS and STATA. The findings of the study show that 1% increase in domestic debt causes a 1.25 % decline in Kenya's economic growth while a 1% increase in external debt causes a 1.10 % decline in Kenya's economic growth. Results also revealed that there exists a significant inverse short-term relationship between economic growth and domestic debt. These results imply that both domestic debt stock and external debt stock are significantly correlated with Kenya's economic growth. It is recommended that proper debt management need to be done to contain increases in debt level in order to ensure a steady economic growth in Kenya.

Keywords: *Domestic debt, external debt, economic growth*

Introduction

The public debt has been a universal problem on most economies, and Kenya is not left out. Theoretical analysis on how public debt affects economic growth and financial development has been well documented in the preceding research studies. However, its impact is still under investigation. This paper takes a look of how public debt impacts economic growth in Kenya by considering key factors which are government expenditure, national savings and government revenue as proposed by Hill (2010). Public debt is a serious problem that can affect the financial development of any country. It affects the economy in terms of capital and resource allocation, activity levels, inflation and balance of payments.

During the period 1963 to 2008, Kenya's economy went through cyclical booms and depressions. As a result, the Kenyan government turned to external and domestic borrowing to finance the budget deficits. However, this has negatively affected the country for instance leading to high dependency ratio as compared to the previous years.

The Kenyan government debt is rising at a very fast rate and the nation's debt to GDP ratio has gradually been increasing from the average of 28% during the period 1992-1996 to a high of 49% in 2014 (Central Bank of Kenya, 2017).

The IMF recommends that proportion of communal dues to GDP should not exceed 40 percent for developing economies. However, with the country's domestic debt to GDP ratio of 56.2 percent in 2018 against 42.8 percent in 2008, the country is overwhelmed by huge external debt that has seen its creditworthiness questioned by various financial institutions and analysts (Majune, et al., 2019). Compared to Africa's largest developing economies especially South Africa and Nigeria, Kenya appears to be doing badly off, with statistics showing that South Africa's dues to the ration in GDP was 53.1 percent in 2017 while Nigeria had 21.3 percent debt to GDP ratio in 2017 as recorded by World Bank (2019).

This rising trend in public debt has been associated with difficulties faced by Kenya's economy. Hence, there is need for further elaborate research study on the impact of public debt on economic growth in Kenya in order to have insights that can drive policy formulation so as to avoid falling into the pit falls that many other countries have gone through. Therefore, this study assessed the effects of domestic borrowing and external borrowing on economic growth in Kenya for the period between 1988 and 2019.

Literature Review

The Keynesian economic growth theory and the dynamic theory of public spending, tax and debt are the main economic growth models used by political leaders and economists. Keynes argued that aggregate demand 'the total amount of money spent by consumers, businesses and governments on products and services' determined the level of economic activity and full employment. According to his theory, Keynes, (1936) posits that the government must chip in and perform a key part in deciding public spending levels, so as to stabilize monetary conditions by raising or lowering taxes and/or increasing or decreasing government spending. Keynes had a different take on how the economy works. He believed that the low income and high unemployment that characterize economic downturns are caused by low aggregate demand. In other words, if people don't have enough money to buy things, then businesses will not invest or hire new workers. In classical theory, aggregate supply alone determines national income (Metwally & Tamaschke, 1994). Keynesian economics assumes that if the aggregate demand is low and output sucks, the government should pump money into the economy by deficit spending. The theory states that this will increase investment in capital goods, machinery and create employment for unemployed resources. As a result, the multiplier effects kick in and increase output (Barro,1989).

Public spending under a dynamic theory is anchored on the fiscal policy and tax smoothing approach by Barro (1979). This theory was first proposed by Richard Musgrave in 1959 and developed further by William Vickrey in 1965 and the first reference to it can be found in the book: *Site Analysis for Economic Efficiency* by Vickrey (1965) is a theory that explains the relationship between fiscal policies such as policy on public spending and taxation, the economy and financial cycle. A fiscal policy measures government spending and tax rate which is set to target inflation rates or economic growth (Barro, 1979).

According to the notion, governments frequently employ budget surpluses and deficits as a safety net to stop tax rates from varying too much. Because of this, governments commonly run deficits during periods of high spending and surpluses during periods of low spending. One key characteristic of the dynamic theory of public spending is that governments tend to apply economical excesses and shortages to act as barrier to avoid tax levels from fluctuating too sharply. Most states and countries in the world incur discrepancies during seasons of great and high expenditure and surpluses when the expenses are low. An economic theory that illustrates the connection between government expenditure and taxation is called the Dynamic Theory of Public Spending, Tax, and Debt, taxes and the extent of government debt. This theory is highly

relevant to studies in the field of public finance, as it considers how government spending affects tax revenues and economic growth.

This approach majorly focuses on the way that public spending, tax and debt affect growth in income and output and the standard of living. The book uses a simple model but incorporates key features such as endogenous growth and externalities. The theory is developed to show how an increase in public spending may be desirable at one stage of economic development but harmful at another (and vice versa); how the connection existing between debt and financial development majorly focuses specifically on the interest rate; what determines whether the rise in government debt can cause a government default; and how tax rates may alter entrepreneurial incentives.

Empirical literature has shown that Kenya's accumulation of peripheral debt has affected savings and progression in the country while domestic debt has presented a burden on the budget. Were (2011) looked into how Kenya's external debt affected economic growth. The empirical research conclusions exhibited that increasing peripheral communal debt had a detrimental outcome on both economic development and private investment. The research study also observed at the effects of communal debt servicing and discovered that while it had a little negative impact on growth, it did have some crowding-out special effects on isolated asset.

Domestic debt, especially in Kenya and other developing countries, has a great impact on economic growth (Makau, 2008; Maana, 2008). The end product of public borrowing and private saving is investment. Private investment is considered to be the most important factor for economic development and wealth creation. That is why the entrepreneurs who borrow from banks will invest those funds in factories or fixed assets, which ultimately provide employment opportunities for people looking to make their living in that particular industry (Were, 2011).

All economies are concerned about achieving sustainable economic growth (Stiglitz, 2012). Sound macroeconomic policies prioritize both private and public investment in order to increase wealth, boost productivity, national income, and employment, cut inflation, and pay for public services (Saunweme & Mufandaedza, 2013). Public debt, however, is one of the most urgent economic policy issues governments are currently facing because most countries, including Kenya, are unable to generate enough revenue to fund national budgets, forcing them to rely on domestic and external debt to finance economic growth and expansion (Ali & Mustafa, 2010; Maana et al., 2008; Stiglitz, 2012).

Methodology

The study was carried out within the Republic of Kenya covering an estimated area of 582,646 Km² with a population of 49.4 million people (KNBS, 2020). Strategically situated in the Horn of Africa, Kenya is a financial powerhouse in East Africa. It shares borders with Tanzania to the south, Uganda to the west, South Sudan to the northwest, Ethiopia to the north, Somalia to the east, and the Indian Ocean to the south. The study was anchored on the Keynesian theory of economic growth and the dynamic theory of public spending.

The study employed the use of longitudinal research design to carry out quantitative analysis of the time series data on Kenya's fiscal debt burden for the period 1988-2019. A longitudinal study follows the same sample over time and makes repeated observations. These studies are usually conducted over a long period and can be used to evaluate the effects of changes in culture, environments and other variables that may affect a population. This design is preferred because the study involves assessment of unit of analysis measured repeatedly at regular

intervals over time (Kaplan & Glass, 1995). According to Deboeck, et al. (2009), time series analysis (TSA) enables one to carry out spectral analysis to obtain cyclical patterns of variable change across time, thereby, enabling the researcher to know if there exists any correlation between the variables under observation.

The study used quarterly time series secondary data from the National Treasury for the period between 1988 and 2019. The chosen time for the study frame was from the first quarter (Q1) of 1988 through the fourth quarter (Q4) of 2018 in order to capture key economic and political events that shaped the trajectory of Kenya’s economic growth.

Autoregressive Distributed Lag (ARDL) model was used to analyse data, with the aid of SPSS and STATA.

Results

The research study findings show that there exists a significant inverse short-term relationship between economic growth and domestic debt as shown in Table 1 where a 1% increase in domestic debt causes a 1.25 % decline in Kenya's economic growth and one percent increase in foreign debt stock (EDSt) leads to a 1.10 percent decrease in economic growth.

Government expenditure (Gt) and export-to-GDP ratio (Pt) had a positive relationship with economic growth where one percent increase in government expenditure (Gt) leads to a 1.49 percent increase in economic growth and one percent increase in export-to-GDP ratio (Pt) leads to a 1.75 percent increase in economic growth; holding all other factors constant.

Table 1 illustrates the autoregressive distributed lag (ARDL) regression results performed on the data using the stata command $ARDL Y_t, P_t, DDS_t, ESDT_t, G_t, lags(3,3,3,3)$ to test for short run relationship among variable in the model

Table 1

ARDL Regression

Sample: 1988Q1 – 2018Q4		Number of Observations	=	125		
		Prob > P	=	0.0000		
		R-squared	=	0.9364		
		Adj R-squared	=	0.9259		
Log likelihood = -1366.8809		Root MSE	=	2.733e+10		
Var	Coefficient	Standard Error	T	P> t	95% Confidence Interval	
Y_t						
L3	1.679034	.11763	2.74	0.0004	-1.05643	-.075342
P_t						
L3	1.74536	.10363	3.872	0.0018	.46739	1.17453
DDS_t						
L3	-1.25342	.65342	3.745	0.0032	.90864	1.90352

EDS_t						
L3	-1.09536	.04574	-2.873	0.0000	0.76354	1.15342
G_t						
L3	1.493762	.79856	2.2477	0.0011	.99965	1.85739

Table 1 also demonstrates that a 1% increase in external debt causes a 1.10 % decline in Kenya's economic growth.

ARDL Bounds Test

In order to establish if there exists a long-run relationship between variables of the model, the study carried out a Bounds test on the ARDL regression model using the optimal lag lengths. The findings were as shown in table 2 below.

Table 2

r-Statistic ARDL Bounds Test

H ₀ : No levels relationship		r = 2.975						
		t = 2.052						
Critical values (0.1 – 0.01), r -statistic								
	(I_0)	(I_1)	(I_0)	(I_1)	(I_0)	(I_1)	(I_0)	(I_1)
	L_.1	L_.1	L_.05	L_.05	L_.025	L_.025	L_.01	L_.01
k_2	3.17	4.14	3.79	4.85	4.41	5.52	5.15	6.36

Accept if $r <$ critical value for I (0) regressors

Reject if $r >$ critical value for I (1) regressors

Using the F-statistic to test, the value of $r=2.975$ was measured against the bound limits within the five percent significance level. It was found that the r-statistic of 2.975 is less than the lower bound of the critical value for I (0) regressors for 5 percent significance level. Therefore, we fail to reject H₀ and conclude that there is no long run relationship between variables of the model.

Alternatively, the ARDL Bounds Test can be interpreted using the t-statistic as shown in Table 3

Table 3

t-Statistic ARDL Bounds Test

Critical values (0.1 – 0.01), t-statistic

	(I_0)	(I_1)	(I_0)	(I_1)	(I_0)	(I_1)	(I_0)	(I_1)
	L_.1	L_.1	L_.05	L_.05	L_.025	L_.025	L_.01	L_.01
k_2	-2.57	-3.21	-2.86	-3.53	-3.13	-3.80	-3.43	-4.10

Accept if $t > \text{critical value for } I(0) \text{ regressors}$

Reject if $t < \text{critical value for } I(1) \text{ regressors}$

Using the t-statistic to test, the value of $t=2.052$ was measured against the bound limits within the 5 percent significance level. It was found that the absolute t-statistic value of 2.052 is less than the lower bound of the critical value for $I(0)$ regressors for 5 percent significance level. As a result of the mixed findings, therefore, H_0 is not rejected and conclude that there is no convincing evidence of a long-term relationship between the dependent and explanatory variables in the model.

The Effect of Domestic Debt on Economic Growth in Kenya

The research study findings show that there exists a significant inverse short-term relationship between economic growth and domestic debt as shown in Table 1. The findings show that a 1% increase in domestic debt causes a 1.25 % decline in Kenya's economic growth. This supports the findings by Abbas (2005), and Abbas and Christensen (2010) on the effect of domestic debt levels on economic growth. Abbas and Christensen (2010) noted that moderate levels of marketable domestic debt as a percentage of GDP have significant positive effects on economic growth. They posit that domestic markets are generally small and highly short term with a narrower investor base. They also found that domestic interest rate payments present a significant burden to the budget with significant crowding-out effects. Charan (1999) observed that it does not matter whether government finances its spending with debt or a tax increase, the effect on total level of demand in an economy is the same.

The study findings that there exists a short-term relationship between domestic debt levels and economic growth concur with earlier findings by Maana et al. (2008) that domestic debt expansion has a positive, long run and significant effect on economic growth. Adofu and Abula (2010) found out that domestic debt affected the growth of the Nigerian economy negatively and recommended that it be discouraged. They suggested that the Nigerian economy should instead concentrate on widening the tax revenue base.

The Effect of External Debt on Economic Growth in Kenya

The research study findings show that there exists short-term inverse relationship between economic growth in Kenya and external debt stock as seen in the ARDL regression results in Table 1. The study's findings show that a 1% increase in external debt causes a 1.10 % decline in Kenya's economic growth. This supports Gargouri and Ksantini (2016), which suggested that since the time of its independence, Kenya has benefited from borrowing money from abroad to close the resource gap between tax receipts and expenditures. However, this is not always been used efficiently. Patillo et al. (2002), in their study assessed the non-linear impact of external debt on growth suggested the average impact of debt becomes negative over time.

The study findings contradict earlier findings by Cohen (1993) on the correlation between developing countries debt and investment showed that the level of stock of debt does not appear to have much power to explain the slowdown of investment in developing countries. It is the actual flows of net transfers that matter, and that the actual service of debt 'crowded out' investment. Elbadawi et al., (2006) also confirmed a debt overhang effect on economic growth using cross-section regression for 99 developing countries spanning SSA, Latin America, Asia and Middle East. Three direct channels identified in which indebtedness in SSA works against growth include: current debt inflows as a ratio of GDP (which should stimulate growth), past debt accumulation (capturing debt overhang) and debt service ratio. The fourth indirect channel works through the impacts of the above channels on public sector expenditures. This is because debt accumulation deters growth while debt stock spurs growth (Stiglitz, 2012).

Other studies that have found a negative effect of external debt on growth include Boboye and Ojo (2012). Generally, most studies tend to confirm external debt overhang/crowding-out effects on economic growth.

The Effect of Government Expenditure on Economic Growth in Kenya

The research study findings in table 1 show that government expenditure have a significant short-run, positive relationship with economic growth in Kenya with a coefficient of 1.4537. The long-run relationship gave inconclusive results in Tables 2 and 3, implying that there is no statistically significant reason to conclude that the long-term relationship exists between government expenditure and economic growth in Kenya.

Akpan (2005) maintains that the observed growth in public spending appears to apply to most countries regardless of their level of economic development. Researchers have particularly questioned whether increases in the size of federal budget tend to be initiated by changes in expenditure followed by revenues adjustments or by the reverse sequence or both (Baghestani and Mcnown, 1994, Akpan, 2005). A growing government is contrary to a government's economic interest because the various methods of financing government such as taxes, borrowing and printing money have harmful effects.

Conclusion

Following regression of the optimal lags of the ARDL model, the findings showed that all the optimal lag variables are significant in the model, given that they all had a p value $P > |t|$ less than 0.05. The R-squared and adjusted R-squared value of 0.9364 and 0.9259 respectively indicated that more than 90 percent changes in the dependent variable (economic growth) can be explained by the explanatory variables in the model. From the study findings, it was noted that one percent increase in export-to-GDP ratio (P_t) leads to a 1.75 percent increase in economic growth; one percent increase in domestic debt stock (DDS_t) leads to a 1.25 percent decline in economic growth; one percent increase in foreign debt stock (EDS_t) leads to a 1.10 percent decrease in economic growth, while one percent increase in government expenditure (G_t) leads to a 1.49 percent increase in economic growth, holding all other factors constant.

Recommendations

It is recommended that proper debt management needs to be done to contain increases in debt level in order to ensure a steady economic growth in Kenya. It is also recommended that the government of Kenya should formulate policies and regulations that allow market forces of demand and supply to thrive.

The study suggests that stronger econometric models be developed to try and establish the long-run effects of explanatory variables under observation and Kenya's economic growth because earlier research on the long-run relationship between economic growth and explanatory variables in the model had produced inconclusive results. The study also recommends an investigation on other factors affecting economic growth in Kenya such as inflation.

References

- Abbas, A. S. M. (2005). Public debt sustainability and growth in sub-Saharan Africa: he role of domestic debt. GDN Project on the Macroeconomics of Low Income Countries. Mimeo
- Abbas, A. & Christensen, J. (2010). The role of domestic debt markets in economic growth: An empirical investigation for low-income countries and emerging markets. *IMF Staff Papers*, 57(1): 209-255
- Adofu, I and Abula, M (2010). Domestic Debt and the Nigerian Economy. *Current Research Journal of Economic Theory*, 2(1), 22-26.
- Akpan, N.I. (2005). Government Expenditure and Economic Growth in Nigeria: A Disaggregated Approach. *CBN Economic and Financial Review*, 43(1), 25-29.
- Ali. R. and Mustafa, U., (2010). External Debt Accumulation and Its Impact on Economic Growth in Pakistan. *The Pakistan Development Review* 51:4 Part II, pp. 79–96.
- Baghestani, H., McNown, R. (1994). “Revenues or Expenditures Respond to Budgetary Disequilibria”. *Southern Economic Journal*, 61,2
- Barro, R. J. (1979). On the determination of the public debt. *Journal of Political Economy*, 87(5), 940-971.
- Barro, R. J. (1989). Public Debt in Developing Economies. *Journal of Political Economy*, 116(7), 458-47
- Boboye, A. L. & Ojo, M. O. (June 2012). Effect of External Debt on Economic Growth and Development in Nigeria. *International Journal of Business and Social Science*, 3 (12): 297- 304
- Central Bank of Kenya. (2017). Annual Public Debt Management Report 2016/2017. <https://treasury.go.ke/wp-content/uploads/2021/02/Annual-Public-Debt-Report-2016-2017.pdf>
- Charan, S. (1999). Domestic debt and economic growth in India. *Econ. Polit. Weekly*, 34(23): 1445-1453.
- Cohen, D. (1993) How to evaluate the solvency of an Indebted nation, *Economic Policy* 1, No.1. pp. 123-150.
- Deboeck, P. R., Montpetit, M. A., Bergeman, C. S., Boker, S. M. (2009). Using derivative estimates to describe intraindividual variability at multiple time scales. *Psychol Methods*. Dec;14(4):367-86. doi: 10.1037/a0016622. PMID: 19968398; PMCID: PMC5636625.
- Elbadawi, I., Mengistae, T., & Zeufack, A. (2006). Market access, supplier access, and Africa’s manufactured exports: An analysis of the role of geography and institutions. *Policy Research Working Paper Series 3942*, The World Bank <https://ideas.repec.org/p/wbk/wbrwps/3942.html>
- Gargouri I., Ksantini M. 2016. “The Determinants of Public Debt.” *The Romanian Economic Journal* 18 (59): 111–124.

- Kaplan, D., & Glass, L. (1995). *Understanding Nonlinear Dynamic*. Springer New York, NY. <https://doi.org/10.1007/978-1-4612-0823-5>
- Keynes, J. M. (1936). *The General Theory of Employment, Interest and Money*. (Reprinted 2007). London: Macmillan.
- KNBS. (2008). *GDP: Second Quarter 2008*.
- Kothari, C. (2004). *Research Methodology: Methods and Techniques. Second Edition*. New Delhi: New Age International (P) Limited.
- Maana, J., Owino, R., & Mutai, N. (2008). (2008). Domestic debt and its impact on the economy-the case of Kenya. *13th Annual African Econometric Society Conference. Pretoria, South Africa*. (pp. 16-28). Pretoria: African Econometric Society.
- Majune, S., Kimani, D., & Khayo, E. (2019). Kenya's Soaring Public Debts and the Jubilee Government Development Agenda. *International Journal of Contemporary Economic Affairs*, 306 - 327.
- Makau, J. K. (2008). External Public Debt Servicing and Economic Growth In Kenya: An Empirical Analysis. Unpublished MBA Project, University of Nairobi.
- Metwally, M. M., & Tamaschke, R. (1994). Debts and Deficit Ceilings, and Sustainability of Fiscal Policies: An Intertemporal Analysis, *Oxford Bulletin of Economics and Statistics*, Vol.62,No.2,197-221.
- Musgrave, R.A. (1959) *The Theory of Public Finance*. McGraw Hill, New York.
- Pattillo, C., Poirson, H., and Ricci, L. (2002). External debt and growth. IMF Working Paper 02/69.
- Saungweme, T., & Mufandaedza, S. (2013). The effects of external debt on poverty in Zimbabwe. An empirical analysis, 120–27
- Stiglitz, J. (2012). *Economy of the Public Sector*. New York: W.W. Norton and Co.
- Were, M. (2011). The Impact of external debt on economic growth and private investments in Kenya: An empirical assessment. *UNU-Wider Development Conference on Debt Relief* (pp. 17-18). Helsinki: Kenya Institute for Public Policy Research and Analysis.
- World Bank. (2019). *Economic Outlook: Africa*. Washington DC: World Bank.