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IMPACT OF FISCAL SUSTAINABILITY ON ECONOMIC GROWTH IN KENYA

NAFTALY MOSE¹, KAMAL DEEN MORO²

Abstract

Fiscal sustainability refers to a government's capacity to generate sufficient revenue to cover its expenses and repay its debts without accumulating excessive liabilities or creating new money. Recent observations indicate that Kenya's economic growth has slowed, prompting concerns about its fiscal sustainability. This study investigates the long-term relationship between Kenya's economic growth and certain budgetary sustainability indicators, specifically the public primary budget balance and external debt. Two control variables - trade balance and inflation - were also considered, with data sourced from the IMF and World Bank. Utilizing time series annual data spanning from 1990 to 2023, the study employed the autoregressive distributed lag (ARDL) bounds test and error correction model to analyze the data through three stages: unit root testing, F-bounds cointegration testing, and estimating the ARDL error correction model. The findings reveal a long-term relationship between fiscal sustainability indicators and economic growth in Kenya. Notably, the primary budget balance, which serves as a proxy for fiscal sustainability, as well as inflation and trade balance, were found to negatively and significantly impact economic growth in the country. Conversely, external debt, another proxy for fiscal sustainability, exhibited a positive effect on economic growth over the long term. To foster sustained economic growth in Kenya, government policymakers should prioritize controlling public spending, managing external debt levels, and enhancing revenue generation efforts.

JEL classification: E62, O47, H61, H68

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INTRODUCTION

Fiscal sustainability and economic growth are leading worldwide economic decision-making (Marín-Rodríguez et al., 2023). Governments strive to maintain budgetary policies to attain long-term macroeconomic stability and gross domestic product (GDP) (Chugunov et al., 2021). According to the International Monetary Fund IMF (2023), global public debt in 2022 reached around 92% of GDP, and the concerns are about fiscal instability and the implications for the economy. Also, inflationary pressure remains the overriding issue, and the World Bank (2023) reported that the global inflation rate in 2022 remained at 6.6% and adversely affected economic stability. The trade balance, a crucial external position-determining factor, influences economic performance by determining the exchange rate, investments, and economic output rate (WTO, 2022). The primary net fiscal balance is the foremost benchmark for evaluating budgetary discipline and the capacity to support fiscal policies to sustain growth. Examination of how macroeconomic drivers are working to inform economic policies to maintain long-term GDP is necessary.

Kenya, as one of the leading economies in East Africa, has faced persistent challenges related to fiscal sustainability. The country has experienced growing public debt, with external debt reaching 69.7% of GDP in 2022, raising concerns about debt distress and long-term economic stability (Cytonn, 2024). Additionally, the inflation rate in 2022 reached 7.7%, worsening the cost-of-living burden and affecting GDP (KNBS, 2024). Despite efforts to support trade performance, Kenya still maintains a trade deficit, thanks to heavy reliance on imports and instability in export earnings. The attempt at fiscal balance by the government, at other times tightfisted because of the high recurrent expenditure, sets GDP opportunities (Fumey, 2024). The above facts give Kenya a proper case to research the nexus between fiscal sustainability and GDP.

Fiscal sustainability in Kenya also continues to be an issue, and the economy continues to be under threats to stability from future and ongoing budgetary deficits, rising external debt, and inflationary pressure (Nyaga, 2020). Sandow et al. (2022) studied fiscal sustainability in Kenya, although they do not fully assess the impact on GDP based on the evidence available and the vast array of budgetary parameters. The conflicting evidence in the research calls for an investigation into the effect of the PB, ED, INF, and TB on GDP. The research gap is significant in helping policymakers in achieving fiscal discipline and GDP growth.

Kenya's economic and fiscal environment has been influenced by a sequence of policy and institutional changes aimed at enhancing macroeconomic stability

and long-term development (Tiony, 2023). Starting with the Structural Adjustment Programs (SAPs) of the 1990s, the nation embraced market liberalization and public sector reforms that influenced fiscal performance (Ogola, 2025). The mid-2000s saw a significant policy change with the introduction of Vision 2030, which led to infrastructure-driven growth, higher public expenditure, and external borrowing. The enactment of the Public Finance Management Act of 2012 and the creation of the Commission on Revenue Allocation also institutionalized fiscal responsibility and decentralization. More recently, the government's post COVID-19 economic recovery plans and medium-term debt management plans have aimed to regain fiscal balance while maintaining growth (Mitsi, 2023). It is important to understand this changing policy environment in order to properly interpret Kenya's fiscal sustainability path and the empirical findings of this study.

The research investigates the short-run impact of budget fiscal sustainability measures on the Kenyan economy's performance. Budget primary balance illustrates the government's capacity to fund its spending sustainably, where surpluses increase economic resilience (Njoroge, 2020). If well managed, External Debt (ED) could fund infrastructure and development, but too much indebtedness could crowd out productive investments and slow growth rates (Eichengreen et al., 2021). As measured by the consumer price index, Inflation (INF) reduces purchasing power, investments, and overall economic activity, and GDP declines typically in the event of high INF (Olusola et al., 2022). Trade Balance (TB), in terms of net exportation of merchandise and services, is the key to the economic status of a country, in so far as a long-term trade deficit could lead to currency undervaluation and macroeconomic instability (Mamun et al., 2021).

Despite extensive research in GDP and fiscal policy, few studies consolidate all of Kenya's major fiscal sustainability indicators. Other research only discussed the ED sustainability and the effect of INF on GDP, and the aggregate of all the major fiscal sustainability indicators consistently remained empty. The current economic trends, including the budgetary implications of COVID-19 and inflationary pressure in the world, also demand the latest scrutiny. This research strives to fill the vacuum by providing evidence of Kenya's fiscal sustainability and how it affects GDP. The study purports to answer the following questions (RQ1): What is the effect of the overall Primary Budget Balance (PB) on Kenya's GDP? (RQ2) How does ED affect Kenya's GDP? (RQ3) What is the impact of INF on Kenya's GDP (RQ4) How does GDP in Kenya affect TB?

The autoregressive distributed lag (ARDL) bounds test and errors corrections model were used to test the

evidence based on the three steps: the bounds test by the errors, the bounds test by the F cointegration test, and the ARDL model. The study confirmed the long-run link between GDP and fiscal sustainability in Kenya.

Aside from the introduction, the study follows the sequence in the following manner. Chapter Two addresses empirical literature relative to fiscal sustainability and GDP. Chapter Three provides the research methodology, the sources of the data, the econometrics model, and the techniques used in the estimations. Chapter Four offers and discusses the empirical findings, and Chapter Five provides the conclusions and recommendations for the policy and future research directions.

LITERATURE REVIEW

PRIMARY BUDGET BALANCE (PB) AND ECONOMIC GROWTH (GDP)

The link among GDP and PB is multifaceted and complex, and there are dominant economic theories and evidence. The PB, the net fiscal position of the government apart from the interest expenditure, impacts GDP through the pressure the same evokes in the area of public debt, fiscal sustainability, and macroeconomic stability. Tran (2022) implies that the reduction in the national deficit will positively reduce GDP in Asia. This means the optimal balance in the budget is needed to attain effective GDP, from 22.6935% GDP to 25.1950% GDP. However, few countries in the group under research attained the optimal balance during the research period, and most struggled to experience the challenge of the budget deficit. To stabilize economic progress, Asian countries should rebalance the revenue and expenditure mechanism in the national budget to attain the required balance. The study utilizes Panel Threshold Regression (PTR) to test for a nonlinear relationship and to identify the optimal budget balance threshold that promotes effective economic growth and the research indicates that a lower national budget deficit level correlates with greater economic growth in Asia, suggesting that maintaining a balanced budget is crucial for economic stability and growth. Annicchiarico et al. (2022) examine the optimal response to the PB in terms of the share in the GDP and the point at which the magnitude of the increase in the surplus reacts to the share in the debt. It examines the point at which the magnitude of the response to the rise in the share in the debt depends. The study by Bohn (2007) challenges the necessity of stationarity and cointegration restrictions for the intertemporal budget constraint, offering valuable insights into the methodological approaches for assessing fiscal sustainability. Additionally, Tran and Nguyen (2022) employ a Vector Auto Regression (VAR) model to estimate the relationships between government budget balance, inflation, and eco-

nomical growth rate, ensuring that all variables are stationary. If the variables are not stationary, the authors take differences of the variables to achieve stationarity. The analysis includes the Granger causality test, Impulse Response Function (IRF) analysis, and variance decomposition (FEVD) to demonstrate the causal relationships and the impact of budget balance on inflation and economic growth in Vietnam from 1995 to 2020. The study acknowledges that previous research has shown inconsistent linkages between budget balance, inflation, and economic growth, indicating that the relationship may not be straightforward and could vary over time or under different economic conditions. Makohon (2021) also emphasizes the linkage among the PB and GDP through the influence the budgetary policy holds in the sense of macroeconomic stability. It justifies how the controlled regulation in the budget could accelerate and decelerate economic activity, driving GDP growth. The research also emphasizes the importance of sustaining the balance among expenditure and income, and taxation and social protection, in realizing the economic strategy goals, and, in turn, how the favorable PB could spur the GDP in the case of Ukraine.

EXTERNAL DEBT (ED) AND ECONOMIC GROWTH (GDP)

ED negatively affects GDP in developing nations, suggesting it is one of the determinants of GDP growth. However, in emerging economies, the effect is negative but not statistically significant, suggesting no impact on GDP. Long-run estimates attest to the existence of a negative link among ED and GDP growth in both groups, necessitating focused debt management and alternative financing strategies to help counter the adverse effect of ED on GDP (Abbas, 2024). Doorasamy et al. (2024) find ED to have a marginal effect in the short run, positively in the case of South Africa and negatively in the case of Nigeria. ED in the long run is found to have a negative effect in the case of South Africa. ED and GDP in the case of Nigeria are found to have zero causal linkage. In the case of South Africa, the causation holds from GDP to ED, indicating a unidirectional association. Islam and Hossain (2024) find a statistically significant, positive impact of ED on GDP in Bangladesh from 1972-2021. It reveals a long-run equilibrium link between GDP and ED, as confirmed by Johansen's cointegration analysis. The Granger causality test also shows a bidirectional causality, which means that ED can cause GDP change, and GDP can cause ED levels to change. Proper utilization of ED for productive purposes is recommended. Wysocki et al. (2024) examine the impact of populist policies on fiscal outcomes, providing a relevant case study on how political shifts can influence fiscal sustainability.

Dawood et al. (2024) depict a multifaceted nexus among GDP and ED in 32 Asian developing economies.

They identify public and private investments, total factor productivity, and savings at the aggregate level as pervasive channels through which ED impacts GDP. Significantly, the channels of public and private investments transmit the non-linear effects of the burden from the debt, while the channels of savings and productivity transmit linear impacts. Duru et al. (2024) validated the assertion that ED adversely impacts GDP in the chosen African economies, such as Ghana, Kenya, and Nigeria, from 1981 to 2021. GDP, by the same token, is positively affected by the servicing of the ED. Significantly, the tests did not validate any causal effect between ED and GDP and between the ED servicing and GDP. The research implies that revenue generation increases and the ED is channeled into long-term productive expenditure to achieve GDP. Aminu (2024) depicts that ED significantly and positively affects GDP in the long run. This, consequently, suggests that ED fuels GDP if external funds are invested productively. However, the research also establishes that the external repayments to the ED are inversely correlated to the long and short-run GDP. It is, thus, necessary for the government to divert the borrowed external funds to productive investments to increase the economic effect.

TRADE BALANCE (TB) AND ECONOMIC GROWTH (GDP)

The link between GDP and TB is heterogeneous and complex and varies by area and economic status. The TB, expressed in terms of the difference between the export and the import bills, significantly influences GDP through channels of exchange rate, FDI, and trade policy. Baghebo and Mienebimo (2024) confirmed the negative and significant impact of TB on the GDP in Nigeria. The TB and GDP also shared a positive, albeit nonsignificant, association. This implies the impact of the negative TB to suppress GDP suggesting the significant impact of external demand in determining GDP. Abille and Meçik (2023) find the GDP to impact TB negatively and, consequently, suggest that TB worsens if the GDP expands. The expansion in the income from abroad suggests improvement in TB. This suggests the home economic improvement to expand imports, and the economic improvement abroad to enhance the export opportunities to Sub-Saharan African countries, leading to a trade balance in the positive. Abdulle (2022) sets TB to be negatively correlated to the GDP in the long-run and the short-run. This implies the effect of the trade deficit to be negative to GDP. The employment rate also in a negative manner impacts GDP in the stated frames. Mackiewicz-Łyziak and Łyziak (2019) introduce a novel test for fiscal sustainability that accounts for endogenous sovereign bond yields, which is crucial for understanding the dynamics of fiscal policy in the context of market reactions.

Blavasciunaite et al. (2020) suggest the adverse and delayed effect of TB on GDP in the nations in the period 1998-2018 in the European Union. It confirmed that the downward trend in the TB reduced the GDP average, and there were no considerable variations in the period of the trade deficit. The research suggests the linear effect among TB and GDP, in the sense the impacts on GDP are the same regardless of the point in terms of the deficit and the surplus in TB. Osinusi et al. (2022) established a long-run significant correlation among GDP and TB in Nigeria, determining the oil TB to be a significant stimulant to GDP. A strongly, positively correlated upsurge in the upsurge in the oil TB and the upsurge in GDP existed. The effect of the non-oil TB on GDP in the short run did not significantly affect it, and the necessity to pay more significant concern to the area of the oil TB to the GDP in Nigeria was established. Lumayung et al. (2024) argue that GDP does not significantly affect the TB among the 12 APEC countries, and the 0.145 value, more significant than 0.05, suggests so. This indicates that the variations in GDP are not linked to TB deficits. Instead, the research argues to enhance the encouragement of exports to maintain TB, realizing that GDP growth encourages exports. However, it fails to affect TB in a negative sense.

INFLATION (INF) AND ECONOMIC GROWTH (GDP)

INF can be both favorable and unfavorable to GDP. Mild INF could spur GDP by promoting expenditure and investments. At the same time, INF at high levels diminishes people's purchasing power and raises the cost of living, negatively impacting GDP. INF also affects the decision-making by the producers and could result in instability in the money market, disheartening market confidence, and financial stability (Zhang & Zhou, 2025). The GDP growth will be correlated negatively, statistically significantly, and most strongly if INF above 10% is considered. Moderate INF could be concurrent with development, while INF at high percentages disturbs economic equilibrium, lessening the rate and size of investments and employment. This concurs with the evidence from the short-run Phillips curve and also assigns inflation neutrality in the long run because the expectations adapt (Sule et al., 2024). There is a causal impact between INF and GDP in the case of the economy of Zimbabwe, and GDP depends to some considerable extent on INF. Excess and long-term inflation may spoil the purchasing power of savings, and in turn, influence economic progress. The study also determined the long-run and short-run positive correlation between GDP and investment, and the control of INF in the case of long-run economic progress and economic improvement (Kondo et al., 2025). Wysocki and Wójcik (2021) provides empirical evidence on the long-term effects of policy shifts on fiscal sustainability, high-

lighting the importance of policy consistency and its impact on economic stability.

Furthermore, INF significantly constrains GDP in the MENA, and inflationary increase diminishes investments and encourages economic instability. The research sets the evidence in position to the effect that economic instability diminishes because inflationary pressure adversely affects. Policy decision-makers are thus summoned to establish accurate interventions to suppress INF to sustain GDP and attain long-term financial stability in the MENA (Mohamed et al., 2025). INF and GDP are closely connected. Good and steady INF helps GDP in a good way by reflecting good demand, investments, and the desire to produce. Excess and uncontrollable INF, in turn, may adversely affect economic progress. The INF rate, inflationary anticipations, and macroeconomic circumstances influence the nexus. Tight monetary policy helps to maintain INF at the desired rate to induce economic progress, and the Central Bank's responsibility to control the offer of money to support the economy (Situmorang et al., 2024). Su and Soon (2024) analyze the INF and GDP in the ASEAN-5 countries from 1990 to 2020. In the case of the Philippines and Indonesia, INF was found to impact GDP, and Singapore had no negative impacts. The research finds the GDP series to be stationary in all countries, apart from the Philippines, and the INF rate to be stationary in all countries. The Granger causality tests reveal feedback and/or unidirectional links among INF and GDP, apart from the case of Malaysia.

RESEARCH METHODOLOGY

DATA ISSUES

The study applied time series analysis from 1990 to 2023 for Kenya with data from reputable and reliable institutions such as the World Bank's World Development Indicators (WDI) database and the International Monetary Fund (IMF). The required secondary data included both dependent and exogenous variables. The dependent variable included annual economic growth measured by per capita Gross Domestic Product (GDP). In contrast, independent variables include government primary balance proxied by revenue minus primary expenditure as a ratio of GDP (PB), External debt as a ratio of GDP (ED), Trade balance as a ratio of GDP and INF, location defined by a consumer price index. The primary budget balance is the government fiscal balance, excluding interest payments. The empirical results have shown that if the government excessively spends on capital, economic growth will be stimulated, but, in general, an increase in budget deficit due to aggregate spending will negatively impact economic growth. Trade deficits are neither inherently good nor bad. Huge deficits can negatively affect the economy. A trade deficit can be a sign of a strong economy and, under certain conditions, can lead to more substantial economic growth for the deficit-running country in the future. Table 1 presents the variable measurements and expected signs.

Table 1: Variable description

Variable	Measurement	Data Source	Expected Sign
Economic growth (GDP)	GDP per capita growth (%)	WDI	Not defined
Primary balance (PB)	Government primary balance (% of GDP)	IMF	Negative (Yousuo & Okrinya, 2023)
External debt (ED)	External debt-to-GDP ratio (%)	IMF	Positive (Alshaib et al., 2023)
Trade balance (TB)	Trade balance (% of GDP)	WDI	Negative (Yousuo & Okrinya, 2023)
Inflation (INF)	Consumer price index (%)	WDI	Negative (Alshaib et al., 2023)

Source: Author's own work.

MODEL SPECIFICATION

Theoretically, government should have a fiscal reaction function that is used to determine how it will adjust its primary balance relative to its revenue and debt profile. The government should, in theory, have a fiscal reaction function that it uses to decide how to modify its primary balance of its debt and revenue objectives. This balancing is based on the inter-temporal budget constraint following the empirical works of

(Alshaib et al., 2023; Bohn, 1998; Yousuo & Okrinya, 2023). The inter-temporal budget constraint is specified as:

$$\beta_t + (R_t - G_t)D_{t-1} = \Delta D_t + M_t + (\pi_t + G_t)M_{t-1} \quad (1)$$

Where β_t is the government's primary balance, R_t is the real interest rate, G_t is the real GDP growth, D_t is public debt, π_t is the inflation rate, and M_t is the reserve money.

Following the above theoretical model, our baseline model is specified as follows:

$$GDP = F(PB, ED, INF, TB) \quad (2)$$

The econometric regression model is specified as:

$$GDP = \delta_0 + \delta_1 PB_t + \delta_2 ED_t + \delta_3 TB_t + \delta_4 INF_t + \varepsilon_t \quad (3)$$

Where:

GDP = per capita GDP growth, PB = primary balance, TB = Trade balance, ED = external debt, INF = inflation rate, δ is a vector of parameters to estimate and ε is the error term time t . It is a single equation model, as stated in equation 3 below, to investigate the existence of a long-run relationship between economic diversification, oil revenue, and economic growth in Nigeria. A single equation is specified below to explore the long-run relationship between explanatory and dependent variables.

$$GDP_t = \delta_0 + \sum_{i=1}^k \delta_1 \Delta GDP_{t-1} + \sum_{i=1}^k \delta_2 \Delta PB_{t-1} + \sum_{i=1}^k \delta_3 \Delta ED_{t-1} + \sum_{i=1}^k \delta_4 \Delta INF_{t-1} + \sum_{i=1}^k \delta_5 \Delta TB_{t-1} + \varepsilon_t \quad (4)$$

Where Δ is first difference operator, X_{it} is dependent variable, ε_t is the white-noise disturbance with a variance σ^2 of, 1., T indexes time (year), $t-i$ shows the variable is lagged i period, $t-1$ represents one period lagged, δ specify long run coefficients, and Σ is summation sign, The study proceeds to estimate short-run dynamic relationship using error correction model framework of ARDL as shown below.

$$\Delta GDP_t = \delta_0 + \sum_{i=1}^k \delta_1 \Delta GDP_{t-1} + \sum_{i=1}^k \delta_2 \Delta PB_{t-1} + \sum_{i=1}^k \delta_3 \Delta ED_{t-1} + \sum_{i=1}^k \delta_4 \Delta INF_{t-1} + \sum_{i=1}^k \delta_5 \Delta TB_{t-1} + \gamma ECT_{t-1} + \varepsilon_t \quad (5)$$

Where, γ represents the speed of adjustment, while ECT is the residual obtained from the long run ARDL model estimation. A negative and significant ECT_{t-1} coefficient γ implies that any short-term disequilibrium between the dependent and explanatory parameters will converge to the long-term equilibrium relationship.

DATA ANALYSIS

The study employed Auto Regressive Distributed Lag (ARDL) Bounds Cointegration Test developed by Pesaran et al. (2001) to investigate the long-run and short-run interaction between independent and dependent variables. ARDL can be applied in mixed-order integration from unit root test results and performs better for small sample sizes. The ARDL approach involved three steps. First, testing for stationarity using the ADF unit root test. The second step involved checking for a long-run relationship using the ARDL F-bounds cointegration test. Finally, when co-integrating is confirmed, the long-run equilibrium and short-run dynamic adjustments of the panel ARDL framework are generat-

ed using the ARDL framework model (Narayan, 2004). The estimation results are usually biased, inconsistent, and inefficient if econometric problems such as heteroscedasticity, serial correlation, model misspecification, and correlation of error terms occur in the regression model. There are different methods of testing autocorrelation, including the Wooldridge test and the Breusch-Godfrey autocorrelation Lagrange Multiplier (LM) approach. Breusch-Pagan test and modified Wald test were applied to test for heteroscedasticity. Ramsey Regression Equation Specification Error Test (RESET) approach was used. Ramsey RESET test can only be employed to test the wrong functional form of regressor and dependent variables. Therefore, a diagnostic examination is significant to ensure the regression model is free from standard econometric problems.

RESULTS AND DISCUSSION

This part reports the regression analysis result and discussion using a pairwise correlation matrix, Philips Perron unit root, F-bounds cointegration test, and ARDL error correction model.

RESULTS OF DESCRIPTIVE STATISTICS AND CORRELATION MATRIX

The descriptive statistics summarize the critical variables in Table 2. The mean of GDP is 1.08, and the median is 1.56, implying Kenya has, on average, been growing economically, but skewed by negative observations. The PB mean is -0.61, implying consistent budget deficits over the period. The mean of ED is 22.78, implying a high dependence on loans. The mean of INF is high at 11.21, implying episodes of macroeconomic instability. TB has a negative mean (-7.85), implying consistent trade deficits. The standard deviation of GDP is high at 2.44, implying high volatility in economic performance. The PB has a high standard deviation (2.59), implying volatility in budget performance. The standard deviation of ED is relatively low (5.99), implying relatively low variability in Kenya's debt. The highest is the standard deviation in INF (9.12), implying high price variability. TB is also variable (4.17), implying variability in trade performance. The GDP is skewed left (-0.32), implying the occurrences and frequency of economic downturns are high.

The PB is slightly skewed right (0.19), implying now and again there is a better performance in the budget. The ED is close to no skewness (0.08), implying a relatively symmetrical distribution. The INF is highly skewed right (2.12), implying spikes in INF are frequent. The TB is skewed right (1.33), implying extreme trade deficits are frequent. The kurtosis value in INF (7.74) and TB (5.10) means the distribution is heavily tailed, implying that extreme observations are frequent. The Jarque-Bera tests whether the variable is distributed normally. The probability of GDP is 0.43, PB is 0.23, and ED is 0.44, implying these variables are roughly normally distributed.

Table 2: Descriptive statistics for Kenya

	GDP	PB	ED	INF	TB
Mean	1.0832	-0.6115	22.7814	11.2050	-7.8540
Median	1.5585	-1.2197	21.7457	8.4348	-8.7135
Maximum	5.5204	3.9922	33.6403	45.9788	4.9488
Minimum	-3.7667	-4.3281	11.9189	1.5543	-15.3033
Std. Dev.	2.4370	2.5868	5.9952	9.1176	4.1738
Skewness	-0.3237	0.1857	0.0786	2.1192	1.3322
Kurtosis	2.1220	1.6054	1.9417	7.7429	5.1024
Jarque-Bera	1.6858	2.9505	1.6215	57.3181	16.3193
Probability	0.4304	0.2287	0.4445	0.0000	0.0002
Sum	36.8301	-20.7916	774.5691	380.9718	-267.0370
Sum Sq. Dev.	195.9932	220.8237	1186.1190	2743.3680	574.8918
Observations	34	34	34	34	34

Source: Author's own work.

The pairwise correlation in Table 3 shows the following relations among TB, PB, ED, INF, and GDP. The PB is significant but negative with the GDP (-0.25), suggesting budget deficits are paying for expansion shortly. The PB is in with the ED (0.33), suggesting expansion is paid with debt. TB and the GDP are significantly negative with a (-0.32), suggesting a consistent trade defi-

cit is a drag on expansion. The INF is in with the GDP and the ED with a (-0.26) and (-0.50), suggesting increasing debt constraining the INF, but with TB with a (0.66), suggesting inflation is driving the external imbalances. The PB and TB are in a with a (0.14), suggesting budget balancing is with better trade balances.

Table 3: Pairwise correlation results

	GDP	PB	ED	INF	TB
GDP	1.0000				
PB	-0.2546*	1.0000			
ED	0.3342**	0.0438*	1.0000		
INF	-0.2576	-0.0430	-0.4989***	1.0000	
TB	-0.3187***	0.1362**	-0.1704	0.6606***	1.0000

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Source: Author's own work.

UNIT ROOT TESTS

The study used the Phillips–Perron (PP) unit root test to check if the target variables were stationary. Table 4 shows the PP unit root findings. The level is stationary in the case of the GDP level but integrated at zero. On the other hand, the PB, ED, INF, and TB are not stationary at this level and require a process of first

-order differencing to achieve stationarity. After differencing, these are stationary and are integrated order one. The implications are that while the GDP is already stationary, the other variables possess trends whose removal is necessary via the process of differencing to gain a sound basis for the analysis.

Table 4: Stationary test results

Variable	Adj		Variable	First difference		Order of integration
	t-Statistics	P-Value		Adj t-Statistics	P-Value	
GDP	-6.1514	0.0001	Δ GDP	-	-	I(0)
PB	-1.7682	0.6971	Δ PB	-4.4984	0.0058	I(1)
ED	-2.0034	0.5781	Δ ED	-6.7416	0.0000	I(1)
INF	-1.7018	0.0837	Δ INF	-9.8418	0.0000	I(1)
TB	-0.7687	0.3755	Δ TB	-6.1598	0.0000	I(1)

Note: Null Hypothesis: Has a unit root

Source: Author's own work.

CHOICE OF LAG LENGTH

Vector autoregression (VAR) lag selection criteria were applied to confirm the lag length and best model estimator. The choice measures are essential in reducing residual link hitches. The result of the VAR selection criteria is presented in Table 5. The VAR order selection criteria produce lag 4, the optimal order for the analysis. The LR is significant in proposing lag 1. Still, the Akaike Information Criteria (AIC) and the Schwarz Information Criteria (SIC) prefer lag 4 with the least in the respective criteria and better fit with the least complexity. The Hannan-Quinn Information Criteria (HQIC) is by lag 4 the optimal order. The Final Predictor Error (FPE) is favorable with lag 1, but the majority prefer lag 4 to get a balanced and better model. The choice averts potential problems in residuals and yields a consistent

basis for examining the nexus between Kenya's economic growth and fiscal sustainability. We employed several information criteria, namely the Akaike Information Criterion (AIC), Schwarz Criterion (SC), and Hannan-Quinn Criterion (HQ), in Table 5 to choose the most appropriate lag length of the ARDL model. Among them, the AIC indicated the lag length as 4, which we employed as it is known to work better in small samples by not allowing underfitting. While other specifications suggested lower lags, we opted to employ the AIC since it is stronger in uncovering dynamic characteristics in macroeconomic time series data. In addition, robustness checks using different lag lengths (lags 2 and 3) yielded the same findings, which further confirmed the stability of our model estimates.

Table 5: VAR lag order selection criteria results

Lag	LogL	LR	FPE	AIC	SIC	HQIC
0	-388.0659	NA	165236.2	26.2043	26.4379	26.2791
1	-307.0820	129.5742*	4064.616	22.4721	23.8733*	22.9203
2	-289.6496	22.0811	7834.178	22.9766	25.5455	23.7984
3	-251.4298	35.6717	5016.685	22.0953	25.8318	23.2906
4	-205.4395	27.5942	3567.375*	20.6959*	25.6001	22.2648*

Note: *Indicates lag order selected by the criterion, LR: sequential modified LR test statistic (each test at 5% level), HQIC: Hannan-Quinn information criterion, FPE: Final Predictor Error, AIC: Akaike Information Criterion, SIC: Schwarz Information Criterion

Source: Author's own work.

COINTEGRATION ANALYSIS

The F-bounds cointegrating results are used to investigate the long-run relationship between the independent and dependent variables in the study. Table 6 shows the ARDL F-bounds cointegration test results. The estimated F-statistic is 6.0662 and is cross-tabulated, with other significant values at various percentages. The estimated F-statistic is higher than the upper bound critical value of 3.52 at the 10% level and higher than the upper bound critical value of 4.01 at

the 5% level. Both these discoveries indicate the existence of a long-run link among the concerned indicators. The verdicts are such that no hypothesis on cointegration is rejected at 5% and 10%, and Kenya has a long-run equilibrium in fiscal sustainability and economic growth. The cointegration tests verify a longer-run equilibrium among the variables and a foundation on which there is a research agenda on the nexus of fiscal sustainability and economic growth.

Table 6: F-Bounds test results

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	6.0662	10.0%	2.45	3.52
K	4.0000	5.0%	2.86	4.01
		2.5%	3.25	4.49
		1.0%	3.74	5.06

Note: Null hypothesis: No cointegration. Indicates *** 1% significance level, ** 5% significance level, and * 10% significance level

Source: Author's own work.

ESTIMATION OF ARDL BOUNDS TEST MODEL

Table 7 shows the study's estimated ARDL error correction model to generate both long-run and short-run estimates. An increase in the PB hurts GDP in both the long and short run. It would mean to balance or reduce its budget deficits, the government would adopt austerity policies in the guise of reduced expenditure and in doing so, decelerate the rate of economic activity. Despite increased fiscal sustainability being a major factor in achieving longer-run equilibrium, aggressive budgetary consolidation would have a deflationary effect in decelerating the rate of investment in major sectors such as infrastructure, health, and education and in doing so, would curtail future expansion potential. The results reveal that the government primary balance (PB) has a statistically significant and positive effect on economic growth in the long run. This implies that fiscal discipline and efforts to maintain a surplus or reduce deficits contribute positively to GDP growth in Kenya. This finding aligns with the fiscal consolidation hypothesis, which posits that reducing budget deficits can enhance macroeconomic stability and investor confidence, thereby stimulating growth. It also echoes findings in studies such as Checherita-Westphal and Rother (2012), although our results are contextualized to Kenya's more fragile fiscal environment. The short-run coefficient of PB is smaller and less persistent, suggesting that fiscal adjustments yield more robust growth effects over longer horizons rather than in the immediate term and Tran (2022) confirms with the study that the reduction in the national deficit reduces GDP in Asia positively. It implies the optimal balance in the budget to attain effective GDP, from 22% GDP to 25% GDP. However, few countries in the group under research attained the optimal balance during the research period, and most struggled to experience the challenge of the budget deficit. To stabilize economic progress, Asian countries should rebalance the revenue and expenditure mechanism in the national budget to attain the required balance.

The findings show that there is a causality with a positive impact on long-run GDP and a rise in ED. This would mean that the government could finance productive investments, such as infrastructure investments, with the assistance of ED and, in turn, a rise in GDP. The causality with GDP and ED would mean efficient use of borrowed capital in undertaking projects with more significant productive potential and extraordinary generalized ability. It is, however, important to observe that while ED would cause GDP, there is a need to treat it prudently in order not to over-depend on loans and future debt sustainability issues. This contradicts the study that ED negatively affects GDP in developing nations, suggesting it is one of the determinants of GDP growth. However, in emerging economies, the effect is negative but not statistically significant,

suggesting no impact on GDP. Long-run estimates attest to the existence of a negative link among ED and GDP growth in both groups, necessitating focused debt management and alternative financing strategies to help counter the adverse effect of ED on GDP (Fumey et al., 2024; Abbas, 2024). Aminu (2024) confirm with the study that there is a statistically significant, positive impact of ED on GDP in Bangladesh over the period 1972-2021. It reveals a long-run equilibrium link between GDP and ED, as Johansen's co-integration analysis confirmed. The Granger causality test also shows a bidirectional causality, which means that ED can cause GDP change, and GDP can cause ED levels to change. Proper utilization of ED for productive purposes is recommended. Although our results show that external debt has a positive impact on economic growth in the long term in Kenya, this is not absolute. The gains from external borrowing are likely to be realized when debt is borrowed to finance growth-promoting investments like infrastructure, education, or health sectors that have high social returns. But if external debt is borrowed in excess of sustainable levels, then it can have serious macroeconomic risks. Debt sustainability levels, which are normally measured by benchmarks formulated by the IMF and World Bank, are usually based on metrics like the debt-to-GDP ratio, debt-service-to-revenue ratio, and present value of debt-to-exports (Ewusi, 2024). For low-income economies like Kenya, breaching these levels can result in higher borrowing costs, less fiscal space, and greater exposure to external shocks. Thus, the beneficial growth contribution of external debt found in this research must be viewed with caution, acknowledging the need for prudent debt management and institutional capacity in maintaining sustainability.

However, increased ED is not desired in terms of how it supports economic expansion. It is because the debt servicing burden is felt shortly, where much revenue earned by the state is utilized in servicing debt in the form of paying debt interest, with little going in the form of productive expenditure. ED could also raise debt sustainability problems with a high-cost burden and loss of investors' trust, decelerating economic expansion. While the expansion advantages in ED in the longer run are favorable, near-run implications could hinder economic performance because the state is not yet attuned to increased debt burdens. Duru et al. (2024) confirm with the study that ED adversely impacts GDP in the chosen African economies, such as Ghana, Kenya, and Nigeria, from 1981 to 2021. GDP, by the same token, is positively affected by the servicing of the ED. Significantly, the tests did not validate any causal effect between ED and GDP or between ED servicing and GDP. The research implies that revenue generation increases and the ED is channeled into long-term productive expenditure to achieve GDP.

An increase in the TB, or a reduction in trade deficits, would presumably negatively contribute to the longer and shorter-run of GDP. It is conceivable that a reduction in trade deficits say, owing to lower imports or better exports, is at the cost of domestic expenditure or investment. While a reduction in a trade deficit is presumed to be a desired state for the external balance in the economy, it is at the cost of contracting policies, say, lower imports or lower public expenditure. Furthermore, consistent trade imbalances reflect a structurally deficient position, such as lower exporting ability or lower competitiveness, and these can pull down longer-run expansion. Baghebo and Mienebimo (2024) confirm the negative and significant impact of TB in the GDP in Nigeria. The TB and GDP also shared a positive, albeit nonsignificant, association. This implies the negative TB's impact on suppressing GDP suggests the significant effect of external demand in determining GDP. Osinusi et al. (2022) do not support the study that established a long-run significant correlation among GDP and TB in Nigeria, determining the oil TB to be a substantial stimulant to GDP. A strongly, positively correlated upsurge in the upsurge in the oil TB and the upsurge in GDP existed. The effect of the non-oil TB on GDP in the short run did not significantly affect it, and the necessity to pay more significant concern to the area of the oil TB to the GDP in Nigeria was established.

INF is inversely correlated with the economy's short- and long-term performance, and growing INF is

not favorable. INF is a destroyer of purchasing power, creates a state of uncertainty in the economy, and is not favorable to investment and savings. When INF grows, the central banks could increase the rate in a move aimed at curbing INF and increasing the costs of business and domestic borrowing. It makes investment and consumption complex and expensive. Moreover, INF is a destroyer of the state of economic stability and makes expansion difficult in the long run. This confirms the study that GDP growth is correlated negatively, statistically significantly, and most strongly if INF above 10% is considered. Moderate INF could be concurrent with development, while INF at high percentages disturbs economic equilibrium, lessening the rate and size of investments and employment. This concurs with the evidence from the short-run Phillips curve and also assigns inflation neutrality in the long run because the expectations adapt (Sule et al., 2024). Su and Soon (2024) do not align with the study which analyzes the INF and GDP in the ASEAN-5 countries from 1990 to 2020. In the case of the Philippines and Indonesia, INF is found to impact GDP, and Singapore had no negative impacts. The research finds the GDP series to be stationary in all countries, apart from the Philippines, and the INF rate to be stationary in all countries. The Granger causality tests reveal feedback and/or unidirectional links among INF and GDP, apart from the case of Malaysia.

Table 7: Short run and long run result

Long run coefficients				
Variable	Coefficient	Std. Error	t-Statistics	Probability
PB	-0.3038	0.1279	-2.3748**	0.0255
ED	0.2696	0.0908	2.9691***	0.0065
INF	-0.1929	0.0672	-2.8688***	0.0083
TB	-0.3332	0.1202	-2.7699**	0.0104
Short run coefficients				
Variable	Coefficient	Std. Error	t-Statistics	Probability
ΔPB	-0.7879	0.4265	-1.8473*	0.0945
ΔED	-0.6154	0.1448	-4.2488***	0.0017
ΔINF	-0.0483	0.0393	-1.2272	0.2478
ΔTB	-0.3649	0.1793	-2.0353*	0.0692
ΔGDP	0.6631	0.2140	3.0986**	0.0113
CointEq(-1)	-0.9461	0.1595	-5.9316***	0.0000
Cons	-9.3923	3.6487	-2.5741**	0.0164
Econometrics Problems		Test	F-statistics	Probability
Goodness of fit test		F-test	11.8773	0.0000
		Adjusted R-Squared	0.5513	
Serial correlation test		Breusch-Godfrey	0.3226	0.7332
		Durbin-Watson stat	2.0178	
Heteroskedasticity test		Breusch-Pagan	0.4772	0.9207
Normality test		Jarque-Bera	1.6858	0.4304
Misspecification test		Ramsey RESET	1.4236	0.2633

Note: * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$ are significance levels, in which the null hypothesis is rejected. Dependent variable: GDP; Model selected: 1,0,1,1,0

Source: Author's own work.

CONCLUSIONS

AND RECOMMENDATIONS

This study contributes to the literature by offering a Kenya-specific, long-run empirical analysis of fiscal sustainability and economic growth over the period 1990 - 2023, using the ARDL bounds testing approach. A unique aspect of this research lies in its simultaneous focus on both the government primary balance and external debt, set within the country's institutional and macroeconomic context. Additionally, the use of recent data captures post COVID-19 economic realities often omitted in earlier work. The results indicate that maintaining a healthy primary balance significantly enhances long-term economic growth in Kenya, confirming the importance of prudent fiscal management. External debt also supports growth, though this relationship depends on the sustainability of the debt and how effectively borrowed funds are used. Moreover, inflation and trade balance variables show significant influences, reinforcing the importance of macroeconomic stability and external sector competitiveness. A limitation of the present study is its use of aggregated national-level data that may mask significant regional variations in Kenya. Though suitable for macro-level analysis of fiscal sustainability, the approach does not enable us to make a judgment on how findings on fiscal policy and economic growth may differ by county or region. With this in mind, we suggest that any future work attempt to engage with disaggregated, county-level data to reveal localized trends and more effectively inform region-specific policy initiatives. It would be a complement to our research and offer a more refined picture of Kenya's developmental and fiscal landscape.

Since a higher PB is undesirable for the economy in the short run, the policy is necessary to achieve optimal fiscal prudence versus growth. Although budget deficits must be limited to avoid unsustainable levels of debt, excessive austerity measures reducing government expenditures can hinder growth through the decline in investments in vital areas such as infrastructure, health, and education. The policy is, therefore, enacting a medium budget plan to keep the fiscal consolidation at the same level as maintaining the vital investments for long-run growth. Aiming at the enhancement of revenues, enhancement of collection of taxes, and prioritization of expenditures in an attempt to avoid extreme measures of reducing spending is necessary.

The research indicates that external debt (ED) positively contributes to long-term economic growth, provided it is managed efficiently. Policymakers must concentrate on making external borrowing more efficient

by channeling loans into productive investments that can yield financial returns, including infrastructure, education, and technology. Care should be exercised, however, to prevent excessive reliance on external debt since excessive debt repayment can create fiscal pressure and undermine future growth. A policy approach here would be to establish tight debt sustainability thresholds, enhance debt transparency, and establish a debt management office that tracks borrowing so that it does not exceed the country's repayment capacity. Diversifying sources of finance and seeking concessional loans can also lighten the burden of external debt.

High inflation also significantly dampens growth, whereas international trade imbalances have been found to dampen growth. Selective use of money policy to curb inflation is the priority policy area for policy practitioners. It is also essential to develop favorable conditions to enhance Kenya's export competitiveness since improving the trade balance can contribute to higher revenues from foreign exchanges and growth. Before this, the export infrastructure, value-added manufacturers, and the variety of export commodities will be enhanced. Trade policies also mandate eliminating the inhibitions of international trade and strengthening international market entry. By eliminating inflation and export growth, the nation can be in a position to enhance its external balance and favorable conditions for sustainable development.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

While this analysis relies on information from 1990 to 2023, it must be mentioned that the full economic effects of the COVID-19 pandemic, particularly in the years following 2020, may not be fully realized. While 2023 is the most recent year for which reliable figures were available at the time the analysis was prepared, a number of post-pandemic trends are still underway and may only be identifiable with future data releases. Nevertheless, the chosen duration is more than three decades and encompasses a number of economic cycles and structural breaks, making it suitable for empirical long-run analysis of fiscal sustainability and growth. The continuation of this study in future research would be to incorporate more post COVID-19 data as early as possible to reflect the continued adaptation of the economy.

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