RELATIONSHIP BETWEEN BUDGET FINANCING AND ECONOMIC GROWTH IN KENYA

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ABSTRACT

Financing is essential for the economy of any country. The paper seeks to assess the connection between budget financing and economic growth in Kenya. Precisely, it examined the relationship between taxation, internal borrowing, external borrowing, official development assistance and economic growth in Kenya. This study was founded on three theoretical foundations: Optimal Tax Theory. It adopted a correlation research design. The study collected monthly data from July 1999 to December 2022. The study utilized time series data collection forms based on the study's objectives. Data analysis was carried out using E-views version 11 and a vector error-corrected model will be fitted. Figures and tables presented the findings. The results of the study indicated that taxation inversely affected economic growth in Kenya. Hence, increased levels of taxation deterred economic growth in Kenya. It was documented that internal borrowing has a significant relationship with economic growth in Kenya. External borrowing has an inverse relationship with economic growth in Kenya. Official development has a statistically significant relationship with economic growth in Kenya. It can be deemed to be double-edged where increased taxation was associated with changes in administrative costs and spillage of revenue collected. There is a need for evaluation of internal borrowing costs by the government since increased borrowing costs of treasury bills and treasury bonds whose risk of default is low compared to individual borrows may constrain access to private capital. There is a need for consideration of borrowing costs and contractual currency since there are instances in which local currency may depreciate its value and it will impact repayment amount. It can be concluded that reliance on official development assistance has an effect on economic growth in Kenya. It can be recommended that there is a need for the adoption of matching taxation policies that would escalate tax collection strategies and minimize the spillage of resources. There is a need for consideration of seeking internal debts via treasury bills and bonds though it ought to undertake it very cautiously since it may trigger skewed borrowing from the private sector. There is a need for consideration of external borrowing that would be cheaper and available for a longer period of time. There is a need for the development of strategies that would guide in fundraising of grants for undertaking projects that will have social economic benefits.

Keywords: Taxation, Internal borrowing, External borrowing, Official Development assistance, Economic Growth.

1.0 INTRODUCTION

Many academics have differing opinions about a country's budget's impact on its economic development. The budget and economic growth have a neutral relationship (Kithinji, 2020). A

balanced budget is crucial for every nation to experience long-term and sustained economic growth. Specifically, a budget is a very effective and practical tool and instrument for designing and implementing a nation's development policies. Whether or not this instrument is balanced or in deficit will significantly impact its utility and effectiveness. Because it affects various macroeconomic trends and is influenced by numerous macroeconomic causes, the budget cannot be detached from the economy.

The budget essentially reflects the government's economic policies. The budget is a tool used by a nation's government for resource mobilization and allocation, capital formation acceleration, increased job opportunities, and resource distribution equity. A budget is also an annual statement of anticipated revenues and costs (Momen & Kaiser, 2019). This current study conceptualizes that budget financing has significant influences on economic growth. According to Crowe (2021), in the EU, governments have historically used budgeting to determine how much money to spend on what, restricting expenditures to available revenues and reducing overspending. Budgeting is increasingly required to fulfill various responsibilities and duties, including serving as a crucial political platform, a tool for stimulating the economy and society, a vital instrument for administration and management, and a significant channel for accountability. Various functions have resulted in different budget styles, assumptions, and ever-more sophisticated budgeting procedures.

Budgeting is a crucial tool for management and governance of public and private resources. Its credited as on efficiency and control of the link between expenditure (payment) and income (receipts) (Morina, 2020). Public expenditure includes and not limited to recurrent expenditure, capital expenditure and debt servicing. Optimal expenditure in the public sector have effect on economic growth. Since minimization of resources spillage enhances revenue absorption in social economic projects. Budgeting and infrastructure development have a significant relationship (Emejulu, Onyekwelu, & Aandoakaa, 2019). However, there are rising worries that the significant capital expenditures included in annual budgets and spending plans would not influence the GDP (Gross Domestic Product) or the lives of ordinary people. As a result, transfers significantly impact economic growth, while recurrent expenditures have little to no impact. The findings suggest that government debt accumulation in foreign countries should be discouraged.

In Ukraine, it was reported that an increase in tax revenue have this shows that increased revenue from taxation was not good for the economy. Since many taxes revenue is an essential source of budget financing, it is germane to test the reliability of these findings in developing countries such as Kenya, which is the focus of this current study. In Indonesia, a study by Wulandari and Harjito (2021) showed that interest rates affect stock values. High-interest rates lead to reduced spending and a drop in stock prices; the combined effect is reduced economic growth due to less financing through stocks. Countries should thus put efforts to keep interest rates to check its effects on reduced financing. Morina (2020) showed that real economic growth is negatively impacted by exchange rate volatility. The results seem solid with alternate metrics of exchange rate instability like standard deviation and z-score.

Nyakoe (2020) claims that while economic development has been erratic, the trend in Kenyan government borrowing has been rising on both a domestic and international level. As a result, financing the internal budget deficit impacts economic progression. According to the report,

policies that encourage subsequent borrowing should be implemented to lessen the damaging impact of external budget deficit financing on the economy. In order to lower the deficit, supported by internal borrowing, the government should also identify measures to improve its capacity to generate money, notably by expanding the tax base. Oguso et al. (2018) assert that Kenya requires significant and ongoing fiscal consolidation to free up funds for funding government development initiatives and sustainable development targets. Unfortunately, the government has had trouble maintaining its efforts at budgetary consolidation. This is because rising perceptions of corruption in the public sector and political budget cycles worsen budget imbalances and impede Kenya's efforts to consolidate its finances.

Ngugi (2018) claims that borrowing is to blame for Kenya's rising government debt and its detrimental effects on the country's economy. Opponents of borrowing contend that the public debt trajectory is unsustainable and harmful to economic progress, despite the government's defense of borrowing as helpful and essential in filling infrastructure gaps and promoting economic growth. Economic progression and public debt are related because the choice of public funding affects incentives, resource utilization, and output opportunities (Mwere, 2018). However, studies on the connection between public debt and economic growth have shown conflicting findings, demonstrating that the relationship depends on debt subtleties that differ from nation to nation. The primary budget balance, interest payments, and gross domestic product are some factors that affect the dynamics of debt.

The government cannot seem to raise enough money to finance its operations, according to Kithinji (2020). Due to borrowing, Kenya's public debt increases, indicating that income collected by the government is averted to facilitate the accumulated debt, meaning that internal and commercial expansion and consumption bear the brunt of this. This has decreased banks' motivation to raise funds to enhance private-sector financing. As a result, the government has the propensity to raise taxes and cut spending to pay down the debt. Due to Kenya's high tax burden, macroeconomic factors like inflation and interest rates significantly impact people's purchasing power.

2.0 STATEMENT OF THE PROBLEM

For every nation to experience long-term and sustained economic growth, having a balanced budget is crucial (Momen & Kaiser, 2019). As a result, governments seek various forms of budget financing to enhance budget growth. Crowe (2021) believes that the budget substantially impacts the economy through capital and income allocations, tax plans, and expenditure allocations. Nevertheless, this is often not the case in developing countries such as Kenya. Although Kenya continues to borrow extensively, there is little to show for it (Ngugi, 2018). The country has continued to register erratic growth over the years. A 20-year analysis of economic growth in Kenya shows immense dips (World Bank, 2022).

In addition to substantial increases in per capita income of 4.6% annually and a decrease in the poverty rate from 46.6% to 36.1%, Kenya's robust GDP growth has been accompanied by these developments. According to KNBS, extreme poverty decreased from 19.6% to 8.6% within the same period (2016). However, an estimated 80% of Kenyans live in poverty or close to it, making them susceptible to returning. The wealthiest 25% of the population have reaped most of the gains of economic progress, devouring 60% of the rise in GDP (Diwakar & Shepherd,

2018). Additionally, despite Kenya's population doubling since 1990 and a large portion of the expanding number of young people failing to find employment, the absolute number of poor individuals has mainly remained stable. Long-term data shows that frequent fluctuations characterize economic growth in Kenya. Panel data for 20 years (2002-2021) shows that there have been frequent fluctuations, with dips being recorded in 2008, 2009, 2011, 2012, 2013, 2915, 2016, 2017, 2019, and 2020 (World Bank, 2022).

3.0 REVIEW OF LITERATURE

3.1 Optimal Tax Theory

The Ramsey (1927) and Mirrlees (1927) foundational works form the basis of optimal tax theory (1971). According to the idea of optimum taxation, a tax structure should be constructed to maximize a social benefit function within a set of limitations. Ramsey's study used consumption as the basis for choosing the best tax subject, and Mirlrees' study chose income as the tax object. The researchers looked for ideal tax rates concerning the chosen tax topic.

The Ramsey method of optimal taxation assumes that governments cannot use lumpsum taxes and that the only option to raise the necessary budget revenue is through distortionary taxes, resulting in a loss of wealth in terms of economic efficacy and moving away from the model solution. Ramsey emphasizes this framework's tax subject and rate to reduce efficacy loss. It is commonly accepted that the government may levy a linear income tax in addition to a commodities tax under the Ramsey approach (Golosov & Tsyvinski, 2006).

The primary source of income is taxation, which is levied under the authority of the state. One primary political instrument that nations employ in this situation to achieve their economic, social, and political objectives is the tax system. States can use successful strategies to accomplish their macroeconomic objectives by using taxation as a tool for fiscal policy. The importance of tax policies in achieving the aforementioned macroeconomic objectives demonstrates that taxation is one of the state's powerful weapons for implementing economic policy. According to the social state theory, taxation becomes a means of transfer. It is widely acknowledged that enabling equality for each person is at the core of what governments owe to their citizenry (Mirrlees, 1971).

According to this theory, maximizing wealth is the primary objective of economic and fiscal policies. This aim has several sizable sub-goals, including promoting stability, growth, resource allocation efficiency, and equitable income distribution. Taxation is the primary financial tool to achieve the desired outcomes. The literature, particularly within the framework of the Optimal Taxation theory, considers the type of taxation that serves the objective of maximizing wealth from existing tax applications under the changing and developing state understanding (Golosov & Tsyvinski, 2006).

Along with trade liberalization, markets become more expansive and innovative as they grow, which may enhance the price pliability of demand by expanding the potential of substituting commodities, particularly necessities (Hummels & Lugovskyy, 2008). In contrast, businesses work to reduce the demand pliability of their goods from the brands developed and by fostering greater brand allegiance. Brand loyalty lowers buyers' price sensitivity, especially in product categories that include luxury goods like technology and automobiles.

The main argument against this rule is that superfluity goods have high price pliability of demand while necessities that address rudimentary needs have low price flexibility. Economists argue that taxing superfluity goods lowly than essential products under the premise that consumers are similar to one another hurts the fairness of taxation. The theory is significant in explaining the importance of taxation on budget financing, which could have significant implications for economic growth in Kenya. Since changes in the amount of revenue generated through taxation if allocated to infrastructural project it may promote social economic development. That would eradicate odds of unemployment through promotion of entrepreneurial opportunities.

3.2 Empirical Literature Review

Gurdal, Aydin, and Inal (2021) investigated the connection between tax receipts, public expenditure, and economic advance in G7 nations. Data covering the period from 1980 to 2016 were used in the study. In order to compare, the study utilized two alternative panel causality techniques. The results demonstrate a unidirectional connection between tax income and government spending but a two-way causality between economic expansion and government spending. Furthermore, tax revenue and economic growth lack a connection. Conversely, incidence domain causation results specify a long-run correlation between economic development and government expenditure and a bidirectional short- and long-run correlation between economic growth and tax revenue. According to the study's findings, taxation policies are practical financial tools that can help countries accomplish their economic goals when implemented in light of their respective economies.

Abdin (2018) examined the link between taxation and national economic growth. The results demonstrate that taxes are the government's primary income source. The government uses tax income to pay for various services, including security, safety nets, health care, transportation, education, and more. Because of this, the government frequently focuses on expanding the tax base and tax provider network. Acts are therefore passed in order to give tax collectors the necessary legal authority to accomplish their goals for revenue collection. The conclusions also stated that while the government has the right to collect taxes, it must equally keep in mind that taxpayers are obligated to understand how effectively their money is being used to benefit the entire country. A tax payer has the right to pay their taxes without difficulty or any form of stress. However, because of their immense power, tax collectors may abuse the law to further their interests. Tax collectors have historically been the most wealthy, influential, and powerful group in society.

Misztal (2021) conducted a study to ascertain the effect of domestic and external borrowing on the economic activity of the European Union. The study was based on data collected from 27 member nations between 2006 and 2017. The results demonstrate that the budget deficit and public debt both favorably impact the nation's economic growth, primarily due to the multiplier effect of the budget expenditures. The neoclassical school holds the opposing position on budget deficits and public debt, contending that they can affect economic growth. On the other hand, supporters of the Ricardian equivalence theory assert that public debt and budget deficits have no adverse effects on economic growth. The study recommends that the findings be used to understand the significance of the budget shortfall and public debt in the nation's economic growth and development domestically and externally.

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Obi (2022) researched to determine whether Nigeria's foreign debt facilitated or hindered economic progress, establishing a link. Fully Modified Ordinary Least Square (FMOLS), the Hansen Parameter Instability (HPI) co-integration test, and Vector Autoregression were utilized in the study (VAR). The study's findings validated that debt negatively links economic growth and that foreign debt does not contribute to growth. Therefore, foreign debt hinders economic growth. Notable was the analysis' intriguing attempt to view foreign debt as an intrinsic component of the debt-growth model. This deduction was established through the VAR causation test, demonstrating growth to generate debt. As a result, as the economy expands, government amenities are expanded to meet citizen demand, which increases the concentration of foreign debt to supplement local means. Therefore, it is advised that governments be supervised in the buildup of foreign debt so that it does not harm growth and that money should be directed toward attaining the country's economic goals.

Teng (2021) conducted a study to determine whether "foreign aid and concessional debts captivated Foreign Direct Indirect (FDI) flows into recipient countries." Information was gathered from a sample of 50 African nations. The study was conducted from 1993 to 2011. The analysis demonstrates that governments in Africa had comparable difficulties in obtaining loans. These were linked to institutional circumstances, financial creditworthiness, and income levels. The "endogeneity problem in panel data analysis" was examined using the Gaussian mixture model (GMM) methodology. The results indicate that there were no substantial connections between foreign aid and FDI inflows. The results demonstrate that encouraging concessional loans for low-income countries to boost FDI inflows is a good idea. Additionally, it was discovered that foreign investors were primarily driven by economic growth in nations with higher levels of development. The prior study, however, did not pay attention to how concessional loans helped recipient nations improve economically, as this current study does.

Sampa (2020) conducted a study in the United Republic of Tanzania titled "An Empirical Assessment of the Impact of External Debt on Economic Development in Tanzania." The fact that external debt continues to be one of the most important funding sources for vital economic infrastructure served as the impetus for this study. An analysis of the past 50 years in the nation revealed that more than 70% of the debt level was financed outside. Midway through 2019, the external debt reached 77%. (USD 21 billion). The analysis also showed that the debt's concessionally had a beneficial, noteworthy impact on economic expansion. According to the research, Tanzania should keep ensuring its debt is manageable and primarily concessional. Although the earlier study was conducted in an Eastern African nation, rigorous research is the only way to determine whether the results apply to Kenya.

Awino and Kioko (2022) studied the effect of official development assistance aid on economic growth and domestic savings in Kenya through applications of simultaneous system modelling. Two stage least squares method was applied to address endogeneity problem. The study showed positive statistically not significant effect of ODA on economic growth. In addition, ODA positive affected domestic savings. The study may have considered quarterly data rather than annual time series data to increase its frequency. Further, the study ought to considered several antecedents of economic growth rather than limiting itself to ODA.

The impact of ODA and economic growth and carbon dioxide mitigations for the recipient countries was studied by Lee et al., (2020). The study relied on panel data from 30 countries

who were beneficiaries of Korean aid from 1993 to 2017. Through application of modified impact, population, affluence, and technology (IPAT) model and a simultaneous equation framework. The study found that ODA has direct and indirect impact on economic growth and carbon dioxide mitigations among recipients' countries. The study may have considered expanding the panel set and considerations of data either semiannually or quarterly so as to mitigate hindrances associated with small sample challenges.

3.3 Conceptual Framework

The study conceptualizes that economic growth is an outcome of taxation, internal borrowing, external borrowing and official development assistance. Economic growth will be operationalized as percentage change in gross domestic product. Taxation will be measured as natural logarithms of total taxes collected, internal borrowing as natural logarithms of (concessional + non-concessional loans) and official development assistance as natural logarithms of total foreign aids. The conceptual framework is presented in Figure 2.1.
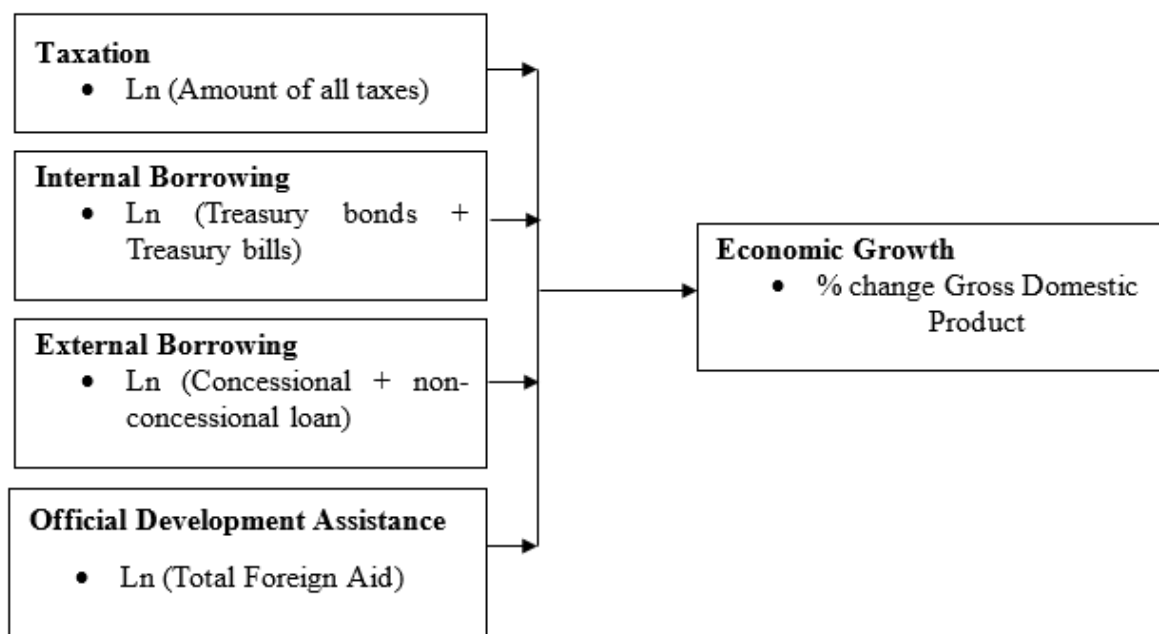
Independent Variables   Dependent variable

Figure 2.1 Conceptual Framework

4.0 RESEARCH METHODOLOGY

This study adopted correlational research design to explore the relationship between budget financing and Kenya's economic growth. The design is appropriate since the study aimed at examining the causality between budget financing and economic growth.

The objective population comprised data on Kenya's economic growth between July 1999 and December 2022. This was obtained from central bank of Kenya website, Kenya national bureau of statistics economic survey and World Bank economic reports. There were gaps in the data especially in 1999 and December 2000 where data was not available for all months.

Collected data was checked for completeness and transformed through use of natural logarithms. It will be exported in E-views 11. Data was analyzed through descriptive and inferential statistics. Descriptive statistics to be applied include mean, standard deviation, skewness and kurtosis. Inferential statistics include Product moment correlation, multiple regression and multivariate time series analysis. In addition, pre and post estimation diagnostic tests were carried. Tables and graphs were used to present the results. The model that was tested in the study is as follows:

$$Y_t = \beta_0 + \beta_1 X_{1t} + \beta_2 X_{2t} + \beta_3 X_{3t} + \beta_4 X_{4t} + \acute{\varepsilon}_t \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.1)$$

Where:

Y= Economic Growth in Kenya

X1= Taxation

X2=Internal Borrowing

X3= External Borrowing

X4= Official development assistance

$\acute{\varepsilon}_i$= error term

The study Vector Error Correction Model (VECM) econometric model. In the VECM, economic growth was a function of its own lag and lag of all other variables as indicated below:

$$Economic\ growth\ _t = \sigma + \sum_{h=1}^{k} \boldsymbol{\delta_h} Taxation\ _{t-h} + \sum_{i=1}^{k} \beta_i Internal\ borrowing_{t-i} + \sum_{j=1}^{k} \gamma_j\ External\ borrowing_{t-j} + \sum_{m=1}^{k} \theta_m Official\ Development\ Assisatnce_{t-m} + \mu_{1t}$$

$$Taxation_t = \sigma + \sum_{h=1}^{k} \delta_h Economic\ growth_{t-h} + \sum_{i=1}^{k} \boldsymbol{\beta_i} Internal\ borrowing_{t-i} + \sum_{j=1}^{k} \gamma_j\ External\ borrowing_{t-j} + \sum_{m=1}^{k} \theta_m Official\ Development\ Assistance_{t-m} + +\mu_{2t}$$

$$Internal\ Borrowing_t = \sigma + \sum_{h=1}^{k} \delta_h Economic\ Growth_{t-h} + \sum_{i=1}^{k} \beta_i Taxation_{t-i} + \sum_{j=1}^{k} \boldsymbol{\gamma_j} External\ Borrowing_{t-j} + \sum_{m=1}^{k} \theta_m Officiala\ Development\ Assistance_{t-m} + \mu_{3t}$$

$$External\ borrowing_t = \sigma + \sum_{h=1}^{k} \delta_h Economic\ growth_{t-h} + \sum_{i=1}^{k} \beta_i Taxation_{t-i} + \sum_{j=1}^{k} \gamma_j\ Internal\ borrowing_{t-j} + \sum_{m=1}^{k} \boldsymbol{\theta_m} Officail\ development\ Assistance_{t-m} + \mu_{4t}$$

$$Official\ Development\ Assistance_t = \sigma + \sum_{h=1}^{k} \delta_h Economic\ Growth_{t-h} + \sum_{i=1}^{k} \beta_i Taxation_{t-i} + \sum_{j=1}^{k} \gamma_j\ Internal\ Borrowing_{t-j} + \sum_{m=1}^{k} \theta_m External\ Borrowing_{t-m} + \mu_{5t}$$

5.0 FINDINGS AND DISCUSSION

5.1 Descriptive Statistics

The study set up to examine the relationship between budget financing and economic growth in Kenya. Budget financing was operationalized as taxation, internal borrowing, external

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borrowing and official development assistance. The average economic growth was 4.31% with a maximum of 8.43% though there were instances when economic growth was inverse. The standard deviation was 2.297 a clear indication of wide variations on the state of economic growth with the period under consideration. Economic growth was not normally distributed since its Jarque Berra coefficient had a p value < 0.05.

The average taxation was 12.327 with a maximum of 14.424 and minimum of 9.2. Taxation was not normally distributed since the p value for Jarque Berra was less than 0.05. The average internal borrowing was 13.628 with a minimum of 12.120 and standard deviation of 0.976. Internal borrowing was not normally distributed Jarque Berra coefficient of 20.875 had a p value < 0.05. The average external borrowing was 13.725 with a maximum of 15.357 and standard deviation of 0.858. Official development assistance has an average of 8.693, with a minimum of 2.320 and maximum of 11.243. Official development assistance and external borrowing were not normally distributed since there Jarque Berra coefficient had p values < 0.05.

Table 4.1 Descriptive Statistics

	Economic growth	Taxation	Internal borrowing	External borrowing	ODA
Mean	4.310	12.327	13.628	13.725	8.693
Maximum	8.430	14.424	15.314	15.357	11.243
Minimum	-0.872	9.210	12.120	12.651	2.320
Std. Dev.	2.297	1.125	0.976	0.858	1.388
Skewness	-0.465	-0.397	0.170	0.567	-1.736
Kurtosis	2.654	2.665	1.691	1.775	7.056
Jarque-Bera	11.231	8.468	20.875	31.804	325.437
Probability	0.004	0.014	0.000	0.000	0.000
Observations	274	274	274	274	274

5.2 Timeseries Analysis

5.2.1 Stationarity Test

Augmented Dickey Fuller (ADF) was applied to examine the stationarity of variables under examination. The null hypothesis indicated presence of unit roots (non-stationary) against lack of unit roots (stationarity). Results in Table 4.2 indicates that only economic growth was stationary at level while taxation, internal borrowing, external borrowing and official development assistance were all stationary at first difference.

Table 4.2 Stationarity Test

	At levels			At first difference		
	T	CV	Sig	T	CV	Sig
Economic growth	-3.15	-2.87	0.024			
Taxation	0.294	-2.87	0.978	-6.33	-2.87	0.00
Internal borrowing	0.80	-2.87	0.993	-8.06	-2.87	0.00
External borrowing	1.394	-2.87	0.999	-18.310	-2.87	0.00
Official development assistance	-2.45	-2.87	0.13	-23.48	-2.87	0.00

5.3 Lag Selection Criteria

Regarding lag selection criteria results in Table 4.2 indicates that the number of optimal lags is two as indicated by sequential modified LR test statistic, final prediction error, Akaike information criterion while Schwarz information criterion and Hannan-Quinn information criterion indicated the option lag to be one.

Table 4.2 Lag Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-1585.57	NA	0.082578	11.69538	11.76166	11.72199
1	403.4436	3890.279	4.42E-08	-2.74591	-2.348210*	-2.586247*
2	441.0796	72.22788*	4.03e-08*	-2.838821*	-2.10971	-2.54611

* indicates lag order selected by the criterion

LR: sequential modified LR test statistic (each test at 5% level)

FPE: Final prediction error

AIC: Akaike information criterion

SC: Schwarz information criterion

HQ: Hannan-Quinn information criterion

5.4 Johansen Cointegration

Johansen Cointegration was carried out to examine the long run relationship between budget financing and economic growth in Kenya. The null hypothesis stated that there was no cointegration. Trace test results in Table 4.3 indicates that there were four cointegration equations. Hence, Vector Error Corrected Model (VECM) was applied to examine the relationship between taxation, internal borrowing, external borrowing and official development assistance on economic growth in Kenya.

Table 4.3 Johansen Cointegration

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.482	531.033	69.819	0.000
At most 1 *	0.429	353.374	47.856	0.000
At most 2 *	0.335	202.236	29.797	0.000
At most 3 *	0.253	92.009	15.495	0.000

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

**MacKinnon-Haug-Michelis (1999) p-values

5.5 Granger Causality

Granger causality was applied to examine the causality of variables under examination in Table 4.4. It was found that there was no granger causality between taxation and economic growth, economic growth and taxation. There was no causality between internal borrowing and economic growth, economic and internal borrowing. Further, there was no causality between economic growth and external borrowing. There was unidirectional causality between taxation and external borrowing, official development assistance and taxation and official development assistance and external borrowing.

Table 4.4 Granger Causality

Null Hypothesis:	F-Statistic	Prob.
D(Taxation) does not Granger Cause economic growth	0.020	0.980
Economic growth does not Granger Cause D(taxation)	0.004	0.997
D(Internal borrowing) does not Granger Cause economic growth	0.121	0.886
Economic growth does not Granger Cause D(internal borrowing)	0.924	0.398
D(external borrowing) does not Granger Cause economic growth	2.723	0.068
Economic growth does not Granger Cause D(external borrowing)	0.269	0.764
D(ODA) does not Granger Cause economic	0.111	0.895
Economic growth does not Granger Cause D(ODA)	0.052	0.949
D(internal borrowing) does not Granger Cause D(taxation)	1.779	0.171
D(taxation) does not Granger Cause D(internal borrowing)	0.110	0.896
D(external borrowing) does not Granger Cause D(taxation)	10.762	0.000
D(taxation) does not Granger Cause D(external borrowing)	0.086	0.918

D(ODA) does not Granger Cause D(taxation)	0.034	0.967
D(taxation) does not Granger Cause D(ODA)	10.837	0.000
D(external borrowing) does not Granger Cause D(internal borrowing)	0.260	0.771
D(internal borrowing) does not Granger Cause D(external borrowing)	0.059	0.943
D(ODA) does not Granger Cause D(internal borrowing)	0.085	0.918
D(internal borrowing) does not Granger Cause D(ODA)	1.045	0.353
D(ODA) does not Granger Cause D(internal borrowing)	0.086	0.918
D(external borrowing) does not Granger Cause D(ODA)	6.267	0.002

5.6 Vector Error Corrected Model

VECM was applied to examine the relationship between budget financing (taxation, internal debt, external debt and official development assistance) on economic growth. Since the selected optimal lag was two, all variables were lagged for two periods. The resultant equation is as follows:

D(Economic growth) = C(1)*(Economic growth(-1) +141.913*D(ODA(-1)) - 4.304) + C(2)*(D(Taxation(-1)) - 0.089*D(ODA(-1)) - 0.007) + C(3)*(D(Internal borrowing(-1)) + 0.0317*D(ODA(-1)) - 0.011) + C(4)*(D(External borrowing(-1)) +0.012*D(ODA(-1)) - 0.009) + C(5) *D(Economic growth(-1)) + C(6)*D(Economic growth(-2)) + C(7)*D(Taxation(-1),2) + C(8)*D(Taxation(-2),2) + C(9) *D(Internal borrowing(-1),2) + C(10)*D(Internal borrowing(-2),2) + C(11)*D(External borrowing(-1),2) + C(12) *D(External borrowing(-2),2) + C(13)*D(ODA(-1),2) + C(14)*D(ODA(-2),2) + C(15)

Results of the study indicates that 19.1% of changes in economic growth was explained by economic growth, taxation, internal borrowing, external borrowing and official development assistance for current and two past periods. The remaining proportion was attributable to extraneous attributes excluded in the model. Further, economic growth lagged for one or two periods have positive statically significant relationship with current period economic growth. Although, taxation has positive relationship it was not significant with economic growth. Moreover, internal borrowing lagged for one or two periods had positive though not statistically significant positive relationship with economic growth. External borrowing and official development had positive though not significant effect with economic growth in Kenya.

The study differed with Gurdal et al. (2021) who demonstrated a unidirectional connection between tax income and government spending but a two-way causality between economic expansion and government spending. Further, there was no causality between tax revenue and economic growth. The study concurred with existence of a long-run correlation between economic development and government expenditure. The results concurred with Abdin (2018) who demonstrated that taxes are the government's primary income source. Since, government capacity to provide services is dependent on taxation revenue collection capacity.

The study findings agreed with Misztal (2021) who demonstrated that the budget deficit and public debt both favorably impact the nation's economic growth, primarily due to the multiplier effect of the budget expenditures. These results in support of neoclassical economic thoughts. They contradict Ricardian equivalence theory that alludes that budget deficit financing adversely affects economic growth. The study supports Obi (2022) who found that foreign debt hinders economic growth. Hence, there is need for government to evaluate the strategies and measures adopted to expand its service provision capabilities. Husain (2019) asserted that only debt-fueled economic expansion. The results demonstrate that both in the short and long terms, public debt has a significant impact on economic growth. Hence, there is need for government to consider borrowing so as to finance it budget gaps.

Results of the study indicated that external borrowing have statistically significant relationship with economic growth. Ojambo (2019) asserts that in Uganda reliance with external borrowing is inevitable since there is need to seek finance for budget deficits through concessional and non-concessional debts. Incorporation of external financing should be exercised with case since increased external borrowing may have inverse effect on economic growth especially local currency depreciates or principal interest rates are increased. The study contradicts Shkonlik and Koilo (2018) who alluded that there was a non-linear relationship between external debt and economic growth in developing economies. Increased use of external debt was blamed to escalation of economic volatility and limitation of economic growth. Thus, there is need for sensitivity analysis prior to borrowing so as to minimize odds associated with negative impact of external borrowing to an economy. Further, Teng (2021) asserted that reliance with foreign aid and concessional debts have significant contribution on economic development in African continent. Furthermore, there was a positive association with concessional debts and foreign aids hence there is need for adoption for mechanisms that would stimulate foreign direct investment so as to complement economic growth linked with use of concessional loans.

The study findings differed with Awino and Kioko (2022) who found that though official development have effect on economic development it was not significant. The study was in support of Lee et al. (2020) who demonstrated that official development may have direct or indirect impact on economic growth. There is need for adoption of frameworks that depicts the valuation of environmental aspects such as carbon emission so as to optimize their value contribution in economic development. Kondu et al. (2016) reported inverse effect of reliance of external financing on economic growth due to interest payments and currency in which loans were denominated.

Table 4.5 Vector Error Corrected Model

	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	-0.0006	0.0009	-0.6328	0.5270
C(2)	0.0445	0.1380	0.3221	0.7474
C(3)	0.8097	3.0614	0.2645	0.7915
C(4)	2.5827	1.8970	1.3615	0.1736
C(5)	0.2873	0.0613	4.6845	0.0000

C(6)	0.2298	0.0616	3.7317	0.0002
C(7)	0.0446	0.1042	0.4278	0.6689
C(8)	0.0374	0.0581	0.6439	0.5198
C(9)	1.9948	2.4385	0.8181	0.4135
C(10)	1.1742	1.7010	0.6903	0.4901
C(11)	0.0352	1.5240	0.0231	0.9816
C(12)	0.4504	1.0087	0.4465	0.6553
C(13)	0.0327	0.0591	0.5536	0.5799
C(14)	0.0252	0.0318	0.7921	0.4284
C(15)	-0.0022	0.0310	-0.0714	0.9431
C(16)	0.0009	0.0013	0.7099	0.4779
C(17)	-1.6309	0.2063	-7.9041	0.0000
C(18)	-4.6323	4.5760	-1.0123	0.3116
C(19)	-11.6329	2.8355	-4.1025	0.0000
C(20)	0.0011	0.0917	0.0119	0.9905
C(21)	0.0198	0.0920	0.2156	0.8293
C(22)	0.3565	0.1557	2.2896	0.0222
C(23)	0.1367	0.0868	1.5739	0.1158
C(24)	0.9666	3.6448	0.2652	0.7909
C(25)	3.9289	2.5425	1.5453	0.1225
C(26)	4.0641	2.2780	1.7841	0.0747
C(27)	0.2124	1.5077	0.1409	0.8880
C(28)	0.0050	0.0884	0.0567	0.9548
C(29)	0.0063	0.0475	0.1322	0.8949
C(30)	0.0039	0.0464	0.0842	0.9329
C(31)	0.0003	0.0000	9.8134	0.0000
C(32)	-0.0048	0.0049	-0.9832	0.3257
C(33)	-1.2870	0.1091	-11.8007	0.0000
C(34)	-0.1195	0.0676	-1.7686	0.0772
C(35)	0.0029	0.0022	1.3429	0.1796

C(36)	0.0000	0.0022	0.0162	0.9871
C(37)	0.0027	0.0037	0.7194	0.4721
C(38)	-0.0001	0.0021	-0.0636	0.9493
C(39)	0.2162	0.0869	2.4889	0.0129
C(40)	0.1748	0.0606	2.8841	0.0040
C(41)	0.0974	0.0543	1.7933	0.0732
C(42)	0.0626	0.0359	1.7419	0.0818
C(43)	-0.0007	0.0021	-0.3382	0.7353
C(44)	0.0002	0.0011	0.1513	0.8798
C(45)	0.0001	0.0011	0.0574	0.9542
C(46)	0.0000	0.0001	0.8070	0.4198
C(47)	0.0073	0.0081	0.9055	0.3654
C(48)	0.1712	0.1787	0.9581	0.3382
C(49)	-0.9664	0.1108	-8.7261	0.0000
C(50)	-0.0011	0.0036	-0.3194	0.7495
C(51)	-0.0031	0.0036	-0.8492	0.3959
C(52)	-0.0047	0.0061	-0.7708	0.4410
C(53)	-0.0012	0.0034	-0.3580	0.7204
C(54)	-0.1782	0.1424	-1.2518	0.2109
C(55)	-0.1488	0.0993	-1.4986	0.1342
C(56)	-0.1222	0.0890	-1.3732	0.1699
C(57)	-0.0974	0.0589	-1.6542	0.0983
C(58)	0.0001	0.0035	0.0308	0.9754
C(59)	-0.0009	0.0019	-0.4933	0.6219
C(60)	0.0001	0.0018	0.0313	0.9751
C(61)	-0.0128	0.0023	-5.4913	0.0000
C(62)	1.2299	0.3667	3.3536	0.0008
C(63)	-7.0238	8.1329	-0.8636	0.3880
C(64)	-11.5346	5.0396	-2.2888	0.0223
C(65)	0.0398	0.1629	0.2446	0.8068

C(66)	0.0606	0.1636	0.3703	0.7113
C(67)	-0.5012	0.2767	-1.8111	0.0704
C(68)	-0.1402	0.1544	-0.9085	0.3638
C(69)	3.4334	6.4780	0.5300	0.5962
C(70)	9.0609	4.5188	2.0051	0.0452
C(71)	1.7878	4.0487	0.4416	0.6589
C(72)	-2.3749	2.6797	-0.8862	0.3757
C(73)	0.6384	0.1571	4.0643	0.0001
C(74)	0.2119	0.0845	2.5078	0.0123
C(75)	0.0023	0.0825	0.0278	0.9778

D(Economic growth) = C(1)*(Economic growth(-1) +141.913*D(ODA(-1)) - 4.304) + C(2)*(D(Taxation(-1)) - 0.089*D(ODA(-1)) - 0.007) + C(3)*(D(Internal borrowing(-1)) + 0.0317*D(ODA(-1)) - 0.011) + C(4)*(D(External borrowing(-1)) +0.012*D(ODA(-1)) - 0.009) + C(5) *D(Economic growth(-1)) + C(6)*D(Economic growth(-2)) + C(7)*D(Taxation(-1),2) + C(8)*D(Taxation(-2),2) + C(9) *D(Internal borrowing(-1),2) + C(10)*D(Internal borrowing(-2),2) + C(11)*D(External borrowing(-1),2) + C(12) *D(External borrowing(-2),2) + C(13)*D(ODA(-1),2) + C(14)*D(ODA(-2),2) + C(15)

R-squared	0.191	Mean dependent var	0.000
Adjusted R-squared	0.147	S.D. dependent var	0.552
S.E. of regression	0.510	Sum squared resid	66.244
Durbin-Watson stat	2.055		

D(Taxation,2) = C(16)*(Economic growth(-1) + 141.914*D(ODA(-1)) - 4.305) + C(17)*(D(Taxation(-1)) - 0.089*D(ODA(-1)) - 0.007) + C(18)*(D(Internal borrowing(-1)) + 0.032*D(ODA(-1)) -0.011) + C(19)*(D(External borrowing(-1)) +0.012*D(ODA(-1)) - 0.009) + C(20)*D(Economic growth(-1)) + C(21)*D(Economic growth(-2)) + C(22)*D(Taxation(-1),2) + C(23)*D(Taxation(-2),2) + C(24)*D(Internal borrowing(-1),2) + C(25)*D(Internal borrowing(-2),2) + C(26)*D(External borrowing(-1),2) + C(27) *D(External borrowing(-2),2) + C(28)*D(ODA(-1),2) + C(29) *D(ODA(-2),2) + C(30)

R-squared	0.6634	Mean dependent var	-0.0004
Adjusted R-squared	0.6449	S.D. dependent var	1.2784
S.E. of regression	0.7618	Sum squared resid	148.0020
Durbin-Watson stat	1.9735		

D(Internal borrowing,2) = C(31)*(Economic growth(-1) + 141.914*D(ODA(-1)) - 4.305) + C(32)*(D(Taxation(-1)) - 0.089*D(ODA(-1)) - 0.007) + C(33)*(D(Internal borrowing(-1)) + 0.032*D(ODA(-1)) - 0.011) + C(34)*(D(External borrowing(-1)) + 0.012*D(ODA(-1)) - 0.009) + C(35)*D(Economic growth(-1)) + C(36)*D(Economic growth(-2)) + C(37)*D(Taxation(-1),2) + C(38)*D(Taxation(-2),2) + C(39)

*D(Internal borrowing(-1),2) + C(40)*D(Internal borrowing(-2),2) + C(41)*D(External borrowing(-1),2) + C(42) *D(External borrowing(-2),2) + C(43)*D(ODA(-1),2) + C(44) *D(ODA(-2),2) + C(45)

R-squared	0.5585	Mean dependent var	-0.0001
Adjusted R-squared	0.5343	S.D. dependent var	0.0266
S.E. of regression	0.0182	Sum squared resid	0.0841
Durbin-Watson stat	1.9286		

D(External borrowing,2) = C(46)*(Economic growth(-1) + 141.913*D(ODA(-1)) - 4.305) + C(47)*(D(Taxation(-1)) - 0.089*D(ODA(-1)) - 0.007) + C(48)*(D(Internal borrowing(-1)) + 0.0318*D(ODA(-1)) - 0.011) + C(49)*(D(External borrowing(-1)) + 0.012*D(ODA(-1)) - 0.009) + C(50)*D(Economic growth(-1)) + C(51)*D(Economic growth(-2)) + C(52)*D(Taxation(-1),2) + C(53)*D(Taxation(-2),2) + C(54)*D(Internal borrowing(-1),2) + C(55)*D(Internal borrowing (-2),2) + C(56)*D(External borrowing (-1),2) + C(57) *D(External borrowing (-2),2) + C(58)*D(ODA(-1),2) + C(59) *D(ODA(-2),2) + C(60)

R-squared	0.5567	Mean dependent var	0.0002
Adjusted R-squared	0.5324	S.D. dependent var	0.0435
S.E. of regression	0.0298	Sum squared resid	0.2258
Durbin-Watson stat	2.0196		

D(ODA,2) = C(61)*(Economic growth(-1) + 141.914*D(ODA(-1)) - 4.305) + C(62)*(D(Taxation(-1)) - 0.089*D(ODA(-1)) - 0.007) + C(63)*(D(Internal borrowing(-1)) + 0.0317*D(ODA(-1)) - 0.011) + C(64)*(D(External borrowing(-1)) + 0.012*D(ODA(-1)) - 0.009) + C(65) *D(Economic growth(-1)) + C(66)*D(Economic growth(-2)) + C(67)*D(Taxation(-1),2) + C(68)*D(Taxation(-2),2) + C(69) *D(Internal borrowing(-1),2) + C(70)*D(Internal borrowing(-2),2) + C(71)*D(External borrowing(-1),2) + C(72) *D(External borrowing(-2),2) + C(73)*D(ODA(-1),2) + C(74) *D(ODA(-2),2) + C(75)

R-squared	0.7072	Mean dependent var	0.0004
Adjusted R-squared	0.6911	S.D. dependent var	2.4363
S.E. of regression	1.3540	Sum squared resid	467.5102
Durbin-Watson stat	2.0552		

5.7 Post Estimation Analysis

Post estimation analysis was carried to examine the stability of the model. The study applied stability and heteroskedasticity tests.

5.8 Roots Characteristics Polynomial

Pictorial presentation in Figure 4.1 indicates that the roots characteristics were unit hence the model was stable.
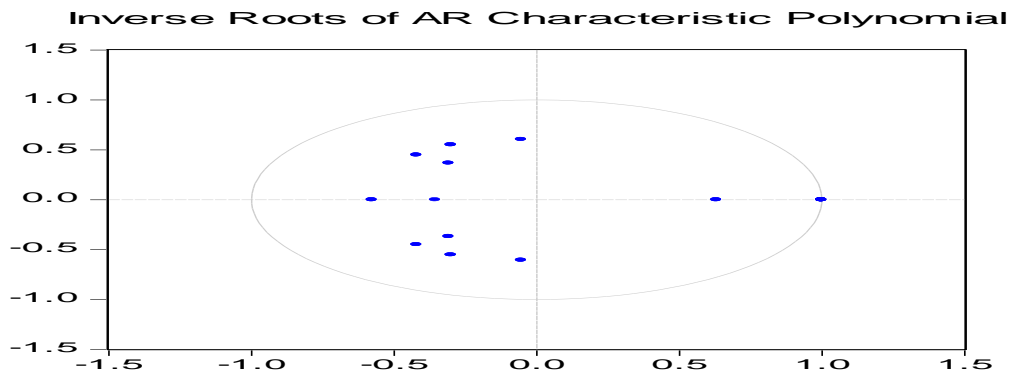
Figure 4.1 Roots Characteristics Polynomial

5.9 Post Estimation Heteroskedasticity Test

Heteroskedasticity tests indicated that there was uniformity of the variance of error term since the p value > 0.05.

Table 4.6 Post Estimation Heteroskedasticity Test

Chi-sq	df	Prob.
43.9453	330	0.07

Impulse Response

Pictorial presentation in Figure 4.2 indicates that economic development responds to shocks of taxation, internal debt, external debt and official development assistance. There was a positive shock of taxation, internal borrowing, external borrowing and official development assistance on economic growth in Kenya.
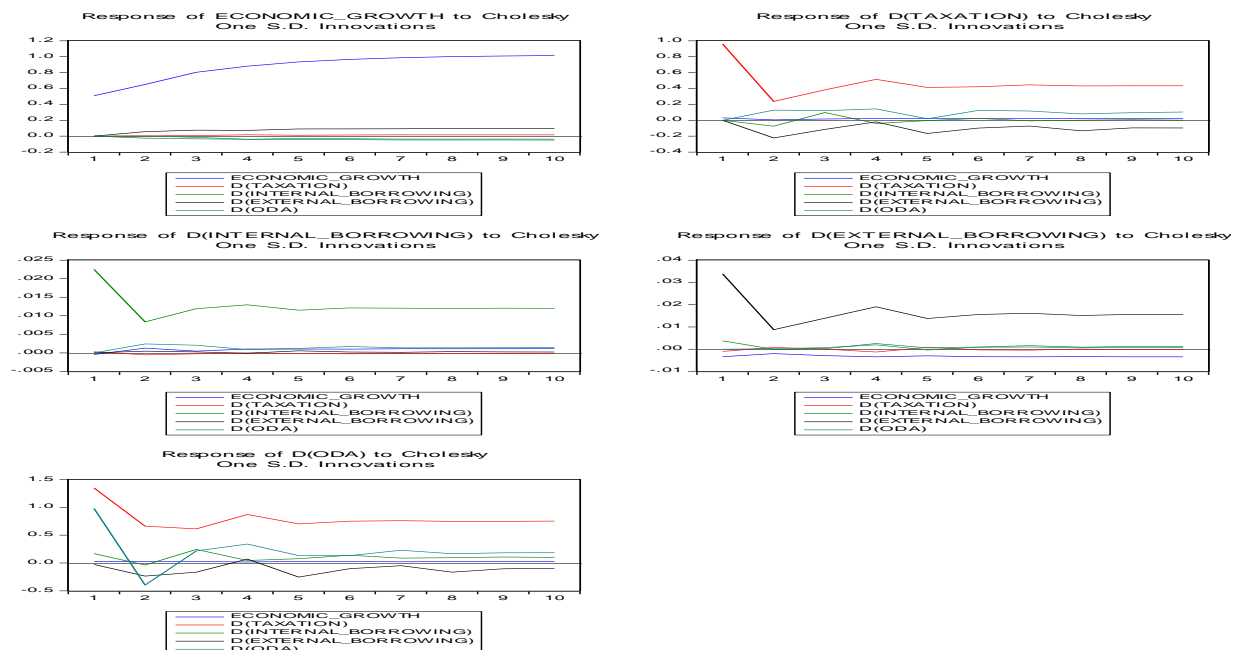
Figure 4.2 Impulse Response

5.10 Variance Decomposition

The study findings in Figure 4.3 indicates that variance due to shocks was 100% initially and it declines with notable changes in response to changes in taxation, internal borrowing, external borrowing and official development assistance.
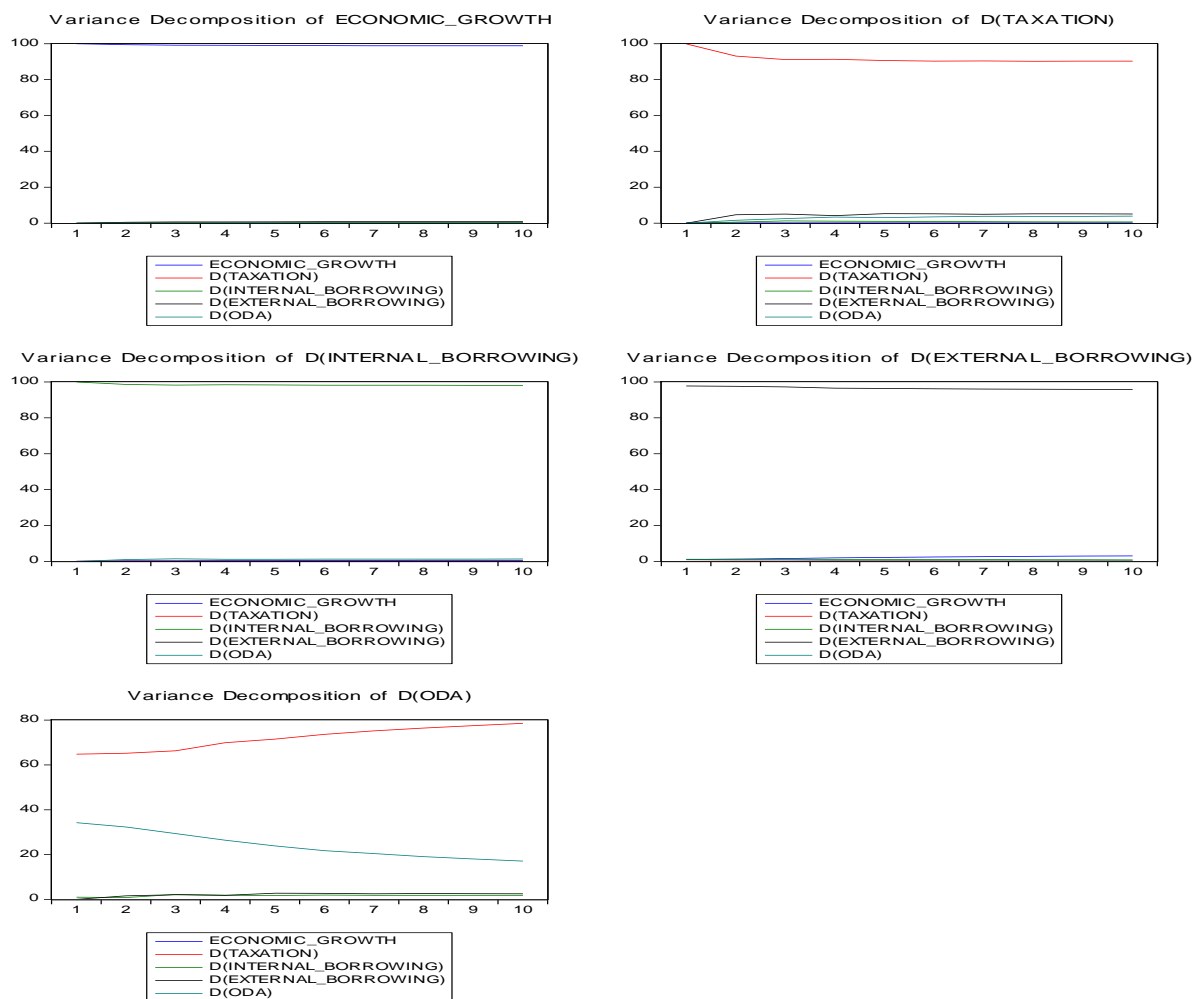

Figure 4.3 Variance Decomposition

6.0 CONCLUSION AND RECOMMENDATIONS

6.1 Conclusions

Taxation has inverse contribution on economic growth. Thus, increased amount of revenue generated from taxation impacted economic growth inversely. Hence, it can be deemed to be double edged where increased taxation was associated with changes in its administrative costs and spillage of revenue collected. Therefore, there is need for evaluation of taxation value chain as such to optimize revenue taxation collection and allocation in projects that support economic growth.

Since, internal borrowing have relationship with economic growth. It can be concluded that there is need for evaluation of internal borrowing costs by the government since increased borrowing costs of treasury bills and treasury bonds whose risk of default is low compared to individual borrows may constrain access to private capital. The government may consider undertaking their infrastructural projects through alternative financing models.

Thirdly, external borrowing has a relationship with economic growth in Kenya. There is need for consideration of borrowing costs and contractual currency since there are instances in which local currency may depreciate its value and it will impact repayment amount. Further, there is need for verification of economic value of projects been financed through external borrowing, this may aid in mitigating financial losses due to corruption and exaggeration of project costs.

The fourth objective indicated that there was a relationship between official development assistance and economic growth in Kenya. From the findings it can be concluded that reliance on official development assistance has effect on economic growth in Kenya. It can be concluded that project grants and development assistance was allocated in projects that affected project development positively. Hence, there is need for evaluation of projects that may have significant contribution on economic development and allocate resources optimally.

6.2 Recommendations

The results of the study indicated taxation inversely affects economic growth in Kenya. Thus, it can be recommended that there is need for adoption of matching taxation policies that would escalate tax collection strategies and minimize spillage of resources. Further, there is need for adoption of taxation policies that may stimulate private sector investment so as to alter resources under employment.

Secondly, internal borrowing has significant effect on economic growth in Kenya. Thus, it can be recommended that there is need for consideration of seeking internal debts via treasury bills and bonds though it ought to undertake it very cautiously since it may trigger skewed borrowing from the private sector. Credit access reduction among the private stakeholders may deter access to private capital that may stimulate economic growth through investment in sectors where government may not operate optimally. Further, the government may develop fiscal and monetary policies that may enhance credit creation of financial institutions and decrease interest costs.

Further, external borrowing has a relationship with economic growth in Kenya. Thus, it can be recommended that there is need for consideration of external borrowing that would be cheaper and available for a longer period of time. Further, there is need for pursuance of loan contracts that presents flexible payment so as to allow for renegotiations especially when there are project overlays or there are delays in generation of revenue from respective projects that has been undertaken.

Finally, positive relationship between official development assistance and economic growth in Kenya. It can be recommended that there is need for development of strategies that would guide in fund raising of grants for undertaking projects that will have social economic benefit.

Further, there is need for establishment of a department for fund raising in respective government ministries.

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