RELATIONSHIP BETWEEN GOVERNMENT SPENDING AND PRIVATE INVESTMENT IN KENYA

BY

JOSEPHINE WANGITHI KARUGA

MASTER OF SCIENCE IN COMMERCE (FINANCE AND INVESTMENT)

KCA UNIVERSITY

2017

RELATIONSHIP BETWEEN GOVERNMENT SPENDING AND PRIVATE INVESTMENT IN KENYA

BY

JOSEPHINE WANGITHI KARUGA

A DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF MASTER OF SCIENCE IN COMMERCE (FINANCE AND INVESTMENT) IN THE SCHOOL OF BUSINESS AT KCA UNIVERSITY

JANUARY 2017

DECLARATION

I declare that this dissertation is my original work and has not been previously published or submitted elsewhere for award of a degree. I also declare that this contains no material written or published by other people except where due reference is made and author duly acknowledged.

Student Name: Josephine Wangithi Karuga Reg. No.: KCA/07/01333

Sign: _____ Date: _____

I do hereby confirm that I have examined the master's dissertation of

Josephine Wangithi Karuga

And have certified that all revisions that the dissertation panel and examiners recommended have been adequately addressed

Sign: _____ Date: _____

Dr. Edward Owino

Dissertation Supervisor

ABSTRACT

Private investments in Kenya have been at low levels since independence. This has been of great concern to policy makers since private investments play a key role in economic growth and development. The Kenyan government has adopted many policies to rejuvenate private investments in Kenya which has not been the case. The aim of this study was to investigate the effects of government spending on private investments in Kenya. Secondary data for the period 1964 to 2015 was used in this study and was analysed using Stata. Causal research design was applied in analysis. Time series Vector Error Correction Model (VECM) was applied in analysis. model was applied in the analysis to establish how government spending components influenced private investments. The analysed data was then presented in figures and tables. The study findings indicated that recurrent expenditure did not significantly influence private investments ($\beta = 0.245$; $p > 0.05$). Results also indicated that capital expenditure had a positive and significant effect on private investments ($\beta = 0.1867$; $p < 0.05$) while debt servicing had a negative and significant effect on private investments ($\beta = -0.277$; $p < 0.05$). The following recommendations are made. First, government should have an effective five year strategy to reduce recurrent expenditure by adopting technology and management practices like those applied in the private sector. Secondly, funds should be channelled to growth and productive sectors of the economy such as technology, energy and transport infrastructure. Moreover, sectors which are vital for the country such as agriculture and tourism should have their infrastructure developed which is expected to crowd-in private investments. Lastly, government should ensure that no debt is incurred to finance recurrent expenditure. Any debt incurred should be channelled towards key economic sectors that have been determined by credible research that they can spur economic growth.

Key words: Government spending, private investments, debt servicing.

ACKNOWLEDGEMENT

I wish to express my heartiest gratitude to Dr. Edward Owino for his inspiration and supervision to complete this research proposal. I am also grateful to my family and friends for their support and last but not least, I would like to articulate my sincere thanks to KCA UNIVERSITY for their kind support.

TABLE OF CONTENTS

DEDICATION

LIST OF TABLE

LIST OF FIGURES

ACRONYMS AND ABBREVIATIONS

EPZs: Export Processing Zones

ECM: Error Correction Model

GDP: Gross Domestic Product

IMF: International Monetary Funds

KIPPRA: Kenya Institute for Public Policy Research and Analysis

KRA: Kenya Revenue Authority

OECD: Organization for Economic Cooperation and Development

OLS: Ordinary Least Squares

SAPs: Structural Adjustment Programmes

VAT: Value Added Tax

WB: World Bank

OPERATIONAL DEFINITION OF TERMS

Fiscal policy: It is stimulation of economic and social development by central government through pursuing a policy stance that ensures a sense of balance between taxation, expenditure and borrowing consistent with sustainable growth (M'Amanja & Morrissey, 2005).

Investment: Refers to the addition of capital stock in an economy given by the value of that part of aggregate output for any given year that takes the form of construction of new structures, changes in business inventories and acquisition of new capital equipment (Arin, 2004).

Monetary policy: The exercise of the central bank's control over the quantity of money and the level of interest rates in order to achieve economic stability (Gillis et al., 1987).

Private investment: It is the accumulation of physical and liquid stock for productive purpose. This is done by private persons who could be nationals or foreigners in the country (Bello et al., 2013).

Public expenditure: Refers to the amount spent on goods and services, public debt servicing, and on capital investment by the government (Gillis et al., 1987).

CHAPTER ONE

INTRODUCTION

1.1 Background to the Study

Government spending is one of the key fiscal policies that governments use to influence provision of good and services, labour productivity, subsidize industries that may need support, to spur aggregate demand and improve savings and investments (Pereira & Andraz, 2005). Basically, government expenditure aims at supplying goods and services that the private sector fails to provide such as defence, public goods, hospitals, roads and bridges and schools (Bello, Nagwari & Saulawa, 2013). Government also provides welfare benefits such as in disability and unemployment benefit. Governments also spend to accomplish supply-side enhancements in the macro-economy, such as expenditure on schooling and education to increase labour productivity.

The spending by governments entails subsidies to industries which are thought to be important in the country thus requiring financial support (Arin, 2004). Similarly, spending by government is aimed at helping to reallocate income and accomplish more equity. Government spends to accomplish their responsibilities in settling public liabilities such as public debt. Public debt servicing comes in the form of interest payments and also principal debt repayment. Lastly, a government spends to introduce additional expenditure into the macro-economy, to support accomplish growths in economic activity and aggregate demand. Such an incentive is a portion of optional fiscal policy (Jafri & Habib, 2013).

Public investment contributes substantially to the economic prosperity of a country. It is therefore important to focus on policies deliberated to foster, safeguard and fully benefit from private investments (Debrun & Kinda, 2013). These comprise developments to the investment

climate that will invite larger flows, better investment returns and care, dispute resolution and stronger intellectual property rights protection. Ahuja (2007) observed that private investments play different and critical macroeconomic roles which include contributing to the current demand of capital goods, thus increasing local expenditure and enlarging the production capacity of fixed capital and hence increasing production capability.

Further, private investments modernize production processes, improving cost effectiveness (Debrun & Kinda, 2013). This in turn increases labour efficiency leading to higher productivity thus allowing for the production of new and improved products, increasing worth in production. Moreover, private investments integrate global world-class inventions and excellence principles, bridging the gap with more advanced countries. This helps the country in exports and a dynamic contribution in international trade. Government spending as a key component of fiscal policy has a role in influencing private investments in a country. Government spending can take the form of spending on recurrent expenditure, development (capital) expenditure, and public debt servicing (principal and interest payments).

As Kenya seeks to achieve a middle income status by 2030, it needs policies that spur economic growth. The flagship projects entailed in Kenya's Vision 2013 include 10,000 kilometres of road through private finance initiative, construction of by-passes, East Africa Road network project (EARNP), Arid and semi-arid land irrigation, building of tier one markets and deepening of capital markets. Others include development of Small and medium enterprises (SME) parks, development of wholesale hubs, establishment of Konza Technology City, establishment of special economic zones and premium parks initiative (Republic of Kenya, 2007). All these flagship projects call for the attraction of private investments and also focused

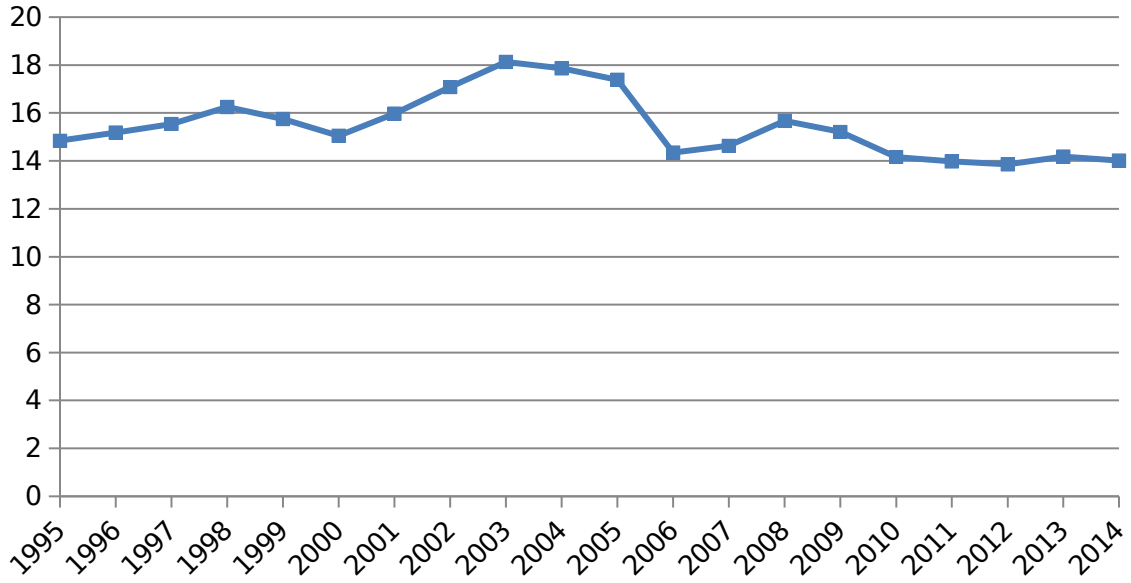
government participation. In addition, private investments are likely to complement public investment in Kenya (KIPPRA, 2013).

1.1.1 Government Spending in Kenya

Fiscal policy involves government revenue and spending to influence the economy (Brooks, 2012). According to Keynesian economics, when the government changes the levels of taxation and government spending, it influences aggregate demand and the level of economic activity. Fiscal policy can be used to stabilize the economy over the course of the business cycle (Sheffrin, 2003). In relation to government spending, Kenya has witnessed an upward trend on public expenditure as a percentage to GDP (World Bank, 2016). As noted in Figure 1, government spending as a percentage of GDP has increased from a low of 57% in 1996 to a high of 60.5% in 2015. Moreover government spending is a demand side policy used by the government to achieve macro-economic objectives. These macroeconomic objectives are price stability, economic growth, balance of payment equilibrium and reduction in unemployment (Kibiwot et al., 2012).

FIGURE 1

Government Spending as a Percentage of GDP



Source: World Bank (2016)

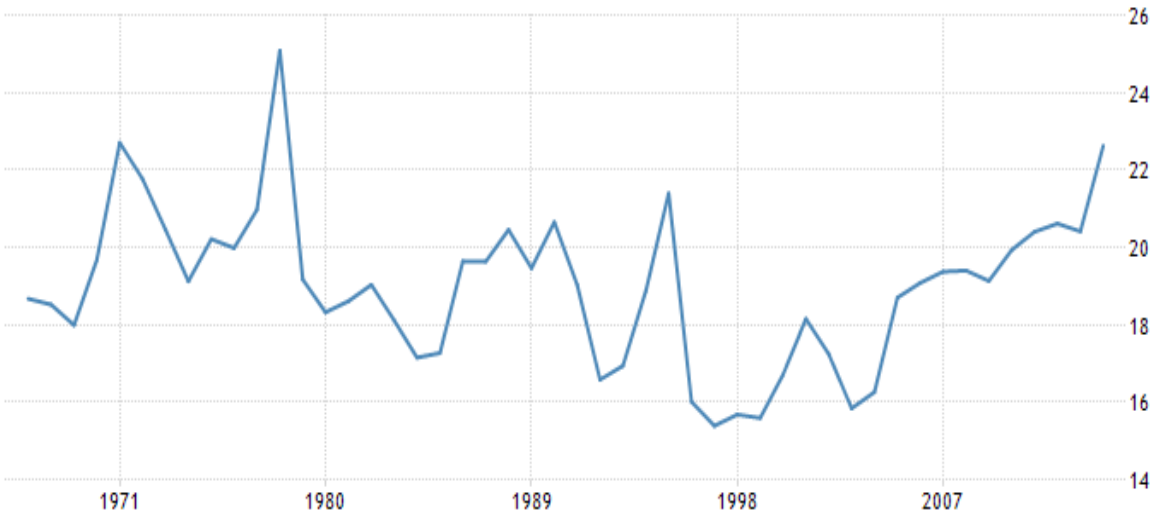
Government spending plays an important role in influencing the economic direction of Kenya. Government policy on spending determines how funds will be allocated (Brooks, 2012; Lewis, 2016)**.** Distribution function of fiscal policy defines how specifically funds are distributed to each sector of the country economy (Lewis, 2016). In Kenya, the major sectors that are financed by the government include education, health, agriculture and transport and communication infrastructure. A huge percentage of government expenditure goes towards paying of recurrent expenses such as salaries for public servants and paying of government obligations such as borrowings (World Bank, 2016). The main reason why the government of Kenya spends is to stabilize the economy as well as to provide essential services and infrastructure (Harris, 2010). Fiscal policy involves two variables either decreasing or increasing government spending or increasing or decreasing taxation. Government spending and taxation affect aggregate demand (Kibiwot et al, 2012).

1.1.2 Private Investments in Kenya

Over the years Kenya has experienced little and high-pitched variations in private investment. Figure 2 represents trends of private investments in Kenya. It is observed that Kenya witnessed the highest level of private investments in 1978 where the level peaked at 25% of GDP. This reduced erratically to around 15.5% of GDP in 1997. The level of private investments increased from the lowest level witnessed in 1997 to 23% in 2015. This is still low when compared to other emerging economies (World Bank, 2015).

FIGURE 2

Private Investment as a Percentage of GDP in Kenya



Source: World Bank (2015)

For the period between 1963 and 1970, private investment made a remarkable growth (Were, Ngugi & Makau, 2006). The government total support to promote private investment can be recognized in this upward trend (Republic of Kenya, 1965). The private investment dropped moderately in the period between 1971 and 1977. This is probably attributed on first oil crisis of 1973 and severe drought of 1974. Substantial government investment leading to public sector dominance could also have crowded-out of private investment (Were et al., 2006).

The coffee boom effects of 1976-1977 can be attributed to high-pitched increase of private investments in 1978. The disintegration of East African Community severely affected production due to limited market for commodities. Equally, the second oil crisis of 1979, drought of 1984, the debt crisis and departure from low interest rate policy by the government in early 1980s caused the downward trend of up to mid-1980s (Legovini, 2002). Kamundia's (2015)

study revealed that debt servicing had a negative effect on private investments. Otieno (2015) established that there was crowding out effect on economic growth and private investments that were brought about by debt servicing.

Disciplinary measures of fiscal policy that focused more on prudent borrowing and reduced expenditure adopted in mid 1980s may have brought assurance in the economy about future estimates hence resulting to considerable growth in investment in 1986 and 1987 (Republic of Kenya, 1986). The period between 1988 and 1994 is associated with a sharp downturn in private investment. It decreased from 19.5 per cent observed in 1987 to 17.6 per cent in 1994 and this could be attributed to the introduction of structural adjustment programmes by the World Bank (WB) and International Monetary Fund (IMF) in 1986, the withdrawal of donor funds, and the events associated with the first multi-party election in 1992 (Wagacha, 2000).

High growth in private investment was experienced in 1995 as it was on the rise to 21.4 percent as shown by Figure 2. Success of policies on recovery and sustainable development could be the reason of this (Republic of Kenya, 2003). This was short term as declining trends again emerged in 1996 and by the year 2002, private investment was 15.9 per cent of GDP as shown in Figure 2. Several factors could have contributed to the decline including aggressively contested election in 1997 that resulted to tribal clashes, the destruction of physical infrastructure by El Nino rains in 1998, and the cut on development expenditure to achieve budget deficit target (Republic of Kenya, 2003). Figure 2 also points out that the accumulative trends emerged again in 2003 which has continued with an upward trend since.

1.2 Statement of the Problem

Public investments in Kenya are expected to fuel the realization of Vision 2030 (RoK, 2007). The economic pillar of Vision 2030 seeks to improve the prosperity of all regions of the country and all Kenyans by achieving a 10% Gross Domestic Product (GDP) growth rate by 2017 and a middle income status by 2030. Evidence from reviewed literature, however, shows that the increased government expenditure in Kenya had not resulted in simultaneous increase in investments. This calls for economic policies to spur private investments in these key priority sectors. Government spending is one key fiscal policy component that could be utilized (World Bank, 2015).

The role of government spending in influencing private investments has been a subject of debate since the classical times (Keynes, 1936). Several empirical studies have also been conducted which has fuelled the debate further. Bello et al. (2013) noted that recurrent expenditure in Nigeria had a crowding out effect on private investments while capital expenditure had insignificant positive effect. In Pakistan, Jafri and Habib (2013) established that debt servicing to multilateral financial and private creditors crowded out private investments while debt servicing to bilateral creditors and non-concessional debt had positive impact on investment.

Locally, various studies on government spending and its effect on private investments have been conducted with mixed results. A study by Kiptui (2005) used Ordinary least squares (OLS) regression established that government recurrent expenditure promoted private investments while debt financing had a negative and significant effect on private investments. Kiptui used OLS on time series data which can produce spurious results. Another study in the

same year by M'Amanja and Morrissey (2005) utilized vector auto regression (VAR) model and established that recurrent expenditure did not have any significant effect on private investments but development expenditure promoted private investment. This study included foreign aid and international trade as other variables in the model. Oyieke (2011) using OLS established that both debt servicing and infrastructure expenditure had insignificant effect on private investments in Kenya. These findings contrasted those by Njuru et al. (2014) who had used vector auto regression (VAR) model that capital and recurrent expenditure promoted private investments. Njuru and colleagues had included taxation policy variables in the VAR model. The current study was different from this study as it applied VECM and included debt servicing as a variable. Model. Otieno (2015) conducted a study using OLS and established that there was crowding out effect on economic growth and private investments that were brought about by debt servicing. Moreover, most of the studies include other fiscal policy variables which may crowd out the effect of government spending.

The reviewed studies indicate mixed results when comparing findings from studies in different periods, different countries and different methodologies (Jafri & Habib, 2013; Kiptui, 2005). Similarly, most of the studies on government spending relate to recurrent and capital expenditure but do not include debt servicing. There are few studies on debt servicing and how they impact on investments in Kenya despite the huge increase in government debt (Otieno, 2015). The current study provided empirical findings on how government spending (development and recurrent expenditure, debt servicing) influenced private investments. This is expected to address the contradicting results on the relationship that exists.

1.3 Research Objectives

The general objective of this study was to determine the effect of government spending on private investments in Kenya. The study sought to address the following specific objectives;

i. To determine the effect of government's recurrent expenditure on private investments in Kenya.
ii. To establish the effect of government's capital expenditure on private investments in Kenya.
iii. To assess effect of debt servicing on private investments in Kenya.

1.4 Research Hypothesis

The research hypotheses in this study were;

H_{01}: Government's recurrent expenditure has no significant effect on private investments in Kenya.

H_{02}: Capital expenditure by the government has no significant effect on private investments in Kenya.

H_{03}: Debt servicing has no significant effect on private investments in Kenya.

1.5 Significance of the Study

This study will be significant to the government and its policy making organs, private investors, scholars, academics and researchers. To the government and its policy making organs, the study will have findings that might be valuable in informing future policy decisions relating to government spending and private investments. This study will also support the government plans to adjust the fiscal policies in a way to favour the private investments growth. This study will be important because it will substantiate on the effects of fiscal policy on growth of private sector which will help the government when they are designing on the effective fiscal policies so as achieve maximum growth of private sector in Kenya. This is because private sector contributes significantly to the GDP of Kenya an there could be no growth of a country without the private sector.

The study findings might also be useful to private investors. It will enable them appreciate the Kenya investment environment and how fiscal policy decisions made by the government relating to spending affect the investment climate. This will enable them to devise strategies to counter the negative effects brought about by government spending.

The study will also contribute significantly to new knowledge and also provoke researchers to evaluate critically the effectiveness of different government policies and advise on the best fiscal policies to adopt to achieve the best economic goals.

1.6 Scope of the Study

This study focused on the relationship between government spending and private investment. Concepts that were focused on in the study included recurrent government spending, capital expenditure, debt repayment and interest payments on public debt. The study was conducted on Kenya and depended on the economic indicators and focused on data from 1964 – 2015.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews the major theoretical and empirical arguments regarding the effect of government spending and private investments. Discussed in the chapter are two theories that underpin the study and the empirical studies. Studies on recurrent expenditure, capital expenditure, debt servicing and interest on public debt are reviewed. The chapter then ends with research gaps, the conceptual framework and an explanation of how the study variables will be measured.

2.2 Theoretical Review

This study was anchored on the Keynesian and real business cycle theory. These two theories are discussed in this section and their fit into the study explained and justified.

2.2.1 Keynesian Theory

Keynesian theory was developed by Keynes (1936) when he tried to understand the causes of the great depression. In his major task “The General Theory of employment, interest and money” published in 1936, during the Great Depression, Keynes contrasted his approach to the aggregate supply-focused 'classical' economics that preceded his book. The interpretations of Keynes that

followed are contentious and several schools of economic thought claim his legacy (Blejer and Khan, 1984).

Keynesian theory often argue that private sector decisions sometimes lead to inefficient macroeconomic outcomes which require active policy responses by the public sector, in particular, monetary policy actions by the central bank and fiscal policy actions by the government, in order to stabilize output over the business cycle. Keynesian economics advocates a mixed economy – predominantly private sector, but with a role for government intervention during recessions.

Keynes argued that the solution to the Great Depression was to stimulate the economy ("inducement to invest") through some combination of two approaches: A reduction in interest rates (monetary policy) and government investment in infrastructure (fiscal policy).By reducing the interest rate at which the central bank lends money to commercial banks, the government sends a signal to commercial banks that they should do the same for their customers. Investment by government in infrastructure injects income into the economy by creating business opportunity, employment and demand and reversing the effects of the aforementioned imbalance. This spurs private investment in the economy. Governments source the funding for this expenditure by borrowing funds from the economy through the issue of government bonds, and because government spending exceeds the amount of tax income that the government receives, this creates a fiscal deficit.

A central conclusion of Keynesian theory is that, in some situations, no strong automatic mechanism moves output and employment towards full employment levels. This conclusion conflicts with economic approaches that assume a strong general tendency towards equilibrium.

In the 'neoclassical synthesis', which combines Keynesian macro concepts with a micro foundation, the conditions of general equilibrium allow for price adjustment to eventually achieve this goal. More broadly, Keynes saw the theory as a general theory, in which utilization of resources could be high or low, whereas previous economics focused on the particular case of full utilization (Blejer and Khan, 1984).

The new classical macroeconomics movement, which began in the late 1960s and early 1970s, criticized Keynesian theory, while New Keynesian economics has sought to base Keynes's ideas on more rigorous theoretical foundations. Some great economists have also come up with their interpretations of Keynes for example, Markwell (2006) who has emphasized his stress on the international coordination of Keynesian policies, the need for international economic institutions, and the ways in which economic forces could lead to war or could promote peace. Government spending could influence investment under Keynesian approach by determining the rate of adjustment between actual and desired investment or by implication on interest rates (Blejer and Khan, 1984). This theory was hence applied in this study to inform the routes through which government spending on recurrent and capital expenditure may influence private investments. The theory also depicts how debt servicing may bring deficits in the economy which may have a negative effect on private investments.

2.2.2 Real business Cycle Theory

Long and Plosser (1983) developed the real business cycle theory to explain the changes in investments in an economy. The basic tenets of the theory are that as government increases its expenditure, levels of private investments increase to cater for the increased consumption by the

government. This is regardless of whether the consumption is recurrent or development. This is because in these two types of spending, the government injects resources into the economy that stimulate returns thus promoting investments (Pereira & Andraz, 2005).

The real business cycle theory is contrary to the IS-LM model, which envisages that investment will drop in reaction to progressive government expenditure shocks. The IS-LM model depicts that an upsurge in government spending leads to a rise in interest rate, which in turn leads to reduced investment if the rise in government spending is not followed by a corresponding increase in money supply (Rebelo, 2005).

The real business cycle theory by Long and Plosser (1983), takes consideration of this cycle. The theory postulates that when increased government spending results to a large budget funded mostly through foreign borrowing, this affects the debt levels and raises the debt liability. Similarly, the theory posits that using domestic borrowing to fund government expenditure might unfavourably affect private investment by dipping savings and crowding-out private investors (Kormendi, 1983). This happens when private investors are pushed out of financial markets by financial institutions since they prefer lending to the government instead. If there is adequate liquidity in the financial sector, then financing expenditure through public borrowing may not affect private investment negatively. On the other hand, if expenditure is financed through taxes, the increase in taxation reduces the after tax returns to private investors thus adversely affecting private investment (Pereira & Andraz, 2005).

The real business cycle theory was used in this study to explain the cycle through which government spending can influence budget deficit, borrowings and debt repayment both in the

short and in the long term. This can hence affect private investments depending on the supply of money in the economy.

2.2.3 Crowding Out Theory

Spencer and Yohe (1970) devised the crowding out theory which postulates that when government increases its involvement in the market, the remainder of the market can be substantially affected either on the demand or supply side. Mostly, the discussed crowding out effect is when government demands more loanable funds thus making interest rates to rise and hence reducing loanable funds available to the private sector. One type frequently discussed is when expansionary fiscal policy reduces investment spending by the private sector (Jafri & Habib, 2013).

When government uses much of its revenue to service external and internal public debt, this reduces the amount of resources that the government can use in carrying out its other responsibilities (Debrun & Kinda, 2013). This leads to increased borrowing by the government. This increased borrowing leads to increased interest rates which lead to reduced financial resources accessed by private investors. This further leads to reduced investment by the private sector.

Crowding out is based on the assumption that when government borrowing increases, the financial sector reacts by increasing their lending to government due to the governments higher credit rating which makes funds available to the private sector to relatively decrease. Further, reduced supply of funds leads to increase in interest rates to restore equilibrium. This hence leads

to reduced borrowing by households and businesses and thus affecting levels of the investments that they make. Moreover, Hudson (2011) observes that the degree to which crowding out is experienced depends on the economic context. When the economy is at full employment, then increased government deficits makes the private sector to compete with government for scarce financial resources. This leads to reduced consumption and investment due to the increased interest rates. This theory was applied in this study to explain the debt servicing variable and how it can lead to reduction of money supply and thus affecting private investments.

2.3 Empirical Review

This section presents empirical studies on the relationship between Fiscal policy and private investment guided by the research objectives.

2.3.1 Capital Expenditure and Private Investment

A study in Nigeria conducted by Bello et al. (2013) examined the effect of government spending on private investment. This study was conducted using data capital expenditure and private investments data and for 1975-2009. The study utilized multiple linear regression with capital expenditure as one of the independent variables. The study established that capital expenditure had a positive but insignificant effect on private investments. This study hence noted that capital expenditure in Nigeria had the effect of crowding-in private investment but the crowding-in was not found to be significant. On the other hand, Bello et al. (2013) noted that capital expenditure had a positive but insignificant effect on private investments. This implies that though increase in capital expenditure is excreted to increase private investments, this effect is not significant.

Njuru et al. (2014) conducted a study with the aim of establishing the effect of government expenditure on private investment in Kenya. The study focused on data for forty years 1963-2012. VAR technique was adopted in analysing the time series data. The study established that capital expenditure improved private investment. This contradicts the findings of a previous study in Kenya by Oyieke (2011). The study by Oyieke aimed at assessing government development expenditure and its impact on private investment in Kenya. The study

focused on the period 1964-2006. Study results established that investment in capital infrastructure has an insignificant positive effect on private investments Kenya.

Kiptui (2005) applied co-integration analyses and ECM to examine the effects of fiscal policy on private investment in Kenya. The data used in the study was from 1972-1999. Capital expenditure was one of the variables considered in the study among other variables. The study established that capital expenditure by the government had a positive influence on private investments. This finding was contrasted by findings from a study by Wang (2003) in Canada. The study by Wang used data for 1961-2000. This study used ECM and Co-integration and determined that capital expenditure by the government had crowding-out influences on private investment.

Njuru et al. (2014) established that capital and recurrent expenditure improved private investment while Kiptui (2005) established that capital and recurrent expenditure by the government had a positive influence on private investments. Kiptui (2005) further noted that debt servicing had a negative effect on private investment. This contradicts the findings of a previous study in Kenya by Oyieke (2011) that investment in capital infrastructure has an insignificant positive effect on private investments Kenya.

2.3.2 Recurrent Expenditure and Private Investment

Bello et al. (2013) in their study in Nigeria established that recurrent expenditure had a significant negative effect on private investments. The study conducted over a period of 35 years (1975-2019) established that government recurrent expenditure crowded out private investments

in the Nigerian economy. The negative effect of recurrent expenditure is disputed by findings from a study by Njuru et al. (2014) who noted that recurrent expenditure improved private investment. However, these two studies were conducted in different countries (Kenya for the latter) which may explain the differences in results.

A study by Debrun and Kinda (2013) noted that when debt levels increase as a proportion to GDP, debt servicing had a negative relationship with private investments. In Pakistan, Jafri and Habib (2013) established that annual debt payments made by the government of Pakistan to multilateral financial and private creditors had an adverse impact on private investments. The study revealed that debt servicing to bilateral creditors and non-concessional debt had positive impact on investment. Kiptui (2005) established that recurrent expenditure by the government promoted private investments. This finding is similar to that by Wang (2003) which established that recurrent government spending on education, health and other social services had significant positive effects on private investments. In Nigeria, Bello, Nagwari and Saulawa (2013) noted that recurrent expenditure is significantly and negatively related to private investment.

Government spending can be classified in terms of purpose which is in two categories recurrent expenditure and development expenditure. Government spending is mostly spent in provision of public goods and services. In late 1980s and early 1990s there was sharp decline in investment which can be blamed on key donors giving tough conditions to government before funds can be given. This was because of the introduction of structural adjustment programs by IMF and World Bank (WB) resulted to government resulting to domestic borrowing crowding

out private investment (Wagacha, 2000; Kabubo – Mariara & Kiriti, 2002; Republic of Kenya, 2003; Were et al., 2006).

Blejer and Khan (1984) investigated the impact of government economic policy on private investments in some twenty four developing countries. The economic relationship between investment and factors that affect its flexible acceleration model was adopted. The results were that the level of private investment was positively related to change in expected real GDP, level of private capital inflows and availability of funds for private investment. Arin (2004) study on the effects of fiscal policy on economic growth and private investment for G-7 countries has proposed study of different tax groups separately in empirical studies as they have different effect on the steady state growth rate. This study found that there is a negative effect of the increase in income tax revenues on growth rates. Thus this study proved that income taxes and government expenditures slow down growth by decreasing private investment.

A study on the impact of government expenditure on economic growth in Kenya by Maingi (2010) used government expenditure components that included expenditure on government investment, education, physical infrastructure, healthcare, economic affairs, public debt servicing, general administration and services, public order and national security, defence and government consumption. The study found that government expenditure had an effect on economic growth and that government expenditure reforms were important for economic growth.

Through government development spending, it improves Kenyan infrastructure for example improvement of transport sector which in turn indirectly improves private investments in Kenya. Sessional Paper No 1 of 1994 articulated various expenditure policies (Republic of Kenya, 1994). There was a re-allocation of budget resources towards the core functions of

government. These included maintenance of law and order, the administration of justice, the provision of broad-based education and health services, the provision of economic infrastructure and the protection of the environment. To spur private investment and economic growth, the development expenditure and recurrent non-wage operating and maintenance expenditure were increased as a share of GDP. The budget rationalization measures aimed at maximizing the productivity of public expenditure. In particular, objective technical and economic criteria were to be applied to project selection, with priority given to projects in the areas of health, education, infrastructure and environment (Republic of Kenya, 1994).

The main government expenditure strategy has been restructuring overall expenditure by directing more resources to activities that complement private investment. To achieve this goal, various policy reforms have been implemented, which include: rationalizing government expenditure, with more resources being channelled to development and recurrent non-wage operating and maintenance expenditure in order to crowd – in private investment (Republic of Kenya, 2002).

2.3.3 Debt Servicing and Private Investment

Kiptui (2005) established that debt servicing had a negative and significant effect on private investment. This study hence implied that debt servicing had an impact on private investment. Focus on repaying debt by the country crowds out private investments. Oyieko (2011) conducted a study using data for 1964 – 2006 in Kenya and established that domestic debt servicing crowds-out private investment. The recommendation from this study was that the government should lessen its reliance on domestic borrowing to fund budget deficit. In Pakistan, Jafri and

Habib (2013) conducted a study aiming at establishing the impact of external debt service payment on the investment. In the study, Gross Fixed Capital Formation (GFCF) was used as an indicator of investment. Annual debt payments made by the government of Pakistan to multilateral and bilateral financial creditors, concessional debt and other creditors were considered. The study established that debt servicing practices to multilateral financial and private creditors had an adverse impact on private investments in Pakistan. The study, however, revealed that debt servicing to bilateral creditors and non-concessional debt had positive impact on investment.

Otieno (2015) conducted a study that assessed the role of total debt servicing on macroeconomic performance in Kenya. The study applied a Vector Autoregressive (VAR) model. Results established that there was crowding out effect on economic growth and private investments that were brought about by debt servicing. Increased debt servicing levels reduced private investments.

Kamundia (2015) conducted a study that assessed the effects of public debt on private investments and growth of the economy in Kenya. The study focused on data from 1980-2013. The study applied Granger causality test to establish the route of causality between public debt and private investments. Ordinary least squares estimation model was applied in establishing the influence. Interest payments on public debt were established to have a negative effect on private investments. The findings from this study hence suggested that interest payments on debt play a vital role in defining the level of private investments which in return affects economic growth.

Debrun and Kinda (2013) in a study of 112 developing countries noted that ever rising debt-to-GDP ratios seem to be unsustainable for many countries. This has caused interest rate

payments to eat up most budgets of some states thus making them to inadequately fund some essential sectors of the economy. The study established a U-shaped curve when relating interest rate payments to private investments level and economic growth. This was explained to be caused by the two conflicting cases when interest rate payments are seen to positively relate to private investments when debt levels are a small percentage of GDP. However, there is a negative relationship between interest payments and private investments when the interest payments form a significant part of the country's total spending. This indicates that how interest payments relate with private investments depends on the amount of interest payment as a proportion of GDP.

2.4 Knowledge Gap

The review of literature above examines several relationships relating to government spending and private investment but does not provide a clear and unanimous relation of government spending and private investments. This is because most of the studies had conflicting findings. For instance, Kiptui (2005), Bello et al. (2013) and Njuru et al. (2014) indicated that capital expenditure promotes private investments. On the other hand, studies by Wang (2003) and Oyieke (2011) observed that capital expenditure negatively influenced private investments. Similarly, Bello et al. (2013) noted that recurrent expenditure had a significant negative effect on private investments while Wang's (2003) and Kiptui's (2005) study established that recurrent expenditure by the government promoted private investments. The current study sought to contribute to this debate to establish the influence of government spending on private investments.

The studies that were considered in the review also had gaps in relation to the variables they considered in relating government spending to private investments. For instance, Njuru et al. (2014) only considered capital and recurrent expenditure and failed to include debt servicing. Furthermore, the study applied VAR model while this study applied VECM. As the debt to GDP levels in Kenya rise (World Bank, 2015), this is becoming a key policy issue and how it influences investment needs to be studied. Though Kiptui's (2005) study considered debt servicing and capital and recurrent expenditure among other variables, this study was conducted more than ten years ago and hence current trends need to be considered.

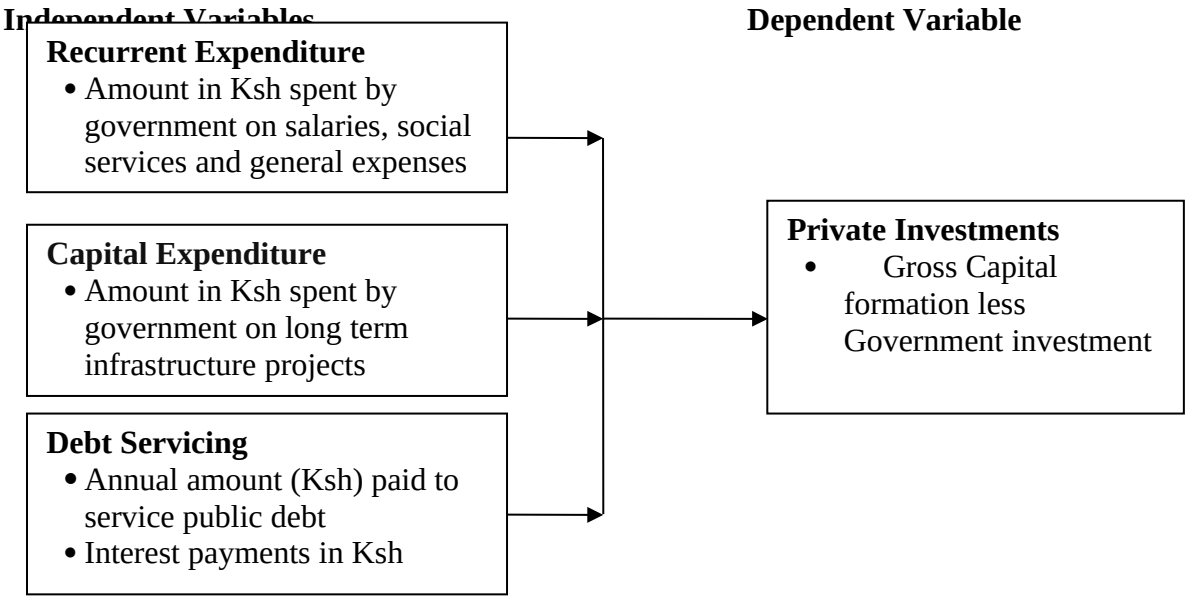
As the country sought to realize Vision 2030, it was critical to project how changing government spending influenced private investments in the future. This was important to policy formulators and implementers in achieving a high level of private investments in Kenya through fiscal policy. Moreover, the study formulated a predictor model that the government could use to achieve desired level of private investment. Thus the motivation to this study was to investigate the relationship between government spending and private investments in Kenya.

2.5 Conceptual Framework

The Figure 3 below explains the hypothesized relationship between government spending and private investment in Kenya. The various components of government spending (recurrent expenditure, capital expenditure, debt repayment and interest payments) were the independent variables in the conceptual framework. Private investment (gross capital formation less government investment) is the dependent variable in the study.

FIGURE 3

Conceptual Framework



Source: Author (2016)

2.6 Operationalization of the Variables

The study operationalized the variables in the relationship between government spending and private investment in Kenya as shown in Table 1. The operationalization table gives the insight on how the various variables were measured analysed and conclusions drawn thereafter.

TABLE 1

Operationalization of the Study Variables

Variable Type/ Variable	**Indicators**	**Measurement Scale**
Independent Variable Recurrent expenditure	Amount in Ksh spent by government on salaries, social services and general expenses as a ratio of GDP	Ratio
Independent Variable Capital Expenditure	Amount in Ksh spent by government on long term infrastructure projects as a ratio	Ratio

	of GDP	
Independent Variable Principal debt repayment	Annual amount (Ksh) paid to service principal debt as a ratio of GDP	Ratio
Independent Variable Interest payments	Annual amount (Ksh) paid as interest on both short term and long term government debt as a ratio of GDP	Ratio
Dependent Variable Private investments	Capital accumulation by private agents for productive purposes in Ksh (Gross Capital formation – Government investment) as a ratio to GDP	Ratio

Source: Author (2016)

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter summarizes the procedures and methodologies that were used to establish the effect of government spending on private investments in Kenya. This section includes the research design, data collection, data analysis and the model that were employed in the study.

3.2 Research Design

This is a structured plan and strategic investigation considered with an aim of finding answers to a research problem or question. This study applied a causal research design. This design was applied as the study sought to establish the relationship between government spending and

private investments in Kenya. Mugenda and Mugenda (2003) observe that causal research is conducted to establish the extent of cause-and-effect relationships between two variables. This design was applied to establish the extent that recurrent expenditure, development expenditure and debt servicing by the government affected private investments.

3.3 Target Population

Population is all the elements that meet the criteria for inclusion in a study (Burns and Grove, 2003, Mugenda and Mugenda, 2003). The study was on Kenya and data from 1964 to 2015 was used. The study considered the most current data available to ensure that the findings reflect the current environment.

3.4 Data Collection

The study utilized data from World Bank, Economic surveys, statistical abstracts, Central bank of Kenya, Quarterly Economic Reviews and annual reports, Sessional papers, African Development indicators and International Monetary Fund financial statistics. Other organizations from which data will be sourced include Kenya revenue Authority (KRA), The Treasury, Kenya Institute of Public Policy Research and analysis (KIPPRA), African Economic research Consortium (AERC) and Ministry of Devolution and Planning. The sources for the data applied included government and non-government sources that were reliable to ensure reliability of the data collected.

The data that was collected related to private investments which are indicated by capital accumulation by private agents for productive purposes (Gross Capital formation less

Government investment), recurrent expenditure (amount in Ksh spent by government on salaries, social services and general expenses) and capital expenditure (Amount in Ksh spent by government on long term infrastructure projects). The study also collected data on principal debt repayment (annual amount in Ksh paid to service principal debt amount) and interest payments (annual amount in Ksh paid as interest on both short term and long term government debt).

3.5 Data Analysis

Data analysis software such (Stata and Microsoft Excel) were used in this study to analyze the data. This study applied a time series model to predict future values of private investments based on the observed values of government spending. The time series Vector autoregressive (VAR) or the Vector error correction model (VECM) was to be applied depending on the cointegration status of the variables. Hacker and Hatemi (2008) argue the VAR model captures the linear interdependencies amongst numerous time series. In VAR procedure, every variable takes an equation clarifying its progression founded on its own lags and the lags of the other model variables. In VAR modelling, the only preceding information required is a list of variables which are theorized to influence each other inter-temporally (Hatemi, 2004). In this case, the variables included are recurrent government expenditure (RE), capital government expenditure (CE), debt servicing (DS) and private investment (PI). However, VAR is appropriate only when there is no cointegration of the variables, when there is cointegration, VECM is more appropriate.

The analysis technique involved three steps. The first step was to load the necessary data to the software. Second, there was creation of vector of response variables and determining the best lags to use for the time series variables. Lastly, the estimation of autoregressive (AR)

models using ordinary least squares was done. This estimation simultaneously fit the trend, intercept, and autoregressive integrated moving average (ARIMA) model.

3.5.1 Model Specification

This study aimed to establish the effect of government spending on private investments in Kenya. The VAR or VECM model was a multivariate time series function. The independent variables of the study comprised of recurrent government expenditure (RE), capital government expenditure (CE) and debt servicing (DS). All the independent variables were taken as ratio of GDP. The dependent variable was private investment (PI) which was also indicated as a ratio of GDP.

The VAR model is as follows:

$PI = f (RE, CE, DS)$

$PI = \beta_0 + \beta_1 RE + \beta_2 CE + \beta_3 DS + \varepsilon$

Where

PI - Private Investments

β_0 - Constant showing private investments in absence of government spending

RE - Recurrent expenditure

CE- Capital expenditure

DS – Debt servicing

ε - error term

3.6 Data Analysis Procedure

This study applied econometric models that examine the effect of independent variables on the dependent variable. To test the existence of dynamic relationship, Johansen test was used to test the existence of cointegration. For short run and long run relationships vector error correction model was fitted to test the relationship. However, unrestricted VAR was to be used if the variables did not have long term integration. STATA software program was used for model estimation.

3.6.1 Preliminary Test

Granger and Newbold (1974) in their research observed that use of Ordinary Least Squares (OLS) on non-stationary data would essentially yield an outcome with very high R squared and statistically significant "t" ratio even where there is no relationship between the data used in the regression. It is further argued that the regression estimated would be 'spurious regression' because they have got no meaning or function (Cameron, 2005). Time series data is deemed to be non-stationary and therefore to avoid spurious regression it is important to test for stationarity of variables under consideration. This can be achieved by carrying out unit root test. To test for unit root, the Dickey Fuller was used (Dickey & Fuller, 1979).

The Augmented Dickey Fuller (ADF) test statistics does not follow the usual "t" distribution under the null since the null is non-stationary but rather follows a non-standard distribution. Critical values are derived from the Monte-Carlo experiments (Fuller, 1976). Philips and Peron (PP) test developed a more comprehensive theory of unit root test for non-stationarity. The test is similar to ADF but they incorporated an automatic correction to DF procedure to allow for the auto-corrected residuals. For the purpose of this study Augmented Dickey Fuller (ADF) unit root test was employed to test for stationarity in the time series.

3.6.2 Diagnostic Analysis

Comprehensive data analysis was carried out and data characteristics were taken into consideration. The results were presented using visual aids such as graphs and tables as well as the use of descriptive statistics. Lastly the data was tested for cointegration.

Hendry and Juselius (2000) initiated the work on the properties of economic series which has been extended to what is known as cointegration. A series data is said to be cointegrated if they move in the same trend in the long run. Nielson (2005) affirm that cointegration requires a time series to be non-stationary and merging such series helps to remove non-stationarity in multivariate time series without differencing. Determining stationarity is the primary stage before conducting cointegration.

If it was established that the time series under consideration was non-stationary, then the Johansen's method would be put into practice to carry out cointegration test and fit the suitable model. If there is no cointegration, then the vector autoregressive (VAR) model would be used.

However, if cointegration is established the vector error correction model (VECM) would be used. VECM is a VAR based approach and it allows for testing a system of equations. This method gives more efficient estimators of cointegrating vectors and does not require variables to be normalized. The two statistics developed in Johansen approach in determining the number of cointegrating vectors include the trace statistics and the maximum eigenvalues (Hendry & Juselius, 2000).

When the error correction model is fitted and cointegration test done, the model would be satisfactory to its forecasting ability. At this point test for serial correlation and variance decomposition would be carried out and results obtained.

CHAPTER FOUR

DATA ANALYSIS, FINDINGS AND DISCUSSION

4.1 Introduction

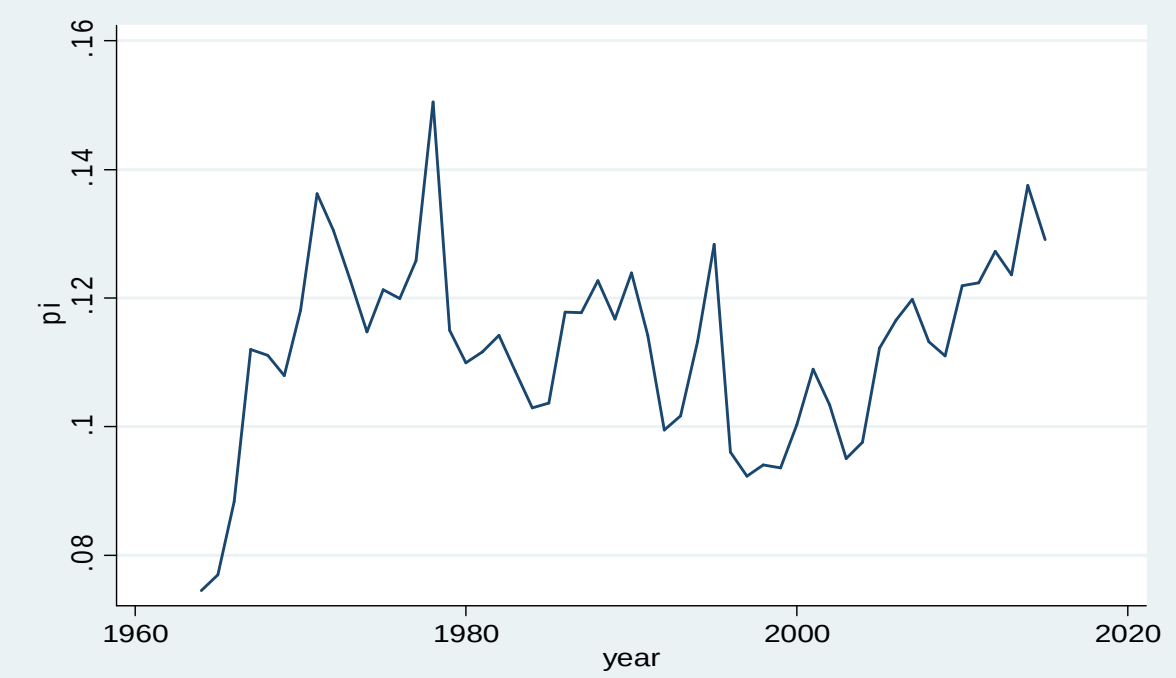
This chapter presents the pre estimation tests, the analysis and also the post analysis tests. The analysis includes exploratory analysis for the ratio of private investments on GDP and also the growth plots for recurrent expenditure, capital expenditure and debt servicing as ratios of GDP. The results from the analysis are then presented in tables and figures and then interpreted. The findings are then discussed in relation to the theories in the study and also to the prior empirical studies.

4.2 Exploratory Analysis of Private Investments

The study explored how private investments as a ratio of GDP varied over time from 1964 to 2015. The results in Figure 4 indicate that private investments as a ratio of GDP started from a low of 0.07 in 1964 and improved to a high of 0.15 in 1978. It then reduced erratically to a low of 0.092 in 1998. From that slump of 0.098 in 1998, private investments have recorded an upward trend to the most current level of 0.129.

FIGURE 4

Trend of Private Investments as a Ratio of GDP



Source: Author (2016)

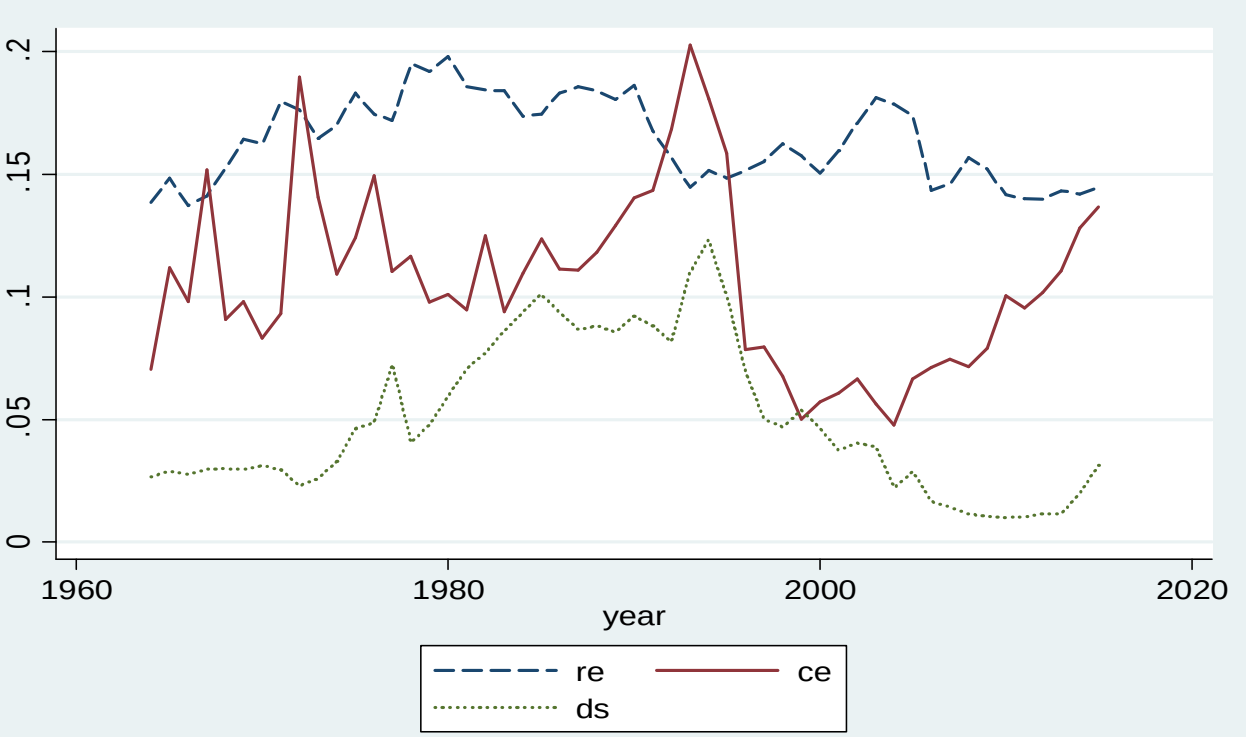
4.3 Growth Plot for Independent Variables

The study also explored how the three independent variables as a ratio to GDP grew over time. The graph in Figure 5 show the overlain plots for recurrent expenditure (re), capital expenditure (ce) and debt servicing (ds). The plots indicate that recurrent expenditure as a ratio of GDP has mostly been constant with few erratic movements over the years. Recurrent expenditure has ranged between 0.137 (1966) and 0.19 (1979). Capital expenditure on the other hand has experienced major variations among them sharp increases in 1967, 1972 and 1993 where they even surpassed recurrent expenditure for those particular years. Debt servicing as a ratio to GDP increased steadily from 1964 up to 1994 (a high of 0.12). Debt servicing as a ratio to GDP then

reduced steadily to a low of 0.01 in 2010. From 2010, debt servicing as a ratio to GDP has increased steadily to the current ratio (2015) of 0.03.

FIGURE 5

Growth Plots for Independent Variables



Source: Author (2016)

4.4 Correlation of Independent Variables

The correlation of the independent variables was checked as a pre analysis diagnostic test. This was applied to establish whether there was any significant relation between any two of the independent variables. In any regression analysis, multicollinearity should be checked and be precluded. Results in Table 2 indicate that there were no two variables that were high correlated

with each other. The highest correlation was between debt servicing and capital expenditure (0.4679) does not suggest multicollinearity (Cameron, 2005).

TABLE 2

Correlation of the Variables

	re	ce	ds	pi
re	1.0000			
ce	0.0074	1.0000		
ds	0.3933	0.4679	1.0000	
pi	0.2235	0.3575	-0.0695	1.0000

Source: Author (2016)

4.5 Selecting Number of Lags

Since the study was to use either the VAR or the VECM timer series models, a decision needed to be made of how many lags to use in the predictive model. This was assessed using the VAR and VECM pre estimation diagnostics command. The results (Table 3) provided the Lag length (LL), the Likelihood Ratio (LR), Akaike's Information Criterion (AIC), the Final Prediction Error (FPE) and, Hannan and Quinn information criterion (HQIC). The results also provided Schwarz's Bayesian information criterion (SBIC). FPE, AIC, HQIC and SBIC suggested selection of one lag whereas LR suggested two lags. Since most of the criteria suggested one lag, the study applied one lag to the model.

TABLE 3

Selecting Number of Lags

Selection-order criteria
Sample: 1968 - 2015 Number of obs = 48

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	484.74				2.3e-14	-20.0308	-19.9719	-19.8749
1	589.482	209.48	16	0.000	5.8e-16*	-23.7284*	-23.4338*	-22.9488*
2	605.202	31.44*	16	0.012	6.0e-16	-23.7168	-23.1864	-22.3134
3	608.964	7.524	16	0.962	1.0e-15	-23.2068	-22.4408	-21.1797
4	617.149	16.37	16	0.427	1.5e-15	-22.8812	-21.8794	-20.2303

Endogenous: pi re ce ds
Exogenous: _cons

Source: Author (2016)

4.6 Unit Root tests

The Augmented Dickey Fuller (ADF) test for unit root was used to establish whether the variables had unit roots or were not stationary. One key assumption of modelling data in time series is the assumption that the variables have no unit roots and they are stationary. This test was applied on all the four variables and the results are presented in Table 4.

TABLE 4

Unit Root Test for Private Investments

```
. dfuller pi, regress lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        51

                                 ———— Interpolated Dickey-Fuller ————
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
——————————————————————————————————————————————————————————————————————————
 Z(t)            -3.617            -3.579            -2.929           -2.600
——————————————————————————————————————————————————————————————————————————

MacKinnon approximate p-value for Z(t) = 0.0054

——————————————————————————————————————————————————————————————————————————
        D.pi |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
——————————————————————————————————————————————————————————————————————————
          pi |
         L1. |   -.354506   .0980012    -3.62   0.001    -.5514468   -.1575652
             |
       _cons |   .0408231   .0110791     3.68   0.001     .0185588    .0630875
——————————————————————————————————————————————————————————————————————————
```

Source: Author (2016)

Results in Table 4 indicate that private investments did not have unit root and hence it was stationary this was because the absolute test statistic (3.617) was greater than the 5% critical value (2.929). The model was also valid and significant as the coefficient of the long term effect was negative (-0.355)

The ADF unit root test was also conducted on recurrent expenditure and results presented in Table 5. The results indicate that recurrent expenditure had unit root since absolute value of test statistic (2.14) was less than the 5% critical value (2.929).

TABLE 5

Unit Root for Recurrent Expenditure

```
. dfuller re, regress lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        51

                                 ———— Interpolated Dickey-Fuller ————
                 Test         1% Critical       5% Critical      10% Critical
               Statistic           Value             Value            Value
——————————————————————————————————————————————————————————————————————————
 Z(t)            -2.140           -3.579            -2.929           -2.600
——————————————————————————————————————————————————————————————————————————

MacKinnon approximate p-value for Z(t) = 0.2288

——————————————————————————————————————————————————————————————————————————
        D.re |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
——————————————————————————————————————————————————————————————————————————
          re |
         L1. |  -.1605862   .0750454    -2.14   0.037    -.3113956   -.0097767
             |
       _cons |   .0265445   .0124134     2.14   0.037     .0015988    .0514903
——————————————————————————————————————————————————————————————————————————
```

Source: Author (2016)

ADF unit root test for capital expenditure was also computed with results as indicated in Table 6. The results indicate that Capital Expenditure had no unit root and was hence stationary as the absolute test statistic (2.944) was greater than the 5% absolute critical value (2.929).

TABLE 6

Unit Root Test for Capital Expenditure

```
. dfuller ce, regress lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        51

                                 ———— Interpolated Dickey-Fuller ————
                 Test         1% Critical       5% Critical      10% Critical
               Statistic          Value             Value            Value
——————————————————————————————————————————————————————————————————————————
 Z(t)            -2.944           -3.579            -2.929           -2.600
——————————————————————————————————————————————————————————————————————————

MacKinnon approximate p-value for Z(t) = 0.0405

——————————————————————————————————————————————————————————————————————————
        D.ce |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
—————————————+————————————————————————————————————————————————————————————
          ce |
         L1. |  -.2973765   .1010093    -2.94   0.005    -.5003623   -.0943907
             |
       _cons |     .03286   .0113127     2.90   0.006     .0101263    .0555936
——————————————————————————————————————————————————————————————————————————
```

Source: Author (2016)

Lastly, the ADF unit rot test for debt servicing was conducted. Results presented in Table 7 indicate that debt servicing had unit root as the absolute value for the test statistic (1.327) was less that 5% absolute critical value (2.929).

TABLE 7

Unit Root Test for Capital Expenditure

```
. dfuller ds, regress lags(0)

Dickey-Fuller test for unit root                   Number of obs   =        51

                                 ———— Interpolated Dickey-Fuller ————
                    Test         1% Critical       5% Critical      10% Critical
                Statistic           Value             Value            Value
——————————————————————————————————————————————————————————————————————————
 Z(t)             -1.327            -3.579            -2.929           -2.600
——————————————————————————————————————————————————————————————————————————
MacKinnon approximate p-value for Z(t) = 0.6165

——————————————————————————————————————————————————————————————————————————
        D.ds |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
—————————————+————————————————————————————————————————————————————————————
          ds |
         L1. |  -.0672724   .0506762    -1.33   0.190      -.16911    .0345652
             |
       _cons |   .0034732     .00299     1.16   0.251    -.0025355    .0094818
——————————————————————————————————————————————————————————————————————————
```

Source: Author (2016)

Two variables (recurrent expenditure and debt servicing) were hence noted to have unit roots. To correct that, first differencing was conducted which corrected the unit roots and made all the variables to be stationary.

4.7 Cointegration Tests

The study further tested whether the variables were cointegrated. The Johansen test for cointegration was applied. When variables are cointegrated, it implies that they have a long term relationship and their trends are related. However, when they are not cointegrated, it implies that

the variables do not have a long term relationship but can only have a short term relationship. The VAR model is appropriate when variables are not cointegrated while the VECM model is appropriate when the models are cointegrated. The results of the Johansen test are indicated in Table 8. The results indicate that the hypothesis of no cointegration was rejected as the trace statistic (51.2465) was greater than the critical value at 5% (47.21). The results indicate that there was cointegration of long run relationship among the variables. This indicates that VECM is the appropriate model.

TABLE 8

Johansen Test for Cointegration

Trend: constant — Number of obs = 51
Sample: 1965 - 2015 — Lags = 1

maximum rank	parms	LL	eigenvalue	trace statistic	5% critical value
0	4	594.7442	.	51.2465	47.21
1	11	609.55284	0.44051	21.6292*	29.68
2	16	615.91301	0.22075	8.9089	15.41
3	19	619.33673	0.12564	2.0615	3.76
4	20	620.36746	0.03961		

Source: Author (2016)

4.8 Vector Error Correction Model

The error correction model was run with the first differenced variables. One lag was applied as had been prescribed by FPE, AIC, HQIC and SBIC. The results of the VECM model are presented in Table 9. The findings indicate that there was one cointegration equation with a negative coefficient ($\beta = -.516$) and was significant at 5% significance level ($z = -4.18$; $p < 0.05$).

This indicated that there was long term causality of recurrent expenditure, capital expenditure and debt servicing. Moreover, the findings also indicated that lagged recurrent expenditure had a short term positive but insignificant effect on private investments ($\beta = 0.217$; $p > 0.05$). This hence leads to acceptance of the null hypothesis in the study: H01: Government's recurrent expenditure has no significant effect on private investments in Kenya. There was no evidence that the hypothesis could be rejected at 5% significance level. This indicates that recurrent expenditure had an insignificant effect on private investments.

TABLE 9

Vector Error Correction Model

Sample: 1966 - 2015 — No. of obs = 50
AIC = -23.52674
Log likelihood = 615.1685 — HQIC = -23.13356
Det(Sigma_ml) = 2.42e-16 — SBIC = -22.49425

Equation	Parms	RMSE	R-sq	chi2	P>chi2
D_pi	6	.008819	0.4588	37.30688	0.0000
D_re	6	.009385	0.1325	6.721795	0.3473
D_ce	6	.028014	0.0602	2.820723	0.8310
D_ds	6	.010509	0.2370	13.66685	0.0336

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
D_pi						
_ce1						
L1.	-.5161433	.1235831	-4.18	0.000	-.7583616	-.273925
pi						
LD.	.2226736	.1344451	1.66	0.098	-.0408339	.4861811
re						
LD.	.2174398	.1355291	1.60	0.109	-.0481923	.4830718
ce						
LD.	.1056689	.0505752	2.09	0.037	.0065433	.2047945
ds						
LD.	-.4124193	.1138054	-3.62	0.000	-.6354737	-.1893649
_cons	9.44e-06	.0012871	0.01	0.994	-.0025133	.0025322

Source: Author (2016)

Findings also indicated that one lag on capital expenditure had a positive and significant effect on private investments ($\beta = 0.106$; $p < 0.05$). This indicates that lagged government development expenditure enhanced private investments. This led to the rejection of the second null hypothesis in the study: H02: Capital expenditure by the government has no significant effect on private investments in Kenya. At 5% significance level, the study established that capital expenditure had significant positive effect on private investments.

Moreover, study results in Table 9 indicated that lagged debt servicing negatively and significantly affected private investments ($\beta = -0.412$; $p < 0.05$). This indicates that application of funds into debt servicing crowds out private investments. This led to the rejection of the third null hypothesis of the study: H03: Debt servicing has no significant effect on private investments in Kenya. The study results indicated that at 5% significance level, debt servicing negatively and significantly influenced private investments.

Lastly, the normalized cointegration equation that was developed and was as presented in Table 10. The results indicated that in the long run, recurrent expenditure, capital expenditure and debt servicing are associated with private investments (chi square = 11.029; $p < 0.05$). Findings on the specific variables indicated that recurrent expenditure was positively and insignificantly related to private investments ($\beta = 0.245$; $p > 0.05$). Results however indicated that capital expenditure had a positive and significant effect on private investments ($\beta = 0.1867$;

$p < 0.05$). Further results indicated that debt servicing had a negative and significant effect on private investments ($\beta = -0.277$; $p < 0.05$).

TABLE 10

Normalized Cointegration Equation

Equation	Parms	chi2	P>chi2
_ce1	3	11.02865	0.0116

Identification: beta is exactly identified

Johansen normalization restriction imposed

beta	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
_ce1						
pi	1	.	.	.	.	.
re	.2451186	.1390417	1.76	0.078	-.0273981	.5176354
ce	.1867781	.073697	2.53	0.011	.0423345	.3312216
ds	-.2770726	.0862176	-3.21	0.001	-.446056	-.1080892
_cons	-.0683519	.	.	.	.	.

Source: Author (2016)

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

This chapter presents the s, conclusion and recommendations. The conclusions made in the study are in regard to the study findings while the recommendations are made based on the gaps noted from the study findings.

5.2 Discussion of Findings

5.2.1 Effect of Government's Recurrent Expenditure on Private Investments in Kenya

The findings from this study indicated that lagged recurrent expenditure was positively and insignificantly related to private investments ($\beta = 0.245$; $p > 0.05$). These results implied that recurrent expenditure did not have a significant influence on level of private investments. These findings are not supported by Long and Plosser's (1983) real business cycle theory which explains that when government increases its expenditure, levels of private investments increase to cater for the increased consumption by the government. This theory indicates that this applies to both recurrent as well as development expenditure. This hence is contrary to the findings in the study that indicated that recurrent expenditure did not significantly influence private investments.

The findings of insignificant effect of recurrent expenditure on private investments contradicts the findings by Bello et al. (2013) whose study in Nigeria established that recurrent expenditure had a significant negative effect on private investments. The insignificant effect of recurrent expenditure is also disputed by findings from a study by Njuru et al. (2014) who noted

that recurrent expenditure improved private investment. The current study findings are also contradicting the findings by Kiptui's (2005) and Wang (2003) which established that recurrent government spending on had significant positive effects on private investments.

5.2.2 Effect of Capital Expenditure on Private Investments in Kenya

Results however indicated that capital expenditure had a positive and significant effect on private investments ($\beta = 0.1867$; $p < 0.05$). These findings are supported by the Keynesian theory which was developed by Keynes (1936). The theory indicated that the government involvement in the economy should be to majorly invest in infrastructure. This, Keynes argued, would inject income into the economy by creating business opportunity, employment and demand and reversing the effects of any negative imbalances. This is expected to spur private investment in the economy. The assertion by the theory hence concurs with the findings from this study that lagged capital investment positively and significantly influenced private investments. The findings are also supported by the real business cycle theory (Long & Plosser, 1983) which postulates that increased capital spending by the government leads to enhanced private investments as private businesses improve their investments to cater for the increased consumption by government.

The findings that capital expenditure had a significant effect on private investments are contrary to the findings by Bello et al. (2013) in Nigeria that capital expenditure had a positive but insignificant effect on private investments. The findings from this study also contradict the findings of a previous study in Kenya by Oyieke (2011) which had indicated that capital expenditure did not significantly influence private investments. The findings also disagree with

findings by Wang (2003) in Canada that capital expenditure by the government had crowding-out influences on private investment. However, the study results concur with findings by Njuru et al. (2014) and Kiptui (2005) which had established that capital expenditure by the government had a positive influence on private investments.

5.2.3 Effect of Debt Servicing on Private Investments in Kenya

Results indicated that debt servicing had a negative and significant effect on private investments ($\beta = -0.277$; $p < 0.05$). These findings are supported by Spencer and Yohe's (1970) crowding out theory which postulated that when government uses much of its revenue to service external and internal public debt, this reduces the amount of resources that the government can use in carrying out its other responsibilities. This hence leads to increased borrowing by the government. This increased borrowing leads to increased interest rates which lead to reduced financial resources accessed by private investors and hence having an adverse effect on private investments. The findings from the study hence concurred with this theory that lagged debt servicing significantly and negatively influenced private investments.

The study findings about significant negative influence of debt servicing on private investments are supported by findings from a study by Debrun and Kinda (2013) that when debt levels increase as a proportion to GDP, debt servicing had a negative relationship with private investments. These findings also agree with results from studies by Kiptui (2005) and Oyieko (2011) that debt servicing crowds-out private investment. This study's findings also compares with the findings by Otieno (2015) and Kamundia (2015) which indicated that principal debt and

interest payments on public debt were had a negative effect on private investments. The study findings however contradict the findings by Debrun and Kinda (2013) who noted that relationship between debt servicing and private investments was U shaped. Debrun and Kinda noted that interest rate payments are seen to positively relate to private investments when debt levels are a small percentage of GDP but there is a negative relationship between interest payments and private investments when the debt servicing form a significant part of the country's total spending.

5.3 Conclusion

The study concludes that lagged recurrent expenditure had a short term positive but insignificant effect on private investments. This hence led to acceptance of the null hypothesis in the study which had stated that government's recurrent expenditure has no significant effect on private investments in Kenya. This finding was not supported by the real business cycle theory that predicts improvement in private investments with increase in recurrent expenditure.

Secondly, the study concludes that lagged capital expenditure had a positive and significant effect on private investments. This hence led to rejection of the null hypothesis that had stated that capital expenditure by the government has no significant effect on private investments in Kenya. The alternate hypothesis was accepted as capital expenditure was established to have a crowding-in effect on private investments. These results were supported by both the real business cycle theory and the Keynesian theory which predict improvement in private investments with increase in capital expenditure.

Lastly, the study concludes that lagged debt servicing negatively and significantly affected private investments. This led to rejection of the null hypothesis which stated that debt servicing has no significant effect on private investments in Kenya. The alternative hypothesis was hence accepted indicating that debt servicing negatively and significantly influenced private investments. The concluding then was that debt servicing crowded-out private investments.

5.4 Recommendations

The following recommendations are made. First, the government should only focus on funding essential sectors so as to reduce the recurrent expenditure. Those big votes on recurrent expenditure are crippling the government's ability to channel finances to productive sectors of the economy. Increasing recurrent expenditure does not only affect the fiscal balance negatively, it has the effect of adversely interfering with the trade balance as well. Government should have an effective five year strategy to reduce recurrent expenditure by adopting technology and management practices like those applied in the private sector.

Secondly, funds should be channeled to growth and productive sectors of the economy such as technology, energy and transport infrastructure. Moreover, sectors which are vital for the country such as agriculture and tourism should have their infrastructure developed which is expected to crowd-in private investments.

Lastly, government should ensure that no debt is incurred to finance recurrent expenditure. Any debt incurred should be channeled towards key economic sectors that have been determined by credible research that they can spur economic growth. Moreover, before the government commits to any new public debt, it should ensure that the value addition from the debt clears outweighs the burden.

5.5 Areas of Further Research

The study suggests that for further research that includes data for other east African countries for a comparative analysis. Research including countries in the East African countries such as Kenya, Tanzania, Uganda, Rwanda and Burundi would provide a very good avenue to compare how government spending influences private investments.

5.6 Limitations of the Study

The study had several limitations which would have affected the study results and the conclusions made from the study. First, there were economic shocks that were experienced in Kenya in the 2007/2008 due to the post lection violence. Other shocks were also experienced in the global financial crisis of 2008/2009. Furthermore, Kenya's GDP was rebased in 2014. All these factors could have had shocks in the economy which could have affected the movements in the variables that were considered in this study.

Secondly, the source of data may influence the finding where the study may have conflicting findings with other studies due to collection of data from differing sources. However, the study was based on data from the World Bank, KNBS and other credible organizations to ensure that the findings were reliable and valid.

REFERENCES

Ahuja, H. L. (2007). *Macroeconomics theory and policy: Advance analysis*. New Delhi: S. Chand & Co Publishers.

Alesina, A., S. Ardagna, R. Perotti, and F. Schiantaretti (1999). *Fiscal Policy, Profits and Investment*. NBER working paper, 7207.

Arin, K. P. (2004). *Fiscal Policy, Private Investment and Economic Growth: Evidence from G-7 Countries.* Retrieved from: http://papers.ssrn.com/sol3/papers.cfm?abstractid=438785.

Asante, Y. (2000). *Determinants of private investment behavior in Ghana.* African Economic Consortium research paper no. 100. Nairobi: AERC.

Bello, M. Z., Nagwari, A. B., & Saulawa, M. A. (2013). Crowding in or crowding out? Government spending and private investment: The case of Nigeria. *European Scientific Journal*, *8*(28) 9 – 22.

Blejer, M.S & Khan, M.S. (1984). Government policy and private investment in developing Countries. *IMF Staff Papers, 31*(2), 379-403.

Cameron, S. (2005). *Making regression analysis more useful.* Maidenhead: McGraw Hill Higher Education.

Debrun, X., & Kinda, T. (2013). *That Squeezing Feeling: The Interest Burden and Public Debt Stabilization.* IMF Working Paper No. WP/13/125.

Dickey, D. A., & Fuller, W. A. (1979). Distribution of the estimators for autoregressive time series with a unit root. *Journal of American Statistics Association, 74*, 427-31.

Fuller, W. A. (1976). *Introduction to statistical time series*. New York: Wiley.

Gillis, M., Perkins, D. W., Roemer, M., & Sodgrass, D. R. (1987). *Economics of development* (2nd ed). London: Norton.

Granger, C. W. J., & Newbold, P. (1974). Spurious regressions in econometrics. *Journal of Econometrics, 2,* 111-120.

Greene, W. H. (2008). *Econometric Analysis*. 6th ed. Upper Saddle River, NJ: Prentice Hall.

Hacker, R. S., & Hatemi, A. (2008). Optimal lag-length choice in stable and unstable VAR models under situations of homoscedasticity and ARCH. *Journal of Applied Statistics, 35*(6), 601–615.

Hatemi, A. (2004). Multivariate tests for autocorrelation in the stable and unstable VAR models. *Economic Modelling, 21*(4), 661–683.

Hendry, D. F., & Juselius, K. (2000). Explaining cointegration analysis: Part I. *Energy Journal 21*, 1–42.

Hicks, J. (1937). Mr. Keynes and the classics: A suggested interpretation. *Econometrica, 5*,147-59.

Hudson, M. (2011). How economic theory came to ignore the role of debt. *Real-World Economics Review, 57*, 2–24.

Jafri, M. K., & Habib, H. (2013). *Impact of external debt service payment on the investment of Pakistan*. Proceedings of 2nd International Conference on Business Management December, Karachi (ISBN: 978-969-9368-06-6).

Kamundia, S. W. (2015). *The effects of public debt on private investments and economic growth in Kenya (1980-2013)*. Unpublished master of economics project, Kenyatta University, Nairobi.

Keynes, J. M. (1936). *The general theory of employment, interest and money*. New York: Oxford University press.

Kibiwot, M. I., & Cheruiyot, K. S. (2012). Effects of Fiscal Policy on Private Investment and Economic Growth in Kenya. *Journal of Economics and Sustainable Development, 3*(7), 8 – 16.

Kiptui, M. (2005). *Impact of fiscal policy on private investment in Kenya.* Institute of Policy Analysis and Research discussion paper No. 066/2005. Nairobi: IPAR.

Kormendi, R. C. (1983). Government debt, government spending and private sector behaviour. *American Economic Review*, *73*, 994-1010.

Long, J., & Plosser, C. (1983). Real business cycles. *Journal of Political Economy*, *91*, 39-69.

M'Amanja, D., & Morrissey, O. (2005). *Fiscal policy and economic growth in Kenya*. Credit Research Paper, 05/06.

Maingi, J. N. (2010). *The impact of government expenditure on economic growth (1963-2008).* Unpublished PhD thesis, Kenyatta University, Nairobi.

Matwang'a, L. F. (2000). *Determinants and constraints to private investment: The case of Kenya*. Dakar: Africa institute for Economic and Development and Planning.

Mugenda, O. M., & Mugenda, A. G. (2003*). Research methods: Quantitative and qualitative Approaches*. Nairobi: Acts Press.

Nielsen, B. (2005). *Analysis of co-explosive processes*. Econometric Theory Discussion paper No. 34. Nuffield College.

Njuru, S. G., Ombuki, C., Wawire, N., & Okeri, S. (2014). Impact of Government Expenditure on Private Investment in Kenya. *Research Journali's Journal of Economics, 2*(8), 1-19.

Otieno, J. M. (2015). *Total debt servicing and macroeconomic performance in Kenya.* Unpublished master of economics project, Kenyatta University, Nairobi.

Oyieke, S. O. (2011). *Government Capital Spending and Financing and its Impact on Private Investment in Kenya: 1964-2006.* AERC Research Paper 236, African Economic Research Consortium, Nairobi.

Pereira, M. & Andraz, J. (2005). Public investment in transportation and infrastructure and economic performance in Portugal. *Review of Development Economics, 9*(2), 177-96.

Rebelo, S. (2005). Real business cycle models: Past, present and future. *Scandinavian Journal of Economics, 107*(2), 217-38.

Republic of Kenya, (1994). Sessional Paper No. 1 of 1994 on Recovery and Sustainable Development. Nairobi: Government Printer.

Republic of Kenya, (2009). *End term review of the economic recovery strategy for wealth Creation (ERS) 2003 – 2007*. Nairobi: Government Printer.

Republic of Kenya. (1986). *Sessional paper No.1 of 1986 on economic management for renewed Growth*. Nairobi: Government Printers.

Republic of Kenya. (2002). *Economic survey*. Nairobi: Government Printer.

Republic of Kenya. (2007). *Kenya Vision 2030*. Nairobi: RoK.

Spencer, R. W. & Yohe, W. P. (1970). *The 'Crowding Out' of Private Expenditures by Fiscal Policy Actions*. Federal Reserve Bank of St. Louis Review, October, 12-24.

Word Bank. (2013). *Data and indicators, Kenya*. Nairobi: World Bank.

Word Bank. (2016). *Data and indicators, Kenya*. Nairobi: World Bank.

World Bank. (1995). *Trends in developing countries*, Washington DC: IMF.

World Bank. (2007). *African Data Base CD-ROM*. Washington DC: World Bank.

APPENDIX: DATA COLLECTION GUIDE

Data for Private Investment and government spending (1964-2014) in Million Ksh.

YEARS	It	Rx	Cx	D	It
1964					
1965					
1966					
1967					
1968					
1969					
1970					
1971					
1972					
1973					
1974					
1975					
1976					
1977					
1978					
1979					
1980					
1981					
1982					
1983					
1984					
1985					
1986					
1987					
1988					
1989					
1990					
1991					
9192					
1993					
1994					
1995					
1996					
1997					
1998					
1999					
2000					
2001					
2002					

2003					
2004					
2005					
2006					
2007					
2008					
2009					
2010					
2011					
2012					
2013					
2014					

Key:

It = Private investment

Rx = Recurrent expenditure

Cx= Capital expenditure

I = Interest payments on debt

D = Debt repayment