Relationship between Public Debt and the Economic Growth in Kenya

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Abstract: Government debt is one of the main macroeconomic variables that determine a state's standing in the global market. It is the elements influencing the inflow of overseas investment. Prudent communal debt administration encourages commercial stability and growth by leveraging resources at low borrowing costs and lowering financial risk exposure. The main subjects of this study are the public debt in Kenya and its connection to economic growth from 2011 to 2021. Most developing nations will anticipate a beneficial impact of public debt on economic progress. Therefore, government spending that would promote economic growth should be financed with funds from public bill. Equating to foreign arrears, there exist a weighty development in household dues, which leads to enquiries on how it will influence investments in Kenya. The empirical exploration, however, shows the opposite. The research also aims to establish the relationship between Kenya's financial development and its foreign dues, domestic arrears, and the overall cost of the debt payment. The Keynesian model and the Debt Overhang Hypothesis, has two opposing framework visions on state's debit outdate view and the Ricardian view— guided the analysis. GDP served as the dependent variable, and variations in public borrowings, the jobless rate, inflation, and total debt served as the predictor factors. From 2011 to 2021, data were gathered for all the parameters. According to the regression analysis findings, the constant was found to be 84.0, with the variables for inflation, the joblessness ratio, public inland arrears, and revolution in aggregate dues being 0.09, 0.39, 0.36, and 0.35 correspondingly. Results showed the difference in 1(one) unit of overall debts could result in a decrease of 6.0 units of internal product. In comparison, a variation in 1 unit of local government debt increases 5.9 units of local produce. Additionally, a change in joblessness would cause a decrease in the domestic product of 0.4 units for every unit that changed. Finally, 0.75 units of the domestic product would decrease for every unit of inflation. Rendering to the outcomes of the correspondence analysis, there is a negative link in GDP and each of the four explanatory factors taken into account. However, there is a major connection between aggregate inflation and debts. The regression model's probability value was deduced from the ANOVA findings. It was found to be 0.04, suggesting the model's importance in describing the link between the GDP and the factors under consideration.

Keywords: Government debt, Macroeconomic variables, Commercial stability, Public borrowings, GDP.

1. INTRODUCTION

1.1 Background of the Study

A key problem with economic policies in emerging countries is dealing with a public debt. For a long time, the high levels of debt, is particularly exceedingly owing to Low-Income Countries. This problem has caused major concerns for many global financial institutions and bilateral financiers. As a result, developed nations and international banks have taken several initiatives to reduce the debt load endangering the economies of Extremely Indebted Poor Nations. The efforts cover anything from debt rescheduling to utter debt forgiveness as ways to lessen the load of debt.

A fiscal imbalance's impact on investments allows for observing correlations between economic performance and state debt. And the "borrowing" and "crowding out" consequences can account for this. Theoretical theories contend that a

significant budget deficit causes the Country to borrow more, limiting its access to capital and raising the cost via high-interest rates. Furthermore, suppose there is a chance that the debt could eventually grow beyond the Country's capacity to pay it off. In that case, the predicted debt costs will deter foreign and local investment (Krugman, 1988). A heavy debt load also promotes capital flight by raising the possibility of devaluation to preserve the "actual" worth of capital assets. The outcome of these capital controls is a decline in domestic investment and savings, which eventually negatively impacts the revenue base and the state's ability to pay down debt (Alberto & Tabellini, 1989).

1.1.1 Global Perspective of the relationship between public debt and the economic growth in Kenya

The association between municipal dues and commercial progress has been widely documented. The United States, the largest economy in the world, had a public debt of $26.95 trillion in September 2020 (Duffin, 2020). This significant increase of more than $4.2 trillion in a year, given the Country's public debt, was $22.7 trillion in September 2019 (Duffin, 2020). The issue remains the subject of fierce debate between Republicans and Democrats, who repeatedly differ on how the US should handle public debt. Between 2000 and 2019, the US public debt quadrupled (Duffin, 2020). This aspect has led to a broad range of studies seeking to establish the link between economic development and public liability.

The "debt overhang" element is considered the most adverse consequence of public debt. The risk of a public debt surpassing the Country's repayment capacity threatens to depress local and international investment due to the expected debt-service expenses. "Crowding out" may also be witnessed if a country uses a significant percentage of foreign capital to repay public debt. In this case, only a small percentage of the capital will be channeled to growth and investment (Demirel, Erdem, & Eroglu, 2017). Demirel et al. (2017) explain that many Eurozone countries are experiencing the crowding out effect as they repeatedly borrow to finance budget deficits. Jordan experienced an economic slowdown in 2015, the first time since 2010 (Al-Majali, 2018). Total investment is directly reduced, while complimentary private expenditures are indirectly decreased by the crowding out result initiated by public debt repayment (Karagol, 2002). The figure below represents a global overview of the correlation between GDP and public debt

1.1.2 Local Perspective of the link between public debt and Kenyan economic growth

The earliest ten years following independence, from 1963 to 1973, were when Kenya's economy grew the fastest. One could call it Kenya's "golden economic era." The Gross Domestic Product increased by 6.5% on average, per capita income stayed healthy, and the inflation level was lower than 3%. Exports increased at an unprecedented pace of 13% annually. The debt repaying ratio, which measures loan repayments as a percentage of overall exports of goods and services, was too low in 1970s to raise concern when contrasted to that of African nations collectively, which was more than 10% in 1972 according to an analysis of commonly used debt burden indicators. However, the 1973–1974 oil crises altered the situation and brought serious BOP issues. To address the BOP problem, the government turned to significant external borrowing. In the previous years, external debt increased by 45.3% in 1973. In 1975, the growth rate dramatically dropped to less than 2.9% (Were, 2001).

Due to the "coffee boom" of 1976–1977, export revenues suddenly increased, which resulted in a transient decrease in the loan-repayment ratio in 1978. However, the second oil crisis and a dramatic global commodity market decline came after the coffee boom. Kenya's export revenue nearly stagnated, while the total debt grew rapidly. Increasing the debt to GNP ratio was seen at the same time. Food imports during the 1980s drought were actualized by the existence of foreign loan financing. The higher rates of interest on overseas loans significantly increased the debt service fee. These caused disposable transfers on debits to decline, turning adverse in 1981, 1984, and 1986 and continuing to do so since 1991. The need to raise money to finance the deficit budget rose to start in 1992 as a result of a spike in corruption scandals, including the Goldenberg Scandal, The Triton Saga, and the state's use of unconstitutional procurement practices. The amount of national debt increased steadily until Moi's administration ended (Were, 2001). Kenya's public debt has increased annually due to the state's efforts to support economic expansion. The government changed powers in 2002, and the new administration, led by Mwai Kibaki, promised to make fresh investments to strengthen the economy of the nation. The necessity for massive investment led to an increase in communal loan from 12.7% in 2002 to 12.9% in 2012. This capital shift to international creditors will significantly impact the economy. Even while the government is looking to the east for more assistance, it is crucial to assess our present debt crisis, its repercussions, and its sustainability. This necessitates discussing the existing debt position, trends in debt spending and servicing, the rising debt load, and how it is used.

1.2 Statement of the Problem

The findings of earlier research in this field are consistent with the debt overhang ideas put forth by neoclassical economists. They suggest that public debt could have a detrimental impact on monetary progress if not controlled appropriately over the lengthy period and past a particular threshold. In Kenya, governmental debt has been rising since 1963/64 and has occasionally been higher than GDP. The Country's ongoing internal and foreign borrowing to cover its budget surplus as it strives to forward the development plan outlined in the National Development Plans (NDP), like the Millennium Development Goals and the Vision 2030, is blamed for the increase. Therefore, the significance of a growing government debt stock will not be excluded from the Country, necessitating the requirement for an empirical study of the phenomena above in Kenya. It is impossible to undervalue how serious Kenya's credit crisis is. There is a substantial quantity of external debt. During the recession of 2008–2009, debt servicing plunged the nation into an economic crisis. Investors anticipate that taxes will increase in the present and the future, impacting the flow of resources overseas. As a result, a debt overhang is caused by a large buildup of foreign and domestic debt, which negatively impacts investment and growth. Private investment is discouraged due to the high debt-to-income ratio (Ajayi, 1991). This, as a result, impacts economic progress because of low investment.

The irony of the state's borrowing over the previous few years is that as more was acquired, the economy gradually deteriorated. Kenyans were deprived of their social, economic, and political rights due to the debt burden, which caused significant poverty throughout the Country. Conditions placed on Kenya are intended to guarantee that the IMF and World Bank receive their funds back, not necessarily to help Kenya escape poverty. This is because the lenders' terms create more issues than solutions, and as a result, the debt load keeps increasing (Ministry of Finance, 1994). Since 2002, nevertheless, this has not been the case. The government's major goal was to boost public investment to stimulate the economy. The economy developed consistently up until 2007/2008, when it fell due to the post-election unrest, despite the rising debt statistics. Since then, it has been expanding once more, on average, at 3.98%.

1.3 Objective of the Study

1.3.1 General Objective of the Study

This exploration primary goal is to evaluate the relationship between public debt and the economic growth in Kenya

1.3.2 Specific Objective of the Study

   i. To investigate the impact of exterior loans on Kenya's financial evolution.

   ii. To assess the native debits consequence on Kenya's fiscal development.

  iii. To assess the overall cost of loan servicing on Kenya's commercial growth.

   iv. To assess the effects of the international reserve as a governor variable on Kenya's economic progression

1.4 Research Questions Objective of the Study

   i. What are the effects of external dues on Kenya's financial development?

   ii. How does domestic debt impact Kenya's monetary progress?

  iii. What are the consequences of the total cost of debt service on Kenya's fiscal development?

   iv. What are the effects of the international reserve as a control variable on Kenya's economic growth?

1.5 Significance of the study

1.5.1 Kenyan public

This study aims to inform the public on how to assess leaders using borrowed money to gauge their success in addressing social welfare, economic growth, and compliance with the 2030 Vision. The research will also be significant for the general public in tracking the trend of public debt levels following independence and for financiers in tracking the government of Kenya's use of borrowed money. This survey aims to offer insights into how federal debt can be properly handled while improving economic activities that promote growth. The IMF elevated a red flag on Kenya's state arrears and how it harmed economic growth.

1.5.2 Government of Kenya (GOK)

The information and conclusions from this study can also be applied by the Kenyan government, particularly the ministries of finance, planning, and devolution, to determine how to manage the nation's public debt better and how to organize the use of borrowed money intended for the nation's progress.

1.5.3 Researchers

The study will help academicians and researchers in higher education bodies in the fields of public borrowings and its management, as well as any improvements that should be made whenever necessary. Over the years, Kenya's governmental debt has increased significantly, sparking intense discussion. To achieve its financial demands as specified in the National Development Plan (NDP), like the millennium development objectives and vision 2030, the Kenyan government has continued to depend on both externally borrowed money and homegrown assets over the years.

1.6 Scope of the Study

The current investigation is grounded in Kenya. The researcher applies statistics from the late 20th century to the 21st century. Conferring to the 2019 Kenya Population and Housing Census Report, the Country's overall population is 47.5 million. Global and industry perspectives help contextualize the study in the modern globalized world by comparing Kenya with the world's major economies, such as the United States.

2.   LITERATURE REVIEW

2.1 Theoretical Review

2.1.1 Classical theoretical Views on Public Debt

Classical economists' opinions on communal borrowing were influenced by belief in the function of administration in the nation's economy. They thought it was possible to spread the debt's payment across many succeeding years. Say (1836) asserts that "there is a major disparity between a private lender and a borrowing governments, that, in general, the former borrows capital for helpful employment, while the latter for unproductive consumption and expenditure" (p.442). Smith (1776) said the state was wasteful because it robbed private business people who desperately needed cash for fostering production and trade by borrowing money from them for useless reasons. A percentage of the yearly produce, he claimed, "turned away from serving in the role of a capital to serve in that of a revenue; from sustaining resourceful workers to preserving the infertile, and to spent and squandered normally in the year, without the expectation of any future reproduction" (Smith, 1776, n.p).

The main ideas of the classical school on public debt are encapsulated in the sets of propositions that follow. The government first takes money away from profitable private jobs. Second, because deficits are less unpleasant than current taxes, unbalanced budgets encourage irresponsible government behavior. Thirdly, when the government borrows money, it makes it more difficult to finance future projects since it increases the amount of the budget allocated to fixed expenses and the amount of taxes collected to cover the cost of the debt's interest. Finally, loan financing is expensive since public expenditures must be paid twice to cover interest costs and again to amortize the debt. It is, therefore, reasonable to claim that state debt causes currency depreciation.

2.2.2 Keynesian Theory of Public Debt

The Keynesian Revolution, which yielded hypothetical outcomes that were completely at odds with the corpus of economic thought that was in existence during its formation, had a major impact on the economics of public borrowing in modern communal investment. The General Notion of Employment, Interest, and Money, published in 1936, laid the theoretical base for the contemporary model of public loan. In functional finance, the fresh model is expressed in its most basic form, which upholds that "the total quantity of the municipal borrowing does not matter at all, and that, however high interest costs that must be paid, these do not constitute any liability on the entire society." The "no liability" policy's proponents consider the economy to be a single entity, and as an effect, they embrace…."That private loan is external, as opposed to public borrowing. Someone owes it to someone else. It is burdensome because of that. Because it is interpersonal, international rather than public debt should be used as the appropriate comparison. Public debt, on the other hand, refers to debt owed by a country to its inhabitants. There isn't an outside creditor, then. We must do it for ourselves.

The society under study in this research is compared to a family. It fails to distinguish between a command economy and a system of economic governance centered on private businesses.

The "no burden" argument also uses some benefits of governmental borrowing. The government can access savings sources, raise resources for useful purposes, and boost the Country's income by issuing debt. The additional income stream eases taxes and loan payment. An increase in communal borrowing during joblessness helps with current capital creation. It encourages the growth of progressively more institutionalized savings sources, including banks, stock markets, and insurance firms. It enables a nation's citizens to raise their standard of living by assisting in reducing consumption, promoting savings, and fostering capital accumulation.

2.2.3 Post-Keynesian Theories of Public Debt

According to Buchanan (1958), the prevailing model of municipal arreas at the time was known as the "New Orthodoxy," founded on three fundamental ideas. Firstly, there is no shifting of the real main cost to the next generation due to the growth of public debt. Secondly, comparing personal or private debt to national debt is false. Finally, there is a clear and major difference between domestic and external borrowing.

The age-old debate over the weight of public debt has reemerged since Buchanan's Public Principles of Public Debt (1958) was published. The arguments by J.M. Buchanan, J.E. Meade, and R.A. Musgrave have effectively attacked the notion that public debt has no negative economic effects and that the actual government expenditue , no matter how it is funded, cannot be passed on to coming generations. In the most general scenario, Buchanan has attempted to show that coming generations bear most of the true cost of the national debt. It is essentially accurate to compare public and personal debt. The essential differences between internal and external debt are negligible. Buchanan stressed that payment of levies is per actual burden.

Public loan finance can then be viewed as enabling individual taxpayers to acquire a tax credit of equal duration. The effect will be equal to that of public loan finance, with the major distinction being that household debt is provided instead of public debt. Loan finance remains an essential policy tool by requiring pay-as-you-go payments even when it does not raise the total amount of resources available.

2.2.4 Modigliani Burden Theory

Modigliani's Burden Theory is an important post-Keynesian public debt thesis. He used the cumulative investment approach to separate the financial consequences of public debt. Because the government purchases goods and services, he comes to the following conclusions: An increase in the (actual) public debt, whether internal or foreign, is typically beneficial to those in the room at the moment of the increase. Through a decrease in the total inventory of private capital, a rise in state debt will typically significantly negatively impact people who live past that point. The gross liability (gain) on forthcoming generations can be determined by the interest payments on the municipal liability if it can be assumed that the interest rate at which the administration borrows is a decent estimate of the marginal capital productivity. As increased public spending, or productive public capital building, goes together with debt growth, the overall burden of the public debt may be offset or even lowered.

The extent of the demand for present resources is unaffected by how government expenses are financed, as Modigliani (1961) noted. However, it might change the kind of private uses that are being made of the relocated resources. He contends that taxes will replace most investments and debt financing will replace primarily consumption. In a free market economy, or even in a mixed economy, there is a natural tendency for wealth and earnings to be divided inequitably. This is where the socialist objection to establishing a large public debt comes from. According to the argument, the development of a considerable amount of public debt creates a new class of investors who benefit from interest payments on bonds issued by the government. The gap between the haves and the have-nots extends as the middle class grows, contributing to increased societal inequality. Government debt expansion is likely to worsen.

This chapter attempts to address the numerous theoretical concerns about public debt. Debt and inflation, the sustainability of domestic debt, the "crowding" out debate, and the debt burden perceived by classical, Keynesian, and modern economists are the topics covered. Debt administration and the effects of domestic debt buildup on the macroeconomics are also covered. The conventional perspective of public debt focused on classical, Keynesian, and post-Keynesian theories was the foundation for this study's theoretical literature review.

2.3 Conceptual Framework

Independent variable   Dependent variable
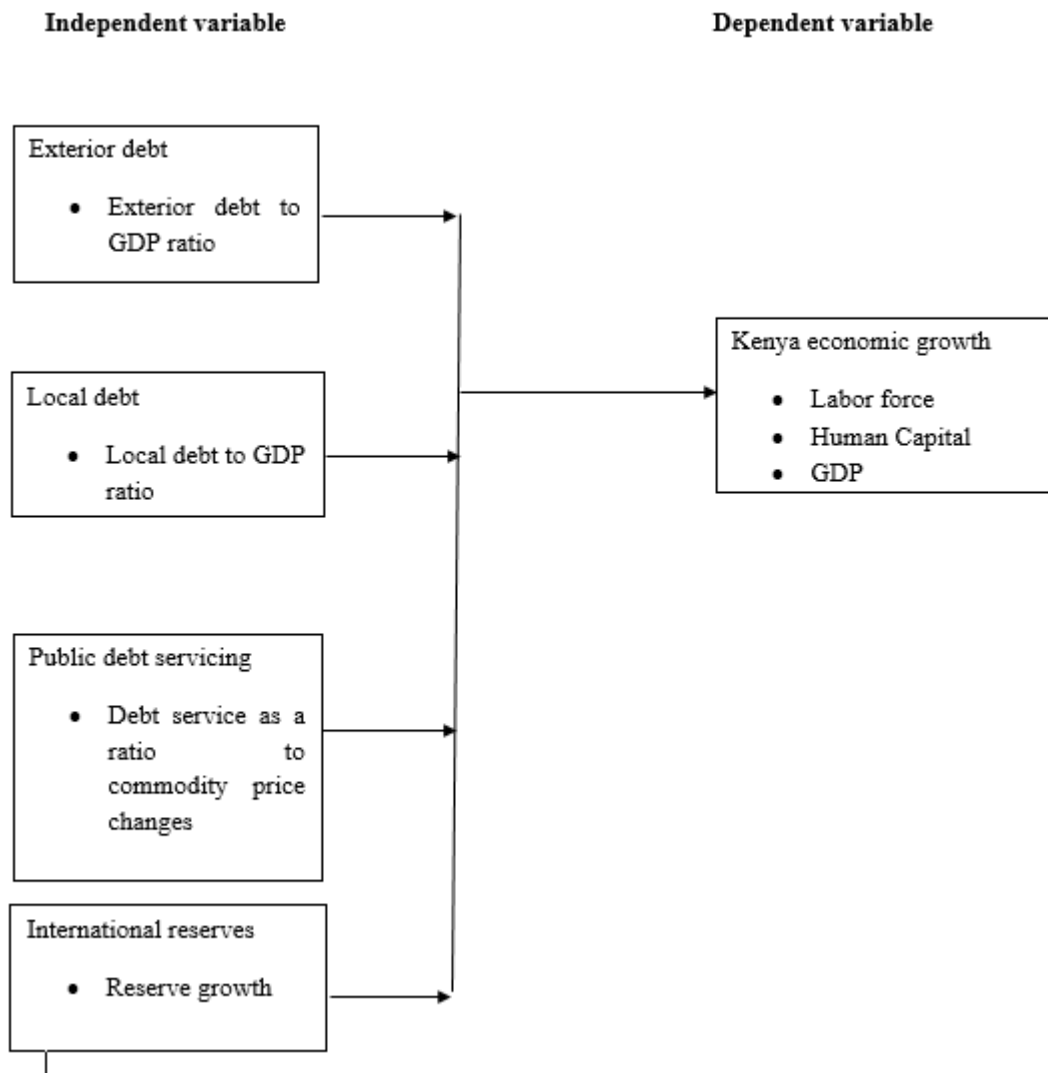
3. RESEARCH METHODOLOGY

3.1 Research Design

The study adopted a descriptive research design. Mugenda and Mugenda (2003) describes descriptive research design as a systematic, empirical inquiring into which the researcher does not have a direct control of independent variable as their manifestation has already occurred or because the inherently cannot be manipulated. Descriptive studies are concerned with the what, where and how of a phenomenon hence more placed to build a profile on that phenomenon (Mugenda and Mugenda, 2003). Descriptive research design is more appropriate because the study seeks to build a profile about the relationship between domestic debt and economic growth

3.2 Data Collection

The information pertaining to this investigation is supplemental. This is so that all of the sovereign variables utilized to govern the dependent variable may be found in credible data, such as the websites of the Kenya National Bureau of Statistics, the Central Bank of Kenya, and the Eikon Thompson Database. Mugenda (2003) asserts that exploratory study favors subordinate data analysis over the prime component of the analysis. Mugenda (2003) claims that secondary statistics classification is significantly clearer since it reduces ambiguity. According to Cheng and Phillips (2014), the use of secondary records analysis is practical since it uses the investigative process, particularly in studies subject to bias. Secondary records are those gathered by a third party for a secondary purpose; they provide a practical alternative for

scholars who lack the necessary time or may be under time constraints in other ways (Hui & Phillips, 2014). The years 1997 to 2020 were taken into account for the study.

3.3 Data Analysis

The study used Statistical Package for Social Sciences Version 21.0 to aid in data analysis. The paired t-test, a non-parametric test of differences developed by Sir Williams Gosset (Mugenda & Mugenda, 2003) will be used in this study as a test of significance. The analysis will be at 0.05 level of significance. In order to determine the relationship between public debt and economic growth in Kenya, the researcher conducted a multiple regression analysis. The study was based on Harrod-Domar growth model which gives insights into the dynamics of growth which holds that the level of savings and capital are functions of the level of GDP in an economy. In order for any government to invest its resources in development, it must have met the recurring expenditure. Hence the amount available for long term investment largely depends on amount of income available to the government both form taxes and debt in forms of domestic and external. The model is based on several studied including: Abbas and Christensen (2007) who studied the impact of domestic debt on economic growth for ninety three low-income countries from the period of 1975-2004 by applying Granger Causality Regression model with variables including different components of domestic debt. Adofu and Abula (2010) also used the components of domestic debt in investigating the relationship between domestic and economic growth in Nigeria for the period 1986-2005. Checcherita and Rother (2010) use both domestic and external debt in the determination of the average impact of government debt on per capita GDP growth for twelve Euro area countries over a period of about 40 years from 1970-2009. Rabia and Kamran (2012) used domestic and external debt to examine the impact government debt on the economic growth of Pakistan

4. EMPIRICAL FINDINGS

4.1. Introduction

The outcome of data gathering is discussed in this section. Firstly, to avoid the issue of erroneous regression results, static tests were conducted and reported. Secondly, the usual least square approximation outcomes are offered, with diagnostic tests and a debate of the discoveries. Finally, the outcomes of the Granger causation assessments between the debt-to-GDP ratio and fiscal development are presented along with a discussion.

Table 4.1 Descriptive statistics

	Mean	Median	Max	Min	Std. Dev.	Skew-ness	Kurtosis	Jarque-Bera	Prob	Obs
Public external debt	47.11	45.07	75.65	23.63	11.51	0.39	2.90	1.08	0.58	41
Public domestic debt	20.16	19.81	29.79	15.00	3.29	0.58	3.22	2.37	0.31	41
Cost of Debt Servicing	1.40	1.52	2.26	0.35	0.60	-0.25	1.74	3.15	0.21	41
Labor power	6.65	6.70	7.25	5.96	0.40	-0.18	1.72	3.01	0.22	41
Rate of exchange	1.62	1.78	2.01	0.87	0.37	-0.76	2.07	5.44	0.07	41
Human Capital	5.93	5.85	6.47	5.56	0.27	0.66	2.22	3.99	0.14	41
Openness to trade	55.37	55.24	72.86	36.18	8.21	-0.13	3.59	0.72	0.70	41
Economic evolution	4.08	4.80	7.62	-0.10	2.13	-0.36	2.02	2.53	0.28	41

Source: Authors' calculations, 2022

All test variables are evenly dispersed according to the specifications listed in Table 4.1. In terms of skewness, the exchange rate, the cost of debt servicing, the work force, monetary progress, and sincerity to trade were undesirably skewed, but public exterior debt, government domestic debt, and human resources were positively skewed. This is because the Jarque Bera p-value is greater than 0.05 and the null hypothesis of regularly spread variables was not excluded at a 5% degree of implication.

4.2 Diagnostic Test Results

As discussed in chapter three, the study executed different tests to assess that the classical assumptions were not violated. The section presents the results of, Multicollinearity, autocorrelation assessment, panel unit root test, and Hausman description examination.

4.2.1 Multicollinearity Tests

Table 4.2 presents the association matrix results for the test of Multicollinearity.

Table 4.2 Correlation Matrix

Variable	Economic Growth	Public external debt	Public domestic debt	Cost of Debt Servicing
Economic Progress	1.00			
Communal external debt	-0.16	1.00		
Communal domestic debt	-0.40	0.31	1.00	
Cost of Debt Servicing	0.20	0.01	-0.09	1.00

Source: Study Data (2022)

Table 4.2 illustrates the pair-wise correlation matrix. According to the analysis, none of the independent variables were statistically connected to one another. The findings demonstrate that all correspondence figures were less than 0.8, demonstrating that the study statistics did not exhibit extreme Multicollinearity (Gujarati, 2003; Cooper &Schindler, 2008). This issue was not present in the data because the maximum correlation value was 0.2.

4.2.2 Autocorrelation Test Results

Table 4.3 presents the test results of the Wooldridge test for autocorrelation.

Table 4.3 Autocorrelation Test Results

Serial Correlation Tests
Wooldridge test for autocorrelation in panel data
H0: no first-order autocorrelation
$F(1,38) = 1.13$
$Prob > F = 0.21$

Source: Study Data (2022)

The outcomes of the serial correlation test are shown in Table 4.3. This research employed the Wooldridge autocorrelation test. Therefore, the assumption that there was no first-order sequential correlation was a null hypothesis. The analysis found lack of sequential association of first directive since the p-value (p-value=0.21) was bigger than the threshold of significance of 0.05 based on the results, and the null theory was not excluded. Because the data supported the hypothesis that residuals were not correlated across time, panel regression analysis was appropriate.

4.2.3 Heteroscedasticity Test Results

Table 4.4 gives the test outcomes of the Wald assessment to test for Heteroscedasticity.

Table 4.4 Heteroscedasticity

Modified Wald test for group-wise heteroscedasticity
$chi2 (42) = 1673.00$
$Prob>chi2 = 0.056$

Source: Study Data (2022)

Table 4.4 denotes the result after the testing of heteroscedasticity. The study utilized the Improved Wald test to test for Heteroscedasticity. The null proposition was that the error terms had a constant variance (Homoscedastic). The investigation produced a chi-square score of 1673.00 with a p-value of 0.056. This demonstrates that the chi-square was

not statistically substantial at a 5 percent significant level; hence the null hypothesis that the error terms had a constant variance was rejected. The researcher addressed the existence of heteroscedasticity by running a Feasible Generalized Least Square (FGLS) Model.

4.2.4 Panel Unit Root Test

Table 4.5 offers the results of the panel unit root test.

Table 4.5 Panel Unit Root Test

Variable	P statistic	Z statistic	L* statistic	Pm statistic
Economic Growth	54.54 (0.03)	-0.89 (0.04)	-0.85 (0.02)	-2.00 (0.03)
Public external debt	2835.63(0.00)	-3.67 (0.0024)	-9.05 (0.00)	15.98 (0.00)
Public domestic debt	845.66 (0.00)	-17.87 (0.00)	-33.73 (0.00)	58.05 (0.00)
Cost of Debt Servicing	499.37 (0.00)	-19.83 (0.00)	-20.89 (0.00)	33.95 (0.00)
International Reserve	3467.455 (0.00)	-1.08(0.002)	-7.06 (0.00)	7.09 (0.00)

Source: Study Data (2022)

The panel data was also subjected to a stationarity test as an additional test of the stability of the variables. In this study, the Fischer-Type unit root test was applied to assess the existence of unit roots. Table 4.5 gives the unit-roots investigations of all the study variables. The null hypothesis was that the figures were not stationary. The rule explains; if the p-value is less than 0.05, it is resolved that the panels do not suffer non-stationarity. From Table 4.5, all the variables have a p-value below 0.05, implying the panels do not suffer non-stationary. Hence, the null hypothesis of non-stationary was rejected.

4.2.5 Hausman Test

The researcher determined whether to run a fixed or random effect model when analyzing board data. Both random and fixed effect models estimated coefficients to conclude the appropriate model to use.

Table 4.6 Hausman Test ROA

Test Summary		Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random		10.87	4	0.02
Cross-section random effects test comparisons				
Variable	Fixed	Random	Var(Diff.)	Prob.
Economic Growth	0.04	0.51	0.029	0.005
Public external debt	1.46	1.54	0.069	0.76
Public domestic debt	-0.38	-0.40	0.015	0.90
Cost of Debt Servicing	-2.36	-2.37	0.064	0.95
International Reserve	**0.56**	1.76	0.067	0.45

Source: Study Data (2022)

The Hausman assessment was used to decide whether to use static or random effect models when the return on equity (ROA) is the dependent variable. The findings are displayed in Table 4.6. The fixed effect model was considered the most suitable option, whereas the random effect model was considered biased. The result is a chi-square statistic score of 10.87 and a corresponding p-value of 0.02. This result led to the null hypothesis being excluded, and the study resolved that the random effect model was the most suitable.

Table 4.7 Hausman Test ROE

Correlated Random Effects - Hausman Test				
Test Summary		**Chi-Sq. Statistic**	**Chi-Sq. d.f.**	**Probability**
Cross-section random		8.61	4	0.0317
Variable	Fixed	Random	Var(Diff.)	Probability
Economic Growth	0.24	3.93	2.67	0.02

Public external debt	6.77	6.64	6.97	0.96
Public domestic debt	-4.02	-3.54	1.59	0.70
Cost of Debt Servicing	-13.43	-14.06	6.64	0.80
International Reserve	0.67	1.16	0.45	0.76

Source: Study Data (2022)

The findings for Hausman statistics are shown in Table 4.7. The fixed effect model was considered the most suitable option, whereas the random effect model was considered biased. The null hypothesis was rejected based on the Hausman Test results since the chi-square statistic was 8.61 and the P-Value was 0.317 (P-Value 0.05). According to the study's findings, the random effect model is the most suitable. As a result, while presenting the regression findings for the ROE model, the researcher included the results for the random effect model.

4.3 Hypothesis Testing

The study's main goal was to ascertain how Kenya's public debt and economic development interacted. Economic growth was the dependent variable in the study, whereas independent factors included public external debt, public domestic debt, cost of debt servicing, and international reserves. The discussion and findings from the regression models used to test the hypotheses were presented in the subsequent sections. By contrasting the empirical findings with the theoretical underpinnings and the results of other researches on the affiliation between public liability and monetary growth in Kenya, the discussion gave an explanation of the empirical results. The study's main findings were the emphasis and the framework was based on the study's unique goals. The P-Value method was utilized to evaluate the legitimacy of the hypothesis. The null hypothesis was required to be excluded if the P-Value was less than 0.05 (5%) significance level or failed if the P-Value was larger than 0.05 (5%) significance level.

4.3.1 Relationship between Public Debt and Economic Growth in Kenya

The regression results for the direct association between communal credit and economic development in Kenya are shown in Table 4.8.

Table 4.4 shows that public external debt, public local debt, cost of debt servicing, international reserves, and inflation in cluster account for 67.3% of any change in Kenya's gross domestic product. Variables not taken into account in this study can be used to explain the remaining 32.7%.

Table 4.8: Model Summary for the relationship between public debt and economic growth in Kenya

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.820[a]	.673	.669	.66115

a. Predictors: (Constant), Public external debt, Public domestic debt, Cost of Debt Servicing, and International Reserve

The ANOVA outcomes are illustrated in Table 4.18. As the results depict, the F-statistics for the model was 1.2 at a significant level of 0.000<0.05. This implies that communal debt has a significant favorable association with economic development in Kenya.

Table 4.9: ANOVA Results for Information Flow Practices

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	31.9	4	8.0	1.2	.004[b]
	Residual	32.7	5	6.5		
	Total	64.6	9			

a. Dependent Variable: economic growth in Kenya

b. Predictors: (Constant), Public external debt, Public domestic debt, Cost of Debt Servicing, and International Reserve

Table 4.10 Regression Results (Dependent Variable)

Variable	Coefficient	Std. Error	Z	P>z
Public external debt	-0.46	0.88	1.65	0.01
Public domestic debt	-0.38	0.46	-0.82	0.04
Cost of Debt Servicing	-0.36	0.80	-2.93	0.004
International Reserve	-2.36	0.003	0.14	0.004

Source: Study Data (2022)

4.3.1.1 Relationship between Public external debt and economic Growth in Kenya

According to the empirical findings in Table 4.8, there is a -0.46 regression correlation between foreign municipal liability and financial progression. This value demonstrates that, while other model variables are held constant, a one-unit rise in Kenya's public external debt results in a 0.46-unit decline in the Country's economic growth. Since the P-Value of 0.01 is less than the accepted significance level of 5%, the study further determined that Public External Debt had a statistically significant positive upshot on Commercial Progress in Kenya. Depending on this conclusion, the study disproved the null hypothesis that municipal external liability has no influence on financial development in Kenya and came to the opposite conclusion: communal exterior debt considerably affects economic development in Kenya.

4.3.1.2 Relationship between Public domestic debt and Economic Growth in Kenya

The survey also examined Kenya's productivity expansion and public domestic debt. It was discovered that public domestic debt significantly harmed Kenya's economic growth. The results also suggest that a unit rise in Kenya's public domestic debt may result in a 0.38-unit decline in fiscal evolution. Furthermore, the P-Value of 0.04, which is lower than the chosen implication level of 5%, demonstrated that this coefficient was statistically significant. Based on these outcomes, the study resolved that communal domestic liability had a considerable impression on commercial growth in Kenya, rejecting the null hypothesis that it had no meaningful impact.

4.3.1.3 Relationship between Cost of Debt Servicing and Economic Growth in Kenya

The liability servicing cost was determined to have a coefficient of -0.36 and was statistically significant at the 5 percent level with a p-value of 0.004, according to the regression result in Table 4.8. The result suggests that a component rise in the Cost of borrowing Servicing would result in a 0.36 unit fall in Economic Growth in Kenya, holding other independent variables in the regression constant. Based on these findings, the research decided that the Cost of loan Servicing has a significant adverse effect on Monetary Development in Kenya, rejecting the null proposition that it has no significant effect.

4.3.1.4 Relationship between International Reserve and Economic Growth in Kenya

According to Table 4.9's regression results, the coefficient for the international reserve was -2.3 and statistically substantial at the level of 5 percent with a p-value of 0.0040. According to this result, a unit fall in international reserves would result in a 2.3-unit decline in financial evolution in Kenya, holding other independent variables in the regression model constant. The study concluded that International Reserve had a substantial negative impact on Economic Growth in Kenya and rejected the null hypothesis, which was that International Reserve had no major influence on Fiscal Progression in Kenya.

5. SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

5.1. Introduction

A summary of research discoveries, comments, and conclusions is presented in this section. For each of the four survey questionnaires, the results and comments for each of the study's hypotheses were reported in the summary of findings. The research aims served as a guide for the recommendations offered in this section, which were also influenced by the study's findings, analyses, interpretations, and debates. Based on the drawn findings, the study's addition to knowledge was looked on. Based on the findings, methodology, policy, and practice recommendations were offered as additional research ideas.

5.2. Summary of the study

This study was inspired by the persistent rise in government debt levels and the persistently lower economic growth rates than those required to transform Kenya into a afresh developing middle-income nation by 2030. Despite efforts to control debt levels, encourage private investment, and boost economic development, this is true. Additionally, the literature study revealed conflicting findings about the contribution of debt to the amount of private investment and economic expansion. Thus, this study aimed to determine how Kenya's public debt affected the Country's economic growth. The Keynesian model and the Debt Overhang Hypothesis were used to lead the analysis, together with the two opposing perspectives on municipal dues—the Traditional vision and the Ricardian view. The dependent variable was GDP, while the predictor variables utilized were variations in the joblessness rate, communal local liability, total debt, and domestic government debt. From 2011 to 2021, all the variables' data were gathered for ten years. The data was gathered from World Bank publications published semiannually and the Kenyan economic evaluations. As a result, 40 observations were gathered.

According to the research, public domestic debt was 3.4 billion USD, with public external debt on average 61 billion USD. For the ten years under observation, the cost of debt servicing was 8.6 and 9.4%, respectively, while the average level of international reserves was 0.3% and 1%, respectively. The highest GDP was 8.6, and the lowest GDP was -0.4. The jobless rate ranged between 9.2% and 9.6%, while inflation peaked at 15.1% and 4.3%. According to the model's findings, the constant was 84.0, with the coefficients for inflation, idleness rate, municipal domestic debt, and shift in total debt being 0.09, 0.39, 0.36, and 0.35 correspondingly. The results showed that a shift in 1 unit of public household debt would produce a favorable change in 5.9 components of household product.

According to the outcomes of the connection analysis, there is a negative association between GDP and each of the four explanatory variables taken into account. However, there is a positive link between inflation and overall debts. In contrast, a variation in 1 unit of total foreign debt would result in a negative figure in 6.0 units of local merchandise. In addition, a shift in joblessness would cause a decrease in domestic product of 0.4 units for every unit that changed. And last, 0.75 units of domestic product would decrease for every unit of inflation. The likelihood value for the regression model was calculated from the ANOVA data. It was found to be 0.04, showing the model's importance in illustrating the correlation between the GDP and the predicate variables are taken into consideration.

5.3 Conclusion of the study

These findings demonstrated that Kenya's aggregate debt load has been relatively high between 2011 and 2021, despite the Country's generally weak economic development. The average ratio of public liability to GDP was high compared to other loans. This period also saw unusually significant GDP deflator inflation. Financial development would still fluctuate, but only by 84% of any change, regardless of inflation, domestic debt, total debt, or jobless rate. It is implied that external and domestic loans significantly impact the Kenyan economy's economic growth (GDP) because foreign and domestic debts justify a significant portion of fluctuations in GDP. The findings also showed a negative correlation between rising prices, joblessness, total liabilities, and the Kenyan economy's expansion during the 40 quarterly intervals between 2011 and 2021. According to the data, the GDP declines as the total amount of domestic debt, overseas debt, and debt servicing costs rise. It was concluded that a shift in public household debts generates a positive variation in 5.9 units of native produce.

In contrast, a change in overall debts results in a six-time adverse variation in parts of GDP. A shift in unemployment triggers a negative change in manufacturing output of 0.4 units simultaneously. Last but not least, a unit change in inflation causes a 0.75-unit decrease in GDP. Additionally, an undesirable association between liability and evolution was indicated, although the data disprove that debt is a direct cause of economic growth. Consequently, it can be stated that roughly half of the fluctuation in Kenya's gross domestic product can be accounted for by total liabilities, public domestic debt, jobless rate, and inflation.

5.4 Recommendations Policy and Implications

The research revealed that a rise in overall debt had a detrimental impact on Kenya's GDP. Changes in domestic dues, however, have a beneficial influence on GDP. According to this crucial policy conclusion, the government should ensure that the overall national debt is kept as low as feasible. If the administration must borrow, it should observe local borrowing for the sake of the Country's economy. This report evaluates whether some new projects and programs will be accommodated into the state's medium-term spending frameworks and recommends that Kenya investigate creative funding options, especially public-private partnerships.

This research also discovered that Kenya's ability to sustain its economy had been harmed by a rise in the overall price level (inflation). These findings have significant policy ramifications for domestic policymakers and development partners, suggesting that economic growth for the nation requires controlling inflation. Therefore, for strong economic growth, policymakers should concentrate on keeping inflation low (single digit). The Kenya Revenue Authority, tasked with collecting taxes, ought to adopt regulations to maximize tax collection. This helps to lower the amount of borrowing required to finance the Country's budget, which will benefit the nation's economic expansion.

5.5 Contribution to Knowledge

Contrary to earlier research that surveyed the association between national debt and the economic progression in Kenya, this research measured different facets of the economic growth in Kenya as they respond differently to various public debt constructs. Further, the study adopted different measures of economic development in Kenya for robustness. The study utilized two dimensions of Public external debt, Public internal debt, Cost of Debt Servicing, and International Reserve, for the regression analyses.

5.6 Areas of further study

According to the results, the independent variables (Public domestic debt, Public foreign debt, expense of debt servicing, and Overseas Reserve) matched the economic development in Kenya to a degree of 67.3%. There are additional aspects that this study's proposed model does not account for yet, which 32.7% of respondents did, for reasons that have not been provided. In light of the study's background and purview, additional research can be conducted to identify additional public debt-related factors that may account for Kenya's wealth creation of 16.7%.

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