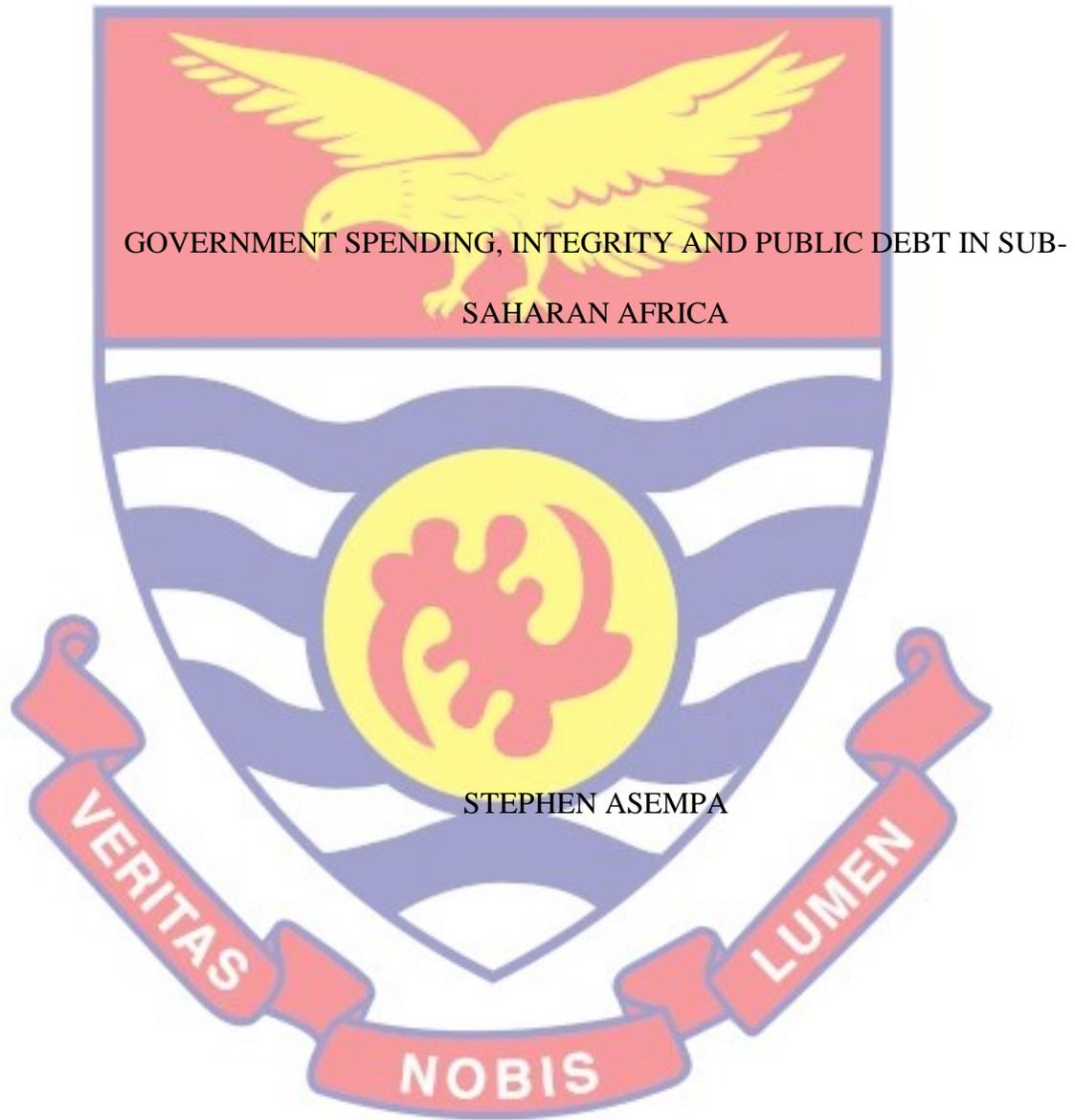


UNIVERSITY OF CAPE COAST



2021

UNIVERSITY OF CAPE COAST

GOVERNMENT SPENDING, INTEGRITY AND PUBLIC DEBT IN SUB-
SAHARAN AFRICA

BY

STEPHEN ASEMPA

Thesis submitted to the Department of Economic studies of the School of
Economics, College of Humanity and Legal Studies, University of Cape Coast, in
partial fulfilment of the requirements for the award of Master of Philosophy

Degree in Economics

NOBIS

DECEMBER 2021

DECLARATION

Candidate's Declaration

I hereby declare that this thesis is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature Date.....

Name: Stephen Asempa

Supervisor's Declaration

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of thesis laid down by the University of Cape Coast.

Principal Supervisor's Signature..... Data

Name: Dr Francis Kwaw Andoh

Co-Supervisor's Signature..... Date.....

Name: Dr Eric Amoo Bondzie

ABSTRACT

The rising public debt level in sub-Saharan Africa and the sustainability of that debt remains an important research agenda. Given the raising concerns of fiscal sustainability and increases in debt burdens in sub-Saharan Africa, this study aims to determine the effect of government spending and government integrity on debt-to-GDP ratio in SSA. The study used panel data of SSA countries over the period 2005 – 2019 and employs GMM estimation model in analysing the findings of the study. The study found that government spending has a significant positive effect on debt-to-GDP ratio. The study also found that government integrity also has a significant and positive effect on debt-to-GDP ratio. The study provided evidence that government integrity reduces the effect of government spending on debt-to-GDP ratio in sub-Saharan Africa. The study therefore, recommends that the borrowed funds by governments should productively be spent on development or capital expenditures in order to regenerate more revenue and achieve growth. Hence policy makers and government agencies in the region should ensure that their government spend within their means. Government are encouraged to restructure their spending from corruption-prone investments to the ones that can be properly managed and monitored. Therefore, governments should pledge to be accountable by frequently making available to the public information on fiscal deficits, government's borrowing and debt management.

KEY WORDS

Debt to GDP ratio

Government spending

Government integrity

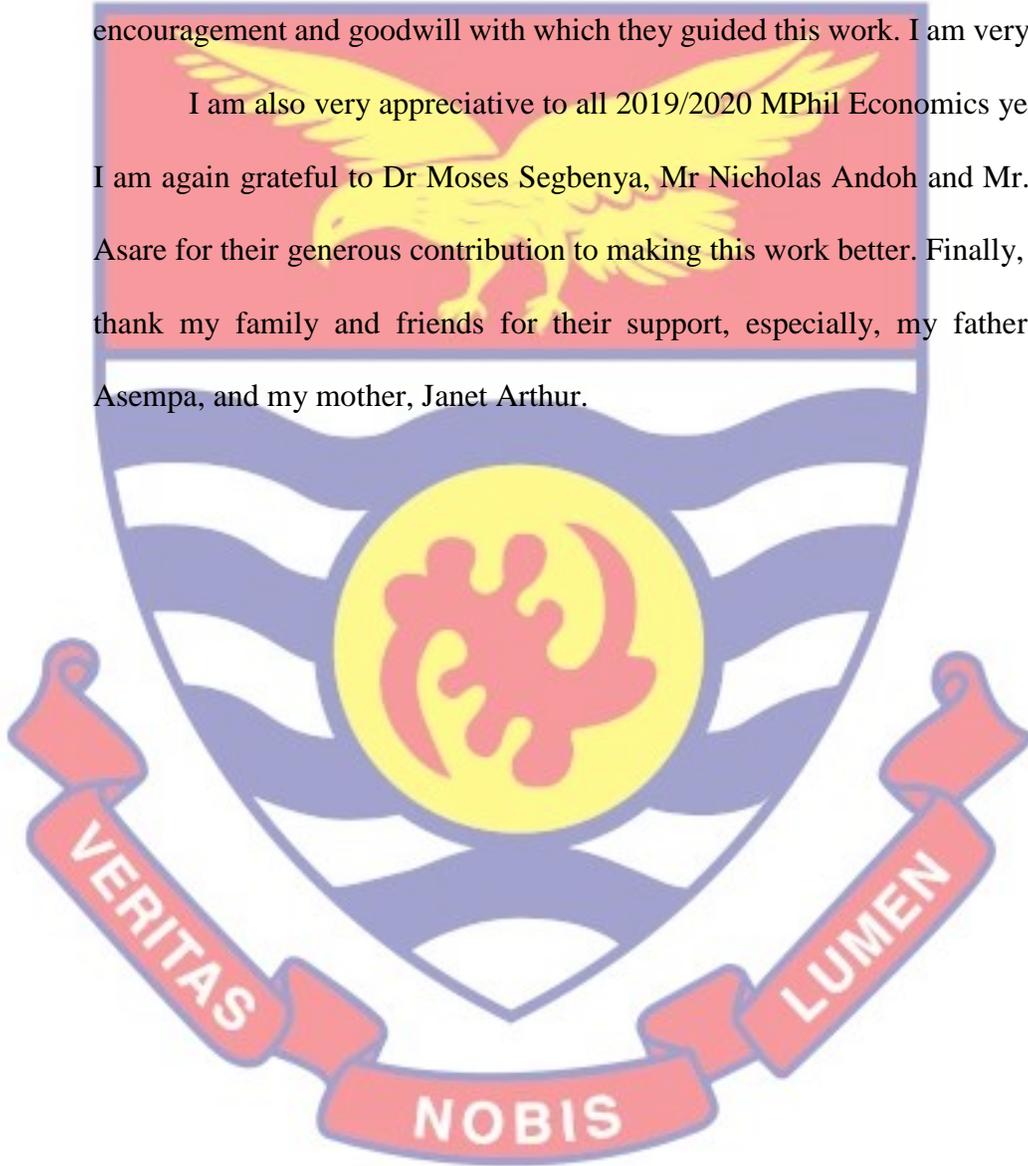
Budget deficit



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DEDICATION

To my sister: Dorothy Asempa

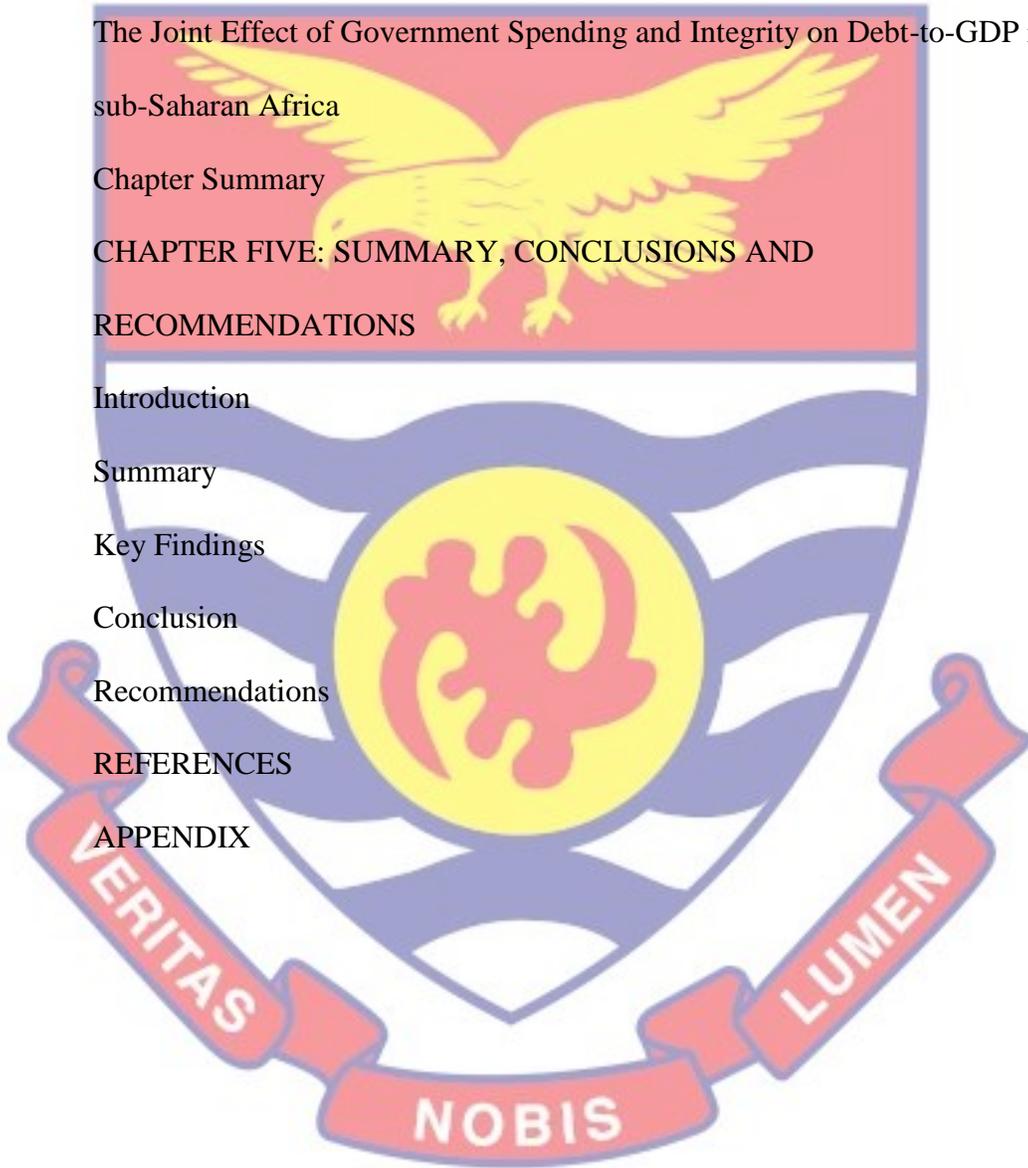


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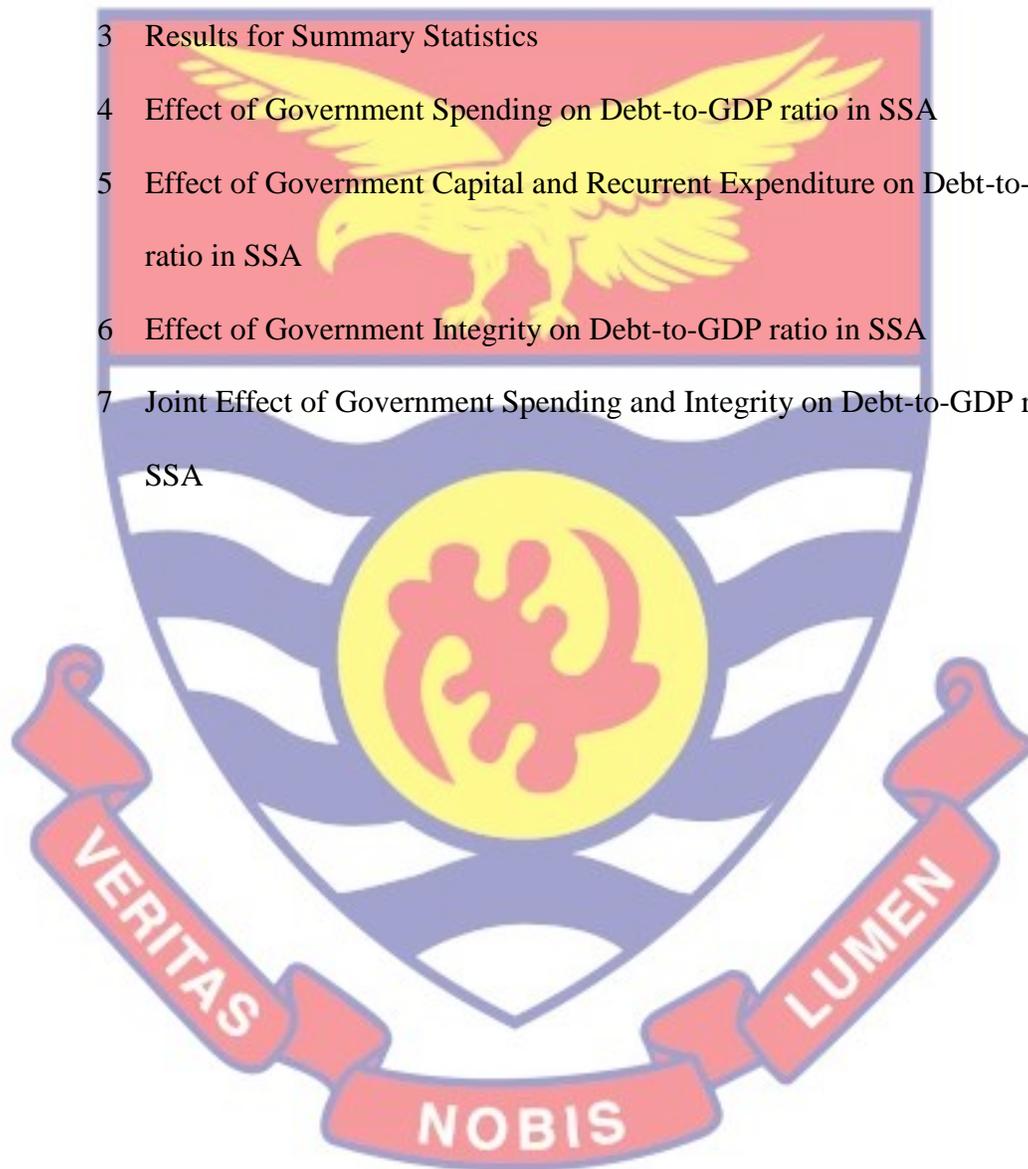
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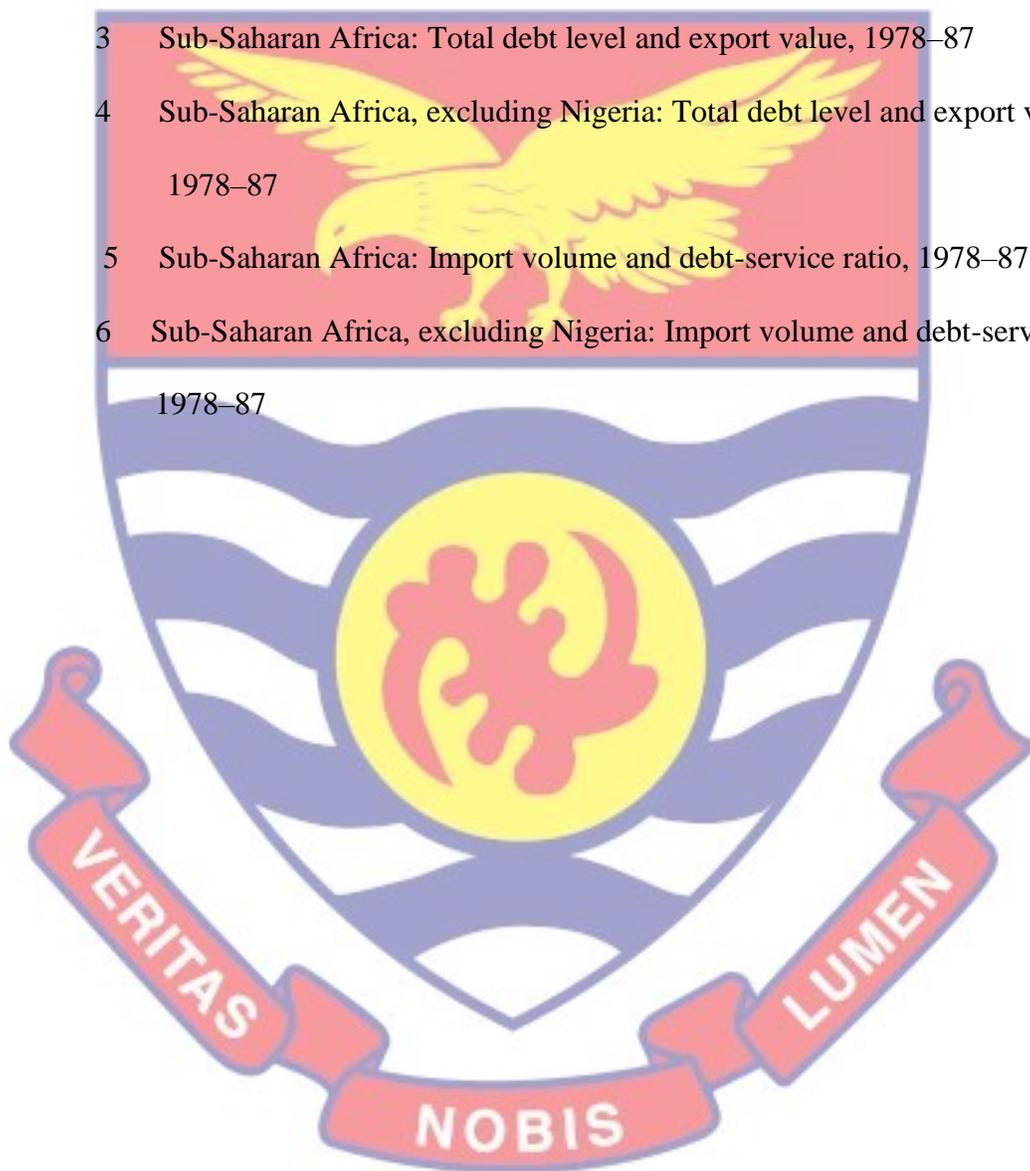
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LIST OF ABBREVIATION

| | |
|-------|--|
| FDI | Foreign Direct Investments |
| WEO | World Economic Outlook |
| OECD | Organisation for Economic Co-operation and Development |
| GDP | Gross Domestic Product |
| SDG | Sustainable Development Goals |
| SSA | Sub-Saharan Africa |
| WDI | World Development Indicators |
| GMM | Generalised Method of Moment |
| GNS | Gross National Saving |
| IMF | International Monetary Fund |
| LIC's | Low Income Countries |
| LDCs | Less Developed Countries |



CHAPTER ONE

INTRODUCTION

Background to the Study

Many countries, especially developing countries, experienced expanding levels of debt-to-GDP ratio since the global financial crises in 2008/ 2009, where sub-Saharan Africa gross debt ratio averaged 50.4% of GDP in 2019 (IMF, 2020a). In the early 2000s, Sub-Saharan African countries showed a considerable reduction in public and external indebtedness as a result of debt relief programs, higher economic growth, and improved fiscal management for some countries. More recently, however, vulnerabilities in some countries are on the rise, including a few with very rapid debt accumulation. Government borrowing to finance public investments is an essential part of any country's macroeconomic tool. Over the last two decades, countries in Sub-Saharan Africa have used this option often, greatly improving human development outcomes. For example, between 1990 and 2015, average life expectancy increased, infant mortality rates were halved, secondary school enrollment ascended, and infrastructure gaps narrowed (Roser, Ortiz-Ospina & Ritchie, 2013). These and other gains would have been impossible without pragmatic spending of borrowed resources.

In the broadest sense, three factors account for the current debt challenges. For starters, the region's commodity exporters, and particularly its oil exporters, were hit hard by the 2014-2016 slump in prices (IMF, 2020a). Africa's lost output and associated debt increases are comparable to the experience of advanced economies following the global financial crisis. Today, eight of the region's fifteen

debt-troubled LICs are commodity exporters (IMF 2020a). Additionally, most countries that have funded development and infrastructure through borrowing have failed to generate sufficient additional tax revenues to repay that debt. In many cases, countries have not been effective at capturing the return on their investments through their tax systems (IMF 2011).

Also, the rapid increase in debt-to-GDP ratio in sub-Saharan Africa has intensified debt sustainability challenges. This challenge has the potential of throwing countries into the risk of committing costly mistakes of accumulating debt-to-GDP ratio to unsustainable levels (IMF, 2009). The challenge has been worsened by the change in debt management setting, which is now tilted towards non-concessional borrowing from non-Paris club creditors as opposed to concessional loans from international financial institutions and bilateral Paris Club creditors that countries have traditionally relied on. The challenge has also been worsened by recent developments on the financing setting, where an increasing number of countries in SSA are accessing international capital markets.

Deteriorating macro-financial factors such as falling economic growth rates, depreciating domestic currencies and increase in interest rates have also exacerbated the debt dynamics. As a result, most country debt levels in SSA have surpassed or are likely, in the event of macroeconomic shocks, to exceed debt risk threshold levels as determined by the IMF and World Bank's Debt Sustainability Framework (DSF) (IMF 2020). The DSF for low income countries, which constitute most Sub-Saharan African countries, assesses the vulnerability to debt

distress based on a Country Policy and Institutional Assessment (CPIA) rating developed by the World Bank.

The respective public debt to GDP thresholds are 38% for countries rated as weak performers in terms of CPIA rating; 56% for medium CPIA rating; and 74% for strong CPIA rating. Debt distress assessment for SSA countries carried out by the IMF in 2016 showed that 32 countries were at moderate and or high risk of debt distress, while 4 were rated to be in debt distress. The debt distress challenges witnessed among SSA countries has prompted the IMF and the World Bank to encourage those at high risk of debt distress to take appropriate actions to reduce fiscal deficits and debt-to-GDP ratio (IMF, 2017a).

Figure 1 provides a brief result on debt as a percentage of GDP for Sub-Saharan Africa, Emerging and developing Europe, Middle East and Central Asia and ASEAN-5 from 2005 to 2019.

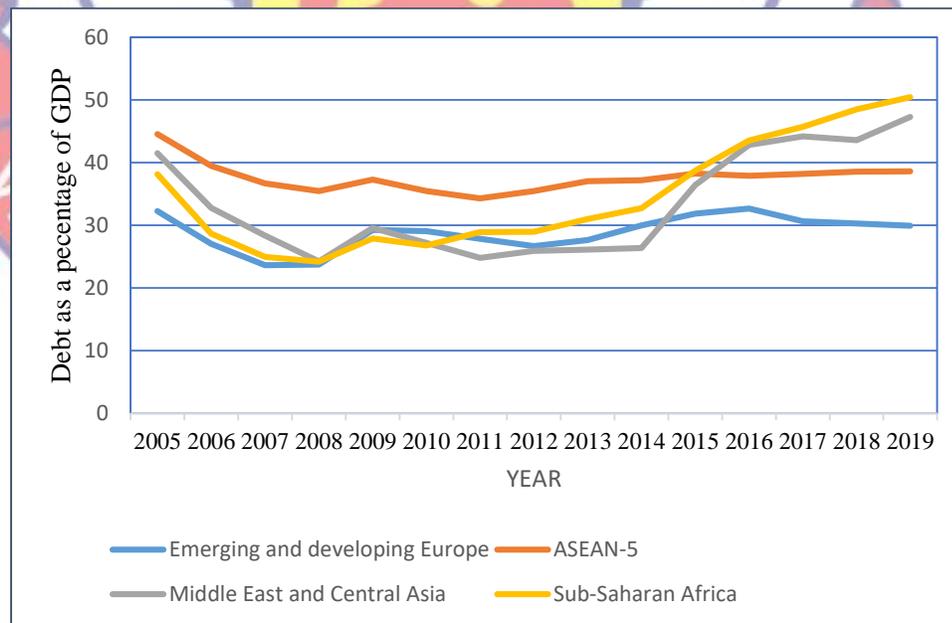


Figure 1: Trend of debt in Sub-Saharan Africa and other Developing economies

Source: Asempe (2021)

From Figure 1, an upward trend in debt as a percentage of GDP is observed in both Sub-Saharan Africa and Middle East and Central Asia. Emerging and developing Europe and ASEAN-5 on the other is observed to have a downward trend in debt as a percentage of GDP. From 2005 to 2010, debt as a percentage of GDP falls from 39% to 27% in Sub-Saharan African. It is also observed the other three regions experienced a downward trend in debt as a percentage of GDP from 2005 to 2010. In 2010, Sub-Saharan Africa's debt was 26.8% of GDP while Middle East and Central Asia, Emerging and developing Europe and ASEAN-5 recorded a debt-to-GDP ratio of 27.2%, 29.05% and 35.46% of GDP respectively. The trend changed from 2011 to 2019 with SSA region recording a debt-to-GDP ratio of 50.4% of GDP, while Middle East and Central Asia, Emerging and developing Europe and ASEAN-5 regions recording 47.3%, 29.9% and 38.6% of GDP respectively in 2019.

It is therefore, observed that from 2010 to 2019, SSA's debt rose by 23.6% of GDP. In that same period, debt-to-GDP ratio for Emerging and developing Europe region only rose by 0.04% of GDP. Comparing these two regions, it clear that debt to GDP ratio is growing at faster rate in SSA region.

Trends in government revenue and spending have for a considerable number of years, especially in developing countries, been on the ascendancy. The main causes of these ascending trends have been rapid rates of population growth and the general demand for improvements in standards of living. These causes have had obvious repercussions on the need for rapid provision of roads, hospitals, schools, water and electricity supply and other infrastructure. Governments in their

attempt to finance these rising expenditures have had to increase taxes or resort to borrowing. The increasing levels of government expenditures and taxes have also had substantial direct effects on total demand for goods and services and hence other macroeconomic variables.

Figure 2 shows the trend of public expenditure and revenue as a percentage of gross domestic product (GDP) between the year 2005 to 2019 in Sub-Saharan Africa.

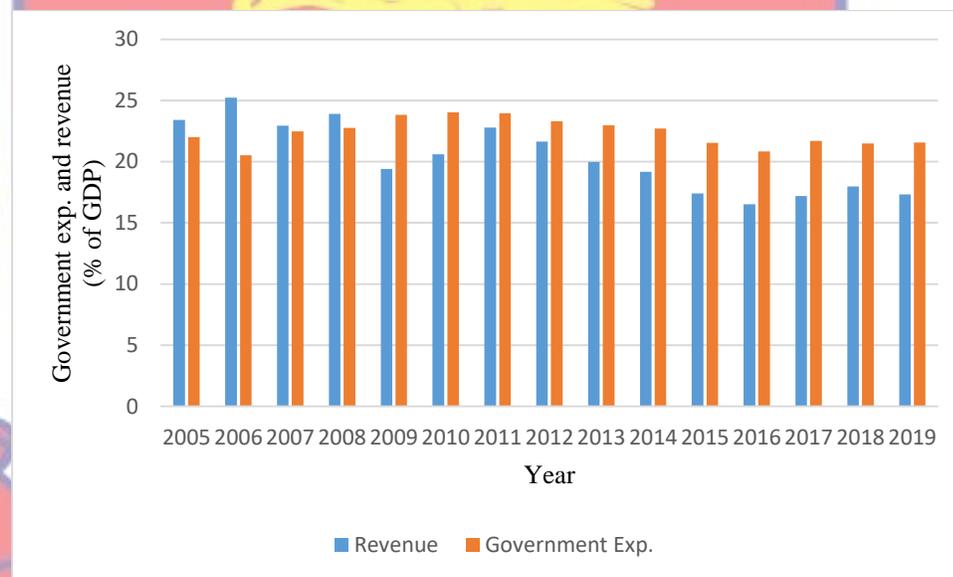


Figure 2: Trend of Government Expenditure and Revenue in Sub-Saharan Africa
Source: Asempa (2021)

From Figure 2, total revenue increased from 23.4% of GDP in 2005 to an average of 25.2% of GDP in 2006. This rise in revenue from 2005 to 2006 was may largely be associated to a tremendous performance of taxes in the region. As shown in Figure 2, government expenditure in SSA declined from 21.9% of GDP in 2005 to 20.5% of GDP in 2006. In 2007, total revue declined to 22.9% of GDP and then rose again to 23.9% to GDP in 2008. Government expenditure on the other hand

rose to 22.4% of GDP and 22.7% of GDP in 2007 and 2008 respectively. It is therefore, observed that SSA from 2005 to 2008 has been recording budget surplus with 2006 recording the highest surplus of about 4.7% of GDP. Total revenue declined again to 19.3 percent of GDP and then rose to 20.5 percent of GDP and 22.7 percent of GDP in 2010 and 2011 respectively. The total revenue has been falling from the period 2012 to 2019 from 21.6 percent of GDP in 2012 to 17.3 percent in 2019. This trend in total revenue can be associated to factors such as tax evasion, corruption and mismanagement of resources.

Government expenditure on the other hand, is observed to exceed government revenue from 2009 to 2019. According to IMF (2020b), SSA, over the past ten years has been recording budget deficit in the region. In 2009, government expenditure was 23.8% of GDP while government revenue was 19.3% of GDP, resulting in a budget deficit of 4.5% of GDP. In 2015, government expenditure exceeded government revenue by 4.2% of GDP in the region. In 2017, government expenditure exceeded government revenue by 4.5% of GDP. As shown in Figure 2, from 2014 to 2019, the gap between government expenditures and government revenues widened and as a result debt-to-GDP ratio kept on increasing.

According to Global governance indices, public sectors in Sub-Saharan Africa are the most corrupt of any region in the world. This has gone a long way to affect government integrity in this region. Many citizens are not satisfied with the anti-corruption effort by their governments because they believe that levels of corruption have increased in recent years in the region. However, corruption is a

major challenge to the economic, social and political developments in sub-Saharan Africa. Its impact differs across various types of political systems in the region.

According to a report by the International Money Fund, sub-Saharan Africa will benefit more than any other region from alleviating corruption (Velloso et al. 2019). The report indicated that if governance in the region, which is relatively poor, is conveyed to the world average, there could be an increased GDP per capita of about 1% to 2% per year. Hence, stronger governance and reduced corruption are key elements towards the achievement of desired development in sub Saharan Africa.

Government integrity refers to the moral quality of the governance process, which is important for the legitimacy and credibility of (public) power. Procedural justice and integrity do really matter for “good governance” but it is important to realize that there are more aspects and values relevant for good governance (Van Ryzin, 2011). These concern other values that are relevant for the governance process (responsiveness and democracy, lawfulness) as well as values that refer to the resulting policies (effectiveness of policies and actual societal outcome). Good governance concerns dealing with these often-conflicting values on process and outcomes, with thus a broader perspective than the “integrity” of the process. This leads to intriguing discussions in actual national and international policies on how to stimulate good governance in countries, but also opens up a challenging agenda for research. Rothstein (2011), for example, argued that impartiality of government is the crucial factor for societal progress. In contrast, Grindle (2004) presented the concept of “good enough governance,” acknowledging that many countries are not

capable of fulfilling all good governance demands, with impartiality and integrity to be seen in the context of the development of (national) governance systems.

When good governance is advocated as a necessary ingredient for reducing widespread poverty, these questions are compounded. This is particularly so for countries attacking poverty as a condition for debt relief. Among them are the poorest countries in the world. Almost by definition their institutions are weak, vulnerable, and very imperfect; their public organizations are deprived of resources and are usually badly managed; those who work for government are generally poorly trained and motivated. Frequently, the legitimacy of poor country governments is questionable; their commitments to change are often undermined by political discord; their civil societies may be disenfranchised, deeply divided, and ill equipped to participate effectively in politics. Despite these conditions, expectations for what such countries should accomplish are high

Statement of Problem

The International Monetary Fund (IMF) has placed the benchmark of debt-GDP ratio at 74% for low income countries (LIC's). Sub-Saharan Africa's (SSA's) debt to debt to GDP is currently at 57.54% which is considered sustainable given that it is below the benchmark set for LIC's. However, IMF's projection on future debt to GDP ratio indicates a worrying trend as they foresee that the ratio of debt to GDP may continue to increase and eventually breach the benchmark of 74% by 2025 (IMF, 2020). Debt-to-GDP ratio in SSA over the years has been increasing with repayment efforts proving to be a major challenge as some are as old as from 30 years back (IMF, 2020).

Government expenditure continues to exceed revenue collected leading to debt financing to bridge the gap. Revenue is averaged 21 percent of GDP hence fiscal expansion has been achieved through debt (IMF 2020). Such debt is expected to be invested in productive activities of the economy so as to raise enough funds to pay back the debt, however this is not happening in SSA. In SSA and many other less developed economies, it is believed that the political class influence allocation of funds to projects which are eventually embezzled and no benefit is derived from such projects. Such allocations may be inefficient in growing the economy since only corrupt officials are bound to benefit.

A number of studies exist to provide some understanding on the causes of debt-to-GDP ratio, from which the issue of government integrity and government size have been identified. However, the existing studies have not examined the individual effects of government size and government integrity on debt-to-GDP ratio. For instance, Amayo (2019) focused on the impact of recurrent and capital expenditure on public debt in Kenya. Amayo only focused on Kenya and did not consider government integrity. Studies such as Cooray et.al. (2017); Apergis 2019; Del Monte and Pennacchio (2020); Amayo (2019) agree that there is minimum research linking government spending and government integrity to public debt. Most studies focused on the relationship between government expenditure and economic growth. For government integrity, studies have only focused on corruption and public debt. Such studies include Del Monte and Pennacchio (2020); Grechyna, (2012); Gonzáles-Fernandez and González-Velasco (2014). This study,

therefore, contributes to the literature by examining the joint effect of public expenditure and government integrity on public debt.

Purpose of the Study

The purpose of the study was to examine the differential and joint effects of government spending and integrity on the debt-to-GDP ratio in Sub-Saharan Africa

Research Objectives

In achieving the principal objective, the study sought to:

1. Examine the effect of government spending on debt-to-GDP ratio in Sub-Saharan Africa.
2. Estimate the effect of government integrity on debt-to-GDP ratio in Sub-Saharan Africa.
3. Determine the joint effect of government spending and integrity on debt-to-GDP ratio in Sub-Saharan Africa.

Research Hypothesis

H_0 : There is no significant effect of government spending on debt-to-GDP ratio in Sub-Saharan Africa.

H_0 : There is no significant effect of government integrity on debt-to-GDP ratio in Sub-Saharan Africa.

H_0 : Government spending and government integrity do not have significant joint effect on debt-to-GDP ratio in Sub-Saharan Africa

Significant of the Study

The role of government in ensuring the level of debt sustainability is a key issue in every economy. As stated in section 15 of the Public Finance Management

Act that the role of government in ensuring the level of debt is sustainable without overlapping the implementation of the budget is fundamental in ensuring economic growth. This study is therefore significant as policy implementations that will help the government adjust their expenditure allocations to help ensure sustainable debt level and improved economic growth. Also, the study is significant in ensuring that government integrity is sustained to help ensure a sustainable debt level and improved economic growth.

Furthermore, the study will contribute to existing literature and knowledge in the field of study as the study findings will be useful to other researchers, the government and international institutions that offer financial advice and lending to countries.

Delimitation of the Study

The study examines the effect of government spending and integrity on the debt-to-GDP ratio in Sub-Saharan Africa over the period 2005 to 2019. Out of 48 sub-Saharan Africa countries, 34 of them were used for the analysis, the reason purely attributed to data availability over the study period stated above.

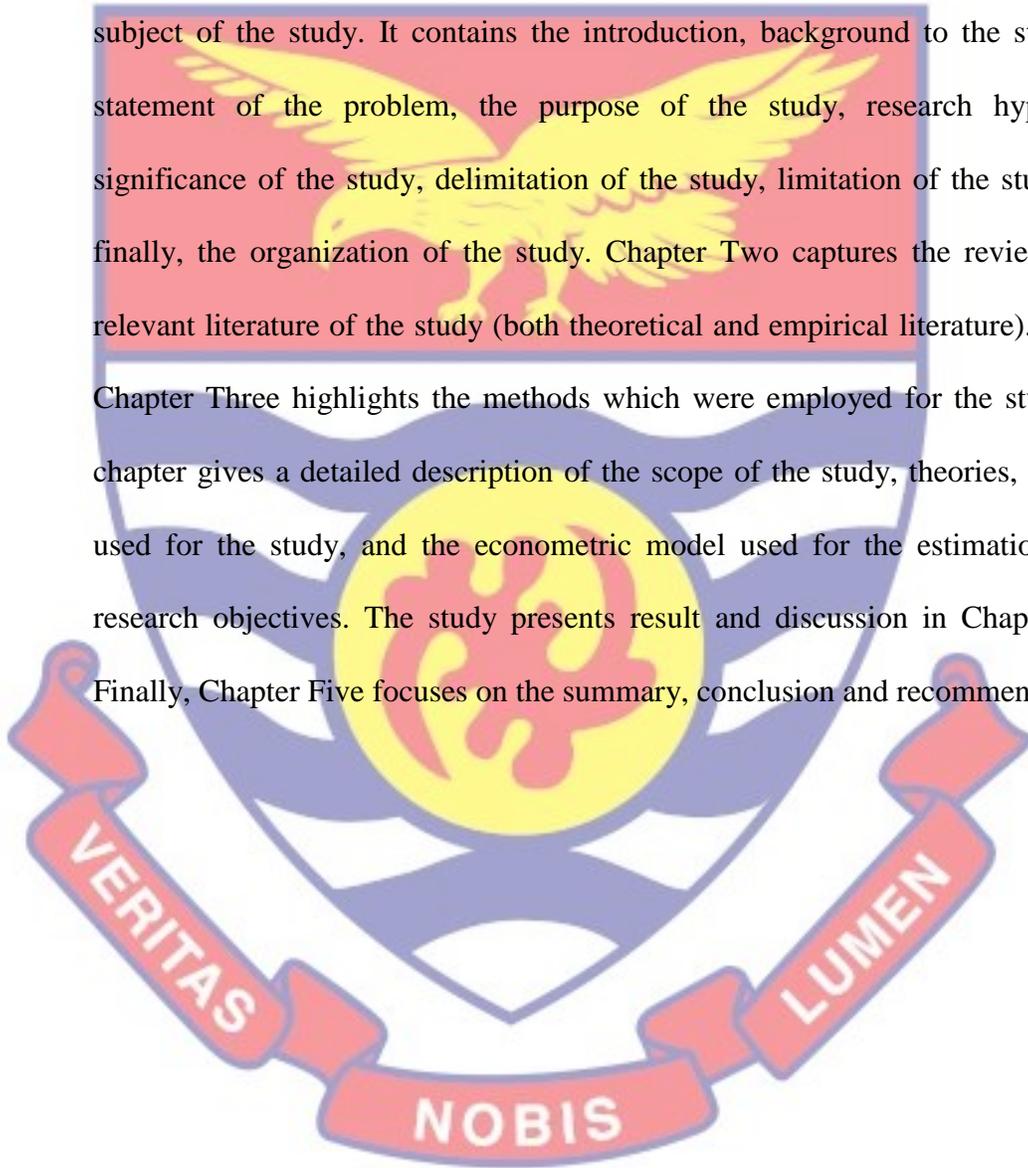
Limitation of the Study

Like any other study, this study is not without limitations. The following are the limitation of the study. First, the study focuses on only 34 SSA countries instead of all SSA due to the unavailability of data. The study is based on panel data from World Economic Outlook (WEO), and World Development Indicators (WDI). However, low statistical power, limited external validity and restricted periods time invariance and undefined variables are some limitations of panel data

analysis. Despite the limitations stated, however, care was taken to ensure that the results presented were as accurate as possible.

Organization of the Study

This study was organized into five Chapters. Chapter One introduces the subject of the study. It contains the introduction, background to the study, the statement of the problem, the purpose of the study, research hypotheses, significance of the study, delimitation of the study, limitation of the study, and, finally, the organization of the study. Chapter Two captures the review of the relevant literature of the study (both theoretical and empirical literature). Further, Chapter Three highlights the methods which were employed for the study. The chapter gives a detailed description of the scope of the study, theories, variables used for the study, and the econometric model used for the estimation of the research objectives. The study presents result and discussion in Chapter Four. Finally, Chapter Five focuses on the summary, conclusion and recommendations



CHAPTER TWO

LITERATURE REVIEW

Introduction

The purpose of the literature review is to provide conceptual and empirical insight into the effect of government spending and integrity on debt-to-GDP ratio. Therefore, this chapter reviews theories as well as existing studies on the factors influencing debt-to-GDP ratio, an overview of government spending, and government integrity and corruption. The chapter also looks at the overview of government spending in the form of current and capital expenditure.

Theoretical Review

The study was underpinned by theories such as Keynesian economic theory of fiscal policy, allocative efficiency in public expenditure theory, political-economic theory and Peacock and Wiseman hypothesis. These theories are further explained subsequently respectively.

Keynesian Expansionary Fiscal Policy Theory

Fiscal policy refers to a government's adjustment of spending and taxes to achieve certain macroeconomic objectives (Stupak, 2019). According to Blanchard (2009), government's primary focus is always on the most important macroeconomic objectives which includes economic growth, price stability, the balance of payments equilibrium, and exchange rate stability.

According to Abata et al. (2009), fiscal policy is central to the health of any economy, hence the government's ability to tax and spend affects the disposable income of the citizens, corporations and also the global business climate. Therefore,

fiscal policy describes the changes in government spending and revenue behaviour to influence economic outcomes.

Expansionary fiscal policy is where government increases spending and decrease taxes revenue to achieve a macroeconomic goal or combination of both.

This theory suggests that expansionary fiscal policy is usually financed by increased government borrowing and selling of bonds to the private sectors.

Keynes said expansionary fiscal policy should be used during a recession, that is when there is unemployment, surplus saving and falling real output. He argued this injection of government spending could stimulate economic activity and get the unemployed resources back into productive use.

The theory, therefore, suggest that expansionary fiscal policy may lead to an increase in the size of a government's budget deficit. If the size of government budget deficit increases, there will be a higher borrowing and this will lead to an increase in debt-to-GDP ratio, financial crowding out, interest rate and resource crowding out. As noted, persistence fiscal stimulus can result in rising debt to GDP ratio and lead to an unsustainable level of debt-to-GDP ratio. A rising debt to GDP ratio can be problematic if the perceived or real risk of the government defaulting on that debt begins to rise. As the perceived risk of default increase, investors will demand higher interest rate to compensate themselves. This will increase interest rate on government debt leading to a rise in debt-to-GDP ratio.

Liberal Economic Theory

The liberal economic hypothesis also offers a reasonable argument on the debt predicament in developing countries. The key disagreement here is that

economic liberalization will help in the increase of flow of overseas investment into the developing countries, as a result of the reduction of trade and exchange limitations. The idea is that in the process of homogenizing the political economy of every member state of the international community that the purpose of creating a market society on a universal scale is within reach (Biersteker, 1993). One of the major objectives of liberalization is to decrease the resource gap in the LDCs, by improving the trade balance and encouraging a net capital inflow.

Economic liberalization therefore, improve efficient utilization of resources in LDCs. The government generate revenue through the foreign investment and this revenue can be use to settle the country's debt. This theory, also suggest that budget deficit and borrowing are reduced since the government will have enough funds to finance it budget. If the government is able to finance it budget internally without borrowing, then the country can sustain the level of public debt.

Theory of Allocative Efficiency in Public Expenditure

According to Schick (1998), allocative efficiency is the ability to allocate and distribute resources to public projects and programmes based on their effectiveness in achieving the set goals and targets. Efficient allocation of resources can be done through a clear budget system where the government may reallocate resources from previous projects to new ones or from inefficient ones to efficient ones. For a nation to make efficient allocations, the government need not be only objective but also strategic by establishing what it wants to achieve in the future and looking back and evaluating previous results. Also, the government should be able to allocate efficiently in both extremes of fiscal conditions, that is whether the

budget is shrinking or growing. In both cases, the government should ensure it spends its limited resources on projects that generate the highest social benefit.

Classical economist argued that budget should seek to allocate efficiently by ensuring that a good budget is prepared and all claims are taken care of exhaustively. However, due to incremental patterns in the budget, structured impediments such as stickiness of public expenditure, time frame of the budget and lack of information on programme effectiveness became evident. Public expenditure tends to be sticky due to difficulty in withdrawing funds away from existing programmes to new ones. On the other hand, due to annual budgeting, it becomes problem to reallocate funds for programmes whose impact lie in the future and their reallocations unfold over a number of year, thus the timeframes of the budget become a hindrance. Finally, when allocating inputs budgeting does not consider whether funded programmes are achieving the set government objective (Dollar, 1990).

Therefore, the theory depicts that government spending become beneficial to the economy if the available resources are used efficiently. If the government allocate resources efficiently, government revenue will increase. An increase in government revenue will lead to an increase in economic growth and reduction in budget deficit and public debt. On the other hand, the theory suggest that inefficient allocation of the limited resources will reduced economic growth and social benefits and increase budget deficit, public borrowing and public debt.

Investing in wrong project only increases the government expenditure but does not yield any benefit or profit. This becomes a waste of resources and a cost

burden on the government. Assuming that government default its debt because of misallocation of borrowed funds, the government's debt will then attract high interest rate due to the default. The rise in the interest rate on the debt-to-GDP ratio will go a long way to increase the debt-to-GDP ratio. Again, the government will have to borrow more to finance its budget and this will again increase debt-to-GDP ratio. Therefore, the choice of projects to invest in by government is core determinant of an economy's performances. It may either lead to capital formation and increase income or stagnation of the economy. This study seeks to establish whether government spending allocations are efficient in sustaining the level of debt.

Adolf Wagner's Hypothesis

This hypothesis is also referred to as the increasing state spending law and was founded by Adolf Wagner (1835-1917). Wagner was of the opinion that government spending increases with expansion of income in the economy (Wagner, 1883). Therefore, as an economy grew, there was need for the state to increase its spending on the public sector. This is attributed by the requirement that the government takes part in social and economic activities and for other historical reasons. Social activities of the states include payment of retirement and pension funds, protection of the environment and natural disaster aid. Economic aspects comprise of investing in new technology, scientific research and investment projects as the country industrialize. Historical reasons such servicing debt incurred in the previous years both domestically and from foreign sources was also found to

contribute to the increasing state spending. Bird, (1971) asserts that public sector will grow with an almost proportional value as the growth in income rises.

According to Wagner, as income grows conflicts among individuals are bound to increase especially in densely populated urban areas as everyone is out to make more money for themselves. This will require that the government intervenes in regulation, maintaining law and order and providing a security service which in turn increases the state expenditure (Easterly & Rebelo, 1993). The replacement of private for public sector leads to increase in government regulation resulting to higher expenditure. As economies become more complex the and enormity of market failures would compel the state to become more regulatory in nature, thereby increasing its role and this would unavoidably involve higher public expenditure (Dhires, 2013). According to this theory any increase in government expenditure caused by government intervention in regulation, maintaining law and order and providing a security service will lead to insufficient existing levels of revenue, causing public debt accumulation. This further assumes a positive relationship between government expenditure, government integrity and public debt.

Peacock and Wiseman hypothesis

This theory was found in 1961 by Peacock and Wiseman. Peacock, Wiseman and Veverka (1967) argued that public expenditure increases in a stepwise manner and not in a constant rate thus establishing a time pattern for analyzing public expenditure growth. The authors also noted that due to social and other disturbances, the government may need to increase their expenditure which

may not be able to be met by the existing levels of revenue. With these low levels of revenue, the government may be forced to borrow thus increasing debt-to-GDP ratio or increase their revenue collection by adjusting taxes upwards.

When there is peace, the government expenditure cannot be increased due to limited taxation thus limited revenue. The general perspective about taxation is fairly stable during peace times as citizens cannot accept nor understand why they should be taxed highly in such times. Therefore, the government cannot meet its desired level of public expenditure. This theory, therefore, suggest that government in an attempt to meet the desired level of expenditure will have to borrow to close the gap and this will end up increasing debt-to-GDP ratio.

However, in times of war or an outbreak of social disturbance, the divergence between taxation and expenditure is reduced as the tax burden increases to finance the war. At this point, increasing tax is generally accepted by the citizens. Even after the war, this tax rate is maintained and the government is able to fund its expenditure programmes. Due to such social disturbances, Peacock and Wiseman identified three effects that arise namely, the displacement, inspection and concentration effect.

The displacement effect occurs when a country experiences a social disturbance at a given point it times such a natural disaster, political disorder or war. This causes the government to increase its expenditure so as to return the economy back to normal. The restructuring of public expenditure is what is referred to as displacement effect. In SSA incidences such as post-election violence, drought

and famine are some of the disturbances that have led to a substantial increase in government expenditure.

As a country goes through the displacement effect, the government tends to discover other problems that were previously not noted. A higher public expenditure level is reached and the government will device means of increasing revenue through higher taxes. This creates a new equilibrium above the initial equilibrium and is referred to as the inspection effect.

Even after the social disturbance let's say war has ended, the government will retain the increased tax rate. The new high equilibrium level is maintained in the economy and this is referred to as the concentration effect. The economy can grow after such a disturbance as the high equilibrium is maintained until another social disturbance occurs and this cycle is repeated. This is referred to as the concentration effect. According to this theory, any increase in government expenditure will lead to insufficient existing levels of revenue, causing public debt accumulation. This further assumes a positive relationship between government expenditure, government revenue and public debt. The movement from the initial and low level of expenditure to a new and higher level is known as displacement effect (Uguru, 2016).

Political Economic Theory

Battaglini and Coate (2008) presented a political economy theory of fiscal policy, where policy decisions are taken by a legislature rather than by a benevolent planner. This theory suggests that if corruption increases the value of public goods, there will also be an increase in debt, taxes and public good spending. Other papers

considered corruption as an important cause of high debt-to-GDP ratio. There are different ways corruption could reduce economic growth and increase debt-to-GDP ratio. It can increase the ability of agents to get resources from central and local governments. Public resources, therefore, reward the people best able to get resources, and not the best entrepreneurs. This means that corruption increases the cost of doing business and undermines the efficiency of business decisions. Similarly, Tanzi and Davoodi (2001) asserted that corruption lowers growth by limiting the development of small- and medium-sized enterprises. It, therefore, has serious implications for public finances.

Entrepreneurs have to spend time bribing officials, so the growth-promoting benefit of small and medium-sized enterprises is not fully realized. Kaufmann (2010) listed other channels through which corruption can affect public finance, including: Erosion of tax revenue through evasion and ineffective tax collection institutions; Increased public expenditure associated with inflated bureaucracies and expensive public investments; Delayed or hidden data disclosure for financial national statistics, which can give rise to a financial and fiscal crisis; and Lower productivity and competitiveness of private companies. Like a tax, corruption can reduce the incentive to invest. It can lead to an inefficient composition of government spending, because corrupt politicians may prefer to invest in large non-productive projects, where they are more likely to benefit from large bribes, rather than in productive activities (Forslund et al. 2011; Mauro 1998; Oto-Peralias et al. 2013).

Recent theoretical literature linked high debt-to-GDP ratio to the presence of rent-seeking activities by government. In a model proposed by Yared (2010), a non-benevolent government over-accumulates long-term public debt because it is not able to smooth the inter-temporal fluctuations as a benevolent government would do. Grechyna (2012b) presented a model for advanced economies that features a traditional approach to the optimal fiscal policy. In this model, the economy consists of government and households. The households consume and save in the form of financial (bonds) and physical (capital) assets.

The government is not benevolent and imposes on expropriated consumption depending on the degree of consumption that is exogenously given. The result of the model is that a higher level of public corruption leads to lower capital, output and private consumption, and higher levels of public debt, expenditure and income taxes at the steady-state. The model explains about 40% of the variation in the national debt in 23 high-income countries. Hessami's (2014) model rests on the assumption that politicians have discretion over an exogenously given budget.

Politicians can, however, determine the share of public budget they want to make available to rent-seeking contests. This takes into account that the allocation of spending may be influenced by the composition of public expenditure, the asymmetries between industries in the degree of competition, and the difficulty of concealing bribery. It shows that briberies result in distortion and inefficiency in the allocation of public resources. This has a negative effect on growth and public debt. Even if the government is benevolent and can control public transactions with

its officials, the literature shows that corruption has a negative effect on public debt. Del Monte and Papagni (2001) developed a model in which bureaucrats and entrepreneurs agree to increase the price of public goods. Government officials control the offer of service against private demand.

The agents are able to choose the number of public resources they steal, maximizing the illegal expected net income. Entrepreneurs are engaged in two different activities: good production and corruption. The outcome of corruption is uncertain because of the repressive action of the state. The reduction in the efficiency of public investment decreases growth and increases public debt. The distorting effect of taxation may make it unaffordable for the government to keep the deficit low by increasing income taxes. This suggests that in the presence of corruption, expropriated resources may result in higher public debt levels.

Concept of integrity

Integrity is not a simple concept to define. Many overlapping and distinct definitions are used. The term integrity is derived from the Latin *in-tangere*, meaning untouched. It refers to virtue, incorruptibility and the state of being unimpaired. Integrity is closely related to the absence of fraud and corruption, but it also entails common decency. In this context, it is a positive and broad concept related to ethics and culture. Integrity means more than simply observing rules and laws. The law provides a lower limit and a minimum moral starting point. An integrity policy calls for a combination of repression and prevention. On the one hand, an organization must adopt measures to take if its staff act inappropriately (repression). On the other, it must do all it can to remove temptations that might

induce civil servants to act inappropriately (prevention). Priority should be given to prevention. Not only is it more effective, but on balance the investment is many times smaller than the cost of repairing damage caused by inappropriate behavior.

Integrity as moral quality

Defining integrity in terms of relevant moral values, norms, and rules requires precise understanding of what a moral value, norm, or rule is; of what is meant by ethics, morals, and morality. Despite agreement that both concern “right and wrong” or “good and evil,” different interpretations of the terms abound, especially in the realm of philosophy and the study of ethics. In most cases the terms “ethical” and “moral” are almost always used as synonyms, both denoting the principle of right and wrong in conduct (Thompson, 1985), acknowledging that “ethics” is also seen as the study of such principles (Huberts, 2014, pp. 49–50).

Kaptein and Wempe (2002, p. 40–42) distinguished six features exhibited by moral pronouncements. They concern “right and wrong” (a normative judgment that expresses approval or disapproval, evokes shame or pride), but they also appeal to the general consent; are not a matter of individual taste; apply to everyone in similar circumstances and involve the interests of others (interpersonal); and the interests at stake are “fundamental” (2002, p. 42). Thus, not all values and norms are relevant for ethical or moral judgments. Ethics are not, for example, concerned with what is beautiful (aesthetics), what is conventional (etiquette), or what works (science and technology; e.g., “ISO norms”—worldwide proprietary, industrial, and commercial standards developed by the International Organization for Standardization).

Integrity is about “moral” norms and values, those that refer to what is right or wrong, good or bad. The features also refer to a general consent with relevance for everyone in the same circumstances. That relates to “valid” moral values and norms.

In sum, morality and ethics refer to what is right or wrong, good or bad. They concern values and norms that people feel rather strongly about, because serious interests are involved that affect the community of which they are a part. Values and norms are the basis for judgment and decision making. The roles they play, however, are different. A “value” is a belief or quality that contributes to judgments about what is good; right; beautiful; or admirable. Values thus have weight in the choice of action by individuals and collectives. A norm is more specific. Norms tell us whether something is good or bad, right or wrong, beautiful or ugly. For types of behavior, they answer the question “what is the correct thing to do?” (De Graaf, 2003; Fijnaut & Huberts, 2002, pp. 10–11; Van der Wal, 2008, pp. 10–12).

Concept of government expenditure

Government expenditure refers to the purchase of goods and services, which include public consumption and public investment, and transfer payments consisting of income transfers (pensions, social benefits) and capital transfer. A government spends money towards the supply of goods and services that are not provided by the private sector but are important for the nation’s welfare. Government spending goes to the nation’s defense, infrastructure, health and welfare benefits.

In national income accounting, when the government acquires goods and services for current use to directly satisfy the individual or collective needs and requirements of the community, it is classified as government final consumption spending. When the government acquires goods and services for future use, it is classified as government investment. This includes public consumption and public investment, and transfer payments consisting of income transfers. Government spending can be grouped into two and they are current spending and capital spending. Current spending is for the short term and include expenditure on wages and raw materials. Capital spending is for the long term and do not need to be renewed each year. It is also called “social capital,” they include spending on physical assets like roads, bridges, hospital buildings, and equipment.

Government spending is primarily financed through two main sources. That is either through tax collections by the government (direct taxes indirect taxes) or Government borrowing money from its own citizens or from foreigners. Public spending enables governments to produce goods and services or purchase goods and services that are needed to fulfill the government’s social and economic objectives. Over the years, we’ve seen significant changes in the role and size of governments around the world.

Government borrowings

The government primarily funds its spending on the economy through tax revenues it earns. However, when revenue is insufficient to pay for expenditures, it resorts to borrowing. Borrowing can be short-term/long-term and involves selling government bonds/bills. Treasury bills are also issued into the money markets to

help raise short-term cash. Government borrowing to finance its spending can result in raising public debt in the country.

Overview of Government Debt in SSA

A country's gross government debt (also called public debt, or sovereign debt) is the financial liabilities of the government sector. Changes in government debt over time reflect primarily borrowing due to past government deficits. A deficit occurs when a government's expenditures exceed revenues. Government debt may be owed to domestic residents, as well as to foreign residents. If owed to foreign residents, that quantity is included in the country's external debt. The ability of government to issue debt has been central to state formation and to state building. Public debt has been linked to the rise of democracy, private financial markets, and modern economic growth. Government debt is typically measured as the gross debt of the general government sector that is in the form of liabilities that are debt instruments. A debt instrument is a financial claim that requires payment of interest and/or principal by the debtor to the creditor in the future. Examples include debt securities (such as bonds and bills), loans, and government employee pension obligations.

Roots of the Sub-Saharan debt problem

The sub-Saharan debt problem can be traced largely to government actions, in particular, the accumulation of external debt for development projects. Since independence, sub-Saharan countries have undertaken public projects in attempting to strengthen their economies, frequently with donor support and generally with heavy use of foreign financing in the form of loans. Many of these development

projects have been designed to improve domestic industry and infrastructure rather than to boost export production directly. The assumption was that national economies would grow over time, and that commensurate increases in export production and reasonable trends in export prices would allow the debt-service obligations arising from these projects to be met. This assumption is consistent with the results from standard growth models that incorporate external debt (see, for example, the survey article by McDonald (1982) and papers by Bardhan (1967), Hamada (1969), and Blanchard (1983)). These assumptions became increasingly unrealistic in the light of the two oil price shocks during 1973–74 and 1979–80 and the subsequent depression in non-oil commodities markets during the 1980s. Indeed, as shown in Figures 3 and 4, total debt levels have risen steadily since 1978, while export earnings in 1987 were barely above their dollar level nine years earlier

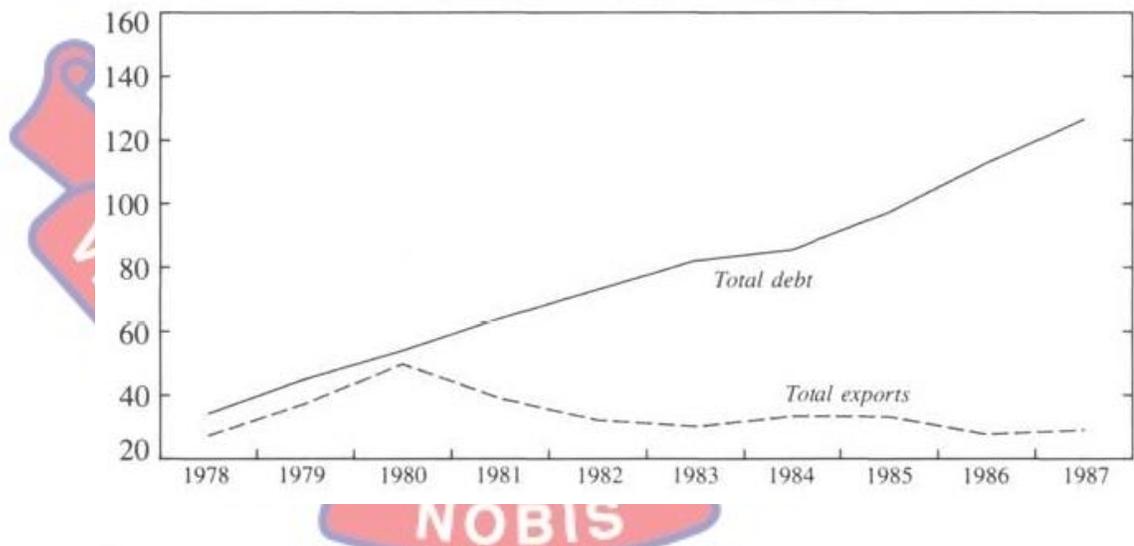


Figure 3: Sub-Saharan Africa: Total debt level and export value, 1978–87

Source: IMF

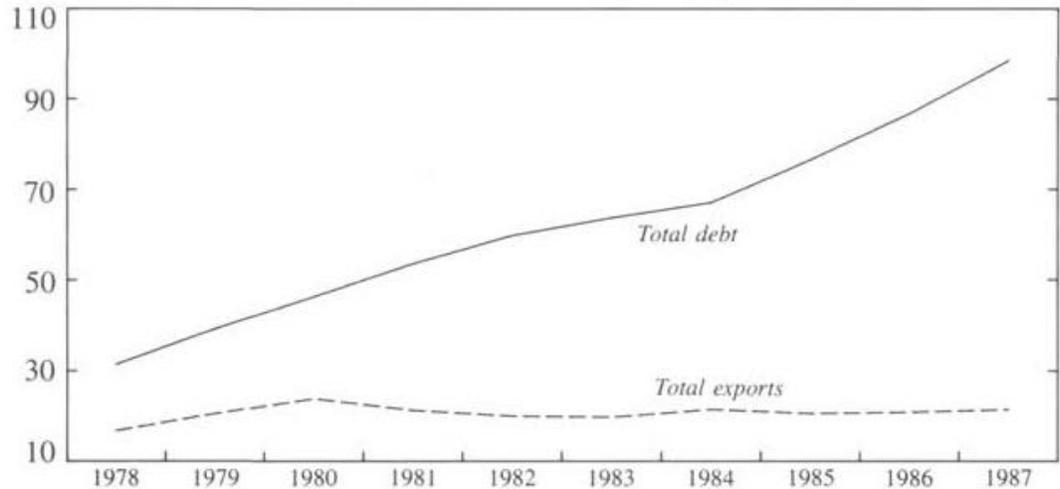


Figure 4: Sub-Saharan Africa, excluding Nigeria: Total debt level and export value, 1978–87

Source: IMF

Following the first round of oil price increases in 1973, prices for a number of other primary commodities, in particular cocoa, coffee, tea, sugar, groundnuts, sisal, phosphate, and uranium, experienced sharp increases followed by steep declines. These price developments affected a number of sub-Saharan African countries, including Burundi, the Central African Republic, Ethiopia, Kenya, Madagascar, Sierra Leone, and Tanzania (all coffee growers); Ghana (cocoa producer); Côte d'Ivoire (cocoa and coffee exporter); the Gambia (groundnut exporter); Senegal (producer of groundnuts and phosphate); Malawi (sugar and tobacco producer); Niger (uranium producer); and Togo (phosphate producer).

Many of the affected countries responded to the initial commodity price increases by sharply expanding public expenditure. Revenues from commodity taxation, though higher, did not rise as fast, and governments used foreign borrowing to meet the remaining costs of particular spending projects. When

commodity prices subsequently fell, expenditures were not reduced commensurately, and previous borrowing was often supplemented with new loans to maintain expenditure levels. At the same time, several countries dependent on minerals, such as copper (Zaire and Zambia) and iron ore (Liberia and Mauritania), whose prices declined during the 1970s, were able to borrow externally on the assumption that prices would subsequently recover. External debt also accumulated in several oil-producing countries during the mid-1970s as a result of declining real prices (Gabon) and production difficulties (Republic of the Congo). Moreover, after 1977, the leading sub-Saharan African oil producer, Nigeria, began to borrow heavily in commercial markets, with its total Eurocurrency commitments approaching US\$3 billion during 1978 and 1979.

The trend toward rising sub-Saharan debt burdens accelerated during the 1980s in the wake of the second oil price shock of 1979-80. Reflecting a concerted effort by industrial countries to contain the resulting inflationary repercussions, industrial country growth since then has been considerably more sluggish than during the 1970s. As a result, prices of non-oil primary commodities have not risen, and in many cases have fallen precipitously since 1980. By 1987 the terms of trade for sub-Saharan countries excluding Nigeria were 24 percent below the level of 1980. In 1987, aggregate export earnings for the sub-Saharan nations excluding Nigeria were 10 percent below their nominal levels in 1980, despite a 16 percent rise in export volume. At the same time, debt-service obligations more than doubled between 1980 and 1987, reflecting both the overhang of debt incurred during the 1970s and continued borrowing since then. With diminished export earnings, and

with import prices by 1987 significantly above their 1980 levels, sub-Saharan countries found it increasingly difficult to meet their debt-service burdens while maintaining an acceptable volume of imports (Figures 5 and 6). This was particularly true for countries, such as Zambia, that had expanded import-intensive manufacturing industries during the 1970s and thus had become even more dependent on imports of raw materials and intermediate goods in later years.

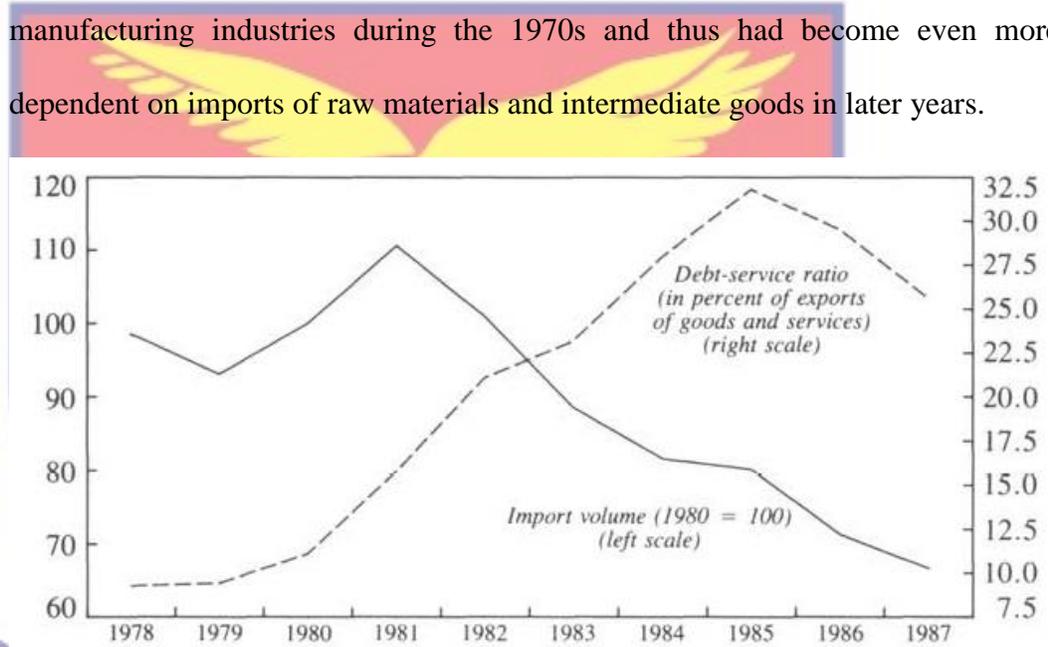
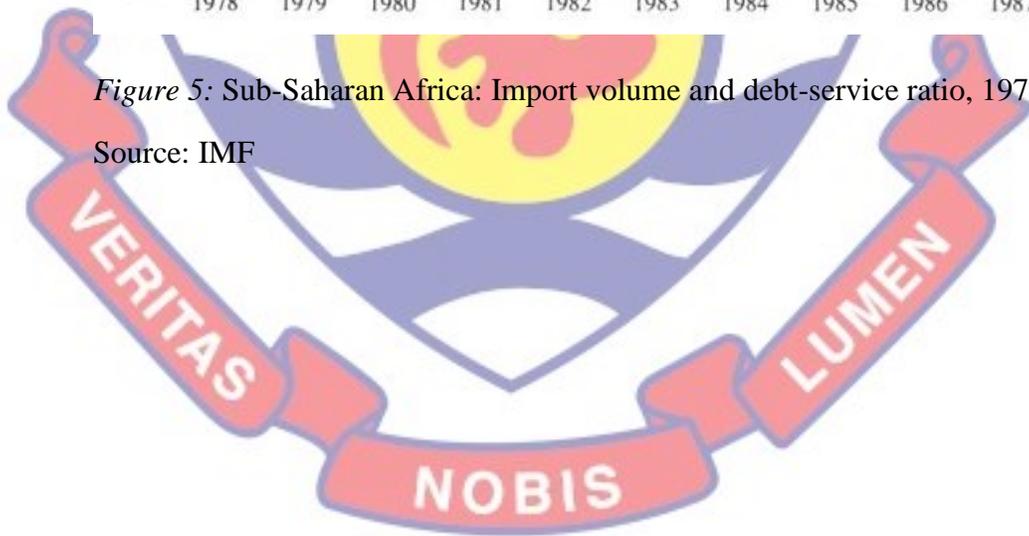


Figure 5: Sub-Saharan Africa: Import volume and debt-service ratio, 1978–87

Source: IMF



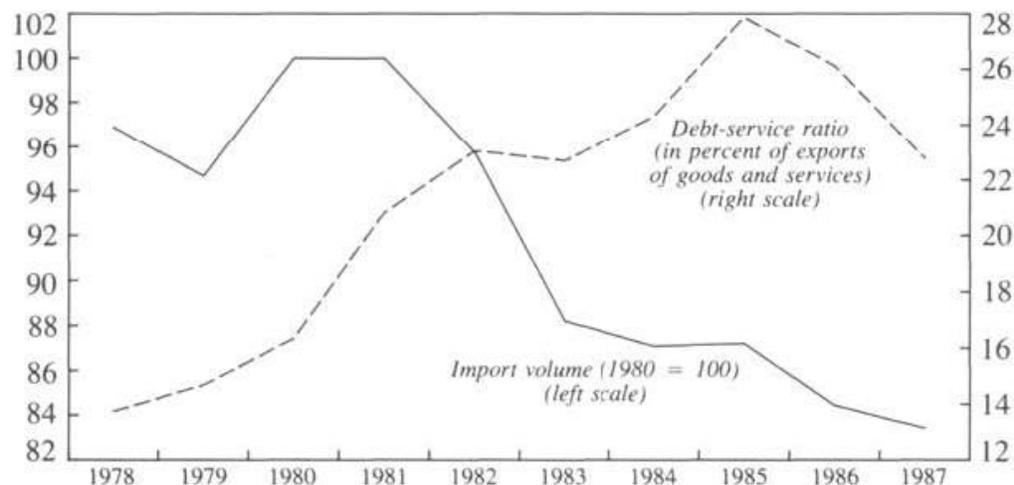


Figure 6: Sub-Saharan Africa, excluding Nigeria: Import volume and debt-service ratio, 1978–87

Source: IMF

Another factor that contributed to sub-Saharan debt burdens during the 1980s was the rise in interest rates. Although less important than for market borrowers, because of the predominantly official character of sub-Saharan debt, rising interest rates nonetheless affected a number of countries that had made significant use of commercial borrowing, in particular Botswana, Côte d'Ivoire, Kenya, Liberia, Malawi, Mauritius, Niger, Nigeria, Senegal, Zaïre, Zambia, and Zimbabwe.¹⁶ Although some of these loans carried fixed rates, an increasing proportion was either denominated in floating rates or renegotiated at the new and higher fixed rates, which averaged 13 percent in nominal terms (and 4 percent in real terms) during 1979–82, compared to 9 percent (and -2 percent in real terms) during 1973–78.¹⁷ According to Krumm (1985), higher real interest rates may have increased debt levels for the Côte d'Ivoire, Malawi, and Zambia by more than 10 percent during 1979–83.¹⁸

Still another factor affecting the ability of sub-Saharan countries to meet debt service obligations was the decline in real net capital inflows, including external assistance, during the 1980s. As shown in Table 1, combined net external borrowing and non-debt-creating flows, including estimated debt relief and arrears, rose from US\$6 billion in 1975 to US\$13 billion in 1980 and US\$17 billion in 1982, before falling sharply to US\$8 billion in 1985. Total inflows recovered to US\$13–14 billion in 1986 and 1987, largely because of debt relief, estimated at US\$11 billion during each of these years. Absent debt relief and arrears, the figures suggest a decrease in net capital flows from US\$11–13 billion a year during 1980–82 to less than US\$1 billion a year during 1986–87. Within these totals was a sharp redistribution of funds toward official sources, as other borrowing (mostly from private creditors) fell from US\$4.4 billion in 1980 to minus US\$5.5 billion in 1986 and minus US\$0.6 billion in 1987. Official grants and borrowing from official sources increased during the period, but by less than the decline in net borrowing from private sources

Table 1: External Financing Flows for Sub-Saharan Africa, 1970–87

| | 1970 Est. | 1975 Est. | 1980 | 1982 | 1985 | 1986 | 1987 |
|--|--------------|--------------|------|------|--------|------|--------|
| Sub-Saharan Africa | 1.9 | 6.1 | 12.9 | 16.8 | 8.2 | 14.2 | 13.2 |
| Net non-debt-creating flows | 1 | 2.4 | 3.6 | 4.1 | 4.5 | 5.2 | 5.5 |
| Net external borrowing | 0.9 | 3.7 | 9.3 | 12.7 | 3.7 | 9 | 7.7 |
| Long-term borrowing from official creditors | -0.6 | -1.8 | -4.5 | -6 | -5.7 | - | -7.5 |
| Reserve-related liabilities | (-) | -0.5 | -0.4 | -5.2 | -2.1 | -2.1 | -0.8 |
| Other borrowing | -0.3 | -1.4 | -4.4 | -1.6 | (-4.1) | 5.5 | (-0.6) |
| Memorandum item: | | | | | | | |
| Total flows, excluding estimated impact of rescheduling and arrears | 1.9 | 5.9 | 13 | 12 | 2.9 | 0.7 | 0.8 |

Source: International Monetary Fund, International Financial Statistics (1988).

Domestic policies have also been a major cause of debt accumulation in sub-Saharan countries. As noted earlier, many countries opted for major development programs and highly expansionary fiscal policies during the commodity boom years of the late 1970s, acquiring external debt as spending increases outpaced the rise in tax receipts. These spending policies continued for some time after the post-1980 collapse in commodity prices. A few countries, such as Zambia, also used external commercial borrowing to maintain consumption in the face of deteriorating export earnings. In addition, several oil producing countries, such as Gabon, Nigeria, and the Republic of the Congo, used their access to foreign capital markets to support major public investment schemes during the 1980s. When oil prices plummeted early in 1986, many of these countries found themselves hard pressed to meet their debt-service obligations.

Besides expansionary fiscal policy and outright borrowing for consumption, many sub-Saharan countries pursued policies that weakened their external positions. Growing fiscal deficits and surging private credit demand led to rapid monetary expansion in many countries. This, in turn, contributed to higher inflation, with consumer prices rising on average by more than 20 percent a year during the 1980s. Because most of these countries did not depreciate their currencies to offset this inflationary impact, many currencies became overvalued. This inhibited exports and encouraged the formation of parallel exchange markets. Also limiting exports was the common practice of marketing crops through monopolistic public sector agencies that offered low producer prices as a way of meeting costs and

raising government revenue. In many countries, producer prices lagged far behind inflation, discouraging production and promoting smuggling.

Domestic economic policies also promoted imports, through overvalued currencies and other measures. Many countries subsidized imported food, fertilizer, and petroleum products as a matter of policy. In addition, tariff legislation encouraged the growth of inefficient, import-intensive manufacturing establishments by imposing high tariff rates or quantitative restrictions on imports of finished goods, while tariffs on imported raw materials and intermediate goods were low or nonexistent.

Negative real interest rates in many countries discouraged domestic savings, encouraged capital outflows, and contributed to debt accumulation by requiring substantial borrowing to finance investment projects. In addition, high inflation rates, capital controls, and extensive restrictions on investment discouraged direct investment and the growth it might have generated. Altogether, these policies increased borrowing needs and lowered export earnings, thus reducing the ability of sub-Saharan countries to meet rising debt-service obligations. These efforts were then compounded during 1986–87, when the failure of commodity prices to match the increase in dollar-denominated import costs led to a 20 percent deterioration on the terms of trade for sub-Saharan countries excluding Nigeria.

Empirical Review

A number of empirical studies that focus on government spending and its effect on the economy exist for both advanced and developing economies. The results of such studies have varied across the countries due to the different levels of

socio-economic development, the time of periods analysed, and various research methods employed. For example, Barro (1990) revealed that an increase in government spending on non-productive government services would lead to lower economic growth per capita. Barro (1996) extended his research to the period of 1960-1990 for 100 different countries. Barro indicated that in the respect of government policy, among the other determinants of economic growth, real GDP per capita might be enhanced by effective implementation of law, lower inflation and smaller government spending. Meanwhile, government spending, excluding spending on education and defence, showed a significantly negative impact on economic growth. Thus, greater government spending, which might be associated with higher taxation, would tend to reduce growth.

Appiah-Kubi, et. al., (2022) investigated the key determining drivers that have a direct and indirect impact on the rising level of public debt in Africa from a panel of 47 African nations for the period 2000–2018. The study employed the generalized method of moments (GMM) and fixed effects two-stage least squares (IV-FE) methodological approach. The study confirmed that a rise in the corruption level leads to an increase in the public debt in Africa. The findings of the study again indicated that government investment enhances the positive and significant association with public debt levels in the sampled countries. The result also revealed that government consumption and tax revenue have a significant negative relationship with the levels of public debt in Africa. Lastly, their results showed that military expenditure has a positive but insignificant relationship with public debt levels in Africa.

Bounsaythip, and Inthakason, (2022) attempted to expound long-run and short-run relationships between government expenditures and gross domestic product (GDP). They also aimed at exploring the direction of causality between the government expenditures and real GDP, in view of examining the nexus between government expenditure and real GDP. The study was based on data from Laos' public expenditure between 1980 and 2018 in key functional governmental expenditures of recurrent and capital budgets, and GDP in different sectors by using an auto-regressive distributed lags (ARDL) model. Econometric techniques such as unit root tests, serial correlation test cointegration test, autoregressive distributed lags (ARDL) and heteroskedastic tests were used. Times series data covering the period from 1980 to 2018 on such variables as government expenditure, and real GDP in the three chosen sectors were used. The results of the study, confirmed that there is a negative long-run relationship between government investment (capital) and administration (recurrent) spending and real GDP, but a positive short-run relation between government investment (capital) and administration (recurrent) spending and economic growth.

Boniface Audu, and Zaccheaus, (2022) investigated the effect of public debt on recurrent expenditure in Nigeria for the period 2010Q1 to 2021Q1. Quarterly time series data for domestic debt, external debt and recurrent expenditure were collected from Central Bank of Nigeria statistical bulletin. Philip Perron test was used to test the stationarity of the data and the ARDL Bound cointegration test was utilized to determine presence of long run relationship. Vector Error Correction Model (VECM) was used for analysis since cointegration was established in the

series. Wald test method was used to test the effect of domestic debt and external debt on recurrent expenditure in Nigeria. The findings showed that domestic debt has insignificant relationship with recurrent expenditure in Nigeria, while external debt has significant effect on recurrent expenditure in Nigeria.

Fumey, Bekoe, and Imoru, (2022) examined the effects of external debt servicing on capital formation in Ghana. Using data from 1980 to 2019, the study estimates the Autoregressive Distributed Lag (ARDL) model and finds that the effect of external debt servicing is negative both in the long and the short run due to the tax disincentive effect. This suggests that as a result of the potentially high debt servicing due to the high debt stock, any future investment may attract high marginal tax rates and would tend to reduce investment in the economy. The result further shows that external debt servicing affects private capital formation more than public capital formation. However, the effect of the external debt stock on private investment is negative in the long run but positive in the short run confirming the direct effect of the debt hypothesis' existence in Ghana suggesting that external debt discourages a long-term investment which is critical for economic growth. Additionally, there exists complementarity between public and private investments indicating that some public investments attract private ones into the country. Therefore, external debt service payment crowds out private investment through excessive interest charges, so government should determine a threshold of borrowing in order to minimize the high debt servicing.

Ukwueze, et. al., (2021) estimated the relationship between government expenditure, governance quality, and economic growth in SSA. The system

generalized method-of-moment (GMM) approach of panel regression was used to estimate such relationships. The GMM approach solves endogeneity issues that might occur as a result of measurement error, omitted variable bias and reverse causality, unobserved heterogeneity, and other problems. The results of the study showed that past realizations of the gross domestic product per capita (GDPP) significantly affect the growth rate per capita, whereas government consumption expenditure and the governance indicators do not affect the growth rate of SSA countries.

Bahaa (2021) examined the effect of public debt on Palestinian government expenditure from the year 1997 to 2019. An analytical descriptive approach was adopted. The study found that public debt positively impacts government expenditures and current expenditure, this confirms that the largest proportion of public debt is spent on the non-productive consumer aspects without direct concern for the elements of real economic production. The study also found that public debt negatively affects the development expenditures, which are usually supported by foreign aid and grants. The researcher recommended that, the Palestinian Authority should rationalize public and private consumption spending, and encourage citizens to invest by making them aware of the benefits of directing savings towards investment, financing projects.

EFE, (2021) evaluated the relationship between fiscal policy and economic growth in Nigeria using time series data spanning from 1981 to 2019. The study adopted longitudinal research design. Capital expenditure, recurrent expenditure, oil revenue, non-oil revenue, domestic debt, external debt, and fiscal deficit were

employed as the independent variables while real gross domestic product, a proxy for economic growth served as the dependent variables. The statistical tools employed in analyzing the data include descriptive statistics, Augmented Dickey Fuller unit root test, Johansen Cointegration test and Error Correction Model (ECM). The result of the descriptive statistics indicated that all the variables were normally distributed. Augmented Dickey Fuller (ADF) test statistics showed that all the variables used in this study were stationary at first difference. Johansen Cointegration test indicate that there is a long run relationship between the variables used in the study. The estimation result indicated that non-oil revenue, capital expenditure and recurrent expenditure had significant positive relationship with economic growth. Oil revenue was found to have insignificant positive relationship with economic growth in Nigeria while domestic debt, external debt and fiscal deficit were found to have negative relationship with economic growth within the period under review. The study therefore concluded that fiscal policy has significant relationship with economic growth in Nigeria.

Chu, Holscher and McCarthy (2020), conducted a study on the impact of productive and non-productive government expenditure on economic growth. Using panel data from 37 high-income and 22 low- to middle-income countries from 1993 to 2012. Their study employed OLS fixed effect and GMM as their research method. They found that a shift in government expenditure away from non-productive government expenditure and towards productive forms of expenditure are associated with higher levels of growth in both high-income and low- to middle-income economies.

Iiyambo, and Kaulihowa, (2020) investigated the relationship between government expenditure, government revenue and public debt in Namibia by employing the data of these variables for the period 1980 to 2018. An error correction model (ECM) was employed to analyse the short- run dynamics. They found that there is a positive relationship between government expenditure and government revenue. Similarly, there is supporting evidence that an increase in public debt will stimulate government expenditure. The error correction term indicates that any disequilibrium is corrected at an annual speed of 46.4 percent. Additionally, the pair-wise Granger causality test fails to support the spend-revenue hypothesis. However, there is supporting evidence that the tax-spend hypothesis does hold for Namibia.

Amayo (2019) conducted a study on the impact of capital expenditure and recurrent expenditure on public debt in Kenya. Annual time series from various economic surveys and Annual Public Debt reports between 1980 to 2015 was used. Augmented dickey fuller and Philip Pearson tests were employed to test the stationarity of the data. The study employed a vector error correlation model. The author found that in the long run there is a significant positive relationship between recurrent expenditure and public and a significant negative relationship between capital expenditure and public debt.

Nyarko-Asomani, et al (2019) conducted a study in Ghana on the relationship between government capital expenditure, recurrent expenditure and economic growth. Their study employed a Stock-Watson Dynamic OLS estimation to analyse the relationship between government expenditure and economic growth.

The study again adopted the Granger Causality test to determine the direction of causality among these expenditure variables and economic growth. The study found that, capital expenditure enhances economic growth while non-interest and interest payment recurrent expenditures are detrimental to economic growth. They also suggested that it is prudent for government to consider an efficient debt management strategy to limit the interest payment growth in the country.

Awwad, (2019) in a study aimed to identify the effect of public debt on Palestinian government expenditure from the year 1997-2019. An analytical descriptive approach was used. The study found that the public debt positively impacts government expenditures and current expenditure, this confirms that the largest proportion of public debt is spent on the non-productive consumer aspects without direct concern for the elements of real economic production. The study again found that public debt negatively affects the development expenditures, which are usually supported by foreign aid and grants.

Liyambo, (2019) investigated the relationship between government expenditure, government revenue and public debt by employing the data of these variables for the period 1990 to 2016, obtained from the Ministry of Finance (MOF). The study employed the error correction model (ECM) to analyse the short run dynamics due to the existence of cointegration. The ordinary least square (OLS) regression revealed a positive significant relationship between government expenditure and government revenue, but public debt was found to be statistically insignificant relative to government expenditure in the long run. All independent variables were found statistically significant and positively related to government

expenditure in the short run. The negative sign of the residual in the estimated ECM indicates that any disequilibrium is corrected at an annual speed of 50.28 percent. The pair-wise Granger causality tests found an unidirectional causality from government expenditure to public debt. On the contrary, there is no evidence to support any causality between government expenditure and government revenue.

Mehra and Mehta (2018), examined the impact of taxes and government spending on public debt in India during the period 2002-2013. The study adopted a multiple linear regression model to analyze the effect of government spending and tax revenues on the public debt. The study concluded that increasing tax revenues and government spending will reduce the debt-to-GDP ratio as both criteria are inversely related to public debt. It also suggests the importance of directing spending effectively and productively, with the support of relevant economic Organizations.

Alawneh (2017) examined the impact of capital spending, current spending, and external and internal public debt on taxes in Jordan during the period 2001 to 2014. Multiple linear regression method was used to study the effect of capital expenditure, current spending, external and internal public debt on the taxes. The statistical analysis showed a positive, statistically significant effect of both capital spending and current spending on taxes. The study also found a positive statistically significant relationship between the external and internal public debt for taxes in Jordan. The researcher recommended the necessity of using nontraditional alternatives to finance capital expenditures instead of external public debt and internal sources.

Uguru (2016) examined the relationship between public debt and government expenditure in Nigeria from 1980 to 2013. The study disaggregated government expenditure into capital and recurrent expenditure as the independent variable. The study adopted the Ordinary Least Square regression technique to analyze the relationship between government expenditure and public debt. It was found that, both capital expenditure and recurrent expenditure have a damaging effect on public debt. From the result, the coefficient of capital expenditure was less than the coefficient of recurrent expenditure. Uguru (2016), concluded that, recurrent expenditure had a more damaging effect on public debt than capital expenditure.

D'Agostino et al. (2016) assumed that an increase in government spending might have caused a higher level of corruption in a country as well, which means that corruption might have an indirect effect on GDP growth as well. This study confirmed that government spending enhances economic growth, while large military burden and non-capital government spending reduces GDP and corruption has a significant indirect impact. Meanwhile, the negative effect of government spending on economic growth was found in the countries with ineffective governments (Butkiewicz & Yanikkaya, 2011).

In the study of Olulu et al. (2014), government expenditures in Nigeria disaggregated into total expenditures, spending on health, education and public debt. The ordinary least square (OLS) was applied to ascertain the short-run relationship between variables, however, the Augmented Dickey-Fuller (ADF) test, was used to examine the long-run relationship between variables in the equation.

The results have revealed an inverse relationship between government spending on health and economic growth. Government spending on education has been found insufficient to cater for the expanding sector in Nigeria. In addition, it has been revealed that GE could promote foreign and local investments.

Mah, et-al (2013), examined the impact of government expenditures and government incomes on government debt. The study estimated the effect of government expenditure on debt in Greece by adopting the vector error correction model framework and granger causality model with annual data from 1976 to 2011. The study used the Vector Error Correction Model framework to estimate the model and the Vector Autoregression Granger causality to determine the direction of causation. The study found a significant negative relationship between gross government debt and gross national income as well as gross government debt and net foreign direct investment. The study, again, found that there is a positive relationship between gross government debt and gross national expenditure and gross government debt and inflation. The study recommended that policy makers should revisit their fiscal policies in order to reduce debt and sustain it.

Corruption has been found to hamper economic growth (Del Monte and Papagni 2001; D'Agostino et al. 2016; Méndez and Sepúlveda 2006; Swaleheen 2011), reduce private investment (Meon and Sekkat 2005) and foreign direct investment (Habib and Zurawicki 2002), lower productivity (Hall and Jones 1999; Lambsdorf 2003), decrease the quality of procurement and the average productivity of public investments (Baldi et al. 2017; Sidorkin and Vorobyev 2018), and accentuate income inequality and poverty (Apergis et al. 2010; Gupta et al. 2002).

Owusu-Nantwi, and Owusu-Nantwi, (2021) examined the effect of corruption and shadow economy on public debt in 51 African countries. The study further explored the causal linkage between corruption, shadow economy and public debt. The study employed vector error correction model and Kao cointegration test to examine the long-run relationship between corruption, shadow economy and public debt in Africa. The study found a positive and statistically significant relationship between corruption and public debt. Further, the study reported a positive and statistically significant effect of shadow economy on public debt. In the short run, the study found a unidirectional causal relationship between corruption, shadow economy and public debt with the direction of causality running from corruption and shadow economy to public debt, respectively.

Camões and Mendes, (2019) through their study asked whether citizens judge public administration to be trustworthy using different criteria from other political institutions. Using survey data, they estimated ordered logistic and multivariate regressions to compare the determinants of trust in six different political administrative institutions. Their Findings showed that social trust, political interest, as well as other individual characteristics, have very similar effects on trust regardless of the institution. The evidence showed that people who are older and more educated, interested in politics, and employed in the public sector, are only slightly more likely to make some sort of distinction.

Jameel, Asif, and Hussain, (2019) examined how good governance promote public trust with possibly mediating role of e-government. A field survey was conducted by distributing questionnaires to 1000 Pakistani individuals. The

response rate was 76.3%. Confirmatory factor analysis and structural equation modelling were used to analyze the data. The results confirmed the casual relationship between good governance and public trust. The results also reveal that e-government plays a mediating role in the relationship between good governance and public trust.

Benfratello et al. (2018) investigated the relationship between corruption and public debt in a large sample of developing and developed countries. They showed that corruption generally increases public debt. Their result indicated that the effect of corruption on public debt, however, varies, and is stronger in advanced economies, and weaker and less statistically significant in less developed countries.

Du, Lin, and Wang, (2018) explored the relation between government integrity and firms' investment efficiency in the context of China's deepening reforms and its strengthening the social credit system. They found that government integrity is positively associated with the investment efficiency of listed companies in China. Government integrity is negatively related to corporate underinvestment, but insignificantly related to corporate overinvestment. Higher government integrity reduces underinvestment in non-state-owned firms, but this relation is not significant in state-owned firms. Furthermore, they found that the negative relation between government integrity and underinvestment is only significant for firms in industries that receive supportive government policies. This study enriches research on corporate investment by adopting the perspective of government integrity, and supplements the literature on government integrity and its economic consequences.

Capasso and Santoro (2018) showed that corruption is not affected by the aggregate level of government expenditure. They provided empirical evidence that some categories of government spending, reflecting different allocations of bargaining power between bureaucrats and firms, play a role in explaining corruption. Finally, other authors have found that public expenditure had a negative impact on corruption.

Liu et al. (2017) analysed state and local public debt expansion in the American states during 1997–2008. They found that states with more public corruption had higher aggregate levels of state and local debt. They also tried to quantify the negative impact of corruption and concluded that if corruption in the 10 most corrupt states was reduced to the average level of the other states, their public debt would be 9% lower.

Cooray et al. (2017) used a sample of 126 countries from 1996 to 2012 to investigate the links between corruption, the shadow economy and public debt. They found that both corruption and the shadow economy contributed to increased public debt and that the shadow economy exacerbated the damaging effect of corruption. They concluded that corruption and the shadow economy are complementary causes of public debt.

Most developing countries have to borrow debts to finance budget deficits and to promote economic growth. Van Bon (2015), empirically investigates the relationship between public debt and inflation for 60 developing countries in Asia, Latin America and Africa over the period 1990 - 2014 via the estimation method of difference panel GMM Arellano-Bond. The estimated results show that in the

direction from public debt to inflation, public debt has a significantly positive effect on inflation while in the opposite direction, inflation has a significantly negative effect on public debt. Hence it is expected that inflation will have a negative effect on public debt.

González-Fernandez and González-Velasco (2014), studied the relationship between corruption, the shadow economy and public debt in the Spanish Autonomous Communities from 2000 to 2007. They showed that corruption was an important cause of local debt, although the shadow economy had a higher impact. Lastly, the link between corruption and public debt is nonlinear.

A study was conducted on Building institutional trust through e-government trustworthiness cues by (Chanley et al., 2000). The research method that the study employed was a comparative case study of two e-services in Chile: a tax administration and an e-procurement system. They revealed that the public will strongly support the government's activities when public trust in the government is high. In this case, the public will support the government activities such as lending money to government if government integrity is high. The public's trust in government can efficiently alleviate the conflict between the government and the public (Kim, et al. 2005).

Based on the theory of fair government institutions, Rothstein and Teorell (2008) claim that government integrity is closely related to quality government. Park and Blenkinsopp (2011) conducted a study on the roles of transparency and trust in the relationship between corruption and citizen satisfaction. The study was based on data gathered in South Korea by conducting a survey. A structural

equation model was employed for their estimations. They argued that in South Korea, the relationship between corruption and public satisfaction is largely influenced by government transparency and government integrity.

Chapter Summary

The theories reveal that fiscal policy stimulates economic growth as explained by Keynesian theory. The Peacock and Wiseman theory also explained that due to social and other disturbances, the government may need to increase their expenditure and that the government may be forced to borrow or increase taxes to finance the public expenditure. The allocative efficiency theory also considered the need for proper allocation of public expenditure to enable the economy to achieve its set objectives and goals. Classical economist argued that budget should seek to allocate efficiently by ensuring that a good budget is prepared and all claims are taken care of exhaustively.

On the other hand, the empirical literature shows that there is minimum research linking government spending and government integrity to public debt. Most studies focused on the relationship between government expenditure and economic growth. For government integrity, studies have only focused on corruption and public debt. For instance, Del Monte and Pennacchio (2020) investigated the effect of corruption and government expenditure on public debt. Amayo (2019) focused on the impact of recurrent and capital expenditure on public debt in Kenya. Amayo only focused on Kenya and did not include government integrity. However, there has been no study in SSA that link public debt with government spending and government integrity. This study therefore contributes to

the literature by bringing a closer focus on how public debt interact with government spending and government integrity.



CHAPTER THREE

RESEARCH METHOD

Introduction

This chapter deals with the research methodology used for the study. It focused on the various procedures that were followed to accomplish the research objectives. It covers the research design and approach, the empirical model specification, type and sources of data with their descriptions, the estimation technique and diagnostic tests.

Research Philosophy

The study adopted a positivist research philosophy. Positivism describes epistemologies which seek to objectively measure, analyse and forecast events in the social world by highlighting regularities and causal links between them (Babbie, 2005; Creswell, 2003). The positivist philosophy assumes that society can be scientifically studied and knowledge can be objectively discovered. Alternatively put, the positivist paradigm asserts the view that, in the social sciences, the researcher can be separated from the object of his or her research and as such, observes it in a neutral and value-free manner.

Advocates of this philosophy believe that society can be studied and understood in a logical and rational manner. Positivists also believe that a phenomenon can only be clearly understood if it is free from personal emotions and can be scientifically validated through empirically verifiable and repeated methods of inquiry.

The Research Design and Approach

The study employed a quantitative research design and positivist approach. This design is appropriate as it enabled the researcher to quantify the relationship between the government expenditure, government integrity and public debt through a multiple regression analysis. Though quantitative design mostly limits the researcher from controlling the environment and also gives limited outcomes yet it is the most appropriate research design because it allows the researcher to determine impact of the underlying relationship, as well as the causal directions.

Theoretical Model Specification

This study adopts Baro (1990) and Greiner (2007) endogenous growth models to establish the relationship between public debt and government expenditure and integrity. Barro (1990) incorporated the public sector into the growth model by explaining government activities in terms of tax collected from private agents. Borrowing from Le, Van and Nguyen-van (2015), the budget constraint can be written in general as:

$$G_t + (r_t^b + 1)B_t + (r_t^d + 1)D_t = T_t r_t^A A_t + B_{t+1} + D_{t+1} \dots \dots \dots (1)$$

Where G_t is the government expenditure flow, r_t^b is the rate of interest on external debt and r_t^d is the rate of interest on domestic debt, B_t and D_t are external and domestic debt respectively. T_t is rate of tax on asset returns, r_t^A is the rate of interest on assets and A_t is stock of asset.

The left hand side of equation (1) represents government expenditure at period t. The government spends on its direct expenditures and payment of interest and capital for local and foreign debt. On the right hand, revenue in the period t is raised

by collecting taxes from private agents and also borrowing both domestically and externally to finance deficits that may arise.

To ensure debt sustainability, Greiner et. al., (2007) assumed that the public debt threshold should not be above a given percentage of total production.

$$G_t + n(B_t + D_t) \leq \Omega Y_t + T_t r_t^A A_t \dots \dots \dots (2)$$

Where Ω measures if primary surplus levels rise or fall as increases domestic income and n determines the strength of primary surplus response to changes in domestic and external debt.

Equation 2 can be written as;

$$(G_t - T_t r_t^A A_t) + n(B_t + D_t) \leq \Omega Y_t \dots \dots \dots (3)$$

The above equation shows that domestic and external debt can be used to fund the budget deficit with a percentage of production set aside to cover for the debt.

Reinhart and Rogoff (2010) also observed that the ratio of primary surplus to GDP and debt to GDP ratio were positively correlated as shown below:

$$\frac{(T_t r_t^A A_t - G_t)}{Y_t} \leq -\Omega + \frac{n(B_t + D_t)}{Y_t} \dots \dots \dots 4$$

From equation (1), if we let r_{t-1}^{bd} be the average interest rate for both domestic and external debt:

$$r_t^{bd} = \frac{B_t}{B_t + D_t} r_t^b + \frac{D_t}{B_t + D_t} r_t^d \dots \dots \dots (5)$$

Total public debt can therefore be written as:

$$B_{t-1}(1 + r_{t-1}^b - n) + D_{t-1}(1 + r_{t-1}^d - n) = (B_{t-1} + D_{t-1})(1 + r_{t-1}^{bd} - n)$$

Empirical Model Specification

Based on the literature and following Baro (1990) and Greiner et al., (2007), accordingly as:

$$DEBT_{i,t} = \beta_0 + \beta_1 GOVS_{i,t} + \beta_2 GOVI_{i,t} + \beta_3 X_{i,t} + \eta_i + \mu_t + \varepsilon_{i,t} \quad i = 1, 2, 3, \dots, 36; \quad t = 1, 2, \dots, 18 \quad (1)$$

where *DEBT* represent gross debt ratio as a percentage of GDP, *GOVS* represent government spending which is a proxy for government spending as a percentage of GDP. Government expenditure was also disaggregated into government consumption expenditure (% of GDP) and gross capital formation (% of GDP). *GOVI*. represent the government integrity and the *X*; is a vector of control variables. The control variables include FDI which also represents foreign direct investment (% of GDP), import represents the volume of imports of goods (percentage change), inflation at the end of the period, gross national savings as a percentage of GDP, population, tax payments (Number), and exchange rate, μ_t is a dummy for time-specific effects and η_i is country-specific unobserved effect and $\varepsilon_{i,t}$ idiosyncratic error term. The subscripts *t* and *i* denote country and time respectively.

To achieve objective one, examine the effect of government spending on public debt in general, the model includes the lag of debt ratio in equation 1 as specified in equation 2. The lag of the dependent variable is included in the estimation to order to show the effect of the previous year's debt to GDP ratio on the current year's debt to GDP ratio.

$$DEBT_{i,t} = \beta_0 + \beta_1 DEBT_{i,t-1} + \beta_2 GOVS_{i,t} + \beta_3 X_{i,t} + \eta_i + \mu_t + \varepsilon_{i,t} \quad (2)$$

where, $DEBT_{i,t-1}$ is the lag of debt ratio as a percentage of GDP. All other variable remains as defined earlier.

To achieve objective two, which seeks to examine the effect of government integrity on public debt in general, the model includes the lag of debt ratio which is specified in equation 3:

$$DEBT_{i,t} = \beta_0 + \beta_1 DEBT_{i,t-1} + \beta_2 GOVI_{i,t} + \beta_3 X_{i,t} + \eta_i + \mu_t + \varepsilon_{i,t} \quad i=1, 2, 3, \dots, 36; t=1, 2, \dots, 18 \quad (3)$$

where, *GOVI* represent government integrity.

To achieve objective three, which seeks to determine the joint effect of government spending and integrity on public debt in Sub-Saharan Africa is also specified in equation 4;

$$DEBT = \beta_0 + \beta_1 DEBT_{i,t-1} + \beta_2 GOVS_{i,t} + \beta_3 GOVI_{i,t} + \beta_4 X_{i,t} + \beta_5 (GOVS_{i,t} * GOVI_{i,t}) + \eta_i + \mu_t + \varepsilon_{i,t} \quad i=1, 2, 3, \dots, 36; t=1, 2, \dots, 18 \quad (4)$$

where $(GOVS_{i,t} * GOVI)$ denotes an interaction term between government spending and government integrity. All other variable remains as defined earlier, β_0 represents the intercept term, $\beta_1, \beta_2, \beta_3, \beta_4$ and β_5 , are our parameter or coefficient of interest and ε_t is the error term in the model.

Data Source and Expected Signs

The study made use of annual data of 34 countries in SSA spanning from the period 2005 to 2019. The dataset was sourced from the World Development Indicators (WDI), World Economic Outlook (WEO) of the World Bank, and Heritage Foundation. Except for government integrity all the other variables are expressed as a percentage of GDP and percentage change.

The variables used in the study are presented in Table 2

Table 2: Variables, Data Source and Expected Signs.

| Variable | Description | Source | Expected sign |
|----------|---|---------------------|--------------------|
| Debt | Gross Debt to GDP ratio | WEO | Dependent Variable |
| GOVS | Government spending (% of GDP) | WEO | Positive |
| GI | Government integrity index | Heritage Foundation | Positive/negative |
| GNS | Gross national savings | WEO | Positive |
| FDI | Foreign direct investment net inflow (% of GDP) | WDI | Positive/Negative |
| EXPORT | Value of export of goods (percentage change) | WEO | Positive/Negative |
| IMPORT | Value of import of goods (percentage change) | WEO | Positive/Negative |
| EXCH | Official Exchange rate (local currency to US dollars) | WDI | Positive |
| INF | Inflation | WEO | positive |
| POP | Population | WEO | Negative/Positive |
| TAXREV | Tax revenue (% of GDP) | WDI | Negative |
| CEXP | General government current expenditure (% of GDP) | WDI | Positive |
| KEXP | Gross Fixed Capital formation (% of GDP) | WDI | Negative/Positive |

Source: Asempa (2021)

Detailed Explanation of the Choice Variables

Debt to GDP ratio

Gross government debt as a percentage of GDP, which indicates the cumulative total of all government borrowings less repayments that are denominated in a country's currency. Public debt is different from external debt, which reflects the foreign currency liabilities of both the private and public sectors

and must be financed out of foreign exchange earnings. Widening deficits and a growing debt burden, both of which are caused by poor government budget management, lead to the erosion of a country's overall fiscal health, and deteriorating fiscal health is associated with macroeconomic instability and economic uncertainty.

Debt is an accumulation of budget deficits over time. In theory, debt financing of public spending could make a positive contribution to productive investment and ultimately to economic growth. However, mounting public debt driven by persistent budget deficits, particularly spending that merely boosts government consumption or transfer payments, often undermines overall productivity growth and leads ultimately to economic stagnation rather than growth.

Government Spending

Total expenditure of the government as a percentage of GDP consists of total expense and the net acquisition of nonfinancial assets. The government spending component captures the burden imposed by government expenditures, which includes consumption by the state and all transfer payments related to various entitlement programmes. Government spending becomes an unavoidable burden as growth in the size and scope of the public sector leads inevitably to misallocation of resources and loss of economic efficiency. Volumes of research have shown that excessive government spending that causes chronic budget deficits and the accumulation of public debt is one of the most serious drags on economic dynamism.

The government spending as an explanatory variable is further disaggregated in fixed capital formation and government current expenditure to determine their effect on the debt-to-GDP ratio. Disaggregating government spending is very importance to this study. This helps the study to analyse the individual effect of capital expenditure and current expenditure on debt-to-GDP ratio to be able to advice policy makers on the type of public expenditure needed to sustain the level of debt. Again, this help government to ensure efficient allocation of resource to sustain the level of debt-to-GDP ratio. Other literature has proven that government expenditure has detrimental effect on debt-to-GDP ratio and disaggregating it will help know whether this detrimental effect is caused by capital expenditure or current expenditure.

Gross fixed capital formation

Gross fixed capital formation as a percentage of GDP is a type of government expenditure which include land improvements plant, machinery, and equipment purchases; and the construction of roads, railways, and the like, including schools, offices, hospitals, private residential dwellings, and commercial and industrial buildings.

General government final consumption expenditure

This type of expenditure measured as a percentage of GDP by World bank and IMF includes all government current expenditures for purchases of goods and services (including compensation of employees). It also includes most expenditures on national defence and security, but excludes government military expenditures that are part of government capital formation.

Government Integrity

Government integrity is an index derived by averaging scores for the following sub-factors, irregular payments and bribes, transparency of government policymaking, absence of corruption, perception of corruption and governmental and civil service transparency. The score is graded on a scale from 0 to 100. The maximum score is assigned to be 100 which means government integrity is high and the minimum score zero, also means there is no government integrity. All the sub-factors are weighted equally.

Each of these sub-factors is derived from numerical data sets that are normalized for comparative purposes using the following equation:

$$\begin{aligned} \text{Sub-factor score}_i &= 100 * (\text{Sub-factor}_{max} - \text{Sub-factor}_i) / (\text{Sub-factor}_{max} \\ &\quad - \text{Sub-factor}_{min}) \end{aligned}$$

where Sub-factor_i represents the original data for country i , Sub-factor_{max} and Sub-factor_{min} represent the upper and lower bounds for the corresponding data set, and $\text{Sub-factor score}_i$ represents the computed sub-factor score for country i .

Other control variables

Inflation

This is measured by the annual growth rate of the GDP implicit deflator, and it depicts the rate of price change in the economy as a whole. This is all about how government revenue reacts to price increases over time. High inflation is considered to be an adverse factor to economic growth in developing countries.

High economic growth at a stable low inflation is one of the major objectives for most governments worldwide.

Gross national savings

Gross national savings as a percentage of GDP refers to gross disposable income less final consumption expenditure after into account an adjustment for pension funds.

Value of Import of goods

Percentage change of volume of imports of goods refers to the aggregate change in the quantities of imports of goods whose characteristics are unchanged. The goods and their prices are held constant. Therefore, changes are due to change in quantities only.

Official exchange rate

Official exchange rate quoted against U.S. dollar refers to the value of the local currency relative to US dollar. It is calculated as an annual average based on monthly averages (local currency units relative to the U.S. dollar). The exchange rate is the price of one currency in terms of another.

In a market-based economy, household, producer, and government choices about resource allocation are influenced by relative prices, including the real exchange rate, real wages, real interest rates, and other prices in the economy. Official exchange rates are often used to convert economic statistics in local currencies to a common currency in order to make comparisons across countries.

Population

Population estimates are usually based on national population censuses. Estimates for the years before and after the census are interpolations or extrapolations based on demographic models. Increases in human population, whether as a result of immigration or more births than deaths, can impact natural resources and social infrastructure. This can place pressure on a country's sustainability. Significant growth in population will negatively impact the availability of land for agricultural production, and will aggravate demand for food, energy, water, social services, and infrastructure.

On the other hand, decreasing population size - a result of fewer births than deaths, and people moving out of a country - can impact a government's commitment to maintaining services and infrastructure. The earliest economic theories of population growth extend back to the classical economists, especially Malthus and Ricardo. Their concern lay with a stagnant agricultural sector in which the supply of available land was fixed and in which labour suffered from sharply diminishing returns.

Tax revenue

This can be defined as the ratio of a nation's tax revenue relative to its gross domestic product (GDP). The ratio provides a useful look at a country's tax revenue because it reveals potential taxation relative to the economy. It also enables a view of the overall direction of a nation's tax policy, as well as international comparisons between the tax revenues of different countries.

Foreign direct investment (FDI)

Foreign direct investment are the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors, and is divided by GDP.

Estimation Procedure

In the quest to examine the relationship between government spending, integrity and debt-to-GDP ratio, an estimation technique that will take care of issues of endogeneity and country-specific heterogeneities is required. In performing panel analysis entails two basic techniques namely the static panel and dynamic panel models. Given that the previous year's debt ratio will affect that of the current year's debt to GDP ratio, the dynamic panel model will be suitable for the study. The situation requires the inclusion of a lagged dependent variable as an explanatory variable in the model.

With a total of 34 countries over 15 years, the best estimation technique suggested in literature and deemed to be suitable for data with large cross-sectional unit, and a relatively shorter period is generalized methods of moments (GMM) (Arellano & Bond, 1991; Arellano & Bover, 1995; Blundell & Bond, 1998; Blundell & Bond, 2000). Capable of addressing all forms of endogeneity issues that may crop up as a result of the presence of the lagged dependent variable and the

correlation between the lagged dependent variable and the error term, taking care of omitted variable bias, correcting measurement errors and generating effective internal instruments, the Generalized methods of moments (GMM) proves to be the most appropriate technique for the study.

Again, by relaxing the normality assumption required under the ordinary least square (OLS) estimation approach, it is possible to estimate the effect or impact of variables on others even if the error term is not normally distributed using Generalized methods of moments (GMM). Moreover, with smaller periods and relatively larger cross-sectional units, the most appropriate technique to use is the GMM estimation (Beck, Levine & Loayza, 2000). From Arellano and Bond (1991), Arellano and Bover (1995), and Blundell and Bond, (2000) we take the first difference of equation (1) to remove the constant term and the country-specific unobserved effects, this gives equation (5)

$$DEBT_{i,t} - DEBT_{i,t-1} = (\beta_0 - \beta_0) + \beta_1(DEBT_{i,t-1} - DEBT_{i,t-2}) + \beta_2(\ln GOVS_{i,t} - \ln GOVS_{i,t-1}) + \beta_3(\mathbf{X}_{i,t} - \mathbf{X}_{i,t-1}) + (\eta_i - \eta_i) + (\mu_t - \mu_{t-1}) + (\varepsilon_{i,t} - \varepsilon_{i,t-1}) \quad i=1, 2, 3, \dots, 26; t=1, 2, \dots, 11$$

$$DEBT_{i,t} - DEBT_{i,t-1} = \beta_1(DEBT_{i,t-1} - DEBT_{i,t-2}) + \beta_2(\ln GOVS_{i,t} - \ln GOVS_{i,t-1}) + \beta_3(\mathbf{X}_{i,t} - \mathbf{X}_{i,t-1}) + (\mu_t - \mu_{t-1}) + (\varepsilon_{i,t} - \varepsilon_{i,t-1}) \quad i = 1, 2, 3, \dots, 26; t=1, 2, \dots, 11 \quad \dots\dots(5)$$

We can rewrite equation (5) as

$$\Delta DEBT_{i,t} = \beta_1(\Delta DEBT_{i,t-1}) + \beta_2(\Delta \ln GOVS_{i,t}) + \beta_3(\Delta \mathbf{X}_{i,t}) + \Delta \mu_t + \Delta \varepsilon_{i,t} \quad i = 1, 2, 3, \dots, 26; t=1, 2, \dots, 11 \quad \dots\dots(5a)$$

The first difference enables us to deal with the constant term and the country-specific unobserved heterogeneity but introduce another problem known as endogeneity bias since the new error term $(\varepsilon_{i,t} - \varepsilon_{i,t-1})$ as in equation (5) would be correlated with $DEBT_{i,t-1} - DEBT_{i,t-2}$. In addition, all the explanatory variables correlate with the lagged error term $\varepsilon_{i,t-1}$. To solve this challenge, the difference GMM estimator allows us to use lagged values of the explanatory variables as instruments once they fulfil two assumptions or moment conditions; the error term is not serially correlated with the instrument and the explanatory variable are weakly exogenous.

$$E[DEBT_{i,t-s}, (\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ for all } s \geq 2; t=3, \dots, 11 \text{ and}$$

$$E[X_{i,t-s}, (\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ for all } s \geq 2; t=3, \dots, 11$$

Once these instruments are used and the conditions are fulfilled the estimation technique is called difference GMM. Blundell and Bond, (1998) argued that the difference GMM suffers from weak instruments when the explanatory variables are persistent over time. Arellano and Bover (1995), and Blundell and Bond, (2000) suggest an estimator that allows us to combine a system of equations in difference and levels. They argued that we can use lagged difference dependent variable as instruments for the level equation in addition to the lagged explanatory as an instrument in the difference equation. The system GMM estimator is said to be a more efficient estimator compared to the difference estimator. For the additional instruments to be valid there could be a correlation between the explanatory variables and the country-specific effect in levels but there should be no correlation between the difference of these variables and country-specific effect.

This requires additional moment conditions for the level equation we need to fulfil to allow us to use the system GMM:

$$E[(DEBT_{i,t-s} - DEBT_{i,t-s-1})(\eta_i + \varepsilon_{i,t-1})] = 0 \text{ for all } s = 1; t = 3, \dots, 11 \text{ and}$$

$$E[\mathbf{X}_{i,t-s} - \mathbf{X}_{i,t-s-1})(\eta_i + \varepsilon_{i,t-1})] = 0 \text{ for } s = 1; t = 3, \dots, 11$$

In this study, two-step system GMM is used to estimate equation (1) to (3).

For objective one, the empirical model for estimation using GMM estimator will be:

$$\Delta DEBT_{i,t} = \beta_1(\Delta DEBT_{i,t-1}) + \beta_2(\Delta \ln GOVS_{i,t}) + \beta_3(\Delta \mathbf{X}_{i,t}) + \Delta \mu_t + \Delta \varepsilon_{i,t} \quad i = 1, 2, 3, \dots, 26; t = 1, 2, \dots, 11 \quad \dots \dots \dots (5b)$$

For objective two, the model becomes;

$$\Delta DEBT_{i,t} = \beta_1(\Delta DEBT_{i,t-1}) + \beta_2(\Delta GOVI_{i,t}) + \beta_3(\Delta \mathbf{X}_{i,t}) + \Delta \mu_t + \Delta \varepsilon_{i,t} \quad i = 1, 2, 3, \dots, 26; t = 1, 2, \dots, 11 \quad \dots \dots \dots (6)$$

The model for objective three becomes;

$$\Delta DEBT_{i,t} = \beta_1(\Delta DEBT_{i,t-1}) + \beta_2(\Delta \ln GOVS_{i,t}) + \beta_3 \Delta GOVI_{i,t} + \beta_4(\Delta \ln GOVS_{i,t} * \Delta GOVI_{i,t}) + \beta_5(\Delta \mathbf{X}_{i,t}) + \Delta \mu_t + \Delta \varepsilon_{i,t} \quad i = 1, 2, 3, \dots, 26; t = 1, 2, \dots, 11 \quad \dots \dots \dots (7)$$

Model Diagnostic Test

To ascertain the validity and consistency of our system GMM estimator, two conditions must be fulfilled; the error term must not be serially correlated and the instruments must be valid. The following tests are used for these verifications.

Hansen test for over-identifying restrictions

Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998) suggested that for the result of the GMM estimator to be consistent

the instruments used for the analysis must be valid. The null hypothesis states that; the instrumented variables are exogenous and not correlated with the error term. If we fail to reject the null, then our instruments are valid.

Arellano-Bond test for serial correlation

This test help examines the assumption that the errors in the first difference regression are not serially correlated. The AR (2) test for serial correlation is based on the residual of the estimation and it is done by using the standard covariance matrix of the coefficients. The null hypothesis states that the errors in the first difference exhibit no second-order serial correlation.

Chapter Summary

This chapter discussed the methodological frameworks that were used in achieving the research objectives highlighted in the first chapter of the study. It also touched on the appropriate research philosophy, design and approach and stressed on the importance of using the positivist approach. The chapter also provided justification for the choice of both the dependent and independent variables. The chapter ended by looking at the estimation techniques employed in finding the relationship between public debt, government spending and government integrity. Some diagnostic tests employed in the study are also presented in the final section. The next chapter discusses the estimated empirical results obtained in the study.

CHAPTER FOUR
RESULTS AND DISCUSSION

Introduction

This chapter presents the analyses and discussion of the results. The results have been organized in the form of tables and figures for a better understanding of the values and direction of the relationship between variables. The chapter includes the presentation of summary statistics results.

Summary Statistics

The results of the summary statistics for the variables are presented in Table 3. The summary statistics is relevant for both parametric and non- parametric tests. It shows whether the sample is normally distributed and indicate if there are outliers in the data.

Table 3: Results for Summary Statistics

| Variables | Observation | Mean | Std. Dev. | Min | Max |
|-----------------------|-------------|---------|-----------|---------|----------|
| Capital exp. | 510 | 22.866 | 8.75 | 5.885 | 79.462 |
| Recurrent exp. | 510 | 14.61 | 6.628 | 2.736 | 41.888 |
| Inflation | 510 | 6.287 | 6.807 | -8.07 | 54.709 |
| Debt | 510 | 42.651 | 27.801 | .488 | 203.651 |
| Government integrity | 510 | 29.876 | 10.921 | 10 | 67.9 |
| FDI | 510 | 3.894 | 5.289 | -6.37 | 39.456 |
| Import | 510 | 8.205 | 20.427 | -40.937 | 159.369 |
| Government spending | 510 | 23.178 | 9.423 | 8.674 | 63.721 |
| Exch. Rate | 510 | 647.812 | 1259.007 | .905 | 9183.876 |
| Gross national saving | 510 | 19.233 | 11.791 | -17.58 | 57.835 |
| Population | 510 | 21.583 | 32.577 | .475 | 200.964 |
| Tax. Rev | 510 | 12.448 | 9.445 | 4 | 39.988 |

Source: Asempa (2021)

From Table 3, debt to GDP ratio for the 34 sub-Saharan African countries under study is averaged about 42.6% as the share of GDP. The maximum value is approximately 203% as the share of GDP with a minimum value of 0.49% as the share of GDP with an average variation of 27.8% among the SSA countries used for the study. The maximum value of 203% and minimum value of 0.49% shows how the region is not performing well in terms of debt management.

Government spending which is measured as a percentage of GDP for the period is averaged 23.2% as a share of GDP. The maximum value is approximately 63.7% of GDP with a minimum value of about 8.6% of GDP. The extent to which Government spending deviates from the mean is approximately 9.4% of GDP within the region. The intuition behind the maximum value and the minimum value is that not much effort has been put in place to manage government spending in this region. Recurrent government expenditure has a minimum value of 2.736 and a high value of 41.888 with an average value of 14.61 recording 6.628 standard deviation. Government capital expenditure on the other hand ranges from 5.885 to 79.462 recording an average figure of 22.866 and a standard deviation of 8.75.

Government integrity is averaged 29.876. The maximum value is approximately 67.9 with a minimum value of 10. The extent to which the Government integrity deviate from the mean is approximately 10.921 within the region. The intuition behind the maximum value and the minimum value is that not much effort has been put in place to improve government integrity in this region.

Inflation as a percentage of GDP deflator is averaged 6.287 percent and a deviation of 6.807 percent from the mean which means there is no outliers in this

data set. The maximum value is approximately 54.709 percent with a minimum value of -8.09 percent. The negative minimum value depicts how the region is managing inflation rate. Some countries such as Burkina Faso, Cameroon, Equatorial Guinea, Liberia, Mali, Togo, Zambia and Zimbabwe recorded negative inflation values and this may be as result of fall in price of goods and services, when supply exceeds demand, reduction in money supply, among others. The maximum inflation value of 54,709 was recorded by Zambia and this may be as a result of demand exceeding supply, increase in money supply, among others.

FDI net inflows has a mean value of 3.894% as a share of GDP with an average variation of 5.3% as a share of GDP. The maximum value and minimum values recorded within the region are 39.4% as a share of GDP and -6.37% as a share of GDP respectively in the region. The maximum value and the minimum value imply that foreign investments are very low in the region. Import recorded a minimum value of -40.937 and maximum value of 159.369 recordings an average figure of 8.205 and a standard deviation of 20.427. The mean value and the standard deviation value of import shows that there are outliers in the data set.

Exchange rate has a minimum value of 0.905 US dollars and a maximum value of 9183.876 US dollars. The average figure is 647.812 and the deviation from the sample mean is 1259.007. The deviation value implies that there are outliers in the data set for exchange rate. The mean value depicts that exchange rate as local currency to US dollars is very high in the region.

Gross national saving has a minimum value of -17.58 and maximum value of 57.835 with a mean value of 19.233 and the deviation from the sample mean is

11.791. Population has a minimum value of 0.475 and maximum value of 200.964 with an average figure of 21.583 and the deviation from the sample mean is 32.577.

The total tax revenue is averaged about 12.4% as the share GDP. The maximum value is approximately 39.9% as the share of GDP with a minimum value of 4% as the share of GDP with an average variation of 9.44% among the SSA countries used for the study. The maximum value of 39.9% and minimum value of 4% shows how the region is not performing well in terms of revenue mobilization due to poor tax systems, among others in the region.

Empirical Estimation and Discussions

In this section, the results from the Generalized Methods of Moments (GMM) estimation are presented and discussed in the context of literature. Specifically, Table 3 assesses the effect of general government expenditure on debt-to-GDP ratio in sub-Saharan Africa. Table 4 highlights the effect of government capital and current expenditure on debt-to-GDP ratio within the sub-Saharan African region, Table 5 also highlights the effect of government integrity on debt-to-GDP ratio in sub-Saharan Africa. Table 6 also highlights the relative effect of both government expenditure and government integrity on debt-to-GDP ratio within the region,

Effect of Government Spending on Debt-to-GDP ratio in sub-Saharan Africa

The first objective of the study sought to examine the effect of government spending on debt-to-GDP ratio. Table 4 shows our first set of econometric estimate, obtained using the GMM estimator.

Table 4: Effect of Government Spending on Debt-to-GDP ratio in SSA

| Variables | Coefficient. | St.Err. |
|------------------------------|--------------|---------|
| Debt to GDP ratio(-1) | 0.858*** | 0.109 |
| Government spending | 1.86** | 0.87 |
| FDI | 0.911 | 0.847 |
| Import | -0.005 | 0.168 |
| Gross nation savings | -0.108 | 0.434 |
| Exch. Rate | 7.421* | 4.281 |
| Population | 1.299 | 0.776 |
| Inflation | 0.025 | 0.181 |
| Tax revenue | 0.446 | 0.271 |
| Constant | -111.08** | 51.076 |
| Number of obs | 476. | |
| F-test | 47.64 | |
| AR(2) | 0.472 | |
| Hansen test | 0.425 | |
| Number of groups/instruments | 34/19 | |

*** $p < .01$, ** $p < .05$, * $p < .1$ represent significance level at 1%, 5% and 10%

Source: Asempa (2021)

From Table 4, the Hansen test for over-identifying restrictions is 0.425 (Hansen test= 0.425) and the Arellano-Bond test serial correlation is 0.472 (AR (2) = 0.472). The Hansen test failed to reject the null hypothesis that the instrumented variables are exogenous and not correlated with the error term. With this we conclude that our instruments are valid. The AR (2) test for serial correlation also resulted in the failure to reject the null hypothesis that the errors in the first difference exhibit no second-order serial correlation.

The results from Table 4, indicates that the coefficient of the lagged value of debt- to-GDP ratio is significant at 1 percent alpha level confirming that current

period's debt-to-GDP ratio is influenced by that of the previous period and therefore the need to specify a dynamic model.

The coefficient of government spending as a percentage of GDP is 1.86 and statistically significant at 5 percent alpha level. The result indicates that a percentage increase in government spending will lead to 1.86 percent increase in debt-to-GDP ratio in sub-Saharan Africa region. This result conforms to the economic intuition and the a-priori sign expectations. Empirical studies have shown that government spending plays a major role in debt-to-GDP ratio either by increasing debt-to-GDP ratio or reducing it. For instance, Misra et al., (2020) and Tanzi and Davoodi, (2001) showed that high government spending increases borrowing and borrowing can increase debt-to-GDP ratio. This result suggests that government spending will increase the debt-to-GDP ratio of the economy. Government sometimes borrows to finance its budget if the country's spending exceeds its revenue. As the government continue to borrow to finance the nation's budget deficit, debt-to-GDP ratio will also continue to increase. This finding conforms with the study of Mah, *et al.* (2013) who indicated that there is a significant positive relationship between gross government expenditure and gross government debt. They indicated that policy makers of the world at larger should revisit their fiscal policies in other to reduce debt-to-GDP ratio. The result also agrees with Del Monte and Pennacchio, (2020) on the effect of corruption and government spending on debt-to-GDP ratio in OECD countries. They found that there is a positive relationship between government size and debt-to-GDP ratio.

According to the Keynesian theory, a persistent increase in government spending can negatively affect the economy in the long run through three main avenues. First, persistent, large budget deficits can result in a rising debt-to-GDP ratio and lead to an unsustainable level of debt. And rising debt-to-GDP ratio can also lead to a recession in the economy. In Africa, most of the government projects are financed through borrowed money from developed countries. The result is again consistence with Peacock and Wiseman theory which agree that social and other disturbances may lead to an increase in government expenditure which may not be met at the existing level of revenue. The theory concluded that the low level of revenue may force government to borrow thus increasing public debt.

Therefore, as the government increases its spending, the state will have to borrow more to finance its budget. This will only lead to a rise in debt-to-GDP ratio. Also if the government does not spend on productive activities, the country cannot raise income to pay its debt hence accumulating more debt in the economy. Amayo (2019) argued that government spending on non-productive activities will increase the damaging effect of government spending on debt-to-GDP ratio. Again, a country full of corruption can also make government spending irrelevant to reduce debt-to-GDP ratio (Del Monte & Pennacchio, 2020).

On the other hand, the results of government spending from Table 4 contradicts the findings of Chu, et. al., (2020); Alawneh (2017); Uguru (2016). They argued that the state can essentially, through implementing appropriate policies, nurture productive activities and reduce unproductive ones and this will help improve economic growth in order to reduce debt-to-GDP ratio of the country.

Table 4 also shows that the coefficient of official exchange rate is 7.42 and statistically significant at 10 percent alpha level. This result indicates that a unit increase in official exchange rate is associated with 7.989 increase in debt-to-GDP ratio in sub-Saharan Africa region. This result is consistent with economic theories like the IS-LM model which indicate that an increase in exchange rate will result in the depreciation of local currency. As the local currency depreciates, the government will then have to borrow more in order to produce and export more and import less to obtain balance of payment. As a result, the debt-to-GDP ratio of that economy will increase. This result is consistent with a study conducted by (Augustine, 2019). According to Augustine (2019), depreciation caused by high exchange rate has a positive relationship with external debt in developing economies.

Effect of Government Current and Capital Expenditures on Debt-to-GDP ratio in sub-Saharan Africa

From Table 5, government capital and current (recurrent) government expenditure as a percentage of GDP were estimated.



Table 5: Effect of Government Capital and Recurrent Expenditure on Debt-to-GDP ratio in SSA

| Variables | Coefficient . | St. Err. |
|-----------------------------|---------------|----------|
| Debt to GDP ratio (-1) | 0.816*** | 0.121 |
| Capital exp. | 0.583** | 0.284 |
| Recurrent exp. | 1.486* | 0.739 |
| Import | -0.26 | 0.21 |
| FDI | 0.255 | 0.333 |
| Saving | -0.344 | 0.383 |
| Exchange rate | 6.493* | 3.552 |
| Population | 0.22 | 0.234 |
| Inflation | -.182 | 0.239 |
| Tax rev. | -.328 | 0.307 |
| Constant | -54.879* | 32.237 |
| Number of group/instruments | 34/19 | |
| Number of Obs. | 476 | |
| F-test | 55.009 | |
| Prob > F | 0.000 | |
| AR(2) | 0.392 | |
| Hansen test | 0.204 | |

*** $p < .01$, ** $p < .05$, * $p < .1$ represent significance level at 1%, 5% and 10%

Source: Asempa (2021)

From Table 5 the Hansen test for over-identifying restrictions is 0.204 (Hansen test= 0.204) and the Arellano-Bond test for serial correlation is 0.392 (AR

(2) = 0.392). The Hansen test failed to reject the null hypothesis that the instrumented variables are exogenous and not correlated with the error term. With this, we conclude that our instruments are valid. The AR (2) test for serial correlation also resulted in the failure to reject the null hypothesis that the errors in the first difference exhibit no second-order serial correlation.

The result in Table 5 indicates that, Government current expenditure as a percentage of GDP has a positive coefficient of 1.486 and statistically significant at 5 percent alpha level. The result indicates that a percentage increase in government current expenditure will lead to 1.486 percent increase in debt-to-GDP ratio in sub-Saharan Africa region.

The coefficient of government capital expenditure is 1.029 and statistically significant at 10% level. This result indicates that a percentage increase in government capital expenditure is associated with 1.029 percent increase in debt-to-GDP ratio in sub-Saharan Africa. The result from this section depict that both current and capital government expenditure have a damaging effect on debt-to-GDP ratio in sub-Saharan Africa region. Unlike Amayo (2019), the results point out that both recurrent and capital expenditure have a significant negative impact on debt-to-GDP ratio. This inconsistency may be that, this study focused on 34 SSA countries using panel data but Amayo (2019), only focused on Kenya. The result in this section therefore depict that both capital expenditure and recurrent expenditure have a damaging effect on debt-to-GDP ratio. Even though both capital expenditure and current expenditure as a percentage of GDP has a damaging effect on debt-to-GDP ratio in the region, it is also observed that current expenditure has more

damaging effect on debt-to-GDP ratio compared to capital expenditure. This further confirms that the choice of government spending have an effect on the debt levels. If the government spends on income generating projects, the levels of debt-to-GDP ratio is bound to decrease in the long run while if it spends on projects that are non-income generating (recurrent expenditure), the levels of debt-to-GDP ratio will continue rising. This is because efficient allocation of resources for capital expenditure on the right projects lead to capital accumulation and income creation that can be used to service the debt, reducing the need to continue borrowing heavily thus enabling the government to maintain a sustainable level of debt.

Effect of Government Integrity on Debt-to-GDP ratio in sub-Saharan Africa

The second objective of the study sought to examine the effect of government integrity on debt-to-GDP ratio. Table 6 below shows the second set of the econometric estimates, obtained using the GMM estimator.

Table 6: Effect of Government Integrity on Debt-to-GDP ratio in SSA

| Variables | Coefficient. | St. Err. |
|------------------------------|--------------|----------|
| Debt to GDP ratio(-1) | 0.707*** | 0.098 |
| Gov. integrity | 1.112*** | 0.397 |
| FDI | 0.76 | 0.564 |
| Import | 0.061 | 0.271 |
| Savings | 0.166 | 0.156 |
| Exch. Rate | 6.722*** | 2.215 |
| Population | 0.31 | 0.474 |
| Inflation | -0.018 | 0.45 |
| Tax revenue | -0.08 | 0.322 |
| Constant | -70.747*** | 25.644 |
| Number of obs. | 476 | |
| F-test | 46.449 | |
| AR(2) | 0.307 | |
| Hansen test | 0.197 | |
| Number of groups/instruments | 34/19 | |
| Prob > F | 0.000 | |

*** $p < .01$, ** $p < .05$, * $p < .1$ represent significance level at 1%, 5% and 10%

Source: Asempa (2021)

From Table 6 the Hansen test for over-identifying restrictions is 0.197 (Hansen test= 0.197) and the Arellano-Bond test for serial correlation is 0.307 (AR (2) = 0.307). The Hansen test failed to reject the null hypothesis that the instrumented variables are exogenous and not correlated with the error term. With this, we conclude that our instruments are valid. The AR (2) test for serial correlation also resulted in the failure to reject the null hypothesis that the errors in the first difference exhibit no second-order serial correlation.

The results from Table 6 shows that government integrity has a positive coefficient of 1.112 and is statistically significant at 1% alpha level. The result therefore indicates that a unit increase in government integrity will lead to 1.112 increase in debt-to-GDP ratio in sub-Saharan Africa. This result does not conform to the economic intuition of most empirical works and the a-priori sign. However, the result is not counter-intuitive. As government integrity rises, a country can gain trust from other countries (both developed and developing countries). This can improve the government's ability to borrow more to finance its budget. This will result in increasing the debt-to-GDP ratio of the country. According to Chanley et al. (2000), the public will strongly support the government's activities when the public trust that the government integrity is high. Therefore, as government gains trust and support from the public, borrowing from them becomes very easy and as the government continue to borrow, its debt-to-GDP ratio will also increase.

This result is again consistent with Wagner's theory, which argues that as income grows conflicts among individuals are bound to increase. This requires that

the government intervenes in regulation, maintaining law and order and providing a security service as a good governance (integrity in the context of good governance) which in turn increases the state expenditure (Easterly & Rebelo, 1993). According to Wagner, any increase in government expenditure caused by government intervention in regulation, maintaining law and order and providing a security service will lead to insufficient existing levels of revenue, causing public debt accumulation. This further assumes a positive relationship between government expenditure, government integrity and public debt.

On the other hand, the result of government integrity from Table 6 contradicts the findings of (Chang & Chu, 2006; Benfratello et al. 2017). Chang and Chu (2006), found that political corruption can seriously damage government integrity and Benfratello et al. (2017) found that corruption generally increases debt-to-GDP ratio.

The Joint Effect of Government Spending and Integrity on Debt-to-GDP ratio in sub-Saharan Africa

The third objective of the study is to examine the joint effect of government spending and integrity on debt-to-GDP ratio. This part of the study provides a more in-depth analysis of the effect of government spending on debt-to-GDP ratio by assessing whether the relationship is affected by government integrity or the effect of government integrity is affected by government spending. To achieve this, we extended the econometric model to include an interaction between Government spending and government integrity in the explanatory variables.

The interaction between Government spending and government integrity is included to check the moderating effect of both government integrity and government spending on each other to debt-to-GDP ratio.

It is possible that countries with relatively low government expenditure do not care about the size of debt-to-GDP ratio. This would give, *ceteris paribus*, a negative sign for the interaction between government integrity and total government expenditure. On the other hand, countries with high public expenditure could have strong incentives to improve their debt-to-GDP ratio management and, with high levels of government integrity, take appropriate measures to reduce public expenditure. The sign of interaction would then be negative.

Table 7 presents the results on how government integrity moderate the relationship between government spending and debt-to-GDP ratio in Sub-Saharan Africa.

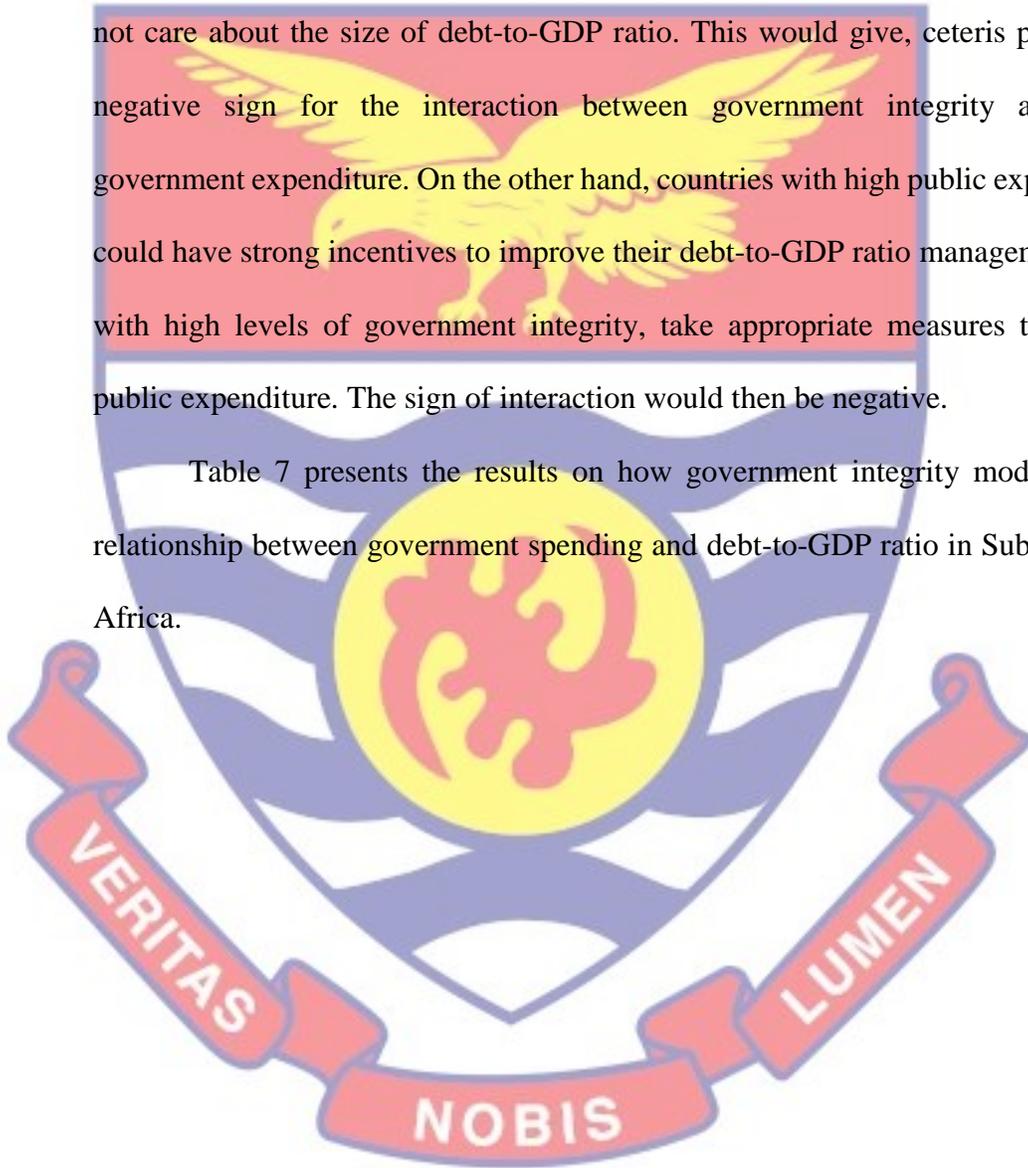


Table 7: Joint Effect of Government Spending and Integrity on Debt-to-GDP ratio in SSA

| Variables | Coefficient . | St. Err. |
|-----------------------------|---------------|----------|
| Debt to GDP ratio(-1) | 0.763*** | 0.096 |
| Gov. integrity | 2.33** | 1.041 |
| Gov. exp. | 2.694** | 1.216 |
| Gov. exp.*Gov. integrity | -0.049* | 0.028 |
| Import | 0.121 | 0.126 |
| FDI | 0.537* | 0.29 |
| Tax. Rev. | -0.056 | 0.314 |
| Inflation | -0.001 | 0.142 |
| Savings | -0.097 | 0.292 |
| Exch. Rate | 8.126* | 4.038 |
| Population | 0.649 | 0.446 |
| Constant | -144.953** | 55.791 |
| Number of obs. | 476 | |
| F-test | 90.965 | |
| AR(2) | 0.268 | |
| Hansen test | 0.348 | |
| Number of group/instruments | 34/20 | |
| Prob > F | 0.000 | |

*** $p < .01$, ** $p < .05$, * $p < .1$ represent significance level at 1%, 5% and 10%

Source: Asempa (2021)

From Table 7 the Hansen test for over-identifying restrictions is 0.348 (Hansen test= 0.348) and the Arellano-Bond test for serial correlation is 0.268 (AR (2) = 0.268). The Hansen test failed to reject the null hypothesis that the instrumented variables are exogenous and not correlated with the error term. With this, we conclude that our instruments are valid. The AR (2) test for serial correlation also resulted in the failure to reject the null hypothesis that the errors in the first difference exhibit no second-order serial correlation.

From Table 7, the estimation results indicate that the main effects of

government spending and government integrity on debt-to-GDP ratio are clearly positive and statistically highly significant. So, both government spending and government integrity increases debt-to-GDP ratio as expected. The effect described by the interaction term *government spending* × *government integrity* is clearly negative and statistically significant at the 10% level, too. The combination of the positive main effect of government spending on debt-to-GDP ratio and the negative effect from the interaction of government spending and government integrity implies that the positive effect of government spending on debt-to-GDP ratio gets smaller when the government integrity is increased. In other words, an increase in government integrity reduces the detrimental effect of government spending on debt-to-GDP ratio in SSA. Reading the effect of the interaction term the other way round says that an increase in government spending also reduces the positive effect of government integrity on debt-to-GDP ratio in SSA. This discussion is further investigated by computing the moderating role of both government integrity and government spending to debt-to-GDP ratio in SSA.

Moderating role of government integrity

To examine the moderating role of government integrity, the study considered how government integrity variable moderate the relationship between government spending and debt-to-GDP ratio within the sub-Saharan African region.

Finding the moderating role of government integrity gives

$$\frac{\Delta DEBT_{i,t}}{\Delta GOVS_{i,t}} = \beta_2 + \beta_3(GOVI_{i,t})$$

$$\frac{\Delta DEBT_{i,t}}{\Delta GOVS_{i,t}} = \beta_2 + \beta_3(\overline{GOVI})$$

$$\frac{\Delta DEBT_{i,t}}{\Delta GOVS_{i,t}} = 2.694 + (-0.049)(\overline{GOVI})$$

Placing the mean value of government integrity of 29.876 from the descriptive statistics gives

$$\begin{aligned} \frac{\Delta DEBT_{i,t}}{\Delta GOVS_{i,t}} &= 2.694 + (-0.049)(29.876) \\ &= 2.694 - 1.463924 \\ &= 1.230 \end{aligned}$$

This shows that on the average with government integrity, a percentage increase in the government spending would increase debt-to-GDP ratio by 1.23 percent in sub-Saharan Africa. This implies that government integrity reduces the positive effect of government spending on debt-to-GDP ratio in sub-Saharan Africa.

Moderating role of government spending

To examine the moderating role; government spending is playing between government integrity and debt-to-GDP ratio within the sub-Saharan African region, the study considered how the government spending variable moderate this relationship. Finding the moderating role of government spending gives

$$\frac{\Delta DEBT_{i,t}}{\Delta GOVI_{i,t}} = \beta_2 + \beta_3(GOVS_{i,t})$$

$$\frac{\Delta DEBT_{i,t}}{\Delta GOVI_{i,t}} = \beta_2 + \beta_3(\overline{GOVS})$$

$$\frac{\Delta DEBT_{i,t}}{\Delta GOVI_{i,t}} = 2.33 + (-0.049)(\overline{GOVS})$$

Placing the mean value of government integrity of 23.178 from the descriptive statistics gives

$$\begin{aligned}\frac{\Delta DEBT_{i,t}}{\Delta GOVI_{i,t}} &= 2.33 + (-0.049)(23.178) \\ &= 2.33 - 1.135722 \\ &= 1.194\end{aligned}$$

This shows that on the average with government spending, a percentage increase in the government integrity would increase debt-to-GDP ratio by 1.194 percent in sub-Saharan Africa. This implies that government spending reduces the positive effect of government integrity on debt-to-GDP ratio in sub-Saharan Africa.

From Table 7, it is also observed that FDI has a positive relationship with debt-to-GDP ratio with a coefficient of 0.537 and statistically significant at 10 percent alpha level. The result indicates that, a percentage increase in FDI inflows will lead to an increase in debt-to-GDP ratio by 0.537 percent within sub-Saharan Africa region. This finding is consistent with the finding of Oche el-al (2016), that debt-to-GDP ratio has a positive and significant relationship with foreign direct investment.

Chapter Summary

From the above estimations and analysis, the results identified that government spending has a significant positive effect on debt-to-GDP ratio in the short run. The results indicated that both current and capital expenditures have a positive significant effect on debt-to-GDP ratio in the short run. It was also indicated that the impact of government spending on the public debt is independence of government integrity. Moreover, the results again identified that

government integrity has a significant positive impact on debt-to-GDP ratio and it is also independent of government spending. Also, it was identified that government integrity reduces the positive effect of government spending on debt-to-GDP ratio in sub-Saharan Africa. Similarly, it was found that government spending also reduces the positive effect of government integrity on debt-to-GDP ratio in SSA.



CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter provides an overview of the entire study. It begins with a summary of the whole study, drawn conclusions, policy recommendations and some suggestions for further research that could be used to investigate the current problem.

Summary

This research investigated the effect of government spending and government integrity on debt-to-GDP ratio in SSA countries during 2005 to 2019. Previous works have paid little attention to this relationship in developing countries. Understanding this relationship would also be important in fiscal policy formulation and most importantly debt-to-GDP ratio management.

The purpose of the study was to examine the impact of government spending and integrity on the debt-to-GDP ratio in Sub-Saharan Africa countries and to provide relevant additional information which will be beneficial to academics and policy makers.

Specifically, the study sought to:

- ✓ Examine the effect of government spending on debt-to-GDP ratio in SSA countries.
- ✓ Examine the effect of government integrity on debt-to-GDP ratio in SSA countries

- ✓ Determine the joint effect of government spending and government integrity on debt-to-GDP ratio in SSA countries.

In the review of relevant literature and theories related to the Keynesian theory of fiscal policy, Allocative efficiency theory, Classical theory of expenditure and debt, Modern expenditure and debt theory and Political economic theory, as well as empirical works in the context of their focus, methodology and findings on government spending and government integrity in developing and developed countries. The study adopts the positivism philosophy. The research employed secondary data from World Economic Outlook (WEO), World Development Index (WDI) and Heritage Foundation. Based on the data, the researcher examined the effect of government spending and government integrity on debt-to-GDP ratio in SSA countries. To achieve these objectives, the study employed the GMM estimation technique to estimate and analyze the effect of government spending and government integrity on debt-to-GDP ratio in SSA countries.

Key Findings

According to first objective and hypothesis, the study found that government spending has a strong and significant positive effect on debt-to-GDP ratio in SSA countries. Government spending was further disaggregated in recurrent and capital expenditure. However, the results showed that both recurrent expenditure and capital expenditure have positive effect on debt-to-GDP ratio in sub-Saharan Africa.

By examining the second objective and its hypothesis, the study again found that government integrity has a strong and significant positive effect on debt-to-GDP ratio in sub-Saharan Africa region.

Considering the last objective and hypothesis, the study found that, both government spending and government integrity has negative joint effect on debt-to-GDP ratio in SSA. It was also found that government integrity once increased has a positive significant impact on debt-to-GDP ratio as a variable on its own but reduces the positive effect of government spending on debt-to-GDP ratio in sub-Saharan Africa region. Similarly, it was found that government spending once increased has a positive significant impact on debt-to-GDP ratio as a variable on its own but on average, reduces the positive effect of government integrity on debt-to-GDP ratio in sub-Saharan Africa region.

Conclusion

Based on the first objective, the study concluded that, government spending has a positive effect on debt-to-GDP ratio within the sub-Saharan Africa region. That is government spending increases debt-to-GDP ratio in SSA region. In the quest to address the first specific objective, government spending was disaggregated into recurrent expenditure and capital expenditure. The study found that both recurrent and capital expenditure have a positive effect on debt-to-GDP ratio with current expenditure producing relatively a more damaging effect on debt-to-GDP ratio in sub-Saharan region. This means government expenditure has a positive effect on debt-to-GDP ratio in SSA region whether the government is engaged in current or capital expenditure in the economy.

The study also concluded that government integrity has a positive effect on debt-to-GDP ratio in sub-Saharan Africa region. However, Government integrity has a strong damaging effect on debt-to-GDP ratio just as government expenditure.

Lastly, based on third objective, the study concluded that government integrity reduces the effect of government spending on debt-to-GDP ratio in sub-Saharan Africa. That is, government integrity once increased has a positive significant impact on debt-to-GDP ratio as a variable on its own but reduces the positive effect of government spending on debt-to-GDP ratio in sub-Saharan Africa.

Recommendations

Having considered the findings and conclusions of this study, the following recommendations are proffered:

- Firstly, since government expenditure was found to cause public debt, the borrowed funds by governments should productively be spent on development or capital expenditures in order to regenerate more revenue and achieve growth. However, government should ensure that it invests in successful capital projects. Such investments require proper planning and implementing to avoid the misuse of borrowed funds. Short term investment on capital expenditure leads to capital formation and revenue generation that can be channeled to debt repayment in the short run to avoid interest accumulation.
- Fiscal imbalances can also be eliminated through sufficient prolonged revenue collections. Therefore, the governments are encouraged to

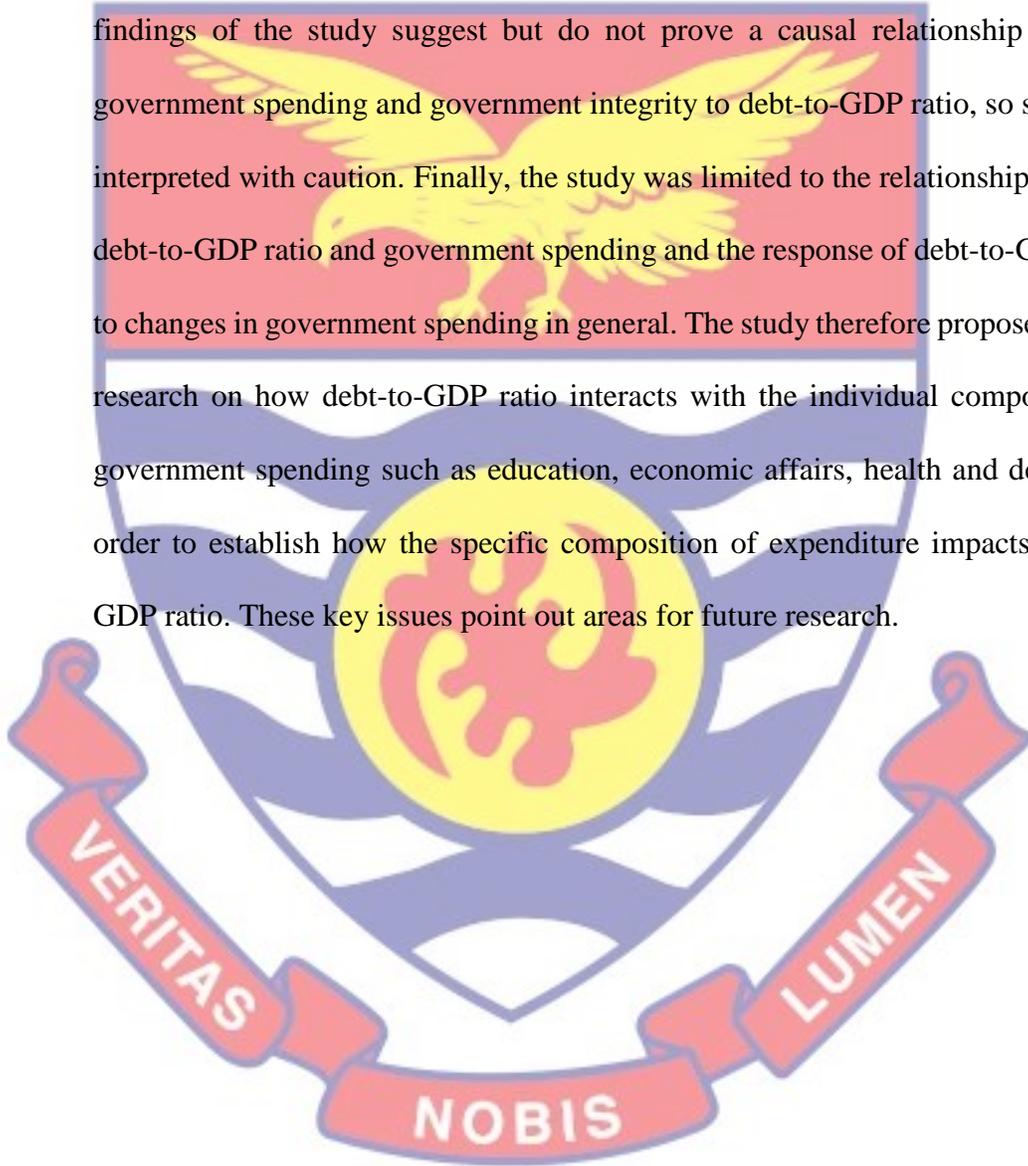
implement long-term policies that stimulate government revenue, while still attempting to mitigate their expenditures to stabilize borrowings in the short run. However, precautions should be taken as increase in revenues will also increase government expenditure due to the positive relationship.

Moreover, since both government revenues and public debt directly influence expenditure, the region's governments should learn an art of spending within their means.

- Since government integrity was found to reduce the positive effect of government spending on public debt in SSA, governments are encouraged to restructure their spending from corruption-prone investments to the ones that can be properly managed and monitored. However, government agencies and policy makers should ensure that there is transparency and accountability in all the fiscal dealings of the governments. Therefore, governments should pledge to be accountable by frequently making available to the public information on fiscal deficits, government's borrowing and debt management. This will enable the public to know how the debt situation is being addressed and also enable civil society to engage meaningfully with government on issues of debt management.
- Finally, the study, recommends that governments should increase the value of its local currency by implementing policies such as selling of foreign exchange assets and purchasing of local currency, raising of interest rate to attract money flows and reducing of inflation by making export more competitive in the country.

Suggestion for further research

Since different econometric techniques give different results. The study applied GMM in its analysis. Further studies should investigate this relationship using other econometric techniques and compare the results. Secondly, the findings of the study suggest but do not prove a causal relationship between government spending and government integrity to debt-to-GDP ratio, so should be interpreted with caution. Finally, the study was limited to the relationship between debt-to-GDP ratio and government spending and the response of debt-to-GDP ratio to changes in government spending in general. The study therefore proposes further research on how debt-to-GDP ratio interacts with the individual components of government spending such as education, economic affairs, health and defence in order to establish how the specific composition of expenditure impacts debt-to-GDP ratio. These key issues point out areas for future research.



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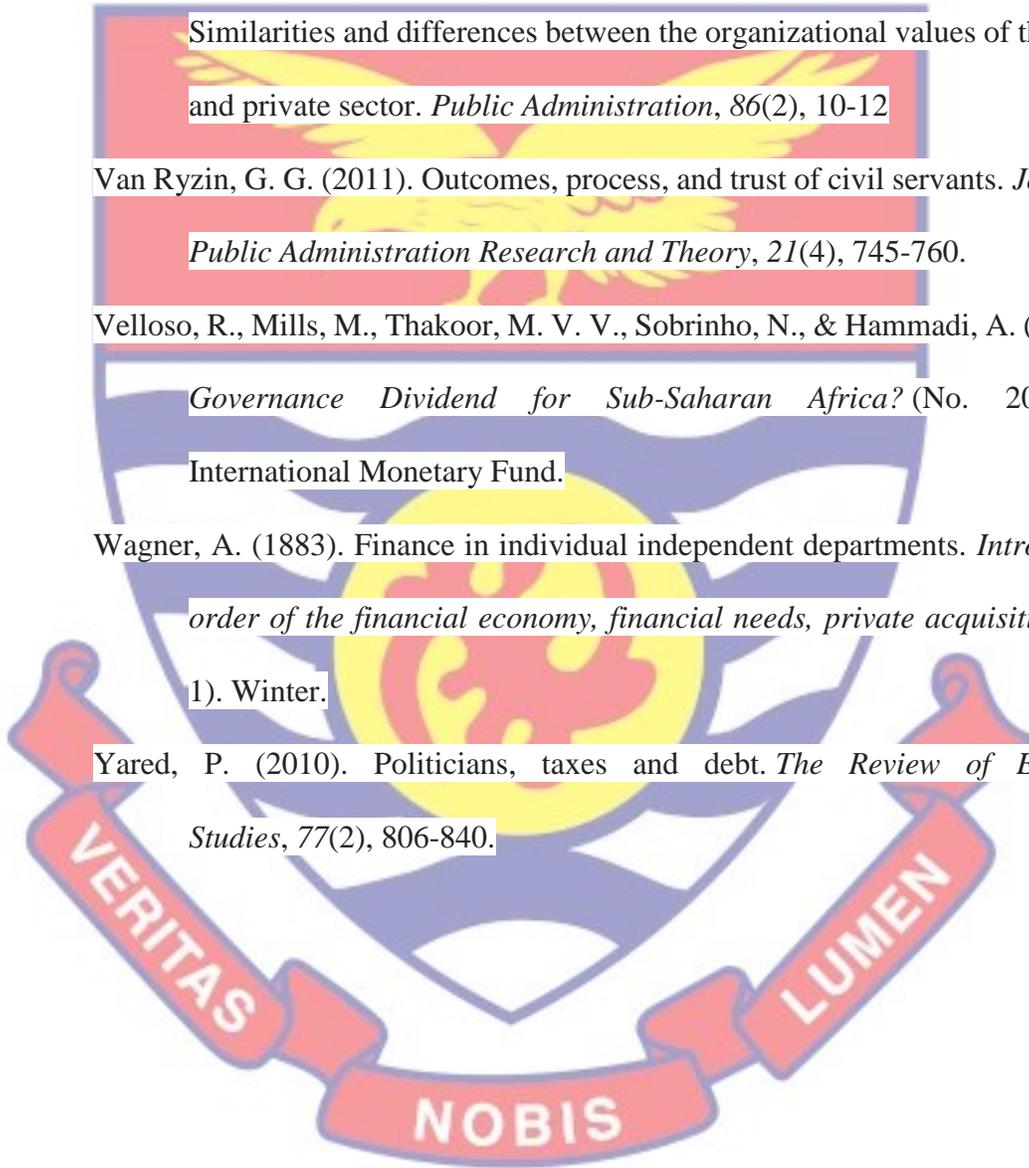
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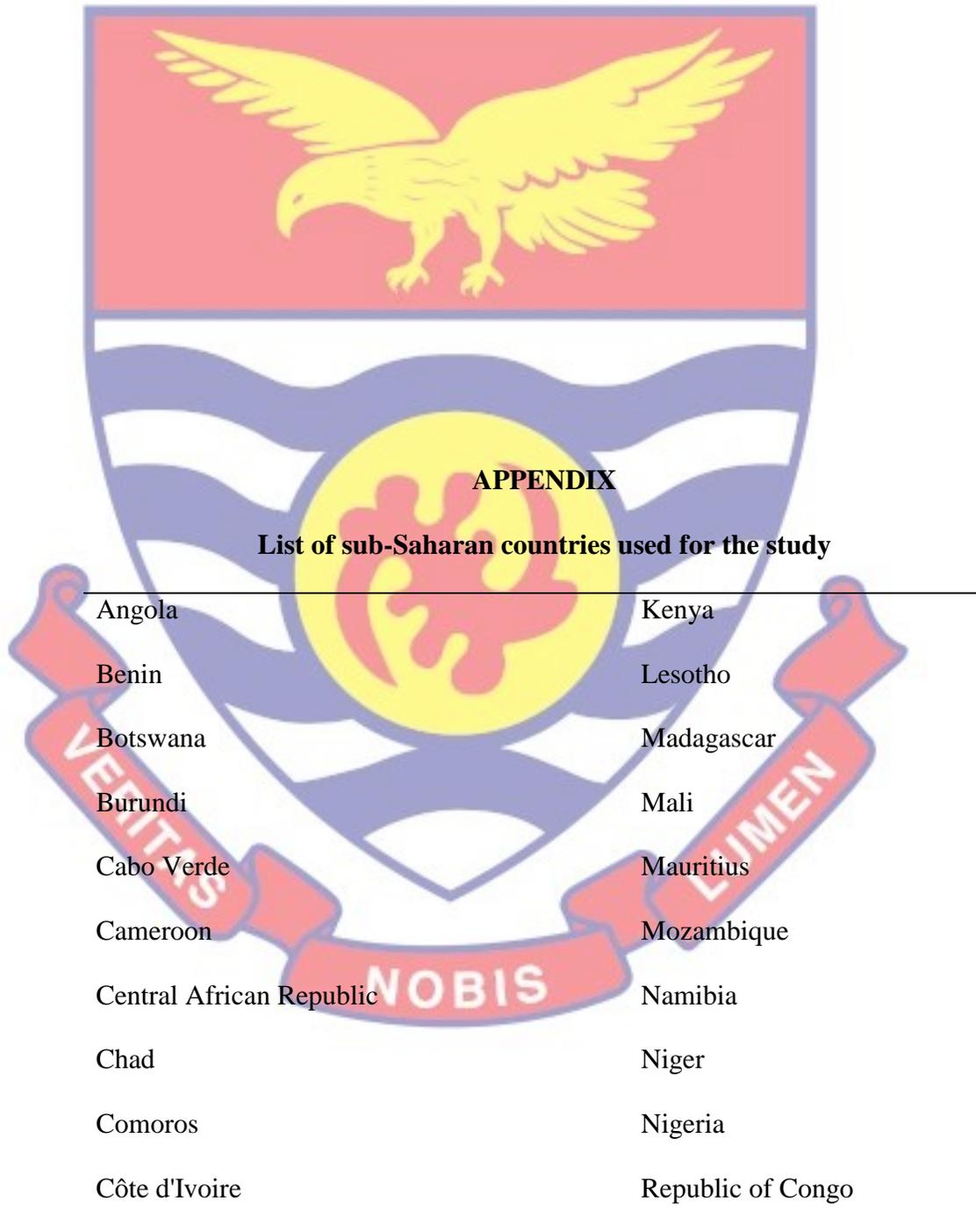
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|----------------------------------|--------------|
| Democratic Republic of the Congo | Rwanda |
| Equatorial Guinea | Senegal |
| Eswatini | South Africa |
| Ethiopia | The Gambia |
| Gabon | Uganda |
| Ghana | Zambia |
| Guinea | |
| Guinea-Bissau | |

Trend of Debt to GPD ratio in SSA, ASEAN-5, Middle East and Central Asia and Emerging and developing Europe

| Year | Emerging and developing Europe | ASEAN-5 | Middle East and Central Asia | Sub-Saharan Africa |
|------|--------------------------------|---------|------------------------------|--------------------|
| 2005 | 32.277 | 44.548 | 41.484 | 38.137 |
| 2006 | 27.023 | 39.488 | 32.757 | 28.652 |
| 2007 | 23.603 | 36.666 | 28.326 | 24.921 |
| 2008 | 23.73 | 35.437 | 24.232 | 24.168 |
| 2009 | 29.26 | 37.304 | 29.559 | 27.878 |
| 2010 | 29.058 | 35.464 | 27.196 | 26.771 |
| 2011 | 27.861 | 34.292 | 24.769 | 28.901 |

| | | | | |
|------|--------|--------|--------|--------|
| 2012 | 26.648 | 35.483 | 25.907 | 28.951 |
| 2013 | 27.654 | 37.009 | 26.115 | 30.975 |
| 2014 | 29.955 | 37.182 | 26.353 | 32.738 |
| 2015 | 31.85 | 38.235 | 36.435 | 38.708 |
| 2016 | 32.652 | 37.881 | 42.828 | 43.534 |
| 2017 | 30.632 | 38.222 | 44.214 | 45.733 |
| 2018 | 30.254 | 38.548 | 43.58 | 48.522 |
| 2019 | 29.914 | 38.607 | 47.313 | 50.436 |

Trend of Government Expenditure and Revenue as a Percentage of GDP in SSA

| Year | Revenue | Government Exp. |
|------|---------|-----------------|
| 2005 | 23.421 | 21.996 |
| 2006 | 25.241 | 20.523 |
| 2007 | 22.949 | 22.474 |
| 2008 | 23.912 | 22.751 |
| 2009 | 19.393 | 23.816 |
| 2010 | 20.594 | 24.023 |
| 2011 | 22.795 | 23.95 |
| 2012 | 21.627 | 23.298 |
| 2013 | 19.976 | 22.977 |

| | | |
|------|--------|--------|
| 2014 | 19.17 | 22.7 |
| 2015 | 17.399 | 21.523 |
| 2016 | 16.509 | 20.84 |
| 2017 | 17.199 | 21.68 |
| 2018 | 17.964 | 21.471 |
| 2019 | 17.323 | 21.559 |

