

**EFFECT OF PUBLIC DEBT ON FINANCIAL DEVELOPMENT IN
KENYA**


RODGERS MWAI

**A RESEARCH PROJECT SUBMITTED IN PARTIAL FULFILMENT
OF THE REQUIREMENT FOR THE AWARD OF THE DEGREE OF
MASTER OF BUSINESS ADMINISTRATION, FACULTY OF
BUSINESS AND MANAGEMENT SCIENCES, UNIVERSITY OF
NAIROBI**

NOVEMBER 2022

DECLARATION


I, the undersigned, declare that this is my original work and has not been presented to any institution or university other than the University of Nairobi for examination.

Signed:  Date: 19 NOV 2022

RODGERS MWAI

D61/36220/2019

This research project has been submitted for examination with my approval as the University Supervisors.

Signed:  Date: 19 November 2022

PROF. CYRUS IRAYA

DEPARTMENT OF FINANCE AND ACCOUNTING

FACULTY OF BUSINESS AND MANAGEMENT SCIENCES

UNIVERSITY OF NAIROBI

ACKNOWLEDGMENT

I am grateful to God for His mercies and provisions during the period of preparing this project. My sincere gratitude goes out to my supervisor, Prof. Cyrus Iraya, for the patience he has exercised in guiding me through this project. My special thanks to my family for their moral support. I also thank the library staff for giving me access to the resources I needed to complete this project. Under their mentorship I have acquired a love for research and the discipline to submit work on time.

DEDICATION

This research project is dedicated to my mother Lesah Mutuku for her eternal love, guidance and unending support for my education.

TABLE OF CONTENTS

DECLARATION.....	ii
ACKNOWLEDGMENT	iii
DEDICATION.....	iv
LIST OF TABLES	viii
LIST OF ABBREVIATIONS	ix
ABSTRACT.....	x
CHAPTER ONE: INTRODUCTION.....	1
1.1 Background of the Study.....	1
1.1.1 Public Debt	2
1.1.2 Financial Development.....	3
1.1.3 Public Debt and Financial Development	5
1.1.4 Public Debt and Financial Development in Kenya	6
1.2 Research Problem.....	6
1.3 Research Objective.....	9
1.4 Value of the Study.....	9
CHAPTER TWO: LITERATURE REVIEW	10
2.1 Introduction	10
2.2 Theoretical Foundation	10
2.2.1 Debt Overhang Theory	10
2.2.2 Crowding-Out Effect Theory.....	11
2.2.3 Functional Finance Theory	12
2.3 Determinants of Financial Development.....	14
2.3.1 Public Debt	14
2.3.2 Interest Rates	14

2.3.3 Inflation Rate	15
2.4 Empirical Studies	16
2.4.1 Global Studies.....	16
2.4.2 Local Studies	18
2.5 Conceptual Framework	21
2.6 Summary of the Literature Review and Research Gaps	21
CHAPTER THREE: RESEARCH METHODOLOGY	23
3.1 Introduction	23
3.2 Research Design.....	23
3.3 Data Collection.....	23
3.4 Diagnostic Tests	24
3.5 Data Analysis	25
3.5.1 Analytical Model	25
3.5.2 Tests of Significance	26
CHAPTER FOUR: DATA ANALYSIS, RESULTS AND FINDINGS	27
4.1 Introduction	27
4.2 Descriptive Analysis	27
4.3 Diagnostic Tests	27
4.3.1 Autocorrelation Test.....	28
4.3.2 Multicollinearity	28
4.3.3 Normality Test.....	29
4.3.4 Stationarity Test.....	30
4.4 Correlation Analysis.....	30
4.5 Regression Analysis	32
4.6 Discussion of Research Findings	34

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS	37
5.1 Introduction	37
5.2 Summary of Findings	37
5.3 Conclusion.....	38
5.4 Recommendations	39
5.5 Limitations of the Study	40
5.6 Suggestions for Further Research	41
REFERENCES.....	42
APPENDICES.....	47
Appendix I: Research Data	47

LIST OF TABLES

Table 3.1: Diagnostic Tests.....	24
Table 4.1: Descriptive Statistics	27
Table 4.2: Autocorrelation Results	28
Table 4.3: Multicollinearity Test	29
Table 4.4: Normality Test Results	29
Table 4.5: Stationarity Test.....	30
Table 4.6: Correlation Analysis	31
Table 4.7: Model Summary	32
Table 4.8: Analysis of Variance.....	33
Table 4.9: Model Coefficients	33

LIST OF ABBREVIATIONS

ARDL	Auto-Regressive Distributive Lag
CBK	Central Bank of Kenya
CLRM	Classical Linear Regression Model
EU	European Union
GDP	Gross Domestic Product
IMF	International Monetary Fund
KNBS	Kenya National Bureau of Standards
SPSS	Statistical Package for Social Sciences
UNCTAD	United Nations Conference on Trade and Development
VIF	Variance Inflation Factors

ABSTRACT

Safe asset view and lazy bank view have been suggested for the interaction between public debt and financial development. Lazy bank view suggests that banks with greater public debt instruments increase their profitability but decrease their efficiency and in turn lowers financial depth in time. On the other side, safe asset view asserts that limited amount of public borrowing supports financial development. So, the net influence of public borrowing on financial sector development depends on public borrowing level and country specific characteristics. The objective of this research was to determine the effect of public debt on Kenya's financial development. The study was anchored on debt overhang theory and supported by crowding out effect theory and functional finance theory. The independent variable was public debt operationalized using debt service to revenue ratio and debt service to export ratio while the control variables were; interest rate and inflation. The dependent variable that the research attempted to explain was the financial development in Kenya. The data was collected on a quarterly basis over a period of twenty years (from January 2002 to December 2021). A descriptive research approach was employed in the research, with a multivariate regression model used to examine the connection between the study variables. The study's findings yielded an R-square value of 0.282, indicating that the chosen independent variables could explain 28.2 percent of the variance in Kenya's financial development, while the other 71.8 percent was due to other factors not investigated in this study. The F statistic was significant at a 5% level with a $p=0.000$. This suggests that the model was adequate for explaining financial development in Kenya. Further, the findings demonstrated that debt service to revenue ratio, debt service to export ratio and interest rate had a positive and significant influence on Kenya's financial development. Inflation had no significant influence on Kenya's financial development. The study recommends the need for practitioners and policy makers to ensure to develop target debt service to revenue ratio and debt service to export ratio that will promote financial development. The policy makers should also ensure that both the government revenue and exports keep increasing with a rise in debt service. Future studies can focus on other determinants of financial development in Kenya such as financial literacy, unemployment among others. Future studies can also focus on a longer study period to confirm the findings.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

There is an ongoing discussion on the association between public deficit and monetary development. Governments that rely on bank lending to finance their developments are at risk of harming their countries' financial development. Additionally, with lower financial depth, the outcomes of public borrowing on macroeconomic outcomes and financial growth are more adverse. Public debt guarantees depositors as well as supports the private sector in enhancing their economic growth (Kumhof & Tanner, 2005). On the contrary, increased public debt can be significant to monetary development since high-interest rates could lead to bank credit being unavailable to the private sector (Ismihan & Ozkan, 2012).

This study was anchored on debt overhang theory and supported by crowding out effect theory and functional finance theory. The debt overhang theory by Krugman (1988) elaborates the indirect link between public debt and financial development as huge debt service reduces the capacity of governments to save and invest thus slowing down economic growth and consequently financial development. The postulation of crowding out effect brought forward by McConnell and Brue (1990) clearly asserts that the tendency of a government to borrow works to enhance interest rates of credit market which is a big blow to the private sector and keeps them at bay and un-operational which is a huge deterrent of economic development. The functional finance theory by Lerner (1943) holds that taxes and government spending are aimed at holding an economy's total expenditures at levels that are conducive and compatible with full employment at the current price.

Most countries across the world depend on external and internal financing in meeting their development and recurrent expenditure due to the occasional budget deficits. It is evident that in developing countries, the debt limit is significantly lower than in developed ones. According to International Monetary Fund (2021), unsustainable borrowing by governments in Sub-Saharan Africa has become problematic in recent years with incentives often pushing against debt transparency according to the economic outlook study. Between 2013 and 2020, the public debt of Kenya for example increased by 50%, that is, it came from 40% higher up to 60% of the total GDP, positioning the country as one of the world's countries with a fast and developing credit accumulation (World Bank, 2020).

1.1.1 Public Debt

Bonga, Chirowa, and Nyamapfeni, (2015) define public debt as money owed by governments from both foreign and domestic lenders; it increases as governments engage more in deficit spending. Debt is often sought to bridge the financial gaps in financing large infrastructure investments, leveraging economic crises, budget deficits, unforeseen calamities such as natural disasters and wars, or even increasing public expenditure. Aybarc (2019) refers to debt as an ideal tool for economic growth given that it is financed efficiently and utilized productively on self-sustaining development projects. UNCTAD (2021) defined public debt as either internal government borrowing or external government borrowing. The current study will adopt the definition by UNCTAD (2021) that takes into account both internal and external debt.

Excessive debt results in problems if the debt servicing capacity of a country does not keep pace with the growth of debt; in this case, governments spend more of their tax

collections on servicing the debts than delivering services to the citizens. Governments will borrow to service already existing debt, finance the ballooning recurrent government expenditures and fail to invest in development projects thus no new source of revenue is created to repay the debts in the future. Public debt can be raised either externally or internally, borrowing internally may be appealing; however, it often encounters challenges that steer a country to seek external debt. These challenges include; narrow tax bases, weak tax administration processes, and under subscription of bonds and bills (Onyekwena & Ekeruche, 2019).

Public debt is a percent or a portion of the GDP making it become utilized as an indicator of the ability and capacity of a country to service its debt. The IMF also outlines the following as conventional measures of a country's debt burden; debt-to-exports ratio and the ratio of scheduled debt service to government revenues. Since external debt must be serviced by foreign exchange earned from exports, it is, therefore, paramount to use the debt service ratio as a measure of the debt burden caused by external debt (Sansa, 2020). This study focused on measuring the debt burden caused by a country incurring public debt by using the following macroeconomic indicators; debt service to government remuneration and debt service export ratio.

1.1.2 Financial Development

World Bank (2019) holds that financial development is a process that involves an increase in the provision of financial services by supplying financial resources to the economy. Roubini and Bilodeau (2018) hold that financial development is the designing of policies, infrastructural factors, and institutions that enable broad access to monetary and financial benefits as well as monetary intermediation that is effective. Mehrotra and

Yetman (2015) defined this as the enhancement of the financial services that are customized to serve all societal hence increasing the accessibility and the availability of financial services in the economy. The current study will adopt the definition from World Bank (2019).

The importance of developing financially is in the public knowledge in development policy and is considered the first thing in many countries. This knowledge enables the productive resources to be allocated efficiently, creating access to the appropriate financial services thus reducing the growth of informal credit sources. Financial development enhances the mobilization, pooling, and channeling of the saving into a productive capital pool that enhances human development (Rahman & Mustafa, 2015). It is widely accepted that financial development is important for long-term economic and human development (Adan, 2017).

Financial development has been measured using several variables. Robinson (2016) used the return on a stock and the change in market prices to assess financial development in India. Makau (2015) utilized the capitalization rate as a representative of economic growth in his study. Changes in stock market prices and return on stock were employed as metrics of financial development in research by Imala (2015) on how macroeconomic variables affect financial development in Nigeria. Mehrotra and Yetman (2015) measured financial development with relation to credit as the credit percentage of the private sector to GDP. The current study measured financial development by utilizing any debt issued to private sector by financial organizations, such as banks then dividing it by the GDP.

1.1.3 Public Debt and Financial Development

Modern approach to public deficit argues that public debt does not in any way burden the residents because it still belongs to them and the resources remain in the country only that they are transferred to bondholders from the taxpayers. The modern theory of public debt holds that more income enables the payment of taxes, which is then used to pay the interests of the debts (Renjith & Shanmugam, 2018). The theory also assumes that with increased public borrowing there is the development of the banking industry, capital markets, and stock market insurance companies (Coupet, 2017).

A safe asset view and lazy bank view have been suggested for the interaction between public deficit and monetary development. The lazy bank view implies that banks with greater public debt instruments raise their profitability but lower their efficiency and in turn lowers monetary depth in time. On the other side, the safe asset view asserts that a restricted amount of public borrowing supports financial development (Hauner, 2009). So, the net influence of public borrowing on financial sector development depends on public borrowing level and country-specific characteristics (Achwoga, 2016).

Public debt is likely to suffer severe implications on a country's financial system if the debt increase discourages the financial negotiators from loaning money to the private sectors since the private credit to GDP ratio serves as a reasonable indicator of economic growth (Levine et al., 2012). Financial growth is vital as it impacts economic growth as well as development. However, public debt is one of the elements that affect financial development. Financial development could either be affected negatively or positively depending on the way the private credit is affected by public borrowing (Hauner, 2009).

1.1.4 Public Debt and Financial Development in Kenya

The Kenyan public debt has shown an increase for a period surpassing the last one decade. Data from The National Treasury about fiscal outturn released in September 2020, revealed a significant increase in public debt for FY2019/20, taking Kenya back to the fiscal consolidation path (World Bank, 2021). The Fiscal deficit has grown from 7.7 percent (in the previous years) to now 7.9 percent of the GDP in FY2019/20 that being the reason for the target being missed in FY2019/20 (of 7.0 % of GDP) by close to a complete ratio threshold of GDP. It has continuously outcome in pushing out the private sector, unexpected hike in allocation deficit as well as the average increase of credit in the private sector.

In regards to financial development, a report by the World Bank (2020) shows the country's financial sector has grown significantly in terms of both complexity and size thus boosting the overall economic growth to a great extent. The sector constitutes mainly insurance, banking, capital markets, savings and credit cooperatives as well as pensions. Money remittances companies, Foreign exchange bureaus, finance development institutions and Microfinance institutions are other major players. Resolution organizations and safety nets also exist to incorporate the compensation funds for; the policyholders of the insurance industry, the Kenya deposits insurance as well as the commercial microfinance bank. Capital markets incorporate the investor compensation fund.

1.2 Research Problem

Ayadi, Groen, Arbak, and Naceur (2013) argue that public debt negatively impacts financial development through the reduction of credit, but capital inflows increase

income and thereby national saving and, therefore, positively impact financial development. Janda and Zetek (2015) argued that since the government is the leading financier of small and medium enterprises, a rise in government debt might negatively impact the pricing of finances due to the demand-supply consideration of rising country's financial risk. According to Ali and Ahmed (2016), government debt affects financial development through fiscal tightening. Fiscal tightening tends to negatively affect the outcome and the ability of investors and domestically to borrow from financial institutions; hence the volume of private debt may reduce Affonso and Jallies (2017) opines that public external debt composition and structure have different time-varying effects on financial development.

Kenya experiences a decline in credit growth, inadequate access to monetary benefits, and inadequate monetary product diversity (Absa Africa Financial Report, 2019). In addition, the financial development measure, private credit to GDP (%), for Kenya has been below the low, and medium-income countries average for the period 1964-2020 (World Bank, 2021). On the contrary, Kenya has consistently accumulated the tier of public debt used in financing budgets. In Kenya, the ratio of deficit and GDP increased beginning with 25.4% 1963 and up to 60% in 2020. Escalation of public debt is likely to negatively affect the achievement of several marks such as the GDP increase of 10.6 percent and the reduction of the debt to GDP ratio to 39.2% in the year 2017 (the Republic of Kenya, 2018).

There are several empirical studies conducted in this area. Globally, Ilgün (2016) explored the same nexus for 18 emerging economies through cointegration analysis where it was established government borrowing harms financial growth in the long term.

Benayed and Gabsi (2020) explored the influence of domestic public borrowing on bank credit to private sector in 20 low-income Sub-Saharan African nations and revealed an inverted-U relationship between domestic public borrowing and private credits by banks. A study was conducted on the varying association connecting economic development and external debt in 43 countries in Africa between 2001 and 2018. The conclusion drawn from this research was that foreign deficit has a significant adverse impact on the development of African Nations (Ehikioya et al., 2020).

Locally, Mwangi (2017) tried to research and establish the way in which internal and external debts affected the development of the Kenyan economy. This study established that internal debt possesses negligible but favorable impact on the development of the economy while external debt, revealed a substantial but negative association with growth. Ochieng' (2018) studied how the government's domestic borrowing impacted the development of the monetary sector in Kenya. The analysis revealed a positive effect. Kipyego (2021) focused on the relationship between Kenya's financial development and public debt where he revealed both public domestic and exterior deficits have a statistically notable negative association with Kenya's monetary development in the long run as well as the short run.

Although several studies in this area have been conducted there, still exist contextual, methodology, and conceptual gaps. The conceptual gaps mostly relate to the operationalization of study variables and conflicting result findings. Further, the studies carried out were done using methodologies in varying contexts making the generalization of the findings to a specific context difficult. Additionally, none of the conclusive studies has documented interactions between public debt and monetary development in Kenya

using the measures proposed in the current study hence an empirical literature gap. That takes us to our study research question, what effect does public debt have on financial development in Kenya?

1.3 Research Objective

The study sought to establish the effect of public debt on financial development in Kenya

1.4 Value of the Study

The review will compliment all theoretical stated details and information on debt overhang theory, functional finance theory, and crowding out effect theory. The study will as well add value to the practical publications on public debt and financial development. In addition, studies may also be conducted in line with the recommendation and suggestions to enhance for additional study.

This research is also valuable to institutions that are policymakers such as the government leadership and other economic authorities responsible for the formulation of various policies on financial development and public debt. This study is useful to the bodies in charge of policy-making who may use the recommendations from the study to design effective borrowing strategies that would enhance economic growth.

The study will have a massive impact on management of all organizations that have been given the responsibility of overseeing public deficit and financial development. It will also be instrumental to investors because it will help them understand the effects of public debt and guide them into taking the necessary steps.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This section outlines all other theories that have been incorporated to guide this study and the relationship existing between the study variables together with any empirical linkages that exist between the variables under study. From this review, a conceptual framework has been developed.

2.2 Theoretical Foundation

The main propositions utilized to interpret the effect of public debt on financial development include debt overhang theory, crowding out effect approach, and functional finance approach.

2.2.1 Debt Overhang Theory

This is the anchor theory of the current study and it was developed by Krugman (1988); deficit overhang is defined as “a situation in which the expected payment of principal and interest on foreign debt incurred by a country falls short of its contractual value”. If a country accrues unsustainable levels of debt that exceed its ability to repay by a given percentage with time, the anticipated deficit benefit is anticipated to form an increasing operation of tier of output for that particular country. High foreign interest payments can raise domestic interest rates and also increase the budget deficit, thereby slowing investments and reducing public savings since a large share of a country’s financial resources are allocated to debt service.

The theory is on the premise that as the amount of outstanding debt surpasses a certain threshold level known as the debt overhang level; the ability or willingness of a country

to repay its debts begins to diminish. This is predominantly the case when governments begin to default on debt payments to impede the adverse effects of very high debt service. Borensztein (1990) emphasizes that debt overhang is “a position in which the debtor country gains significantly low from the return of any additional investment due to the increasing debt service obligations.”

On the other hand; Mesjasz (2011) states that a reduction in the face value of future debt obligations increases investment and the repayment capacity of a country consequently leading to sustained economic growth which is a critical determinant of poverty reduction. However, if a country accumulates unsustainable debt, it lowers growth and further curtails the government's savings, investments, and social spending, thus reducing the potential for poverty-related spending (Clements, Rina & Nguyen 2005). This theory indicates that high levels of debt have an impact on financial development due to the decreased levels of public investments.

2.2.2 Crowding-Out Effect Theory

This theory was developed by McConnell and Brue (1990). According to Karazijene (2015), this approach posits that the tendency of borrowing by a government increases interest rates in the credit market which is a blow to the private sector and thus it lowers the possibility of future investments. With these increasing interest rates and crowding out the private sector, higher national deficit has the influence of lowering business activities and also decreasing the growth of the economy according to Coupet (2017). This proposition of crowding-out effect is a section contained in the more diverge neoclassical hypothesis discussed by Lwanga and Mawejje (2014), which posits that underwriting debts leads to the crowding-out of investments which consequently leads to

low formation of capital. A consistent deficit of the budget is a tool that drains the national savings of a country (Hyman, 2014). The decrease in these savings may end up raising the real interest rates which in turn becomes a barrier to investment and consequently decelerate the growth of the economy.

A major constraint with the approach comes up because the approach requires full utilization of resources, but very occasional thrifts, Kenya included, are capable to accomplish. Similarly, this approach is also unfit in the study since it links fiscal dominance to private acquisition and savings. Also, it carries a hypothesis stating fiscal debts are only subsidized using fiscal sovereignty, even though alternatives like borrowing through bilateral and multilateral organizations exist (Coupet, 2017).

The approach applies to existing analysis since it identifies the significance of state renting to subsidize debt allocations because monetary organizations have little funds at their disposal to lend to the private sector. In case the approach is valid, public debts might carry a damaging impact on financial development in the long term through filling out all private investors and entrepreneurs. Therefore, borrowing of a state to inflate expenditure may lead to an increase in the interest rates that affects private investment and consequently financial growth.

2.2.3 Functional Finance Theory

The theory of functional finance developed by Lerner (1943) building on the summary given by the Keynesian prescription of deficit spending; is based on the principle of measuring how government fiscal operations work or function in the economy rather than their soundness or conventional morality. Fiscal operations such as taxation and

borrowing; public spending, oversight of public deficit, and debt financing, should be developed to fulfill particular roles which have a prompt direction and far-reaching results on the financial plan.

This theory mainly focuses on the impact of state spending and taxation on the employment and income levels of a country. Lerner (1943) postulates that government spending and taxing aim to hold the economy's entire expenditures at consistent levels and facilitate full occupation at the existing price. Governments raise their total expenditure by reducing taxes and spending more mainly through major infrastructure projects so that their citizens have more money to spend. On the other hand, governments reduce total expenditure by lowering their spending levels or by increasing taxes so that taxpayers have less money left to consume.

Lerner (1943) argues that public debt should only be incurred as a means of achieving the optimal rate of interest for private investment rather than as a means of balancing the budget. This theory holds that the “National Debt’s absolute size does not necessarily matter, irrespective of the high-interest payments that are incurred, these do not result to any burden on the society as a whole.” The theory adds value to the study by identifying that public deficit accumulation fails to create limitation on the financial system; instead, its effect on the economy is aimed at fulfilling a defined function which is attaining full employment that subsequently increases income levels and therefore enhances economic growth.

2.3 Determinants of Financial Development

The following part presents all factors that influence financial development. It is globally acknowledged financial development proves to be a multidimensional issue and its improvement necessitates an in-depth and comprehensive approach as outlined below:

2.3.1 Public Debt

From the Keynesian theory, countries can balance recessions by administering debts to the private sector and also distributing the profits accrued back to the sector (Eze & Ogiji, 2016). According to Bal and Rath (2016), a thrift's gross spending affects financial development and economic steadiness, therefore a state's debt taken to back expenditure does not destroy the economy to a great extent.

According to Lwanga and Mawejje (2014), Ricardian's approach suggests a correlation between the two variables that is, debt and growth, proves not to be favorable or unfavorable. In their report, financial debt is extraneous because its sole purpose is aiding to streamline any spending and income disturbances (Renjith & Shanmugam, 2018). The approach has been established basing on the view that increasing state deficit consists rising expected taxes with a percentage or value that matches the current value of the deficit.

2.3.2 Interest Rates

They significantly influence the setting of prices for products and services at the local level and even internationally. Money supply occurring in the thrift will significantly impact interests. An example, when the entire economy is enjoying abundance of money, interest rates will in most cases start decreasing impacting the way business functions.

Barksenius and Rundell (2012) say that this consequently makes the economy flourish and attract outsiders to come and invest.

Interest rates define the economic improvement. An unforeseen shift in the interest rates affects the investment decisions, where, investors may change their savings arrangements, like shifting to specified profit instruments from the capital market (Barnor, 2014). Khan and Sattar (2014), state that financial development can be affected either negatively or positively by the interest rates according to the motion. Savings are disheartened when interest rates on deposits are lowered and there is an increase in consumption.

2.3.3 Inflation Rate

Inflation rates are among the factors that can have a great impact on the economy of a particular state. An example, when prices are increasing properties will become costly. Thus, when an economy is undergoing through inflation, the cost of average products and services also rises. Because of this, the purchasing power of people will lower and consequently impact financial development. Due to this fact, a lot of investors that take part in the enterprise of products and services will always allow a room for inflation in their decisions (Biller, 2007).

Increased inflation rates imply that prices of products will be reasonably high for consumers which make them consume less and in turn reduce the profits of the firms. These high prices to a point also activate occurrence of high rates of interest as put across by Hendry (2016). Mostly, inflation has a negative effect on the economy and it is therefore associated to market performance in a positive way (Fama, 1998). Therefore,

growth should be related to the expected price level in a negative way, where short-term rate of interest represent the international fisher effect.

2.4 Empirical Studies

In this part, the past studies associated with this study's variables conducted globally have been reviewed to determine the methodology employed and identify the gaps of such surveys.

2.4.1 Global Studies

Asteriou, Pilbeam, and Pratiwi (2021) did a study aiming at examining the relationship that existed between public deficit on long and short-run financial development, in some chosen Asian countries between 1980–2012. In the study, several econometrics strategies were employed: mean group, pooled mean group, dynamic fixed outcomes, and entitle for standard correlated results. Analysis of the significance of a difference in the public deficit is done using the asymmetric panel ARDL method. The outcomes show addition in state deficit negatively affects financial growth in long-run as well as short-run. The research displays a contextual gap because it was entirely based on Asian countries and therefore findings cannot be generalized to other countries.

Albu and Albu (2021) analyzed the dynamics of the link between public deficit and rate of financial development in European nations. They did this using the wavelet approach, where they were able to establish both long-term and short-term correlations connecting the two variables. Analysis done using the non-linear on the debt-growth nexus reveals that there were points whereby economic growth can be hampered by rising indebtedness. The wavelet analysis approach shows a strong relationship between

financial growth and public debt, especially with high frequencies, public debt significantly affects the financial growth in the subject of terms above 2 years for most of the members of the Euro Zone states. The study presents a conceptual gap as the focus was on economic growth which is different from financial development.

Chung-Yee, Ismail, and Ai-Lian (2020) seek to demonstrate all asymmetric outcomes of the state deficit on Malaysian economic development. This research employed time sequence data for periods between 1980 to 2015 with a non-linear Autoregressive Distributed Lags structure, where it identified a significant link connecting public debt levels to financial development in both the long-run and short-run. From the findings, it is concluded that there is an existence of asymmetry effects between financial development and public debt, where higher debt levels tend to discourage financial development. This survey has a contextual gap because its total focus is in Malaysia whose financial and economic status is different from Kenya.

Bayar and Sakar (2020) explore the effect that domestic state borrowing, financial development and remittances have on growth of the economy from 1996 to 2017 as carried out in eleven EU transition economies consisting of second-generation cointegration together with causality analysis. This causality analysis was done to show how domestic borrowing possesses an effective effect on economic development. The cointegration analysis showed outcomes that support the safe asset view and lazy bank view. The research has a contextual gap as it focused on EU transition economies whose financial and economic status is different from Kenya.

Ehikioya et al. (2020) looked into the existence of existing connections linking external loans to the development of the economy in 43 countries of Africa from 2001 to 2018.

Johansen Cointegration test was employed together with the system generalized method of moments. The research states that the impact of foreign debt may be little because of high misappropriation. The results further state that if these borrowings are used to enhance infrastructure, there would exist an equilibrium link between debt and growth of the economy in the long-run. The conclusion from their study indicate that at a certain juncture, the short and long run stability intersect making these external debts have a negative effect on the growth of the economy. The contextual gap in this survey is that it was conducted across many countries making it inappropriate to administer all the findings to a particular country.

2.4.2 Local Studies

Kipyego (2021) analyzed how public debt was linked to financial development in Kenya. In his study, he collected yearly sequence information from 1964 to 2019 from the World Bank, Kenya National Bureau of Statistics, and Kenya's Central Bank. Inferential and descriptive statistics were utilized in the study. Error Correction Model and the Autoregressive Distributive lag (ARDL) bound test were also utilized to analyze the long-run and short-run associations. The ARDL test suggested the presence of a stable long-run connection linking financial development, public internal debt, external debt, and interest rate. Specifically, the finding indicates domestic deficit has a statistically considerable negative relationship with Kenya's financial development both in the long and short run. Also, the public external deficit has a significant favorable long and short-run relationship with financial development. This research poses a conceptual gap because several measures of public debt like the percentage of deficit service to remuneration was not taken into account.

Murungi and Okiro (2018) analyzed empirical and theoretical literature as to the way national debt influenced the development of an economy. Most of the results of the analysis suggested that public deficit has an effect on financial growth; several surveys indicated favorable financial development whereas others revealed adverse financial growth. This study leaves a gap in methodology since being a critical literature review means it needs an empirical study for confirmation of the findings.

A multivariate linear regression model that included all variables that are projected to affect the development of an economy was utilized to investigate the process of growth of the economy of Kenya in relation to internal borrowing as from 1971-2013 (Kimolo & Onono, 2017). The data suggest that domestic borrowing harms economic growth. Economic growth is also found to be negatively influenced by private consumption and inflation but favorably influenced by private investment and net export growth. The development of an economy is not affected by any reforms in the market. This study presents a conceptual gap since it focuses on economic growth and does not consider financial development.

Mwangi (2017) researched on how the economy of Kenya is affected by domestic and external borrowing tendencies. This survey utilized an improved Solow's growth model. Further, cointegration analysis had to be incorporated to assert the incidences of long-term connection linking GDP to the particular variable. This study displayed that public debt, carries a favorable insignificant influence on economic growth. Foreign deficit, reveals a significant though negative relationship to growth. This survey possess a conceptual gap because it focused on economic growth leaving a gap in financial development.

Achwoga (2016) investigated how domestic and external public debts affected the economic growth of Kenya. This study employed a defining study method. The secondary data was gathered from the World Bank, global financial institutes like KNBS and IMF, and the Kenyan Central Bank. He used Eviews version 7.2 to analyze data. This study's findings showed that there exists a negative but significant relationship between economic growth and foreign deficit. The outcomes further showed a considerable and at the same time negative relationship linking GDP to domestic debt. GDP and debt service were positively correlated but the association was insignificant. Additional outcomes too revealed that debt service and GDP had a positive relationship that was significant. The exchange rate was negatively and insignificantly related to GDP. The research offers a conceptual gap because financial development was not taken into account.

2.5 Conceptual Framework

The conceptual model of the research consists of public debt and financial development being the independent and dependent variables with interest rate and inflation rate were incorporated to act like the control variables. Public debt has two measures, which are the percentage of deficit service to revenue, the second measure being the ratio of debt service to export. Figure 2.1 depict the study's conceptual model.

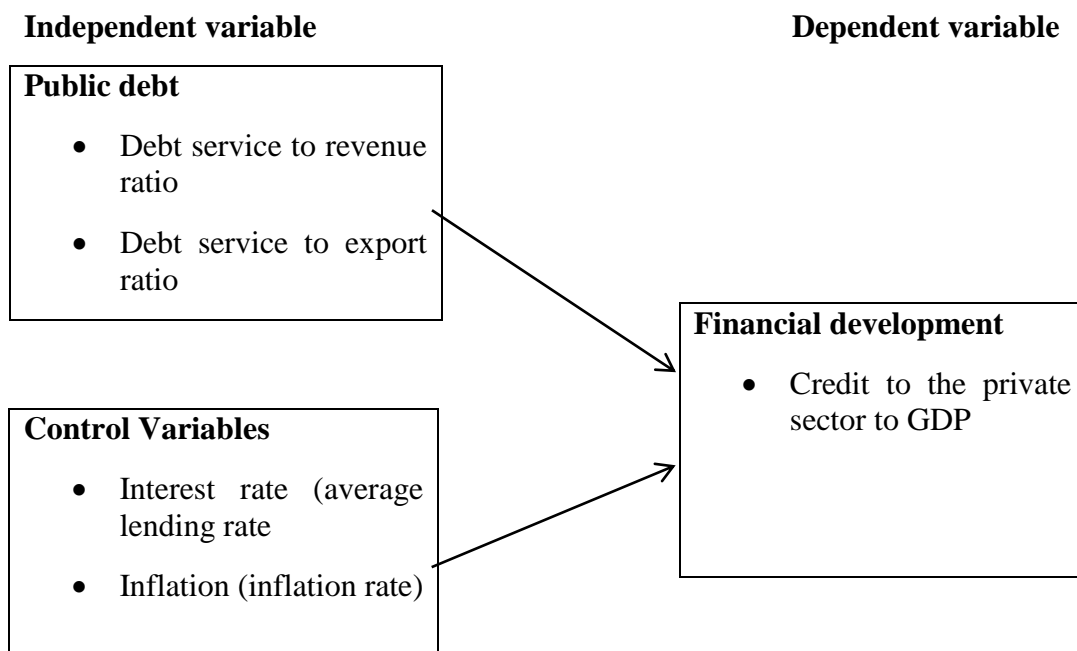


Figure 2.1: Conceptual Model

Source: Author (2022)

2.6 Summary of the Literature Review and Research Gaps

All the above theoretical reviews depicted the projected link connecting public debt to financial development. The key factors influencing financial development have been discussed. It is clear that there exists a knowledge gap that should be addressed based on

the research that has been examined. Various conclusions about the connection linking public debt to financial development have been drawn from all surveys that have been analyzed. Conceptual, contextual, and methodological gaps can explain the disparities in the studies.

The conceptual gaps mostly relate to the operationalization of study variables and conflicting result findings. Further, different methodologies were used to carry out the studies in different contexts making the generalization of the findings to a specific context difficult. Additionally, none of the conclusive studies has recorded interconnection between public debt and financial development in Kenya using the measures proposed in the current study hence an empirical literature gap. This leads to the study query, what is the effect of public debt on financial development in Kenya?

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

The section highlights all steps and methods embraced in the execution of the proposed study. It particularly converses the methods of collecting data, research design, operationalization of the variables, and the techniques of analyzing data.

3.2 Research Design

The descriptive study design was adopted in the research in order to estimate the effect of Kenya's public debt on financial development. Cooper and Schindler (2013), suggest that the most systematic research design is the descriptive one as it consists of a practical inquiry whereby the researcher does not directly control the independent variable due to their manifestation having already occurred or their inherent inability to manipulate. A defining study method is the most suitable as the study sought to create a profile about the link between financial development and public debt.

3.3 Data Collection

This research used secondary data only. The gathering of the secondary data was done through Central Bank reports and KNBS reports for the quarterly periods between January 2002 and December 2021. This twenty- year period that was compiled quarterly was sufficient to give the necessary information required in order to attain the objectives of the study. A data collection sheet was utilized to compile all secondary data. The particular information gathered included; credit to the private sector, debt service, government revenues, total exports, interest rate, inflation rate as well as GDP.

3.4 Diagnostic Tests

The linear regression was anchored on several presumptions like linearity, no autocorrelation, no or little multi-collinearity, homoscedasticity and multivariate normality.

The diagnostic tests to be performed are outlined in Table 3.1

Table 3.1: Diagnostic Tests

Test	Meaning	Statistical method	Interpretation	Diagnosis
Autocorrelation	Occurs when the residuals lack independence from each other.	Durbin-Watson statistic	When the test outcomes fall within critical values ($1.5 < d < 2.5$) there is no autocorrelation	Correlogram (Auto Correlation Function-ACF plot) Review model specifications
Multicollinearity	How closely related are the independent variables of the study	Variance Inflation Factors (VIF)	VIF less than 10 implies that there is no multicollinearity	Multicollinearity will be adjusted using log transformation
Normality Test	When linear regression analysis for all variables is multivariate normal	Goodness of fit test Shapiro-Wilk test	Kolmogorov-Smirnov test prob. > 0.05. If the test is not substantial, the distribution is possibly normal.	Data that will not be normally distributed will be adjusted for using log transformation and non-linear log transformation.
Stationarity	a unit-root test to establish if the data was stationary	Jarque Bera unit root test	A p value less than 0.05 implies that the data is stationary	Robust standard errors will be used where data fails the test.

3.5 Data Analysis

Analyzing data was conducted with the help of the SPSS software version 24. Graphs and tables presented the quantitative conclusions. Measures of central tendency and dispersion were calculated using descriptive statistics, and standard deviation was provided for all the variables. Regression and correlation were relied on by the inferential statistics. The correlation determined the extent of the relationship that exists among the study variables whereas the reason and impact of the variables was defined using regression. A multivariate regression linearly determined the link between independent and dependent variables.

3.5.1 Analytical Model

The following equation was applicable:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \varepsilon$$

Where: Y = Financial development measured by total credit issued to the private sector divided by GDP quarterly

β_0 = y intercept of the regression equation.

$\beta_1, \beta_2, \beta_3, \beta_4$ = are the regression coefficients

X_1 = Public debt measured as the ratio of debt service to government revenue per quarter

X_2 = Public debt measured as the ratio of debt service to exports per quarter

X_3 = Interest rate measured as quarterly average lending rate

X_4 = Inflation rate measured as the quarterly inflation rate

ε = error term

3.5.2 Tests of Significance

Parametric tests determined the general model and individual variable's significance. The F-test determined the overall model's significance and this was achieved using ANOVA while a t-test determined coefficient significance.

CHAPTER FOUR: DATA ANALYSIS, RESULTS AND FINDINGS

4.1 Introduction

This chapter presents the findings of this research. The main aim of the study was to determine how public debt influences financial development in Kenya. The following sections consist of descriptive statistic, diagnostic test, analysis of correlations, regression and discussion of results.

4.2 Descriptive Analysis

Descriptive statistics of all variables on which analysis was done are listed in the table below. Quarterly information was gathered and analyzed using SPSS version 24 software during a twenty-year period (2002 to 2021).

Table 4.1: Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Financial development	80	.2	.3	.294	.0244
Debt service to revenue	80	.5919	.6320	.611126	.0086716
Debt service to exports	80	.0904	.8236	.485028	.2179950
Interest rate	80	5.8	18.0	9.819	2.7188
Inflation rate	80	4.0	16.8	7.653	3.2928
Valid N (listwise)	80				

Source: Research Findings (2022)

4.3 Diagnostic Tests

Diagnostic tests were done before conducting the regression model. Autocorrelation, Multicollinearity, normality, and stationarity tests were conducted in the study.

4.3.1 Autocorrelation Test

A serial correlation test established the relationship of error terms for different times. For the research to obtain the desired model parameters, the Durbin Watson serial correlation test was used to carry out the analysis of autocorrelation in the data, which is a major shortcoming in the data analysis that must be examined. The findings are shown in Table 4.2.

Table 4.2: Autocorrelation Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.531 ^a	.282	.244	.0212	1.887

a. Predictors: (Constant), Inflation rate, Debt service to exports, Interest rate, Debt service to revenue
b. Dependent Variable: Financial development

Source: Research Findings (2022)

From the null hypothesis, no first-order serial/auto correlation exists. The 1.887 Durbin Watson statistical varies from 1.5 to 2.5 indicating no serial correlation.

4.3.2 Multicollinearity

In a multiple regression model, multicollinearity is displayed whenever predictor variables exhibit a substantial relationship. An event where independent variables have great correlations is unfortunate. Parameters are said to have multicollinearity if they have a perfect linear connection. Outcomes for the test on multicollinearity were displayed in Table 4.3.

Table 4.3: Multicollinearity Test

	Collinearity Statistics	
	Tolerance	VIF
Debt service to revenue	0.632	1.582
Debt service to exports	0.518	1.931
Interest rate	0.824	1.214
Inflation rate	0.685	1.459

Source: Research Findings (2022)

VIF value is used where values that fall below 10 are not multi-linear. One condition for multiple regressions to occur is that no strong connection should be evidenced among variables. Given by the outcomes, every VIF variable is below 10 as indicated in table 4.3 which shows that independent variables in the study experience no significant statistical multi-linearity.

4.3.3 Normality Test

To establish if the data was normally distributed, the researcher used the Shapiro-wilk test. If the p-value falls above 0.05, we conclude that there is normal distribution of data and vice versa. Table 4.4 summarizes the results of the test.

Table 4.4: Normality Test Results

	Shapiro-Wilk	P-value
Financial development	0.881	0.194
Debt service to revenue	0.874	0.191
Debt service to exports	0.892	0.201
Interest rate	0.923	0.220
Inflation rate	0.874	0.194

Source: Research Findings (2022)

Since the data displayed a p value of above 0.05 therefore having a uniform distribution, the researcher adopted the alternative hypothesis. This data was fit to be subjected to tests and analysis like for variance, regression and Pearson’s Correlation analyses.

4.3.4 Stationarity Test

The research variables were subjected to a unit-root test to establish if the data was stationary. The unit root test was ADF test. With a standard statistical significance level of 5%, the test was compared to their corresponding p-values. In this test, the null hypothesis states that every variable has a unit root, and the alternative hypothesis is that the variables are stationary. Findings depicted in Table 4.5.

Table 4.5: Stationarity Test

Variables	Inverse normal Z statistic	P-value
Financial development	0.7505	0.0000
Debt service to revenue	2.7578	0.0000
Debt service to exports	3.2434	0.0000
Interest rate	3.4628	0.0000
Inflation rate	2.1936	0.0000

Source: Research Findings (2022)

As demonstrated in Table 4.5, this test concludes that the data is stationary at a 5% level of statistical significance since the p-values all fall below 0.05.

4.4 Correlation Analysis

Pearson correlation was employed to establish the relationship linking financial development in Kenya to the characteristics of the study (debt service to revenue, debt service to exports, inflation and interest rate). The results are as shown in Table 4.6.

Table 4.6: Correlation Analysis

		Financial development	Debt service to revenue	Debt service to exports	Interest rate	Inflation rate
Financial development	Pearson Correlation	1				
	Sig. (2-tailed)					
Debt service to revenue	Pearson Correlation	.224*	1			
	Sig. (2-tailed)	.045				
Debt service to exports	Pearson Correlation	.420**	.312**	1		
	Sig. (2-tailed)	.000	.005			
Interest rate	Pearson Correlation	.134	.001	-.105	1	
	Sig. (2-tailed)	.237	.995	.355		
Inflation rate	Pearson Correlation	.134	-.267*	-.056	-.221*	1
	Sig. (2-tailed)	.238	.017	.620	.049	

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
c. Listwise N=80

Source: Research Findings (2022)

From the study's findings, a weak positive that is statistically significant relationship exists between debt service to revenue ratio and financial development ($r = .224$, $p = .045$). The correlation results further revealed a moderate positive and significant statistical connection between debt service to exports ratio and financial development ($r = .420$, $p = .000$). The rate of interest displays a not significant positive interrelationship to financial development in the Kenyan economy ($r = .134$, $p = .237$). Inflation exhibited a

weak positive and not significant association with financial development in Kenya ($r = .134$, $p = .238$).

4.5 Regression Analysis

Debt service to revenue ratio, debt service to export ratio, interest rate, together with the rate of inflation were utilized as agents to predict financial development in Kenya. The test was done at 5% level of significance. Table 4.7 to 4.9 displays the results.

Table 4.7: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.531 ^a	.282	.244	.0212

a. Predictors: (Constant), Inflation rate, Debt service to exports, Interest rate, Debt service to revenue

Source: Research Findings (2022)

The R squared indicator indicates how the explanatory variables may describe variations in the response variable. As indicated in Table 4.8, the R square was 0.282, indicating that change in debt service to revenue ratio, debt service to export ratio, interest rate and inflation account for 28.2 percent of the financial development in Kenya. Other factors not included in this research account for 71.8 percent of the variance in financial development in Kenya. The correlation coefficient (R) of 0.531 showed a significant connection amongst predictor factors and financial development.

The value of P obtained by ANOVA is 0.000, which is less than $p=0.05$. This demonstrates that the model's importance described how debt service to revenue ratio, debt service to export ratio, rate of interest and inflation, affect Kenya's financial development.

Table 4.8: Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.013	4	.003	7.371	.000 ^b
	Residual	.034	75	.000		
	Total	.047	79			

a. Dependent Variable: Financial development
b. Predictors: (Constant), Inflation rate, Debt service to exports, Interest rate, Debt service to revenue

Source: Research Findings (2022)

The relevance of various variables was determined using the model coefficients. The statistics of t and values of p were used to accomplish this. This study is significant since it allowed the researcher to determine which independent variables were chosen (debt service to revenue ratio, debt service to export ratio, interest rate and inflation) significantly influences the financial development of the Kenyan economy. Table 4.9 summarizes the findings.

Table 4.9: Model Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.042	.184		-.227	.821
	Debt service to revenue	.002	.001	.253	2.428	.018
	Debt service to exports	.046	.011	.421	4.055	.000
	Interest rate	.002	.001	.242	2.389	.019
	Inflation rate	.454	.300	.162	1.516	.134

a. Dependent Variable: Financial development

Source: Research Findings (2022)

Table 4.10 shows that only debt service to revenue ratio, debt service to export ratio and interest rate, with a p value less than 0.05, were a significant predictor of financial development in Kenya. Inflation was not a significant predictor of financial development in Kenya, as evidenced by low t values and p values greater than 0.05.

The following regression was estimated:

$$Y = -0.042 + 0.253X_1 + 0.421X_2 + 0.242X_3$$

Where,

Y = Financial development

X₁ = Debt service to revenue ratio

X₂ = Debt service to export ratio

Using the constant = -0.042, we can see that if selected independent variables (debt service to revenue ratio, debt service to export ratio, interest rate and inflation) were rated zero, the financial development would decrease by 0.042. Increasing debt service to revenue ratio by one unit would increase financial development by 0.253 units, increasing the debt service to export ratio by one unit would cause the financial development to increase by 0.421 while increasing interest rate by one unit would increase financial development by 0.242. Inflation had no statistically significant influence.

4.6 Discussion of Research Findings

This research had an aim of establishing the way in which the predictor variables impacted the financial development in the Kenyan context. Independent variables

included debt service to revenue ratio, debt service to export ratio, interest rate and inflation. This research tried to show financial development being a dependent variable. The ratio of credit to the private sector to GDP measured financial development. Correlation as well as regression analysis were utilized to show the connection linking the independent to dependent variables.

The Pearson model showed that a weak positive and statistically significant relationship exists between debt service to revenue ratio and financial development. The correlation results further revealed a moderate positive and significant statistical connection between debt service to export ratio and financial development. Inflation exhibited a weak positive and not significant association with financial development in Kenya. The rate of interest displays a not significant positive interrelationship to financial development in the Kenyan economy.

The independent variables accounted for 28.2% of variances in financial development, in accordance with the summary of the model. The predictor variables of this research had explanatory power that fitted a 95% confidence level like indicated by the 0.000 p value, which was way below the threshold of significance that is 5%. Therefore, the overall model employed in this study is a good and sufficient prediction model to determine the financial development in Kenya.

This research is in agreement with Albu and Albu (2021) who analyzed the dynamics of the link between public deficit and rate of financial development in European nations. They did this using the wavelet approach, where they were able to establish both long-term and short-term correlations connecting the two variables. Analysis done using the non-linear on the debt-growth nexus reveals that there were points whereby economic

growth can be hampered by rising indebtedness. The wavelet analysis approach shows a strong relationship between financial growth and public debt, especially with high frequencies, public debt significantly affects the financial growth in the subject of terms above 2 years for most of the members of the Euro Zone states.

This study is also in agreement with a study conducted by Kipyego (2021) who analyzed how public debt was linked to financial development in Kenya. In his study, he collected yearly sequence information from 1964 to 2019 from the World Bank, Kenya National Bureau of Statistics, and Kenya's Central Bank. Inferential and descriptive statistics were utilized in the study. Error Correction Model and the Auto-Regressive Distributive lag (ARDL) bound test were also utilized to analyze the long-run and short-run associations. The ARDL test suggested the presence of a stable long-run connection linking financial development, public internal debt, external debt, and interest rate. Specifically, the finding indicates that public external deficit has a significant favorable long and short-run relationship with financial development.

CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The major motive of this study was to investigate the way public debt influences the financial development in Kenya. The findings from the above sections are outlined in this chapter together with the conclusions and limitations of this study. This section also outlines the strategies that can be adopted by policymakers. It also provides the recommendations.

5.2 Summary of Findings

The study assessed how public debt influenced the financial development in Kenya. Debt service to revenue ratio, debt service to export ratio, interest rates, as well as inflation rate was adopted to be the predictor variables of the research. The study used descriptive design to do analysis and data collection. Secondary data was obtained from CBK as well as KNBS and prepared using SPSS version 24 program. The study used data of 20 years compiled quarterly.

The Pearson model showed that a weak positive and statistically significant relationship exists between debt service to revenue ratio and financial development. The correlation results further revealed a moderate positive and significant statistical connection between debt service to export ratio and financial development. Inflation exhibited a weak positive and not significant association with financial development in Kenya. The rate of interest displays a not significant positive interrelationship to financial development in the Kenyan economy.

The independent variables accounted for 28.2% of variances in financial development, in accordance with the summary of the model. The predictor variables of this research had explanatory power that fitted a 95% confidence level like indicated by the 0.000 p value, which was way below the threshold of significance that is 5%. Therefore, the overall model employed in this study is a good and sufficient prediction model to determine the financial development in Kenya.

The regression results further discovered that if selected independent variables (debt service to revenue ratio, debt service to export ratio, interest rate and inflation) were rated zero, the financial development would decrease by 0.042. Increasing debt service to revenue ratio by one unit would increase financial development by 0.253 units, increasing the debt service to export ratio by one unit would cause the financial development to increase by 0.421 while increasing interest rate by one unit would increase financial development by 0.242. Inflation had no statistically significant influence.

5.3 Conclusion

The results of the research indicate that Kenya's financial development is positively affected by debt service to revenue ratio, debt service to exports ratio and interest rates. The research finds that the higher debt service to revenue ratio and debt service to exports ratio leads to a significant increase in financial development in Kenya. The research also finds that while inflation have a positive impact on financial development, the impact is not statistically meaningful.

The study concludes that the factors under research – debt service to revenue ratio, debt service to export ratio, interest rate and inflation – affect financial development by

describing 28.2% of the variations. This means that the non-model variables are only responsible for 71.8% of variations of financial development in the country. It is therefore substantial to infer that the outlined factors affect the financial development as shown in the ANOVA summary by p values less than 0.05.

The conclusions of this research concurred with Bayar and Sakar (2020) who explore the effect that domestic state borrowing, financial development and remittances have on growth of the economy from 1996 to 2017 as carried out in eleven EU transition economies consisting of second-generation cointegration together with causality analysis. This causality analysis was done to show how domestic borrowing possesses an effective effect on economic development. The cointegration analysis showed outcomes that support the safe asset view and lazy bank view.

5.4 Recommendations

Outcomes show that debt service to revenue ratio possesses a positive and considerable effect on financial development in Kenya implying a rise in debt service can have a positive effect on financial development. This also means that credit to the private sector is likely to rise with a rise in debt service to revenue ratio. The research proposes that policy makers to adopt measures aimed at enhancing government revenues and pay debt service on a timely basis, since this would lead to a rise in financial development and possibly also other areas of the economy.

This study has demonstrated that debt service to export ratio has a positive and significant effect on the financial development in the country. It therefore recommends that several approaches are required to make sure that the factors that lead to export growth are well

addressed to enhance further financial development. Policy makers should come with long term policies aimed at ensuring that the debt service is paid on a timely manner. They can also come up with target debt service to export ratio.

5.5 Limitations of the Study

This study embraced a 20 years period (2002-2021). It gives no substantial evidence that in an added timeframe, the findings will not change. Additionally, it is not certain that these findings will be sustained after 2021, things might change. Extra timeframe is reliable because it comprises instances with economic shifts like recessions and booms.

The main drawback of the study was the quality of data. It is not possible to reliably state the results obtained in the survey as the correct reflection of the general situation. Accuracy and reliability of the data collected are assumed to a certain point. Additionally, because of the existing circumstances, computing the data has been incoherent. This study uses secondary data as opposed to primary data. The determinants of financial development have been partially considered because of unavailability of data for all determinants.

Regression models were used to conduct data analysis. It would be impossible for the researchers to generalize outcomes because of the setbacks accruing from model utilization like erroneous and deceptive conclusions resulting from a change in value of variable. Whenever data is put in a regression model, it is impossible to process it through another previous model.

5.6 Suggestions for Further Research

The aim of the study was to determine the impact of public debt on financial development of the Kenyan economy. A research that focuses on primary data or mixes primary data with secondary data is recommended so as to recognize qualitative elements that might have been overlooked in the current research.

This research failed to consider all independent variables that affect financial development of an economy. A suggestion therefore arises to include other factors in future studies in order to come up with more specific findings. These factors include money supply, economic growth, balance of payments, foreign direct investments among others. Providing details how each of them affects financial development will enable policymakers make decision on the steps to take in order to control their financial development.

Because of unavailability of data, this study focused on the latest 20 years. Other future studies should employ a wider range to come up with a valid conclusion. This study was also under restriction because it only focused solely on Kenya. Additional survey should be conducted in other nations to determine results. In conclusion, the investigator adopted a regression model to do a confirmation or rejection of the findings. Any studies in future should adopt other independent methods to confirm or reject their findings.

REFERENCES

- Absa Africa Financial Report. (, 2019). *Absa Africa Financial Taking you further into Africa than ever before*. Official Monetary and Financial Institutions Forum.
- Achwoga, G. (2016). *Effect of public debt on economic growth in Kenya*.
URI: <http://41.89.49.13:8080/xmlui/handle/123456789/1333>
- Afonso, A., & Jalles, J. T. (2017). Euro area time-varying fiscal sustainability. *International Journal of Finance & Economics*, 22(3), 244-254.
- Albu, A. C., & Albu, L. L. (2021). Public debt and economic growth in Euro area countries. A wavelet approach. *Technological and Economic Development of Economy*, 27(3), 602-625.
- Ali, A., & Ahmed, F. (2016). Impact of Government borrowing on financial development (a case study of Pakistan). *Bulletin of Business and Economics (BBE)*, 5(3), 135-143.
- Asteriou, D., Pilbeam, K., & Pratiwi, C. E. (2021). Public debt and economic growth: panel data evidence for Asian countries. *Journal of Economics and Finance*, 45(2), 270-287.
- Ayadi, R., Arbak, E. & Naceur S. (2013a). Financial development, bank efficiency and economic growth across the Mediterranean, MEDPRO Technical Paper No. 30, MEDPRO FP7 project.
- Aybarç, S. (2019). Theory of public debt and current reflections. In *Public economics and finance*. IntechOpen.

- Bal, D. P., & Rath, B. N. (2016). Is Public debt a Burden for India? *Economic Papers: A Journal of Applied Economics and Policy*, 35(2), 184–201.
<https://doi.org/10.1111/1759-3441.12132>
- Bayar, Y., & Sakar, E. (2020). Impact of Domestic Public Borrowing on Financial Development: Evidence from EU Transition Economies. *Applied Economics Journal*, 28(1), 18–42
- Benayed, W., & Gabsi, F.B. (2020). Public debt and financial development in Sub-Saharan Africa: Is there an inverted-U relationship? *Economics Bulletin*, 40(1), 846-854
- Bonga, W. G., Chirowa, F., & Nyamapfeni, J. (2015). Growth-debt nexus: An examination of public debt levels and debt crisis in Zimbabwe. *IOSR Journal of Economics and Finance (IOSR-JEF)*, 6(2), 9-14.
- Burns, N. (2008). *The practice of nursing research: Conduct, critique, and utilization: 5th Edition*: St Louis, Elsevier Saunders
- Chung-Yee, L. ., Ismail, N. W. ., & Ai-Lian, T. . (2020). Is Public Debt Asymmetrically Link to Financial Development in Malaysia? *Asian Journal of Empirical Research*, 10(3), 97–110.
- Cooper, R., & Schindler, S. (2013). *Business research methods*. New York: McGraw-Hill
- Coupet, J. (2017). Government debt and economic growth: Another neo-classical growth approach. *Journal of Applied Economics and Business Research*, 7(3), 172-193.
<http://www.aebrjournal.org/>

- Eze, O.R., Ogiji, F. O. (2016). Impact of deficit financing on economic stability in Nigeria: Analysis of economic growth. *Journal of Applied Finance & Banking*, 6(1), 111-125.
- Fama, E. F. (1998). Stock returns, real activity, inflation, and money. *The American economic review*, 71(4), 545-565.
- Hauner, D. (2009). Public Debt and Financial Development, *Journal of Development Economics*, 88(2), 171-183.
- Ilgün, M.F. (2016). Financial development and public debt in emerging economies: A panel cointegration analysis. *Journal of Applied Economics and Business Research*, 6(4), 284-296
- International Monetary Fund (2021). *Sub-Saharan Africa Regional Economic Outlook: Navigating Uncertainty*, Sub-Saharan Africa
- Ismihan, M., & Ozkan, F. G. (2012). Public debt and financial development: A theoretical exploration. *Economics Letters*, 115(3), 348-351.
- Janda, K., & Zetek, P. (2015). How Public Finance Contribute to the External Sources of Microfinance Institutions. In *Proceedings of the 20th International Conference Theoretical and Practical Aspects of Public Finance* (pp. 91-99).
- Karazijiene, Ž. (2015). Critical analysis of public debt and tendencies of its management. *Public Policy and Administration*, 14(2), 194–208.
- Khan, J. A. (2008). *Research methodology*. New Delhi. APH Publishing Corporation
- Kipyego, S. A. (2021). *Relationship between public debt and financial development in Kenya* (Doctoral dissertation, KENYATTA UNIVERSITY).

- Krugman, P. (1988). Financing vs. forgiving a debt overhang. *Journal of Development Economics*, 29(3), 253-268.
- Kumhof, M., & Tanner, E. (2005). Government debt: A key role in financial intermediation.
- Lerner, A. P. (1943). Functional finance and the federal debt. *Social research*, 38-51.
- Levine, R. Loayza, N. & Beck, T. (2012). Financial intermediation and growth: Causality and causes. *Journal of Monetary Economics*, 46(1), 31-77.
- Lwanga, M. M., & Mawejje, J. (2014). Macroeconomic Effects of Budget Deficits in Uganda: A VAR-VECM Approach. *Research Series*, 4(117), 81–108.
- McConnell, C. R., & Brue, S. L. (1990). *Microeconomics: Study guide to accompany McConnell and Brue's microeconomics*. McGraw-Hill Publishing Company.
- Murungi, S., & Okiro, K. (2018). Impact of Government Debt on Economic Growth in Kenya: A Critical Literature Review. *European Scientific Journal*, 14(1), 240-257.
- Mwangi, D. N. (2017). *The Impact of Public debt on Economic Growth in Kenya* (Doctoral dissertation, Makerere University).
- Ochieng, J. (2018, March 10). ICPAK is alarmed over Kenya's growing debt. Retrieved from <https://www.nation.co.ke/news/ICPAK-on-Kenya-debt/1056-4345984-7kwrle/index.html>
- Onyekwena, C., & Ekeruche, M. A. (2019). Is Nigeria on track to achieving quality education for all? Drivers and implications.

- Rahman, N. H. A., Ismail, S., & Ridzuan, A. R. (2019). How does public debt affect economic growth? A systematic review. *Cogent Business and Management*, 6(1), 12-19.
- Renjith, P. S., & Shanmugam, K. R. (2018). Debt sustainability : Empirical evidence from Indian states. *Public Finance & Management*, 18(2) 168-191.
- Sansa, N. A. (2020). Analysis of the impact of public debt on economic growth and poverty in Tanzania. *Electronic Research Journal of Social Sciences and Humanities*, 2, 154-167.
- UNCTAD. (2021). *World Investment Report 2021*. Retrieved from: www.unctad.org/wir
- World Bank. (2019). *Global financial development report 2019/2020: Bank regulation and supervision a decade after the global financial crisis*. The World Bank.
- World Bank. (2021). *Global economic prospects, June 2021*. The World Bank.

APPENDICES

Appendix I: Research Data

Year	Quarter	Financial development	Debt service to revenue	Debt service to exports	Interest rate	Inflation rate
2002	1	0.2183	0.6001	0.0904	5.8333	7.8500
	2	0.2264	0.6028	0.1037	6.0833	5.8667
	3	0.2157	0.6037	0.1158	6.5000	4.7067
	4	0.2314	0.6044	0.1270	15.1667	4.0333
2003	1	0.2617	0.6045	0.1323	18.0000	4.1567
	2	0.2859	0.6053	0.1425	18.0000	6.0133
	3	0.2827	0.6056	0.1472	15.3333	9.0200
	4	0.2883	0.6057	0.1556	11.6667	12.7767
2004	1	0.3120	0.6063	0.1656	9.5000	15.8267
	2	0.3177	0.6065	0.1738	8.8333	16.2900
	3	0.2911	0.6071	0.1881	8.5000	14.2967
	4	0.3029	0.6071	0.2211	8.5000	10.6967
2005	1	0.2099	0.6072	0.2284	8.5000	7.2567
	2	0.3146	0.6072	0.2405	8.5000	5.0433
	3	0.3229	0.6083	0.2478	8.5000	4.5633
	4	0.3315	0.6094	0.2696	8.5000	5.3867
2006	1	0.3185	0.6097	0.2742	8.5000	6.2033
	2	0.3262	0.6114	0.2754	9.0000	6.8267
	3	0.3379	0.6114	0.2887	11.5000	7.2367
	4		0.6121	0.2890		

Year	Quarter	Financial development	Debt service to revenue	Debt service to exports	Interest rate	Inflation rate
		0.3421			11.5000	6.9767
2007	1	0.3214	0.6126	0.2950	11.5000	6.6667
	2	0.3271	0.6136	0.2953	10.8333	6.6567
	3	0.3359	0.6140	0.3222	10.5000	6.3900
	4	0.3427	0.6165	0.3254	10.5000	6.4367
2008	1	0.3298	0.6174	0.3275	10.0000	6.8400
	2	0.3149	0.6179	0.3356	10.0000	6.5900
	3	0.3192	0.6188	0.3554	10.0000	6.4700
	4	0.3046	0.6191	0.3577	10.0000	6.4033
2009	1	0.3111	0.6210	0.3771	9.5000	6.4833
	2	0.3029	0.6224	0.3826	9.0000	7.7233
	3	0.3072	0.6228	0.3845	9.0000	8.3233
	4	0.3262	0.6232	0.3930	9.0000	8.1533
2010	1	0.2813	0.6210	0.4025	9.0000	7.3600
	2	0.2790	0.6224	0.4309	9.0000	5.6833
	3	0.2795	0.6228	0.4443	9.0000	4.7033
	4	0.2730	0.6232	0.4556	8.8300	4.6033
2011	1	0.2765	0.5919	0.5076	9.0000	7.3600
	2	0.2756	0.5938	0.5125	9.0000	5.6833
	3	0.2745	0.5968	0.5144	9.0000	4.7033
	4	0.2753	0.5984	0.5296	8.8300	4.6033
2012	1	0.3131	0.5985	0.5346	6.9167	16.8333

Year	Quarter	Financial development	Debt service to revenue	Debt service to exports	Interest rate	Inflation rate
	2	0.3140	0.5987	0.5377	6.7500	15.9200
	3	0.3149	0.5993	0.5497	6.0000	13.3933
	4	0.3158	0.6001	0.5506	6.0000	10.3000
2013	1	0.3167	0.6001	0.5605	5.8333	7.8500
	2	0.3176	0.6028	0.5734	6.0833	5.8667
	3	0.3185	0.6037	0.5803	6.5000	4.7067
	4	0.3194	0.6044	0.5866	15.1667	4.0333
2014	1	0.3203	0.6045	0.5924	18.0000	4.1567
	2	0.3212	0.6053	0.5954	18.0000	6.0133
	3	0.3220	0.6056	0.6071	15.3333	9.0200
	4	0.3229	0.6057	0.6081	11.6667	12.7767
2015	1	0.3238	0.6063	0.6372	9.5000	15.8267
	2	0.3247	0.6065	0.6428	8.8333	16.2900
	3	0.3256	0.6071	0.6503	8.5000	14.2967
	4	0.3265	0.6071	0.6526	8.5000	10.6967
2016	1	0.3274	0.6072	0.6613	8.5000	7.2567
	2	0.3283	0.6072	0.6639	8.5000	5.0433
	3	0.3292	0.6083	0.6662	8.5000	4.5633
	4	0.3301	0.6094	0.6677	8.5000	5.3867
2017	1	0.3310	0.6097	0.6756	8.5000	6.2033
	2	0.3318	0.6114	0.6829	9.0000	6.8267
	3	0.3327	0.6114	0.6912	11.5000	7.2367

Year	Quarter	Financial development	Debt service to revenue	Debt service to exports	Interest rate	Inflation rate
	4	0.3336	0.6121	0.6934	11.5000	6.9767
2018	1	0.3345	0.6126	0.6935	11.5000	6.6667
	2	0.3354	0.6136	0.6970	10.8333	6.6567
	3	0.3363	0.6140	0.7007	10.5000	6.3900
	4	0.3372	0.6165	0.7020	10.5000	6.4367
2019	1	0.3381	0.6174	0.7232	10.0000	6.8400
	2	0.3390	0.6179	0.7331	10.0000	6.5900
	3	0.3399	0.6188	0.7448	10.0000	6.4700
	4	0.3408	0.6191	0.7456	10.0000	6.4033
2020	1	0.3416	0.6210	0.7629	9.5000	6.4833
	2	0.3425	0.6224	0.7651	9.0000	7.7233
	3	0.3434	0.6228	0.7848	9.0000	8.3233
	4	0.3443	0.6232	0.7952	9.0000	8.1533
2021	1	0.3452	0.6250	0.8101	9.0000	7.3600
	2	0.3461	0.6270	0.8114	9.0000	5.6833
	3	0.3470	0.6290	0.8223	9.0000	4.7033
	4	0.3479	0.6320	0.8236	8.8300	4.6033