EFFECT OF PUBLIC DEBT, EXPORT TO GDP RATIO AND GOVERNMENT EXPENDITURE ON ECONOMIC GROWTH IN KENYA

PETER PTENGWER CHEWOREI

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DECLARATION

Declaration by the student

This thesis is my original work and has never been presented for the award of an academic degree in any other university and shall not be copied, or reproduced in any format without prior written authority from the author and/or University of Eldoret.

Cheworei Ptengwer Peter

---------- **Date** **----------**

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Approval by the Supervisors

This thesis has been submitted for examination with our approval as university supervisors.

---------- **Date** **----------**

Dr. Winrose Chepng'eno

School of Business, Economics and Management Sciences

University of Eldoret

---------- **Date** **----------**

Prof. Paul Odwori

School of Business, Economics and Management Sciences

University of Eldoret

DEDICATION

This thesis is dedicated to my dear wife, Fracisca Jane and my loving daughters ; Victoria, Ora and Ella for their invaluable support and encouragement during my studies.

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ABSTRACT

An investigation into the growth of GDP and public debt in Kenya shows that during the period 1963 to 2008, the economy experienced cyclical booms and depressions with the economic booms in mid 1970s, late 1980s, and early 2000s, as well as global economic depressions in early 1980s, early 1990s and in 2008. As a result, the Kenyan government turned to external and domestic borrowing during these periods to plug the budget deficits, which has contributed immensely on the country negatively and this has led to high dependency ratio as compared to the previous years. The study sought to assess the effect of domestic borrowing, external borrowing, export to GDP ratio as well as government expenditure on economic growth in Kenya. The study was anchored on the Keynesian theory of economic growth and the dynamic theory of public spending to establish the effect of public debt on Kenya's economic growth by conducting longitudinal research design on quarterly secondary time series data from the treasury for the period 1988-2018. The study employed the autoregressive distributed lag (ARDL) regression model to carry out analysis using STATA version 15 software at five percent significance level. The study found that there exists a significant inverse short-term relationship between economic growth and domestic debt where one percent increase in domestic debt causes 1.25 percent decline in Kenya's economic growth (β =1.25342, $p < 0.05$). The findings of the study shows that one percent increase in external debt causes 1.10 percent decline in economic growth in Kenya (β =1.09536, $p < 0.05$), and 1.745 positive relationship between export to GDP ratio and economic growth in Kenya (β =1.74536, $p < 0.05$) whereas government expenditure has a significant short-run, positive relationship with economic growth in Kenya with a correlation coefficient of 1.4537 β =1.493762, $p < 0.05$. The study concluded that Kenya's economic growth is significantly correlated with all four explanatory variables. Based on the study findings, it was recommended that to ensure a steady economic growth in the country, both external and domestic debt stocks should be kept at manageable levels, while government expenditures remain sustainable.

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LIST OF ACRONYMS AND ABBREVIATIONS

ADF: Augmented Dickey Fuller

AFDB: African Development Bank

AR: Auto Regression

ARDL: Auto-Regressive Distributed Lag

BP: Budget Deficit

BS: Budget Surplus

CBK: Central Bank of Kenya

DDS: Domestic Debt Stock

EDS: External Debt Stock

GDP: Gross Domestic Product

GE: Government Expenditure

GNP: Gross National Product

IMF: International Monetary Fund

IPO: Initial Public Offering

JB: Jacque-Berra

KNBS: Kenya National Bureau of Statistics

KPSS: Kwiatkowski-Phillips-Schmidt-Shin test

OECD: Organization for Economic Corporation and Development

OLS: Ordinary Least Square

SAPs: Structural Adjustment Programmes

SBIC: Schwarz/Bayesian Information Criterion

SGR: Stand Gauge Railway

SOC: Second Order Criteria

SOEs: State Owned Enterprises

TSA: Time Series Analysis

USD: United States Dollar

VAR: Vector Autoregressive

WB: World Bank

XGR: Export-to-GDP Ratio

OPERATIONAL DEFINITION OF TERMS

Domestic Debt- Is a situation which arises when government raises money, in local currency in form of Treasury Bills, Treasury Bonds and IPOs.

Economic Downturn – A general slowdown in economic activity over a sustained period of time.

Economic growth – It is an expansion in the production of economic goods and services, compared from one period of time to another. It can be measured in nominal or real (adjusted for inflation) terms. Traditionally, aggregate economic growth is measured in terms of gross national product (GNP) or gross domestic product (GDP), although alternative metrics are sometimes used.

External Debt – This is a situation that results when Government raises funds from a source outside the country i.e. foreign commercial banks, international financial institutions like IMF, World Bank, and AfDB, and other foreign governments. External debt has to be paid back in the currency in which it is borrowed.

Export-to-GDP Ratio – This is the measure of openness of an economy, hence at times called 'trade openness ratio'. It is obtained by dividing the aggregate value of imports and exports over a period by the gross domestic product for the same period, normally expressed as a percentage of GDP.

Government Expenditure- It is the spread and usage of resources the government has mobilized to provide goods and services for the public.

Public debt- Is the total amount of money that the government owes to creditor.

CHAPTER ONE

INTRODUCTION

1.1 Overview

This chapter provides details of the study, problem statement, objectives, hypotheses and the significance of the study.

1.2 Background of the Study

Public debt is a universal problem on most economies globally especially in the developing world. In Kenya public debt has been a nightmare specifically over the last two decades. This has been as result of increased borrowing to fix the fiscal deficits year in year out. These resources borrowed have also been mismanaged in some incidence through corruption and outright theft, putting more pressure on government to continue borrowing to finance infrastructural development, education, health among other development needs. Theoretical analysis on how public debt affects financial and financial development has been well documented in several research studies. However, its impact is still under investigation. This study seeks to look into how public debt, export to GDP ratio and government expenditure impacts economic growth in Kenya by considering secondary data from the National Treasury for period of first quarter of 1988 to fourth quarter of 2018. This will be achieved by investigating key factors which are government expenditure, national savings and government revenue as proposed by Hill (2010).

Public debt is a serious problem that can affect economic growth of any country. It affects the economy in terms of capital and resource allocation, activity levels, inflation and

balance of payments. Kenya is one such country whose public debt started rising in the 1990s. This was the period of structural adjustments in Kenya which had begun in the 1980s. Structural adjustment programmes were economic strategies and policies formulated to enhance a stable and sustainable economic growth. They were geared towards reducing inflation, improved debt repayment, enhancing export and reduced budgetary deficits. These reforms oscillated around economic stabilization, liberalization of markets, bureaucracy management, and privatization of government industries and enterprises. (Subbo, 2007). However, these programmes did not achieve the intended purpose of stabilizing the economy. They led to a more volatile and unpredictable economic environment especially in the 1990s, requiring further economic stabilization mechanisms such as external and internal borrowing to fix budget deficits. Economic stabilization is situation where the economy experiences favorable interest rates, a stable currency exchange rates, and steady balance-of-payments. Market liberalization is process designed to enhance free flow of goods and services where markets are controlled through the forces of supply and demand. Bureaucracy management is a process of controlling bottlenecks in government to allow market forces to thrive, whereas privatization of government industries and enterprises is a process of transmitting assets of the state from publicly owned to privately owned to promote market efficiencies and competition.

The World Bank (WB) and the International Monetary Fund (IMF) demanded that borrowing countries introduce broad free market systems with strict fiscal policies. In order to meet the requirements of structural adjustment programs, Kenya was forced to cut expenditure on public sector employment, reduce subsidies, and enhance local revenue

collection in order to reduce budget deficits. It was also required to increase transparency and accountability; seal tax leakages; privatize state owned enterprises and remove bottle-necks in order to attract investment. As a result, Kenya's external debts rose due to economic transformation programmes initiated in the late 1980s and early 1990s (Rono, 2002).

The World Bank research project on the relationship between the Kenyan economy and the public debt was inconclusive especially on poverty reduction and the general support on live and livelihoods. During this period, the economy of Kenya suffered a catastrophic blow as a result of drought, which led to massive famine and large-scale death. This prompts the government to borrow money from the International Monetary Fund and World Bank to pay for debts, food and medicine and other essential goods. This resulted to increased levels of debt burdens amidst decline in revenue collection. All countries prepare yearly budgets which highlight the ways and means and the expenditure lines. These budgets can be balanced, depict deficit or surplus between available resources and expenditure. If there is a deficit, a country can borrow to bridge the resource gap (Ptunoi and Mutuku, 2013) whereas economies with surplus budgets can spend them on reducing taxes, starting new programs or invest in sovereign wealth.

During inflation, Keynesian theorists recommend for borrowing to fill the gap between revenue and expenditure to spur overall demand (Motley, 2007). This strategy was acquired by many countries following of the 2007/ 2008 international monetary predicament, as Ncube and Brixiova (2013) found out that more nations enlarged their

fiscal shortfalls in this period. Ncube and Brixiova (2013) noted that the fiscal shortages expanded in African countries from one percent (2008) to 2.7 percent (2012) of gross domestic product (GDP). Additionally, many developing economies and upcoming market economies had fiscal shortfalls of 2.4 percent in 2012, up from one percent in 2008, while in advanced economies had fiscal deficit it increasing from 0.5 percent in 2008 to three percent in 2012.

To finance a budget shortfall, a country may print money or mobilize financial resources from domestic and external sources through borrowing. Printing money attracts a levy on the citizen of a country, and the tax reduces consumption as it has the effect of reducing the disposable income (Abbas and Mahmood, 2011). Given the negative effect of printing money, borrowing from domestic and external sources is the most feasible option for a country to plug its budget deficit. Since independence, Kenya has relied on external borrowing to fund its fiscal expenditures, relying on policy makers to ensure that the fiscal budget deficit remains within manageable limits (Kitabire *et al*., 2009).

Since the year 1980, Kenya has been implementing various strategies to reduce public debt through fiscal consolidation. These strategies include; enhanced revenue mobilization, reduced borrowing, enhanced management of public finance and broaden tax base target specific groups. Despite the implementation of these strategies, public debt continues to rise due to poor economic management. Private debt, which accounts for over 50 percent of total domestic debt, has risen rapidly in the past three years. The increase has been driven by an expansion in credit from the banking sector and from non-banking financial

institutions and the government's increased borrowing to finance expenditure on infrastructure. These includes: 1991-1994-Economic stagnation and aids suspension,1997-1999 loans to stabilize the economy, 2003-2008 infrastructural development loans, 2007-2008 post-election violence loans, 2014-first Eurobond, 2015-2018 SGR loan and 2018 second Eurobond.

Risks to macroeconomic stability are rising, given that external stringent speculation has fallen sharply over the past two years, partly due to reducing investor confidence as a result of policy changes and uncertainty. This has also led to crowding out of private investors from the main stream financial institutions. The result of communal dues on financial development in the country is positive. As the size and scope of government spending increases over time, the government saving would also increase. In recent years, there has been a connection between public debt and the financial progression because longer period of time has led to higher investment expenditures, which will simultaneously motivate financial progression and finally increase tax revenues for the government.

Public debt is government debt incurred through government borrowing of money. The role of public debt in macroeconomic growth has been a much-discussed topic since the global financial crisis (GFC) erupted in 2008. While there are several factors affecting the growth of an economy which include savings, investment and human capital, among others; studies on public debt have illustrated an undesirable effect on the growth of economies worldwide. Nations with lower levels of public debt rare most likely to experience rapid economic growth than those with higher public debt. Some studies show

a negative relationship between public debt and economic growth which may lead to negative growth outcomes. When public debt grows, the economy is rendered vulnerable to a debt crisis especially in developing economies. Increased public borrowing requires attracts higher taxes to meet debt obligation, which may slow economic growth in the long run. Additionally, increased public debt may lower the credit worthiness of a country thus negatively affect the confidence of both internal and external investors. As these investors become reluctant to lend money to the government and demand higher rates of interest to insure them from the uncertainties of economic volatilities in the economy of the country in question. These higher interest rates with greater accompanying penalties, may result to higher government spending.

Domestic debt is described as a financial obligation owed to domestic creditors by sovereign states according to International Monetary Fund (IMF) while the Central Bank of Kenya describes domestic debt as financial obligation offered within a country through government bonds and treasury bills. External debt is described as a financial obligation owed to external creditors by a country (Central Bank of Kenya, 2009). These creditors include: International Monetary Fund, World Bank, African Development Bank among others. Kenya's two-pronged creditors include commercial creditors and friendly sovereign countries.

The citizenry and the policy makers in particular have not taken seriously or completely disregarded the effects and challenge associated with public debt on economic growth in Kenya. Therefore, this study tries to bridge that gap by examining how public debt affects

the growth of economy in Kenya. It is expected that it will contribute to a better understanding of public debt and its impacts on the economic growth in Kenya especially at this time higher inflation rates. Kenya's huge public debt, has been accumulating over time, jeopardizing its ability to carry out its economic development agenda and at the same time meet its increasing debt obligations. The economy of Kenya is heavily dependent on foreign aid and loans to purge its budgetary shortfalls. It has been borrowing to support economic growth, with an average debt to GDP ratio of over 50 percent. However, servicing of debt has constrained government's ability to finance key development sectors such as infrastructure, education and health through domestic resources because large proportions of revenue collected is used in public debt settlement. As a result, Kenya's economic growth rate has been below expectations despite receiving billions of United States dollars in aid every year from various development partners.

Public debt has been given a wide consideration in the global economy, largely due to concerns over high levels of indebtedness of many countries and its influence on financial advancement across the world. Several theories have been advanced regarding the connection between monetary development and public debt. Some theories emphasize the importance of minimizing domestic debt to prevent crowding out effect for example Feldstein and Horioka (1982). Other theories suggest that at low levels of indebtedness, increased level of public debt can boost output and consumption through multiplier effects on private consumption demand (King and Levine1993). A third group advocate that at higher levels of public debt, it is unlikely that increased public borrowing will generate sufficient consumption demand to offset reductions in private consumption due to effects

of crowding out private investors (Kaldor, 1989). However, many concerns have not received sufficient attention in empirical testing of these hypotheses.

The public debt in Kenya has emerged as the main challenge affecting the economic growth and development. It is one of the main drivers of economic volatility in Kenya especially on the United States dollar denominated debts. Additionally, Kenya has some of the highest levels of inequality in Africa, with a large number of citizens un able to access adequate elementary social services such as healthcare and education because these services are un affordable and sometimes un available. However, despite this poor record, significant improvement in financial policies, institutional arrangement and the legal framework have led to reasonably higher sustained economic growth rates. As the economic growth and development of the world has advanced, so has the growth of public debt. One essential question that we must ask ourselves is whether public debt compounds economic volatility or whether it contributes to economic growth.

The justification for a government to incur public debt is the potential to promote the economic growth by investing on key infrastructural development and support socio-economic programs such as healthcare and education. Public debt is the accumulated budget deficit after taking into account borrowing, interest and penalties on such borrowing. The public debt on economic growth in Kenya is a matter of concern to many citizens and policy makers. The government has been especially blamed for failing to manage the effects of huge public debts whereas, investors have been blamed for adding more debt burdens on the country. Both the government and the domestic lenders have

been accused of crowding out private investors. In Kenya, economic growth has been marked by public debt and poor economic performance. It is however difficult to draw a line between high public debt and political mismanagement of the economy. Public debt is a debt billed by the administration. It is a serious problem that requires special attention for Kenya to realize holistic and sustained economic growth in Kenya.

Public debt settlement requires proper revenue management in order to pay various debts and liabilities incurred by the government during its operations. Public debt therefore, represents financial resources that the government has borrowed, and must be repaid at a later date. The concept of public debt can be divided into three elements: Foreign currency reserves, Fiscal standing of state-owned enterprises (SOEs) and Government budget deficit. There is a relationship between economic growth and public debt. Recent studies show an undesirable effect on economic growth because of increasing government public debt. Kenya was able to sustain economic growth at 7 percent during most of the 1990s but these levels have dipped in recent years due to increasing GDP ratio to public debt. The world is moving towards macroeconomic growth, driven by the rapid expansion of public debt and the corresponding increase in economic growth. There has been a lot of discussion on the result of public debt on economic growth in the country and hence researchers have set out to provide background information on how public debt shakes economic growth and to see whether or not there is any reasonable indication that can help in reducing the effects of public debt on economic growth.

The increase of public debt in Kenya has been as a result of many factors, including the high international prices of crude oil. This is a result of low revenue collection due to higher

oil prices alongside an increase in expenditures on infrastructural development, social services and security. Thepact of these on economic growth are likely to be complicated and varied leading to reduced economic growth. Public debt is assurance by the government to meet its financial obligation to lenders at a specific date. It appears like an asset in the books of the government, but it is an obligation that has to be repaid from future taxation or from the sale of assets such as government land, bond, shares or buildings.

1.3 Statement of the Problem

The effect of public debt to economic growth in most countries have remained an obstacle to policy makers and academic researchers as stated by Cashell (2007). There are numerous arguments by scholars and policy makers on the significance of huge debts on economic growth of any state, especially the least developed economies. According to Gargouri & Ksantini (2016), the government of Kenya like many developing economies in the world has always run budget deficits. The effect of this is the rise in the debt stock in the country as noted by World Bank (2014). The rise in debt should be considered in respect to country's economic growth because the ability of the government to meet its financial obligation may not matter when the absolute amount of debt is large, if the economy also grows (Aso, 2016). The IMF recommends that proportion of communal dues to GDP should not exceed 40 percent for developing economies. However, with the country's domestic debt to GDP ratio of 56.2 percent in 2018 against 42.8 percent in 2008, the country is overwhelmed by huge external debt that has seen its creditworthiness questioned by various financial institutions and analysts (Majune, Kimani and Khayo, 2019). Compared to Africa's largest developing economies especially South Africa and Nigeria,

Kenya appears to be doing badly off, with statistics showing that South Africa's dues to the ration in GDP was 53.1 percent in 2017 while Nigeria had 21.3 percent debt to GDP ratio in 2017 as recorded by World Bank (2019).

Huge public debt causes negatively affect an economic growth since government is forced to increase taxation rate to ease financial pressure on the interest rate so that the financial curve can be balanced. Owino and Mutai (2008) argue that domestic administration deriving can crowd out private savings which could decrease upcoming production and incomes (Stiglitz, 2012). The influence of debt on financial progression in the country has been analyzed in the light of the experience over the period from 1970 to 1980. Even though Kenya has experienced periods of economic decline, moderate fiscal and monetary policies have played a significant role in creating favorable economic conditions for longstanding financial progression. Public debt and its impacts on economic growth in Kenya is a topic that has been researched by many scholars. The conflicting points of view considering the effects of public debt on economic growth have led to mixed results in various studies. Some studies show that government debt is not necessarily a bad thing for financial progression; for instance, Organization for Economic Cooperation and Development (OECD) reports that public debt seems to have no undesirable result on real GDP per capita or unemployment rate while several other studies have shown that these countries are experiencing high indebtedness because of lack of infrastructure investment, corruption and regulatory failures among other reasons.

Public debt has been considered a major challenge to Kenya's economy growth for decades. Despite several policy interventions, it continued to be a concern of both national

and international organizations. At present, Kenya is saddled with an enormous public debt that represents over half of Kenyan GDP (CBK, 2019). Government spending primarily relies on non-tax revenue including external financing which has also contributed significantly to growing public debt. Increased public debt may lead to increased government spending and expansion, which could be helpful to the budget specified during a particular period of time, but it can have adverse effects in the long term. Public debt has become a major public and policy issue in Kenya. It is often accused of hindering fiscal evolution, resulting in high interest rates, inflation and increased unemployment (Ali, 2015). However, there are multiple issues affecting a nation's economy which may not be zeroed only to government debt. There is need for empirical evidence that can show how much debt matters for Kenya's economy. Though Kenya has been able to achieve significant economic growth over the years, it still suffers from high public debt and budget deficit rates. These factors have been identified as major hindrances to Kenya's economic growth. Public debt matters in financial markets, in the macroeconomic performance of countries and in their ability to service debt. Since most governments have limited resources at any point in time, they must decide on how to allocate these resources between the two main uses: capital expenditures and debt payments. Government spending through the public sector is important because it provides benefits to society through its multiplier effect on job creation and improved service delivery.

The Kenyan government debt is rising at a very fast rate and the nation's debt to GDP ratio has gradually been increasing from the average of 28 percent during the period 1992-1996 to a high of 49 percent in 2014 (Central Bank of Kenya, 2016). This rising trend in public

debt has been associated with difficulties faced by Kenya's economy. Therefore, there is need for further elaborate research study on the effect of public debt on economic growth in Kenya to provide an insight that can drive policy formulation so as to avoid falling into the pit falls that many other countries have gone through. The government of Kenya requires a very robust fiscal policy framework aimed at a steady increase in economic growth while ensuring public debts remain at very manageable levels. This can only be achieved by mobilizing any additional revenue as well as cutting on current expenses in order for sustainable assets are directed to investments that fuel workable evolution. According to the Word Bank (2017), Kenya as a developing mid-level income economy needs to keep deficit level to below five percent of the GDP, so as to allow for the participation of private sector in development and realization of the optimal economic growth (KNBS, 2020). It is on this premise that this research endeavored to establish the effect of public debt on economic growth in Kenya.

1.4 Objectives of the Study

1.4.1 General Objective

The general objective of the study was to establish the effect of public debt, export to GDP ratio and government expenditure on economic growth in Kenya.

1.4.2 Specific Objectives

The specific objectives of the study were:

i. To evaluate the effect of domestic debt on economic growth in Kenya.

ii. To determine the effect of external debt on economic growth in Kenya.

iii. To establish the effect of export to GDP ratio on economic growth in Kenya.

iv. To ascertain the effect of government expenditure on economic growth in Kenya.

1.5 Hypotheses of the Study

The study desired to test the following null hypotheses;

i. H_{01}: Domestic debt does not significantly affect economic growth in Kenya.

ii. H_{02}: External debt does not significantly affect economic growth in Kenya.

iii. H_{03}: Export to GDP ratio does not significantly affect economic growth in Kenya.

iv. H_{04}: Government expenditure does not significantly affect economic growth in Kenya.

1.6 Significance of the Study

In Kenya, various research studies have proved that pubic debt has undesirable effect on economic growth as recorded by Were, (2011). Throughout the period 1996 to 2007, increased public debt raised national attention on its impact and sustainability (Maana *et al*., 2008) whereas in the period 2003-2012, increased domestic borrowing by government to finance the budget deficit resulted to crowding out private investors. The period 2013 – 2017 however, shows the Kenyan government tripling its external borrowing, as the lion's share of the acquired funds was channeled to infrastructural development projects (Mwai, 2018). As the public debt continue to rise in Kenya, questions have been raised on its sustainability in the long-run (Mwai, 2018; Nandelenga, 2013). A sustainable debt is one in which the debtor is anticipated to continue providing service idealistically great forthcoming alteration to the stability of revenue and disbursement (IMF, 2012). Sustainable fiscal policies are desirable because they ensure stable future interest rates,

hence enhancing economic growth as result of higher public expenditure and increased revenue (Agnello and Sousa, 2009; Castro and Cos, 2006). This study will assist in determining the economic effect of public debt on growth of Kenyan economy. The study will also provide a deeper understanding and indicate the details on public debt levels in the country that negatively affect economic growth.

This is an important research area because most governments in Africa are witnessing a rapid escalation in public debt which has apparently led to negative effects on growth rates, for instance, low investment, slowdown or even decline in GDP growth and also employment creation. The presence of communal dues could affect financial progression, as it would constrain savings and investment. The research study tries to explain the impact of communal dues on monetary progression. This study is expected to contribute to government officials and policy makers who are involved in the management of finances for National (Federal) Government account and for provincial governments. There is a need to undertake an in depth and systematic study of the influence of communal dues on monetary progression in the country due to the persistent high levels of national general dues which is recognized as a major constraint on development.

Debt is problematic for many developing nations. In Kenya, public debt has increased rapidly in recent years. This is worrisome because it will have an influence on economic growth to the people of Kenya as well as having an impact on the future generations. The research aims to develop a framework that can be applied to measure the effects of debt on economic growth in the country. From an academic perspective, this study adds new

knowledge to the potential effects of public debt on economic growth in Kenya and its regional neighbors. The effect of public debt on the economic growth in the country has been the matter of concern within the political and academic circles due to its close association with general development in the nation. This research work will therefore, add on to the ongoing debate on this matter by offering some key insights into the connection between debt and economic growth in the country. The findings from this research study will be useful to policy makers, governments, development partners including other relevant stakeholders. In addition, these findings may inform decision making in government especially when the country is experiencing high levels of inflation. This study will enhance general understanding the effect public debt on economic growth in Kenya.

This research will contribute to economic growth in Kenya by providing government with economic policies that are more sustainable, efficient and effective and giving them a chance to make decisions based on their limited resources after they have read and observed this research study. The increasing public debt in Kenya is a major challenge to technocrats especially now where most of the debt is at an interest rate of 10 percent and above. This has caused huge debt servicing costs that the government would rather use on other priority uses such as infrastructure development and other social services. The study will help formulate appropriate policies on how to manage public debts since this will affect financial progression in Kenya. The research study will enable the nation to make informed policy choices on how best to manage its debt burden, given the various tradeoffs involved. The results of this research project also help policymakers with decisions regarding the issuance of more debt and prioritizing between different expenditure sectors. This study

has many academic and policy implications. From the policy point of view, it shows that public debt is an important indicator on economic growth and should be used more creatively. It argued that countries where there is a high level of public debt are not necessarily doomed to low levels of economic growth; rather it is only when public debt is inappropriate, excessive or mismanaged that negative consequences follow. This study will analyze the effect of public debt on economic growth in the country. The findings will be benefit to policy makers who aim at sustaining rapid economic growth in Kenya and meeting their target of achieving middle income status by 2030. The findings can also assist policy makers to formulate ways that can be used to mitigate shocks arising from future crises.

The influence of debt on economic growth in the country is a matter of great concern not just to economists, but also to policy makers, economic planners and ordinary citizens. It is a subject worth examining in light of its importance in the current economic situation that has been experienced by many developing countries. There is a consensus among economists that excessive levels of public debt can negatively affect economic performance as well as increase the risk of defaulting on debts which leads to hyperinflation and also higher interest rates and greater risk spreading across the entire commodity chain. The findings will be valuable to policy makers and planners who would like to make sure that there is a beneficial relationship between public debt and economic growth. They also be used to enhance government spending capabilities, planning and budgeting exercises by identifying key elements in ensuring sustainable development. The research findings highlight the importance of evidence-based research to policy makers

and hence will provide insights on how to close the gap between the researchers and policy makers during their interactions in policy making processes. It will also solve the concerns of bounded rationality among policy makers.

1.6 Scope of the Study

The study was carried out using annual time series data of Kenyan economy focusing on four independent variables and one dependent variable. These variables are domestic debt, external debt, export to GDP ratio, government expenditure and economic growth. The data that was used was for the period between 1988 to 2018.

CHAPTER TWO

LITERATURE REVIEW

2.1 Overview

This chapter provides theoretical and empirical assessment of economic growth and public debt sustainability in developing economies. It also presents the conceptual framework as well as literature review summaries to establish the existence of knowledge gap.

2.2 Theoretical Framework

The study was guided by the Keynesian theory of economic growth and the Dynamic theory of public spending, tax and debt.

2.2.1 The Keynesian Theory of Economic Growth

The theory was developed by John Maynard Keynes, an economist who contributed to the field of macroeconomics. The Keynesian theory of economic growth emphasized that economic growth depends on effective demand. The theories ideas on income, employment and investment became the foundation of Keynesian growth theory. Keynesian theory is a school of thought in macroeconomics that focuses on the causes and consequences of aggregate demand, resulting in the allocation of resources to satisfy it. The theory was formulated by John Maynard Keynes to explain instability in markets and their limited means to gauge demand uncertainty. It was formed with the intention of achieving prosperity for all members of society during periods of increased economic activity, defining its functions as: An economy's health can be evaluated using its gross domestic product (GDP), which represents a sum market price of all commodities and services

produced in an economy in a given period. It is a summation of consumption, government expenditure, investment, and net exports as follows:

$GDP = C + G + I + NX$ ..... (2.1)

Where;

GDP-Gross domestic product

C- Consumption

G- Government expenditure

I- Investment

NX-Net export.

The Keynesian approach of monetary progression is based on the belief that policies can affect the technological progress and savings. The greatest role in stimulating faster growth in the economy has been played by government spending through deficit financing and by increasing aggregate demand. The focus is not only on certain sectors, but also on specific types of investment such as public works and infrastructure projects. The Keynesian theory of economic theory starts from the presumption that investment and consumption decisions are based on future projections. The uncertainty levels are higher than levels that would be consistent with full employment, and therefore there will always be some involuntary unemployment in an economy. If expectations about the future were more certain, then output would be increased, so that full employment could be achieved.

According to Keynesian theory, government spending not only creates jobs but also increases income and economic growth. All this will lead to rising prices and inflation. The

Keynesian theory on economic growth is a model that explores the relationship between growth and the economy. The concept is founded on the ideas that if persons spend money given to them it stimulates economic growth but if the money is saved the economy only grows at a constant rate. The Keynesian theory of economic growth is grounded on the theory of employment, interest, and money. This is explained with three interactions of aggregate demand, aggregate supply, and multiplier. These three interactions explain the business cycle that occurs in an economy. The great depression was characterized by widespread unemployment rates with many businesses winding up and employees being laid off in multitudes. The Keynesian theory of economic growth postulates that the rate of output, income and employment is dependent on long-run growth. The factors that are responsible for this long-run growth include capital accumulation and technical progress. In other words, the long-run growth level of income relies on how rapidly capital stock is being used at any point in time as well as how fast technological knowledge is being used to increase productivity. The Keynesian's of economic growth theory is an expansion on classical growth theory (Solow, 1956). The main contribution of the Keynesian theory is its focus on aggregate demand and how it affects long-run economic growth. In contrast to classical theories which typically regard consumption as a stable function of permanent income and capital accumulation, Keynesians argue that consumption depends upon current income relative to desired consumption.

Keynesian theory traces its origins to ideas that John Maynard Keynes developed in response to the boundless hopelessness. Keynes argued that the total amount of money spent by consumers, businesses and governments on products and services as the aggregate

demand, determined the economic activity and employment levels. This theory, emphasizes that the government must chip in and perform a key part in deciding public spending levels, so as to stabilize monetary conditions by raising or lowering taxes and/or increasing or decreasing government spending. Keynes had a different take on how the economy works. He believed that the low income and high unemployment that characterize economic downturns are caused by low aggregate demand. In other words, if people don't have enough money to buy things, then businesses won't invest or hire new workers.

In classical theory, aggregate supply alone determines national income (Mankew, 2012). Keynesian economics assumes that if the aggregate demand is low and output sucks, the government should pump money into the economy by deficit spending. The theory states that this will increase investment in capital goods, machinery and create employment for unemployed resources. As a result, the multiplier effects kick in and increase output Barro (1989). The point of the Keynesian postulates that full employment in an economy occurs when there is absence of crisis and therefore, stability is a precursor for full employment. If governments can increase spending during this period, they will create jobs and help increase output. This can be done by increasing taxes and spending on useful goods such as infrastructure or education.

The Keynesian theory of economic growth emphasizes the importance of aggregate demand, which is controlled by public debt. The theory states that the communal segment is crucial in determining the speed of economic growth and inflation or deflation. Discussions on how public debt affects macro-economic variables such as employment, joblessness and inflation are central to this theory. Keynes's approach of financial

development is based on the idea of demand-driven investment. Keynes's theory shows that expansionary monetary policies can lead to increase engagements, thereby increasing national revenue. Increased government spending leads to more consumer spending and a rise in both private investment and national income. This theory states that economic growth is driven by consumption expenditure, which is fueled by disposable income. The gross domestic product increases as long as consumption expenditure increases, so the increase in investment stimulates consumption and hence production, thus pushing up output and increasing employment.

The Keynesian economic growth theory is the main economic growth model used by political leaders and economists. The main idea of this theory is that Keynesian economic growth can be achieved by increasing employment and output in the economy. It focuses on demand-side measures to improve the macroeconomic situation in an economy. These measures include Government spending and central banking policy (interest rates). It also encourages expansion of businesses through tax reliefs, subsidies and capital injections. Real GDP and employment are significantly impacted in the short term by changes in aggregate demand, whether or not they are expected. But only a long-term impact on inflation, according to Keynesian theory. According to the argument, the economic impact of government debt is minimal, and that the real burden only occurs when the government expenditure is made, which is the time when the real resources are used up.

2.2.2 The Dynamic Theory of Public Spending, Tax and Debt

Public spending under a dynamic theory is anchored on the fiscal policy and tax smoothing approach by Barrow (1979). This theory first proposed by Richard Musgrave in 1959. The theory was developed further by William Vickrey in 1965. The theory explains the relationship between fiscal policies such as policy on public spending and taxation, the economy and financial cycle. A fiscal policy measures government spending and tax rate which is set to target inflation rates or economic growth. This theory illustrates the connection between government expenditure, taxation and the extent of government debt. This theory is highly relevant to studies in the field of public finance, as it considers how government spending affects tax revenues and economic growth.

According to the notion, governments frequently utilize budget surpluses and deficits as a safety net for avoiding volatility in taxation. Because of this, governments commonly employ deficits and surpluses during spells of high and low expenditures respectively. One key characteristic of the dynamic theory of public spending is that governments tend to apply economical excesses and shortages to act as barrier to avoid tax levels from fluctuating too sharply. Most states and countries in the world incur discrepancies during seasons of great and high expenditure and surpluses when the expenses are low.

This approach majorly focuses on the way that public spending, tax and debt affect growth in income and output and the standard of living. The book uses a simple model but incorporates key features such as endogenous growth and externalities. The theory is developed to show how an increase in public spending may be desirable at one stage of

economic development but harmful at another; how the interest rate affect public debt and economic growth; what determines whether the rise in government debt can cause a government default; and how tax rates may alter entrepreneurial incentives.

In addition, these theoretical insights are applied to empirical data with some surprising results. The fiscal multiplier is the ratio between changes in total output and changes in government spending, when the latter causes crowding out of private request for possessions and reliable services. It can be given by the product of two variables: increased expenditure on consumer goods purchased by households or businesses, and decreased saving because a smaller share of income is available for saving after taxes. The reasoning behind this is that governments have an incentive to smooth their tax rates (so as not to overtax or under-tax their populace) while they can afford it. In doing so, they will dip into their reserves of cash to cover expenses and replenish them when they are able to do so again.

The approach to analyzing the determination of optimal inflation responds to an observation that most contemporary analyses of inflation ignore the role of political institutions and consider the economy as a totally autonomous entity whose behavior is determined by purely economic variables. The basic principle for this study's approach is that expenditure in government fluctuates over time, where tax rate and income taxes have a convex relationship. It also has roots in a fundamentally altered view of how economic agents behave (Battaglini and Sargent, 2006). A key role of the legislator is to distribute the financial resources of the state. If we consider that these resources are used to provide

public goods, then legislators distribute them according to their electorate's priorities. However, unlike ordinary citizens, legislators may have personal interests in mind when allocating certain funds. The theory introduced here suggests that this may lead to inefficient allocations and result in lower tax rates for voters who contribute most of their taxes (Bohn, 1998).

This approach proposes a dogmatic influence considering the legislature, composed of personal participant, geologically defined districts, is responsible for making policy decisions. The government has two options for increasing revenue. First, through a relative tax on employment salary; and second, through capital market borrowing. Borrowing is done through the issuance of one-year bonds. If the legislature so desires, it will secure bonds and use the available revenues to assist fund forthcoming communal expenditure. Public funds are utilized to fund an unrestricted service that will be efficient and benefit all residents, as well as directed sectors, district and specific payments, which are regarded as basic expenditure. Citizens' perceptions of the public good are volatile, imitating tremors such as natural occurrences and wars.

The lawmaking process during a particular time is displayed using Baron and Ferejohn's governmental negotiating method. The government functions under the majority or supermajority rule (1989). Between different policy eras, the number of communal dues normally play a key role as a variable in the state and creates an active relationship. This theory is a Keynesian macroeconomic model for understanding the effects of current public spending, tax policy, and balance on financial progression.

The dynamic theory of public debt, spending and taxes sheds light on the nexus between economic strategy, debt and development in an open economy. The book offers a clearer understanding of taxation, public spending, debt financing and sustainability. To understand why the Kenyan current fiscal policies are unsustainable. It is a paramount to evaluate the dynamism of public spending. The Dynamic Theory of Public Spending and Taxation is a monetary theory that suggests that changes in aggregate income can affect both tax and government spending. The government borrows money from domestic market and issues bonds to pay for their expenditure when their current available resources are inadequate. The increase in revenue leads to notable change in demand for savings, resulting in higher interest rates which causes the government cost of borrowing to increase, which will cause them to raise taxes or reduce spending or run a budget deficit.

The Dynamic Theory of Public Sector Accounting is the most widely accepted explanation for the behavior of government income and expenditure. The Dynamic Theory argues that a government's borrowing behavior is on need basis. Therefore, expenditure in government occurs irrespective of solvency. This theory can also be applied when studying individual households as it includes all stakeholders within a nation's economy, including households as well as foreign investors.

2.3 Empirical Literature Review

2.3.1 Domestic Debt and Economic Growth

Domestic borrowing is when government raises money, in local currency in form of treasury bills, treasury bonds and initial public offerings. It is the sum of government debt owed to lenders within a country (Babu *et al*., 2015). Despite changing government functions and low tax receipts relative to anticipated public spending, Kenya borrows to satisfy the increased demand for better products and services. Public debt is periodically utilized to breach the funding gap between revenue and expenditures, even though it is ideal for governments to rely entirely on domestically generated tax revenue (African Development Bank, 2018). Kenya, on the other hand, has become engulfed in debt as a result of this. Reasonable borrowing and debt management could contribute to increased socioeconomic growth and, as a result, higher living standards. Notable improvements in the administration of the open area are required to make debt effective.

In general, the empirical literature on domestic debt and economic growth has identified an optimistic association between public debt and financial development. The analysis is made using data from Kenya for the period 1960-2013. The results show that economic growth and public debt are positively related; the coefficient indicate that the rise of one percent in domestic debt causes an increase of 0.77 percent in GDP per capita. The finding shows that both national savings and remittances have significant impact on financial progression. Administrators and policy makers, particularly in developing countries have had challenge in understanding how public debt strains economic growth.

The proportion of public debt to GDP is a measure of the percentage of public debt to the entire economy. It has been shown that there exists a close relationship between the amount of public debt and growth of an economy. Both saving and investment are important for monetary progression, whether in Kenya or elsewhere. Greater heights of communal debt can influence saving and investment decisions so that they may not be consistent with economic growth objectives in Kenya Though, public debt resources have not been utilized as efficiently especially where projects financed through loans cannot generate adequate resources to repay the loans due to financial mismanagement (Gargouri and Ksantini, 2016). As a result, socioeconomic growth is jeopardized because the government spends a lot of financial resources for loan repayments leaving little to spend on education, health, and other social services that primarily benefit the poor, who make up the bulk of the population (Chen *et al*., 2020).

Maana et al. *et al*., (2008) assessed the effects of domestic debt on economic growth for a period of 1996 to 2007 and discovered that a considerable growth in domestic debt during the time resulted in a significant rise in domestic rates of interest, putting a significant strain on the budget. There was also evidence of a beneficial, albeit minor, influence on economic growth. Additionally, domestic debt, did not appear to be crowding out private sector financing, according to the report. Domestic debt increased in Kenya from 2000 to 2010, according to Putonoi and Mutuku (2012). The study agreed that the relationship between domestic debt and economic growth was favorable. Accordingly, many researchers proposed that the Kenyan government promotes long-term domestic borrowing and enhanced public resource management.

Domestic debt, especially in Kenya and many third world countries, has great implication on economic growth because this spur both public and private investment. Private investment is essential factor for economic growth and wealth creation. That's why the entrepreneurs who borrow from banks will invest those funds in factories or fixed assets, which ultimately provide employment opportunities for people looking to make their living in that particular industry. Domestic debt servicing, on the other hand, consumes a significant portion of government revenue. Government spending on development projects is limited. Domestic debt servicing is more harmful to economic growth, especially if it is not accompanied by reciprocal economic enlargement (Nord *et al.***,** 2013).

This study sought to assess the effect of domestic debt on growth of economy in Kenyan. It examines the association between domestic debt and economic growth in Kenya to learn how several interpretations on relationship apply in different situations. The insights can be used to help shape future policy and economic planning. It also adds to existing studies and provides a foundation for future research. Other studies have shown the importance of a country's domestic debt to economic growth. For example, Hellberg, Lindner and Mickevicius (2018) find that increasing private consumption enhances economic growth only when financed by domestic funds, not foreign loans. A number of studies have found that as countries become more indebted, economic growth declines. For example, Reinhart and Rogoff (2010) find that a country's average growth rate falls by 2 percent for every point of its debt-to-GDP ratio.

The relationship between economic growth and domestic debt has been studied by many researchers in the past. These past studies, however, have focused on one point in time, which means they may not be able to account for how domestic debt has changed over time. This research, a panel dataset that covers the period from1988-2018- is employed. It contains annual data on gross national product (GNP) per capita and total debt at the end of each year. This unique dataset allows an analysis that accounts for changes over time in both domestic debt and the rate of economic growth.

2.3.2 External Debt and Economic Growth

External debt is one of the many factors impacting economic expansion in Kenya. Its sway on economic growth across the world has become a crucial subject today not only among policy makers but also among academics and development economists. There are two sides to the external debt story. The first is the view that external debt imposes pressure to the economy, reducing growth and employment opportunities. The second school of thought on the contrary argues that certain economies need an inflow of resources to fund investments such as infrastructure development and education, which in turn contribute to economic growth. Like all other countries, Kenya faces the challenge of economic growth. Economic growth is important because it enhances and multiplies the capacity of a country to meet its people's needs. In addition to physical and human capital formation, economic growth leads to increased domestic product and enhances social services such as health and education services. Higher human development outcomes have been found to be associated with elevated economic growth levels in various studies across the world.

All economies are concerned about achieving sustainable economic growth (Shabbir, 2012). They prioritize effective macroeconomic policies for wealth creation, boost production, enhance national income, provide employment opportunities, cut on inflation and enhance public services delivery (Saunweme and Mufandaedza, 2013). Public debt, however, is one of the most urgent economic policy issues governments are currently facing because most countries, including Kenya, are limited in mobilizing adequate resources to support national budgets, forcing them to borrow from both domestic and external markets to fund their budget deficits (Ali and Mustafa, 2009; Boboye and Ojo, 2012). (Maana *et al.*, 2008; Shabbir, 2012)

There is both positive and negative correlation between economic growth and external debt according to several empirical studies on growth of GDP, levels of inflation and rates of exchange. Using the fiscal policy path method, Taye (2011) assessed the viability of public debt in Botswana. The technique analyzed the effect of other significant variable which included fiscal space and domestic debt among others, in measuring sustainability public debt and tracked the debt's dynamic course over time. The complexity of the model introduces an element of uncertainty because it calls for a number of assumptions, especially an assumption of an uninterrupted foreign direct investment. The results indicated a stable and sustainable public debt in Botswana which had greatly contributed to the economic growth.

Ndoricimpa (2014) carried out a study on the fiscal feasibility of Burundi, Kenya, Rwanda, Tanzania and Uganda covering period 1985-2012 employing Hakkio's and Rush (1991)

model to test for sustainability fiscal space. The result indicated a huge difference between government spending and government revenue in Kenya and Burundi. The initial study generally supported the fiscal strength EAC Countries. However, more analysis showed unsustainable fiscal space across the East African Countries. The payment of external debt, signaling a higher current account deficit, can result in a debt overhang, which increases the danger to a country's economic development (Ali and Mustafa, 2009). In order to achieve economic growth in any economy, debt, whether public or publicly guaranteed, and contingent liabilities are essential (Were, 2001).

Nyongesa *et al*. (2013) assessed the effect of current account in Kenya from 1970 to 2012. The study employed the constraint inter-temporal budget model and investigated public debt and revenue through stationary and cointegration tests to ascertain sustainability its current account. Stationarity analysis indicated sustainable external debt whereas cointegration analysis showed unsustainable long-run current account balance. The results were not conclusive as to what extent public debt affected economic growth in Kenya. Therefore, concluding that external debt was feasible is untenable. According to Maana *et al*. (2008), resource mobilized locally was used to service external debt from 2006 to 2007. This indicated untenable long-run debt management. The purpose of the borrowed funds resulted to different results. Therefore, it was difficult to point whether external debt was beneficial to the economy or not. Failure to effectively manage the economy and the available resources eventually results in a conundrum of a lower revenue base, lower spending capacity, and higher debt servicing costs because developing economies have limited capacity to raise adequate revenues (Boboye and Ojo, 2012). The conclusions of

the research may be used by the government to guide fiscal policy, monetary policy, and public debt management.

2.3.3 Export-to-GDP Ratio and Economic Growth

The circular flow of income is boosted by exports of goods and services, which enhances collective demand and improved output. In developing and emerging economies in particular, increases in export to GDP ratio contribute to higher individual income and the eradication of extreme poverty (Yao, 2014). Increasing export sales helps businesses make money and profits, which they can then utilize to increase capital investment spending thanks to the acceleration effect. A country's export potential is increased through increased investment, which also increases its production capacity (Jinjun, 1995). A few of the sectors that support commerce are logistics, insurance, and port infrastructure. Increased investment and employment are projected in these associated industries in countries with quickly growing export sectors. An excellent example of the significance of business is the development of global commercial hubs in nations like Singapore and Hong Kong, as well as the Netherlands.

As with the case of economic productivity, increased export to GDP ratio indicated a beneficial correlation growth of the economy. One such study was conducted by Khan and Altinay (1985) which found that exports served as engines for economic development in developing economies. Smaller economies are able to grow, maintain their GDP growth, and provide high-quality opportunities for citizens. The steady growth of export-to-GDP ratios(XGR) has been linked to economic growth in many advanced economies. In the case

of small countries, there is an inverse relationship between XGR and GDP per capita as well as an inverse relationship between XGR and total inward remittances. Exports as a share of GDP have grown over time and continue to influence overall economic growth, whether a country experiences fast or slow economic growth. Additionally, there is compelling evidence that the income levels of exporting countries are often higher than those of non-exporting nations indicating notable correlation between exports and GDP.

Most countries have experienced rapid growth and development in recent years, which has been largely due to international trade. Many export-related industries have gone through fast economic growth in several nations, enhancing their long-term development. They include developing nations like Singapore, Hong Kong, Ireland, China, South Korea, and Vietnam among others. Several other nations including Japan and Malaysia are also experiencing robust economic growth fueled by their exports (Jinjun, 1995). The trade to GDP ratio increased significantly in some of them. For example, South Korea saw its GDP increase 18-fold for the period 1973 to 1997 which was mainly due to the rise in exports.

China stands out as one of the biggest benefactors of the export-led boom that has transformed the country's once-fragile economy into a stronghold economic liberalization, economic reforms in China turned the economy from a centrally planned, isolated, and inefficient economy tone of the economies with the fastest rate of expansion. It had an average of 9.5 percent annually since 1979, despite a recent dip, according to The World Bank estimates. It introduced economic reforms and trade liberalization over 40 years ago to spur its underdeveloped economy. This was geared towards opening the economy to the

outside world, enhancing efficiency and increasing its production and productivity. It experienced a rapid and continuous growth for several decades now (Yao, 2011). It is the second-largest economy in the world after the United States. It has been able uplift over 800 million people out of poverty by quadrupling its economic output on average every eight years. It is now the largest manufacturer, goods trader, and holder of foreign exchange reserves in the world, surpassing the United States in all three categories. Despite many studies showings that higher export-to-GDP ratio leading to enhanced export-led economic growth, other scholars have shown negative economic consequences as a result of abrupt increase in the export to GDP ratio.

Rapid export-led growth can cause demand to rise in price and interest rates (Liu, Margaritis and Zhang, 2019). High relative inflation can reduce the ability of local producers to compete on price with imports and make export industries less competitive in global markets. According to Liu *et al*. (2019), export-led growth might not be able to provide long-term balanced growth if it results in over-exploitation of natural resources. The study considers the effect of large-scale agribusiness in China's deforestation, overfishing, and land degradation in their analysis Silva-Ruete, (2019). Despite being a major world economy, China still experiences high of poverty levels and unequal wealth distribution among its population.

The Chinese government has adopted more innovative, knowledge-based growth model that promotes consumption, enhances investment especially infrastructural development and enhanced exports. For many countries in the world, export-led growth has been critical

to reduce poverty, stimulate economic development and raise living standards. The issue is that not all nations have the capacity to export a wide range of goods in order to avoid some of the drawbacks of primary product dependence. Additionally, they need to consider how they distribute their export benefits among the people so that everyone can benefit from them.

2.3.4 Government Expenditure and Economic Growth

The government mobilizes resources to spend in the provision of public goods and services. The process of providing these goods and services is called government expenditure (GE). It refers to the government's distribution and use of cash earned to purchase products and services for immediate usage in order to unswervingly encounter specific or shared wants and necessities of the general public (Dudzeviit *et al*., 2018a). (Many governments around the world have attempted to revive their economies by raising administration expenditure, while others have harshly condemned them, most notably some European Union (EU) countries (Larch and Lechthaler, 2013). Thus, scholars have hypothetically and pragmatically investigations the relationship connecting government expenditure (GE) and growth of the economy (Dudzeviit *et al*., 2018a). However, despite extensive studies in both established and emerging nations on the influence of government expenditure on economic growth, discussions are still ongoing (Dudzeviit *et al*., 2018a; Maingi, 2017; Onifade *et al*., 2020; and Gunasinghe *et al*., 2019).

Various research studies examining the influence government spending says that that monetary measures and strategies which have been widely used to decrease extreme debts,

frequently raise some arguments and debates over which detailed class of government expenditure should be cut, plus the influence of reduced expenditure on economic growth. Such disagreements emerge as a result of the fact that some aspects of government spending are thought to have a stronger effect on monetary progression than others (Onifade *et al*., 2020). The prevailing hypothetical and pragmatic works on this topic have yielded conflicting conclusions. On the one hand, multiple studies have revealed that nations with a higher proportion of public expenditures devoted to productive expenditure had higher levels of economic growth (Rileys, 2012).

The government expenditure is a major factor that contributes to financial progression in the country. The importance of administration spending is because it helps contribute to economic growth through the formation of more employment avenues and regeneration of revenue. It is becoming increasingly clear that in order for countries to maintain high rates of economic growth, governments must be propitiating.

Gemmell, Kneller, and Sanz (2016) identified considerable benefits of transportation, communication, investment and education spending on the growth of an economy in OECD countries in a prominent and robust analyses. Housing and health expenditures had favorable effects, whereas social welfare spending had negative consequences, according to the study. According to Gupta *et al*. (2005), when production cost of the project is high, economic growth rate is also affected by productive expenditure. Devarajan, Swaroop, and Zou (1996), however, find that capital misallocation also contributes to per capita GDP decline.

According to Gupta *et al.* (2000), France's economic growth rate was improved by public sector spending on health and property rights protection. According to Facchini and Seghezza (2018), while other expenditure has no meaningful impact. The influence of public expenditure on economic growth are critical challenges to fiscal management experience by economies in transition. This problem has been highlighted by several economists and researchers, including Oyinlola (1993) who investigated the influence of public debt and expenditure to Nigerian economy. According to Singh and Sahini (2004), government uncontrolled expansion is unconducive for improved economic performance. Akpan (2005), observed that expansion in government expenditure in most countries, is independent of level economic growth. Increase in government finance has prompted several inquiries to theoretical assumptions and empirical evidence to explain this behavior.

Previous researches have shown that a country's economic growth depends to a largely on government expenditure levels. Thus, government has an opportunity to increase economic growth by increasing its expenditure. This research project seeks to examine whether higher expenditures lead to higher economic growth. Researchers have found that government spending has been a key factor in growing economies and economies had grown more when they spend more on public investments (Maturana, 2017). Government outflow and financial development are among the most important concepts for economists. Previous studies have revealed an inverse relationship between the two, with economic growth being closely connected to economic policy (Canar, Fan, and Grennes, 2019).

Government expenditure is important for economic growth. Previous studies have established that administration expenditure has an effect on monetary progression. But the impact varies between countries and is conditional on other factors. Governments spend money on various projects in order to help their people. These are known as government expenditures and economic growth. Growth of any economy entails increased production and productivity that is sustainable over time and capable of being maintained with manageable risks.

2.4 Conceptual Framework

A conceptual framework, according to Kothari (2004), is a structure that establishes the association between several variables in the study. It also communicates the researcher's thoughts on a study's key construct. Conceptual framework is a theory that projects the interrelationship of variables and constructs in research. It is a critical component of any research project. It defines the boundaries of the study and dictates how information will be collected, analyzed, and interpreted.

The conceptual framework establishes boundaries for the research as well as provides guidance about what data should be collected and how data can be used to generalize results. This research study conceptualizes that Kenya's economic growth is influenced by external debt, internal debt, export-to-GDP ratio and government expenditure (Bonizzi *et al*., 2019; Gargouri and Ksantini, 2016; Liu *et al*., 2019; Putunoi and Mutuku, 2013 and Yao, 2014).

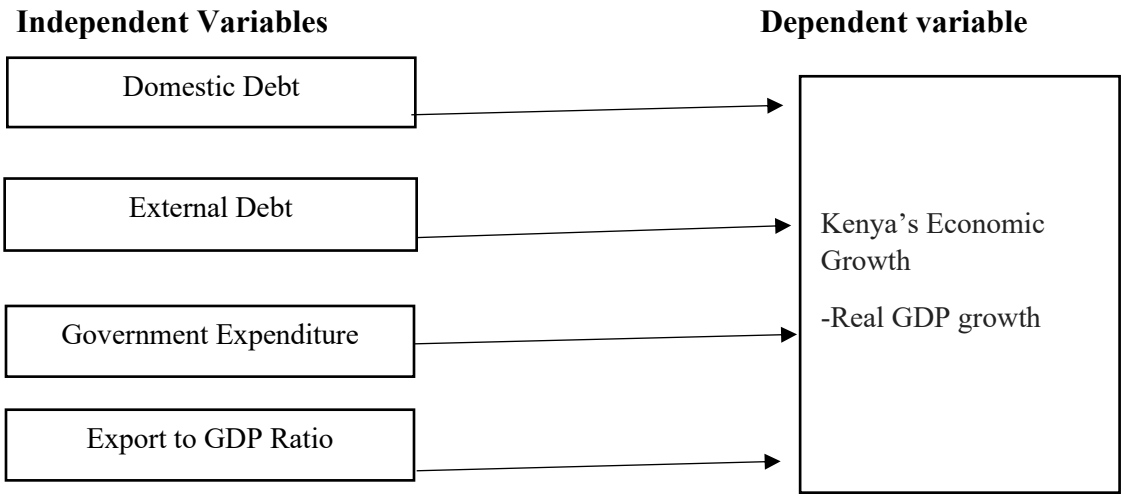

Figure 2.1: Conceptual Framework

CHAPTER THREE

METHODOLOGY

3.1 Overview

This chapter gives the study area, the research design, data types and sources, tests to be carried out, model specification, and analysis of data.

3.2 Study Area

This study was carried out within the Republic of Kenya covering an estimated area of 582,646 Km^2 with a population of 49.4 million people (KNBS, 2020). Strategically situated in the Horn of Africa, Kenya is a financial powerhouse in Eastern Africa region. It shares borders with the United Republic of Tanzania to the south, the Republic of Uganda to the west, the Republic of South Sudan to the northwest, the Federal Republic of Ethiopia to the north, the Republic of Somalia to the east, and the Indian Ocean to the south as shown in figure 1 below.

Figure 3.1: Map of Kenya (Source : Surveys of Kenya)

Kenya has one of the biggest economies in Africa, boasting USD26 billion for the fiscal year 2020–2021 and an anticipated USD 101.5 billion (World Bank, 2020). Kenya's state debt, as of June 2020, was Sh7.06 trillion, or 65 percent of GDP, according to the World Bank (2020) estimate. As the leading economy in the region, Kenya had an annual fiscal budget of more than Kshs 2.91 trillion for the 2020/2021 financial year, with an estimated debt portfolio of 7.84 trillion as at June 30th 2021 (The National Treasury, 2021).

3.3 Research Design

A research design are the special procedures followed in gathering, analyzing and interpreting data from a research problem (Creswell, 2014). Research designs are very important because they provide methods for gathering relevant information and quantifying variables. This information is then analyzed and interpreted to explain the research questions.

The study used longitudinal research design to carry out quantitative analysis of the time series data on Kenya’s fiscal debt burden for the period 1988-2018.A longitudinal study follows the same sample over time and makes repeated observations. These studies are usually conducted over a long period and can be used to evaluate the effects of changes in culture, environments and other variables that may affect a population (Thousand *et al.*, 2008).

This design is preferred because the study involves assessment of unit of analysis measured repeatedly at regular intervals over time (Kaplan and Glass, 1995). According to Deboeck, Montpetit, Bergeman, and Boker (2009), time series analysis (TSA) enables one to carry out spectral analysis to obtain cyclical patterns of variable change across time, thereby, enabling the researcher to know if there exists any correlation between the variables under observation. The longitudinal research design is characterized by repeated measurement of both the causal and independent variables over time. Longitudinal studies are designed to observe changes within individuals over time, and, therefore, require a very large sample size. Given that at least one characteristic might change significantly between two studies intervals, a longitudinal study should be comprehensive in order to determine whether or not those changes are related to the independent variable over time. A longitudinal study requires collection of data from an already established population rather than studying sampling error. The major benefit of this design is that it allows us to see how behaviors develop over time or change from one situation to another.

3.4 Data Types and Sources

The study employed quarterly time series secondary data that was gathered from the National Treasury approved annual budgets and quarterly statistical reports. Other sources included, IMF debt portfolio reports publications, and World Bank fiscal assessment reports for the period between 1988 and 2018. The study's chosen time frame was quarter one (Q1) of 1988 through the quarter four (Q4) of 2018 in order to capture key economic and political events that shaped the trajectory of Kenya’s economic growth. These include the Structural Adjustment Programs (SAPs) in the early 90’s; the 2002 general elections

and the subsequent changes in public debt policies by the new government; the 2007 post-election violence and the resulting economic impact; the 2008 global economic meltdown; as well as the 2014/15 Euro Bond loan and how it affected Kenya's debt management policies. The study used secondary data from 31 years, translating to 124 observations. IMF and World Bank debt portfolio reports, and KNBS export to GDP ratios.

3.5 Data Collection Instrument

For this study, data was collected using a secondary data review template. A secondary data review template is a structured tool used to gather information in a systematic and organized manner ensuring that data is collected across all observations.

3.6 Model Specification

In investigating the effect of external debt stock, domestic debt stock, export-to- GDP ratio and government expenditure on Kenya's economic growth, the study employed the Keynesian theoretical framework. As a result, the study heavily references Onwioduokit *et al*. (2014), who employed a Keynesian context to inspect the effect of economic deficits on advancement in developing nations. The aggregate expenditure on consumption, aggregate expenditure on investment, aggregate expenditure on government, and aggregate expenditure on net exports, according to Keynes, can be broken into four primary component elements. The connection between these expenses and actual general revenue is depicted in equation 3.1 by the Keynesian income-expenditure model.

$$Y = C + I + G + (X - M) \quad \text{..... (3.1)}$$

Where:

Y= Actual general revenue

C= Aggregate expenditure on consumption

I= Aggregate expenditure on investment

G= Aggregate expenditure on government

(X-M) = Aggregate expenditure on net exports

According to Keynes, the aggregate consumption behavioral model is primarily determined by the real national income as shown.

$C = a + bY^d$, where $b > 0$,

$Y^d = Y - T$

The aggregate expenditures on investment (I), government (G), and net exports (X-M) on the other hand are typically regarded as autonomous expenditures, since they are normally independent of the current national income. The autonomous expenditures of the model are therefore, expressed as follows:

$I = \delta + Y^i$, Where $Y > 0$

$G = \bar{G}$

$T = \bar{T}$

$X = x + \sigma e$, Where $\sigma > 0$

$M = m + \phi Y^d$, Where $\phi > 0$

Where Y = Output, C = Consumption, Y^d = Disposable income, T = Tax revenue, $\bar{T}$ = exogenous tax revenue, I = Investment, δ = exogenous investment, i = Interest rates, G = government expenditure, G^* = exogenous government expenditure, X = exports, x =

exogenous exports, $e =$ exchange rates, $M =$ Imports, $m =$ exogenous imports, while $b, \sigma,$ ϕ are coefficients.

Substituting the behavioral equations into equation 3.1, the equilibrium output equation becomes:

$$Y^* = \frac{A}{\theta} + \frac{1}{\theta}\left(\gamma^i + \sigma e + G - (b - \phi)T\right) \quad \text{..... (3.2)}$$

Where:

$\theta = 1 - b + \phi,$ and

$A = a + \delta + x - m$

According to Kaur, Sarin and Dhami (2018), Export-to-GDP ratio increases when there is rapid export-led-growth. The Granger Causality model therefore used to establish the long-run relationship between GDP and export. The export led growth model is therefore as shown in equation 3.3.

$$Y_t = \gamma + \delta_t X + \varepsilon_t \quad \text{.....(3.3)}$$

Where,

$$Y_t = GDP\ in\ year\ t \quad \text{....(3.4)}$$

$$\gamma = \sum_{i=1}^{n} \gamma_i \quad \text{.....(3.5)}$$

$$\delta = \sum_{j=1}^{n} \delta_j \quad \text{... (3.6)}$$

Following the theoretical underpinning of the study on the Keynesian equilibrium output model, the study estimated economic growth (Y) as a function of consumption, government expenditure, government investment, tax revenue, exports, as well as imports.

$Y = f(C, G, I, T, X, M)$ …… ….(3.7)

Where:

Y= Income

C= Consumption

G= Government expenditure

I= Investment

T= Tax

X= Export

M= Import

Adopting equation (3.7) and above, the study was therefore modified to include domestic borrowing, external borrowing, export-to-GDP ratio, and government expenditure as a function of economic growth.

$Y = f(DDs, EDs, P_{t-1}, G)$ ……..... (3.8)

Where:

Y= real GDP growth

DDs=domestic debt stok

EDs= external debt stock

P_{t-1} = export-to-GDP ratio

G= Government expenditure

The real GDP growth (Y) is not functionally explained by the explanatory variables on the right-hand side of equation 3.8 due to a lack of theories linking the variables in equation

3.8 in the same model. This is because government expenditure components are complimentary to private investment, their growth effects may appear gradually over time (Yao, 2014). As a result, the usage of Vector Autoregressive (VAR) model methodology is required. This is due to the fact that the VAR model is a theory-free tool for estimating economic connections (Kosimbei, 2009). VAR captures the interconnectedness and evolution of numerous time-series by generalizing univariate Auto Regressive (AR) models (Liu *et al*., 2019). A VAR model incorporates an equation that explains the evolution of each variable based on its own lags and the lags of all other variables in the model, addressing all variables symmetrically (Swanson, 2016). The VAR model is preferred because all of the model's variables are endogenous and each variable is expressed as a linear function of both its own lagged values and the lagged values of every other variable in the system (Cheng and Lai, 2007). VAR can also be used to determine whether two or more variables are causally related (Cheema and Sial, 2012).

A VAR's compact structural form to be adopted by the study is represented by

$Y_t = A_0 + A_1 Y_{t-1} + A_2 Y_{t-2} + \ldots . + A_p Y_{t-p} + e_t$ …….. …...(3.9)

Where:

A_0 = n x 1 vector of constant terms

$A_1, A_2,$ .... = n x n matrices of coefficients,

y_t= Is the time series value of economic growth in Kenya at time, 't'

y_{t-1} = Is the lag 1 of time series

y_{t-2} = Is the lag 2 of time series

y_{t-p} = Is the lag, p, of the time series

e_t= a vector of serially uncorrelated error terms with mean of zero and a covariance of matrix

3.7 Description and Measurement of Study Variables

Following review of previous studies carried out using variables similar to the ones in the study model, it is expected that the study findings will exhibit the following behaviors in relation to the dependent variable under observation as shown in table 3.1.

Table 3.1: Variable Measurements and Expected Signs

Variable	Measurement	Expected Sign	Inference	Reference
Domestic Debt	Levels of domestic debt stock (DDS)	-ve	Due to the crowding out of local private investment, there is an inverse relationship between domestic debt and economic growth.	Gikandu (2008)
External Debt	Levels of foreign debt stock (FDS)	-ve	External debt and economic growth appear to be negatively correlated.	Maana *et al*. *et al*. (2008)

Export-to-GDP ratio	Level of Trade openness	+ve	The ratio of exports to GDP appears to be positively correlated with economic expansion.	Yao (2014)
Government expenditure (GE)	Levels of government spending	+ve	Government spending and economic expansion appear to be negatively correlated.	Dudzevičiūtė *et al*., 2018b)

3.8 Data Analysis

Data analysis is a process of investigating the available data and drawing conclusions from the findings. The results may be presented in a formal report, or distributed in a less formal format. It involves using statistical software, business intelligence tools and spreadsheet programs to examine large volumes of data and interpret them into useful insights. Data analysis is a key step in the research process. It is an essential part of making sure that the data collected is relevant and useful to the reader. Data analysis consists of transforming raw data into information and knowledge that can be used to make decisions, provide insights and recognize patterns.

3.8.1 Descriptive Analysis

In analysis of the quarterly data under consideration, the study carried out the measures of central tendency (descriptive statistics) such as frequency, mean, and median. The findings were presented in tabular format for ease in interpretation and comprehension.

3.8.2 Stationarity Tests

Stationarity is a condition utilized in of time series analysis to evaluate data quality for modeling. A stationary series is one that does not change over time, and therefore does not need any form of transformation such as seasonality adjustment. Stationarity tests can be performed for either manifest or latent variables. Stationarity is a way to determine whether or not the data being studied shows any trending or seasonal behavior. Stationarity is the assumption that data follow a stationary stochastic process over time. Stationarity is important in statistical analysis because non-stationary data tend to violate numerous tests of statistical significance (Levin-Lin Chu, 2002).

The study carried out various tests to establish the presence or absence of stationarity among variables. This is because non-stationarity may lead to biasness and spurious regression results, which makes the inferences to be misleading (Gujarati, 2004). Stationarity tests are a set of tools employed show stationarity of a test. The condition implies that the series should follow a linear trend that is, zero drift and have constant mean, variance and autocorrelation structure. If the series exhibits any of these four characteristics, then it is non-stationary and there is evidence of unit root present. Stationarity tests incorporate three important elements: level tests, trend tests and unit root tests.

Stationarity is required for statistical inference, including regression, correlation and some time series methods. A stationary time series, indicates a stable probability density function across time. Stationarity is a proven method for testing relationships in time series. The stationarity tests help to determine if the variables are going up or down over time. This can be especially helpful when trying to predict future values and make sure they fit into previous patterns. Stationarity is important in research, especially in economics. It is the continuing pattern of how things happen over time. The degree of stationarity of an economic variable is measured by the p-value of a test for non-stationarity. P-values are essentially probability numbers that have been calculated from a statistical test. This indicates whether or not a variable's mean has changed significantly over time. If a variable is found to be non-stationary, then it might still be transformed by differencing or differencing and/or seasonal adjustment methods. This means that any test applied to the series will have the same result regardless of when it is applied. There are three primary tests of stationarity used in the study include: Philips-Perron test, the Kwiatkowski–Phillips–Schmidt–Shin (KPSS) test and the Augmented Dickey Fuller (ADF) (Maddala and Wu, 1999).

The Augmented Dickey–Fuller test is used in time series to examine unit roots null hypothesis. In order to determine if a process is stationary, the ADF looks for a unit root in an autoregressive model of a given time series. In a time, series regression with numerous lagged dependent variables, the ADF test is an econometric method for examining the unit roots null hypothesis. The ADF test is a Phillips–Perron test used in econometrics, based on the idea that general error autocorrelation is not the only source of spurious non-

stationarity in time series, but other forms of serially correlated errors can also be present. Augmented Dickey-Fuller (ADF) test is used in testing an economic time series of a fixed order p for structural breaks in level, trend and volatility.

It searches for structural changes in the mean, variance and autocorrelation, which are called structural breaks that occur in economic time series. The forecast of ADF test is made by calculating the estimated values of all terms with t-statistics, which represent whether there is any evidence of any break or not. The test is performed by summing up lagged variations of the response variable to the regression model, as well as adding lagged dependent variables themselves to the regression equation.

Proponents argue that this approach improves upon earlier tests such as Granger causality and unit roots detection methods by incorporating both forward and backward correlations in the same model (Phillips and Perron, 1988). Alternative hypothesis is basically stationarity or trend-stationarity (Greene, 2002). However, it is not possible to achieve a 'strict stationarity' in time series, hence majority of studies test for second order stationarity (Nason, 2006).

The ADF operates on the hypothesis that:

H_0: The series Yt is I (1) or H_0: The series data is non-stationary against;

H_1: The series Yt is I (0) or H_1: The series data is stationary

The following model is used in the ADF test procedure:

$$\Delta y_t = \alpha + \beta t + \gamma y_{t-1} + \delta_1 \Delta y_{t-1} + \ldots + \delta_p \Delta y_{t-p+1} + \varepsilon_t \quad \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (3.10)$$

Where:

$\alpha =$ Is the constant

$\beta =$ The coefficient on a time trend, and

$p =$ Lag order of the autoregressive process

$\delta =$ Order of differential

$Y =$ Income

$\varepsilon =$Is an error term

t = Time

The Augmented Dickey-Fuller (ADF) statistic for the test results in a negative value. The more strongly the unit root hypothesis is rejected, at whatever level of confidence, the more negative the result is. The null hypothesis of 0 is then used as the null hypothesis for the unit root test against alternative hypothesis of 0. In order to determine the stationarity of the mode 1, an Augmented Dickey Fuller (ADF) test was carried out (Elliot, Rothenberg and Stock, 1996). By including lags of the order p, the ADF formulation supports higher-order autoregressive processes.

The Augmented Dickey-Fuller (ADF) test is a procedure for testing the null hypothesis of a unit root against alternatives of constant and decreasing trends or stationary. Augmented Dickey-Fuller (ADF) test is an economic test that helps to find out if there is any trend in the data. It can determine whether the time-series data has a unit root or not by using statistical tests. The ADF test is used to determine whether the series data have a unit root or not, with a significant probability and also determine whether we are at the beginning or end of a trend line.

To ascertain whether the null hypothesis is integrated of order one, a unit root test is applied to time series. Similar to the augmented Dickey–Fuller (ADF) test, the Phillips–Perron test addresses the scenario where y (t-1) is endogenous and the original Dickey–Fuller t-test is invalidated because the process producing the data for yt has a higher order of autocorrelation than is permitted in the test equation (Elliot, Rothenberg and Stock, 1996).While the ADF solves the endogeneity problem by including lags of y t as regressors in the test equation, the Phillips-Perron test makes a non-parametric correction to the original Dickey-Fuller test. The Phillips-Perron test is used to detect the presence of non-nested autoregressive models and is also known as the PP test. The Phillips–Perron test is a statistical test for detecting structural breaks in a time series.

It is useful for detecting changes in regime, where a regime is defined as the set of economic or financial factors that determine demand and supply in an economy. It consists of null hypotheses that are mutually exclusive and it works by testing if one or more of these hypotheses are true. If false, they will be rejected, while if true, they will not be rejected. The Phillips-Perron test is used to test the null hypothesis of a unit root in a time series.

The test is based on the idea that if the null hypothesis is true, then the autocorrelation function (ACF) should have an asymptote at zero for all lags and not vary much with respect to lags. If the ACF does not have such asymptote but instead decreases with increasing lags, then it is unlikely that the null hypothesis is true. The Phillips-Perron test is a macro econometric test that decomposes the variance of time series into trend, cyclical

and seasonal components. The test states that if the long-run null hypothesis is true (that is there is no unit root), then the augmented Dickey-Fuller (ADF) statistic should be asymptotically normally distributed with zero mean and finite variance since stationarity implies integrality as stated by Fuhrer (1993). Phillips-Perron (PP) Test is one of the most popularly used unit root tests; especially in studying the stationarity of time series. PP Test has had a long history which started in early 1980s and has come a long way since then. It is also known as Augmented Dickey Fuller Test or Unit Root and Cointegration Test. This test has been revised time and time again; starting from initial versions, up to the latest versions.

3.8.3 Cointegration Test

The cointegration test is used to determine the long-term stationaries of non-stationary linear combinations. The presence of cointegration between variables with respect to test outcomes may be seen as a true long-term relationship; in this instance, the variables were able to be employed in the model even when levels were present (Baum, 2013). The study was able to capture the equilibrium relationship between non-stationary series within a stationary model by using the cointegration technique. Furthermore, it aids in the avoidance of both spurious and inconsistent regression issues, which are more common when dealing with non-stationary data series regression. Cointegration also allows long-run and short-run information to be used in the same model, avoiding the problem of information loss that occurs when attempting to handle non-stationary series through differencing (Granger *et al*., 2004). The cointegration technique allows non-stationary series information to be captured without jeopardizing the computed equation's statistical validity.

The Johansen cointegration test was adopted for cointegration tests. The approach of Johansen, which is stated as a VAR of order p, is as follows:

$y_t = u + A_1 y_{t-1} + A_2 y_{t-2} + \ldots . + A_p y_{t-p} + \varepsilon$ ..... (3.11)

Where:

y_t= Is the time series value of economic growth in Kenya at time 't'

y_{t-1} = Is the lag 1 of time series

y_{t-2} = Is the lag 2 of time series

y_{t-p} = Is the lag p of the time series

u = Is a constant variable

A = Is a coefficient of the time trend

ε = Is an error term

t = Is the time in period

3.8.4 ARDL Regression Model

In order to investigate how public debt affects economic growth, the study employed lagged values for each of the four variables in an autoregressive distributed lag (ARDL) regression model. According to Shrestha and Bhatta, both non-stationary and mixed order of integration time series can be represented by an OLS-based model known as an autoregressive distributed lag (ARDL).

As a result, the study used an ARDL regression model incorporating macroeconomic variables such as gross domestic product (a measure of economic growth), domestic debt

stock, external debt stock, export to GDP ratio, and government expenditure, as indicated in equation 3.12.

$$\boldsymbol{Y_t = \beta_{j0} + \beta_1 Y_{t-1} + \beta_2 DDS_{t-1} + \beta_3 EDS_{t-1} + \beta_4 P_{t-1} + \beta_5 G_{t-1} + \varepsilon} \ldots\ldots\ldots \quad (3.12)$$

Where:

$\boldsymbol{Y_t}$ = GDP (as a proxy for economic growth), which is the measure of value of goods and services in US Dollars ($) produced by the Kenyan economy in time period t.

$\boldsymbol{Y_{t-1}}$ = GDP for the previous period t-1

$\boldsymbol{P_{t-1}}$ = Export-to-GDP ratio for the period t-1.

$\boldsymbol{DDS_{t-1}}$ = The domestic debt stock in Kenya for the period t-1.

$\boldsymbol{EDS_{t-1}}$ = External debt stock in Kenya for the period t-1.

$\boldsymbol{G_{t-1}}$ = Kenya's total government expenditure for the period t-1.

$\boldsymbol{\varepsilon}$ = Error term, which captures the effect of all other factors outside the study model that may have an influence on the economic growth of Kenya for the period under study.

The analysis was carried out using STATA 15 software.

3.8.5 Diagnostic Tests

The use of time series data poses great challenges in the econometric estimation of the model. Since the primary purpose of time series data is to be able to predict the relation between variables in the model, it is imperative that pre-estimation tests are carried out to ascertain the time series data properties, and be able to enhance the accuracy of the predictions made by the model. The diagnostic tests the study carried out on data include: normality test and heteroscedasticity test.

Normality test was to ascertain the skewness and kurtosis of the variables in the model. The tests used skewness, kurtosis and Jarque-Bera test. To test for normality, the study employed the Jarque-Bera (JB) test to compare the skewness coefficient (S) and kurtosis coefficient (K) of a variable, given by;

$$JB = n\left[\frac{S^2}{6} + \frac{(K-3)^2}{24}\right] \quad \text{..... (3.13)}$$

Where:

$JB =$ Jarque-Bera normality index

$n =$ Sample size

$S =$ Skewness coefficient

$K =$ Kurtosis coeffecient

As JB approaches zero, the more normally distributed the variable is, and thus we fail to reject the normality assumption that JB=0.

The study also conducted heteroskedasticity test. A random variable in a model is said to be heteroskedastic if the modification of the random error is different across elements of the vector, hence the absence of homoscedasticity. The absence of heteroscedasticity is one of the presumptions made by the traditional linear regression model. The study used the Breusch- Pagan test developed by Trevor Breusch and Adrian Pagan in 1979 to test for heteroskedasticity in a linear regression model. Since linear regression is premised on the assumption that the error terms are normally distributed, the Breusch Pagan tests whether the variance of the errors from a regression is dependent on the values of the independent variables, hence the name “Chi-Square” ($\chi 2$) test.

3.8.6 Hypothesis Testing

The hypotheses were tested at five percent significance level as captured in table 3.2.

Table 3.2: Hypothesis Testing

Hypothesis	**p-value**	**Decision Rule**
H_{01}: Domestic debt does not significantly affect economic growth in Kenya.	$p \leq 0.05$	Reject the null hypothesis.
H_{02}: External debt does not significantly affect economic growth in Kenya.	$p \leq 0.05$	Reject the null hypothesis.
H_{03}: Export to GDP ratio does not significantly affect economic growth in Kenya.	$p \leq 0.05$	Reject the null hypothesis.
H_{04}: Government expenditure does not significantly affect economic growth in Kenya.	$p \leq 0.05$	Reject the null hypothesis.

3.8.7 Ethical Considerations

Ethical observation was observed through seeking for permission from the University to undertaking the study, looking for NACOSTI permit and through the use of data for the intended research purpose only.

CHAPTER FOUR

RESULTS

4.1 Overview

The chapter outlines a descriptive statistic of data, normality tests carried out, and the empirical research findings obtained by regressing data using that STATA version 15 software.

4.2 Descriptive Statistics

The descriptive statistics for the data on Kenya's debt are displayed in table 4.1 below. Measures of central tendency such as the mean and median, are included in the statistics generated.

Table 4.1: Descriptive Statistics

Variable	Observations	Mean	Median
Y_t	124	4734608.3	4045125.01
P_t	124	0.2059	0.2058
DDS_t	124	1015191.51	552459.31
EDS_t	124	1051605.42	659032.72
G_t	124	1278344.23	1092183.81

Source: Author's Computation (2023)

The findings from 124 observations across from the first quarter of 1988 to the fourth quarter of 2018 gave a mean of 1015191.51 and 1051605.42 for domestic debt stock and external debt stock implying increased debt for Kenyan economy. Government expenditure had a mean of1278344.23 implying increased expenditure by the government to boost

economic growth. However, export to GDP ratio had a mean of 0.2059 indicating low level of export therefore, negatively affect economic growth in Kenya. The median showed a similar pattern across all the variable under study indicating the same effect to economic growth in Kenya.

4.3 Stationarity Test Results

When a random process is said to be stationary, it means that neither its mean nor its variance are affected by the passage of time (Gujarati, 2004). According to Nason (2010), non-stationarity implies the presence of unit roots, therefore, one should test for and eliminate unit roots to achieve stationarity of any given time series data. This is because non-stationarity may lead to biasness and spurious regression results that leads to misleading inferences. The study carried out the two primary tests of stationarity: Augmented Dickey Fuller (ADF) and Philips-Perron test**.**

The study employed ADF to check for presence of unit roots in data, to ascertain if the series is I (0) or I (1). If the absolute test statistic value is greater than the absolute critical value, the null hypothesis is rejected and hence, the series is said to be stationary. The test was carried on the variables of the model and the results obtained were as follows in table 4.3.

Table 4.2: Unit Root Test on Non-Lagged Model Variables

Variable	ADF Statistic	1 percent Critical Value	5 percent Critical Value	Comment
Y_t	3.545	-3.702	-2.980	Stationary
P_t	0.328	-3.702	-2.980	Non-stationary
DDS_t	-0.393	-3.702	-2.980	Non-stationary
EDS_t	0.793	-3.702	-2.980	Non-stationary
G_t	-1.126	-3.702	-2.980	Non-stationary

The test shows that the dependent variable Y_t has no unit roots hence stationary. All explanatory variables are non-stationary since unit roots are still present. Proceeding to regress the model with this kind of data would lead to spurious results. One way of eliminating unit roots is by obtaining differences of non-stationary variables. Therefore, the first differences of all explanatory variables in the model were obtained. The ADF was then performed on the first differences obtained, and the following results were obtained as seen in table 4 .3.

Table 4.3: ADF Unit Root Test on Variable Differences

Variable	ADF Statistic	1 percent Critical Value	5 percent Critical Value	Comment
Y_t	3.545	-3.709	-2.983	Stationary
P_t	-6.252	-3.709	-2.983	Stationary
DDS_t	-7.085	-3.709	-2.983	Stationary
EDS_t	-5.194	-3.709	-2.983	Stationary
G_t	-5.257	-3.709	-2.983	Stationary

After the first difference of explanatory variables, all variables in the study model are now stationary. Regression carried out on the variables is therefore valid, and results obtained thereof can be relied upon for policy recommendations (Akanni, 2021).

4.4 Johansen Cointegration Test Results

The Johansen cointegration test was employed in the study to see whether the variables had any long-term relationships. To determine whether the non-stationary variables are cointegrated at levels, a cointegration test was run. According to the theory of cointegration, deviations from a long-run route are considered stationary if there is a long-run relationship between two or more non-stationary variables. Because it permits testing for several cointegrating relationships, the Johansen cointegration test was preferred at 5

percent significance level. In addition, it is employed when all variables are integrated by one as shown in table 4.4.

Table 4.4: Cointegration Test Results

Variable	**None***	**At most 1**	**At most 2**	**At most 3**
Trace Test				
Eigen Value	0.50	0.14	0.09	0.02
Statistic	36.72	16.61	6.64	0.60
Critical Value	41.67	26.93	11.39	2.78
Prob.**	0.56	0.71	0.79	0.63
Max-Eigen Value Test				
Eigen Value	0.50	0.14	0.09	0.02
Statistic	20.11	9.06	3.14	0.60
Critical Value	28.49	19.15	14.23	2.78
Prob.**	0.59	0.71	0.52	0.66

There are no co-integrating equations, according to the Trace and Max-Eigen value cointegration results reported in Table 4.4. Accordingly, it follows that there is no long-term correlation between economic growth and the model's independent variables. This draws the conclusion that there was no long-term association between the model's study variables and the study fails to reject the null hypothesis.

4.5 ARDL Lag Length Determination

According to Kumari and Malhotra (2014), having too many regressors in form of lags inflate the standard errors of coefficient estimates and thus imply an increase in the forecast error. This therefore, implies that unnecessary lags should be omitted from the model to avoid estimation bias in the findings. The Akaike information criterion (AIC), Hannan-Quinn information criterion (HQIC), and the Schwarz/Bayesian information criterion (SBIC) were used to determine the lag lengths. The results are presented in table 4.5.

Table 4.5: Lag Length Determination

	Lag Length	**LL**	**LR**	**Df**	**P**	**AIC**	**HQIC**	**SBIC**
Y_t	0	-1634.23				60.5642	60.5784	60.6011
	1	-1490.62	287.22	1	0.000	55.2824	55.3108	55.3560
	2	-1479.43	22.397	1	0.000	54.9046	54.9472*	55.0151*
	3	-1479.42	.00462	1	0.034	54.9416	55.9984	55.0889
	4	-1477.16	4.5352*	1	0.017	54.8946*	54.9687	55.0780
P_t	0	-1501.53				58.6123	58.6265	58.6491
	1	-1433.05	296.95	1	0.000	53.1501	53.1786	53.2238
	2	-1418.82	28.461	1	0.000	52.6601	52.7028	52.7706*
	3	-1418.82	.00384	1	0.051	52.6971	52.7539	52.8444
	4	-1413.83	9.9915*	1	0.002	52.5491*	52.6201*	52.8733
DDS_t	0	-1590.55				58.9465	58.9607	58.9833
	1	-1456.02	269.07	1	0.000	54.0008	54.0292	54.0744

	Lag Length	LL	LR	Df	P	AIC	HQIC	SBIC
	2	-1435.56	40.925*	1	0.000	53.2799*	53.3225*	53.3904*
	3	-1434.76	1.5912	1	0.027	53.2875	53.3443	53.4348
	4	-1433.07	1.7915	1	0.011	53.2914	53.3624	53.4755
EDS_t	0	-1578.29				59.5815	59.5924	59.9536
	1	-1494.47	271.54	1	0.000	56.4532	56.5638	56.5862
	2	-1488.13	25.781	1	0.000	54.5982	54.5622*	54.5823*
	3	-1481.34	.01824	1	0.034	54.9452	54.8312	54.8935
	4	-1463.51	5.9813*	1	0.017	54.3462*	54.4832	54.3092
G_t	0	-1621.02				58.5672	58.9572	58.4632
	1	-1498.12	293.30	1	0.000	56.5319	56.5673*	56.6023*
	2	-1483.39	21.401	1	0.000	53.9542	53.7635	53.9752
	3	-1472.61	1.0352*	1	0.009	53.8539*	53.5975	53.5937
	4	-1471.52	2.6982	1	0.043	53.8335	53.8142	53.5919

The Akaike information criterion (AIC) and the Schwarz/Bayesian information criterion (SBIC) are the two most preferred information criteria to minimize selection of too large models. Using the AIC selection yields 4, 4, 2, 4, and 3 as the optimal lags for GDP (Y_t), export-to-GDP ratio (P_t), domestic debt (DDS_t), external debt (EDS_t), and government expenditure (G_t), while using SBIC selection yields 2, 2, 2, 4, and 4 as the optimal lags. Zeileis (2019) noted that SBIC is a consistent estimator of the true lag order as compared

to AIC, thereby implying that the study was based on the SBIC selection criterion for the model lag length to be adopted.

However, the good practice standards of optimal lag selection dictate that odd lag numbers are preferred to even numbers when selecting lag length. Given that SBIC selection yields 2, 2, 2, 4, and 4 as the optimal lags for GDP (Y_t), export-to-GDP ratio (P_t), domestic debt (DDS_t), external debt (EDS_t), and government expenditure (G_t), the convenient way is to select the model with the lowest SBIC meaning that the model lag selection adopted is 3,3,3,3 and 3.

4.6 Autoregressive Distributed Lag (ARDL) Regression Model Results

In the event that cointegration test fails to establish meaningful long-run relationship among underlying variables, Pesaran, Smith, and Shin (2001) posit that it is imperative to continue to work with lagged values of the variables or their differences instead, to fill up for the missing long run information. The ARDL model should be used, according to Pesaran *et al*. (2001), if the trace, maximal eigenvalue, or F-statistics show that there is only one or no long-run link between the variables. After determining that the model's variables do not have a long-term relationship with one another, autoregressive distributed lag (ARDL) regression is performed on the data using lagged values for each of the four variables.

The study therefore, used the Stata command $ARDL\ Y_t, P_t, DDS_t, ESDT_t, G_t, lags(3,3,3,3,3)$ to test for short run relationship among variable in the model, the following results in table 4.6 were obtained.

Table 4.6: ARDL Regression Model Results

Sample: 1988Q1 – 2018Q4 Number of Observations = 124

Prob > P = 0.0000

R-squared = 0.9364

Adj R-squared = 0.9259

Log likelihood = -1366.8809 Root MSE = 2.733e+10

Variable	**Coefficient**	**Standard Error**	**t**	**P>|t|**
Y_t				
L3	1.679034	.11763	14.2739	0.0004
Pt				
L3	1.74536	.10363	16.8422	0.0018
DDSt				
L3	-1.25342	.65342	1.9182	0.0032
EDSt				
L3	-1.09536	.04574	23.9475	0.0000
Gt				
L3	1.493762	.79856	1.85739	0.0011

Following regression of the optimal lags of the ARDL model, the findings in table 4.6 show that all the optimal lag variables are significant in the model, given that they all had a *p* value P>|t| less than 0.05. The R-squared and adjusted R-squared value of 0.9364 and

0.9259 respectively indicate that more than 90 percent changes in the dependent variable (economic growth) can be explained by the explanatory variables in the model.

From the study findings, it can be noted that one percent increase in export-to-GDP ratio (P_t) leads to a 1.75 percent increase in economic growth ($\beta = 1.74536,\ p < 0.05$) ; one percent increase in domestic debt stock (DDS_t) leads to a 1.25 percent decline in economic growth($\beta = 1.25342,\ p < 0.05$) ; one percent increase in foreign debt stock (EDS_t) leads to a 1.10 percent decrease in economic growth($\beta = 1.09536,\ p < 0.05$), while one percent increase in government expenditure (G_t) leads to a 1.49 percent increase in economic growth ($\beta = 1.493762,\ p < 0.05$), holding all other factors constant.

The research study findings show that there exists a significant inverse short-term relationship between economic growth and domestic debt as shown in table 4.6 where a one percent increase in domestic debt causes a 1.25 percent decline in Kenya's economic growth. However, the long-run correlation gave inconclusive results as shown in table 4.4.

The study's findings in table 4.6 show that a one percent increase in external debt causes a 1.10 percent decline in Kenya's economic growth. This shows that uncontrolled external debt has a negative effect on economic growth in Kenya.

The research study findings in table 4.6 show that there exist a 1.745 positive relationship between export to GDP ratio and economic growth in Kenya. The study however, notes that the relationship is solely short-run, with long-run tests showing inconclusive results as shown in table 4.4.

The research study findings in table 4.6 show that government expenditure have a significant short-run, positive relationship with economic growth in Kenya with a coefficient of 1.4937 at 95 percent confidence level. However, the long-run relationship gave inconclusive results in table 4.4

4.7 ARDL Bounds Test

In order to establish if there exists a long-run relationship between variables of the model, the study carried out a Bounds test on the ARDL regression model using the optimal lag lengths. The findings were as shown in table 4.7 below.

Table 4.7: r-Statistic ARDL Bounds Test

H_0: No levels relationship r = 2.975

t = 2.052

Critical values (0.1 – 0.01), **r-statistic**

	(I_0)	(I_1)	(I_0)	(I_1)	(I_0)	(I_1)	(I_0)	(I_1)
	L_.1	L_.1	L_.05	L_.05	L_.025	L_.025	L_.01	L_.01
k_2	3.17	4.14	3.79	4.85	4.41	5.52	5.15	6.36

Accept if r < critical value for I (0) regressors

Reject if r > critical value for I (1) regressors

Using the F-statistic to test, the value of r=2.975 was measured against the bound limits within the five percent significance level. It was found that the r-statistic of 2.975 is less than the lower bound of the critical value for I (0) regressors for 5 percent significance level. Therefore, the study fails to reject H_0 and conclude that there is no long run

relationship between variables of the model. Alternatively, the ARDL Bounds Test can be interpreted using the t-statistic as shown in table 4.8.

Table 4.8: t-Statistic ARDL Bounds Test

Critical values (0.1 – 0.01), **t-statistic**

	(I_0)	(I_1)	(I_0)	(I_1)	(I_0)	(I_1)	(I_0)	(I_1)
	L_.1	L_.1	L_.05	L_.05	L_.025	L_.025	L_.01	L_.01
k_2	-2.57	-3.21	-2.86	-3.53	-3.13	-3.80	-3.43	-4.10

Accept if t > critical value for I (0) regressors

Reject if t < critical value for I (1) regressors

Using the t-statistic to test, the value of t=2.052 was measured against the bound limits within the 5 percent significance level. It was found that the absolute t-statistic value of 2.052 is less than the lower bound of the critical value for I (0) regressors for 5 percent significance level. As a result of the mixed findings, therefore, H0 is not rejected and conclude that there is no convincing evidence of a long-term relationship between the dependent and explanatory variables in the model. Therefore, conclusions are drawn from the ARDL regression model results as presented in section 4.6 above, which demonstrates the short-term relationship between economic growth and the model's explanatory variables.

4.7 Normality Tests

Kurtosis describes the peaking and flattening of the distribution tail, whereas skewness reflects the direction and degree of asymmetry of a given distribution around its mean

(Cisar and Cisar, 2010). For a normal distribution, skewness is 0 with a kurtosis of 3 and the JB of 0. A positive kurtosis indicates a relatively peaked distribution while if the kurtosis is negative kurtosis the distribution will be relatively flat (Cisar & Cisar, 2010).

Table 4.9 Normality Test

Skewness	**Kurtosis**	**Jarque-Bera**
0.7	-0.8	4.6
0.7	0.9	3.9
1.4	0.7	9.1
1.1	0.1	6.1
0.7	0.8	4.6

From the above summary table, it can be seen that none of the model variables is absolutely normally distributed, since the differences of the mean and median are not equal. The distribution is positively skewed indicating that the GDP, export-to-GDP ratio, domestic debt, foreign debt, and government expenditure have increased over time. The positive kurtosis indicates that export-to-GDP ratio, domestic debt, foreign debt, and government expenditure are peaking, while the negative kurtosis shows that GDP has shown a slight decline.

CHAPTER FIVE

DISCUSSIONS

5.1 Overview

This chapter explains the synthesis and logical interpretation of the results and findings of the study.

5.2 Descriptive Statistics

The findings from 124 observations across from the first quarter of 1988 to the fourth quarter of 2018 gave a mean of 1015191.51 and 1051605.42 for domestic debt stock and external debt stock implying increased debt for Kenyan economy. Government expenditure had a mean of1278344.23 implying increased expenditure by the government to boost economic growth. However, export to GDP ratio had a mean of 0.2059 indicating low level of export therefore, negatively affect economic growth in Kenya. The median showed a similar pattern across all the variable under study indicating the same effect to economic growth in Kenya.

5.3 The Effect of Domestic Debt on Economic Growth in Kenya

The findings show a significant inverse short-term connection between economic growth and domestic debt as shown in table 4.6. The findings show one percent increase in domestic debt causes 1.25 percent decline in Kenya's economic growth. However, the long-run relationship inconclusive results shown in tables 4.4. This is caused by crowding out effect where increased public domestic borrowing reduces the space for private investors to access credit from domestic market. This supports the findings by Abbas (2007) and

Abbas and Christensen (2010) on the effect of domestic debt levels on economic growth. Abbas and Christensen (2010) noted that moderate levels of marketable domestic debt as a percentage of GDP have significant positive effects on economic growth. Christensen (2005) posits that domestic markets are generally small and highly short term with a narrower investor base. Abbas (2007) also found that domestic interest rate payments present a significant burden to the budget with significant crowding-out effects. Charan (1999) observed that it does not matter whether a government finances its spending with debt or a tax increase, the effect on total level of demand in an economy is the same.

The study findings that there exists a short-term relationship between domestic debt levels and economic growth tends to concur with earlier findings by Maana *et al*. (2008) that domestic debt expansion has a positive, long run and significant effect on economic growth. Adofu and Abula (2010) found out that domestic debt affected the growth of the Nigerian economy negatively and recommended that it be discouraged and instead concentrate on widening the tax revenue base.

5.4 The Effect of External Debt on Economic Growth in Kenya

The research study findings show that there exists short-term inverse relationship between economic growth in Kenya and external debt stock as seen in the ARDL regression results in table 4.6. The study's findings show that a one percent increase in external debt causes 1.10 percent decline in Kenya's economic growth. This supports Gargouri and Ksantini (2016), which suggested that since the time of its independence, Kenya has benefited from borrowing money from abroad to close the resource gap between tax receipts and

expenditures. However, this is not always been used as efficiently. Patillo *et al.* (2002), assessed the non-linear impact of external debt on growth suggested the average impact of debt becomes negative over time.

The study findings contradict earlier findings by Cohen (2013) on the correlation between developing countries debt and investment in late 90's and early 2000's, which showed that the level of stock of debt does not appear to have much power to explain the slowdown of investment in developing countries. It is the actual flows of net transfers that matter, and that the actual service of debt 'crowded out' investment. Elbadawi *et al*. (2006) also confirmed a debt overhang effect on economic growth using cross-section regression for 99 developing countries spanning SSA, Latin America, Asia and Middle East. Three direct channels identified in which indebtedness in SSA works against growth include: current debt inflows as a ratio of GDP (which should stimulate growth), past debt accumulation (capturing debt overhang) and debt service ratio. The fourth indirect channel works through the impacts of the above channels on public sector expenditures. This is because debt accumulation deters growth while debt stock spurs growth (Shabbir, 2012). Using the case study for Cameroon, Mbanga and Sikod (2001) found that there exist a debt overhang and crowding-out effects on private and public investments, respectively.

Other studies that have found a negative effect of external debt on growth include Boboye and Ojo (2012). Some studies simply use simulation analysis to show the impact of the debt burden indicators on economic growth under different scenarios (Examples include:

Ajayi, 2011; Osei, 2005; as well as Mbire and Atingi, 2007). Generally, most studies tend to confirm external debt overhang/crowding-out effects on economic growth.

5.5 The Effect of Export-to-GDP ratio on Economic Growth in Kenya

The research study findings in table 4.6 shows a 1.745 positive relationship between export to GDP ratio and economic growth in Kenya. This means that a balance between exports and import promotes economic growth. The study however, notes that the relationship is solely short-run, with long-run tests showing inconclusive results as shown in table 4.4. This shows that increased export to GDP ratio enhances economic growth in Kenya as a result of more foreign earnings.

Export-led growth is when a sizable portion of the increase in real GDP, employment, and per capita incomes results from the successful export of goods and services from one country to another. Thus, the study's findings are consistent with those of Yao (2014), who discovered that enacting free-market reforms, opening up to foreign trade and investment, and permitting more foreign investment enable a country to obtain direct access to resources and goods that are not easily accessible domestically.

In a study on the role of exports on Kenya's economic growth *vis-a-vis* other components of the GDP for the period 1975-2007, Otinga (2009) noted that exports have a greater positive impact to the GDP than other components. It was found imports, private and public investments to be negatively correlated with GDP, while exports were positively correlated with economic growth.

In another study on export led growth hypothesis for Kenya using autoregressive distributed lag (ARDL) bounds test approach, Ramesh and Boaz (2007) found that there existed a long-term relationship between economic growth and exports, and the relationship was unidirectional, running from exports to GDP growth. However, this study did not examine whether there was evidence of export led growth relating to different export components.

In an attempt to establish link between exports and economic growth in developing economies, Ahmad and Kwan (2001) carried out correlational analysis in 47 African countries. The results showed that there was no correlation between exports and economic growth or vice-versa in the African countries. However, the authors found that in some low-income African countries, minimal correlation runs from economic growth to exports. Similarly, Ukpolo (2004) in their study on net exports and economic growth in Ghana found that there is a positive relationship between non-fuel primary exports and economic growth. However, the regression results presented some inconclusive outcome on the role of manufactured exports on economic growth.

Similar studies conducted in countries outside Africa have seen diverse observations from different authors. Xu (1996) could not establish evidence for long-term relationship between exports and economic growth for Israel, Morocco, Tunisia and Turkey. However, it was confirmed that export led to growth for Israel and Tunisia. Emilio and Smith (2001) on the other hand examined short-term as well as long-term relationship between export and economic growth in Costa Rica. The study found out that export led growth hypothesis

was valid; however, the empirical results showed that physical investment and population mainly drove Costa Rica's overall economic performance from 1950 onwards.

Awokuse (2003) examined export led growth hypothesis for Canada by testing whether exports Granger Cause national output growth. The empirical results suggested that a long-run steady state existed among the model's six variables; GDP, labour, capital, foreign output shock, real exports and terms of trade and that Granger causal flow was unidirectional from real exports to real GDP.

5.6 The Effect of Government Expenditure on Economic Growth in Kenya

The research study findings in table 4.7 show that government expenditure have a significant short-run, positive relationship with economic growth in Kenya with a coefficient of 1.4537. This means that increased government expenditure promotes economic growth in the short-run. The long-run relationship gave inconclusive results in table 4.4, implying that there is no statistically significant reason to conclude that the long-term relationship exists between government expenditure and economic growth in Kenya.

Akpan (2005) maintains that the observed growth in public spending appears to apply to most countries regardless of their level of economic development. Researchers have particularly questioned whether increases in the size of federal budget tend to be initiated by changes in expenditure followed by revenues adjustments or by the reverse sequence or both (Baghestani and Mcnown, 1994, Akpan, 2005). A growing government is contrary to

a government's economic interest because the various methods of financing government such as taxes, borrowing and printing money have harmful effects.

Kneller *et al*, (1999) maintains that government spending by its very nature is often economically destructive regardless of how it is financed whereas Oyinlola (1993) observed that the size of government expenditure and its impact on economic growth have emerged as a major fiscal management issue facing economies in transition. Singh and Sahini (1984) have urged that a large and growing government is not conducive to better economic performance. For decades public expenditures have been expanding in many countries of the world. However, higher government expenditure may slow down overall performance of the economy (Barro *et a.,* 1992).

CHAPTER SIX

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Overview

This chapter provides the summary, conclusions and recommendation of the study.

6.2 Summary

This study sought to investigate how public debt, export to GDP ratio and government expenditure impacts economic growth in Kenya by considering secondary data from the National Treasury for period of first quarter of 1988 to fourth quarter of 2018. This time frame was chosen to capture key aspects that affected economic growth in Kenya. These includes: 1991-1994-Economic stagnation and aids suspension,1997-1999 loans to stabilize the economy,2003-2008 infrastructural development loans,2007-2008 post-election violence loans, 2014-first Eurobond, 2015-2018 SGR loan and 2018 second Eurobond.

6.3 Conclusions

The research study findings show that there exist short-term relations between economic growth in Kenya (proxied by GDP growth), and the explanatory variables of the model such as domestic debt stock, external debt stock, export to GDP ratio, and government expenditure.

From the findings of this study, it can be noted that there exists an inverse relationship between domestic debt stock and economic growth where one percent increase in domestic debt stock (DDS_t) leads to a 1.25 percent decline in economic growth.

It is also shown that there exists an inverse relationship between external debt stock and economic growth where one percent increase in external debt stock (DDS_t) leads to a 1.10 percent decline in economic growth

Whereas export to GDP ratio and government expenditure have positive relationship with economic growth where one percent increase in export to GDP ratio and one percent rise in government expenditure leads to 1.75 percent and 1.49 percent increase in economic growth respectively.

6.4 Recommendations

6.4.1 Recommendation for Management and Policy

From the results of this study, it is recommended that the government of Kenya should enhance management of public debt, both domestic and external while also enhancing proper debt management systems. The government should also initiate programs that encourage increase public expenditure on areas such as education, health and infrastructure.

The government promote home grown industries and use of locally available materials in order to reduce dependency on import. These will ensure a healthy economic growth and sustainable public debt.

6.4.2 Recommendation for Further Research

The study suggests that stronger econometric models be developed to try and establish the long-run effects of explanatory variables under observation and Kenya's economic growth

because earlier research on the long-run relationship between economic growth and explanatory variables in the model had produced inconclusive results.

The study also recommends an investigation on other factors affecting economic growth in Kenya such as inflation.

REFERENCES

Abbas , K., & Mahmood, T. (2011). Fiscal Effects of Monetary Seigniorage: A Case Study ofPakistan. *Pakistan Development Review, 33*(4), 1113-1119.

Abbas, A., & Christensen, J. (2007). *The Role of Domestic Debt Markets in Economic Growth: An Empirical Investigation for Low-income Countries and Emerging Markets. IMF WP 07/127.* Washington DC: International Monetary Fund.

Adam, C. S., & Bevan, D. L. (2005). Fiscal deficits and growth in developing countries. *Public Economics, 89*, 571-597.

Agnello, L., & Sousa, R. (2009). *The determinants of public deficit volatility.* Frankfurt, Germany: European Central Bank. Retrieved from https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1042.pdf?3b579285054bdeb103e5dbf180b52d06

Aso, Y. (2016). Sustainability of Budget Deficits. *Public Policy Review,, Vol.9,* (No.4), 661-686.

Baron, D., & Ferejohn, J. (1989). Bargaining in legislatures. *American Political Science Review, 83*, 1181–1206.

Barro, R. J. (1979). On the determination of the public debt. *Journal of Political Economy, 87(5)*, 940-971.

Barro, R. J. (1989). Public Debt in Developing Economies. *Journal of Political Economy, 116(7)*, 458-472.

Battaglini, M., & Sergeant, C. (2006). *A Dynamic Theory of Public Spending, Taxation and Debt. NBER Working Paper No. w12100.* New York: National Bureau of Economic Research, Inc.

Battaglini. M. & Coate, S. (2008). *Fiscal Policy over the Real Business Cycle: A Positive Theory. NBER Working Paper No. 14047.* . New York: National Bureau of Economic Research, Inc.

Bohn, H. (1998). The Behavior of U.S. Public Debt and Deficits. *Quarterly Journal of Economics, 113(3)*, 949-963.

Cashell, B. W. (2007). *The Federal Government Debt: Its Size and Economic Significance, CRS Report RL31590.* Washington DC: United States Congress Research Services.

Castro, F., & Cos, P. (2006). *The Economic effects of exogenous fiscal shocks in Spain.* Frankfurt, Germany: European Central Bank,.

Central Bank of Kenya. (2009). *Kenya's Public Debt Status.* Nairobi: The Treasury.

Central Bank of Kenya. (2019). *Kenya's* . Nairobi: The Treasury.

Cisar, P., & Cisar, S. M. (2010). Skewness and Kurtosis in Function of Selection of Network Traffic Distribution. *Acta Polytechnica Hungarica, 7*(2), 95-106.

Dudzeviit et al.(2018a). *Government expenditure and economic growth in the European countries. International Journal of Social Economics,45(2), 372-386.*

Dudzeviit et al.(2018b). *Education and Economic development in the selected European countries*.European Journal of Sustainable Developmet, 7(2),14-28

Gujarati, D. (2004). *Basic Econometrics (4th Ed.).* New Delhi: McGraw-Hill Companies.

Hakkio, G. C., & Rush, C. A. (1991). Keynesian Economics: The Search for First Principles. . *Economica, 51(202)*, 207-208.

Huyuh, N. (2007). *Budget Deficit and Economic Growth in Developing Countries: The Case of Vietnam.* . Ishikawa: Kansai Institute for Social and Economic Research.

Keynes, J. M. (1936). *The General Theory of Employment, Interest and Money. (Reprinted 2007).* London: Macmillan.

Kitabire, D., Oumo, P., Mwega, F., & Beckerman, P. (2009). The Debt Experiences of Uganda, Kenya and Bolivia. *Compendium on debt sustainability and development* (pp. 89-114). United Nations.

KNBS. (2008). *GDP: Second Quarter 2008.*

Kothari, C. (2004). *Research Methodology: Methods and Techniques. Second Edition* . New Delhi: New Age International (P) Limited.

M'Amanja, D., & Morrissey, O. (2005). *Fiscal Policy and Economic Growth in Kenya.* CREDIT Research Papers.

Maana, J., Owino, R., & Mutai, N. (2008). (2008). Domestic debt and its impact on the economy-the case of Kenya. *13th Annual African Econometric Society Conference. Pretoria, South Africa.* (pp. 16-28). Pretoria: African Econometric Society.

Majune, S., Kimani, D., & Khayo, E. (2019). Kenya's Soaring Public Debts and the Jubilee Government Development Agenda. *International Journal of Contemporary Economic Affairs*, 306 - 327.

Mankiw, G. N. (2012). *Macroeconomics, 8th Edition.* New York: Worth Publishers.

Motley, B. (2007). Ricardo or Keynes: Does the government debt Affect Consumption. *Federal Bank of San Francisco Economic Review.*, 47–62.

Mwai, E. (2018). *Sustainability of Public Domestic Debt in Kenya: An Empirical Analysis.* University of Nairobi, School of Economics. Nairobi: Unpublished Masters of Arts in Economics research paper.

Nandelenga, M. (2013). *Debt sustainability and the optimal debt in Kenya.* Unpublished Master of Economics (Econometrics) research paper, Kenyatta University, Nairobi.

Nyongesa, D. N., Mukras, M. S., & Momanyi, G. (2013). Is Kenya's Current Account Sustainable? A Stationarity and Cointegration Approach. *European Scientific Journal, 9(2)*, 171-190.

Onwioduokit, E., Bassey, G. E., & Ugo, P. (2014). Fiscal Deficit and Economic Growth in the Gambia. *International Journal of Current Research and Review, 5(22)*, 38-51.

Osuka, P., & Chioma, A. J. (2014). The Impact of Budget Deficits on Macroeconomic Variables in Nigeria. *International Journal for Innovation Education and Research, 3(2)*, 2-11.

Ptunoi, G. K., & Mutuku, C. (2013). Domestic Debt and Economic Growth Nexus in Kenya. *Current Research Journal of Economic Theory, 5*(1), 1-10.

R., H. N. (2001). Foreign direct investment, financial development and economic growth. *Journal of development studies, 40(1)*, 142-163.

Ristil, .., Nicolaescu, C., & Tagaduan, D. (2013). Budget Deficit Effects on Economic Growth. *Journal of Economics and Business Research, 2(1)*, 321-356.

Stiglitz, J. (2012). *Economy of the Public Sector.* New York: W.W. Norton and Co.

Tešić, A., Ilić, D., & Đelić, A. T. (2014). Consequences of Fiscal Deficit and Public debt in Financing the Public Sector. *Economics of Agriculture, 14(13)*, 336-344.

Tiamiyu, K. (2025). Public Spending and Private Investment: Testing the Crowding-Out Hypothesis in Nigeria (1981–2020).

Were, M. (2011). The Impact of External debt on economic growth and private investments in Kenya: An empirical assessment. *UNU-Wider Development Conference on Debt Relief* (pp. 17-18). Helsinki: Kenya Institute for Public Policy Research and Analysis.

World Bank. (2019). *Economic Outlook: Africa.* Washington DC: World Bank.

APPENDICES

Appendix I: Secondary Data Review Matrix

Kindly fill in the below secondary data review matrix on the survey.

Year	Domestic debt	Government expenditure	External debt	Export to GDP ratio	Economic growth

Thank you for your time and responses.

Appendix II: Introduction letter

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P. O. Box 1125 - 30100, Eldoret, Kenya
Tel: +254 53 2063257 /2033712/13 Ext. 2358
Mob: 0774249552;; Fax: +254 53 206 3257
E-mail: bpgs@uoeld.ac.ke
Website: www.uoeld.ac.ke

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Dear Cherowei,

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Congratulations on the successful defense of your thesis research proposal titled "**Effects of Public Debt on Economic Growth in Kenya**" on the 21st September, 2021.

The supervisors assigned to guide you through your research are:

Lead Supervisor: Dr. Winrose Chepng'eno - Department of Applied Economics
University of Eldoret

Co-Supervisor: Dr. Paul Odwori - Department of Applied Economics
University of Eldoret

Subsequently, the Board of Postgraduate Studies hereby grants you clearance to undertake the proposed research work. Please note that during the entire period of research you shall be expected to work closely with your supervisors. You are required to observe professionalism and ethics during the period of research.

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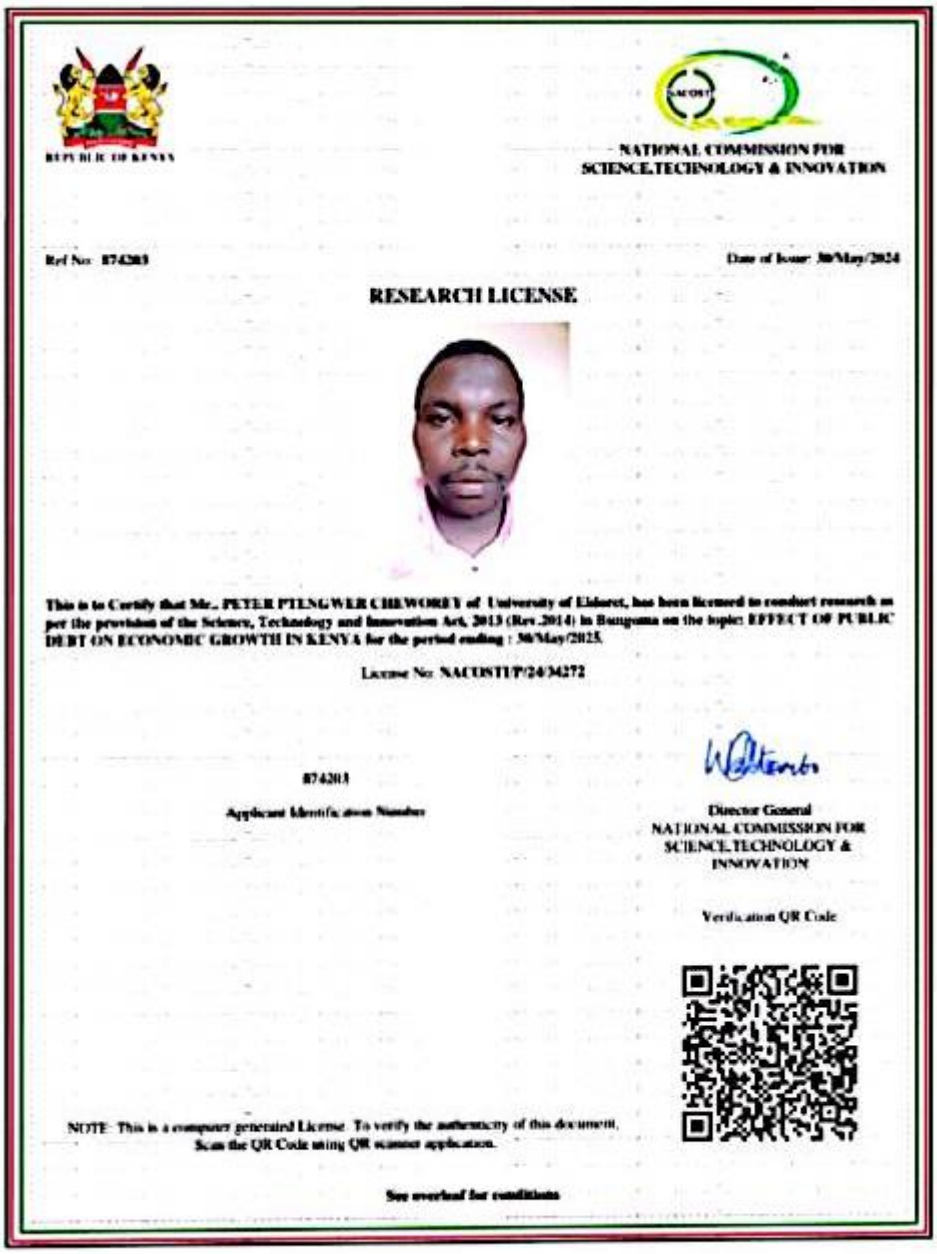

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