

T.C.

ISTANBUL COMMERCE UNIVERSITY

GRADUATE SCHOOL OF SOCIAL SCIENCES

DEPARTMENT OF ECONOMICS

ECONOMICS M.A. PROGRAM

**THE IMPACT OF EXTERNAL DEBT ON ECONOMIC GROWTH IN SELECTED
SUB-SAHARAN COUNTRIES**

M.A. Thesis

Jabir Abdullahi MOALLIM HASSAN

200014950

Istanbul, 2022

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ÖZET

Bu tezin genel amacı, 2000 ve 2020 yılları arasında seçilmiş Sahra Altı Afrika ülkelerinde dış borcun ekonomik büyüme üzerindeki etkilerini incelemektir. Ele alınan ülkeler, Kenya, Uganda, Etiyopya, Tanzanya ve Nijerya'dan oluşmaktadır. Bu genel amacın yanında araştırmanın ilave olarak özel amacı da Sahra altı Afrika ülkelerinde (2000-2020) dış borç ile ekonomik büyüme arasında uzun vadeli bir ilişki olup olmadığını belirlemektir. Bu kapsamda çalışmada Dünya Bankası ve Uluslararası Para Fonu panel verileri 2000-2020 yılları arasında oluşturulan bir regresyon modeliyle analiz edilmiştir. Birim kök testinin sonuçları, bütünlük 1 (0) olan düzeyi alındığında durağan hale gelen GSYİH değişkeni hariç, modeldeki tüm değişkenlerin birinci farkta durağan olduğunu göstermektedir. Veriler hem sabit etki hem de rastgele etki modelleri kullanılarak analiz edilmiştir. Sahra Altı Afrika'da dış borç ve ekonomik büyüme arasındaki ilişki hem eşbütünlük hem de ECM analizi kullanılarak incelenmiş ve açıklanmıştır. Bağımsız değişken olarak dış borç ve bağımlı değişken olarak ekonomik büyüme kullanılmıştır. Uzun dönemli eşbütünlüğün değerlendirilmesine olanak sağlayan değişkenler üzerinde panel eşbütünlük testi yapılmıştır. Bu test ile, Johansen eşbütünlük katsayısı ile gösterildiği gibi, dış borç ile ekonomik büyüme arasında uzun dönemli bir ilişkinin varlığını gösteren dört eşbütünlük denkleminin olduğu belirlenmiştir. Bu çalışmada kullanılan ikinci bir yöntem, dış borç ile ekonomik büyüme arasındaki kısa dönemli ilişkiyi tahmin etmek için kullanılan ECM değişken testidir. Çalışmanın bulguları, Sahra Altı Afrika ülkeleri politika yapıcılarının, kamu sektöründe reform yapmayı ve dış borcun sürdürülebilirliğini amaçlayan yapısal reformları hızla hayata geçirmeye çalışmaları gerektiği sonucunu çıkarmaktadır. Dış kaynaklara güvenmek hem riskli hem de istikrarsız olduğundan, Sahra Altı Afrika ülkeleri istenmeyen ekonomik etkileri azaltmak için kendi kaynaklarını harekete geçirmeli ve dış borç riskini azaltacak politikalar benimsemelidirler. Başka bir deyişle, daha fazla borç birikimini önlemek için bu bölgedeki ülkeler daha fazla gelir elde edecek ve iç finansmanı artıracak yönde ekonomilerini genişletmelidirler. Ayrıca, dış kaynakların bu ülkelerin ekonomilerinin yapılarını geliştirecek, büyümeyi üretecek ve dış borcun geri ödemelerini de sağlayacak şekilde cari işlemlerde iyileşme yapacak şekilde rasyonel alanlarda ve yatırımlarda kullanılması gerekmektedir.

Anahtar Kelimeler: Sahra altı ülkeleri, Dış borç, Ekonomik büyüme

ABSTRACT

The overarching goal of this thesis is to look at the impact of external debt on economic growth in selected Sub-Saharan African countries between 2000 and 2020. These include Kenya, Uganda, Ethiopia, Tanzania and Nigeria. The research has had two specific objectives; to find out the external debt's effect on economic growth in a Sub-Saharan African sample between 2000 and 2020 and to determine whether external debt and economic growth in a sub-Saharan African country have a long-term relationship (2000-2020). From 2000 through 2020, the study analyzed World Bank and International Monetary Fund panel data. The results of the unit root test indicate that all variables in the model are stationary at first difference, with the exception of the GDP, which becomes stationary at level and integrated 1 (0). The data were analyzed using both fixed effect and random effect models. The relationship between external debt and economic growth in Sub-Saharan Africa was examined and explained using both cointegration and ECM analysis. With external debt serving as the independent variable and economic growth serving as the dependent variable. A panel cointegration test was performed on the variables, which allowed for the assessment of the long run through cointegration. This implies that there are four cointegrating equations, which indicates the presence of a long-run relationship between external debt and economic growth as demonstrated by the Johansen cointegration coefficient. A second method utilized in this study was the variable test through ECM, which was used to estimate the short-run relationship between external debt and economic growth. The study recommends that the Sub-Saharan Africa and policymakers must try speedily to enact structural reforms aimed at reforming the public sector and sustainability of the external debt. Since reliance on external resources is both risky and unstable, the SSA must mobilize its own resources and adopt policies to reduce its external debt exposure, in order to reduce its undesirable economic effects. In other words, to prevent further debt accumulation, the SSA should expand the economy to generate more income and to increase domestic financing. It is also important that the foreign resources should be used in basic industries that can stimulate development, ease the repayment of the debt and improve the current accounts.

Keywords: Sub-Saharan countries, External debt, Economic growth

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LIST OF ABBREVIATIONS

HIPC: Heavily indebted poor countries

SSA: Sub-Saharan Africa

LDC: Less Developed Countries (LDCs)

GDP: Gross domestic product

USD: U.S. dollar

FDI: Foreign direct investment

BOU: Bureau of statistics

WEO: World Economic Outlook

WDI: World development indicator

GMM: Generalized Methods of Moments Estimation

IMF: International monetary fund

DEDH: Direct Effect of Debt Hypothesis

ADF: Augmented Dickey Fuller

FE: The Fixed Effects

RE: Random Effects

OLS: Ordinary least square

ECM: Error Correction Model

1. INTRODUCTION

Many developing countries, including African and Sub-Saharan countries need funds and financial resources in order to finance development, especially to build infrastructure. However, Domestic resources have frequently proven insufficient, with potentially disastrous consequences for investment from the private sector Fajana (2003). Therefore, most of the governments seek to borrow money, to meet their financial demands and close their budget deficits. Domestic resources, on the other hand, have frequently proven insufficient, with potentially disastrous consequences for investment from the private sector Fajana (2003).

Debt is thought to be a stumbling block to Africa's progress and development. The debt burden on the continent has become one of the most significant hurdles hampering recovery and development. Debt pushes out investment in Africa, according to Ayadi & Ayadi (2008). They claim that lowering burdens might help Sub-Saharan Africa's economy grow significantly. Since the government need resources for public spending, borrowing is predicted to boost resource availability. The majority of Africa's external debt was accumulated for political motives disguised as underdevelopment. As a result, if borrowings are not handled wisely, they may soon put a burden on government budgets. As more resources are directed to debt servicing, less money is available for regular and development investment. Resource mismanagement can quickly lead to unsustainable debt levels which has hampered the growth of emerging economies.

External debt is a significant issue for developing economies, those in Sub-Saharan Africa, for example. In accordance with Pattillo et al. (2002), the repayment or "debt service" terms of external loans generate challenges for many countries, particularly in Africa. A revised debt strategy that includes concerted financing, debt reduction and comprehensive macroeconomic adjustment underpinned by a World Bank agreement and the aid of the International Monetary Fund. Most middle-income economies alleviate their debt difficulties throughout the 1980s. These countries regained access to international capital markets and the international banking and institutions of finance were spared major disruptions. Despite the presence of numerous debt restructuring and rescheduling agreements, the condition of financial issues and threat still exists in many deeply indebted low-income countries. One of the most prominent indications of the region's indebtedness concerns is rising debt reserving arrears. Despite favorable net inflows and

rotating relief initiatives during the last six years, the region was only able to meet a third of its obligations. It is worth emphasizing that the accumulation of arrears dominates the region's debt stock's increased growth pace, which is the crux of the debt overhang problem (Olusegun, Olufemi, & Olubunmi, 2020).

Most developing countries' primary goal is economic growth and development; as a result, to invest in viable growth-accelerating projects, external borrowing is used to mobilize resources from a variety of sources. All countries, particularly developing economies, are concerned about long-term economic growth because of rising debt payment, foreign debt service in particular, and expanding shortfalls in the current account Reinhart and colleagues (2012). Atique and Malik claim that (2012), external borrowing is warranted not just because excessive borrowing on the local market can cause financial insecurity and the suffocation of the private sector (Panizza et al., 2010), on the grounds that developing countries at the beginning of their development require external borrowing due to a lack of domestic capital for investment (Todaro and Smith, 2006).

Theoretically, the majority of scholars believe that one of the most serious problems is external debt impeding economic development in emerging countries. Sachs (1989) proposed the debt overhang theory as the most widely accepted hypothesis for determining whether economic growth and external debt are negatively correlated. Creditors expect increased tax rates to cover international debt service payments as countries accrue external debt, according to the debt overhang theory.

The debt overhang concept postulates that debt accumulation serves as a cost on future production, discouraging government and private sector productive investment adjustment efforts. When a debtor country's economic performance improves, creditors receive a portion of the benefits of greater output or exports. This occurs when the debtor country's economic performance improves and a percentage of the earnings from the improvement is utilized to repay the loan (Karag, & Fak, 1982). Despite the debt overhang theory' many persuasive theoretical justifications, There has not been much empirical research to back it up. The majority of empirical results now point to the fact that debtor countries' investment has declined in lockstep as due to the commencement of the debt crisis.

This emphasizes the issue of external debt in the face of economic transition. A government with a budget deficit can borrow from the private industry or foreign sources to pay down its public debt. Domestically, the amount of money accessible is quite limited, owing to the absence of a strong private sector and a well-established banking system. Despite these and other problems, many impoverished countries rely largely on international lenders and other forms of external financing. Infrastructure projects aimed at boosting development and growth account for a substantial amount of the external debt of Sub-Saharan Africa. However, debt service concerns persist in the region, owing in part to the region's failure to meet growth and development expectations. Debtor countries are experiencing significant growth and development, requirements for reducing debt servicing issues in a healthy and expanding global economy, however, none of these characteristics were realized in the early 1980s (Abott, 1993). Goals for expansion were set missed because debt servicing requirements ate up more and more of the limited foreign exchange resources available for development financing (Dauda, 2007).

SSA countries' external debts have recently increased, prompting fears among analysts and politicians about the region's potential debt crises. Total external debt stocks of SSA grew from 176.36 billion dollars in 1990 to 235.94 billion dollars in 1995. External debt climbed from 58.21 percent to 71.95 percent of GDP within the same time period. In 1994, the greatest 78.23 percent external debt-to-GDP ratio was reached. The overall stock of external debt was valued at US\$213.44 billion; by the end of 2010, it had risen to US\$269.08 billion, an increase of US\$55.63 billion. External debt increased by 98.43 billion dollars (from \$269.08 billion to \$367.51 billion) over a three-year period (2010-2013), reflecting a 77 percent increase over the previous decade's increase (2000-2010).

The primary goal of this research is to analyze how external debt affects economic growth in Sub-Saharan Africa, specifically. The goal of the research is to determine if foreign debts benefit SSA by supporting economic growth or whether they add to the burden by increasing the debt burden. With respect to the specific objectives of this study, we perform an empirical inquiry of the consequences of debt overhang and debt crowding out, as well as the influence of foreign debt on economic growth in a number of Sub-Saharan African countries.

The research suggests useful ways in a number of areas. In theory, this research helps to a better understanding of how external debt affects Sub-Saharan African economic growth.

Understanding the foreign debt levels of SSA nations is crucial for practical ramifications. This findings will be extremely useful to policymakers in Sub-Saharan Africa as they formulate policies when it comes to external debt and economic growth. Finally, the study's conclusions will summarize the extent to which external debt, currency rates, and foreign direct investment, among other factors, affect the region's economic growth. Additionally, this study will help developing countries gain a better understanding of Africa's Sub-Saharan region, and also the influence of external debt on national economies which is a major concern. Academics will benefit from these works in future research on topics of interest. This research will also assist economic managers in making better judgments by allowing them to grasp the link between external debt and economic expansion are related in order to build effective policy instruments for achieving development and growth aims. It is also going to be beneficial for foreign partners in development and funders to obtain a better comprehension of the control and regulation of the external debt and growth nexus, in order to reduce any negative effects that external debt may have in Sub-Saharan Africa.

The thesis is organized into five chapters to accomplish the study's objectives. Following the introduction. The second chapter is a literature review. To highlight the importance of the research topics, this chapter examines SSA's economic progress and foreign debt. In addition, this chapter focuses on external debt levels and economic development of Nigeria, Uganda, Tanzania, Ethiopia, and Kenya, respectively. This chapter introduces the inspiration for each country and provides a broad review of each country's economic growth history. The third chapter contains the study's theoretical framework, which includes model specifications based on the theory used, data, and method of estimation. The theoretical framework employed in this study is analyzed to ensure the thesis hypothesis by analyzing past empirical studies on foreign debt's impact on economic growth. The fourth chapter summarizes the presentation, analysis, and interpretation of data. Finally, chapter five summarizes all findings, makes policy recommendations for Sub-Saharan Africa, and suggests additional research.

2. LITERATURE REVIEW

Economic growth and its impact of external debt has sparked much debate among academics about whether external debt reduces or increases economic growth. Economic growth in general is the subject of this chapter, which looks at both theoretical and empirical literature. After that, we will concentrate on notions that link domestic and external debt to economic growth. In this study, the debt overhang hypothesis, the crowding-out effect theory, the Dual Gap Theory, and a wide range of empirical literature are all examined.

2.1 The Crowding Out Effects Theory

Higher debt service payments, based on the debt crowding out theory, can contribute to a rise if personal savings do not rise to compensate for a country's fiscal deficit, state savings will be reduced. This, in turn, could raise interest rates or reduce the amount economic growth due to a lack of credit available for private investment. More interest rates choke out private sector investment when the government borrows more to fund higher spending or lower taxation. If there is more borrowing, interest rates will rise as a result of increased monetary demand and funds that can be borrowed, as well as higher prices. As a result of lower rates of return, the interest rate-sensitive private sector is likely to cut investment. Long-term economic growth based on supply or possibilities for production expansion will be stifled if corporate fixed investment falls. Because Government expenditure boosts the multiplier, which increases demand for private-sector goods. Consequently, increasing the acceleration effect via a fixed investment, reduces the crowding-out impact (Joy & Panda, 2020).

Excessive real interest charges frequently cause crowding out effects as the conditions of a heavily leveraged economy's trade deteriorate and external credit markets become unavailable. Claessens et al. (1996) identified a reduction in the available assets of a country for funding investment and macroeconomic activities as the cause of a drop in investment. Because of this, the crowding out effect, the country's ability to service its debt has been reduced, leaving little

cash for domestic investment as it tries to satisfy some of its obligations (Patenio and Agustina, 2007).

The Effects of the Crowding Out Hypothesis claim that there are government debts consume a bigger share a percentage of national savings intended for investment when a desire to save rises but supply is stable, resulting in a rise in the price of money. Due to exorbitant interest payments, crowding out effects set in when the government and its agencies are the only ones who can borrow. As a result, small businesses and individuals are unable to compete, and as a result, they've been pushed off the market. Economic growth is limited by the incapacity of the economy to create sufficient funds for investing.

Clements et al. (2003)'s findings were validated by the aforementioned. This and more findings, For instance, the debt stock and the flow of service payment facilities demonstrate the detrimental consequences of foreign borrowing on economic growth, verifying negative evaluations and scenarios, as well as the consequences of excessive borrowing which almost certainly stifle public investment. Taylor (1993) concluded that debt-induced liquidity constraints are a result of a fall in government spending as a result of the continued service of existing debt stocks that exceed the capability of the economy. According to Karagol (2004), developing countries are very interested in relationship between exterior and internal loans since the debt overhang effect, as well as economic development as a result. There is an increase in investment, which results in an increase in economic growth. Determining the source and effect, however, is difficult because debt overhang definitely has a significant impact on investment rates. Claessens et al. (1996) examine hypothesis of the debt overhang, demonstrating that a nation's expected burden of debt is becoming a more important component of its productivity.

Interest rates have risen, disposable income has reduced, and salaries have risen may arise from domestic and international borrowing are used to finance the government's deficit, all of which reduce corporate profitability and, by extension, private investment. As a result, private investment may be discouraged or displaced, lowering the level of production in a financial situation (Spilioti & Vamvoukas, 2015). Fiscal expansion, according to Keynesian economists, has a predisposition to raise the fiscal multiplier stimulates private investment growth by increasing aggregate demand for private sector goods. Increased government spending backed by borrowing reduces private sector savings. This is due to two factors: first, when the government's

fiscal policy is expansionary, government bonds are purchased by private savers, resulting in fewer savings to invest in the private sector. Furthermore, increased interest rates rise when the government borrows, which crowd out private investment. Furthermore, present borrowing crowds out by moving the tax burden to future generations, private investment is stifled (Gordon & Cosimo, 2018). Classical economists believe that government debt is bad for the economy, especially if it decreases both the budget process access to credit for the private sector and financial discipline. This argument claimed that government debt repayments, which are primarily foreign, stifle by restricting potential foreign investors are being discouraged from investing in the private sector., the government is stifling economic growth.. The equivalent of Ricardianism theory, on the other hand, claims that budgetary stabilization efforts have no impact on the economy. This theory assumes that changes in government spending and revenue being mirrored by shifts in personal savings (Saungweme et al., 2019).

In fact, crowding can be considered as the government's attempt to encourage private sector investment by conducting projects in the capital such as road infrastructure, hydropower, facilities for educational or health-care purposes, all of which reduce the private sector's cost of marginal production of generating one unit of output (Piana, 2001). This means that large government spending on capital goods production could potentially expand the stock of public capital investment, so crowding out private sector participation. To fund such initiatives, the government would have to create a debt instruments (domestic or foreign) or raise taxes.

2.2 The Debt Overhang Theory

According to the notion of debt overhang, excessive borrowing leads to increased debt, debt traps, as well as sluggish economic growth. The debt-overhang scenario states that, if the government's debt is likely to grow beyond the capacity of a country to repay it in the future, predicted debt servicing costs will deter additional both domestic and international investment. Investors could be interested deterred by the belief that the more production the more there is, the more governments will tax them to pay off the government's debt, and hence would be less willing to invest now to increase future output (Gordon & Cosimo, 2018). The accumulation of public debt, according to Krugman (1988), operates as a tax on future output while also diminishing the incentive to save and invest. The idea was that servicing debt decreases the quantity of money that can be invested, and that imposing a contractual liquidity restriction on

debt would further constrain investment and delay growth. Both the stock and service of government debt, according to the theory, have an impact on by inhibiting private investment, growth is stifled. Or changing the mix of government spending. Debt service may limit the amount of public funds available for infrastructure and human capital development, stifling growth.

External borrowing is effective topic in economic growth literature because of the negative impressions association foreign debt and foreign investment, which leads to poorer capital formation. The term "debt overhang" refers to this unfavorable association by Krugman (1988), when the repayment capacity of outstanding loans is smaller than the signed value. The problem of debt overhang was defined in the study as the expected the current worth of any proposed resource allocation that is insufficient to pay off an organization's outstanding debt.

According to Coccia (2017), the resources utilized to pay off the large public debt symbolizes a waste of resources that could have been put to better use in important development areas. The expense of servicing massive public debts could eat up more of the government's limited revenue, causing distortions and slowing growth in emerging countries. In deeply indebted economies, Debt hypothesis is a major source of economic stagnation. As noted by Kos and István (2019) when it comes to underdeveloped countries, servicing, enormous the government's debts are depleting. The revenue of the indebted country has dwindled to the point that it is time to reclaim the country's potential on track with your growth, even if the nation implements effective refinancing policies. If a country's debt greater than its repayment capabilities, debt payments are likely to become a bigger part of the country's future GDP, according to Krugman (1988). As a result, investment and growth will be inhibited due to the anticipation of high tax rates on local economic returns issued to current international creditors. Due to the uncertainty and adverse incentive effects that debt overhang causes, private investment programs are hampered (Spilioti & Vamvoukas, 2015). Capital flight is further exacerbated by high levels of debt by causing depreciation concerns, tax rises, and a need to safeguard the real worth of financial assets. As a result, domestic savings and investment are reduced of capital emigration, decreasing debt, growth, and the tax base servicing ability (Madow et al., 2021).

The debt overhang has the consequence that huge debt stocks reduce growth by limiting investment. This reduces the capability of native country to build it destabilizes the economy and

increases the country's dependency on foreign debt. Servicing the government's debt operations appear to be diverting significant resources away from expenditures on human development and infrastructure.

2.3 The Dual Gap Theory

Economic growth, according to the Dual Gap Theory, is dependent on investment, which in turn is a function of savings. However, this kind of investing which necessitates domestic financial savings alone may not be enough to sustain growth, particularly in Least Developed Countries (LDCs). According to Chenery, Foreign aid can help close these two gaps and help the economy reach its projected growth rate.

Foreign borrowing can help an LDC overcome a restriction of foreign exchange if it is dominant or binding at any particular time. Capital, intermediate products, and technical assistance are all imported the country can begin new investment projects. In the long run, foreign borrowing will be necessary to meet the increase in imports and exports. When exports reach a level that details the imports that are required for the economy's planned growth rate, the foreign exchange gap will close. Chenery presents empirical evidence that over the course of their development, LDCs confront a severe savings limitation followed by a severe foreign exchange constraint as one of the two chasms (savings gap and foreign exchange gap). Chenery classifies nations with a savings limitation and countries with a currency constraint into two types.

According to Hunt (2007), impoverished economies grow slowly and inefficiently due to their inability to offer financial assistance for both types of investments respective countries' private and public sectors. Savings and investment, alternatively, help to promote and sustain economic growth. According to Sachs (2002), capital is required for economic growth to be sustained and maintained capital levels exceed a particular threshold. Automatic economic growth will result from an increase in savings over time as capital and investment grow, aided by foreign loans. The dual gap theory is demonstrated in the preceding.

External borrowing becomes necessary as a result. The most crucial factor to consider when taking on external debt is a simple and straightforward one: only take on if the money can

generate larger when invested, returns greater than the cost of funding, debt from abroad may be considered. As a result, borrowing countries will increase their productivity and national output as a result of the investment made possible by means of borrowing cash. The term "dual-gap" signifies how important foreign currency is to a country's economic growth. For developing countries, foreign capital is essential in this situation because it enables them to invest more than they can afford to save on a local level, which is important given their savings deficits (McKinnon, 1964).

In the same vein, Were (2001) stated that in underdeveloped economies, due to insufficient income, the gap between consumption and income has not been great enough, resulting in insufficient savings. As a result, Capital in this situation will require to be supplemented with external financing in order to stimulate investment and, ideally, accelerate economic growth. It is important to remember that such cash must be invested and used profitably. As a result, countries will be able to increase their growth rates. In emerging countries, a lack of capital is mostly owing to a lack of foreign cash inflow to supplement domestic reserves (Ajab and Audu, 2006).

2.4 External Debt and Economic Growth in Sub-Saharan Africa (SSA)

For decades, developing countries have struggled with growing external debt, owing to the fact that most of them ran deficit budgets under the guise of building infrastructure, but which were ultimately utilized for political and deadweight initiatives office service. Raffinot and Venet argue that low- and middle-income nations' external debt stock has fallen. Stockpiles of external debt have dropped by 6% to \$6.7 trillion. The primary factors to this drop were net debt outflows and year-on-year currency variations between the currencies used to denominate external debt and the US dollar. Outflows were induced by a shrinkage of 18%. Apart from debt, flows of net financial fell by a third to \$379 billion in 2015, from \$1,159 billion in 2014. This amounts to 1.5% of the total GDP of countries with low and moderate incomes, descending from 4.9 percent in 2013–14. The steep decline in loan and portfolio equity flows was able to sustain foreign direct investment (FDI) based on equity. FDI remained constant in 2015, at \$543 billion, a modest increase over the previous year. For the fourth year in a row, portfolio stock flows were positive in 2015, nonetheless, they plummeted precipitously to \$21 billion (from \$81 billion in 2014). Inflows of net debt to developing nations decreased to \$184 billion in 2015, down from \$542 billion the previous year. (IDS, 2017) In 2015, however, net financial flows (debt and equity) in

Africa climbed by 18% to \$28 billion, demonstrating that the continent is growing. Inflows to Nigeria and Congo are not promising as a result of the worldwide oil price decline, posing a threat to these countries' development goals (IDS 2017).

In the near future, external debt will be an important form of financing for fiscal deficits in emerging nations. According to Adepoju et al. (2007), Africa's emerging countries suffer from insufficient internal capital generation as a result of the poor productivity, low income, and little savings create a vicious circle. As a result, to close the resource gap generated by the vicious circle, LDCs are compelled to seek managerial, technical, and financial support from Western countries. External borrowing is not just used to finance deficits; it is also used to help the economy recover. When debt is used effectively and strategically, the economy not only recovers from crises, but also grows. Developing countries, which are defined by a lack of fundamental infrastructure and capital. These resources are necessary for survival and they can be acquired through credit from wealthier countries as well as the global market.

On the contrary, others argue that external debt is stifling capital formation and as a result, economic growth in developing countries by crowding out private investment as debt accumulates and the servicing obligations and principal payback increase. Given the aforementioned, in developing economies, external debt contributes to the exacerbation of poverty in a self-perpetuating manner and a stumbling block to progress (Folorunso S. Ayadi et al, 2008). There is rising worry about whether the accumulated stock of external debt and its repayments by LDCs, as numerous scholars claim, they serve as a deterrent to the growth and development of their economies.

The historical debt crisis that affected Sub-Saharan African countries, which, according to various scholars, was caused by a complex a number of variables, some of which are exogenous to the debtor countries and others of which are direct consequences of bad policies. This establishes a reference point for analyzing the influence of external debt on economic growth. Over the course of the last two decades, economists and policymakers have proposed varied recommendations and tried various treatments to lessen or eliminate impoverished countries' external debt problems. The restructuring of non-concessional loans was one suggestion. However, it was eventually shown that inefficient government policies could obstruct debt reform's good consequences. This prompted recommendations to increase the amount of foreign

loans to deeply indebted developing countries (at lower interest rates) in exchange supporting internal policy improvements such as reducing government deficits and promoting exports. Debt relief has been proposed more recently when countries accrue loans and have problems repaying them (AmaniElnasri, 2006).

2.4.1 Overview of external debt and economic growth in Nigeria

At the moment, Nigeria is one of Sub-Saharan Africa's most indebted countries. Export growth has slowed as GDP growth has slowed, rapidly shrinking income per capita and rising poverty levels. The majority of these countries including Nigeria have been caught in a cycle of haste and stressful borrowing that they are unable to service. Worse, their primary exports' world prices are falling, necessitating greater borrowing (Ogunjimi, 2019). In 2006, Nigeria's debt burden was significantly reduced as a result of a 2005 debt reduction agreement negotiated by the Paris Club of creditors, which was prompted primarily by the need to free up resources in order to invest and build the economy more quickly. Unfortunately, 14 years has passed. Later, the country is once again mired in debt. Debt has piled up at an alarming rate under successive governments, and debt repayment costs have risen considerably in recent years, making them a thorn in Nigeria's financial process. As a result, massive government debt and debt repayment costs are weighing heavily on the economy which account for more than half of the government's modest income, restricting the economy's growth potential, the government's budgetary flexibility to make essential infrastructure investments that encourages private investment and promotes growth.

Public debt that is unsustainable is plainly stifling investment and reducing growth in Nigeria, lowering global competitiveness of the country and making financial markets more vulnerable to global shocks (Ogbonna et al., 2019). Either of these theories can be used to explain debt sustainability. The debt ratio of service to revenue or the debt-to-GDP ratio can be utilized to explain debt sustainability. The debt-to-GDP ratio in Nigeria is predicted to be less than 22%, one of the lowest in the world and significantly lower than that of most emerging economies. In comparison to many other countries, the total public debt of Nigeria is less than 30% of GDP, making it appear modest. Meanwhile, debt-to-GDP is not often taken as a trustworthy long-term debt sustainability indicator, particularly in countries such as Nigeria. Its tax-to-GDP ratio is one of the lowest in the world (6.1 percent). A more trustworthy metric of Nigeria's debt the debt

ratio of service to revenue is a measure of sustainability which gauges whether or not the government has enough cash on hand to pay off its debts as they come due. Nigeria's debt payment to revenue ratio has long been a problem. This has become a source of concern levels in recent years, prompting many to wonder if the country is insolvent or on the verge of bankruptcy.

Nigeria has been harmed by a larger debt-to-revenue ratio since the recession in 2016, as revenues have fallen in lockstep with oil prices. Out of a total of N4.1 trillion in income, Nigerian authorities spent 2.45 trillion dollars in 2019 servicing their debt-ridden naira, resulting in a debt service to revenue ratio of 59.6 %. In 2020, Debt service as a proportion of GDP in Nigeria reached an all-time high of 83 percent, bringing the country's debt profile to a new peak. This means that in 2020, 83 percent of revenue will be utilized to repay debt, which is concerning.

Domestic debt servicing cost in 2020 the government will spend N1.76 trillion, compared to a budget of N1.87 trillion. The total cost of foreign indebtedness was N553 billion, compared to a budget of N805.47 billion. To get started, you'll need a sinking fund away monies that will be utilized to repay future loans, such as bonds. Private businesses in need of credit were unable to get finance for expansion and growth due to the government's persistent borrowing from the domestic market (Ogunjimi, 2019). When a government spends a large portion of its earnings to service big debts, it leaves little money for crucial infrastructure investment, slowing growth. According to the National Bureau of Statistics' 2019 Poverty and Inequality in Nigeria Report, Nearly 83 million people in Nigeria live in poverty, with 40.1 percent of the population living below the N137,430 (\$381.75) per year is the poverty line, indicating the country's low levels of wealth in Africa's largest economy.

Total external debt is the sum owed to non-citizens in cash, goods, or services. The overall foreign debt is calculated by adding all external debts together, long-term debt that is guaranteed by the government and debt that is not guaranteed by the government, IMF loans, as well as short-term debt and interest on long-term debt. The figures are expressed in US dollars. In 2019, Nigeria owed \$54,832,397,402 up 8.68 percent over the previous year. Nigeria's external debt climbed by 16.81% to \$50,451,834,785 in 2018. Nigeria's external debt increased by 25.58

percent in 2017 to \$43,192,878,170. Nigeria's external debt was \$34,396,014,489 in 2016, up 6.12% from 2015.

Figure 2.1: A graph representing Nigeria's debt servicing and total proportion of GDP as external debt ratios from 2000 to 2019 is depicted



Data Source: World Bank

Despite revenue deficiencies, recurring government expenditures (debt and non-debt) has stayed elevated and in accordance with fiscal targets over the last two decades, while much-needed capital spending has continued to shrink. Nigeria's revenue is decreasing raising questions about the country's economic viability. Government income, notably non-oil income, might stay weak for a long time. The economy is on the verge of a covid-19, and insecurity is a primary cause of recession. As a result, the government would continue to borrow to support its activities. In Nigeria, rising debt has increased the service-to-revenue ratio. There will be a scarcity of resources to balance the budget and maintain the physical infrastructure that attracts investment and fosters long-term development unless basic revenue-driven changes. Structural policy reforms budgetary reductions are implemented to attract private investment and foster growth. Nigeria's total debt stock was N12.4 trillion in December 2014, according to Amaefule (2015). International Monetary Fund (IMF) reported that the government's domestic borrowing has been

steadily decreasing; nevertheless, according to public debt figures, the national debt has increased from N12.589 trillion. The sum of N12.577 trillion was spent in December 2017, N12.151 trillion was spent in March 2017 and the sum of N12.151 trillion was spent again in June 2018. According to trade economics, in the second quarter of 2018, Nigeria's external debt grew to USD22083.44 million up from USD22071.91 million in the previous quarter.

Table 2.1: Showing External Debt of Nigeria - Historical Data

Nigeria's External Debt - Historical Data			Nigeria's External Debt - Historical Data		
Year	Current US \$	Annual % Change	Year	Current US \$	Annual % Change
2019	\$54,832,397,402	8.68%	2009	\$19,285,647,640	17.08%
2018	\$50,451,834,785	16.81%	2008	\$16,472,696,893	6.35%
2017	\$43,192,878,170	25.58%	2007	\$15,488,724,677	19.49%
2016	\$34,396,014,489	6.12%	2006	\$12,961,870,579	-55.46%
2015	\$32,413,453,872	13.22%	2005	\$29,099,132,315	-34.70%
2014	\$28,628,765,478	16.94%	2004	\$44,559,883,686	8.38%
2013	\$24,482,376,279	14.05%	2003	\$41,114,859,871	14.26%
2012	\$21,466,867,764	2.21%	2002	\$35,984,951,348	6.63%
2011	\$21,003,387,146	11.59%	2001	\$33,749,025,764	0.70%
2010	\$18,821,584,009	-2.41%	2000	\$33,514,256,077	15.19%

Data Source: World Bank

2.4.2 Overview of Uganda's external debt and economic growth

For many years, Uganda, like a significant number of other developing countries, has relied on loans from international and bilateral financial institutions to meet its financial needs. Although the debt of Uganda has been increasing throughout the 1990s and early 2005, when it last received debt relief, the economy is in good shape, March, June, and September economic figures from BOU. By the end of May 2017. However, the total stock of public debt (provisional) was forecast to reach Shs. 34.0 trillion, up 14.1% from June 2016. (BOU 2017).

The Heavily Indebted Poor Countries (HIPC) effort helped to lower the external debt payment burden from 15.54 percent in 2004-05 to 13.1 percent in 2005-06. Later that year, during the G8 summit in Scotland, the MDRI was relaunched. Leaders of the G8 have promised to wipe all the debts of the world's most indebted and impoverished nations. As a result of this endeavor, Loans made by Uganda to international financial institutions have been completely canceled. Due to this, Uganda's external debt stock has been reduced by around 65 percent. The debt trajectory in Uganda is depicted in Figure 2.2, particularly in terms of debt-to-GDP, debt-to-export, and GDP growth rate. From 35.3 trillion dollars in the 1990s to 35.3 trillion dollars in the present.

Uganda qualified for debt relief as a result of financial communities around the world such as the creditors from the Paris Club, Non-Paris Club creditors, commercial and bilateral creditors, and global institutions must handle the debt crisis of low-income nations. Uganda received initial aid worth in nominal terms. The amount is \$ 650 million and improved assistance worth in nominal terms, the amount is \$1300 million dollars. As part of this initiative. When the HIPC initiative was launched in 1998, the debt-to-GDP ratio of the country had reportedly exceeded 100%. In contrast to other East African countries, Uganda's economy has grown for the past 20 years, the average annual growth rate has been 7%, until recently in 2017 (Uganda's Central Bank, 2017). The economy grew by 3.9 percent in 2016/17, According to Uganda Bureau of Statistics estimates, the rate will be 0.6 percentage points lower than the 4.5 percent forecast for the period and 0.8 percentage points lower than the 4.7 percent recorded in FY 2015/16. (UBOS).

Any debt with an initial maturity of one year or less is considered short-term debt. The figures are expressed in US dollars. Uganda's external debt for 2019 is at \$13,970,921,696, up 13.45 percent over 2018. Uganda's external debt was \$12,315,104,976 in 2018, up 5.5 percent from 2017. The external debt of Uganda in 2017 was \$11,672,694,087, up 15.73 percent from 2016. The external debt of Uganda in 2017 was \$11,672,694,087, up 15.73 percent from 2016. The external debt of Uganda in 2016 was \$10,086,191,862, up 5.39 percent from 2015.

Figure 2.2: Uganda's external debt as a percentage of GDP.



Data Source: World Bank

The ambitious targets outlined NDP II and Vision 2040 are the second, and third national development plans have exacerbated Uganda's debt which aim to transform. Uganda is expected to transition from by 2020, the peasants will be lower-middle-income, then Per-capita incomes of USD 9500 would be achieved by 2032, according to the National Planning Authority (NPA). To meet these goals, the government has invested heavily in massive infrastructure Dams, train lines, and airports are examples of infrastructure that can be used to boost the productivity of both physical and human resources.

Table 2.2: Showing External Debt in Uganda - Historical Data

Uganda's External Debt: A Historical Overview			Uganda's External Debt: A Historical Overview		
Year	Current US \$	Annual % Change	Year	Current US \$	Annual % Change
2019	\$13,970,921,696	13.45%	2009	\$2,763,176,528	20.51%
2018	\$12,315,104,976	5.50%	2008	\$2,292,861,399	38.70%
2017	\$11,672,694,087	15.73%	2007	\$1,653,066,727	27.09%
2016	\$10,086,191,862	5.39%	2006	\$1,300,697,180	-70.84%
2015	\$9,570,701,032	10.63%	2005	\$4,460,499,217	-6.87%
2014	\$8,651,413,340	1.07%	2004	\$4,789,438,348	4.63%
2013	\$8,559,917,407	126.68%	2003	\$4,577,712,718	13.88%
2012	\$3,776,142,288	15.74%	2002	\$4,019,812,753	6.68%
2011	\$3,262,582,094	9.68%	2001	\$3,768,195,791	6.59%

2010	\$2,974,602,245	7.65%	2000	\$3,535,147,375	-0.08%
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Data Source: World Bank

2.4.3 Overview of external debt and economic growth in Ethiopia

Between 2005 and 2017, an assertive economic policy reform and infrastructure development program resulted in an average real GDP growth rate of 10.4%, making Ethiopia one of Africa's fastest-growing nations. External debt financed a large portion of this exceptional economic expansion. Sub-Saharan Africa's third-largest economy is heavily indebted. As of 2017, the government and public enterprises owed more than half of the country's debt. From \$5.9 billion to \$26.1 billion, the debt stock has increased over the past decade.

Ethiopia's external debt was unsustainable and variable due to its status as a developing country. In keeping with this, the country is classified as a highly indebted low-income country by the World Bank's Highly Indebted Poor Countries classification. Over the last quarter of the twentieth century, Size, structure, and composition of Ethiopia's external debt have all changed drastically during the past decade. It was worth around US\$ 343.7 million in 1975 and US\$ 9.1 billion in 1991. This sum had risen to an equivalent of US\$ 10.2 billion as of June 30, 1999. Even though it had declined to USD 5.92 billion as of 30 June 2005 (MeleseGizaw, 2005). Following debt Relief is provided in conjunction with development measures aimed at assisting HIPC's (Highly Indebted Poor Countries), it has recently increased to USD 11.22 billion as of June 30, 2012, and further 21.74 billion at the end of 2016 (MoFEC, 2016); being four times larger than its figure in 2005. As a result, the concern is how the accumulated and fast expanding external debt stock, as well as debt repayment, would affect economic growth.

It was around USD 343.7 million (14 percent of GDP) in 1975, and by 1991, it had risen to USD 8.86 billion (138.93 percent of GDP). Furthermore, in 2001, this value had dropped to USD 5.6 billion (57.11 percent of GDP). It had recently climbed to USD 7.9 billion (36.7 percent of GDP) in 2011 as a result of debt relief granted as part of a development plan aimed at assisting impoverished nations with a high level of debt (HIPC's) (world Bank, 2011). The entire government spending in 2014 reaches a new record of Birr 178 billion. Ethiopia, as a developing country is not immune to peril; the government is unable to service its debt or achieve a sustainable level of economic growth.

African countries, particularly Ethiopia, were unable to increase investment, which could have boosted growth and development, due to their massive external debt stock and debt servicing payments (Clements, et al. 2003). Due to inefficient contractual loan deployment, insufficient returns on investments to service maturing commitments, and a lack of a positive balance to encourage domestic economic growth, external debt became a burden for the majority of African countries. As a result, Ethiopia's economy has struggled to respond macro-economically.

Since 1970s oil crisis, the public foreign debt has been a serious worry for HIPC's (highly indebted poor countries) and has impacted their economic fundamentals, according to the African Development Bank (2010). It has been claimed that a higher public external debt-to-GDP ratio enhances the likelihood of a crisis, increases volatility and delays growth. In accordance with the World Bank (2015), the external debt of Ethiopia has shifted dramatically and the country is today the most indebted and destitute in the worldwide. At the same time, the country has had steady growth over the last three decades, with some variations between time periods," says the World Bank.

The total external debt due to non-residents in the form of cash, products, or services is referred to as total external debt. External debt of Ethiopia in 2019 is \$28,287,820,759, an increase of 1.78 percent over 2018. External debt of Ethiopia rose 5.95 percent to \$27,793,379,640 in 2018. Ethiopia's external debt was \$26,233,362,395, up 11.76 percent from the previous year. Ethiopia's external debt reached \$23,473,611,284 in 2016, up 14.4% from 2015. The total external debt of Ethiopia from 2000 to 2019 is shown in Figure 2.3.

Figure 2.3: Showing Data from External Debt in Ethiopia



Data Source: World Bank

For growing Sub-Saharan African countries like Ethiopia, the issue of public foreign debt has become a hot issue that has to be researched for good management and efficient utilization in order to stimulate economic growth. Ethiopia is one of the worlds and even Sub-Saharan Africa's most indebted countries (World Bank, 2015). The country's external debt stock has grown by 11.3 percent annually to USD 26.4 billion in 2017/18, primarily to greater debt to international and commercial creditors worldwide. The external debt stock of the country to GDP ratio was 28.9 percent. (National Bureau of Economic Research, 2018). In order to revive and accelerate Ethiopia's economic growth, the Ethiopian government has implemented a more liberalized market-based economic policy with considerable institutional reforms during the 1990s.

Despite the debt burden, the country's economic performance improved throughout this time period as compared to the 1980s. In comparison to the 2% average growth in the 1980s, real GDP rose at a rate of 5% each year on average. However, since 1991, real GDPGR has increased at a remarkable rate of 6.58 percent each year on average. The economy has been developing at a faster rate in recent years (2014-2018), an annual real GDP growth rate of 9.42 percent on average. Indeed, the economy expanded by 7.7% in 2017/18, down from 10.9 percent the previous year (NBE, 2018).

Table 2.3: Showing External Debt in Ethiopia - Historical Data

Ethiopia's External Debt - Historical Data			Ethiopia's External Debt - Historical Data		
Year	Current US \$	Annual % Change	Year	Current US \$	Annual % Change
2019	\$28,287,820,759	1.78%	2009	\$5,360,207,434	88.31%
2018	\$27,793,379,640	5.95%	2008	\$2,846,424,291	9.84%
2017	\$26,233,362,395	11.76%	2007	\$2,591,387,173	16.68%
2016	\$23,473,611,284	14.40%	2006	\$2,220,991,209	-64.04%
2015	\$20,519,350,424	21.09%	2005	\$6,175,805,430	-5.97%
2014	\$16,945,024,499	34.65%	2004	\$6,568,177,207	-9.80%
2013	\$12,584,252,083	20.26%	2003	\$7,281,813,432	11.13%

2012	\$10,463,932,699	21.58%	2002	\$6,552,441,033	14.04%
2011	\$8,606,448,544	18.12%	2001	\$5,745,843,979	4.16%
2010	\$7,286,199,659	35.93%	2000	\$5,516,263,792	-1.01%

Data Source: World Bank

2.4.4 An Overview of Tanzania's External Debt and Economic Growth

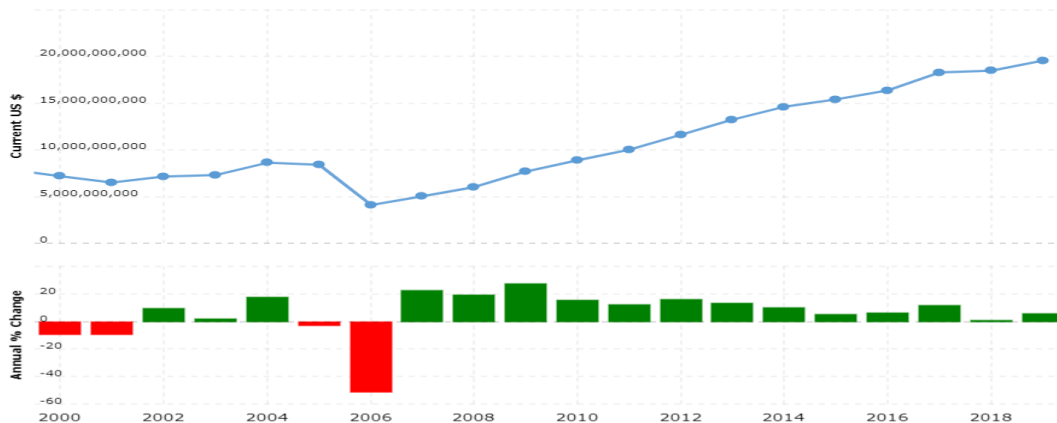
Initiatives Tanzania's development and balance of payments obligations have typically been funded by official bilateral and international donors. Tanzania was plagued by a slew both foreign and domestic economic and natural calamities, between 1975 and 1985, resulting in severe budget and balance of payments deficits. The oil crisis and the tragic Tanzania-Uganda war are two examples. Tanzania was compelled to borrow money from both domestic and international sources to cover its budget deficit (National Debt Strategy, 1998). External debt raised from 4.9 billion to 7.9 billion dollars between 1986 and 1997, a significant increase. At the same time, debt service fell from 0.3 billion dollars in 1986 to 0.12 billion dollars in 1990.

Tanzania is a participant in the World Bank-IMF-led Debt Reduction for Heavily Indebted Poor Nations (HIPC) program, which provides external debt relief to roughly 40 developing countries, the majority of which are in Sub-Saharan Africa. After the government met the completion milestone, the international institutions became eligible for this rebate, which provided debt payment reduction totaling around US\$ 3 billion in 2001. As demonstrated in the graph, the debt service has remained constant from 1970 to 2014, with no significant year-to-year volatility. Since 1970, GDP growth has been quite modest, however it can be observed that starting in 1996. GDP growth stepped up and began to show tremendous increase. This is understandable in light of the fact that economic liberalization occurred rapidly in the 1990s, assisting in the recovery of the economy by fostering private firms (i.e. privatization policy), improving revenue collection through telecommunications, and so on.

Gross Domestic Product (GDP) Growth Rate in the 2012 World Economic Outlook (WEO) owing to the accomplishment of economic reforms, Tanzania's real GDP growth rate has been trending upward since 1990. According to Muganda (2004), the government attained economic stability in the late 1990s, but macroeconomic policy suffered a temporary setback in the early 1990s. Tanzania's growth rate, however, was startled, falling from 7.0 percent to 2.1 percent in 1990 and 1991, respectively. The downward trend continued in 1995, with a minor uptick. When the reform effort temporarily stalled in the early 1990s, donor support plummeted; However, when the Mkapa government resumed reforms in 1995, it surged (Muganda, 2004). Another factor that contributed to Tanzania's slowing development rate was the numerous requirements imposed by donors in order to receive foreign help. Conditioning aid on policy measures, according to Muganda (2004), is a significant source of tension since it is seen as undermining ownership of economic control by the government and sovereignty. It caused friction between the government and its funders, prompting donors to reconsider their aid policies. Furthermore, Tanzania's growth rate fluctuated between 1995 and 2000, but it considerably increased to 6.0 percent in 2001. Fortunately, the data has revealed that, despite the fact that the movement swung back and forth between 2002 and 2010, there has been a little increase in growth since 2001.

Tanzania's macroeconomic performance from 2000 to 2019 has been excellent. The rate of expansion grew, as tax collected. A decade of extraordinary macroeconomic performance has marked Tanzania's economic development. The average yearly rate of increase between 2002 and 2009 was 7%, which, combined with a surge in tax revenue and a rise in the number of donors, allowed for a large increase in public spending (Lewis et al. 2011). Tanzania's external debt climbed from \$6.5 billion to \$8.7 billion between 1990 and 2010. On the other hand, from 130.1 percent in 1990 to 41.6 percent in 2010, the percentage of GDP has fallen. Debt service of Tanzania on an annual basis decreased by a slight amount between 1990 and 2010, from 0.21 billion to 0.20 billion dollars (WDI, 2011). The majority of debt load indices are on the decline. As a result, Tanzania's external debt is manageable so far (MOF, 2011).

Figure 2.4: Depicts the Trend of External Debt Stocks (in billions of dollars) from 2000 to 2019.



Data Source: World Bank

Total external debt includes all nonresidential debt that is repayable in cash, goods, or services. All figures are in US dollars. Tanzania's external debt for 2019 is at \$19,584,049,478, up 5.92 percent over 2018. Tanzania's external debt in 2017 was \$18,301,183,902, an increase of 11.73 percent over 2016. Tanzania's external debt increased by 6.28 percent in 2016 to \$16,380,492,423 a 6.28% increase from 2015.

Table 2.4: Showing External Debt in Tanzania - Historical Data

Tanzania's External Debt - Historical Data			Tanzania's External Debt - Historical Data		
Year	Current US \$	Annual % Change	Year	Current US \$	Annual % Change
2019	\$19,584,049,478	5.92%	2009	\$7,685,190,153	27.87%
2018	\$18,489,828,009	1.03%	2008	\$6,010,233,474	19.46%
2017	\$18,301,183,902	11.73%	2007	\$5,030,962,807	22.77%
2016	\$16,380,492,423	6.28%	2006	\$4,097,945,623	-51.27%
2015	\$15,412,332,704	5.41%	2005	\$8,409,774,097	-2.54%
2014	\$14,621,719,528	10.47%	2004	\$8,628,762,340	18.07%
2013	\$13,235,508,739	13.73%	2003	\$7,307,954,236	2.27%
2012	\$11,637,522,702	16.14%	2002	\$7,145,819,696	9.75%

2011	\$10,020,297,256	12.68%	2001	\$6,511,080,019	-9.42%
2010	\$8,892,437,728	15.71%	2000	\$7,187,824,540	-9.10%

Data Source: World Bank

2.4.5 An Overview of Kenya's External Debt and Economic Growth

Treasury bills and Treasury bonds are used to borrow on the government's behalf in the internal market under the terms of the Internal Loans Act (Cap 420). Treasury bills and Treasury bonds are issued by the Minister of Finance (cabinet secretary to finance). The only element of borrowing for domestic debt that appears to be regulated by law appears to be the government overdraft at the Kenyan Central Bank. Borrowing domestically via Treasury bills and bonds appears to be legal and unrestricted. Kenyan statutes, on the other hand, limit total indebtedness in principle amounts to Ksh 500 billion or a sum greater than that permitted by the National Assembly through a resolution.

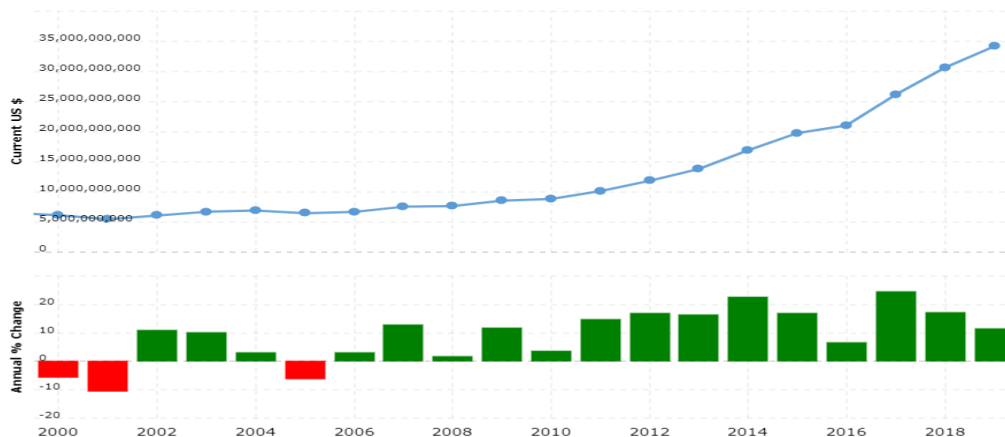
A perception of bad governance and mishandling of resources from the public sector and development assistance caused a steady fall in development assistance to Kenya in the 1990s. The Cold War has come to an end and the disintegration of the Soviet Union are also considerations. In the early 1990s, these developments created a financial crisis in Kenya, transforming the country into a deeply indebted country. The debt crisis was aggravated the Goldenberg episode, for example, was caused by macroeconomic mismanagement in the 1990s, which resulted in a decline in donor inflows after Kenyans were fleeced of billions of shillings. To fund its expenditures, the government has to rely on debt rescheduling and high-cost domestic short-term borrowing. Kenya's debt burden continues gloomy; the country's state debt was Kshs 867 billion as of August 2008, in a country of 36 million people and a slew of problems. Since 2003, the government's debt structure has evolved in favor of borrowing on a long-term basis through Treasury bonds. Interest rates remained stable at around 13% over this time period (Putunoi and Mutuku, 2013).

Kenya's debt management policy has two goals: to meet the government's financial needs at the lowest long-term borrowing cost possible while maintaining a sensible level of risk, and to expand the local market for government securities (Bumbe, 2009). According to the (IMF, 2016), the guiding fiscal rules is that the gross in net present value terms, governmental debt

should not exceed 50% of GDP. In accordance with the EAC Monetary Union Protocol. Further, The EAC protocol establishes fiscal convergence criteria, such as a 3 percent of GDP ceiling on the fiscal deficit (including grants), an 8% headline inflation ceiling, and a reserve cover floor (4.5 months of imports).

Kenya's state debt has risen in recent years, according to the (IMF, 2016), with most new debt funding infrastructure aimed at addressing bottlenecks and boosting sustainable growth. The majority of Kenya's external state debt has favorable terms, although recent commercial borrowing requires large payback in 2017 (2015 syndicated loan), 2019, and, particularly, 2024. (2014 sovereign bond issuance). Additionally, state debt has climbed from 44% of GDP at the end of 2013 to 52% of GDP by the end of September 2015. In the long run, it is predicted that the national debt will stabilize at approximately 54–55 percent of GDP in the coming years. In 2017–2019 and then progressively drop. External creditors account for half of Kenya's state debt.

Figure 2.5: Depicts the evolution of Kenya's external debts from 2000 to 2019



Data Source: World Bank

Nonresident debt is referred to as total external debt since it can be repaid in cash, products, or services. When combined with governmental debt, total external debt officially comprises Long-term debt, including guaranteed and unguaranteed private debt, IMF loans. Kenya's external debt in 2019 was \$34,217,072,395, up 11.5 percent from the previous year. Kenya's external debt climbed by 17.14% in 2018 to \$30,688,081,446, up from \$26,228,081,446 in 2017.

Table 2.5: Showing External Debt in Kenya - Historical Data

Kenya's External Debt - Historical Data			Kenya's External Debt - Historical Data		
Year	Current US \$	Annual % Change	Year	Current US \$	Annual % Change
2019	\$34,217,072,395	11.50%	2009	\$8,558,933,887	11.60%
2018	\$30,688,081,446	17.14%	2008	\$7,669,044,524	1.59%
2017	\$26,197,804,744	24.39%	2007	\$7,549,036,617	12.81%
2016	\$21,061,327,085	6.49%	2006	\$6,691,670,450	3.11%
2015	\$19,776,929,997	16.94%	2005	\$6,489,733,476	-6.17%
2014	\$16,911,889,740	22.56%	2004	\$6,916,593,411	3.00%
2013	\$13,798,577,601	16.21%	2003	\$6,715,084,651	10.16%
2012	\$11,873,346,635	16.91%	2002	\$6,095,869,528	10.93%
2011	\$10,155,961,501	14.68%	2001	\$5,495,276,586	-10.60%
2010	\$8,856,240,084	3.47%	2000	\$6,147,150,098	-5.79%

Data Source: World Bank

2.5 Empirical review

Some modest attempts have been made to empirically examine debt accumulation and crowding-out effects. The overwhelming bulk of empirical research involve a pretty conventional set of exogenous explanatory factors such as exogenous explanatory variables include domestic debt, and policy variables, as well as additional exogenous explanatory variables. Depending on the study's objective, the vast majority of people believe that At least one debt variable has a substantial and negative relationship with investment and growth.

Africa (2018) investigated external debt's impact on Sub-Saharan Africa's economic growth (SSA) in light of rising external debt levels in numerous African nations. From 1990 to 2013, the study collected annual data from 6 SSA countries and employed GMM (Generalized Methods of Moments). There is non-linear link between foreign debt and economic development, and grouping countries by per capita income has no effect on the external debt-growth relationship.

Olusegun, Olufemi, and Olubunmi (2020). Investigated External debt's impact on Sub-Saharan Africa's economic development was examined. The goal of this study is to ascertain whether or not the weight of foreign debt has an impact on economic development in 38 countries in Sub-Saharan Africa from 1990 to 2016. The link was assessed using a panel data econometric technique called Generalized Method of Moments.

External debt burdens have a detrimental effect on the economies of Sub-Saharan African countries. In accordance with the findings of the generalized moment technique. Furthermore, External debt has been shown to be more detrimental to middle-income countries than to low-income countries.

Musibau, Mahmood, Ismail, Shamsuddin, and Rashid (2018) investigated the question of whether external debt results in economic growth. The View from an ECOWAS Member Country. Foreign capital flows, particularly external debt, are offered by the academics as a solution to this long-standing issue. Using panel data between 1980 to 2015, With the Debt Overhang Theory as a guide, the study examined the casual link between external debt and economic advancement in ECOWAS members.

Mashingaidze (2014) investigated the influence of external debt on economic growth by conducting an analysis of the situation. In his analysis, he employed annual time series data, which encompassed the years 1980 through 2012. Using Granger causality, Toda-Yamamoto established a one-way relationship between external debt and economic progress. This conclusion implies that Zimbabwe's Gross Domestic Product (GDP) has been impacted by external borrowing (GDP). As a result, the findings validate Zimbabwe's debt overhang.

The relationship between foreign debt, public investment, and growth in low-income countries was one of the themes explored by Nguyen, Clements, and Bhattacharya (2003). According to their calculations, significant reductions in highly indebted poor countries' (HIPC's) foreign debt would enhance yearly per capita income growth by around 1%. Reduced foreign debt service may also contribute indirectly to economic growth by increasing governmental investment. HIPC's growth might be improved by 0.5 percentage point per year.

Södertörns högskola (2013) examined the debt overhang and debt crowding out effects to discover if foreign debt had an effect on the economic growth of a group of HIP African

countries. This is accomplished by an analysis of data from eight impoverished African countries that are severely in debt from 1991 to 2010. The estimation's conclusion reveals that it is the debt crowding out effect, not the debt overhang that has an effect on economic development. Additionally, to differentiate their debt service histories, the study discovered that the selected countries do not pay over 95% of the entire debt.

Mbah and Kharusi (2018) Oman's continuous expansion in foreign debt in order to pay its annual budget prompted researchers to analyze the link between government external borrowing and economic growth. The World Bank and the Central Bank of Oman provided time series data from 1990 to 2015. To ascertain the short-run dynamic nature of external debt and economic development, the study used the Autoregressive Distributed Lag cointegration approach to characterize the error correction process. According to the analysis, Oman's economic growth is significantly influenced by external debt. Additionally, it was discovered that total fixed capital is a major predictor of Oman's growth performance.

Getinet and Ersumo (2020) used an ARDL technique to investigate the effects of Ethiopia's public foreign debt on economic development from 1983 to 2018. For long-run co-integration, bound testing was used, and ECM was used for short-run dynamics. The outcomes of It is concluded from this study that Ethiopia's debt variables PEDSGD and DSSGD are major debt drivers, with the long and short term effects on Ethiopia's development being negative. Short-term crowding out is demonstrated by the fact that public foreign debt has a crowding out influence. Additionally, the indicator DSSGD is negative, indicating that the country's public foreign debt has an adverse influence on the economy.

Hassan and Meyer (2020) examined evidence on the non-linear impact of foreign debt on economic growth in Sub-Saharan Africa. The augmented mean group (AMG) and common correlated effects mean group (CCEMG) estimators were used to evaluate panel data from 1985 to 2018 in 30 SSA nations. External debt has a nonlinear effect on economic development in Sub-Saharan African countries, according to the research. Moreover, external debt limits of 44-53 percent of GDP and 196-232 percent of export were calculated as depressing economic growth in the region.

Hassan, Sule, and Abu (2015) conducted a research titled "The External Debt Effects on the Nigerian Economy. The data analyzed using the ordinary least square approach, and the study encompassed the years 1986 to 2013. Over the research period, government loan had a limited impact on economic growth, with massive external debt contributing relatively little to actual GDP. The study's findings indicate that unless excessive borrowing is curbed, the economy would continue to deteriorate, forcing the government to run a surplus budget, resulting in increased unemployment, decreased total investment, declining reserves.

Shkolnyk and Koilo (2018) examined a study from 2006 to 2016 on the association between external debt and economic development in emerging economies. The correlation analysis and ADL model were among the economic methods used by the authors. The results demonstrated that initial signs had no effect on the parameter estimates. Additionally, the regression model demonstrated that for emerging economies, there is a debt load threshold at which external debt has a negative marginal effect on economic development.

Between 1990 and 2010, Kasidi and Said (2014) evaluated the effect of Tanzania's external debt on economic growth. Using time series data, external debt and economic performance were studied. External debt and debt service had a considerable impact on GDP growth, the study showed. Paying debt payments has a negative impact of about 28.517, while the overall stock of external debt has a positive impact of approximately 0.366939. The cointegration test demonstrates that external debt and GDP have no link in the long-run

Gövdeli (2019) explored an empirical examination of Ethiopia's external debt in Debt and Growth: The data comes from the World Bank's time series database, which spans the years 1970 to 2016. In a cointegration framework, he computed a debt-growth model. Given that the country has consistently been on the debt Laffer curve, the model's evidence supports the debt overhang claim. In light of these facts, the model demonstrates that debt and growth have a non-linear and negative connection.

Marobhe (2019) used time series data to analyze the association between external debt and economic development in Tanzania (1970-2015). Multiple regression analysis using ordinary least squares revealed a substantial positive association between external debt and economic growth. Additionally, The Granger causality test was used to assess Tanzania's economic

progress. The results showed a relationship between foreign indebtedness and economic growth in the country. Moreover, According to the results of the Johansen Co-integration test, foreign debt and economic development have a long-term link in their relationship.

Table 2.6: Literature Review

Author(s)	Country	Time Frame	Methodology	Variables	Findings
Africa (2018)	6 SSA countries	1990 to 2013	GMM (Generalized Methods of Moments).	GDP, EXD, DB,	There is non-linear link between foreign debt and economic development
Olusegun, Olufemi, and Olubunmi (2020).	Sub-Saharan Africa	1990 to 2016	Generalized Method of Moments	GDPGR, ED DDS, FDI, GOVE	External debt burdens have a detrimental effect on the economies of Sub-Saharan African countries.
Musibau, Mahmood, Ismail, Shamsuddin, and Rashid (2018)	ECOWAS Member Country	1980 to 2015	Debt Overhang Theory	RGDP ,GDP, EXTDEBT, INTEXTDEBT, DSAVING	Long and short run causality between external debt and economic growth economic integrated member countries.
Mashingaidze (2014)	Zimbabwe	1980 through 2012	Granger causality	LNY, LNK, LNLAB, and LNEXT	Zimbabwe's Gross Domestic Product (GDP) has been impacted by external borrowing (GDP

Södertörns högskola (2013)	HIP African countries	1991 to 2010	debt crowding out effect	External Debt, Debt overhang, Debt crowding out,	The study discovered that the selected countries do not pay over 95% of the entire debt.
Mbah and Kharusi (2018)	Oman	1990 to 2015	Autoregressive Distributed Lag cointegration approach	GDPGR, DEBT/GDP, POPGR, GFCF, TRD/GDP	Negative and significant influence of external debt on economic growth in Oman.
Getinet and Ersumo (2020)	Ethiopia	1983 to 2018	ARDL technique	GDP, EX, POP	With the long and short term effects on Ethiopia's development being negative.
Hassan and Meyer (2020)	Sub-Saharan Africa.	1985 to 2018	The augmented mean group (AMG) and common correlated effects mean group (CCEMG) estimators	GDP,EX,X	External debt has a nonlinear effect on economic development in Sub-Saharan African countries
Hassan, Sule, and Abu (2015)	Nigeria	1986 to 2013	ADF unit root test, Johansen cointegration and error correction test.	GDP, DPST EXDT,EXR ,FXR	Debt service payment has negative and insignificant impact on Nigeria's economic growth while external debt stock has positive and significant

					effect on Nigeria's growth index.
Shkolnyk and Koilo (2018)	emerging economies	2006 to 2016	ADL model	GDP,POP.I NV, EXR	The significance of the problem of effective public debt management strategy implementation in Ukraine.
Kasidi and Said (2014)	Tanzania	1990 and 2010	time series data,	GDP,ED,D S	There is significant impact of the external debt and debt service on GDP growth.
Gövdeli (2019)	Ethiopia	1970 to 2016.	ARDL bounds testing approach	GDP,EXD ARD	The model's evidence supports the debt overhang claim.
Marobhe (2019)	Tanzania	1970-2015	Granger causality test	GDP,debt stock, EXT, debt service	Foreign debt and economic development have a long-term link in their relationship.

3. METHODOLOGY

3.1 Research Design

The study's approach can be described as an ex-post factor design. In this context, the literature evaluation included a comparative examination of data and other material. The model is based on growth equation regression, and it used both the standard Dickey Fuller (ADF) and the Augmented Dickey Fuller (ADF) tests to detect whether or not the series was stationary in the first place.

3.2 Theoretical Framework

3.2.1 The Two gap or Dual gap model

To gain a better understanding of the external debt issue, scholars have taken a variety of perspectives. Chenery's dual gap model (1996) is commonly used to analyze the need for international aid to close the gap between industrialized and underdeveloped countries, namely the there is a savings gap as well as a trading gap. The majority of these economies start out their development with a modest level of savings. However, it has change gaps that must be bridged in order to achieve the targeted pace of growth and engage in high-level investment. As Rostow points out, it is becoming simpler for economies to achieve the take-off stage. As Rostow predicted, if the gap is narrowed. Now the issue is how the void will be filled. Chenery views overseas trade as a way of bridging these two divides and assisting the economy in reaching its target growth rate (M.L. Jhingan 2007). If the savings gap is dominating, the economy is enjoying full employment, but not all of its foreign exchange revenues are being used, based on the assumption of full employment. It might have adequate foreign currency to buy more capital goods from other countries, but it lacks the spare to pursue new investment opportunities with domestic resources. As a result, additional foreign exchange may be used to import high-end items. Such a country has a scarcity of resources that are useful, which can be interpreted as a scarcity of savings. On the contrary, countries with a savings gap, or those with a foreign exchange gap, cannot close the gap by employing extra domestic savings.

Foreign exchange imbalances must be resolved in order to attain the desired rate of economic growth. Dual gap analysis is built on this foundation. Assume there is a country that needs to

save and make prudent investments in order to attain the desired rate of economic growth. There is a savings-investment gap when domestic savings fall short of the level required to accomplish the targeted growth rate. Likewise, a foreign exchange gap between exports and imports develops when the greatest amount of import required to achieve the desired level of growth exceeds the maximum amount of export that may be accomplished. The gap between exports and imports in total value causes a foreign exchange gap (especially when imports exceed export). The resulting depreciation changes the difference between the local and international currencies. The savings gap, on the other side, is the difference between how much money people save and how much money they need to invest in the economy. This can be presented in numerically as:

$$Y=C+I+X-M.....Eqn 3.1$$

$$Y=C+S.....Eqn 3.2$$

$$S=Y-C..... Eqn 3.3$$

Therefore,

$$C+I+X=C+S+M..... Eqn 3.4$$

$$I-S=M-X..... Eqn 3.5$$

We have a savings constraint when the savings gap exceeds the foreign exchange gap; we have a foreign exchange constraint when the foreign exchange gap exceeds the savings gap. As a result, foreign aid must be employed to close the savings gap through capital inflows.

3.3 Model specification

The Dual Gap hypothesis, which considers the saving-investment gap, is the theoretical underpinning of this study. Hassan, Sule, and Abu (2005), Ajayi and Oke (2013), and Hunt (2014) all conducted research using this concept (2007). The two-fold gap analysis provides a paradigm that growth requires investment and that domestic saving is insufficient to ensure growth (Oloyede, 2002). Many countries use the dual gap hypothesis to decide whether or not to take on international debt in addition to domestic debt. This theory's premise states that savings is a function of investment. Many growing countries, on the other hand, are faced with insufficient investments and savings, and as a result, they choose to supplement domestic savings with external savings. The rationale for governments borrowing money from other countries to fund investment will be referred to as "gross domestic product" (GDP). GDP is utilized in this

scenario to signify the total value of national income (C), payments and services, and savings (S).

$$C + S = \text{GDP} \quad (1)$$

GDP is the total of all economic agents' total expenditures when the government has no control over the economy

$$\text{Where (M) is import and (X) is export. Therefore, we have: } \text{GDP} = (X - M) + C + I \quad (2)$$

The term "total domestic investment" refers to the sum of private sector (IP) and public sector (PSI) investment (Ig). Domestic investment in total I is as follows:

$$I = I_p + I_g \quad (3)$$

EQ (3) is obtained by solving both equations (1) and (2) as follows:

$$\text{GDP} = S + C, \text{ GDP} = (X - M) + C + I$$

$$S + C = C + I + (X - M)$$

$$S = I + (X - M)$$

$$I = S - (X - M)$$

$$I = S + (M - X) \quad (4)$$

Due to the occurrence of an import balance on the current account, a country will require external finance if local savings are insufficient to fund domestic investment - EQ iv (M-X). Total domestic investment = total domestic savings + total net external loan, as we can see from the previous calculation. Our Econometric model will be estimated using panel data to compare the influence of foreign debt on economic growth.

The following is a description, this research will make use of a modified version of Fosu's increased production function:

$$Y_{it} = (EXD_{it}, INF_{it}, CS_{it}, INV_{it}) \quad (5)$$

The model may be rewritten as follows using the aforementioned equations:

$$\text{GDP}_{it} = \beta_0 + \beta_1 EXD_{it} + \beta_2 INF_{it} + \beta_3 CS_{it} + \beta_4 INV_{it} + \epsilon_t \quad (6)$$

Where:

GDP= Gross domestic product

β_0 =constant

t = time

I =Particular Country

EXD= External debt

INF=Inflation

CS=Capital stock

INV=Investment

E_t = disturbance term

3.4 Data type and Sources

This study employs secondary data from the year 2000 to the year 2020, and it is panel data. The World Bank's World Development Indicators (WDI) database served as the major source of data for this study. Additionally, the International Monetary Fund (IMF). Economic growth was quantified as the annual percentage change in real GDP, while inflation was measured as a change in the consumer price index in percentage terms. External debt was measured as the each country's total external debt in US dollars. Gross fixed capital formation is measured as a percentage of gross domestic product, whereas investment is measured as a percentage of GDP (in US dollar).

Table 3.1:- description and measurement of variables

Variables	Descriptions	Variable Measurement	Source of data
GDP	Gross domestic product	Annual percentage change of (GDP)	World development indicator (WDI)
EXD	External debt	Total external debt of each country in US Dollars)	World development indicator (WDI)
INF	Inflation rate	Annual Percentage change in Consumer Price Index (CPI)	International Monetary Fund (IMF)
INV	Investment	Percentage of GDP for each country	International Monetary Fund (IMF)
CPS	Capital stock	Gross fixed capital formation (in US dollar)	International Monetary Fund (IMF)

			IMF)
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3.5 Data Analysis

Cointegration techniques developed by Johansen (1988) and Johansen and Juselius (1990) will be utilized to follow up on this study. This technique was used to assess the long-term association between variables. The first step is to ensure that all of the data is in the same order. This is performed through the use of unit root tests to determine whether or not data sets are stationary. As a result, Augmented Dickey-Fuller (ADF) unit roots are applied to the variables.

3.5.1 Descriptive Analysis

The technique for analyzing the descriptive statistics for the variables included in the study is known as the variable assessment procedure. The descriptive indicates the central tendency and spread of the data sets used in the preliminary appraisal of the event, as well as the nature of the general population inferences drawn from results acquired from a sample of the organization's data.

3.5.2 The Fixed Effects (FE) and the Random Effects (RE) Regression

According to Halima (2015) Panel data can be analyzed using either fixed effects or random effects models. The FE was utilized to establish a correlation between economic growth and external debt in each country. Because every country has its own macroeconomic situation, including aspects that may or may not have an effect on GDP growth. The use of this model is warranted. The following is a description of the FE model:

$$GDP_{it} = \alpha_i + \beta_1 X_{it} + u_{it}$$

Where:

$\alpha_i (i = 1 \cdots n)$ is the intercept for each country

GDP_{it} is Gross domestic product $i = \text{country}$ and $t = \text{time}$

X_{it} Is a vector of independent variables (external debt, domestic debt, inflation rate, capital stock, labor force, and exchange rate)

βs are the coefficients of the independent variables

u_{it} Is a stochastic error term

Individual impacts that are not noticed are represented by fixed parameters, according to the model's fundamental premise. Furthermore, the independent variables are unrelated to the idiosyncratic error term. It is predicated on the premise that individual entity error terms are unrelated to the independent variables. The RE model is described as follows:

$$GDP_{it} = \alpha_1 + \beta_1 X_{it} + u_{it} + \varepsilon_{it}$$

Where:

u_{it} is the between country error term
 ε_{it} is the within country error term
 the generalized least squares method was used to estimate the RE model.

3.5.3 Stationary testing

The sequence of integration of variables in a model must be tested. This is accomplished through the usage of the unit root test. The integration sequence must be understood in order to establish the nature of co-integrated and non-stationary variables. In this situation, the augmented Dickey-Fuller test is advantageous. To avoid econometric difficulties such as spurious regression and inconsistency, the unit root test is applied. BLUE estimates are model estimates with the same order of integration as the variables. Inconsistent or erroneous regression results from non-BLUE estimations in a model. The null hypothesis asserts the existence of a unit root, whereas the alternative hypothesis asserts that it does not. Before running the OLS regression, non-stationary variables must be differenced to make them stationary.

3.5.3.1 The Augmented Dickey-Fuller Tests

The ADF contrasts the null hypothesis, $H_0: \rho = 0$, that the time series is non-stationary, with the alternative hypothesis, $H_1: \rho < 0$, that the time series is stationary (no unit root). If the null hypothesis is rejected, the series does not have a unit root. For stationary variables, the regression model establishes the independent and dependent variables, as well as the means to variance errors. Nonstationary analyses demonstrate the effect of High 2 for low Durbin Watson statistics and F statistics in determining economic outcomes (Verbeek, 2000). The purpose of estimation assessments in statistical determinations is to ensure consistency.

3.5.4 Co -integration test

Granger (1983) established that two variables must have an error correction representation in order to be considered co-integrated (ECM). In order for two time series variables to be co-integrated, their integration orders must be the same and (d) there must be a stationary linear combination of the two variables ((0)). Even if the component time series are not stationary, cointegration of a linear combination of these variables is achievable. Engle-Granger & Johansen's technique was employed in this investigation. The OLS-based autoregressive distributed lag (ARDL) technique for cointegration has gained popularity in recent years, due to the low power and other drawbacks of standard test methods. The primary advantage of ARDL modeling is that it is adaptable to variables with varied integration orders (Pesaran and Shin 1997). Additionally, Using a sufficient number of delays, this method is able to accurately describe the data production process within a general-to-specific modeling framework (Laurenceson and Chai 2003). Additionally, by performing a simple linear transformation, ARDL can be used to generate a dynamic error correction model (ECM) (Banerjee et al. 1993). ARDL approach is asserted to be less problematic when dealing with non-stationary time series data (Ssempala, Ssebulime and Twinoburyo, 2020).

3.5.5 Error Correction Model Specification

Because we are interested in univariate analysis, a link between external debt and economic growth shows that the two variables are in long-run equilibrium, which is supported by empirical evidence of co-integration. Therefore, The Error Correction Model would be computed to analyze the Co-integrated series characteristics in the short run. The use of ECM allows for clearer picture of the short-term interactions between several stationary series. It defines each variable in a system is a function of itself latency as well as the lag of the other variables.

Error Correction Models were used to simulate the short- and long-run effects of external debt on economic growth. A model is constructed using the Hendry Modeling methodology from a generalized (excessively parameterized) form to a defined (parsimonious) form. It was also

embraced because it accounts for the speed with which the body returns to balance following a shock (ECTt-1).

The Error Correction Model (ECM) has the following structure:

$$\Delta Y_t = a_0 + \sum_{i=1}^j \alpha_{1i} \Delta Y_{t-i} + \sum_{i=1}^j \alpha_{2i} \Delta X_{it-i} + \alpha_3 ect_{t-1} + u_t$$

The proportionality between yt and Xt is used to obtain the long run characteristics. The above specification demonstrates the relationship between the short run variation of the dependent variable yt and the variation of the explanatory variables Xt. This phenomenon is referred to as the impact effect (2), but a feed-back method is used to test the change in the long run impact.

4. EMPIRICAL RESULTS AND DISCUSSION

This part conducts a data review and empirical analysis, focusing on the key variables identified in the methodology for measuring the impact of external debt on Sub-Saharan Africa's economic growth. To assess the data in relation to the defined objectives, E-Views were employed. Additionally, the study conducted preliminary tests such as normality and stationary test variables throughout time. The study performed only cointegration analysis because it was primarily interested in long-run relationships.

Furthermore, cointegration approaches are presented in order to ascertain throughout Sub-Saharan Africa's long-term relationship between external debt and economic growth (2000-2020). Additionally, this chapter applies the econometric methodologies discussed in the preceding chapter and discusses the results in detail. This chapter opens with a concise description of the data. This may be used to assess the scores for each variable in order to perform more advanced statistical analysis, and the results can be easily visualized using tables and graphs.

The following subsections of the chapter incorporate the Augmented Dickey Fuller approach to perform unit root tests (ADF). Following that, stationary tests will be used to examine the long-term association between the variables under inquiry. Johansen cointegration tests are used to capture the long-term relationship.

4.1 Data Preliminary Testing

Numerous diagnostic checks and tests were conducted prior to data analysis to ascertain the all variables' statistical behavior. In order for data to be used in a study, the integrity and trustworthiness of the data must be confirmed, as well as its normal distribution.

4.1.1 Descriptive Summary

All of the variables' mean, standard deviation, maximum, and minimum values are all considered descriptive statistics. Due to the absence of data on key factors for some countries, the data

comes from a sample of five countries in Sub-Saharan Africa from 2000 to 2020, and it is based on that sample. The mean of the variables reveals their average value, but the standard deviation reflects their distribution of values around their mean values. The study's major factors were economic growth and foreign debt, other variables were inflation (INF), capital stock (CPS), and investment (INV). Descriptive analysis was used to ascertain the nature of the data on these variables, and the findings are summarized in Table 4.1.

Table 4.1: The Summary Statistics For The Series Of The Data Set

Statistics	GDP	EXD	INF	CPS	INV
Mean	6.134755	47.22075	45.47151	20.53066	23.73691
Median	6.162619	30.80921	12.86040	20.10556	22.38400
Maximum	15.32916	184.0822	329.9850	46.51123	39.88300
Minimum	-2.161360	4.616943	-5.755335	-2.817915	3.863000
Std. Dev.	3.134641	52.18671	63.73479	8.930809	8.200051
Skewness	-0.102468	1.406420	2.338982	0.192063	0.178175
Kurtosis	3.774024	3.673162	8.869354	3.266627	2.564771
Jarque-Bera	2.804866	36.59783	246.4554	0.956565	1.384294
Probability	0.245998	0.000000	0.000000	0.619847	0.500500
Sum	644.1493	4958.179	4774.509	2155.719	2492.376
Sum Sq. Dev.	1021.902	283239.1	422460.9	8294.972	6993.048
Observations	105	105	105	105	105

Sources: eviews-9

GDP growth rates in the empirical analysis for the chosen Sub-Saharan African nations averaged 6.134755percent. The maximum growth rate recorded was 15.32916 percent, while the minimum growth rate recorded was -2.161360 percent; there was a 3.134641 percent standard deviation from the mean growth rate. The mean external debt was 47.22075, ranging from 184.0822 to 4.616943, external debt, it differs from the mean by an average of 0.8586%. The mean inflation rate over the study period was 45.47151, ranging from 329.9850 to -5.755335. The period's standard deviation from the inflation rate was 63. 73479. The mean capital stock over the study

period was 20.53066, ranging from 46.51123 to -2.817915. During the study period, the standard deviation of capital stock from the mean was 8.930809. ”

Investment as a percentage of GDP averages 23.73691 with the highest estimate being 39.88300 and the lowest being 3.863000. During the time, the standard deviation from the mean investment was 8. 200051. The disparity in domestic investment relative to GDP between countries may be explained by variances in their growth rates.

4.1.2 Test for Normality

The model's variables were examined for normalcy to determine whether the model's incorrect results were caused by the variables' non-normality. This was verified using the Jarque-Bera statistic.

Table 4.2: Test for Normality

Statistics	GDP	EXD	INF	CPS	INV
Skewness	-0.102468	1.406420	2.338982	0.192063	0.178175
Kurtosis	3.774024	3.673162	8.869354	3.266627	2.564771
Jarque-Bera	2.804866	36.59783	246.4554	0.956565	1.384294
Probability	0.245998	0.000000	0.000000	0.619847	0.500500
Sum	644.1493	4958.179	4774.509	2155.719	2492.376
Sum Sq. Dev.	1021.902	283239.1	422460.9	8294.972	6993.048
Observations	105	105	105	105	105

Sources: *evIEWS-9*

The normality test findings in Table 4.2 indicate that, at the 5% level of significance, only foreign debt (EXD) and inflation (INF) were normal. Whereas all other variables in the sample were not normal since their Jarque-Bera probability exceeded the 0.05 threshold of significance. The null hypothesis of normality cannot be rejected. As a result, we will record the variables before to using them in subsequent examinations.

4.1.3 Test for Stationarity/Unit root test

We will employ the unit root test and the augmented Dickey-fuller (ADF) test to find out if the variables are not stationary. We employed the augmented Dickey Fuller (ADF) statistics to find

out if the variables were stationary. They can be found in Tables 4.3. The decision rule: For it to be stationary, it must have an absolute value of more than 5%. If not, it is non-stationary.

Table 4.3: Stationarity Test Results Using Augmented Dickey Fuller (ADF) Tests

VARIABLES	ADF - Fisher Chi-square @LEVELS	5% CRITICAL VALUES	ORDER OF INTEGRATION	RESULT
GDP	22.7674	0.0116	I (0)	STATIONARY
EXD	9.66675	0.4702	I (0)	NON-STATIONARY
INF	6.86383	0.7382	I (0)	NON-STATIONARY
CPS	10.3095	0.4138	I (0)	NON-STATIONARY
INV	6.86383	0.7382	I (0)	NON-STATIONARY

Sources: *evIEWS-9*

The preceding results indicate that none of the variables were stationary at their own values except for GDP, which was stationary at the 5% level of significance. This can be seen by looking at the important value of the test statistics at the 5% level of significance. The table's results show that there is no consistency. As a result, the null hypothesis is not thrown out and the foregoing result suffices to conclude that unit roots exist in the variables at levels. Except for GDP, all variables were compared once, and the ADF was run on them. The following table 4.4 summarizes the findings:

Table 4.4: Unit Root Test for Stationarity at First Difference

VARIABLES	ADF - Fisher Chi-square @LEVELS	5% CRITICAL VALUES	ORDER OF INTEGRATION	RESULT
GDP	67.1937	0.0000	I (1)	STATIONARY
EXD	18.7215	0.0439	I (1)	STATIONARY
INF	55.1834	0.0000	I (1)	STATIONARY
CPS	47.8488	0.0000	I (1)	STATIONARY
INV	29.9730	0.0009	I (1)	STATIONARY

Sources: evIEWS-9

GDP is the only variable that is stationary at levels; EXD, INF, CPS, and INV at the initial difference, the system is stationary and integrated to order 1. Because the majority of our variables are it's not stable in level form, so a cointegration test is done. The purpose is to demonstrate that the majority of the variables have a long-term link.

4.2 Random Effects Model (REM)

The random effects model's results are summarized in table 4.5 at the bottom. External debt had an effect on GDP growth, the results indicate. The connection was not statistically significant at the 5% level. On the flip side of the equation, a negative but statistically significant link between GDP and inflation was discovered. GDP has a significant positive association with the size of the capital stock. Investment is another factor that contributes to GDP growth. This has a statistically significant effect on gross domestic product (GDP).

Table 4.5: Random Effects Model Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.629658	1.223303	2.149638	0.0340
EXD	-0.002076	0.005151	-0.403021	0.6878
INF	-0.015580	0.004301	-3.621935	0.0005
CPS	0.082191	0.030982	2.652885	0.0093
INV	0.110550	0.034247	3.228005	0.0017

Sources: evIEWS-9

4.3 Hausman Test

The Hausman test was performed to determine the relationship between the fixed and random effect models. As demonstrated in Table 4.6, the test chose the fixed effects model as the preferable model.

Decision-making role: Random effects are appropriate, according to the null hypothesis. Alternatively, fixed effects may be appropriate. In this case, a fixed effect model will be employed if the p-value is significant; if not, a random effect model will be used.

Table 4.6: Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Gross-section random	10.631847	4	0.0310

Sources: *evIEWS-9*

4.4 Fixed Effect Model

Table 4.7 summarizes the random effects model's conclusions succinctly. Debt from outside the country has a small but positive effect on the country's GDP. An important relationship was found between inflation and GDP, but it was negative and statistically important. The capital stock and overall GDP had a negative and statistically insignificant connection. Finally, investment demonstrated a considerable positive association with GDP. As indicated in Table 4.7, the Hausman test got a p-value of 0.0310. This demonstrates that the FEM model was selected as the optimal model.

Table 4.7: Fixed Effects Model Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.779758	1.697717	2.815403	0.0059
EXD	0.006333	0.016114	0.393013	0.6952
INF	-0.034378	0.006275	-5.478300	0.0000
CPS	-0.002650	0.036547	-0.072510	0.9423
INV	0.112634	0.049900	2.257207	0.0263

Sources: *evIEWS-9*

4.5 Co-integration Analysis

The goal of this study was to determine whether a variable has a long run correlation with one another using the Johansen Fisher Panel Cointegration Test. Maximum likelihood estimation and two statistics are used in this test: maximum Eigen values and a trace statistic. It is the rule that there is no co-integration if the null hypothesis is true. If the chance is less than 5%, we reject the null hypothesis (0.05). Even though the null hypothesis is not rejected if the probability exceeds 0.05, it does not mean that there is not a causal link between the variables. In Table 4.8, we can see the results of the cointegration study.

Table 4.8: Unrestricted Cointegration Rank Test (Trace and Maximum Eigenvalue)

Hypothesized	Fisher Stat.*		Fisher Stat.*	
No. of CE(s)	(from trace test)	Prob.	(from max-eigen test)	Prob.
None	126.8	0.0000	79.54	0.0000
At most 1	62.84	0.0000	39.65	0.0000
At most 2	31.06	0.0006	19.60	0.0333
At most 3	19.70	0.0322	18.73	0.0439
At most 4	12.31	0.2647	12.31	0.2647

Sources: *evIEWS-9*

Table 4.8 contains four equations from the Unrestricted Co-integration trace rank test, one of which (11) is the maximum lag length for the VAR model in equation (7). This means that there is co-integration between the Series: EXD INFCPS and GDP. In this example, we find that the null hypothesis that there is no co-integration is false at the 0.05 level of significance. On the other side, the results from the same table's Maximum Eigenvalue indicate the existence of co-integration between four variables (GDP EXD INF CPS). These results corroborate the first trace rank test. We reject the null hypothesis that there is no long-term association between external debt and economic growth in Sub-Saharan Africa based on the p-values in the table (2000-2020). As a result, we will now use ECM to analyze the co-integrated series' short run features.

4.6 Error Correction Model

The Error Correction Model was developed by adding the lagged terms of the variables as well as the Error Correction Term in the model. The error correction model shows how variables are linked in the short run.

Table 4.9: Short Run Relationship Model Dependent Variable: (GDP) Included Observations: 105 after Adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2.629658	1.257269	2.091563	0.0390
EXD	-0.002076	0.005294	-0.392133	0.6958
INF	-0.015580	0.004421	-3.524083	0.0006
CPS	0.082191	0.031842	2.581214	0.0113
INV	0.110550	0.035198	3.140796	0.0022
R-squared	0.730929			
Adjusted R-squared	0.50167			
F-statistic	7.506769			
Prob(F-statistic)	0.000025			
Durbin-Watson stat	1.189948			

Sources: *evIEWS-9*

This is shown in Table 4.9. In the short term, EXD is not linked to GDP at all. The coefficient of EXD (β_1) is -0.002076, which means that when all other factors stay the same, the relationship between external debt and gross domestic product is in the opposite direction when the other factors stay the same. When the amount of money we owe outside the country rises by 1%, we lose 0.2% of our gross domestic output, or 0.002076. The study found a correlation coefficient of 0.730929 and an adjusted correlation coefficient of 0.50167, which show that there is a strong connection. In this case, the F-statistics value of 0.000025 is less than 0.05, which means that the regression model did a good job of predicting how each variable would turn out, and that their means are statistically linked.

β_2 : The parameter takes the link between INF and GDP into account. According to prior expectations, an increase in a country's inflation rate invariably results in a decline in GDP. The coefficient of INF is -0.015580, indicating that inflation and GDP have an inverse connection when other variables remain constant. This suggests that a 1% increase in inflation results in a -0.015580 drop in GDP.

β_3 : The parameter takes the link between CPS and GDP. According to prior expectations, an increase in a country's capital stock would probably lead rise in GDP. The coefficient of CPS is 0.082191, indicating that capital stock and GDP have a positive relationship, holding other variable constant. This suggests that a 1% increase in capital stock increases GDP in 0.082191.

β_4 : the parameter takes into consideration the relationship between INV and GDP. Based on prior expectations, an increase in a nation's investment would lead to rise in GDP. The coefficient of INV is 0.110550, indicating that Investment and GDP have a positive relationship, holding other variable constant. This suggests that a 1% increase in investment increases GDP in 0.110550.

5. CONCLUSIONS AND POLICY RECOMMENDATIONS

Numerous research have produced contradictory findings regarding the impact of external debt on economic growth. Some studies have indicated a positive correlation between external debt and economic growth, while others have found a negative correlation. The goal of the study was to find out how external debt affects economic growth in Sub-Saharan Africa between 2000 and 2020. This chapter discusses the previous chapter's findings, the study's conclusions, and recommendations for reducing external debt through economic growth.

5.1 Discussion of Findings

- In order to examine the relationship between external debt and economic growth in Sub-Saharan Africa., we used a three-step process that was based on facts. During the first step of the process, we used a unit root testing procedure (ADF) to look into the stationary properties of the time series. All the variables in the model are stationary at first difference, except GDP, which is stationary at level. When we did this in the second stage, we used the fixed and random effect model.
- The study's initial objective was to determine the effect of external debt on economic growth in several countries in Sub-Saharan Africa (2000-2020). The study used REM and FEM (Fixed and Random effect model) to look at the variables and figure out how external debt affects economic growth, as well as how the variables were related. The coefficient of EXD is 0.006333, indicating that assuming all other variables remain constant, there is a positive association between external debt and economic growth. This means that if EXD goes up by one percent, GDP goes up by 0.006333.
- The main findings of ECM show that having a lot of debt from outside of the country has a detrimental effect on the economic prosperity of the country. To start with, when the country's debt grows, a lot of tax collected has to be used to pay it back loans from other countries. These limits the amount of money that can be used to invest in projects that help developing countries grow their economies. Repaying debt from outside the country can also lead to the depreciation of local currencies, which can lead to inflation in SSA countries that are big importers.

- The second goal of this study is to look into how long-term debt and economic growth are linked in some of the countries in sub-Saharan Africa that we have chosen (2000-2020). The study used the variable test to figure out the external debt and economic growth long-term link. It used co-integration to figure this out. And that of Johansen cointegration shows that there were 4 equations that were linked together. This implies that external debt and economic growth have a long-term link. Results from our Johanssen cointegration test showed that the variables were linked together in a real way. According to the findings of Ehikioya, Omankhanlen; "Ssempala; "Ssebulime; and Twinoburyo (2020), "Mashingaidze (2014), and Ssempala, Ssempala, and Twinoburyo (2020), External debt and GDP growth in Sub-Saharan Africa have a long-term link.

5.2 Conclusion

The complexity of the region's development issues, the severity of its capacity, and the magnitude of its development finance requirements make it impossible for domestic resources to bridge the region's budget deficit. Along with fiscal resources and local reserves, it is prudent, if not inevitable, for Sub-Saharan Africa's economies to tap additional sources of funding. Even though the majority of the world's developing countries have relied on external debt to finance their development, this debt remains the greatest impediment to economic growth and development today. This situation is suitable when applied to developing countries, where a high debt stock remains a threat. The stagnation of the world economy and international recession have been identified as key factors contributing to the region's debt crisis. Debt is a perennial problem that has been addressed in a variety of ways over the years. While the region's debt crisis has gained prominence and attention, it is obvious that the majority of countries continue to rely on external finance. There have been questions voiced about such a method, which brings us to the thesis's motivation: if such a method is worth relying on.

External debt, in general, can have a beneficial or negative effect on economic development, depending on how the country and its government manage it to develop productive infrastructure and inspire its human capital to prevent waste. Sub-Saharan countries face numerous challenges due to their economic conditions. Successive governments have amassed large foreign debts in order to finance national development schemes and deplete home resources. The study's primary

contribution is that relatively few academics have examined this macroeconomic indicator of external debt.

A government that has a public debt can get money from the private sector or other sources outside of the country to pay it back. As a result of the absence of a robust private sector and a well-developed financial system, there are not sufficient resources that can be used at home. Despite this and other problems, many countries in Sub-Saharan Africa still rely on loans from international lenders and other sources of money from outside their countries. This study used empirical analysis to look at the effect of external debt on economic growth in some countries in Sub-Saharan Africa and see how it affects them. In this study, a model called a cointegration model was used to look at how the variables in the study were related over time. The study used a cointegration model to see if any of the variables in the model had a long-term relationship with each other. Additionally, the study examined how an error correction model affected the short-term association between the variables in the study (ECM). In some places of Sub-Saharan Africa where the error correction model was applied, there is a short-term correlation between external debt and economic growth.

In the study, it can be said that external debt has a big effect on the growth of the economy. They hurt the economy when people have debt outside of their own country, but it is not statistically significant when it is at 5%. This means that if there is less debt outside of the country, more money can be used to invest in development projects and thus boost the economy's growth.

5.3 Policy Recommendations

In view of the preceding findings and conclusions, governments and policymakers in SSA countries should consider the following recommendations:

- To keep the economy growing at a steady pace, the governments should first figure out and follow an ideal balance between external and domestic debt. Domestic debt did not have a big impact on GDP growth, but it cannot be relied on completely because a big rise in borrowing locally could make private investments less profitable.

- Sub-Saharan Africa and policymakers must try speedily to enact structural reforms aimed at reforming the public sector and sustainability of the external debt. Since reliance on external resources is both dangerous and unstable, the SSA must mobilize its own resources and adopt policies to reduce its external debt exposure, in order to reduce its undesirable economic effects. In other words, to prevent further debt accumulation, the SSA should expand the economy to generate more income and to increase domestic financing. Borrowings should be linked to productive initiatives and invested in self-liquidating building projects that invest in vital infrastructures that stimulate the growth of specific sectors of the economy rather than social consumption.
- Fiscal management is needed to keep the overall public debt from growing too much. SSA countries will be able to spend more of their tax money on investments instead of paying back loans, which will help their economies grow. It is important that foreign sources should be used in areas which stimulate growth and development, high technology, high value added industries and improve the current account.
- The study advocates for more deliberate borrowing and the growth of infant industries. To promote the development of infant industries and so minimize foreign borrowing, governments are advised to consider partnering with foreign partners that possess the skills necessary to develop certain natural resources that remain untapped in specific sections of the country.
- Investor confidence in both domestic and international investments should be bolstered by policymakers through establishing credibility and political will. Sub-Saharan Africa is confronted with numerous issues such as political instability, terrorism, and so on. As a result, countries have lost their investor confidence. In order for investors to invest in the countries and for the countries to become less reliant on external debt, it is imperative that this confidence be rebuilt in the short term.
- Increased domestic saving and export revenues are advised as additional ways to boost anticipated growth and minimize the economy's reliance on foreign debt. It is critical to foster an investment-friendly climate, and policy should prioritize the inflow of Foreign

Direct Investment (FDI), while minimizing the input of debt. To avoid misusing external debt, strict monitoring and regular debt management measures are critical.

- Additionally, foreign debt should be used to fund well-evaluated "high priority" capital and human development projects which do not inflate the economy or impede external competitiveness, but instead boost economic performance and enhance citizens' well-being.
- Finally, a good economic management policy, characterized by low inflation and a low budget deficit, is essential for the effectiveness of external debt. A suitable policy solution must be implemented in order to achieve the beneficial impact of external debt on economic growth, which should be achieved by reducing the budgetary deficit and lowering the inflation rate.

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APPENDIX: MACROECONOMIC DATA

Countries	Year	GDP	EXD	INF	CPS	INV
Ethiopia	2000	6.073	4.625262	9.464719	32.10767	20.217
Ethiopia	2001	5.162146	4.616943	-5.75534	37.09796	21.528
Ethiopia	2002	6.073217	4.649352	-3.62143	34.08112	22.838
Ethiopia	2003	8.301306	4.705918	12.76798	37.99373	21.006
Ethiopia	2004	1.514726	4.761461	3.911362	40.67127	25.05
Ethiopia	2005	-2.16136	4.801486	9.875512	37.34877	22.384
Ethiopia	2006	13.5726	4.823309	11.55235	38.44399	23.914
Ethiopia	2007	11.81877	4.835354	17.22058	34.72882	20.781
Ethiopia	2008	10.83473	4.846259	30.31167	35.26398	21.244
Ethiopia	2009	11.45617	4.861587	24.14642	30.75215	24.677
Ethiopia	2010	10.78852	4.879485	1.444572	46.51123	25.524
Ethiopia	2011	8.802553	4.897617	20.06188	9.440737	32.108
Ethiopia	2012	12.55054	4.913407	33.54141	24.39043	37.098
Ethiopia	2013	11.1783	4.936868	4.901979	26.26627	34.081
Ethiopia	2014	8.647812	4.981242	10.98179	10.57857	37.982
Ethiopia	2015	10.58227	5.051954	10.83654	11.88551	39.417
Ethiopia	2016	10.25749	5.137135	10.39793	4.151258	37.349
Ethiopia	2017	10.39246	5.249895	6.676855	25.25477	38.444
Ethiopia	2018	9.433483	5.370718	12.38229	7.424957	34.163
Ethiopia	2019	9.56419	5.471986	12.8604	35.26398	35.264
Ethiopia	2020	6.816148	5.5405	18.24389	11.88551	30.752
Kenya	2000	0.599695	48.88165	9.980025	17.41409	6.82
Kenya	2001	3.779906	42.80308	5.738598	18.79034	6.816
Kenya	2002	0.54686	46.79714	1.961308	15.13822	14.596
Kenya	2003	2.932476	45.5617	9.815691	16.48215	13.931
Kenya	2004	5.1043	43.35403	11.62404	16.9625	3.863
Kenya	2005	5.906666	34.64572	10.31278	17.64968	12.928
Kenya	2006	6.472494	25.98158	14.45373	18.63359	6.691

Kenya	2007	6.85073	23.72865	9.75888	20.45698	13.771
Kenya	2008	0.232283	21.38976	26.23982	19.61271	12.018
Kenya	2009	3.30694	23.15905	9.234126	19.33262	19.001
Kenya	2010	8.405699	22.23807	3.961389	20.8409	21.264
Kenya	2011	6.108264	23.87788	14.02249	21.70276	21.887
Kenya	2012	4.563209	23.52786	9.377767	21.4756	22.192
Kenya	2013	5.878681	25.23263	5.717494	20.10556	22.414
Kenya	2014	5.357126	27.87759	6.878155	22.43166	24.955
Kenya	2015	5.718507	31.27089	6.582174	21.46596	22.103
Kenya	2016	5.878949	30.85626	6.297158	18.25545	19.348
Kenya	2017	4.805697	34.76743	8.005723	19.03417	21.077
Kenya	2018	6.318451	36.3882	4.68982	17.94529	20.157
Kenya	2019	5.365749	37.33931	5.23586	17.40169	19.479
Kenya	2020	-0.3075	39.3727	5.404815	15.66621	12.362
Nigeria	2000	5.015935	52.94455	32.241	34.10954	14.361
Nigeria	2001	5.917685	48.2576	38.324	30.92589	15.14
Nigeria	2002	15.32916	40.30195	43.262	27.58251	20.072
Nigeria	2003	7.347195	42.27652	49.333	29.3868	17.546
Nigeria	2004	9.250558	35.21739	56.733	27.11797	16.553
Nigeria	2005	6.438517	17.87779	66.864	26.18959	15.576
Nigeria	2006	6.059428	5.600018	72.358	27.86559	16.268
Nigeria	2007	6.59113	5.871894	76.267	21.24461	18.654
Nigeria	2008	6.764473	5.117637	85.099	19.897	15.611
Nigeria	2009	8.036925	6.95436	95.768	22.04954	19.418
Nigeria	2010	8.005656	5.502671	108.928	17.5621	17.291
Nigeria	2011	5.307924	5.491002	120.719	16.36056	16.212
Nigeria	2012	4.230061	4.950816	135.478	14.95883	14.908
Nigeria	2013	6.671335	5.063753	146.986	14.90391	14.904
Nigeria	2014	6.309719	5.417664	158.815	15.8027	15.803
Nigeria	2015	2.652693	6.838346	173.125	15.4901	15.49

Nigeria	2016	-1.61687	9.019975	200.298	15.36674	15.367
Nigeria	2017	0.805887	12.56601	233.352	15.47433	15.474
Nigeria	2018	1.922757	14.30156	261.574	19.81377	19.814
Nigeria	2019	2.208429	13.84388	291.386	25.41589	25.416
Nigeria	2020	-1.79425	16.88231	329.985	29.39886	29.399
Tanzania	2000	4.520785	54.35423	8.201104	6.33598	21.91
Tanzania	2001	6.070808	49.23877	4.815969	13.09339	22.507
Tanzania	2002	7.093195	51.02538	7.233031	8.507813	22.082
Tanzania	2003	6.67279	48.77692	8.418683	15.0456	23.78
Tanzania	2004	7.503815	52.54019	6.885623	11.04292	27.945
Tanzania	2005	7.476319	46.74834	6.389613	20.34945	30.626
Tanzania	2006	6.532221	22.10714	5.510095	16.51625	31.613
Tanzania	2007	6.768535	23.45698	9.09939	15.28195	32.914
Tanzania	2008	5.686417	21.93144	16.38075	22.98269	37.981
Tanzania	2009	5.269105	27.00912	9.041662	7.89056	34.694
Tanzania	2010	6.336523	28.42933	9.428716	2.550122	32.39
Tanzania	2011	7.672155	29.88535	12.19842	13.99895	35.273
Tanzania	2012	4.500154	30.80921	10.48389	8.592889	34.844
Tanzania	2013	6.781586	31.09219	9.666184	23.88368	37.47
Tanzania	2014	6.732462	33.00316	6.050846	9.595574	37.654
Tanzania	2015	6.160629	39.03914	7.591364	-2.81791	32.759
Tanzania	2016	6.867116	39.93876	7.472034	9.342579	32.175
Tanzania	2017	6.78568	41.1049	2.703734	13.4425	34.046
Tanzania	2018	5.444968	39.76395	2.975537	8.184962	38.363
Tanzania	2019	5.791371	39.03159	2.473306	1.726969	39.655
Tanzania	2020	2.003858	41.25045	0.336384	6.41808	39.883
Uganda	2000	3.141907	96.92813	32.084	19.23396	20.365
Uganda	2001	5.183661	96.02283	32.701	19.04756	20.059
Uganda	2002	8.732686	103.4871	32.603	19.96328	20.888
Uganda	2003	6.473259	114.0889	35.442	20.68333	21.937

Uganda	2004	6.807233	126.9599	36.742	19.94443	23.192
Uganda	2005	6.332565	137.8494	39.902	22.20172	23.119
Uganda	2006	10.78474	148.7272	42.783	20.92496	22.017
Uganda	2007	8.412426	168.0645	45.388	21.86888	24.9
Uganda	2008	8.708752	151.1743	50.855	22.74825	22.181
Uganda	2009	6.801517	160.9467	57.475	24.13599	21.469
Uganda	2010	5.637612	184.0822	59.767	25.8436	22.667
Uganda	2011	9.391655	181.6684	70.923	25.71481	22.707
Uganda	2012	3.837456	177.3834	80.861	25.14081	26.801
Uganda	2013	3.586906	175.3603	85.283	30.44247	28.948
Uganda	2014	5.106307	153.2386	88.939	25.59507	24.932
Uganda	2015	5.18786	146.7538	92.222	22.54008	24.152
Uganda	2016	4.781	152.6289	96.99	24.23401	24.75
Uganda	2017	3.809129	162.2996	102.461	24.05242	24.622
Uganda	2018	6.162619	159.0957	105.148	24.34807	25.266
Uganda	2019	6.803327	114.0889	107.613	25.33103	26.448
Uganda	2020	2.857581	103.4871	110.58	24.50197	27.621

Source: world Bank and international monetary fund (WB, IMF)