Eastern Africa Journal of Contemporary Research (EAJCR)

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Article information:

To cite this article:

Kongo, Y.O., Kiano, J.E., Ogada, J.O. & Omboto, P.I. (2023). Is Kenya's Public Debt Sustainable? An NARDL Approach. *Eastern Africa Journal of Contemporary Research*, 3(2), 33-46.

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The Eastern Africa Journal of Contemporary Research (EAJCR) is both an online (ISSN: 2663-7367) and print (ISSN: 2663-7359) double-blind peer-reviewed quarterly journal published by the Directorate of Research and Publications of Gretsa University, Kenya.

EAJCR aims at advancing the frontiers of knowledge by publishing contemporary multidisciplinary conceptual/ theoretical and empirical research articles as well as case studies and book reviews.

Vol. 3, Issue 2, 2023, ISSN: 2663-7367 (Online) & ISSN: 2663-7359 (Print)

Is Kenya's Public Debt Sustainable? An NARDL Approach

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Abstract

The macroeconomic and financial health of an economy depends on the sustainability of its debt. It speaks to the government's capacity to fulfill its present and upcoming financial commitments. The Debt Sustainability Threshold is used as a warning when a nation has reached a risky level of debt and should implement fiscal and monetary policies to reduce it. Kenya's debt rose from 1.8 trillion in 2013 to 9.182 trillion in January 2023. In 1990, Kenya's debt-to-GDP ratio was 15.2%. In 2022, the debt-to-GDP ratio reached 72.3%, 12.3% more than the IMF's middle-income economy recommendation of 60.0%. By 2022, the country's debt service to revenue ratio was 47.9%, 17.9% above the IMF's 30.0% recommendation, indicating how public debt servicing affects the country's budget. This prompts the question: is Kenya's public debt level sustainable? Sustainability is critical to an economy's financial and macroeconomic well-being. It refers to the government's ability to meet its current and future payment obligations. The debt Sustainability threshold is used to signal a country's entry into a dangerous debt level, triggering fiscal and monetary policies to correct it. The measurement of public debt is done in both absolute and relative terms. In absolute terms, public debt is defined as the total value of liabilities that obligate a borrowing government to pay the principal and chargeable interest. In terms of relative sustainability, public debt is measured in relation to the country's economic potential, particularly its ability to pay off the debt. In this regard, the percentage of debt to GDP ratio is the most used relative measure of debt in the literature. From the findings, Kenya's public debt is not sustainable in the long-run if the government continues to borrow.

Keywords: *Kenya, Public Debt Sustainability, NARDL*

1. Introduction

Globally, budget deficits and rising public debt have become the norm in every nation. Since the 1970s, governments have been unable to pursue symmetrical, sound fiscal

behavior. Governments frequently run surpluses during cyclical booms and deficits during recessions, resulting in a low, or at least stable, level of public debt over time (Porzecanski, 2018). Public debt and the budget deficit are two critical macroeconomic variables that influence a country's fiscal policy. It is frequently argued that policymakers, lenders, and borrowers are frequently faced with the challenge of determining an economy's optimum condition of public debt (Naraidoo & Raputsoane, 2015). Determining the budget's long-term viability is also difficult.

If a government can fulfill all of its current and anticipated financial obligations without resorting to extraordinary measures or defaulting, it is said to have a sustainable public debt. Haggard and Kaufman (2018) cite the importance of determining whether debt-stabilization policies are practical and consistent with preserving growth potential or development progress. The risks of refinancing must be considered when a nation borrows from the financial market. A debt instrument, according to Hakura (2020), is a financial claim that calls for the debtor to pay interest, principal, or both to the creditor in the future. A number of creditors, such as private bondholders, banks, other nations and their official lending institutions, and multilateral lenders like the World Bank, are owed money by countries.

According to Bhat and Sharma (2018) most economies around the world frequently set goals to increase their investment and capital formation, save more, reduce consumption, and redistribute resources among their various sectors of the economy. These objectives can be met by increasing government spending or by lowering taxes, both of which would reduce the fiscal balance and discourage private investment, both of which would be detrimental to economic growth and lead to debt unsustainability. Since World War II in 2020, the world experienced the largest one year debt increase with global debt reaching $226 trillion as the world was hit by a global health crisis and a deep recession (Hepburn, et *al.*, 2020). Debt levels were already high prior to the crisis, but governments now face a world of record-high public and private debt levels, new virus mutations, and rising inflation. According to the IMF's Global Debt Database (2021), global debt increased by 28 percentage points to 256 percent of GDP in 2020. Government borrowing accounted for slightly more than half of the increase, as the global public debt ratio reached a new high of 99 percent of GDP. Non-financial corporations' and households' private debt also reached new highs. Debt increases are especially noticeable in advanced economies, where public debt has risen from around 70% of GDP in 2007 to 124% of GDP in 2020. Private debt, on the other hand, increased at a slower pace, rising from 164 to 178 percent of GDP during the same time period (IMF, 2021).

Kenya has undertaken ambitious infrastructure projects, including the Lamu Port South Sudan-Ethiopia Transport Project (LAPSSET) and the Standard Gauge Railway (SGR), to meet its Vision 2030 targets. The SGR, completed in early 2018, cost US$3.6 billion, with 90% of the funding borrowed from the Exim Bank of China and the remaining 10% provided by the Kenyan government. Additionally, the development of geothermal power generation required significant funding beyond the government's revenue collection capacity. Consequently, the government opted to borrow to bridge the gap between

revenue and desired expenditures (GOK, 2019).

As a result of these endeavors, Kenya's total public debt has increased from 48.6% of GDP in 2015 to an estimated 69% of GDP by the end of 2020 (IMF, 2021). External public debt accounted for 51.4% of the country's total debt stock of 7.1 trillion Kenyan Shillings as of September 2020 (Kenya Annual Public Debt Management Report, 2020). Notably, the International Monetary Fund recommends that the public debt-to-GDP ratio for developing countries should not exceed 40% (IMF, 2010). While Kenya's public debt to GDP ratio decreased from 64.1% in June 2003 to 38.1% in June 2012, it has since risen, primarily due to infrastructure spending and the impact of COVID-19-related expenses. Infrastructure projects and the 2020 COVID-19 pandemic drove up public debt. Further, government spending exceeds revenue, notably in public sector wages and subsidies, causing fiscal deficits and mounting public debt. Inefficient tax collection and management may have lowered government revenues, necessitating borrowing. Election cycles, where expenditure rises, strain governmental budgets and increase public debt. External variables including global commodity price variations have affected Kenya's export revenues and debt levels. Currency depreciation also raises the cost of servicing foreign-denominated debt, increasing public debt.

However, external debt is not always detrimental to an economy. According to the findings of Mohsin, *et al.,* (2021) external debt inflows can help to stabilize the economy and boost economic growth. However, repayments of interest and principal on external debt are made in foreign currency. This depletes a country's foreign exchange reserves and may cause the domestic currency to depreciate. Kenya's relatively high level of external indebtedness, combined with the country's rising debt burden, has serious implications for the country's development and debt sustainability initiatives. This is because high debt levels are associated with several risks, including increased taxation, depreciation of local currency, increased cost of further borrowing, and high cost of debt servicing, and more detrimental, crowding out of the private sector (Were, 2018). The Kenyan government has proposed several debt-management strategies. The objectives of public debt management are outlined in Section 62(3) of the Public Finance Management Act (2012) and Medium-Term Debt Management Strategy (2021). The strategies outlined in the act include minimizing the long-term costs of public debt management and borrowing while taking risks into account, encouraging the development of market institutions for government debt securities and ensuring that the benefits and costs of public debt are shared by current and future generations. In March 2021, the IMF Debt Sustainability Analysis classified Kenya's public debt as sustainable but with a high risk of debt distress. This was a downgrade from the February 2020 classification of moderate risk of debt distress.

The economic slowdown associated with the COVID-19 pandemic was largely blamed for the revision. In both the baseline and standard stress scenarios, there were breaches in the present value of debt to exports ratio and debt service-to-exports ratio indicators. Under the stress scenario, there was an additional one-time breach of the debt service to revenue ratio. According to the DSA findings, Kenya is vulnerable to export and market financing shocks. Furthermore, more prolonged and protracted economic shocks would

pose downside risks to the debt outlook (Nyaga, 2020). Kenya's recent economic developments and outlook indicates that real GDP growth has slowed sharply from 5.4 percent in 2019 to an estimated -0.1 percent in 2020, owing to severe disruptions in economic activity (Onsomu *et al.,* 2021). As a result, it is abundantly evident that the long-term sustainability of Kenya's public debt is a severe problem that requires immediate addressing. If nothing is done to solve the problem, it could lead to a worsening of the debt crisis, a rise in the cost of borrowing, and other potentially detrimental effects on economic growth and development.

2. Empirical Literature

Rahman *et al.,* (2022) investigated Indonesia' s debt sustainability using fiscal diagnostics and secondary data from 2010 to 2020, including GDP, government revenue, government debt, primary balance, and private debt. Their research employed three debt sustainability measures: public debt service to revenue ratio, public debt interest to revenue ratio, and public debt to revenue ratio. The results of their study revealed that the budget deficit is within the safe limit of less than 3%, but the effects of the Covid-19 pandemic have caused the deficit to rise to 6% by 2020. The three indicators of sustainable debt showed that the debt burden is increasing, and that the country's fiscal capacity will struggle to pay off the debt.

Beqiraj *et al.,* (2018) studied governments' reactions to debt accumulation in 21 Organization for Economic Co-operation and Development heterogeneous countries from 1991 to 2015, looking at whether governments voluntarily take corrective measures when the debt to GDP ratio begins to rise or whether they prefer to let the debt grow. They distinguished between discretionary and automatic responses to primary balance of government actions, as captured by the structural and cyclical components of public primary balance. Their research revealed the existence of a systematic long-term relationship between debt and structural primary balance, lending credence to the view that long-term governments' discretionary response to increases in the debt to GDP ratio is negative, implying that governments are not currently taking long-term actions to mitigate debt to GDP ratio increases.

Makin and Pearce (2014) investigated the sustainability of public debt at the subnational level in Australia and discovered that nearly all administrative units, such as states and general government territories, had unstable debt levels. The study also found that the ability to stabilize debt was affected by the cost of debt servicing, the size of public debt relative to GSP, and the size of the primary budget balance. All subnational governments were expected to turn primary deficits into surpluses in order to improve the debt situation.

According to Melina *et al.,* (2016) even in resource-rich developing countries, increasing public investment without implementing saving or borrowing strategies can expose the economy to debt sustainability risks, especially if public investment is inefficient or anticipated future resource revenues are not realized. Public debt has the potential to increase economic liquidity, improve consumption patterns, and improve citizens' well-being, reducing the burden of borrowing on households. At the same time, increasing debt levels can jeopardize a country's welfare, particularly if it crowds out private investment and results in lower output (Chatterjee *et al.,* 2017). Using a probabilistic approach to predict the public debt of six emerging countries from various economic regions, Paret (2017) discovered that fiscal policies do not always act pre-emptively to keep the debt ratio from rising. According to the study's findings, emerging countries with fiscally responsible policies have lower primary deficits or small surpluses.

Beqiraj *et al.,* (2018) used panel data from 21 different Organization for Economic Co-operation and Development (OECD) countries to investigate government responses to debt accumulation. The variables used included cyclically adjusted primary balances, debt-to-GDP ratio, debt-to-potential-GDP ratio, output gap, and a business cycle indicator. The study found

a close relationship between debt and structural primary balance, reinforcing the conclusion that unrestricted growth in the debt-to-GDP ratio over long periods of time can be harmful. Structural primary balance reacted positively to transitory changes in GDP as well

Mahmood *et al.,* (2009) assessed Pakistan's debt sustainability level from 1975 to 2007 using traditional threshold debt ratios and theoretical models. The study discovered that current account and fiscal imbalances exacerbated the debt sustainability challenge. Similarly, Jayme Jr (2001) used Johansen cointegration tests to investigate the sustainability of Brazil's external debt. The findings indicated that current account and external debt deficits were unsustainable in the long run. Tiwari (2012) examined the primary surplus in relation to the debt-to-GDP ratio to see if India had followed debt-sustainable policies between 1970 and 2009. The study, however, was unable to provide concrete or precise evidence in support of public debt sustainability.

By estimating a fiscal reaction function, Bokemeier and Stoian (2018) investigated debt sustainability in ten Eastern and Central European countries. The findings revealed that Bulgaria's and Romania's debt ratios were not sustainable as of 2015. Furthermore, a 20-year linear trend analysis revealed volatile debt dynamics in Romania and Latvia. Comparisons of stable debt ratios to historical averages indicated that most countries, with the exception of Bulgaria, could sustain debt in the long run. However, for five countries; Slovenia, Czech Republic, Poland, Hungary, and Slovakia; uncertain results were reported, indicating the model's limitations.

Llorca (2017) examined a cohort of 24 Asian emerging and developing economies from 1993 to 2014 to assess external debt sustainability. The PV methodology was used in the study to determine whether the external debt of countries; which were further classified into four regions: South-East, South-West, Central, and Pacific; was long-term sustainable. External debt was determined to be sustainable in all the economies studied. Pradhan *et.al.* (2019) investigated changes in the status of India's external debt and externally induced vulnerability indicators. Notably, the size of India's external debt had increased but remained constant, at around 20% of GDP. Borrowing by non-government sectors was blamed for the increase in external debt. In terms of reserve adequacy indicators, India's vulnerability to externalities was noted to be relatively low.

Ncube and Brixiová (2015) examined the sustainability of public debt in Africa from 2008 to 2012 using a debt-stabilizing primary-balance framework. The IMF and World Bank approach, which concentrates on projecting the debt path in relation to given thresholds, and the debt stabilizing primary balance approach, which identifies primary balances necessary to achieve a given debt path based on various assumptions about changes in real interest rate and growth, were the two main approaches to debt sustainability used. A positive primary-balance gap8 would imply a gradual increase in the debt-to-GDP ratio in the absence of fundamental fiscal policy changes. The study discovered that primary balances in half of the countries studied were higher than those required to maintain the level of public debt at 2007 levels, and in most cases higher than those required to ensure public debt sustainability.

Naraidoo and Raputsoane (2015) examined debt sustainability in South Africa using historical time series data spanning the period 1865–2010, taking into account the possibility of nonlinearities in the form of threshold behaviour by fiscal authorities based on recent history of indebtedness as well as financial crises. The results revealed a debt-to-GDP threshold ratio of around 56%. The findings also revealed that prior debt levels played a critical role in informing debt adjustment decisions. There was evidence to support the need for fiscal sustainability, such as a rise in debt as a percentage of GDP above a certain threshold resulting in stronger fiscal consolidation.

Based on analysis using unit root tests and cointegration tests, Kayandabila and Manyama (2013) concluded that Tanzania's fiscal policy was unsustainable from 1970 to 2011. Nkhata (2009) noted the vulnerability of external debts to increased lending rates in these post-HIPC countries in his assessment of the main risks to public debt sustainability in Malawi, Uganda,

and Tanzania, and concluded that the acquisition of additional debt should be carefully examined to ensure it is sufficiently concessional to promote future debt sustainability. Tanzania's total public debt was found to be sensitive to low GDP and worsening primary balance in the DSA analysis's stress tests.

Were and Mollel (2020) investigated Tanzania's public debt and debt sustainability, with a focus on the economic impact of external debt accumulation. Their investigation revealed that rapid debt accumulation, particularly commercial debt, could expose Tanzania to external threats. As a result, the study recommended that concessional borrowing, efficient public investment, better debt management, and domestic resource mobilization be prioritized as critical debt sustainability measures.

Ryan and Maana (2014) examined the sustainability of Kenya's public debt using both the co-integration and stochastic debt sustainability approaches, using annual data on a fiscal year basis from 1983 to 2013. Their findings revealed that the national debt is manageable. Furthermore, during the study period, exchange rate depreciations had no significant effect on average interest rates on external debt. However, according to their research, policies to support faster economic growth, restructuring public debt toward external borrowing that is cheaper than domestic debt, continued deepening of capital markets to lengthen the maturity profile of domestic debt, and rationalization of recurrent expenditure would be required in the medium term to ensure that the public debt does not become unsustainable.

Nyaga (2020) investigated the likely impact of economic shocks such as slowing long-term growth, decreased export earnings, rising borrowing costs and an elevated primary balance on debt sustainability in Kenya. The study discovered, using a Debt Sustainability Framework, that persistently low economic growth, including negative shocks to exports, poses the greatest risk to the sustainability of external debt. According to the study, rising debt service on external and domestic debt could put a strain on foreign exchange earnings and local revenues in the medium to long term. As a measure to ensure public debt sustainability, the study proposed increasing growth, moderating debt accumulation, and reducing the current account deficit through investment in the exports sector. Guei (2019) looked at the relationship between external debt and economic growth in a group of emerging countries. The study examined the debt-growth nexus using a linear and non-linear specification, employing a panel ARDL model on 13 emerging countries from 1990 to 2016. In the long run, there is no robust effect of debt on economic growth; however, in the short run, external debt is negatively and significantly correlated with economic growth.

Dmitriev and Kurkina (2019) have established a mathematical model that establishes a connection between GDP growth and national debt. GDP growth is determined by subtracting total revenues from total expenses, which includes debt servicing, using two linear ordinary differential equations. The model suggests that overseas investments, which result in an increase in national debt, may enhance economic growth, but GDP would exhibit sluggish development in their absence. A comprehensive analysis was conducted on an equation elucidating the fluctuation of external debt, which conclusively demonstrated that external debt is never fully discharged, hence corroborating previous established models. In order to have steady economic growth, it is necessary for the GDP to increase at a rate that is either equal to or greater than the rate of inflation.

Hostland and Karam (2006) established probability projections of the public debt burden in the medium term using stochastic simulation methods in order to assess debt sustainability in emerging market economies. The vulnerability of public debt to severe economic shocks was assessed by examining indicators such as output volatility, financial fragility, internal reactions of the risk premium, and abrupt cessation of private capital flows. External debt vulnerability was discovered to be sensitive to exchange rate determinants as well as tradable goods prices.

Research Gap

Although there is a substantial body of literature on the sustainability of public debt in different

nations, there is a notable research deficiency when it comes to the Kenyan situation. The studies reviewed mostly examines the issue of debt sustainability in countries such as Indonesia, South Africa, Tanzania, and India. However, Kenya's distinct economic and political environment necessitates specific consideration. The existing research mostly examines the factors contributing to the unsustainability of public debt, but no studies have attempted to evaluate the long-term sustainability of rising debt levels. Considering Kenya's distinctive economic, political, and social characteristics, as well as the extensive infrastructure development projects and their implications for debt sustainability, this study is deemed vital.

3. Methodology

Year of Study: The paper utilized secondary data from 1990 to 2021, giving a total of 32 observations.

Unit root: The first assignment on the data collected was to identify the stationarity property. This was done by using Clemente-Montaés-Reyes unit-root test with structural breaks. The test null hypothesis states data contains unit root against and alternative hypothesis of no unit root. At 5 percent alpha level, the null hypothesis is rejected if probability is less than 0.05, otherwise it is accepted.

Econometric Model: The research adopted Bohn's model to assess the sustainability of Kenya's public debt. Renjith and Shanmugam (2018) describes the Bohn general equilibrium stochastic model for assessing debt sustainability as follows.

$$S_t = \alpha + \varphi d_t + \varepsilon_t \quad \ldots\ldots 1$$

Where, S_t the ratio of primary balance to GDP, d_t is the ratio of public debt to GDP, e denotes the random error and ††† and φ denote the parameters to be estimated. If this equation holds true, the debt is manageable. In general, if φ is greater than zero and statistically significant, the debt is sustainable, implying that the initial stock of debt equals the sum of the present discounted values of the primary surpluses. If the discounted sum of the end period debt converges to zero, the Inter-temporal Budget Condition is satisfied. This convergence is ensured by the positive reaction coefficient φ.

According to Renjith and Shanmugam (2018) for debt sustainability to hold, S_t must be positive and a linearly increasing factor of the ratio of public debt to GDP, and φ must be greater than zero and statistically significant.

The model of interest in estimating equation 1 is Non-linear ARDL (NARDL) model recently developed by Shin *et al.,* (2014) that uses positive and negative partial sum decompositions allowing detecting the asymmetric effects in the long and the short-term. Compared to the classical cointegration models, NARDL models present some other advantages such as performing better for determining cointegration relations in small samples Romilly *et al.,* (2001) and, they can be applied irrespective of whether the regressors are stationary at level or at the first difference.

4. Results and Discussion

Checking for unit root tests in the presence of structural breaks was the next step in the data analysis process. Baum (2005) argued that the Philips-Perron and Dickey Fuller

test, which employs the DF-GLS unit root test, may be biased because it ignores the effect of structural change in a time series data. As a result, the author suggested a different approach to account for structural breaks in a particular series: the Clemente-Montaés-Reyes unit-root test with single mean shift, Additive Outlier model. Additive outlier (AO) is applicable when the change is assumed to affect instantaneously.

The results of the Clemente-Montaés-Reyes unit-root test with a single mean shift is graphically represented to help identify notable events like regime changes, changes in governmental policies, economic crises, and other significant features that occurred and caused a macroeconomic series to break (Jha, 2011).

Table 1: Results of Clemente-Montañés-Reyes Unit-root Test with Single Mean Shift Results

Variable	Breaks	Coefficient	t	Rho-1	$p-$value	Year
PDS	DU1	0.26071	7.392	-0.644	0.0000	2010
	DU2	0.37364	8.077	-2.176	0.0000	2016

Note: DU and rho – 1 represent time structural break and unit

Source: Data Analysis Results, 2023

Figure 1 suggested two major optimal breaks for Kenya's public debt sustainability at 2010 and 2016. The p-values for PDS were significant at 5 percent significance level for these years. This implied the null hypothesis of unit root was rejected and confirmed that variables were stationary. The first optimal break in 2010 is closely associated with the Euro crisis of 2010 which led the primary balances to be higher than what was needed to maintain debt-to-GDP levels.

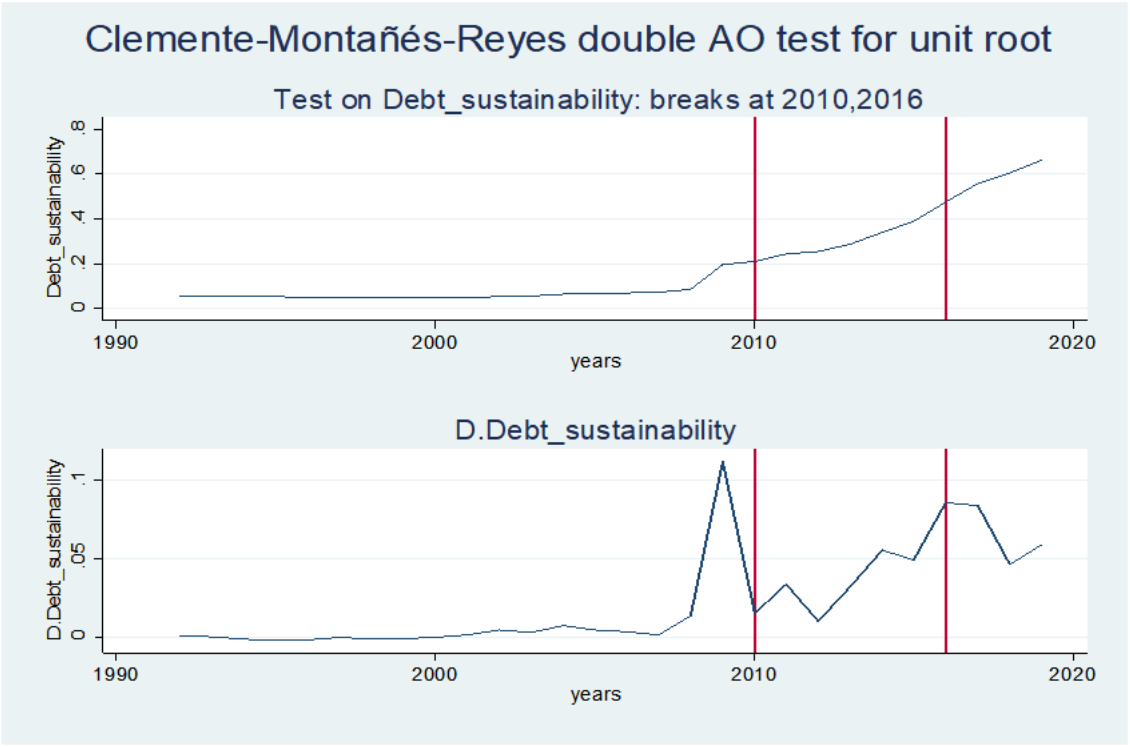

Figure 1: Structural Breaks for debt sustainability in Kenya

Source: Data Analysis, 2023

The 2016 structural break is associated with jubilee government implementation of the big four agenda of housing, food security, manufacturing, and the universal health coverage. This situation made the country borrow external funds. According to Gakuru (2017), gross public debt climbed from 48.6% of GDP at the end of 2015 to a projected 69 % of GDP at the end of 2020, showing high deficits that were also mostly fueled by prior spending on significant infrastructure projects and, in 2020, by the COVID-19 global shock.

Before investigating whether public debt in Kenya was sustainable or not, it was prudent to look at the nature of the relationship. That is, to identify if the relationship was symmetric or asymmetric. Table 2 presents the NARDL results for long run asymmetric estimation.

Table 2: NARDL Asymmetry Statistics for whether Debt Sustainability in Kenya

	Long-run effect [+]			Long-run effect [-]		
Variables	Coef.	F-stat	P>F	Coef.	F-stat	P>F
Public debt sustainability	-21.125	9.149	.006	221.737	1.143	.297
	Long-run asymmetry			Short-run asymmetry		
	F-stat	P>F		F-stat	P>F	
Public debt sustainability	.9861	.332		.0160	.900	

Note: Long-run effect [-] refers to a permanent change in exogenous variable by -1

Cointegration test statistics:	t_BDM =	-1.6727
	F_PSS =	6.9204

Source: Data Analysis Results, 2023

Results presented in Table 2 indicates an insignificant F-statistic with probability of 0.332 in the long run asymmetry and 0.900 in the short run. The Nonlinear ARDL has a null hypothesis that there is no asymmetry. In this study the probability values are insignificant at 5 percent, so the study accepted the null hypothesis of no asymmetry implying there is inequality in the long run and short run effect or coefficients are not same. The results therefore allow for estimation of the Non-Linear Regression to determine whether public debt is sustainable in Kenya.

Determining Debt Sustainability in Kenya

Results presented in Table 3 are for long run symmetric estimation. According to the results of positive shocks, the coefficient for debt sustainability was negative and significant (β=-7.095, p = .006) whereas in the negative shocks, was negative and insignificant (-74.469, p = .082).

Table 3: Non-Linear Regression Results for Determining Debt Sustainability in Kenya

		Positive [+]		Negative [-]	
		Coef.	p-value	Coef.	p-value
Public debt sustainability		-7.095	.006	-74.469	.082
	Differenced values				
		Positive [+]		Negative [-]	
		Coef.	p-value	Coef.	p-value
Public debt sustainability		.048	.990	294.333	.195
F-statistic		=5.51			
R-square		=.6771			
Adj. R-square		=.5541			

Source: Data Analysis Results, 2023

According to Renjith and Shanmugam (2018) for debt to be sustainable, the coefficient of the ratio of public debt to GDP (φ) must be greater than zero and statistically significant. This implies that the initial stock of debt equals the sum of the present discounted values of the primary surpluses. If the discounted sum of the end period debt converges to zero, the Inter-temporal Budget Condition is satisfied. This convergence is ensured by the

positive reaction coefficient φ. According to the study findings, the discounted sum of the end period debt does not converge to zero hence the Inter-temporal Budget Condition (IBC) does not hold since φ must be positive and a linearly increasing factor of the ratio of public debt to GDP. Therefore, since the coefficient of public debt to GDP (φ) is not greater than zero (β_1 = -7.095, p=.006<0.05) and though statistically significant, we conclude that the public debt level in Kenya is not sustainable. In this sense, a public debt is considered unsustainable if it continues to grow out of control over time and it becomes impossible for it to repay its debts. When public debt is well managed and does not exceed economic growth, it is regarded as sustainable. Renjith and Shanmugam (2018) describes sustainable government debt as one that results from good government debt management, ensures the fulfillment of borrowing requirements, and does not adversely affect the government's creditworthiness or capacity to repay long-term debt. According to Da Costa (2010) public debt is deemed sustainable, when fiscal and monetary policies can be followed without causing a disruption in the government's budget. This means that the total amount of public debt should not be greater than the present value of all future balances. This assigns a numerical expression to the circumstances under which the government's budget constraints can be met by acknowledging situations in which the debt may not be repaid or when monetization will occur.

5. Conclusions and Recommendations

The comprehensive examination of Kenya's rising public debt shows alarming tendencies that require immediate intervention. The findings reveal that current debt levels are unsustainable. The Kenyan government must move quickly to manage the growing public debt by introducing appropriate measures. To address this urgent issue, the government ought to implement a clear fiscal law that caps public debt to GDP ratio. This method, combined with strict fiscal consolidation requirements, will give a strategic framework to respond to public debt variations and prevent debt from ballooning out of control. Additionally, the government should consider alternative financing methods for vital infrastructure projects. The private sector may fund development projects better by fully embracing PPPs, Build Operate and Transfer schemes, and joint ventures. This will cut governmental debt by reducing borrowing. A strong fiscal consolidation strategy should include austerity measures and carefully allocating capital expenditures to projects with high social effect or Economic Rate of Return. This careful resource allocation will ensure that spending pays off. Revenue collection must also be improved. The government can increase revenue via improving tax administration, extending the tax base, and reducing tax evasion. In addition, well-calibrated tax measures that stress efficiency, justice, and minimal distortions will strengthen the fiscal framework. In addition to these techniques, public financial management must improve budgetary processes, transparency, and accountability. Optimizing resource allocation and limiting leakages can help the government promote responsible financial governance and debt management. The analysis shows that Kenya's rising national debt requires immediate action and a comprehensive approach. The government can reduce debt risks, provide

fiscal stability, and promote sustainable economic growth by implementing the suggested measures.

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