THE EFFECTS OF FISCAL POLICY ON PUBLIC DEBT IN KENYA: THE MODERATING ROLE OF INSTITUTIONAL QUALITY

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074175

A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE IN DEVELOPMENT FINANCE AT STRATHMORE UNIVERSITY

MAY 2025

DECLARATION

I declare that this work has not been previously submitted and approved for the award of a degree by this or any other University. To the best of my knowledge and belief, the dissertation contains no material previously published or written by another person except where due reference is made in the dissertation itself.

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ABSTRACT

The rising levels of public debt in Kenya have sparked concerns about the effectiveness of fiscal policies in ensuring sustainable debt management. This study examines the effect of fiscal policy on public debt in Kenya while considering the moderating role of institutional quality. Grounded on the Keynesian theory of public debt and the debt overhang theory, used a quantitative research approach, and collected secondary data from covering the period 1993–2023. The key fiscal policy indicators were revenue generation, government expenditure, and fiscal deficits. Institutional quality was the moderating variable, while foreign exchange rate was the control variable. Descriptive statistics was used to summarize the data using means and standard deviations. Diagnostic tests for normality, multicollinearity, autocorrelation, heteroskedasticity and cointegration were performed to test the assumptions for time series data. Autoregressive Distributed Lag (ARDL) time series model was used to examine the dynamic relationship between variables, including both past values of the dependent variable (autoregressive part) and past and current values of other variables (distributed lag part). Baseline ARDL model findings show that increased government revenue reduces debt growth, while high expenditure contributes to debt accumulation. Exchange rate depreciation and fiscal deficits show positive but mixed effects. Institutional quality alone had no significant direct impact, but its interaction with fiscal policies proved critical. Moderation ARDL model analysis revealed that better institutions reduce debt growth yet can also enable greater borrowing during high-revenue or deficit periods. In view of these results, the government should broaden the tax base, improve compliance, and diversify revenue. Prudent spending, reduced deficits, and strong institutions are key to sustainable debt.

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VT OMNES
VNVM SINT

LIST OF ABBREVIATIONS

CBK	Central Bank of Kenya
CPI	Corruption Perceptions Index
EU	European Union
GDP	Gross Domestic Product
KNBS	Kenya National Bureau of Statistics
OECD	Organization for Economic Co-operation and Development

OPERATIONAL DEFINITION OF TERMS

Fiscal Deficit to GDP Ratio	The excess of government expenditures over a period of time, usually a year and expressed as a ratio of the country's GDP (Mohamed, 2024)
Government Expenditure	The spending made by the government as it seeks to meet the needs of members of the public (Nzomo, 2024)
Institutional Quality	Institutional quality is an indicator of a government's ability to enforce the rule of law and guarantee efficiency, transparency and accountability of its institutions (Naz & Yasmin, 2021)
Public Debt	Public debt refers to the total obligations or liabilities governments owe to local or foreign debtors (Atingi-Ego, Timuno, & Makuve, 2021)
Revenue Generation	These refer to the taxation strategies deployed to increase revenue generation

CHAPTER ONE: INTRODUCTION

1.1.Background to the Study

Debt is as a tool to finance government deficits (OECD, 2024). Despite this, debt accumulation can be detrimental to the development of the economy when managed improperly (Raihan &Anjum, 2020). This is the case for many countries according to Appiah-Kubi, et al. (2022), who report that since the 1980s, the ratio of government debt to gross domestic product (GDP) of many countries has risen sharply to 83% in 2023 from 40% in 1993, despite the OECD recommending that countries maintain a debt-to-GDP ratio of at least 30% (OECD, 2024). The debt-to-GDP ratio is particularly concerning for African countries as debt accumulation over the last three decades has seen debt-to-GDP ratio rising to an average of 67% by 2023. In Kenya, the National Treasury (2024) report indicates that the country's debt-to-GDP ratio currently stands at around 70%, raises serious questions regarding the country's fiscal sustainability. According to Mohamed (2024) prudent management of fiscal policies should play a key role in countering unchecked debt accumulation.

In conditions of increasing need for public expenditure, Amina (2024) aver that maintaining "appropriate" government deficits and debt levels are some of the main challenges facing many countries. Several factors have been advanced to explain the changing debt profile between the 1980s and now, with some of the mostly cited factors being high budget deficits, significant increases in public expenditure, a narrow revenue base, limited output growth, and high inflation (Alnashar, 2019; Lin & Kueh, 2019). The rapid expansion of public debt continues to raise questions both developed and developing countries (bin Hidthiir, et al., 2024; Alnashar, 2019); with the IMF (2020) reporting that the underlying factors differ significantly from one country to another due to country-specific differences in debt management policies.

According to Mohamed (2024), while in the 1960s, governments used fiscal policies as a main tool for driving economic growth, they became heavily reliant on monetary policy in the 1980s, before having to coordinate between fiscal and monetary policy after the 2007 - 2008 financial crisis. Ciaffi, et al., (2024) confirms that while most advanced countries implemented fiscal consolidation policies that reduce spending and increase taxes after the 2008 financial crisis, these have failed to address the rising levels of government debt as OECD countries and the US report

higher public debt-to-GDP ratios, reduced economic growth, and increased unemployment rates. Ciaffi, Deleidi, and Di Domenico (2024) noted that the policy approaches are also influenced by market and economic conditions. The researchers confirmed that major global events such as the 2007/8 financial crisis, the COVID-19 crisis and the Russian-Ukrainian war in 2022 have negatively impacted countries' ability to contain the debt they had accumulated.

Tanchev and Mose (2023), in analysis of data from 27 European countries revealed that while fiscal policy elements emphasizing increases in government expenditure and tax revenue contributed to short-term economic growth, over the long term, they resulted in significant increases in the level of public debt. Similarly, Rajbhandari (2021) reports that while its fiscal policy in China is dominated by increased spending on large infrastructure projects and tax reforms, fiscal stimulus packages during the COVID-19 pandemic and slow economic growth in recent years has resulted in a significant accumulation of public debt, especially at local levels of government. Meanwhile, in South Korea, where fiscal policy focuses on the maintenance of balanced budget in combination with a countercyclical approach, Kim (2021) reported that such policies would be ineffective in the long-term due to the expected debt obligations of its rapidly aging population. Despite fiscal consolidation policies having negative impacts on debt management in Europe and China, Kim (2021) recommended that the governments should reduce spending and expand the tax base.

Raihan and Anjum (2020) observed that even though counter-cyclical fiscal policies increasing public debt may boost the economic performance of developed economies, many developing economies resort to procyclical (contractionary) policies such as implementing progressive tax systems and large infrastructure investments. Many developing economies also have large informal economies and weak administrative systems which impedes revenue generation and large governments with weak, corruptible institutions (Nguyen & Luong, 2021). According to Nguyen and Luong (2021), while reducing public expenditure and improving revenue mobilization could reduce public debt levels, weak governance in controlling corruption increases public debt accumulation in transition countries. Appiah-Kubi, et al. (2022) concur that good governance reduces the cost of borrowing, improves financial risk management, attracts investment, and increases revenue mobilization, which is critical to reducing debt accumulation. Weak governance,

on the other hand, contributes to overborrowing and imprudent allocation of financial resources which negatively affects debt repayment potential (Raihan & Anjum, 2020).

In African countries, researchers such as Appiah-Kubi, et al. (2022), in a study that sought to determine whether African governments can use short- and medium-term fiscal policy to reduce government debt, found out that the current rising levels of public debt in African countries is partly due to weak institutions and high cost of debt servicing. In Egypt, Mohamed (2024) revealed that while increases in government spending had positive impacts on debt levels, the effect was only short-term as the debt-to-GDP ratio increased in the long-run. Incremental tax policies also reduced the debt to GDP ratio but in the short run. In Nigeria, Chenge and Oigbochie (2023) showed that the government's use of debt on bailouts, persistent budget deficits and low revenue mobilization has significantly widened debt ratios. Despite this, few studies have sought after the association between fiscal policy, institutional quality and debt levels in African countries with Appiah-Kubi, et al. (2022) investigating key drivers of public debt and Chenge and Oigbochie (2023) focused on an oil-dependent economy.

While the government has been using a mix of fiscal policies to manage public debt, Mwangi (2021) notes that persistent budget deficits have increased the governments' hunger for debt, resulting in significant debt accumulation. Mustapha (2023) found that these policy instruments have had insignificant effects addressing the country's debt levels as reflected by the debt-to-GDP ratio and the debt-service-to-revenue ratios. Mose et al., (2024) noted that economic and governance challenges threaten to further erode the country's ability to meet its debt obligations. According to Kongo (2023), poor implementation of fiscal policies, and weak governance in controlling corruption has worsened Kenya's debt sustainability. Kinuthia and Rugo (2020) explained that revenue leakages, persistent fiscal deficits and weak institutions typically characterized by high levels of corruption, weak rule of law, and escalating social unrest, are the primary factors. Kongo, et al., (2023) added that while institutional quality may not be the only factor that can effective debt management, their presence increases the chances that a country will cope with and recover after economic shocks and effectively manage its debt to ensure long-term economic growth.

A sound fiscal policy should enable the implementation of counter cyclical policies when the economy faces destabilizing shocks by affecting demand through revenues and expenditures

(Chemnyongoi, 2023). However, Chien, et al. (2022) assert that few recent studies have sought after the interaction between fiscal policies and debt levels in countries with weak institutions. Given Kenya's weak institutions could be impacting the country's ability to use fiscal policies to manage public debt more effectively, this study seeks to fill this gap by evaluating the moderating influence of institutional quality on the relationship between fiscal policies and public debt in Kenya.

1.1.1. Public Debt

Governments need to finance development projects. However, in most countries, tax revenues are insufficient, forcing governments to borrow from different sources (Akotia, 2018). Public debt refers to the total obligations or liabilities governments owe to local or foreign debtors (Atingi-Ego, Timuno, & Makuve, 2021). While domestic debt is financed through local currency, external debt is repaid in foreign currency, hence, is subject to currency fluctuations (Naz & Yasmin, 2021). While critical to development of the global economy, all debts incur repayment interest. Further, while governments borrow to cover fiscal deficits, overborrowing can increase the imbalance between revenue and expenditures owing to higher interest rates (Atingi-Ego, et al., 2021).

Public debt can balloon to unsustainable levels when debt is used to service expenditures that are not associated with productive activities in the economy (Abotsi, 2023). As such, without appropriate fiscal balancing and rigorous public debt management, the cost of debt overhang could impact borrowing capacity (Atingi-Ego, et al., 2021). Additionally, while effective debt management can improve economic performance, persistent deficits beyond a certain level can exert negative effects on debt sustainability (Zareen, et al., 2024).

Indicators such as external debt to per cent of GDP, guaranteed external and domestic public debt, or the central government debt with respect to annual nominal GDP. Measures such as Debt-to-GDP Ratio, Gross Public Debt, Debt per capita, have been used to indicate public sector debt by various researchers (Joel, 2021; Abotsi, 2023; Zareen et al., 2024) (Abotsi, 2023).

Public debt in Kenya is composed of local and foreign debt and data from the Central Bank of Kenya (CBK) reveals that the size and structure of the country's public debt has been increasing steadily as the country seeks out new loans that it can use to finance its large development ambitions (Ochieng, 2022). While the CBK (2023) reports that the country's debt stock has crossed

the Kshs. 10.6 trillion marks, a 2023 repayment to foreign debtors saw the external debt reducing by 5.2%. Despite this, the debt to GDP ratio still stands at 70.0% of GDP, implying that the country is grappling with a high debt burden and facing elevated risk of debt distress according to the annual public debt management reports provided by the National Treasury and planning (Planning, 2023).

Analysis into the composition Kenya's public debt reveals that external debts dominate public debt (Owaga, 2021). Most of these debts are from multilateral and bilateral creditors and as a result, are subject to price fluctuations and other changes in the global economy. Cytonn (2024) reported that significant changes in Kenya's fiscal policy over the last decade have seen the country's total public debt as a percentage of GDP rising from 44 % in 2010 to 60 % in 2023 despite the IMF recommending countries maintain a 50% debt-to-GDP threshold. A historic review of Kenya's debt to GDP ratio between 1963 and 1980 averaged 28.1% before rising sharply to 51.3% between 1981 and 1990 as a result of the 1982 political instability and the 1988 IMF infused Structural Adjustment Programs (SAPs). Further economic and political turmoil followed by rapid depreciation of the Kenya Shilling saw public debt rising to 60.8% between 1991 and 2002, before falling to 49% between 2003 and 2007 and 55% between 2008 and 2015 (Makau, et al., 2018).

Makau, et al., (2018) confirms that the total debt-to-GDP ratio has been increasing since 2008 following the global financial crash, the implementation of expansionary policies that increased infrastructure spending and post COVID-19 economic shocks. Debt levels have continued to soar despite the government claiming that it is working on trimming domestic borrowing to alleviate the pressure on interest rates (Mwangi, 2021). Mwangi (2021) adds that high debt levels have also increased the debt service to revenue ratio which stands at 69.5%, about 39% points higher than the recommendation of the IMF. This high debt service to revenue ratio is an indication that the country will have to pay more to service its debts, further straining the government's expenditure and increasing the risks of default.

Coupled with the recent COVID-19 pandemic which saw a decline in economic activity and an increase in deficits, the rising debt service to revenue ratio spells doom for the government which saw its credit rating being downgraded by credit rating agencies such as Moody's, Fitch, and S&P Global (Cytonn, 2024). While the government has attempted to implement fiscal consolidation measures, weak institutions may have impacted the country's efficiency in implementing these

policies. As the country continues to struggle with prolonged fiscal deficits, understanding the interaction between fiscal policy, institutional quality and debt levels would be critical to managing existing issues and improving the countries' debt sustainability.

Debt levels have also been on a steady rise in Kenya. The 2024 Budget Review and Outlook Paper (BROP, 2024) reported that the government's stock of public debt increased from Kshs 1.487 trillion stood in 2011, to Kshs 10.6 trillion in June 2024, meaning that public debt was 70% of the country's GDP (BROP, 2024; CBK, 2025). The 2024 National Treasury Debt Bulletin reports that the country's debt mix, external debt to domestic debt, was 51:49, implying that foreign borrowing exceeds domestic borrowing. Despite efforts to reduce debt by reducing expenditures and increasing tax revenue mobilization, IMF (2021) reported that Kenya's the debt stock increased by 300% between 2012 and 2020, and subsequently an increase in the cost of debt repayments. In the 2019/20 fiscal year, for instance, the IMF (2021) reports that the country's debt payments amounted to 8.7% of the country's GDP. Debt service to tax revenue ratio increased from 30% in 2011/12 to 56% in 2019 to 69.6% in 2024, an increase the National Treasury (2024) attributed the depreciation of the Kenya shilling against major currencies and increased appetite for borrowing to finance fiscal deficits. Further, the National Treasury anticipates an increase in public debt by end June 2027 upto Ksh 13 Billion (the National Treasury, 2023).

1.1.2. Fiscal Policy

Fiscal policy refers to the set of rules and measures used by governments to direct taxation, spending and debt management (Hongzhong, Jianbang, & Tanchev, 2023). Amina (2024) defines fiscal policy as a form of direct government intervention instituted under periods of instability to stabilize the economy while Hongzhong, et al. (2023) conceptualizes it as the utilization of government tax and spending with the aim of improving economic balance. According to Fazzari, Morley, and Panovska (2021), fiscal policy concepts emerged from Keynes economic theory which asserted that governments can influence macroeconomic output by increasing or decreasing taxes and expenditure components. Fiscal policies are based on taxation, expenditure, and debt management policies, with regard to their application in countering economic imbalances, addressing the balance of payments deficit, and stimulating economic activity (Amina, 2024). Fiscal policy can be contractionary or expansionary. It is contractionary when taxes exceed spending, and expansionary when spending exceeds taxes (Hongzhong, et al., 2023).

Banks, Karjalainen, and Propper (2020), Hongzhong, et al. (2023) and Joel (2021) explained that fiscal policy, which comprises government spending and taxation, has significant impacts on public debt. According to Banks et al., (2020), budget deficits increase when governments adopt expansionary policy and increase spending levels, and reduce when governments cut down on expenditures can increase. Meanwhile, Joel (2021) observed that raising taxes through tax reforms can increase government revenue, reducing the impotence for borrowing and reduce public debt in the long-term. Amina (2024) reiterated that tax reforms, expenditure decisions and deficits are the main components of fiscal policy in research.

Taxation measures are policies instituted to either raise or lower taxes over a period of time, and subsequently the amount of tax revenue collected to finance the budgeted expenditures (Joel, 2021). Governments seeking to stimulate the economy often lower the taxes to encourage spending, hypothesizing that higher spending would stimulate economic activity and increase revenues in the long-term. However, such practices risk failure if tax cuts lead to larger deficits and borrowing. On the other hand, raising taxes can increase revenue, reduce the need for borrowing and improve the governments' ability to meet its debt obligations (Mohamed, 2024). Akinyi and Odundo (2018) noted that many governments in developing economies focus on increasing the efficiency of tax mobilization to ensure the government has adequate finances to counter meet their spending needs.

Government expenditure is a fiscal policy tool that refers to the finances governments spend in pursuit of their development agenda (Appiah-Kubi, et al., 2022). Naibei, Muriithi, and Mbaabu (2024) categorized government expenditure into recurrent and development expenditure and confirmed governments use expenditure tools to stimulate economic activities or meet social needs of society. Spending on human capital development and infrastructure, for instance, influences flow of money, creates employment and lays a foundation from which the government can increase revenue generation in the future (Al-Waeli & Al-Attafi, 2024). However, in the short term, such expenditures have been confirmed to contribute significantly to short-term debt increases (Naibei, et al., 2024). Moreover, when government recurrent spending exceeds tax generated revenue, it creates deficits that contribute significantly to high debt levels since governments then have borrow to fill these deficits (Mehmood, et al., (2024). According to Naibei, et al., (2024),

government expenditure can be determined by adding up the cost of government consumption, transfer payments, and interest payments, and be expressed as a percentage of the country's GDP.

Fiscal deficit refers to the excess expenditure that exceeds the tax revenue generated, reflecting the discrepancy between a government's spending decision and its income over a fiscal year (Hongzhong, et al., 2023). Soo, et al., (2023) explain fiscal deficits as a balance of payment component that reflects the difference between payments and receipts of a government. Musa (2021) assert that fiscal deficits can determine a government's ability to meet its financing obligations but found that without adequate management, they increase a country's debt unsustainability. bin Hidthiir, et al. (2024) ascertained that persistent deficits are among the main contributors of accumulating debt levels as annual deficit expansions increase debt servicing costs. Lin and Kueh (2019) add that financing deficits through borrowing plays a key role in continued accumulation of public debt. Kihara (2021) expressed fiscal deficits as a percentage of GDP while Soo, et al., (2023) calculated it as the amount of expenditure over revenue.

Kenya's fiscal policy stance has fluctuated significantly over the past three decades (Mwangi, 2021). In the 1990s, the country's fiscal policy centered around structural adjustment and fiscal consolidation policies that introduced tax reforms and broadened the tax base. However, between 2000 and 2016, the country implemented expansionary policies, characterized by expanding social and infrastructure investment, and tax reforms to boost revenue (Makau, Njuru, & Ocharo, 2018). These policies resulted in an increase in the public debt level to concerning levels, such that by 2016, the country prioritized contractionary fiscal policies (Mwangi, 2021). However, from 2020, the country reverted back to expansionary policy comprising stimulus packages, tax relief, and increased healthcare spending to mitigate the impact of the COVID-19 pandemic, resulting in a surge in borrowing that resulted in the debt-to-GDP ratio exceeding 70% by 2023 (Kihara, 2021; Nzomo, 2024). According to the Budget Review and Outlook Paper 2023, it is evident that post-Covid period the government has re-committed to pursuing contractionary policies and introduced measures to broaden the tax base and reduce recurrent government expenditure (National Treasury, 2023). This has been done through measures including broadening tax categories. Despite this, high debt servicing costs, fiscal deficits, weak institutions and corruption have undermined efforts to improve fiscal discipline, raising questions regarding whether fiscal policy are effective tools to manage the country's debt (Nzomo, 2024).

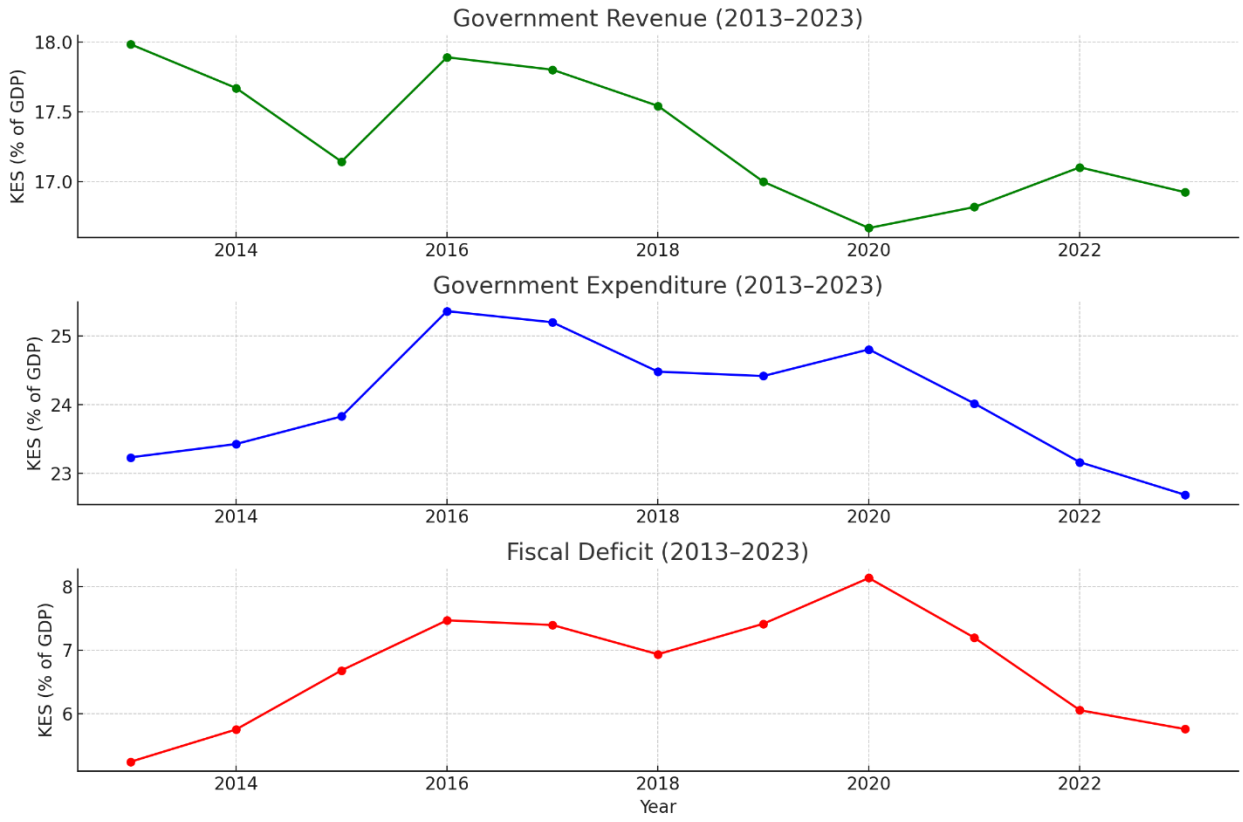

Figure 1.1 Trends in Government Revenue, Expenditure and Fiscal Deficit (% of GDP)

Source: The National Treasury (2023)

1.1.3. Institutional Quality

Institutional quality is an indicator of the government's ability and effectiveness in enforcing the rule of law and guarantee efficiency, transparency and accountability in its institutions (Naz & Yasmin, 2021). According to Mehmood, et al., (2024) strong institutions are artificial barriers that dictate government behavior, are determined by the quality of a country's legal, political, economic, and social frameworks, and exert significant effects on economic productivity and growth. While high quality institutions may fail prevent economic crises, they improve the country's ability to recover from economic shocks and manage expenditure and tax elements efficiently. As a result, quality institutions are key to the creation of a fair and predictable business environment (Kongo, 2023). Naz and Yasmin (2021) identified control of corruption, regulatory quality, political stability, rule of law, property rights protection, voice and accountability, government effectiveness, and the impartial enforcement of laws as the key components of

institutional quality and confirmed that control of corruption is one or the main component with a strong influence on the efficiency of public debt management efforts.

Mehmood, et al., (2024) analysis of Japan's debt revealed that countries with quality institutions attract more investment that can pay debts while those with weak institutions struggle with high indebtedness. Zareen, et al., (2024) found that while quality institutions prevent opportunistic behavior in the management of public finances, weak institutions increase corruption and indebtedness. Zareen, et al., (2024) assert that corruption high levels of corruption result in the redirection of credit resources from transformative sectors to lower performing sectors, contributing to fiscal deficits and public borrowing to finance this deficit. Nguyen and Luong (2021) revealed that many corrupt regimes siphon debt and even sign inflated deals at the cost of the taxpayer and in Africa, Kongo (2023) confirmed corruption and poor oversight as the main drivers of increasing debt burdens. Moreover, corruption discourages investment, reduces revenue generation, which ultimately increases fiscal deficit and hamper's the country's ability to repay its debts (Cooray, 2017).

Wafula and Njaramba (2024) and Kongo (2023) explain that Kenya's institutional weakness is reflected in the high corruption score ranking where it ranks a lowly 121 among 180 countries with an average corruption score of 24.5 points between 1996 to 2024 and a low of 19.0 points in 2002, implying high instances of abuse of power and high levels of public sector corruption. As evidenced by Fazzari, et al., (2021) fiscal policies can only be effective under quality institutions where borrowed funds are utilized effectively. With the debt to GDP ratio increasing from 38% in 2012 to 70% in 2023, it is important to understand how the country's corruption score influences its debt levels.

According to Kongo (2023), various indicators can be used to rank the quality of a countries' institutions, including the Worldwide Governance Indicators (WGI) which has six dimensions of governance, the Global Competitiveness Index which measures institutions as a factor of economic competitiveness, the ease of doing business index and the Corruption Perceptions Index (CPI) which ranks countries based on perceived levels of public sector corruption. Control of corruption as the indicator of institutional quality, as captured in the Transparency International's Corruption Perceptions Index, is the leading global indicator of public sector corruption (Akotia, 2018).

1.2.Statement of the Problem

While public debt can finance deficits and stimulate economic activity, high debt levels have become a source of concern in many developing countries, and Kenya is not an exception (Kongo, 2023). Kenya's total public debt has increased significantly over the past decade (Onyango, 2019). Both the country's debt-to-GDP ratio and debt-service-to-revenue ratio exceed the IMF's recommended threshold (Kongo, 2023). Currently, the country has a debt-to-GDP ratio of 70%, and its ratio of foreign debt to domestic debt ratio is 52:48, implying the dominance of foreign debt and the risk of erosion of the country's creditworthiness (CBK, 2025). The budget policy statement (2025) reported that even though Kenya's public debt was sustainable, the risk of debt distress has been rising due to global shocks, slow economic growth, currency depreciation and higher borrowing costs. The IMF and World Bank have in the past classified Kenya as having a high risk of debt distress, despite the country's implementation of austerity measures, e-procurement systems and governance reforms (Kihara, 2021).

The rising public debt levels has increased debate among researchers on the factors influencing debt levels. While fiscal policies purport to enable countries to stabilize debt levels, persistent fluctuations in fiscal deficits and weak control of corruption make it difficult for the government to prepare and enforce appropriate fiscal policies that can stabilize debt levels (Akotia, 2018). Hongzhong, et al., (2023) found that increasing government spending during recessions reduces debt in the short term but has negative effects in the long-term, especially at the local government level. The study was unique to fiscal policies implemented during recessions. Ciaffi, et al., (2024) found that increasing development spending increases public debt in the short term, but reduces debt in the long-term but used panel data from multiple countries. Meanwhile, in Sri Lanka where public debt reached 100% of GDP in 2021, Vinayagathasan and Ranjith's (2021) findings emphasized the need for fiscal consolidation policies, expansion of the tax base, and efficient tax administration to address the country's public debt and deficit challenges. Hongzhong et al., (2023) emphasized expansionary policies on debt reductions, Ciaffi, et al., (2024) underscored the value of productive investment, while Vinayagathasan and Ranjith (2021) highlight the need for fiscal consolidation, implying that different measures have different effects on debt levels.

Regionally, Raihan and Anjum (2020) evaluated the effect of fiscal policy in a developing country but sought after its influence on economic growth while the current seeks to link it with public

debt. Alnashar (2019), Chenge and Oigbochie (2023) attribute the rise in government debt not only to poor implementation of fiscal policy but also on exchange rate policy, and key fiscal transparency issues. Alnashar (2019) evaluated the drivers of debt in Egypt while this study limits itself to how fiscal policies influence public debt levels. Chenge and Oigbochie (2023), on the other hand, restricted their analysis to the effects of rising fiscal deficits on public debt while this study uses fiscal deficits as a component of fiscal policy alongside expenditures and tax measures. Local researchers such as Kongo, et al., (2023) and Kihara (2021), despite informing of the drivers of public debt in Kenya, Kongo, et al., (2023) used debt service ratio and exchange rate as independent variables, and Kihara (2021) who used similar fiscal policy tools to the current study, failed to determine whether institutional quality factors influence the effect of fiscal policy on debt levels. There is scarce evidence on how fiscal policy tools influence the public debt of developing countries like Kenya, and the role of quality institutions in this relationship. This study seeks to address this gap by establishing the moderating effect of institutional quality on the relationship between fiscal policy and debt levels.

1.3.Research Objectives

The main objective of this study is to evaluate the effect of fiscal policy on public debt in Kenya

1.3.1. Specific Objectives

The specific objectives of the study are to:

i. To assess the effect of tax revenue on the level of public debt in Kenya.
ii. To determine the effect of government expenditure on the level of public debt in Kenya.
iii. To assess the effect of fiscal deficit on the level of public debt in Kenya.
iv. To determine the moderating effect of institutional quality on the relationship between fiscal policy and the level of public debt in Kenya.

1.4.Research Questions

i. What is the influence of tax revenue on public debt in Kenya?
ii. To what extent does government expenditure affect the level of public debt in Kenya?
iii. What is the effect of fiscal deficit to gross domestic product ratio on the level of public debt in Kenya?

iv. What is the moderating effect of institutional quality on relationship between fiscal policy and public debt in Kenya?

1.5.Scope of the Study

Kenya, like other developing countries, is heavily reliant on debt to meet its deficits. However, although important to the development of many countries, excessive public debt, can pose negative effects on the economy, when not well managed. This study evaluated the association between government's use of fiscal policies on their borrowing and spending behavior. The study was guided by the Keynesian theory of debt which calls for government intervention to direct the economy and improve management. The study used secondary data published between 1993 and 2023 on public debt, fiscal policies, and institutional quality from Central Bank of Kenya, IMF, and Transparency International's Corruption Perceptions Index. The study used tax revenue, government expenditure, and fiscal deficits as the fiscal policy instruments. The moderating variable was institutional quality, while foreign exchange rate was used as a control variable, in the examination of the relationship between fiscal policies ad public debt.

1.6.Significance of the Study

Governments use fiscal policy instruments to influence economic productivity by increasing or decreasing its tax revenue and expenditure practices. With Kenya facing widening fiscal and external imbalances amid the rising cost of corruption and inefficient institutions, this study is relevant to a host of actors including policy makers and academic researchers.

1.6.1. Policy Makers

The sustainability of fiscal policy in an economy is one of the most important determinants of economic growth and stability. This study highlighted the link between fiscal policies and public debt and made recommendations about how economists and policy makers can make better use of fiscal policies to promote economic stability. The study identified the fiscal policy components that had the most significant impacts on debt levels and made suggestions on how these policies can be utilized in a more effective way so that the debt obligations of the current government do not interfere with the growth prospects of future governments. The study confirmed the importance of a credible fiscal policy on the accomplishment of goals such as keeping debt at a manageable

level. The results also provided important fiscal policy insights that policy makers can deploy as they attempt to re-align fiscal adjustment measures.

1.6.2. Future Academics

This study explored an important, but under-researched topic. The findings of the study expand theoretical and empirical literature on the effects of fiscal policies on the debt position of emerging economies in Africa. The study further identified gaps in research that other researchers can address in future studies. The study results can serve as an important reference for future scholars interested in the interplay between fiscal policies, institutional quality, and public debt.

1.7.Chapter Summary

This chapter introduces the study, providing the expected relationship between the study variables, the definitions of the study variables, the statement of the problem, the study general and specific objectives, and the research questions, scope and the significance of the study. The study identifies the gaps through the sections to highlight the motivation for the study.

CHAPTER TWO: LITERATURE REVIEW

2.1.Introduction

The rise in public debt has roused curiosity of numerous researchers seeking to explore the factors contributing to public debt. This study seeks to explore the connection between fiscal policy instruments and debt dynamics and this section provides a review of the theoretical and empirical review sections of the study.

2.2.Theoretical Review

2.2.1. The Keynesian Theory of Public Debt

The Keynesian Theory of Public Debt was proposed by Keynes (1936) who explained that the government, through its investment and expenditure decisions, has a key role to play in managing the economy (Heise, 2023). Keynes (1936) recognized that purchasing power reduces significantly during periods of economic downturns and ascertained that government intervention is an effective way to manage aggregate demand and increase economic stability. In the context of debt, the

theory explains that while at a moderate level public debt can stimulate economic activity, economies that are heavily indebted will require more taxes which, in the long-run will discourage private investment, reduce domestic consumption and negatively impact economic growth (Chatelain & Ralf, 2022). In such a case, Keynes (1936) proposed that interventions increasing government spending and reducing taxes would stimulate demand and encourage economic growth which can then improve debt sustainability (Chemnyongoi, 2023).

The rationale behind direct government intervention is that governments can use borrowed funds to reduce taxes and stimulate economic growth in the short-term, then reap the benefits of increased investment by later increasing taxes to repay the accumulated debts. While simple in theory, however, Bischi, Giombini, and Travaglini (2022) explained that the increased borrowing can only improve the country's ability to repay its debts if it is invested in productive sectors of the economy, and if the debt is managed in an effective manner. Moreover, Mehmood et al., (2024) found that increased borrowing can increase a country's debt obligations if government investment crowds out public investment, if the local currency loses value in international markets, and if the government fails to balance out its size and creates conditions to exacerbate recurrent expenditures.

Empirical evidence points to varying effects of government interventions on public debt sustainability and according to Omondi (2024), Keynesian economists stress the importance of strict constraints and prudent usage of the borrowed funds on ensuring borrowings generate positive economic outcomes (Monamodi, 2021). Studies using the Keynesian view also emphasize the short-run effects of fiscal policy and highlight that counter-cyclical fiscal policies whereby governments increase spending during recessions and reduce spending during booms can play a key role in reducing the severity of economic fluctuations (Heise, 2023; Chatelain & Ralf, 2022). Oyewobi and Falolu (2022) and Monamodi (2021) used the theory in analysis of how tax revenue consumption expenditure affects Nigeria's public debt while (Mohamed, 2024) used it in analysis of the effect of fiscal and monetary policy on public debt in Egypt.

The Keynesian theory provides a useful way of understanding the dynamics between government interventions and public debt as it calls for well monitored, controlled and implemented government interventions to bridge the savings-investment gap. In previous studies, it has been used to examine the effects of taxes, budget deficits, fiscal and monetary policy on public debt (Mehmood, et al., 2024; Chatelain & Ralf, 2022). Chemnyongoi (2023), who examined the effect

of fiscal policy in Kenya using the theory of public debt confirmed that rising public debt, budget deficits, and economic challenges drive fiscal policy fluctuations and that enhancing revenue mobilization, rationalizing public spending, and improving debt management would address these challenges. Makau, et al., (2018) used the theory in analysis of fiscal policy on public debt in Kenya and observed that the governments' expansionary fiscal policy had failed to address changes in debt levels. Given the government is currently pursuing contractionary policies, this study will use this theory to evaluate the effect of these contractionary policies on public debt in Kenya.

2.2.2. The Debt Overhang Theory

The Debt Overhang Theory was proposed by Myers (1977) as an economic theory to explain the relationship between debt levels and a borrower's behavior (Abdullahi, et al., 2016). According to Myers (1977), high levels of debt have the impact of discouraging companies from undertaking new investments, explaining that this aversion is driven by concerns that taking on new risks would negatively impact their ability to recompense existing creditors. Myers (1977) explained that debt overhang induces companies to make inefficient decisions since its current decision are significantly influenced by expected future burdens of existing debt. While the theory was formed to explain organizational behavior, Krugman (1988) applied the theory to sovereign debt and explained debt overhang as the condition where a country has a stock of debt larger than its capacity to repay it in the future, which limits its ability to access debt from creditors and distorts its optimal investment decisions (Picarelli, 2018).

In macro literature, debt overhang analysis mainly evaluates it from the context of sovereign-debt crises (Karadam & Akin, 2021). Krugman (1988) explained that smaller countries with low economic growth and high debt burdens often fail to attract voluntary new lending, and are sometimes disincentivized to develop the economy since debt servicing obligations are perceived as a tax on the indebted country's resources. According to Abdullahi, Bakar, and Hassan (2016), while high debt levels can cause countries to introduce higher taxes or reduced public spending, it can also discourage private sector activity and impact the country's future repayment capacity. Picarelli (2018) notes that Krugman's (1988) application of the debt overhang theory provides a useful framework from which to examine the tradeoffs of countries facing debt crisis. Moreover, according to (Knoll, 2013), such situations can also reduce a country's fiscal space and fiscal policy

choices, discouraging the indebted country from improving its economy through the implementation policy reforms and stabilization interventions.

When applied to sovereign debt, the debt overhang theory predicts that heavily indebted countries are highly likely to experience economic stagnation since they are disincentivized to borrow and invest into the economy (Abdullahi, et al., 2016). In such situations, the theory provides a model for understanding the necessity for debt relief initiatives (Knoll, 2013). The concept of debt overhang has received relevance in explaining the behavior of many governments in developing climates where low revenues, persistent fiscal deficits and weak instructions may discourage further borrowing, and even lead to calls for debt cancellation and restructuring (Picarelli, 2018). In this case, the theory explains that investors can only be convinced by improved governance quality and institutions' efficiency (Karadam & Akin, 2021). Karadam and Akin (2021) confirmed that institutional and governmental quality emerge as important factors that can influence the sustainability of sovereign debts.

Abdullahi, et al., (2016) used the theory in analysis of the relationship between debt, debt overhang, crowding out effects and capital formation in Kenya, Nigeria and South Africa. Kiungah (2018) used the theory in analysis of the effect of external debt on foreign investment in Kenya while Mutuku (2016) used the theory in analysis of the relationship between economic growth and prudent public debt management. Mutuku (2016) confirmed that high debt burdens limit the scope of application of counter-cyclical policies like taxation and public expenditure. With Kenya's public debt levels to GDP soaring in recent years, this study seeks to use the theory to determine whether counter-cyclical policies like taxation and public expenditure, as well as institutional quality factors have any impact on public debt levels in Kenya.

2.3.Empirical Review

This section provides a review of previous findings on the association between fiscal policies, institutional quality elements and public debt. These are presented as they appear in the research objectives.

2.3.1. Tax Revenue and Public Debt

With the Stability and Growth Pact (SGP) being activated to stabilize EU countries against pandemic-induced shocks, Kraemer and Lehtimäki (2023) carried out assessment of the effect of different European institutions and national fiscal rules on public debt. Findings were that the establishment of the SGP had significant effects on lowering the level of public debt and specifically, fiscal rules (expenditure rules, budget balance rules and revenue rules) at the general government level were most effective at lowering debt but not when implemented at the central or local government level. The study highlighted the importance of examining how the application of national fiscal rules for different sectors influences debt levels but collected data from multiple developed countries.

Focusing on four Eastern European countries, Mose, et al., (2024) used modified ordinary least squares (FMOLs) in analysis of the effect of tax revenue and government expenditure on public debt. The study used data published between 1998 and 2022, and findings were that tax revenue and government expenditure have both direct and indirect effects. Directly, public debt will increase under lower tax revenue and higher government spending, and indirectly, these create cuts in budget deficits, reduce public borrowing and debt in the process. The study confirmed that public spending has negative effects on government debt when the country has weak tax collection measures. The study used data from countries with different governance scores.

Explaining that maintaining macroeconomic stability requires effective controlling of current account deficit and fiscal deficits, Lin and Kueh (2019) used pooled mean group (PMG) estimation in analysis of the relationship between current account balance (CAB), fiscal balance and debt levels in the ASEAN region. Findings were that there is a positive relationship between CAB and public debt and it was recommended that optimal handling of debt levels would overcome the negative impacts of fiscal account and current account imbalances. This study focuses on fiscal policies in one country.

Confirming that growth of the South African economy had stagnated due to fiscal missteps and corruption, Monamodi (2021) carried out analysis into the association between tax revenue collection, political instability, corruption and debt. The study used Auto Regressive Distributed Lags (ARDL) methods in analysis of data published between 1985 to 2019 and findings were that

changes in tax revenue collection has significant effects on lowering public debt, but that political instability and corruption negate this relationship. The study confirmed that productive expenditure would increase revenue generation and improve the country's ability to repay its debt in the short term and long term. The study used data from South Africa and specified a period of economic segregation hence its findings cannot be extended to Kenya.

With new administrative policies being instituted to improve revenue administration, Adegbite (2024) carried out evaluation of the effect of personal income tax on servicing of domestic debt in Nigeria. Panel data analysis was applied on data published between 2011 and 2023 and the focus was on pay as you earn, direct assessment and road tax on domestic debt servicing. Findings were that refining tax policies, improving revenue administration, and improving revenue collection would increase the government's ability to finance public debt. The study did not examine how other fiscal policies influence the government's fiscal capacity.

Confirming that the Kenyan government has also been experimenting on new tax administration improvements and instituting new tax policies to expand the tax base, Ndirangu (2022) used correlation and regression methods in analysis of how these measures were influencing revenue collection and debt management. The findings were that while tax automation costs improved revenue collection, costs associated with educating taxpayers and engaging stakeholders have insignificant effects. On the other hand, tax enforcement costs had negative and significant effects, implying that balancing these strategies would increase revenue generation and improve the country's fiscal balance. The study's goal was on revenue collection while the current specifies debt management.

2.3.2. Government Expenditure and Public Debt

Government expenditure refers to the finances spent by the government to provide basic goods and services to the members of the public and its main components include government consumption and investment (Montazeri, 2019). The analysis by Pratibha and Krishna (2023) used ordinary fixed and random effect models and two-stage least square (2SLS) regression estimates in analysis of the main determinants of public debt levels in the South Asian Association for Regional Cooperation (SAARC) region between 2001 and 2019. Findings were that spending on the military, reduced control of corruption and interest rate fluctuations had positive effects on the

debt-GDP ratio. Spending on more productive sectors, fiscal consolidation and mitigation of opportunities for corruption was highlighted as a means to stop debt accumulation. The study provides data from multiple countries with different levels of governance and corruption scores hence its findings cannot be extended to single country studies.

Ciaffi, Deleidi, and Di Domenico (2024) used data from14 OECD countries in assessment of the effect of expenditure dynamics on the public debt-to-GDP ratio and used the Local Projections approach. The study focused on the 1981–2017 period and findings were that a rise in government expenditures can reduce the public debt-to-GDP ratio if they invest more than they spend on salaries and other current budgets. The study called for expansionary fiscal policies focusing on government investment rather than public consumption to reduce the public debt-to-GDP ratio.

Alnashar (2019) conducted a Vector Autoregression model in analysis of quarterly data published between 2001 and 2017 in Egypt to determine the drivers of government debt. The IMF's Debt-Sustainability tool was used in analysis of the extent of the effect of the key drivers and findings were that primary deficits and exchange rate depreciation are the main drivers of public debt expansion in Egypt. Specifically, the study confirmed that non-budgeted spending was influencing the higher-than-warranted accumulation of government debt but sought after general determinants of public debt.

With public debt and consumption increasing significantly in African countries, Oyewobi and Falolu (2022) used data published between 1992 – 2022 in analysis of the effect of total tax revenue measures and consumption expenditure on public debt. OLS regressions were applied to the data and it was ascertained that while public debt increases with any increase in total tax revenue and consumption expenditure. Despite the positive effect, however, total tax revenue had insignificant effects on public debt levels, implying that decreasing consumption expenditure and increasing current accounts would reduce public debt levels. The study did not include the influence of institutional quality factors on the relationship between the study variables.

The study by Thusini and Mah (2023) carried out analysis of the public debt - government expenditure nexus in South Africa, relying on VECM, and the Granger causality test in analysis of time series data published between 1980 and 2020. The study found that the relationship between capital expenditure and public debt is statistically significant and unidirectional, and that recurrent

expenditures increased public debt. Recurrent expenditure exhibited unidirectional causality from public debt to recurrent expenditure and the implication was that increasing capital expenditures would reduce debt accumulation. The study is from South Africa.

The analysis by Onyango (2019) used election year stability as an indicator of political stability in research that sought after the expenditure-public debt nexus in Kenya. The study used data published between 1980 and 2018, and analysis involved use of a Vector Error Correction Model. Findings were that out of the two components of expenditure, expenditures on recurrent items increased the country's debt obligations while spending on development had positive effects on public debt. The study also confirmed that public debt increases in election years and recommendations were for use of less expensive loan instruments. The study used data from a time period not included in this study and does not include the policies enacted during and after the COVID-19 pandemic.

2.3.3. Fiscal Deficit and Public Debt

According to the Keynesian absorption thinking, fiscal deficits cause deteriorations in current account balance which can erode a country's ability to meet its debt obligations. Confirming that the COVID-19 pandemic had eroded the fiscal deficit of many European countries, Milovanović, Radisavljević, and Milanović (2022) evaluated the effect of primary and consolidated deficits on public debt in the republic of Serbia, focusing on deficit dynamics between 2000 and 2023. Findings of the research were that while government expenditures improved the country's ability to repay debts, the erosion of fiscal balances contributed significantly to the increase in public debts. The study confirmed that reducing the fiscal deficits by replacing expensive debts with more affordable loans and maintaining fiscal discipline would improve debt sustainability.

Durucan and ve Yeşil (2022) used GMM methods in analysis of the effect of defense expenditures, budget deficit, and current account deficit on government debt by analyzing data from 16 developed and 9 developing countries between 2000 and 2019. The findings were that while defense expenditures increase government debt and budget deficits in developed countries, they influence on current account deficits in developing countries. The finding implied that defense expenditures will not significantly alter the debts in developing economies if they spend on exports

and domestic production rather than imports. The study used GMM methods while the current relies on descriptive and inferential analysis.

Montazeri (2019) focused on Iran's economy in analysis of the determinants of government debt size between 1973 and 2017. The study applied ARDL model in analysis and findings were that while budget deficits have significant effects on government debt size, political instability reflected by frequent changes in ministerial positions was contributing to budget deficits and eventual debt distress. The study highlighted the importance of structural reforms and flexible fiscal policies but used data from an oil-rich country that can rely on oil sales to offset dent.

Keeping with the view that Pakistan's debt levels were escalating significantly in recent years, Sundus and Islam (2022) carried out an assessment of debt sustainability determinants in the country. The study used an ARDL approach in analysis of data published between 1975 and 2021 and it was observed that fiscal deficit, coupled with exchange rate depreciation and interest rate fluctuations have positive and significant effects on the country's public debt. The study further ascertained that fiscal indiscipline was the leading factor contributing to budget deficits and the rise in public debt. The study further explained that instituting structural reforms in the tax system would enhance and tax administration, revenue collection and guarantee the country has primary surpluses that can be used to stabilize public debt levels.

Musah (2023) argued that fiscal deficits are among the primary causes of increases in the public debt ratio of Ghana in research which examined the determinants of public debt accumulation in the country. The study used ARDL model in analysis and findings were that government spending significantly determines the changes of public debt. Specifically, fiscal policies, external borrowing, trade, interest payments, and budget deficits were all confirmed to increase the accumulation of public debt. Policies promoting fiscal discipline, debt sustainability, and transparency were associated with improved public debt management.

The Vector Error Correction Model (VECM) technique was used by Omrane and Omrane (2017) in analysis of the main factors contributing to public debt in Tunisia, focusing on the 1986-2015 period. Findings of the study were that while investment expenditures and inflation had significant effects on reducing public debt, real interest rates, budget deficits, and trade openness had significant effects on public debt in the country. Moreover, the study confirmed that external borrowing increases fiscal deficits which impede countries from accumulating productive

resources that can be used to finance debt. This study will rely on descriptive and inferential analysis in determining the magnitude of the relationship between the study variables.

Mohamud (2023) used OLS regressions in analysis of how budget deficits affect Uganda's national debt between 1980 and 2020, specifying the influence of budgets deficits on national, external and domestic debt. The study used a longitudinal approach and findings were that all budget deficits in Uganda have significant effects on increases in debt portfolio. Continuous expansions of budget deficits were associated with more irresponsible borrowing which in turn, increased the country's debt levels. The study was unique to budget deficits and did not evaluate how the other critical components of fiscal policy influence debt levels which is the focus of this study.

Explaining that Kenya's focus on development and recurrent expenditure has resulted in the fiscal deficit averaging 8.1% over the last decade, Mose, et al., (2024) used GMM estimation regressions in analysis of the factors determining the sustainability of Kenya's public debt. The study analyzed data from 1990 to 2023 and findings were that the debt stock has been increasing since the country has been continuously running budget deficits amid a depreciation of local currencies. These factors have increased the debt service cost and negatively impacted the country's ability to repay its debts, increasing the instability of the debt-to-GDP ratio over time.

2.3.4. Moderating effect of Institutional Quality on Public Debt

Atiqasani and Darmawan (2022) used OLS regressions in analysis of the determinants of public debt in 74 middle-income countries. The study used cross-section data and findings were that while debt accumulation has the most significant impact on debt levels owing to increased debt service cost, improved fiscal transparency and effective adoption of e-budgeting negated the negative effect. On the other hand, countries with corrupt institutions had higher debt-to-GDP ratio. The study provides evidence from multiple countries.

Observations that corruption contribute to increases in debt-to-GDP ratio were also made in the study by Cooray and Özmen (2024) which compared the role of institutions on public debt in 54 EU and non-EU countries. Regression results were that while tax revenue and trade liberalization measures reduced government debt, political stability and control of corruption only had debt reducing effects in EU countries. Outside EU, however, political stability and control of corruption

had insignificant effects on public debt, suggesting a need for more stringent strategies to control corruption. The study was comparative in nature.

Yang, Hu, Su, and Qiao (2024) used fiscal transparency as a moderating variable in analysis of the factors influencing the sustainability of public debt in China at the provincial level. The study also sought to determine whether the country's anti-corruption stance had any influence on ameliorating rent-creation and rent-seeking in the public debt management sector. Findings were that fiscal transparency magnifies the positive effect of control of corruption on sustainable debt management, and that effective policy implementation enhances the impact of anticorruption initiatives and moderating impact of fiscal transparency. The current study will use anti-corruption measures as moderating variable rather than an independent variable.

Appiah-Kubi et al. (2022) used GMM and fixed effects two-stage least squares (IV-FE) methods in analysis of the key factors causing the rise in public debt of African countries. The study used data from all African countries published between 2000 and 2018, and findings were that government spending has significant effects on debt levels and that presence of weak, corrupt institutions exacerbates a country's risk of default. Specifically, government investment reduced the level of public debt except military expenditure resulted in an increase in debt levels.

Nguyen and Luong (2021) made similar observations to Appiah-Kubi et al. (2022) that corruption is one of the key factors influencing a country's public debt level. The study used OLS regressions, random effects and GMM methods in analysis of data from transition countries published between 2000 and 2018. Mainly, while debt can be lowered by reducing public expenditure and improving government revenue weak control of corruption was confirmed to influence the tendency to accumulate higher public debt. The study relied on panel data from multiple countries while this study uses data from one country.

With Kenya committing to digitalization of tax administration to improve transparency and the quality of her tax administration institutions, Mose, et al., (2024) sought after the sustainability of public debt public debt in Kenya. The study applied GMM estimators in analysis of data published between 1990 and 2023, and findings were that Kenya is struggling to manage her debt and that increase in budget deficits, local currency depreciation and weak implementation of the digitalization program had reduced revenue collection, increased the debt stock and significantly reduced the country's repayment potential. The study methodology differs from this study.

Revealing the Kenya has had an unstable fiscal policy characterized by ever expanding fiscal balance and debt levels that surpass regulatory limits, Makau, Njuru, and Ocharo (2018) sought after the effect of fiscal policy tools used in the country and public debt to determine the optimal fiscal balance to GDP ratio. The study used OLS methods in analysis and findings were that the expansionary policies used by the government were not having any meaningful impact on debt levels in the country as the government was running a high fiscal deficit. The study ascertained that effective enforcement of the fiscal deficit to GDP ratio ceiling and adherence to fiscal consolidation guidelines would improve the government's ability to become more sustainable.

2.4.Summary of Research Gaps

The study reviewed different studies that examined the factors influencing debt levels in different countries and settings and from the review, it is clear that various factors play a key role in influencing debt levels. However, these studies do not inform of factors contributing to the high debt levels in Kenya as most of the studies sought after the contributing factors for debt levels in multiple countries. Studies by Kraemer and Lehtimäki (2023), Ciaffi, Deleidi, and Di Domenico (2024) and Lin and Kueh (2019) fall in this category having evaluated debt determinants in EU countries, the ASEAN region and in the OECD group of countries. aside from this, the study by Durucan and ve Yeşil (2022) compared the effect of fiscal policies on debt by analyzing data from developed and developing countries. This study explores the fiscal policy-debt dynamic in one developing country.

Another category of studies provided methodological gaps having relied on ARDL methods (Montazeri, 2019; Akotia, 2018), or GMM estimators (Appiah-Kubi, et al., 2022; Mose, Thomi, Fumey, & Ewusi Arthur, 2024), or OLS regressions (Oyewobi & Falolu, 2022; Atiqasani & Darmawan, 2022). This study will use logistic regressions in analysis. Conceptual gaps also emerge in the studies by Milovanović, Radisavljević, and Milanović (2022) and Thusini and Mah (2023) whose analyses were unique to fiscal deficits and government expenditure components respectively. This study explores the effect of multiple fiscal policy tools including government expenditure components, revenue generation components and fiscal balance components to get a clearer view of their contribution to debt in Kenya. This study further aims to be unique by including provisions identified by Keynesian theory that effective controls are essential to

improving the quality of government interventions and will examine how governance and control of corruption factors influence the impact of fiscal policies on debt levels in Kenya.

2.5.Conceptual Framework

A conceptual framework provides a model for understanding the relationship between independent and dependent variables in a study and the following conceptual framework will guide the current study.

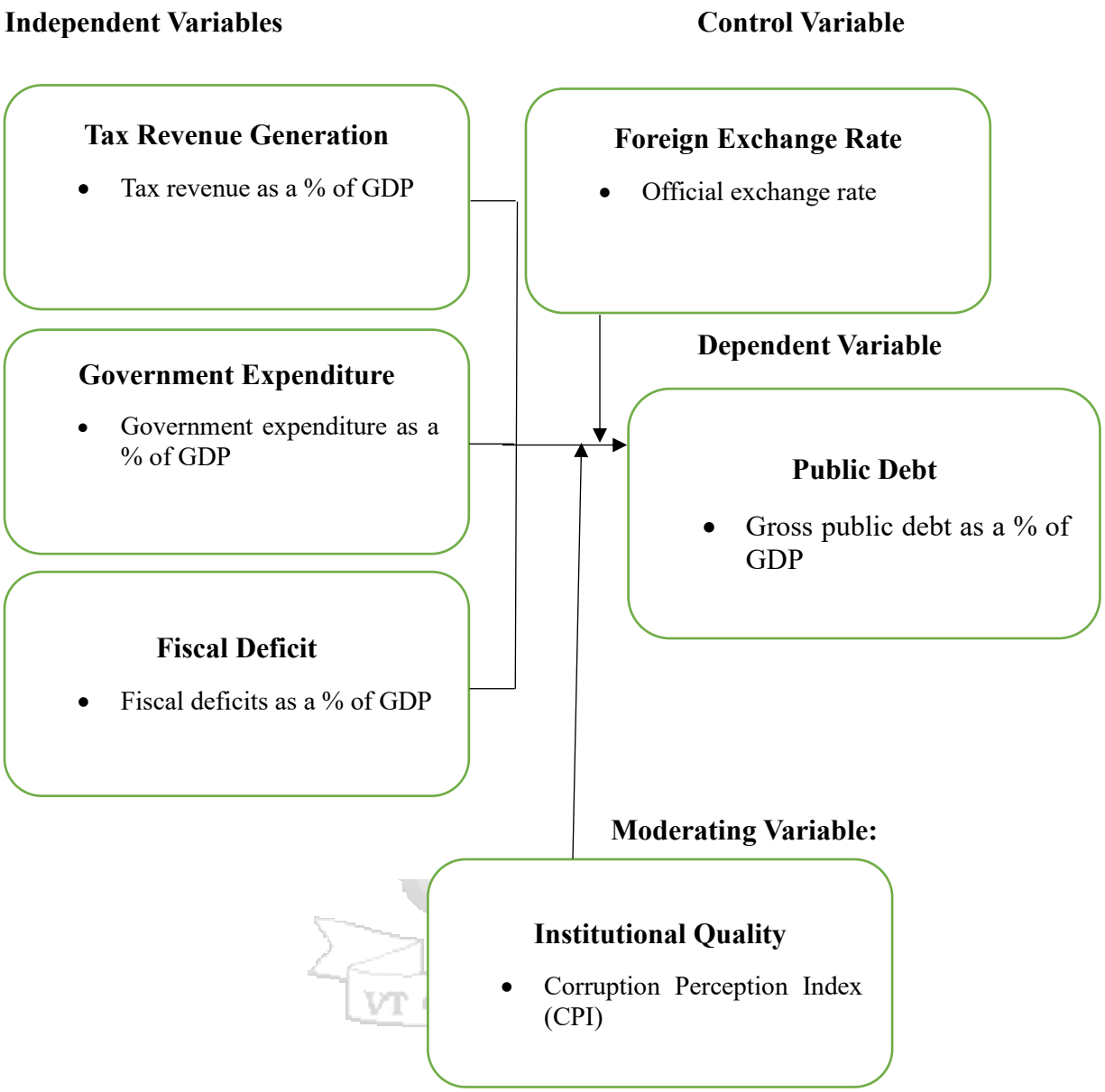

Figure 2.1 Conceptual framework

Source: Researcher (2025)

Table 2.1 Operationalization of Variables

Variable	Construct	Measurement	Scale	Analysis
Tax revenue generation	• Tax revenue to GDP ratio	Ratio of taxed generated to GDP	Ratio (1993-2023)	Descriptive, correlation, regression analysis
Government expenditure	• Government expenditure to GDP ratio	Ratio of development and recurrent expenditure to GDP as a % (Mohamed, 2024)	Ratio (1993-2023)	Descriptive, correlation, regression analysis
Fiscal deficit	• Fiscal deficits as a % of GDP	Deficits as a % of GDP (Mohamed, 2024)	Ratio (1993-2023)	Descriptive, correlation, regression analysis
Foreign exchange rate	• Foreign exchange rate	Official exchange rate (Nzomo, 2024)	Ratio (1993-2023)	Descriptive, correlation, regression analysis
Institutional quality	• Control of corruption • Governance quality	Corruption indices by Transparency international & World Bank (Naz & Yasmin, 2021)	Ratio (1993-2023)	Descriptive, correlation, regression analysis
Public debt	• Total Public Debt to GDP	Level of external and domestic debt held (Atingi-Ego, Timuno, & Makuve, 2021)	Ratio (1993-2023)	Descriptive, correlation, regression analysis

Source: Researcher (2025)

CHAPTER THREE: RESEARCH METHODOLOGY

3.1.Research Design

The chapter provides critical details on the methodological process that will be adapted in the course of the study. The main covered areas in this chapter include the research philosophy, design, population of study, data collection instrument and research procedure. Further, the data analysis and presentation as well as regression assumptions are presented.

3.2.Research Philosophy

The research philosophy is defined as the foundation of knowledge that guides how a social reality is studied from a grounded theory or hypothesis (Gupta & Gupta, 2022). The philosophical foundation for this study was anchored on a positivist philosophy which supports the adaptation of quantitative approach in solving the research problem (Dubey & Kothari, 2022). Positivists also view the premised of knowledge should be informed by facts and there is an objective reality that can be quantified numerically and holds a predictive power (Verma, Verma, & Abhishek, 2024). This philosophy was ideal for this study as it allowed for the examination of how the study variables are related and allow for adoption of quantitative methods that can provide results that can be generalized to explain the cause-and-effect relations between variables.

The study design represents the various decisions that inform the master plan or blueprint that is adopted in the research to inform the right methods, procedures and analytical approaches that aid in solving the research problem (Singh, 2022). This study adopted a correlational research design which supports the study in its attempt to identify the nature and magnitude of relationships between the research variables that allow for predictions to be drawn. This research design was ideal in this study to identify the effect of fiscal policy on public debt in Kenya

3.3.Population & Sampling

The target population represents the finite or infinite number of individuals, items or objects that are to be studied within the research (Dubey & Kothari, 2022). Specifically, this research focused on the examination of the level of public debt in Kenya and how its' affected by the fiscal policy. The unit of observation for this study was data obtained from the Central Bank of Kenya, International Monetary Fund, and Transparency International focusing on the selected constructs

of fiscal policy, public debt, foreign exchange rates, and institutional quality that aided in answering the research problem.

3.4.Data Collection Methods

The data collection tools represent the various scientific instruments that are utilized to obtain research data from participants (Sileyew, 2019). This research relied on secondary study data that was obtained from the Central Bank of Kenya, International Monetary Fund, and Transparency International. The research data was extracted for the period 1993-2023. A data extraction sheet was developed to aid in the data collection process; with the development based on the operationalization of the variables shown in Table 2.1

The main approach for the study was premised on secondary data extraction; however, despite relying on reports; it was ideal to follow specific procedures and guidelines that guide collection, management and ethics within the study process (Dubey & Kothari, 2022). The researcher ensured that approval from the supervisor and the institution was obtained prior to progressing with the study work. The researcher ensured all obtained information was primarily used for the study purposes and was stored securely to avoid unauthorized access.

3.5. Validity, Reliability and Objectivity of the Research

The research emphasized the importance of research quality through the principles of validity, reliability, and objectivity. Validity was ensured by adhering to standard regression assumptions, including normality tests, multicollinearity checks, unit root tests, autocorrelation, and heteroskedasticity assessments, which confirm the accuracy of relationships among variables. Reliability was maintained by utilizing secondary data from credible sources such as the Central Bank of Kenya, International Monetary Fund, and Transparency International, alongside rigorous data analysis techniques, including descriptive and inferential statistical methods. Objectivity was upheld through a positivist research philosophy, ensuring that findings were derived from quantifiable data rather than subjective interpretations.

3.6.Ethical Considerations

The research adopted various standard ethical guidelines to ensure it's conducted within the required quality levels. The collected study data was only utilized for the stated academic aims and

was securely stored to ensure there is no unauthorized access. Secondly the research sought approval from the Institutional Ethics Review Committee of Strathmore University before proceeding with the study. The study ensured that all material quoted was properly referenced and the document met the plagiarism threshold maintained by the institution.

3.7.Data Analysis and Presentation

3.7.1. Descriptive Analysis

Upon completion of the data extraction into Microsoft Excel the data was imported to STATA 13.0 for subsequent analysis. For descriptive analysis, percentages, means, and standard deviations were computed and data presented in tables and graphs, accompanied by narrative description of the results.

3.7.2. Inferential Analysis

3.7.2.1.Time Series Methodology

To determine the relationships between the variables, two types of time series methodologies are applied. The first methodology involves the use of time series regression models, which include ARDL (Autoregressive Distributed Lag), VAR/VECM (Vector Autogression/ Vector Error Correction Model), and Dynamic Ordinary Least Squares (DOLS), Fully Modified Ordinary Least Squares (FMOLS), or General Least Squares (GLS). ARDL is used when the variables are a mix of stationary and non-stationary variables. VAR is used for stationary time series data, while VECM is used for cointegrated (non-stationary) time series data, with the incorporation of the error correction term necessary for capturing long-run equilibrium relationships. On the other hand, dynamic OLS is used to estimate long-run relationships in a model with dynamic data, fully modified OLS is used when there is an assumption of long-term relationships between the variables in the panel data, while GLS is used when the variance of the errors is not constant across all observations. In essence, while dynamic OLS addresses the issue of endogeneity in time series data, GLS addresses issues with heteroscedasticity and serial correlation.

The second methodology is a moderation analysis in time series which incorporates the moderating effect of the moderating variable, in this case, the institutional quality. Incorporating the effect involves the creation of an interaction term, which is a multiple of the fiscal deficit (tax revenue,

government expenditure, fiscal deficit) and institutional quality (corruption index). These are then incorporated in the regression model.

3.7.2.2.Diagnostic Tests

The research performed various diagnostic tests to ensure the observations being used in the study meet standard regression assumptions. The performed a series of analyses which included converting the year variable to time series, checking for missing values, performing diagnostic tests, including: normality (Shapiro-Wilk Test), Augmented Dickey-Fuller (ADF) test, cointegration (Bounds test), multicollinearity (VIF) test, autocorrelation (Durbin-Watson & Breusch-Godfrey tests), heteroskedasticity (Breusch-Pagan & White's tests). After testing for the assumptions, the research performed time series regression.

Normality tests determine whether the observations are from a normally distributed sample. The research applied the Shapiro-Wilk Test (for small samples < 50). At 5% significance level, p-values above 0.05 indicate that the data is from a normally distributed sample, while p-values below 0.05 indicate that the data is not normally distributed (Meuleman, Loosveldt, & Emonds, 2015).

Unit root tests were performed to establish whether the null hypothesis was that the series contained a unit root, and the alternative was that the series is stationary. The augmented dickey fuller (ADF) test was used in the analysis. Values of the test with a p-value less than 0.05 rejected the null hypothesis that a unit root was present, indicating the series is stationary (Altman & Krzywinski, 2016).

Cointegration test determines if two or more non-stationary time series have a stable, long-term relationship, even if they are individually non-stationary. This test is crucial in econometrics and finance to avoid spurious regressions and understand the long-run relationship between variables (Meuleman, Loosveldt, & Emonds, 2015).

Multicollinearity tests were used to check whether the independent variables were linearly dependent on each other. The collinearity tests were performed using the Variance Inflation Factor (VIF) with values below 10 showing that there is no multicollinearity problem within the observations of the study (Fox, 2019).

Autocorrelation tests were performed to assess the degree of similarity between a given time series and a lagged version of itself over successive time intervals. The study will adopt the Woodridge Test; with a p-value above 0.05 indicating there is no presence of serial correlation (Meuleman, Loosveldt, & Emonds, 2015).

Heteroskedasticity tests, including the Breusch-Pagan and White's test were performed to detect whether the variance of errors changed over time. The Breusch-Pagan test was used to identify linear heteroskedasticity by regressing squared residuals on explanatory variables, assuming normally distributed errors, while White's test was used to detect both linear and nonlinear heteroskedasticity without requiring normality. These tests were essential for evaluating volatility in macroeconomic indicators. Usually, the presence of heteroskedasticity implies that robust standard errors, log transformations, or models like GARCH have to be applied to correct it, so as to ensure a more reliable statistical inference.

3.7.2.3.Choice of Time Series Methodology

The study utilized ARDL due to the assumption of a mix of stationary and non-stationary variables, in addition to a moderation analysis. Further, the analysis was carried out on Stata due to its capacity to compute ARDL, interaction terms, and diagnostics. Eviews also has the capacity to perform ARL, interaction, diagnostics, as well as VAR/VECM. While SPSS only has the capacity for basic regressions and interaction term; however, its limited when it comes to robust time series analyses.

Since the choice of the model is based on the stationarity and cointegration results, ARDL was justified because it is ideal when dealing with mixed order integration and a small sample (N=31 years), while also being robust for short-run and long-run relationships.

3.7.2.4.Model Estimation

In this study, the dependent variable is Public Debt (PD); independent variables are fiscal policy indicators, Government Tax Revenue (GR), Government Expenditure (GE), and Fiscal Deficits (FD); control variable is Foreign Exchange Rate (FX), and moderating variable is institutional quality (IQ). The analysis therefore demands the construction of the baseline model (without interaction term) and the moderation model (with interaction term).

The baseline model took the form of:

$PDt=\beta_0+\beta_1GR_t+\beta_2GEt+\beta_3FD_t+\beta_4FX_t+\beta_5IQ_t+\epsilon_t$

Where:

PD_t is Public debt at time *t*

GR_t is Government Tax Revenue at time *t*

GE_t is Government Expenditure at time *t*

FDt is Fiscal Deficits at time *t*

FX_t is Foreign Exchange Rate at time *t* (control variable)

IQ_t is Institutional Quality at time *t* (moderating variable)

β_0 - β_5 are the coefficients to be estimated.

To test whether institutional quality moderates the effect of fiscal deficit on public debt, an interaction term was included. The moderation model therefore took the form of:

$PDt=\beta_0+\beta_1GR_t+\beta_2GEt+\beta_3FD_t+\beta_4FX_t+\beta_5IQ_t+\beta_6 (FD_t \text{ X } IQ_t)+\epsilon_t$

The interaction term is interpreted in two ways: First, β_6 captures the moderating effect of institutional quality on the relationship between fiscal deficit and public debt. Secondly, a significant β_6 implies that the effect of fiscal deficit on public debt depends on the level of institutional quality.

CHAPTER FOUR: PRESENTATION OF RESEARCH FINDINGS

4.1. Introduction

The chapter presents the research findings derived from analysis of fiscal policies and public debt data from 1993-2003. The results presented cover the descriptive statistics and trend analysis, diagnostic tests, correlation analysis, and OLS regression analysis of the time series data. The chapter ends with a summary of the results.

4.2. Descriptive Statistics

Table 4.1 presents the descriptive statistics computed for the study. Findings show that the average revenue as a percentage of GDP over the period was 16.18 ± 1.61, with values ranging from 10.35 to 17.98. The negative skewness (-1.688) indicates a left-skewed distribution, meaning most values were clustered toward the higher end. The high positive kurtosis (4.235) suggests that values are concentrated around the mean and tails are heavier than a normal distribution.

On average, government expenditure as a percentage of GDP stood at 19.68 ± 3.87, ranging between 13.68 and 25.36. The distribution is nearly symmetrical, as suggested by the minimal skewness (0.024). However, the negative kurtosis (-1.547) indicating that the data are more spread out and have lighter tails than a normal distribution.

The fiscal deficit as a percentage of GDP had a mean of 3.50 ± 3.12, with values from -0.84 (a surplus) to 8.57. The slight positive skewness (0.137) shows a mild rightward tail, while the negative kurtosis (-1.592) indicates a flat distribution with fewer extreme values compared to a normal curve.

The foreign exchange rate exhibited considerable variation from 1993 to 2023, with values ranging from 51.43 to 139.85 and a mean of 82.87 ± 20.45). The distribution was moderately positively skewed (0.722), indicating occasional years with notably high exchange rates. The kurtosis value of 0.521 suggests a relatively flat distribution with fewer extreme values than a normal distribution.

With a mean of 24.22 ± 3.99, the Corruption Perceptions Index (CPI) score ranged from 19 to 32, suggesting a relatively low perceived integrity in public institutions (lower scores imply higher perceived corruption). The distribution is moderately skewed to the right (0.512), and kurtosis (-1.006) indicates a somewhat flat distribution.

Gross public debt as a percentage of GDP averaged 46.62 ± 11.78, spanning from 34.19 to 73.11. The positive skewness (0.915) implies a right-skewed distribution, with more values concentrated at the lower end and a few high outliers. The slight negative kurtosis (-0.444) suggests the distribution is somewhat flatter than normal.

Table 4.1: Descriptive statistics

Variables	Min	Max	Range	Mean	Std. Dev	Skewness	Kurtosis

						Statistic	Std. Error	Statistic	Std. Error
Government revenue	10.35	17.98	7.64	16.18	1.61	-1.688	0.421	4.235	0.821
Government expenditure	13.68	25.36	11.68	19.68	3.87	0.024	0.421	-1.547	0.821
Fiscal deficit	-0.84	8.57	9.42	3.50	3.12	0.137	0.421	-1.592	0.821
Foreign exchange rate	51.43	139.85	88.42	82.87	20.45	0.722	0.421	0.521	0.821
Corruption Perceptions Index	19.00	32.00	13.00	24.22	3.99	0.512	0.448	-1.006	0.872
Gross public debt	34.19	73.11	38.91	46.62	11.78	0.915	0.421	-0.444	0.821

Source: Researcher (2025)

On the basis of descriptive statistics, trend analysis was also carried out to visualize the movement of fiscal variables, foreign exchange rate, institutional quality and public debt over the period under examination.

4.2.1. Revenue Generation

Government revenue as a percentage of GDP has experienced moderate fluctuations over time. The lowest recorded revenue was 10.35% in 1993 and rose steadily in subsequent years, reaching a peak of 17.98% in 2013, possibly reflecting improved tax administration, higher economic activity, or new revenue streams. A stable and growing revenue base is essential for financing public services and reducing fiscal deficits without resorting to excessive borrowing.

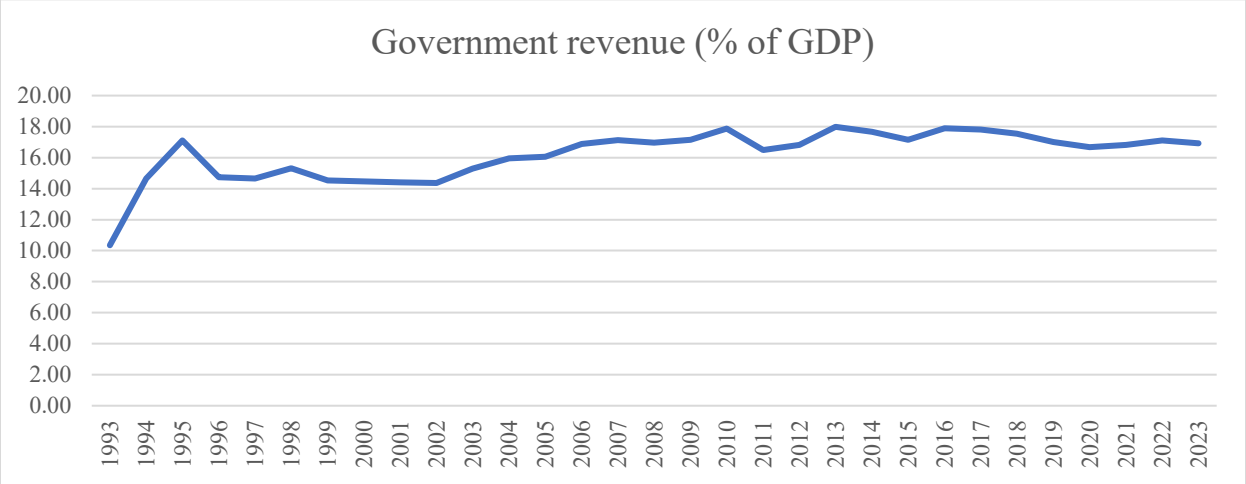

Figure 4.1: Government revenue as a percentage of GDP (1993-2023)

Source: Researcher (2025)

4.2.2. Government Expenditure

Government expenditure as a percentage of GDP has varied significantly, reflecting shifts in fiscal policy, economic conditions, and spending priorities. The lowest expenditure level was 13.68% in 1999, suggesting a period of austerity, reduced government intervention, or economic downturns limiting fiscal space. In contrast, the highest expenditure was 25.36% in 2016, indicating increased public spending, possibly on infrastructure, social programs, or economic stimulus measures.

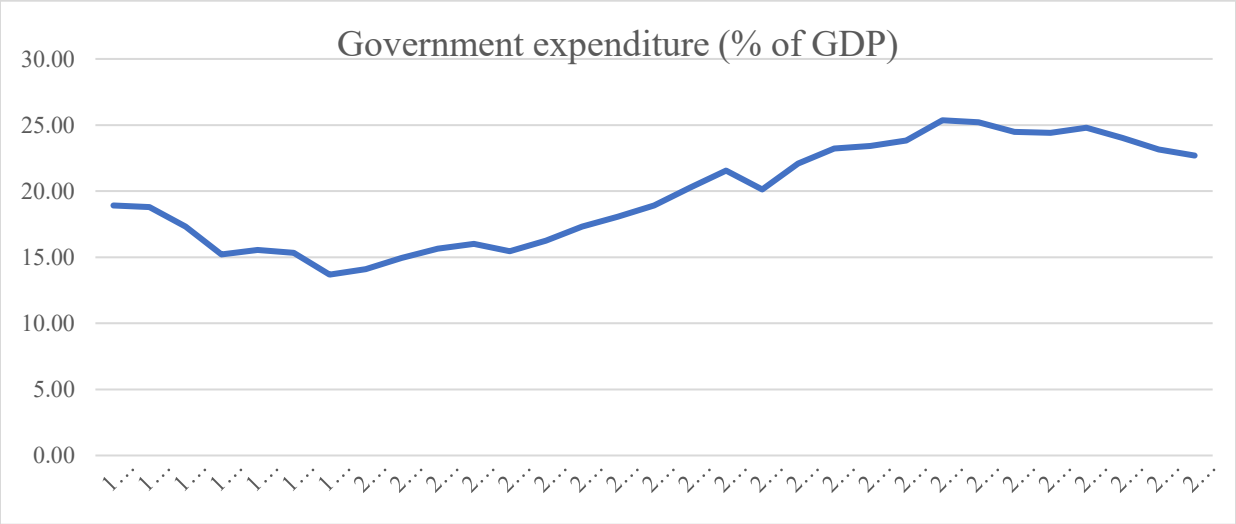

Figure 4.2: Government expenditure as a percentage of GDP (1993-2023)

Source: Researcher (2025)

4.2.3. Fiscal Deficit

The fiscal deficit, which represents the gap between government revenue and expenditure, has exhibited considerable variability. The highest deficit was 8.57% in 1993, indicating significant overspending relative to revenue, possibly due to expansionary fiscal policies or economic challenges necessitating higher borrowing. Conversely, the lowest deficit recorded was -0.84% in 1999, reflecting a small fiscal surplus, potentially due to spending cuts, improved revenue collection, or favorable economic conditions.

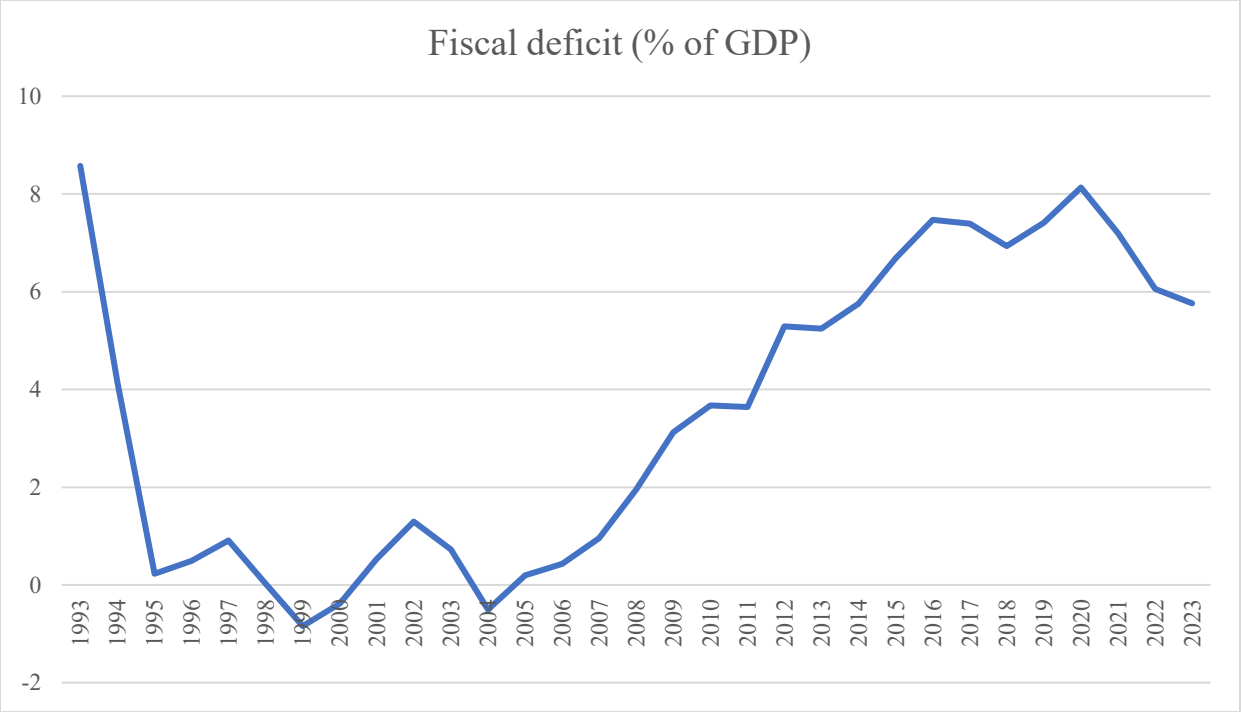

Figure 4.3: Fiscal deficit as a percentage of GDP (1993-2023)

Source: Researcher (2025)

4.2.4. Foreign Exchange Rate

The foreign exchange rate experienced a gradual but consistent increase from 1993 to 2023, with significant acceleration in depreciation observed after 2020. This long-term weakening of the currency could reflect structural imbalances, persistent fiscal deficits, or external economic pressures, making it a potentially influential factor in the dynamics of public debt during the period.

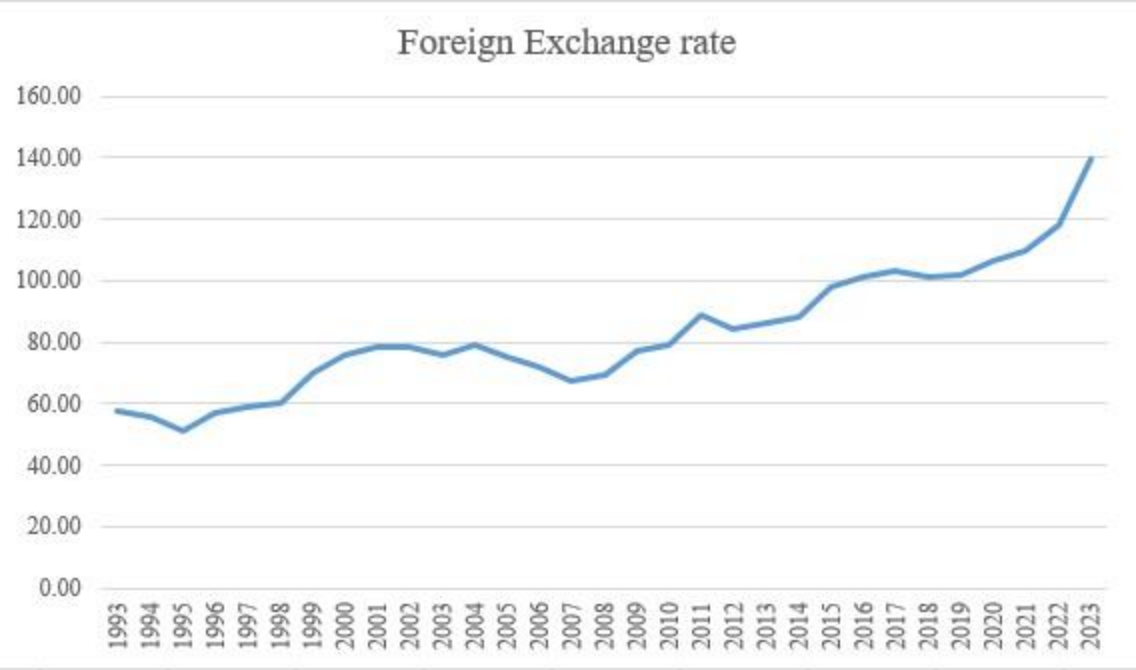

Figure 4.4: Foreign exchange rate (1993-2023)

Source: Researcher (2025)

4.2.5. Institutional Quality

The Corruption Perceptions Index (CPI) score fluctuated between 19 out of 100 in 2002 and 32 out of 100 in 2022, indicating varying levels of perceived corruption. A lower score signifies higher corruption perceptions, while a higher score suggests improved governance and transparency. The trends in CPI may be influenced by anti-corruption measures, political stability, enforcement of laws, and changes in public sector accountability. A rise in CPI could reflect successful governance reforms, while a decline may indicate increasing concerns about unethical practices, bribery, or inefficiencies in public administration.

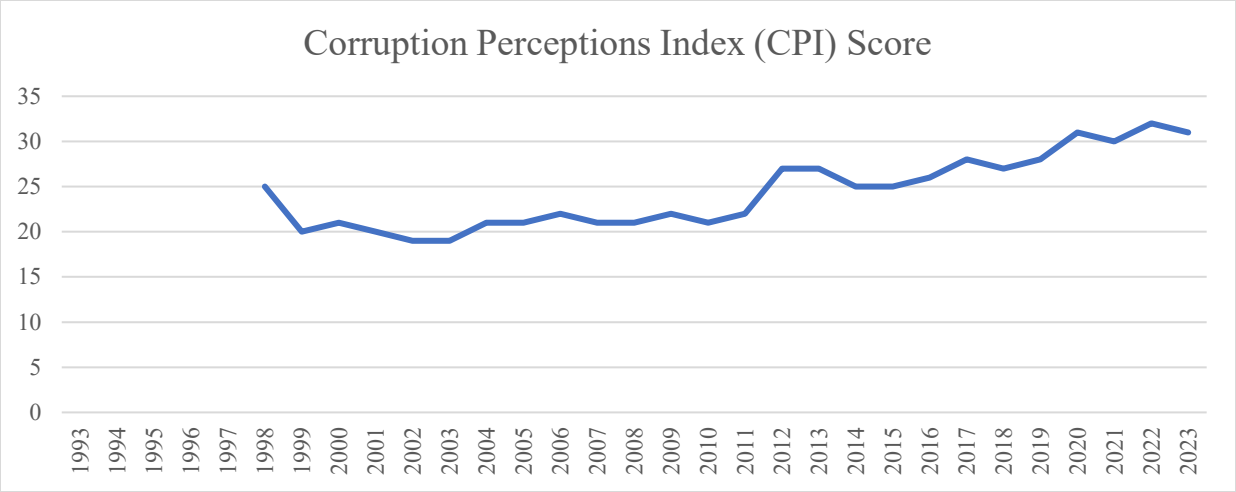

Figure 4.5: Institutional quality (1993-2023)

Source: Researcher (2025)

4.2.6. Public Debt

Gross public debt as a percentage of GDP has shown substantial fluctuations, influenced by economic conditions, fiscal policies, and external borrowing. The debt level was relatively high in earlier years, followed by a decline before rising again. The lowest recorded debt was 34.19% in 2007. This was a period of both reduced borrowing and reduced economic activity, due to post-election violence. However, the debt burden increased significantly in later years, reaching 73.11% in 2023, suggesting growing reliance on borrowing.

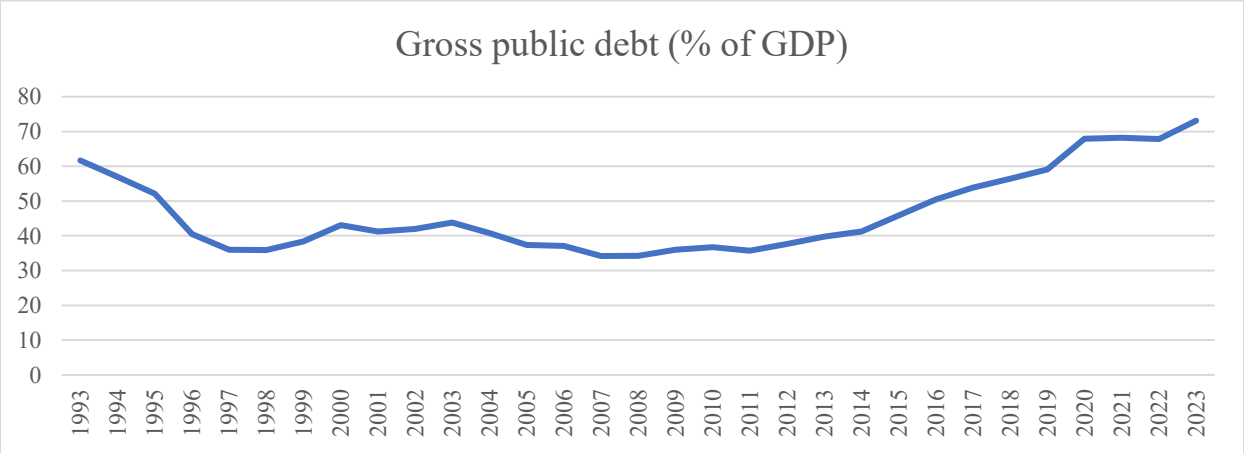

Figure 4.6: Gross public debt as a percentage of GDP (1993-2023)

Source: Researcher (2025)

4.3. Diagnostic Tests

4.3.1. Normality Tests

At the 0.05 significance level, the Shapiro-Wilk test results indicate that all variables significantly deviate from normality, as their p-values are below 0.05. Government revenue (% GDP) (p = 0.00020), government expenditure (% GDP) (p = 0.01320), fiscal deficit (% GDP) (p = 0.00582), public debt (% GDP) (p = 0.00074), and the Corruption Perceptions Index (CPI) (p = 0.03704) all have p-values below the critical threshold of 0.05, with the exception of foreign exchange rate (p=.17793). This means the null hypothesis of normality is rejected for all variables, indicating non-normal distributions. In time series analysis, when variables deviate from normality, several approaches can be applied depending on the severity of the deviation and the analytical requirements. Normality, while a common assumption in many statistical tests, is not strictly required for in Autoregressive Distributed Lag modeling, especially when employing lagging and differencing during regression.

Table 4.2: Shapiro-Wilk W test for normality

Variable	Obs	W	V	z	Prob>z
Public debt	31	0.85774	4.634	3.177	0.00074
Government revenue	31	0.83039	5.525	3.541	0.00020
Government expenditure	31	0.91036	2.920	2.220	0.01320
Fiscal deficit	31	0.89627	3.379	2.523	0.00582
Foreign exchange rate	31	0.95206	1.561	0.923	0.17793
Institutional quality	27	0.91885	2.386	1.786	0.03704

Source: Researcher (2025)

4.3.2. Stationarity Tests

The unit root test, Augmented Dicky-Fuller (ADF) test, was performed for each variable. ADF test results indicated that none of the variables are stationary at their levels, as their test statistics are higher (less negative) than the 5% critical value, and their p-values exceed 0.05. ADF was conducted up to lag 3, and the absence of a significant result (p value is less than 0.05) indicated that the null hypothesis of a unit root (non-stationarity) could not be rejected, as indicated by the

following results: public debt (p-value = 0.9788), government revenue (p-value=0.6975), government expenditure (p-value = 0.4028), fiscal deficit (p-value= 0.6852), foreign exchange rate (p-value =0.9968), institutional quality (p-value= 0.9710). This implies that the time series data is likely non-stationary and may require further processing, such as differencing, to achieve stationarity. However, differencing, the process of transforming a non-stationary time series into a stationary one, is not always required in Autoregressive Distributed Lag (ARDL) models. This is because ARDL models can handle variables that are integrated of different orders. If variables are I(0), there's no need to difference them. However, is necessary if they are I(1) or higher. Either way, this study employed differencing in model estimation.

Table 4.3: Augmented Dicky-Fuller (ADF) test for stationarity

Variables	Test Statistic (Z(t)	MacKinnon approximate p-value	Interpolated Dicky-Fuller		
			1st Critical Value	5% Critical Value	10% Critical Value
Public debt	0.333	0.9788	-3.736	-2.994	-2.628
Government revenue	-1.143	0.6975	-3.736	-2.994	-2.628
Government expenditure	-1.755	0.4028	-3.736	-2.994	-2.628
Fiscal deficit	-1.369	0.5972	-3.723	-2.989	-2.625
Foreign exchange rate	1.331	0.9968	-3.736	-2.994	-2.628
Institutional quality	0.178	0.971	-3.736	-2.994	-2.628

Source: Researcher (2025)

4.3.3. Multicollinearity Tests

The Variance Inflation Factor (VIF) test was used to check for high correlation among independent variables. VIF test results indicate the presence of severe multicollinearity among the independent variables. A VIF above 10 is generally considered a strong indication of multicollinearity, and in this case, both fiscal deficit (% GDP) (VIF = 32.39) and government expenditure (% GDP) (VIF = 26.08) exhibit extreme collinearity. The Corruption Perceptions Index (VIF = 4.02) and foreign exchange rate (VIF =3.55) have much lower value, indicating a weaker but still notable correlation

with other variables. The mean VIF of 16.51 confirms the overall presence of multicollinearity in the model. In ARDL models, multicollinearity does not directly impact the ability to fit a model or make predictions; however, it can make it difficult to interpret the individual effects of variables. While lagging or delaying the introduction of variables into a model can sometimes be a strategy to mitigate multicollinearity, especially in time series analysis, but it's not a direct fix for it. This study used both lagging, differencing, and omission of variables omitted variables during estimation to deal with the issue of multicollinearity.

Table 4.4: VIF tests for multicollinearity

Variable	VIF	1/VIF
Fiscal deficit	32.39	0.031
Government expenditure	26.08	0.038
Institutional quality	4.02	0.248
Foreign exchange rate	3.55	0.281
Mean VIF	16.51	

Source: Researcher (2025)

4.3.4. Autocorrelation Tests

Durbin-Watson test was used to test for first-order autocorrelation, while Breusch-Godfrey test was used to test for higher-order autocorrelation. In Durbin-Watson test statistics range from 0 to 4, with values near 2 indicating no autocorrelation, values below 2 suggesting positive autocorrelation, and values above 2 indicating negative autocorrelation. The Durbin-Watson statistic of 0.8688 suggests the presence of positive autocorrelation in the regression residuals. Since 0.8688 is much lower than 2, this implies a strong positive correlation between consecutive residuals, which violates the assumption of independent errors in regression analysis. In Breusch-Godfrey test, $p < 0.05$ indicate that autocorrelation exists. The Breusch-Godfrey LM test results showing a p value of 0.0044 further confirms the presence of autocorrelation.

Autocorrelation and ARDL are related in the context of time series analysis, specifically when modeling relationships between variables over time. Autocorrelation refers to the correlation of a time series with its past values, while ARDL is a statistical technique used to model these relationships. In the context of ARDL, autocorrelation in the residuals (the difference between observed and predicted values) can indicate that the model is not capturing the full dynamics of

the time series, and it can affect the reliability of the model's results. Before implementing ARDL, lagging was used to correct for autocorrelation.

Table 4.5: Durbin-Watson and Breusch-Godfrey tests

Durbin-Watson	DW statistic
Durbin-Watson test	0.8688

Breusch-Godfrey LM test for autocorrelation

lags(p)	chi2	df	Prob > chi2
1	8.123	1	0.0044

Source: Researcher (2025)

4.3.5. Heteroskedasticity Tests

Heteroskedasticity means the variance of errors is not constant. Breusch-Pagan test was used to test heteroscedasticity. On the other hand, white's test was used to detect non-linear heteroscedasticity. In this case, the null hypothesis is that heteroscedasticity does not exist (meaning that the variance of the errors is constant), while the alternate hypothesis is that heteroscedasticity exists (meaning that the variance of errors is not constant). Since the p value is greater than 0.05 in both tests, it means that there is no statistically significant evidence of heteroscedasticity in the residuals. This means that the assumption of homoscedasticity, which is necessary for time series analysis, holds and supports the validity of standard errors and test statistics in the regression model.

Homoscedasticity (constant variance of errors) is a key assumption in linear regression models, including those used within ARDL frameworks. When this assumption is met, the spread of the residuals (the difference between observed and predicted values) is roughly the same across the entire range of predicted values. On the contrary, if it is not met, that is, heteroscedasticity, then it can lead to biased standard errors, potentially making the coefficients appear more significant than they actually are (inflated standard errors) or less significant than they should be (deflated standard errors). In this case, the assumptions for ARDL are met.

Table 4.6: Breusch-Pagan and White's tests for heteroscedasticity

Tests	chi2(1)	Prob > chi2
Breusch-Pagan / Cook-Weisberg test for heteroskedasticity	0.18	0.6745
White's test test for heteroskedasticity	18.49	0.1855

Source: Researcher (2025)

4.3.6. Cointegration Tests

Government Revenue (Lagged) has a statistically significant negative effect on public debt change (Coef = -2.96, $p = 0.012$). This suggests that increased past revenue is associated with a reduction in public debt growth. Government Expenditure (Lagged) has a statistically significant positive effect (Coef = 1.06, $p = 0.038$), indicating that higher past expenditure contributes to an increase in public debt. The change in foreign exchange rate is marginally significant ($p = 0.075$), implying that currency fluctuations may influence debt, albeit weakly. Other variables, including the lagged values of public debt, foreign exchange, institutional quality, and changes in fiscal deficit and institutional quality, are not statistically significant at the 5% level. The model explains approximately 63% of the variation in public debt ($R^2 = 0.6269$), though the adjusted R^2 (0.4031) suggests moderate explanatory power after adjusting for the number of predictors.

Table 4.7: Cointegration Tests (Lags)

Variable	Coefficient	Std. Error	t-statistic	P-value	95% Confidence Interval
L. Public Debt	-0.1327	0.1477	-0.90	0.383	[-0.4475, 0.1820]
L. Government Revenue	-2.9628	1.0402	-2.85	0.012	[-5.1800, -0.7456]
L. Government Expenditure	1.0626	0.4674	2.27	0.038	[0.0664, 2.0588]
L. Fiscal Deficit	Omitted	—	—	—	—
L. Foreign Exchange Rate	-0.0295	0.1203	-0.25	0.810	[-0.2859, 0.2269]
L. Institutional Quality	0.3086	0.3582	0.86	0.402	[-0.4548, 1.0720]
Δ Government Revenue	Omitted	—	—	—	—
Δ Government Expenditure	-0.4091	0.9973	-0.41	0.687	[-2.5348, 1.7166]
Δ Fiscal Deficit	1.8205	1.0967	1.66	0.118	[-0.5170, 4.1580]
Δ Foreign Exchange Rate	0.1822	0.0952	1.91	0.075	[-0.0207, 0.3852]

Δ Institutional Quality	0.1822	0.3667	0.50	0.627	[-0.5994, 0.9638]
Constant	29.3123	13.4773	2.17	0.046	[0.5860, 58.0385]

Source: Researcher (2025)

4.4. Time Series Analysis

4.4.1. Baseline ARDL Model (Without Interaction Term)

The coefficient for lagged public debt is -0.1327, suggesting a weak inverse relationship between the previous year's public debt level and the current change in public debt. However, this relationship is statistically insignificant ($p = 0.383$), meaning that there is insufficient evidence to conclude that prior debt levels have a meaningful influence on current debt dynamics. Theoretically, one might expect that higher debt levels could constrain future borrowing due to debt sustainability concerns. Yet, in this model, that expected negative feedback mechanism is not evident. The result implies that past public debt does not significantly determine whether public debt increases or decreases in the current period, possibly due to institutional inertia, policy lags, or persistent fiscal pressures that override historical debt constraints.

The lagged value of government revenue has a coefficient of -2.9628 and is statistically significant at the 5% level ($p = 0.012$). This indicates that higher revenue collected in the previous year is associated with a notable reduction in the growth of public debt in the current year. The magnitude of the effect implies that for every one-unit increase in government revenue lagged by one year, the rate of change in public debt decreases by approximately 2.96 units. This finding aligns with classical fiscal theory, where strong revenue performance reduces the need for borrowing to finance government expenditures. The result suggests that improving domestic revenue mobilization is a viable strategy for controlling debt accumulation. Governments that focus on enhancing tax compliance, broadening the tax base, and optimizing revenue administration may be better positioned to limit debt growth.

In differencing, this variable was omitted due to collinearity, meaning it is highly correlated with other predictors in the model, particularly lagged government revenue. While this omission prevents direct interpretation of short-term changes in revenue, the significant effect of lagged revenue suggests that the historical revenue performance continues to play a more dominant and

stable role in influencing debt dynamics. The omission highlights the importance of separating immediate shocks from more structural fiscal trends when modeling public debt outcomes.

Lagged government expenditure has a positive coefficient of 1.0626, and it is statistically significant ($p = 0.038$). This result implies that higher spending in the previous year leads to an increase in public debt growth in the current year, with a one-unit increase in expenditure associated with approximately a one-unit increase in debt growth. This finding is consistent with the notion that persistent or recurrent expenditures, especially those not matched by revenue, create fiscal imbalances that eventually lead to borrowing. In particular, this could reflect situations where governments commit to programs or capital investments whose financing requirements spill over into subsequent years. Therefore, while public spending can have beneficial economic effects, failure to align expenditures with sustainable revenue streams can result in rising debt burdens.

In differenced government expenditure, the coefficient for the change in government expenditure is -0.4091 and statistically insignificant ($p = 0.687$). This suggests that short-term or abrupt changes in spending levels do not significantly affect the change in public debt in the immediate term. The insignificant result may be due to several factors, including budget rigidities, lagged implementation of expenditure programs, or counteracting fiscal adjustments. While policymakers may adjust spending in response to revenue shocks or economic crises, such changes do not immediately translate into changes in borrowing, especially if offset by financing reallocation or contingency buffers. Therefore, long-term expenditure trends, rather than sudden changes, are more critical drivers of debt dynamics.

In lagged analysis, fiscal deficit was omitted due to multicollinearity, which may be caused by overlapping effects with revenue and expenditure variables already included in the model. Since fiscal deficit is calculated as the difference between revenue and expenditure, including all three can lead to redundancy in the regression. The omission suggests that the effects of the fiscal deficit are already embedded in the influence of its components, particularly lagged revenue and expenditure. As a result, while fiscal deficit remains conceptually important in debt analysis, its direct effect could not be independently estimated in this specification.

The coefficient for the differenced fiscal deficit is 1.8205, with a p-value of 0.118, making it statistically insignificant at the 5% level but noteworthy due to its positive direction and proximity to significance. This suggests a possible relationship where a rising fiscal deficit leads to increased borrowing requirements, and therefore higher growth in public debt. Although not conclusive in this model, the result aligns with economic expectations and deserves further investigation in models with larger samples or alternative specifications. Policymakers should be cautious of expanding deficits, as they may indirectly contribute to debt growth even if immediate effects are difficult to detect statistically.

In lagged foreign exchange rate, the coefficient is -0.0295 and statistically insignificant ($p = 0.810$), indicating no meaningful relationship between past exchange rate levels and current changes in public debt. This result suggests that exchange rate movements in previous periods do not have a lagged effect on the debt trajectory. Given that public debt often includes foreign-denominated liabilities, this result may reflect either effective hedging mechanisms, relatively stable exchange rates, or a low share of external debt in total public debt. Nevertheless, this insignificance should not be interpreted as absence of exchange rate risk; rather, it highlights that the immediate past exchange rate alone may not predict debt growth without considering broader macroeconomic or policy contexts.

In differenced foreign exchange rate, the coefficient for the immediate change in exchange rate is 0.1822 and is marginally significant ($p = 0.075$), suggesting that recent depreciation of the local currency is associated with an increase in public debt growth. This relationship likely arises from valuation effects, where foreign-denominated debt becomes more expensive to service in local currency terms when the exchange rate rises (i.e., currency depreciates). This result underscores the vulnerability of debt sustainability to currency shocks, especially in economies with significant external borrowing. Policymakers should consider exchange rate stability and foreign debt composition in their debt management strategies to mitigate this risk.

In lagged institutional quality, the coefficient is 0.3086, and it is not statistically significant ($p = 0.402$). While the positive sign suggests a potential relationship where better institutional quality may coincide with increased borrowing, perhaps due to improved creditworthiness, but this result is inconclusive. It may also reflect that governments with stronger institutions are better able to

access capital markets. However, without statistical significance, we cannot confirm a consistent pattern or policy implication. More refined measures of institutional quality or longer time series might be needed to capture its effects reliably.

In differenced institutional quality, the coefficient is 0.1822, also statistically insignificant (p = 0.627), indicating that short-term improvements or deteriorations in institutional quality do not have a measurable immediate impact on public debt growth. This may be due to the lagged nature of institutional reforms or the fact that changes in institutional quality are often gradual and may take time to influence fiscal policy and debt dynamics. Nonetheless, the inclusion of institutional variables remains important in the broader context of fiscal governance and accountability, even if their immediate effects are not detectable in this model.

The constant term was term is 29.3123 and statistically significant (p = 0.046). This value represents the baseline change in public debt when all explanatory variables are zero. While not directly interpretable in a substantive sense, its significance indicates that there are unobserved or omitted factors influencing debt growth beyond the included regressors. This highlights the complexity of public debt dynamics and the potential role of exogenous shocks, political events, or structural economic conditions not captured in the model.

Table 4.8: Regression results – determinants of change in public debt (First Differences and Lags)

Number of Observations: 25
F(9, 15): 2.80
Prob > F: 0.0377
R-squared: 0.6269
Adjusted R-squared: 0.4031
Root MSE: 2.2226

Variable	Coefficient	Std. Error	t-Statistic	P-Value	95% Confidence Interval
L. Public Debt	-0.1327	0.1477	-0.90	0.383	[-0.4475, 0.1820]
Government Revenue					
L.	-2.9628	1.0402	-2.85	0.012	[-5.1800, -0.7456]
D.	*Omitted*	—	—	—	—
Government Expenditure					
L.	1.0626	0.4674	2.27	0.038	[0.0664, 2.0588]
D.	-0.4091	0.9973	-0.41	0.687	[-2.5348, 1.7166]
Fiscal Deficit					
L.	*Omitted*	—	—	—	—

D.	1.8205	1.0967	1.66	0.118	[-0.5170, 4.1580]
Foreign Exchange Rate					
L.	-0.0295	0.1203	-0.25	0.810	[-0.2859, 0.2269]
D.	0.1822	0.0952	1.91	0.075	[-0.0207, 0.3852]
Institutional Quality					
L.	0.3086	0.3582	0.86	0.402	[-0.4548, 1.0720]
D.	0.1822	0.3667	0.50	0.627	[-0.5994, 0.9638]
Constant	29.3123	13.4773	2.17	0.046	[0.5860, 58.0386]

4.4.2. Moderating Model (With Interaction Term)

The coefficient of lagged public debt is -0.6409 and is statistically significant (p = 0.008). This indicates that a higher public debt level in the previous year leads to a substantial reduction in the change in public debt in the current year. The inverse relationship may reflect debt sustainability constraints, where policymakers moderate current borrowing due to rising past debt. The result suggests a stabilizing mechanism in debt accumulation, meaning that high past debt appears to discourage further increases. This dynamic is crucial for debt management strategies, emphasizing the importance of tracking historical debt burdens in fiscal planning to avoid unsustainable trajectories.

Lagged government revenue has a positive and statistically significant coefficient of 13.595 (p = 0.018). This finding suggests that higher revenue in the previous year is associated with a significant increase in the change in public debt. While this may appear counterintuitive, it could reflect a situation where increased revenues are used to support ambitious development spending or large-scale borrowing programs under the assumption of fiscal space. Alternatively, the effect may be driven by an economy where both revenue and debt expand simultaneously during growth cycles. This emphasizes the need for fiscal discipline even during periods of revenue growth to prevent unchecked debt accumulation.

When differenced, the change in government revenue has a positive and significant coefficient of 10.007 (p = 0.009), indicating that an increase in revenue in the current year is also associated with higher public debt growth. This may suggest that when governments experience sudden revenue gains, they may feel empowered to borrow more, perhaps to co-finance development projects. Although increased revenue is generally seen as a debt-reducing factor, this result shows that

revenue shocks may actually encourage expansionary fiscal policies that require additional financing. Caution is advised when interpreting such revenue windfalls, meaning that they may not always reduce debt if spending rises in tandem.

Lagged government expenditure has a large and statistically significant negative coefficient of -13.716 ($p = 0.010$), implying that higher spending in the previous year leads to a significant reduction in current public debt growth. This result is unexpected and may suggest that certain types of past expenditures—perhaps investment spending—contribute to economic performance that stabilizes debt, or that previous high spending reduces the need for further fiscal stimulus. Another interpretation could be the impact of delayed or cyclical effects where prior high spending reduces the fiscal space or borrowing needs in the current year. Further disaggregation of spending categories could clarify this dynamic.

When differenced, the coefficient for the change in government expenditure is -9.369 and statistically significant ($p = 0.007$), meaning that increases in government spending in the current year are associated with reduced public debt growth. This may imply that increases in expenditure are financed through non-debt sources or offset by simultaneous revenue increases, or that the nature of the spending is productive (e.g., economic stimulus that increases output). While this runs counter to typical expectations, it may reflect strong fiscal controls or efficient public financial management. Nonetheless, such a relationship should be interpreted cautiously and ideally examined within a structural model.

Both the lagged and current change in fiscal deficit are omitted due to collinearity. This means their effects are already captured in the revenue and expenditure components included in the model. Since the fiscal deficit is the difference between government expenditure and revenue, its direct inclusion would introduce redundancy. The omission highlights that any interpretation of fiscal dynamics should focus on these core fiscal aggregates.

The lagged foreign exchange rate has a positive coefficient of 0.2294 and is marginally significant ($p = 0.069$). This suggests that previous currency depreciation is associated with increases in public debt growth. This may be due to the rising cost of servicing foreign-denominated debt in local currency terms when the exchange rate deteriorates. Although only marginally significant, this

finding underscores the need to manage currency volatility as part of prudent debt management, especially in countries with large external debt exposure.

When differenced, the change in exchange rate is positively and significantly associated with public debt growth (coefficient = 0.3527, p = 0.001). This confirms the expectation that currency depreciation increases the value of foreign debt when expressed in local currency. The strong statistical significance and economic magnitude highlight the sensitivity of public debt to exchange rate shocks, emphasizing the importance of exchange rate stability and risk hedging in countries with substantial external debt obligations.

Lagged institutional quality has a statistically significant negative coefficient of -2.3545 (p = 0.014), indicating that higher institutional quality in the past is associated with a reduction in public debt growth. This aligns with the theory that better governance, transparency, and policy credibility constrain unnecessary borrowing. Institutions likely enforce fiscal discipline and ensure that borrowing is tied to sustainable development needs. This reinforces the critical role of institutional development in managing public debt effectively.

When differenced, the change in institutional quality also shows a significant negative relationship with public debt growth (coefficient = -1.9877, p = 0.008). This suggests that even short-term improvements in institutional quality, such as anti-corruption reforms or better fiscal oversight, can have an immediate dampening effect on public debt. The result highlights the value of reform initiatives and governance strengthening in curbing debt accumulation, not just over time but within the same fiscal cycle.

The interaction terms between fiscal deficit and institutional quality (FD_IQ) are both statistically significant and positive (L1 coefficient = 0.6067, p = 0.007; D1 coefficient = 0.4427, p = 0.002). These results suggest that the moderating effect of institutional quality on fiscal deficits actually increases public debt growth. This may appear contradictory, but it can be interpreted as stronger institutions enabling governments to borrow more confidently when they run deficits—possibly due to improved creditworthiness or better project execution capacity. Thus, while institutional quality reduces debt directly, it can also legitimize or facilitate debt accumulation when deficits are present, reflecting a nuanced relationship.

The constant is 58.546 and highly significant (p = 0.003), indicating a strong baseline level of public debt growth when all explanatory variables are zero. This may reflect structural drivers of debt accumulation not captured in the model, such as demographic pressures, geopolitical dynamics, or long-term infrastructure needs. The constant reminds us that even when fiscal and institutional factors are accounted for, residual debt pressures persist, requiring broader macroeconomic vigilance.

Table 4.9: Regression results – determinants of change in public debt (including the interaction term FD_IQ)

Number of Observations: 25
F(11, 13): 5.40
Prob > F: 0.0027
R-squared: 0.8205
Adjusted R-squared: 0.6685
Root MSE: 1.6562

Variable	Coefficient	Std. Error	t-Statistic	P-Value	95% Confidence Interval
L. Public Debt	-0.6409	0.2059	-3.11	0.008	[-1.0858, -0.1960]
Government Revenue					
L.	13.5950	5.0263	2.70	0.018	[2.7364, 24.4536]
D.	10.0075	3.2650	3.07	0.009	[2.9538, 17.0612]
Government Expenditure					
L.	-13.7156	4.5630	-3.01	0.010	[-23.5734, -3.8579]
D.	-9.3686	2.9476	-3.18	0.007	[-15.7364, -3.0008]
Fiscal Deficit					
L.	Omitted	—	—	—	—
D.	Omitted	—	—	—	—
Foreign Exchange Rate					
L.	0.2294	0.1158	1.98	0.069	[-0.0207, 0.4795]
D.	0.3527	0.0862	4.09	0.001	[0.1663, 0.5390]
Institutional Quality					
L.	-2.3545	0.8292	-2.84	0.014	[-4.1459, -0.5630]
D.	-1.9877	0.6411	-3.10	0.008	[-3.3728, -0.6027]
FD_IQ (Interaction Term)					
L.	0.6067	0.1891	3.21	0.007	[0.1983, 1.0152]
D.	0.4427	0.1183	3.74	0.002	[0.1872, 0.6982]
Constant	58.5457	15.9529	3.67	0.003	[24.0816, 93.0097]

CHAPTER FIVE: DISCUSSIONS, CONCLUSIONS AND RECOMMENDATIONS

5.1.Introduction

The chapter focuses on summarizing the results presented in the previous chapter, discussing the findings with respect to the literature reviewed, drawing conclusions from findings, and making recommendations for practice and further research.

5.2.Summary of Findings

5.2.1. The Effect of Fiscal Policies on Public Debt in Kenya

Findings from the baseline model (without interaction term) showed that the coefficient for lagged public debt is -0.1327, indicating a weak negative relationship with current changes in public debt. However, this relationship is statistically insignificant ($p = 0.383$), suggesting that previous debt levels do not have a meaningful or predictive effect on current debt growth. This result implies that factors such as institutional inertia, delayed policy responses, or persistent fiscal pressures may be overriding the expected feedback mechanism from prior debt levels.

Lagged government revenue has a significant negative effect on public debt growth, with a coefficient of -2.9628 ($p = 0.012$). This means that higher government revenue in the previous year is associated with a substantial reduction in the current year's debt growth. The finding supports classical fiscal theory, indicating that improved revenue performance, through measures like enhanced tax compliance and administration, can effectively curb debt accumulation.

Lagged government expenditure shows a positive and statistically significant relationship with public debt growth (coefficient = 1.0626, $p = 0.038$). This suggests that previous year's spending contributes to higher borrowing in the current year, consistent with the idea that sustained expenditure not matched by revenue creates fiscal imbalances requiring debt financing. It emphasizes the need for governments to align expenditure with sustainable revenue streams. The coefficient for differenced government expenditure is -0.4091 and statistically insignificant ($p = 0.687$), indicating that short-term changes in spending do not significantly affect public debt in the immediate term. This could be due to implementation delays, fiscal rigidities, or compensatory

budget adjustments. Long-term expenditure patterns remain more influential in debt dynamics than abrupt policy shifts.

Lagged fiscal deficit was omitted due to multicollinearity with revenue and expenditure, which are its components. Its exclusion suggests that the effects of fiscal deficits are implicitly captured through the included revenue and expenditure variables. The coefficient for differenced fiscal deficit is 1.8205 with a p-value of 0.118, indicating a positive but statistically insignificant relationship. Although not definitive, this result suggests that an increase in the fiscal deficit may lead to higher public debt growth, consistent with economic expectations. The near-significance warrants further exploration in alternative models or larger datasets.

The coefficient for lagged exchange rate is -0.0295 ($p = 0.810$), showing no significant effect on debt growth. This implies that past exchange rate movements do not influence current debt dynamics, possibly due to stable exchange rates, a low share of foreign-denominated debt, or effective hedging mechanisms. Nonetheless, the absence of statistical significance does not eliminate potential exchange rate risks. For differenced foreign exchange rate, the coefficient of 0.1822 and marginal significance ($p = 0.075$), suggests that recent currency depreciation is associated with increased public debt growth. This likely reflects valuation effects, where external debt becomes more expensive to service in local currency terms during depreciation. It underscores the importance of exchange rate stability in debt management, especially for countries with substantial foreign-denominated debt.

Lagged institutional quality has a positive coefficient (0.3086) but is statistically insignificant ($p = 0.402$). While better institutions might enhance borrowing capacity through improved creditworthiness, the result is inconclusive. This may be due to measurement limitations or the need for longer-term data to detect institutional effects. Similarly, after differencing, the coefficient for immediate changes in institutional quality is 0.1822 ($p = 0.627$) and not statistically significant. This indicates that short-term institutional improvements or declines do not have a detectable impact on debt growth, possibly due to the gradual nature of institutional reforms and their delayed influence on fiscal outcomes.

5.2.2. The Moderating Effect of Institutional Quality on the Relationship Between Fiscal Policies and Public Debt in Kenya

Findings from the moderating ARDL model (with interaction terms) showed that the coefficient of lagged public debt is -0.6409 and statistically significant (p = 0.008), indicating that higher debt in the previous year leads to a notable reduction in current debt growth. This suggests the presence of a stabilizing effect where rising debt burdens prompt more cautious borrowing behavior, reinforcing the importance of historical debt levels in fiscal planning and sustainability efforts.

Findings for lagged government revenue shows a positive and statistically significant coefficient (13.595, p = 0.018), implying that increased government revenue in the previous year is associated with higher public debt growth. This seemingly paradoxical result may arise from governments using increased revenues to justify expanded borrowing or implement large-scale programs, highlighting the importance of disciplined fiscal management even during periods of strong revenue performance. When differenced, the change in government revenue (coefficient = 10.007, p = 0.009) is also positively and significantly associated with public debt growth. This indicates that sudden revenue gains may not reduce borrowing but instead stimulate expansionary policies, where additional funds are matched with new debt-financed initiatives. The finding emphasizes that revenue shocks can encourage borrowing unless anchored in prudent fiscal rules.

For lagged government expenditure, the coefficient is -13.716 and statistically significant (p = 0.010), suggesting that higher spending in the previous year reduces public debt growth in the current period. This unexpected result may reflect productive or counter-cyclical spending that supports growth or reduces the need for subsequent borrowing. It challenges conventional assumptions and may call for further analysis of the types of expenditures involved. After differencing, a significant negative coefficient (-9.369, p = 0.007) indicates that current increases in government spending are associated with reduced public debt growth. This may occur if the additional spending is financed from non-debt sources, paired with revenue gains, or consists of productive investment that boosts economic performance. It underscores the potential benefits of well-managed, strategic expenditure.

Both lagged and differenced values of the fiscal deficit were omitted due to multicollinearity with revenue and expenditure variables. This reflects the fact that fiscal deficit dynamics are already

embedded in the interaction between revenue and expenditure, and any further analysis should be interpreted through those components.

Lagged foreign exchange rate coefficient is 0.2294 with marginal significance (p = 0.069), suggesting that previous depreciation of the local currency may lead to increased debt growth. This likely arises from higher servicing costs of foreign-denominated debt and reflects the importance of managing exchange rate volatility in debt sustainability strategies. When differenced, the immediate change in exchange rate has a significant positive coefficient (0.3527, p = 0.001), confirming that currency depreciation contributes to public debt growth. This is due to valuation effects on external debt and reinforces the critical need for exchange rate stability and effective hedging in external debt management.

Lagged results showed a statistically significant negative coefficient (-2.3545, p = 0.014), indicating that higher institutional quality in the past reduces debt growth. This supports the role of governance, transparency, and credible policy frameworks in promoting fiscal discipline and managing debt prudently over time. Even after differencing, the negative and significant coefficient (-1.9877, p = 0.008) indicates that even short-term improvements in institutional quality, such as reforms or better oversight, can curb current debt growth. This reinforces the value of governance reforms not only for long-term sustainability but also for immediate fiscal outcomes.

Both lagged and differenced interaction terms are positive and statistically significant (L1 = 0.6067, p = 0.007; D1 = 0.4427, p = 0.002), indicating that institutional quality may moderate the fiscal deficit in a way that enables or legitimizes more borrowing. This suggests a dual role for institutions: while they can restrain excessive debt directly, they may also enhance borrowing capacity during deficit periods by improving credibility and execution efficiency.

5.3.Discussions

5.3.1. The Effect of Fiscal Policies on Public Debt in Kenya

When compared to the literature, the findings align with some studies while diverging from others. Kraemer and Lehtimäki (2023) emphasize the role of fiscal rules in managing public debt in the EU, showing that strict expenditure and budget balance rules at the general government level are

effective in reducing debt. This contrasts with the findings of the present study, which suggest that revenue levels alone do not significantly impact public debt. However, this divergence may stem from differences in governance structures, economic stability, and the existence of institutional fiscal constraints in the EU compared to Kenya.

Mose et al. (2024) find that tax revenue and government expenditure directly and indirectly affect public debt in Eastern European countries. Their findings indicate that lower tax revenue and higher government spending increase public debt, but efficient tax collection reduces deficits and borrowing. This contradicts the present study's findings, where revenue does not significantly influence public debt. One possible explanation for this discrepancy is the strength of tax enforcement mechanisms and the broader fiscal policy framework in Eastern Europe, which may differ from Kenya's economic structure and tax administration capacity.

Lin and Kueh (2019) analyze the ASEAN region and conclude that managing current account and fiscal deficits is crucial for maintaining macroeconomic stability. They find that fiscal balance and current account deficits influence public debt, implying that public debt is affected by macroeconomic factors beyond just revenue collection. This finding supports the present study's results, which suggest that revenue alone does not determine public debt levels. However, the ASEAN study provides a broader macroeconomic perspective, incorporating trade balances and external borrowing, which the present study does not explicitly analyze.

Monamodi (2021) investigates South Africa and finds that tax revenue collection significantly reduces public debt, but political instability and corruption undermine this effect. The study highlights the role of governance and political stability in fiscal outcomes. While the present study does not explicitly examine the role of governance, its findings—particularly the weak relationship between revenue and debt—could be partially explained by governance issues affecting tax collection efficiency and fiscal policy execution. The differences in findings may be due to structural differences between South Africa and Kenya, particularly in terms of economic policy and governance challenges.

Adegbite (2024) examines the impact of personal income tax on domestic debt servicing in Nigeria. The study finds that improving tax policies and administration strengthens a government's ability to finance debt. This contrasts with the present study's conclusion that revenue does not

significantly impact public debt. However, a key difference is that Adegbite focuses on specific tax components, whereas the present study looks at overall government revenue as a percentage of GDP. The broader revenue measure used in the present study may mask the effects of individual tax components that are more directly tied to debt servicing.

Ndirangu (2022) assesses tax administration improvements in Kenya and finds that tax automation enhances revenue collection, but tax enforcement costs negatively impact revenue. This aligns with the present study's findings that revenue fluctuates due to improvements in tax administration and policy changes. However, Ndirangu emphasizes the role of administrative costs, which the present study does not address. This suggests that further research could explore how administrative efficiency in tax collection influences public debt levels in Kenya.

The relationship between revenue and public debt has recorded a very low R-squared value, indicating that the model fails to explain public debt variations effectively. This suggests that key explanatory variables are missing. Literature such as Lin and Kueh (2019) suggests that current account balances and broader macroeconomic conditions should be included in debt analysis, which the present study does not consider. Future research should incorporate additional fiscal and economic indicators to provide a more comprehensive explanation of public debt trends. Additionally, the study does not analyze the role of governance and institutional quality in revenue collection and debt accumulation. As Monamodi (2021) demonstrates, governance plays a crucial role in fiscal outcomes, particularly in developing economies. Given Kenya's governance challenges, corruption, and inefficiencies in tax administration, these factors likely influence the weak relationship between revenue and debt found in the study. Incorporating governance metrics, such as the Corruption Perceptions Index, into the analysis could provide more insights. Another critique is the study's reliance on a single regression model that examines revenue and debt in isolation. As Mose et al. (2024) indicate, expenditure policies interact with revenue collection to shape debt levels, hence the need for a simultaneous equation model or an expanded regression model that captures the interplay between revenue, expenditure, and borrowing.

The relationship between government expenditure and public debt has been extensively analyzed in fiscal policy research. The findings of this study indicate that government expenditure as a percentage of GDP has varied significantly, with periods of fiscal expansion and contraction. The correlation and regression analyses confirm that government expenditure has a significant and

positive impact on public debt levels, suggesting that fiscal policy decisions directly influence debt accumulation. These results align with some existing literature while diverging from others, particularly in the role of institutional quality and the composition of government spending.

The literature corroborates findings reported in this study in several ways. For instance, Montazeri (2019) defines government expenditure as encompassing public consumption and investment, emphasizing its role in providing essential goods and services. The findings of Pratibha and Krishna (2023) in the SAARC region support this study's conclusions by showing that excessive spending, particularly on non-productive sectors, contributes to debt accumulation. Their research highlights the role of governance in mitigating debt growth, a perspective supported by this study's correlation between CPI and fiscal indicators. However, their focus on military spending and interest rate fluctuations adds dimensions not explicitly analyzed in this study.

Other studies, such as Ciaffi, Deleidi, and Di Domenico (2024), present a nuanced view. Their research on OECD countries suggests that increased government expenditure does not necessarily lead to higher debt if spending prioritizes investment over consumption. This partially contrasts with the current study's findings, which do not differentiate between capital and recurrent expenditure. Similarly, the work of Thusini and Mah (2023) in South Africa confirms that capital expenditures can reduce debt accumulation, while recurrent spending increases debt—a distinction that this study does not explicitly address. Onyango (2019) supports this distinction in the Kenyan context, finding that development expenditures positively impact public debt, whereas recurrent spending leads to increased debt obligations.

The study's findings align with those of Alnashar (2019), who applied a Vector Autoregression model to Egyptian data and found that primary deficits and exchange rate depreciation were the main drivers of debt expansion. Both studies highlight fiscal deficits as a key determinant of public debt, reinforcing the argument that unchecked spending without corresponding revenue increases leads to debt accumulation. However, Alnashar's research includes macroeconomic factors such as exchange rate fluctuations, which are not considered in this study.

The study by Oyewobi and Falolu (2022) analyzing African countries provides a differing perspective on the role of tax revenue in public debt. Their findings suggest that while government expenditure contributes to debt growth, total tax revenue has an insignificant effect. This contrasts

with this study's findings that improved governance (reflected in higher CPI scores) is positively correlated with revenue and expenditure. Their omission of institutional quality factors limits their findings' applicability to governance-related debt control strategies. Similarly, the findings of Onyango (2019) regarding the impact of political stability on public debt offer insights not covered in this study, particularly the tendency for debt to rise in election years.

One of the key limitations of this study is its failure to distinguish between different types of government expenditure. As highlighted by Ciaffi et al. (2024), Thusini and Mah (2023), and Onyango (2019), capital expenditure can lead to long-term economic benefits and may not necessarily contribute to unsustainable debt levels. By aggregating all forms of government spending, this study may overlook important policy implications regarding fiscal sustainability.

Another limitation is the study's focus on a single country without considering cross-country variations in institutional quality, governance structures, and economic conditions. Pratibha and Krishna (2023) and Ciaffi et al. (2024) analyzed multiple countries, providing broader generalizability. The SAARC and OECD findings suggest that governance plays a crucial role in shaping fiscal outcomes, an aspect acknowledged but not deeply explored in this study.

Additionally, while the study identifies a positive correlation between CPI and fiscal indicators, it does not establish causation. The regression analysis does not include CPI as a predictor in the debt model, making it difficult to determine whether improved governance directly reduces debt or merely coincides with higher fiscal activity. The interaction effects between governance and fiscal policies warrant further investigation, as seen in the study by Thusini and Mah (2023), where institutional factors influence the expenditure-debt relationship.

A methodological critique can also be drawn from the comparison with other studies. Alnashar (2019) used the IMF's Debt-Sustainability tool, while Ciaffi et al. (2024) employed the Local Projections approach. The current study relies on standard regression analysis, which, while robust, may not fully capture the dynamic relationships between fiscal variables. Time-series models, such as those used in Thusini and Mah (2023) and Onyango (2019), might provide deeper insights into causality and long-term trends.

The findings of this study contribute valuable insights into the relationship between government expenditure and public debt, reinforcing existing literature that highlights the importance of fiscal

discipline. However, the study does not differentiate between capital and recurrent expenditures, limiting its ability to make precise policy recommendations. While it confirms that higher government spending leads to increased debt, it does not account for factors such as economic growth, exchange rate fluctuations, and political stability, which are examined in other studies. Future research should incorporate these dimensions to develop a more comprehensive understanding of fiscal sustainability and debt management strategies.

The findings of this study align with and diverge from previous research. The relationship between fiscal deficits and public debt is widely documented. Milovanović, Radisavljević, and Milanović (2022) found that while government expenditures improved Serbia's ability to repay debts, fiscal deficits significantly contributed to debt accumulation. Their study emphasizes the importance of fiscal discipline and restructuring debt to improve sustainability, which is consistent with the present study's assertion that persistent fiscal deficits lead to higher public debt.

Durucan and ve Yeşil (2022) examined the impact of defense expenditures, budget deficits, and current account deficits on public debt across developed and developing countries. They found that in developed economies, defense expenditures significantly increase debt and budget deficits, while in developing countries, the impact is contingent on whether the spending supports exports and domestic production. This study's findings reinforce the idea that fiscal deficits drive public debt but do not specifically isolate the role of defense spending, making it a potential avenue for further research.

Montazeri (2019) examined Iran's debt determinants and confirmed that budget deficits significantly affect debt size. However, the study also highlights that political instability, reflected by frequent changes in ministerial positions, contributes to fiscal deficits and eventual debt distress. This adds an important dimension absent from the present study, suggesting that political stability and governance structures play a crucial role in fiscal sustainability.

Similarly, Sundus and Islam (2022) assessed debt sustainability in Pakistan and found that fiscal deficits, exchange rate depreciation, and interest rate fluctuations significantly impact public debt. Their findings suggest that fiscal indiscipline is a key driver of rising debt, a conclusion that aligns with the present study. However, they emphasize structural tax reforms as a solution, whereas the present study does not explore tax policy measures in depth.

Musah (2023) examined public debt accumulation in Ghana and identified fiscal deficits, external borrowing, trade policies, and interest payments as significant drivers. The study aligns with the present research by confirming that fiscal policies significantly determine debt levels. However, Musah's research extends the analysis to include external borrowing and trade factors, which the present study does not explicitly address.

The importance of fiscal discipline is also highlighted by Omrane and Omrane (2017), who analyzed Tunisia's debt determinants. Their findings indicate that investment expenditures and inflation help reduce public debt, while budget deficits and trade openness increase debt levels. The study emphasizes the role of external borrowing in exacerbating fiscal deficits, a perspective that aligns with the present study but introduces the additional complexity of trade openness and inflation effects.

Mohamud (2023) used OLS regressions to assess Uganda's budget deficits and debt, confirming that persistent deficits lead to irresponsible borrowing and increased debt. This study corroborates the present study's findings, emphasizing the direct relationship between fiscal imbalances and debt accumulation. However, Mohamud's study is unique in that it separately examines national, external, and domestic debt, an aspect not explored in the present study.

Focusing on Kenya, Mose et al. (2024) employed GMM estimation regressions to analyze public debt sustainability. Their findings reveal that Kenya's debt stock has increased due to continuous budget deficits and local currency depreciation. The study highlights the rising cost of debt servicing and its impact on debt-to-GDP stability. This aligns with the present study's conclusion that fiscal deficits are a key driver of debt accumulation, reinforcing the need for stronger fiscal discipline in Kenya.

5.3.2. The Moderating Effect of Institutional Quality on the Relationship Between Fiscal Policies and Public Debt in Kenya

The study's findings align with existing literature on the impact of corruption and governance quality on public debt. Atiqasani and Darmawan (2022) found that improved fiscal transparency and e-budgeting reduced the adverse effects of debt accumulation in middle-income countries. Similarly, Cooray and Özmen (2024) observed that corruption control effectively reduced debt accumulation in EU countries but had limited effects outside the EU. This aligns with the current

study's finding that better governance (higher CPI) is associated with increased debt, possibly due to improved access to financial markets.

Yang et al. (2024) emphasized the role of fiscal transparency in enhancing the positive effects of corruption control on debt sustainability in China, reinforcing the moderating role of institutional quality, as seen in the present study. The negative interaction term (β=-2.268, p=0.000) in the regression analysis supports the argument that strong institutions mitigate the harmful effects of fiscal deficits.

Other studies also highlight the role of corruption in driving unsustainable debt. Appiah-Kubi et al. (2022) found that weak institutions increase default risk, similar to Nguyen and Luong (2021), who confirmed that corruption exacerbates debt accumulation in transition economies. However, the current study diverges from these findings by suggesting that better governance (higher CPI) correlates with increased public debt. This suggests that in Kenya, stronger institutions may be enabling more borrowing for developmental projects rather than merely preventing debt accumulation.

Mose et al. (2024) focused on Kenya's debt sustainability and found that weak implementation of digital tax reforms contributed to high debt levels. This supports the present study's argument that institutional quality plays a crucial role in fiscal sustainability. Similarly, Makau, Njuru, and Ocharo (2018) found that Kenya's persistent fiscal deficits exceeded regulatory limits, aligning with this study's finding that fiscal deficits (β=6.061, p=0.000) are the most significant predictor of public debt.

5.4.Conclusions

5.4.1. The Effect of Fiscal Policies on Public Debt in Kenya

The baseline analysis reveals that fiscal policy variables have mixed and nuanced effects on public debt growth in Kenya. Lagged government revenue significantly reduces debt growth, affirming the importance of revenue mobilization as a key strategy for debt containment. Conversely, lagged government expenditure significantly increases debt growth, highlighting the risks of persistent spending not matched by sustainable revenue. However, short-term (differenced) changes in

expenditure and revenue appear to have limited or insignificant effects, suggesting that long-term fiscal patterns drive debt dynamics more than short-term fiscal shifts.

The fiscal deficit, while theoretically important, showed a positive but statistically insignificant association with debt growth, likely due to its overlap with revenue and expenditure components. Exchange rate depreciation showed marginal significance in the short run, underscoring the importance of currency stability in managing foreign-denominated debt. Institutional quality indicators were not statistically significant in the baseline model, pointing to the possibility that their effects are more complex or operate with a lag.

Overall, the findings highlight the need for Kenya to maintain a balanced fiscal strategy focused on sustainable revenue growth, controlled expenditure, and prudent deficit management to prevent unsustainable public debt accumulation.

5.4.2. The Moderating Effect of Institutional Quality on the Relationship Between Fiscal Policies and Public Debt in Kenya

The extended model incorporating interaction terms reveals deeper insights into the dynamics of public debt. Notably, lagged public debt becomes significantly and negatively associated with current debt growth, suggesting a self-correcting mechanism influenced by debt sustainability concerns. Surprisingly, both lagged and current increases in government revenue are linked to higher debt growth, indicating that revenue gains may prompt expansionary fiscal behavior unless properly constrained.

Contrary to conventional expectations, both lagged and current increases in government expenditure are associated with reduced debt growth. This could imply that such expenditures are productive, growth-enhancing, or financed through non-debt sources. These findings suggest that not all spending is harmful to debt sustainability, its composition and financing sources matter greatly.

Institutional quality emerges as a powerful moderating factor. Higher past and present institutional quality significantly reduces public debt growth, demonstrating the critical role of governance, transparency, and policy enforcement in ensuring fiscal discipline. However, the positive and

significant interaction between fiscal deficits and institutional quality implies a paradox: stronger institutions may also facilitate higher borrowing during deficit periods by enhancing credibility and borrowing capacity.

In conclusion, institutional quality has both restraining and enabling effects on public debt in Kenya. While it directly promotes fiscal prudence, it can also legitimize higher borrowing in contexts of fiscal deficits. Therefore, Kenya must not only strengthen its fiscal policies but also invest in building robust, transparent, and accountable institutions to ensure that borrowing remains sustainable and aligned with development priorities.

5.5.Recommendations

5.5.1. Recommendations for Practice

To mitigate public debt accumulation, Kenya should prioritize enhancing domestic revenue through improved tax administration, broadening the tax base, reducing tax evasion, and leveraging technology for efficient collection. Stable and sustainable revenue streams are essential to reduce the reliance on debt financing.

The government should align spending with strategic national priorities and ensure that expenditures are productive and yield long-term economic benefits. Efforts must be made to eliminate wasteful spending, enhance public investment efficiency, and regularly evaluate the cost-effectiveness of government programs.

There is a need to establish and enforce clear fiscal rules that limit deficit spending and borrowing, especially during revenue booms. Implementing legal and policy frameworks that cap the size of fiscal deficits and control off-budget spending will help in containing unsustainable debt growth.

The government should adopt counter-cyclical fiscal measures that allow for saving during periods of strong revenue performance and spending during downturns. Such policies can stabilize debt dynamics and reduce the temptation to expand borrowing during temporary revenue gains.

Given the influence of exchange rate depreciation on debt growth, especially for foreign-denominated debt, Kenya should develop robust exchange rate risk management strategies. These

may include hedging mechanisms, limiting external borrowing in volatile currencies, and maintaining adequate foreign reserves.

Since institutional quality directly reduces debt growth and shapes how fiscal policies impact debt, Kenya should invest in strengthening governance frameworks. This includes enhancing transparency in budget processes, improving public financial management systems, fighting corruption, and ensuring accountability in resource use.

To promote accountability and informed decision-making, Kenya should regularly publish comprehensive reports on public debt composition, risks, and servicing costs. Transparent reporting can improve investor confidence, support better fiscal planning, and facilitate public scrutiny.

While strong institutions can enhance borrowing capacity, the government must avoid the trap of using improved credibility to justify excessive debt accumulation. Institutional strength should be used to enforce prudent borrowing frameworks rather than expand fiscal space irresponsibly.

5.5.2. Limitations and Areas for Further Research

Institutional quality was measured using annual corruption indices, which may not fully capture governance dynamics or short-term institutional changes. Future studies should consider composite or sector-specific governance indicators and quarterly data where available.

The study focused on institutional quality as a single moderating variable. Future research should explore other moderators such as political stability, rule of law, or bureaucratic efficiency to assess their interaction with fiscal variables and debt outcomes.

The findings are specific to Kenya's context and may not be directly transferable to other countries with different economic structures or fiscal regimes. Comparative studies across developing economies could enrich the understanding of contextual variations in fiscal-debt dynamics.

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APPENDICES

Appendix I: Data Extraction Sheet

Year	Revenue generation (% of GDP)	Government expenditure (% of GDP)	Fiscal deficit (% of GDP)	Foreign exchange rate	Corruption Perceptions Index (CPI) Score	Gross public debt (% of GDP)
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Appendix II: Ethics Committee Review Approval

Strathmore UNIVERSITY

7th April 2025

Ms Mwangi Ruth,
ruth.nyaguthie@strathmore.edu

Dear Ms Mwangi,

RE: Effect of Fiscal Policy on Public Debt in Kenya: The Moderating Role of Institutional Quality

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** proposal. Your application reference number is **SU-ISERC2777/25.** The approval period is from **7th April 2025 to 6th April 2026.**

This approval is subject to compliance with the following requirements:

i. Only approved documents including (informed consents, study instruments, MTA) will be used.
ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
v. Clearance for the export of biological specimens must be obtained from relevant institutions.
vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) https://research-portal.nacosti.go.ke/ and obtain other clearances needed.

Yours sincerely,

Mr Ambrose Rachier,
Chairperson; SU-ISERC

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