

**EFFECT OF GOVERNMENT BORROWING ON PRIVATE  
INVESTMENT IN KENYA**

**BY**

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## DECLARATION

This project is my original work and has not been presented to any other university for degree award.

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## **DEDICATION**

To the members of the family, thank you for the support I received

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## **LIST OF ABBREVIATIONS AND ACRONYMS**

**CBK:** Central Bank of Kenya

**CPI:** Consumer Price Index

**GDP:** Gross Domestic Product

**KRA:** Kenya Revenue Authority

**SPSS:** Statistical Package for Social Sciences

**PI:** Private Investment

**GB:** Government Borrowing

## ABSTRACT

Kenya has experienced a consistent increase in borrowing by the government to finance an ever increasing budget. However, the focus of government borrowing in Kenya has shifted from external to domestic markets including commercial banks and pension funds. This increased domestic borrowing by Kenyan government has resulted into debates among policy makers since lending institutions have preferred to lend to the government as opposed to the private sector. It was therefore important to determine the interaction between government debts and private investment in Kenya. The adopted design was descriptive and quarterly data was gathered over a time year period (2009-2018). The information collected was analyzed using SPSS tool with help of means, standard deviation, and correlation and regression analysis. It was shown that government borrowing and interest rate as control variable significantly predict private investment. The study concludes that government has mixed but significant effect on private investment based on whether it is domestic or external borrowing. The study recommends the need to have a ceiling on the maximum external debt that the government should borrow. There is need for effective monetary and fiscal policies by the Central Bank and the National Treasury to stabilize the fluctuations in inflation rates hence boosting private investment. The conceptual limitation of this study was informed by the fact that it focused on bringing out the interaction between government borrowing and private investment. Theoretically, the study was limited to Crowding out Theory, the Ricardian Equivalence Theory and the Keynesian theory. Methodologically, the study used secondary sources of information that was gathered on a quarterly basis over a ten year period (2009-2018). The study recommends further research to be conducted on say foreign direct investment aside from private investment which is more broad and general. Further research is also required across the member countries of say East Africa Community (EAC) for comparative purpose. It is important for further studies to be conducted in emerging economies like Somalia and the advanced economies like USA for the sake of comparison of the results. Such comparative studies should employ more advanced and complex methods of analysis including the use of time series as well as panel data methodologies since the data involved shall be so huge.

# CHAPTER ONE: INTRODUCTION

## 1.1 Background of the Study

Government borrowing has emerged as one significant fiscal method that helps in mobilization of resources for economic growth especially in emerging economies. Most governments in developing economies resort to borrowing as a way of financing budget deficit. Government borrowing is justified on ground that taxation alone cannot result into adequate amount for funding national budgets (Putunoi & Mutuku, 2013). It is worthwhile to note that any increase in government spending would bring about budget as well as fiscal deficit which can partly be financed through government borrowing. However, the effect of too much borrowing by the government on private investment has emerged as a contagious issue among scholars. There exist two conflicting views on the effect of government borrowing on private investment. While one school of thought argues that government borrowing drives up interest rate (crowd-in effect), others argue that too much government borrowing shrinks credit to the private sector (crowd-out effect). These conflicting views on government borrowing and its effect on private investment have remained unresolved with inconclusive findings (Barik, 2013).

Theoretically, the effect of government borrowing on private investment can be explained by three theories; the crowding out effect theory, the Ricardian Equivalence Theory and the Keynesian Theory. According to the Crowding Out effect Theory, a rise in government borrowing reduces the amount of credit that lending institutions give out to private sector hence resulting into a negative relationship. On the other hand, the Ricardian Equivalence Theory argues that a rise in government spending results into increased borrowing but leads to identical changes in private savings without any impact on real economy of the country (Gibendi, 2014).

In other words, the real economy (private investment) of the country does not depend on the choice of budget financing adopted by the government that is whether by borrowing or taxation (Ricardo, 1817/1951). Under this Ricardian Equivalence, no crowding out effect would result from government borrowing because individuals will be forced to lower their consumption which increases saving (Carrasco, 1998). The Keynesian Theory argues that during time of recession, government borrowing plays an important role by encouraging more savings and investments which restore the economy back on track (Keynes, 1935).

The statistics from the Central Bank of Kenya confirm that government borrowing has been on a rising trend for the past decade. For instance, for the financial years 2016/2017 and 2017/2018; there was a rise in domestic debt by the government by Kshs. 142.6 billion to stand at Kshs. 2.692 trillion (CBK, 2018). This increase in government borrowing particularly from domestic markets including the banking institutions has adversely affected the private sector as it regards accessibility to credit facilities. For instance, in a twelve month period up to February 2019, there was a marginal growth in credit to private sector by only 3.4% which is much far below 12-15% that is considered as ideal for the growth of the economy (National Treasury, 2018). There has been a sharp increase in government borrowing reaching as high as extending over a 50% mark, raising concerns on repayment ability (CBK, 2018). The government's appetite for borrowing from domestic is likely to increase in future given the inconsistent failure of the Kenya Revenue Authority (KRA) to meet revenue collection targets hence a perpetual budget deficit that requires debt financing. In this current financial year, the target for domestic borrowing stands at Kshs. 310 billion while Kshs. 321.5 billion is to be obtained from external creditors in order to meet the Kshs. 635 billion fiscal deficit.

### **1.1.2 Government Borrowing**

Borrowing occurs when some money is taken with an expected repayment period in future. Government borrowing simply refers to debts taken by the state to finance the budget. Kerrow (2014) defines government borrowing as the legal obligation of state to pay back the principal as well as interest amount to holders of predefined rights based on a given schedule. Government borrows whenever there is a shortfall between current revenues against public expenditure bringing about budget deficit. Budget deficit occurs whenever there is an increase in government expenditure relative to the available income or when there are short falls in tax revenue collection by the agency in charge (Maji, Okon & Denies, 2013).

Government borrowing can be classified into a number of categories based on maturity, source as well as productive and unproductive. Based on maturities, government borrowing can be clarified into short, medium as long term borrowing. Short term borrowing takes a period of less than a year and it include the use of T-bills and T-bonds. Medium term borrowing covers securities with the time frame of 1-5 years (Tan et al., 2016). Additionally, long term borrowing covers instruments with a maturity over 5 years for instance the T-bonds. These securities are usually offered in capital market with relatively higher interest rates as compared to medium and short term borrowing. According to source, borrowing can either be internal or external. Unlike internal borrowing, external borrowing has an influence on national income of a country (Bonomo, Brito & Martins, 2015). Productive borrowing is done with the aim of funding construction of projects like irrigation that ultimately contribute to the productive capacity of the country. On the contrary, unproductive borrowing is done with the aim of funding activities that do not add to the productive capacity of the country for instance in support for famine or war (Kirchner & van-Wijnbergen, 2016).

### **1.1.2 Private Investment**

The term invest is the addition to the available stock of assets and machinery that would generate returns. It is the commitment of funds in long term projects that would maximize the wealth of the investors. From the Economics point of view, investment is influenced by saving which depends on the level of consumption. Private investment therefore describes a set of projects other than the government that spur the growth of the economy (Suhendra & Anwar, 2017).

Private investment creates wealth of the country as a whole. Besides being a catalyst for the growth of economies, private investment shape and influences the productive capacity of the country (Hildreth, 2016). In any country, the private sector plays a critical role as far as the growth of the economy is concerned. Among other things, the private sector creates employment for people while supporting domestic consumption by producing the required goods and services. Private investment is largely supported by private borrowing which is key for the entire private sector (Stowell, 2017).

### **1.1.3 Government Borrowing and Private Investment**

The link between the ability of the government to borrow and private investments has been a subject among scholars and has offered inconclusive results theoretically and empirically. For instance, Ayturk (2017) found out that government borrowing negatively impacts on private investments. Thus, an increase in government borrowing would reduce private sector investment. On the other hand, Akomolafe et. al. (2015) and Hashibul Hassan (2015) established a direct interaction between government ability to borrow and private investment. Kingw'ara (2014)

established an inverse interaction between borrowing from domestic markets and private investments.

Theoretically, a negative relationship is expected between borrowing especially from domestic markets and private investment. When the government borrows more internally, less credit would be available to the private sector resulting into a situation called the crowding out effect. A drop in credit at the disposal for private sector would slow down private investment since it is mostly supported by borrowing (Greenwood, Hanson & Stein, 2015). These represent the classical thinking and school of thought. However, criticisms have been leveled against these neoclassical crowding out effect since it is pegged on the balance sheet of the lending institutions such that more borrowing by the government would reduce the credit available to the private sector. Yoshino and Taghizadeh-Hesary (2018) argue that this is a wrong assumption since lending institutions will usually adjust their loan portfolio to reflect the state of reality in an economy.

#### **1.1.4 Government Borrowing and Private Investment in Kenya**

In Kenya, government borrowing (especially from domestic sources) is coordinated by the Central Bank of Kenya (CBK). This is done by floatation of T-bills and T-bonds on behalf of the government. Kenya has witnessed a consistent rise in government borrowing over the past decade to finance an ever increasing budget from as a low Kshs. 1.026 trillion in 2014/2015 to as high as Kshs. 3.02 trillion for the financial year 2019/2020 (Kerrow, 2014). The latest statistics from CBK indicate that the value of debt from government borrowing was at Kshs 5.398 trillion (\$53.64bn) in February 2019 up from Kshs KSh5.146 trillion in September 2018 and Kshs.

4.57trn in December 2017 respectively. About 66% of the target of domestic debt has already been attained in Kenya with T-bill subscription at 147% (CBK, 2018).

The IMF recommends that for developing countries, the value of debts to GDP should be at around 40% and at 50% for middle income nations (IMF, 2016). This is completely against the current situation in Kenya where the ratio of debts to GDP stands at 68.9%. The current government borrowing in Kenya has shifted to domestic markets where T-bonds explain 62% while 35% is accounted for by T-bills as of the end of March, 2019 (National Treasury, 2018). At the start of January, 2019; a total of Kshs. 40 billion bond with a maturity of 15 years was issued by the government with an oversubscription of 255% (National Treasury, 2018). In February 2019, a total of Kshs. 50 billion bonds with a maturity of 10 years was further issued that attracted an oversubscription of 156% (CBK, 2018). According to Chen, He and Liu (2017), the largest investors in T-bills and T-bonds include banking institutions and pension funds.

This trend is expected to increase where the government projects to increase domestic borrowing by 46% in this financial year 2019/2020. However, the International Monetary Fund (IMF) (2019) reports that this increase in domestic borrowing will offer bank a chance to lend more to the government as opposed to lending to the private sector. This is likely to bring about crowding out effect and thus adversely affecting the private investment. For instance, for the financial year 2017/18, there was a rise in commercial bank lending to the government by 15% to stand at Kshs 1.17 trillion in the nine months to September as compared to private sector lending that only registered a growth of 2.7% standing at Kshs 2.4 trillion within the same period (CBK, 2019). This has resulted into a consistent drop in the value of private real investment in Kenya and this informs the current study.



## 1.2 Research Problem

Government borrowing is vital whenever there is a short fall in level of income against the expenditures. Government borrowing has remained a hotly contested issue in Economics and Finance literature with inconclusive evidence on how it affects private investment (Zhang, Chen & He, 2018). Empirical studies exploring the link between government borrowing and private investment have resulted into mixed findings of a , negative, significant and non-significant relationship. In theoretical terms, the link between government borrowing and private invest is even more ambiguous and confusing. Such a scenario cannot offer meaningful evidence for policy makers and calls for a clear study (Suter, 2019).

Kenya has experienced a consistent increase in borrowing by the government to finance an ever increasing budget. A number of factors have played an important role as far as government borrowing in Kenya is concerned the key ones being inability of KRA to meet revenue collection targets and an expansionary fiscal policy embraced by the government in realization of Big-4 Agenda. However, the focus of government borrowing in Kenya has shifted from external to domestic markets including commercial banks and pension funds (Rubin, 2019). This increased domestic borrowing by Kenyan government has resulted into debates among policy makers since lending institutions have preferred to lend to the government as opposed to the private sector. This situation is expected to continue in Kenya as KRA consistently fails to meet the revenue collections budgets (National Treasury, 2019).

Several studies have been carried out to explain how government borrowing affects investment. Globally, Thilanka and Ranjith (2018) studied the effect of public debt on private investment using a case of Sri Lanka. The study established a relationship between debts and investment. In

Palestine, Abdullahi, Bakar and Hassan (2016) looked at debt overhang in comparison to crowding effect and established mixed results. This study was not carried out in Kenya but in Palestine. A study conducted in China by Huang, Pagano and Panizza (2016) on public debt and its influence on private funding of firms. A significant relationship was established. In United States, Traum and Yang (2015) critically analyzed the influence of crowding out effect on the economy. These studies were however carried in other advanced countries and not in Kenya which results into research gap.

Mogaka and Ochieng (2018) looked at domestic public debt and its influence on development of the financial market using a case of East Africa as a region and established a negative relationship. Babu et al. (2015) examined the influence of domestic debt on economic growth with reference to East Africa Community where a relationship was identified. Most of these studied focused on East Africa as a whole and not specifically on Kenya. Other studies were specific on domestic debt and not the overall government borrowing. At the same time, other studies related borrowing or government debt with economic growth and not specifically on private investment therefore resulting into conceptual gap.

Thus, some of the studies were done in other developed countries including the USA, China and Sri Lanka and not in Kenya. The local studies cover the entire East Africa region and not specifically Kenya. Other studies conceptually focus on economic growth and not private investment while others look at the specific government debt like domestic and not government borrowing in general. These results into gaps that the present study sought to fill by answering the following research question; what is the effect of government borrowing on private investment in Kenya?

### **1.3 Research Objective**

To determine the effect of government borrowing on private investment in Kenya

### **1.4 Value of the Study**

The findings of the study would be important to the Central Bank of Kenya, the National Treasury, lending institutions in Kenya including commercial banks as well as future scholars and academicians. The CBK is responsible for issuance of T-bills and T-bonds on behalf of the government. The findings of the study would be important in informing development of sound policies on the basis of the interaction between government borrowing and private investment.

The National Treasury would rely on the findings of the study as they collaborate with CBK to formulate fiscal and monetary policies that would stabilize the growth of the economy as a whole. The management team of all lending institutions in Kenya including the commercial banks will benefit from the findings of the study as they mobilize funds for the government as well as the private sector.

The study would add to the existing literature on government borrowing and private investments. The study would enhance the available theories exploring the interaction between government borrowing and private investment. Future scholars would leverage on this study to carry similar studies in future or in review of literature.

## **CHAPTER TWO: LITERATURE REVIEW**

### **2.1 Introduction**

This chapter reviews relevant theories that help in explaining the relationship between government borrowing and private investment. The chapter also looks at the determinants of private investment with a review of past empirical studies. The conceptual framework is provided that links government borrowing and private investment.

### **2.2 Theoretical Review**

A theoretical review focuses on theories that inform a study which help in explaining the interaction between the variables. The study will be guided by the following theories; the Crowding out Theory and the Ricardian Equivalence Theory.

#### **2.2.1 The Crowding out Effect Theory**

The neoclassical advocates including Smith, Ricardo, Marshall and Pareto are among the key proponents of the crowding out effect theory in early 1920s. The crowding out effect theory reflects the views of the neoclassical school of thought. The theory argues that lending to the government by banking entities reduces the available credit for the private sector (Swianiewicz, 2004). Commercial banks and other lending institutions may have strong preference to lend to the government as compared to the private sector because it would be improbable for the government to default on repayment. The theory indicate that crowding out brings about a reduction in individual consumption since it increases the level of spending by the government. An increase in government spending (arising from more resources from lending institutions) leads to a reduction in individual spending pattern (Pan, Zhang, Zhu & Wójcik, 2017).

Although the decision of the government to loan from external sources may not have an influence on interest rates as it would with a domestic borrowing decisions, there is however a possibility of it affecting private capital formation (Beaugrand, Loko & Mlachila, 2012). According to Gray and Woo (2010) and Were (2011), external debt just as domestic debts also has a crowding out effect on economy. Based on this theory therefore, a negative relationship is expected between government borrowing and private investment.

### **2.2.2 Ricardian Equivalence Theory**

The Ricardian Equivalence Theory was advanced by Ricardo in 1900c and it argues that government borrowing has no influence on crowding out effect in an economy. According to Barro (1974), the ability of the private sector to hold on government bonds is not a reflection of the net wealth of the households. Thus, it does not in any way affect private consumption. The theory argues that efforts to increase government borrowing (hence government expenditure) result into growth in personal savings which affect the real economy of a country. This however does not in any way affect the real interest rates in an economy. This is informed by the fact that the expenses of the government may be funded with the help of current taxes or issue bonds to get funds (Hamilton & Flavin, 1985).

In the process that bonds have been issued by the government, the debt will later be paid by an increase in taxes in future. Hence, the key decision remains as to whether tax would apply now or in future. The theory is premised on a number of issues; first, it is assumed that the country has a perfect capital market. This assumption does not apply in the real world. It is also assumed that people will offset future taxes by increasing their savings when there is a high budget deficit because of being rational. This however does not hold for in most cases, individuals usually

consume all their incomes by spending on expenses with low saving especially in poor countries (Allen & Smith, 1983).

It is also assumed that there is a constant growth in population of the country. The time horizon is also taken to be infinite under this Ricardian equivalence theory. It also assumes that the future burden of servicing government debt is borne fully by those who initially received the tax cut. The last assumption of the theory is that there are no distortionary taxes in an economic system. These assumptions have been a subject of criticisms to the theory since some of them do not hold in reality. On the basis of this theory, a relationship is predicted between government borrowing and private investment (Haug, 1991).

### **2.2.3 Keynesian Theory**

The Keynesian Theory was advanced by Keynes (1935) and it argues that there are some micro-economic level actions which when collectively undertaken by individuals as well as firms may result into distortion of some macro-economic variables. This happens particularly in situation that the economy is underperforming below its actual growth and output levels. Most Keynesian proponents argue for active stabilization policies with the aim of reducing business cycles which are ranked as significant issues facing economies (Mankiw, 1992). According to Keynes (1935), Great Depression could have been solved when economies could have been stimulated through use of two means; reducing the interest rates as well as government expenditure.

Government expenditure through infrastructure projects results into increased flow of income and revenues to the economy. This would in turn increase production and investments (Keynes, 1935). From the first stimulation, a series of events ensue that aim at expanding the level of economic activities and investment, through the multiplier effect. According to Keynesians, the

government financed investments should be backed by borrowing either internally or externally. Hansen and Perloff (1963) productive government borrowing are associated with an improvement and growth of economies. Keynes (1935) argues that government borrowing is particularly of essence whenever the economy is deemed to be in recession. This is a period where the level of investment in the economy is very low, with an increase in unemployment rates and the growth of the economy is relatively low because the level of aggregate demand is very low.

By borrowing, the government is able to generate streams of saving, ensure that the resources raised from debts are used productively in financing investment projects and this is likely to grow the economy (Maji et al., 2013). The government is able to generate more revenues from taxes due to steady flow of incomes and thus servicing of debts because easier. During the time when the rate of unemployment is very high, an increase in government borrowing result into formation of capital while checking on consumption levels with a possibility of increased savings and investments. However, Keynes (1935) indicates that governments should exercise care in the use of borrowing since it may result into crowding out effect. The relevance of this theory to the study is that it provides argument for the need for government borrowing but at the same time gives a precaution of not having too much debt as it may lead to crowding out effect.

### **2.3 Determinants of Private Investment**

This section reviews factors that determine private investment.

### **2.3.1 Domestic Inflation Rate**

Inflation is an important factor influencing private investments in an economy. In as much as moderate inflation is a pre-requisite for profitable survival of the business, an increasingly high rates inflation results into economic instability in an economy. According to Oshikoya (1994), higher inflationary pressure particularly in developing countries is strongly associated with reduction in private investment. This is because an increase in inflation lowers the value of money which in turn affect saving and by extent investment. Inflation can be measured using various indicators but the common one is the consumer price index. Inflation can be measured on a monthly, quarterly, half-yearly and annual basis (Hasnat & Ashraf, 2018).

### **2.3.2 Interest Rate**

Interest rate is the cost of borrowing funds from a lending institution and it has an effect on private investment in an economy. In particular, interest rate has an effect on the savings and the available credit among lending institutions (Das, 2017). There are several types of interest rates including those on government securities (T-bills and T-bonds), the one charged on deposits and well as withdrawals by commercial banks. In particular, the interest charged on government securities is believed to be risk free as compared to other interest rates. Interest rate on government securities usually vary based on maturity dates (Sorensen & Jagannathan, 2015).

### **2.3.3 Availability and Access to Credit Facilities**

Credit facilities from lending institutions are an important driver of private investment in a country. The amount of credit that is at disposal to private borrowers in the private sector has a



direct influence on private investment. However, availability of credit facility to the private sector is majorly inhibited by too much borrowing from the government.

### **2.3.4 Government Borrowing**

Any fiscal deficit irrespective of how they are financed has an influence on private investment. Financing of any fiscal deficit can be conducted through external as well as domestic sources and all these have been established to have an adverse influence on private investment especially among developing economies. Fiscal deficits that are financed by the use domestic borrowing result into an increase in interest rate while lowering the amount of loanable funds at disposal by the private sector (Thornton & Vasilakis, 2018).

An increase in interest rate will have an adverse influence on private investments since it increases the cost of capital while discouraging people to borrow for the purpose of investment. On the other hand, financing government deficit with the aid of external borrowing results into spill over into external account deficit which bring about depreciation of real exchange rates, debts as well as balance of payment crisis. External debts can be measured by debt to export ratio, ratio of external debt to exports and the ratio of external debt to GDP of the country (ADB, Furceri & IMF, 2016).

## **2.4 Empirical Literature Review**

In Sri Lanka, Thilanka and Ranjith (2018) examined the influence of public debt on private investment. The study collected secondary data on an annual basis covering the time horizon from 1978 all through to 2015. A number of econometric steps were adopted by the study including the use of unit root test, co-integration as well as the application of Vector Error

Correction Model. All these were conducted to establish whether public debt has a long term influence on private investment. The empirical results confirmed that use of debts results into crowding out effect for private investors. The study was however carried out in Sri Lanka and not in Kenya hence creating a research gap.

Among developed European countries, Ayturk (2017) was interested in establishing how government borrowing influences corporate financing. A total of 15 developed European countries were sampled out and covered by the study. Data was secondary in nature and it was collected covering a time horizon from 1989 all through to 2014. Panel data methods were employed in analysis of the study. The results indicated that government borrowing has a negative and significant link with corporate debt. On the other hand, the study failed to establish a connection between government borrowing and the use of equity. This study was done in European countries and not in Kenya.

In Nigeria, Okorie (2013) studied how private sector credit influences private domestic investment. The study employed error correction model technique in analysis of the findings. Data for the study was gathered from secondary sources and it was documented that a rise in private sector credit has no influence on domestic investment of the country. This study was however carried out in Nigeria and not in Kenya. In Egypt, Al-Majali (2018) looked at the crowding out effect resulting from public borrowing. The study used co-integration to attain the formulated objective. It was established that government borrowing from domestic markets is key factors bringing about crowding out effect in an economy. The study was conducted in Egypt and not in Kenya.

Tkačevs and Vilerts (2019) used a case of OECD and 11 early euro area countries to establish how government borrowing influences the growth of the economy. Secondary data was collected covering the time horizon from 1985 all through to 2015. The study established a significant link between government borrowings has influence on economic growth. A study in India by Das (2017) sought to determine how debt dynamics in the borrowing by the government. The study adopted panel data method of analysis. Data for the study was collected from secondary sources and the time frame was from 1980 all through 2013. The study established that government borrowing has far reaching effect as far as the growth of the economy is concerned. In Portugal, Silva (2018) looked at external debt and its influence on the growth of the economy. Data for this study was secondary in nature and its collection covered a time horizon of 1999 all through to 2014. The findings from the analysis indicated that external debts by the government has a influence on growth of the economy.

While using panel data from countries in OECD, Salotti and Trecroci (2016) analyzed how government debt influences the growth of investment and production capacity. Secondary data was gathered covering a time horizon from 1970 all through to 2009. The findings indicated that an increase in government borrowing has an adverse effect on private investment. In Mexico, Sánchez-Juárez and García-Almada (2016) looked at public debt and its influence on the growth of the economy. The study used panel data methodology were secondary data was gathered covering a time horizon from 1993 all through 2010. These data was gathered from a total of 32 states in Mexico. The study established correlation between government borrowing and private investment.

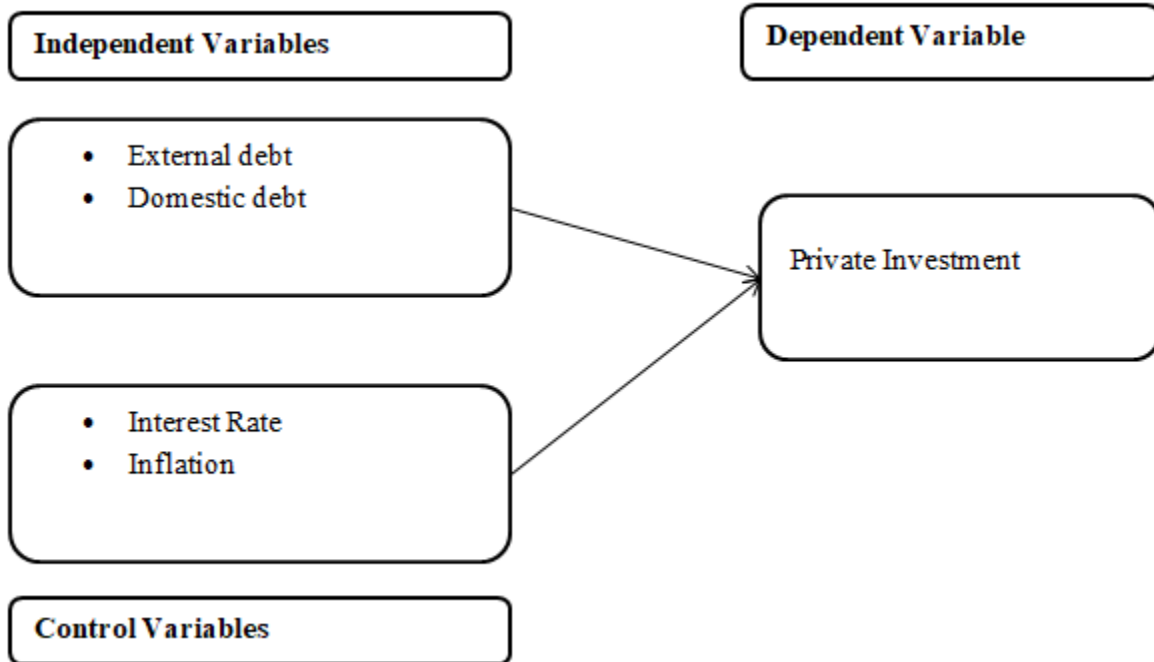
Bista (2013) studied the influence of domestic borrowing by the government on private investment with reference to Nepal. The study variables include private investment, rates of

interest, lending to the private sector by commercial banks and economic growth. Time series data methods were used with data collected on an annual basis. The time horizon for collection of data was 1975 all through 2011. Autoregressive Distributed Lag (ARDL) and error correction models were used in establishing short as well as long term effect between the study variables. It was shown that domestic borrowing by the government is negatively correlated with private investment.

Mogaka and Ochieng (2018) looked at domestic public debt and its role in development of financial markets. The study used a case of East Africa region as a whole where Kenya was covered. The type of design adopted was descriptive and data was sourced from secondary sources including CBK and KNBS. Data collection covered a period from 2012 all through to 2016. The findings showed that domestic government borrowing has negative effect on development of financial markets. This study however not only specifically focused on Kenya but also covered other countries across East Africa region.

Babu, Kiprop, Kalio and Gisore (2015) did a study to determine how domestic debt influences the growth of economy among east African countries. Empirically, the study sought to determine the role played by domestic debt measured as a percentage of GDP influences the growth of an economy. Data was gathered from secondary sources and the time horizon was 1990 all through to 2010. The findings confirmed that domestic debt has a significant link with the growth of an economy. Just like the previous study, this study also covered East African countries where Kenya was included.

## 2.5 Conceptual Framework



**Figure 2.1: Conceptual Framework**  
Source; Author (2019)

## 2.6 Summary of Literature Review and Research Gaps

The study gaps are indicated in Table 2.1.

**Table 2.1: Summary of Literature Review and Research Gaps**

Author	Study	Research Methodologies	Key Findings	Research Gaps	How to Address Gaps
<u>Tkačevs and Vilerts (2019)</u>	government borrowing influences the growth of the economy	Secondary data was collected	There is a positive and significant link between government borrowings has positive influence on economic growth	The study was done on economic growth and not specifically in private investment	The current study will focus on private investment
<u>Mogaka and Ochieng (2018)</u>	domestic public debt and its role in development if financial markets	Descriptive design	domestic government borrowing has negative effect on development of financial markets	The focus of the study was on government borrowing and financial markets and not private investments	The current study will cover both external and domestic debts
<u>Thilanka and Ranjith (2018)</u>	The influence of public debt on private investment. In Sri Lanka	Unit root test, co-integration as and Vector Error Correction Mode	use of debts results into crowding out effect for private investors	The study was carried out in Sri Lanka and not in Kenya	The present study will be done in Kenya covering both external and public debt
<u>Al-Majali (2018)</u>	Crowding out effect resulting from public borrowing in Egypt	co-integration used	government borrowing from domestic markets is key factors bringing about crowding out effect in an economy	The study was done in Egypt and not in Kenya	The current study will focus on the Kenyan economy
<u>Ayturk (2017)</u>	how government borrowing influences corporate financing	Panel data methods	Government borrowing has a negative and significant link with corporate deb	The study linked government debts and corporate financing and not specifically private investment	The focus of the present study will be government borrowing and private investment

**Source; Author (2019)**

## **CHAPTER THREE: RESEARCH METHODOLOGY**

### **3.1 Introduction**

The chapter details the kind of design the study will adopt. It also covers the respondents to be targeted, how information was sought and the steps to be followed in processing the sought information.

### **3.2 Research Design**

The adopted design goes a long way to determining the means of gathering the views of the respondents (Astalin, 2013). A descriptive design was adopted where the collected data from the field was quantitative in nature.

### **3.3 Population**

The study aimed at determining the influence of government borrowing on private investment. This study focused on the economy of Kenya as a whole. The study was conducted on a ten-year period (2009-2018) with collection of quarterly data hence a total of 40 data points were used.

### **3.4 Data Collection**

The study collected secondary data that shall be collected using data collection sheets. Secondary data was collected on a quarterly basis and it was gathered on inflation, lending interest rate, external debt, domestic debt as well as private investment. Data on private investment and inflation was collected from KNBS while CBK reports and the National Treasury were used in collection of data on lending interest rate, external debt and domestic debt. The data was

collected on ten-year period (2009-2018). The study utilized quarterly data which was readily available at KNBS and the National Treasury as well as the CBK.

### **3.5 Data Analysis**

The analysis began by coding data into SPSS. Descriptive statistics were computed whereby means and standard deviations were clearly shown in form of both tables and figures. A regression model was used to determine the interaction between government borrowing and private investment. The study also used correlation analysis to determine relationship between variables.

#### **3.5.1 Model Specification**

The study model was shown below;

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \mu_{it}$$

Where Y is = Private investment (Natural logarithm of quarterly Private Investment)

$X_1$  = External debt (stock of external debt as a portion of imports)

$X_2$  = Domestic debt (stock of quarterly domestic debt as a ratio of GDP)

$X_3$  = Interest Rate (quarterly lending by commercial banks)

$X_4$  = Inflation (quarterly Consumer Price Index CPI)

$\beta_0$  = Constant and  $\mu_{it}$  is the error term



### **3.5.2 Diagnostic Tests**

Normality test was done to ensure that the data set is normally distributed. It was carried out using normal PP plots. VIF helped in determining multicollinearity while Scatter plots were used to determine the presence of heteroskedasticity.

### **3.5.3 Significance Tests**

The study used the p-values of the individual variables to determine significance. In this regard, a comparison of the p-values against 5% or 0.05 was conducted. In the event that the p-values are lower than 0.05, the inference drawn was that the variable is significant while  $p > 0.05$  meant insignificant effect. The interpretation of the p-values was also accompanied by the t-test, where t-values were compared with 1.96. In the event that  $p < 0.05$ , it follows that  $t > 1.96$  hence the inference drawn was that there was significant effect.

## CHAPTER FOUR: RESEARCH FINDINGS AND DISCUSSION

### 4.1 Introduction

This chapter is established to present the findings of analysis on the secondary data that was gathered from the published reported. The study used covered a time frame from 2009 all through to 2018 which was equivalent to a period of ten years. Quarterly data was used hence a total of 40 data points were used during the analysis in this study. The data points were deemed to be adequate for carrying out inferential statistics including regression analysis. The rule thumb is usually that data points should be 30 and above for one to perform regression analysis.

### 4.2 Descriptive Statistics on Variables

The study used means and standard deviations as well as skewness and kurtosis values to describe the variables as detailed in subsequent sections.

#### 4.2.1 Means and Standard Deviations

The findings on means and standard deviations as descriptive statistics used in the study are presented in Table 4.1.

**Table 4.1: Means and Standard Deviations**

	<b>N</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Std. Dev</b>
Private Investment (billions)	40	2.07	2.78	2.42	.181
External Debts (billions)	40	5.25	21.50	10.55	4.442
Domestic Debts (billions)	40	.64	2.17	1.32	.433
Interest Rate (%)	40	12.51	20.34	15.70	2.191
Inflation (%)	40	3.30	19.20	7.72	3.799

**Source; Research Data (2019)**

From Table 4.1, the study established that private investment averaged at Kshs. 2.42 billions, external debts at Kshs. 10.55 billions, domestic debts at Kshs.1.32, interest and inflation rates at 15.70% and 7.72% respectively across the study period. The implication of these findings is that the government relies more on external as compared to domestic debts in funding the operations. Furthermore, the gains from private investment are more than the domestic debts by the government.

#### 4.2.2 Skewness and Kurtosis

The study used the values of Skewness and Kurtosis to describe the data set as shown in Table 4.2.

**Table 4.2: Skewness and Kurtosis**

	<b>N</b>	<b>Skewness</b>		<b>Kurtosis</b>	
	<b>Statistic</b>	<b>Statistic</b>	<b>Std. Error</b>	<b>Statistic</b>	<b>Std. Error</b>
Private Investment	40	-.116	.374	-.408	.733
External Debts	40	.854	.374	-.477	.733
Domestic Debts	40	.434	.374	-.928	.733
Interest Rate	40	.646	.374	-.536	.733
Inflation	40	1.475	.374	1.841	.733

**Source; Research Data (2019)**

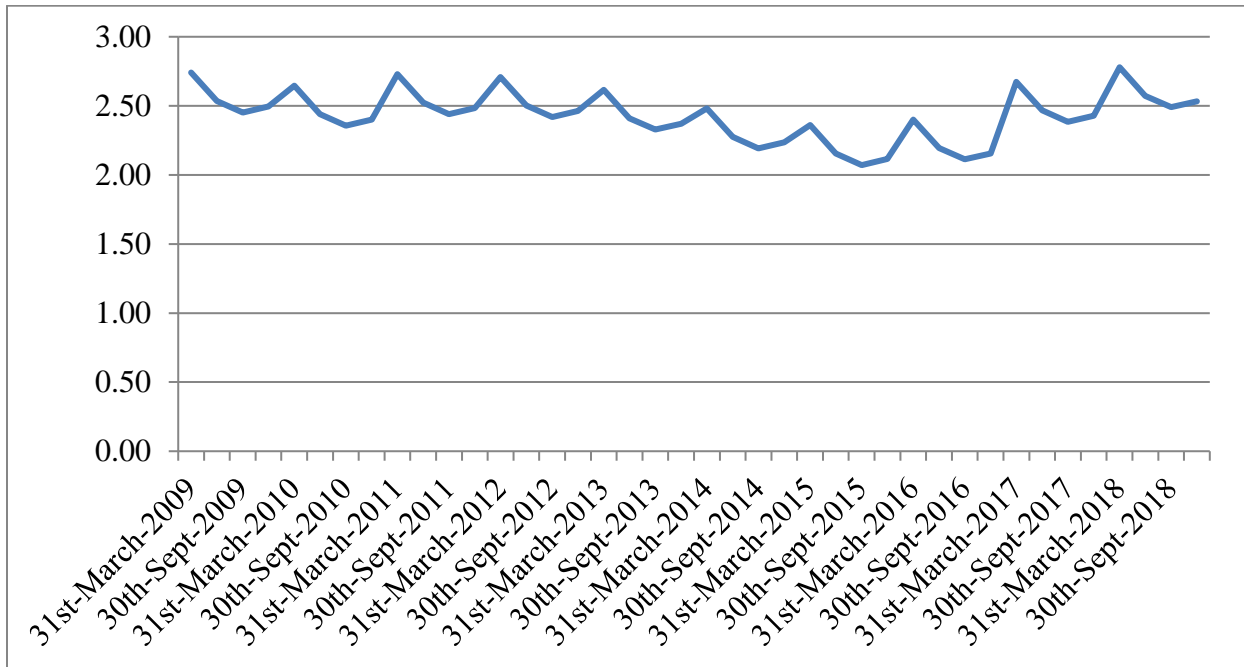
From the results in Table 4.2, private investment was negatively skewed with a negative value of kurtosis. On the other hand, external debts, domestic debts, interest rate and inflation were positively skewed with negative kurtosis except inflation. The implication of these results is that the data used the study was normally distributed. This assertion is consistent with Kothari (2004) who noted that for normal distributions, the values of kurtosis and skewness usually fall within the range of – or +2.

### 4.3 Trend Analysis

The study used graphs to illustrate the pattern and movement of the variables across the period of consideration. Thus, this section is set out to present these findings on trend analysis as informed by the variables.

#### 4.3.1 Private Investment

Suhendra and Anwar (2017) view private investment (PI) as the addition to the available stock of assets and machinery that would generate returns. It can also be viewed as the commitment of funds in long term projects that would maximize the wealth of the investors. To measure private investment, the study used the natural logarithm of all the values of private investment.



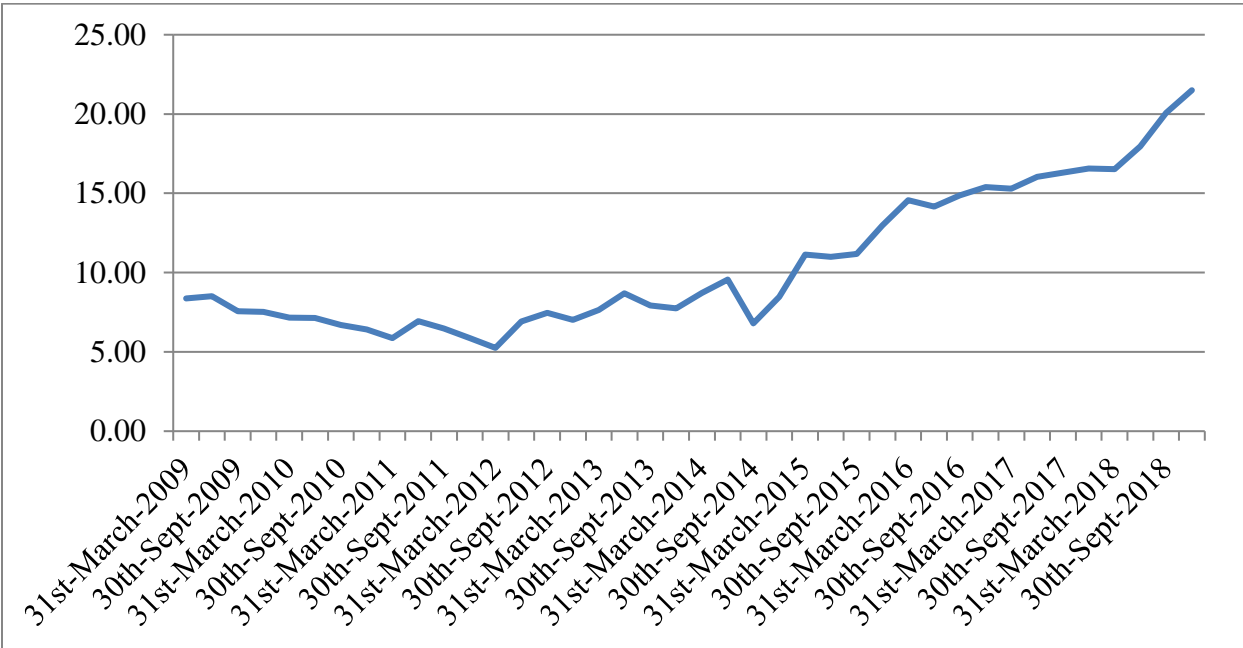
**Figure 4.1: Private Investment**  
**Source; Research Data (2019)**

From the results in Figure 4.1, there was generally stability in PI in Kenya across the period of consideration. This trend in PI could be attributed to a number of efforts made by the

government to attract investors including public private partnership programs in realization of Big-4 agendas.

### 4.3.2 External Debts

External Debts was the dependent variable in the study. Bonomo et al. (2015) noted that according to source, borrowing can either be internal or external. The study operationalized external debts as a proportion of imports. Consider Figure 4.2.



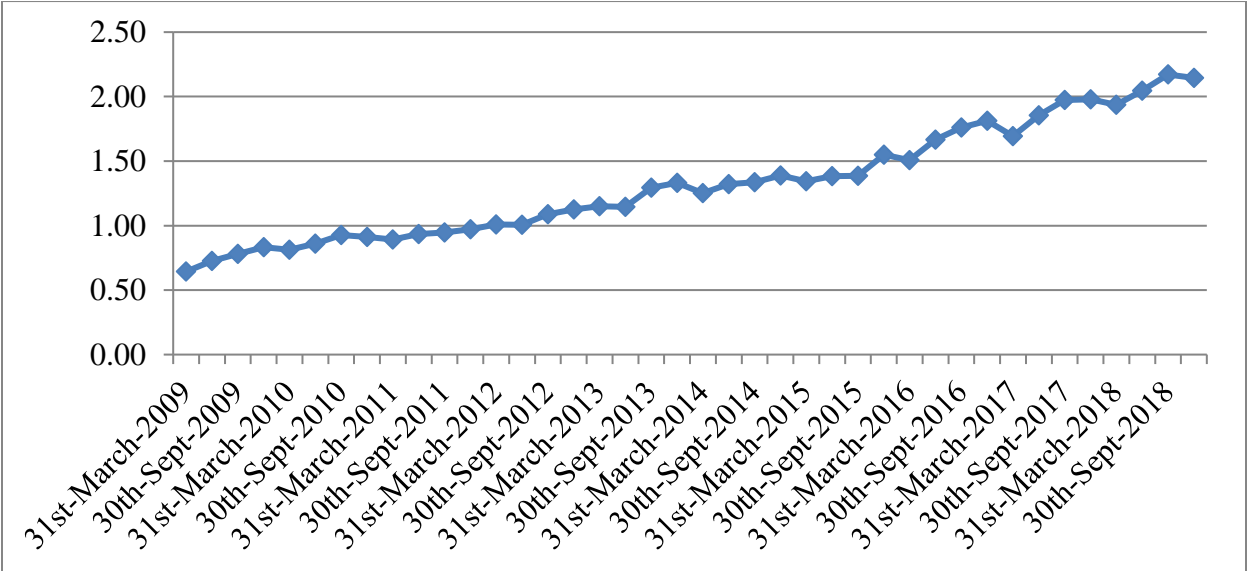
**Figure 4. 2: External Debts**  
**Source; Research Data (2019)**

Figure 4.2 indicate that external debts have consistently increased across the period. This trend is particularly true given the heavy infrastructural projects that the government has invested in including the construction of standard gauge railway as well as the medication of road systems. These findings are consistent with the statistics from the Central Bank of Kenya indicating government borrowing has been on a rising trend for the past decade. For instance, for the

financial years 2016/2017 and 2017/2018; there was a rise in domestic debt by the government by Kshs. 142.6 billion to stand at Kshs. 2.692 trillion (CBK, 2018).

### 4.3.3 Domestic Debt

Domestic debt was operationalized as domestic debt as a proportion of the national gross domestic products. Consider Figure 4.3 for results.

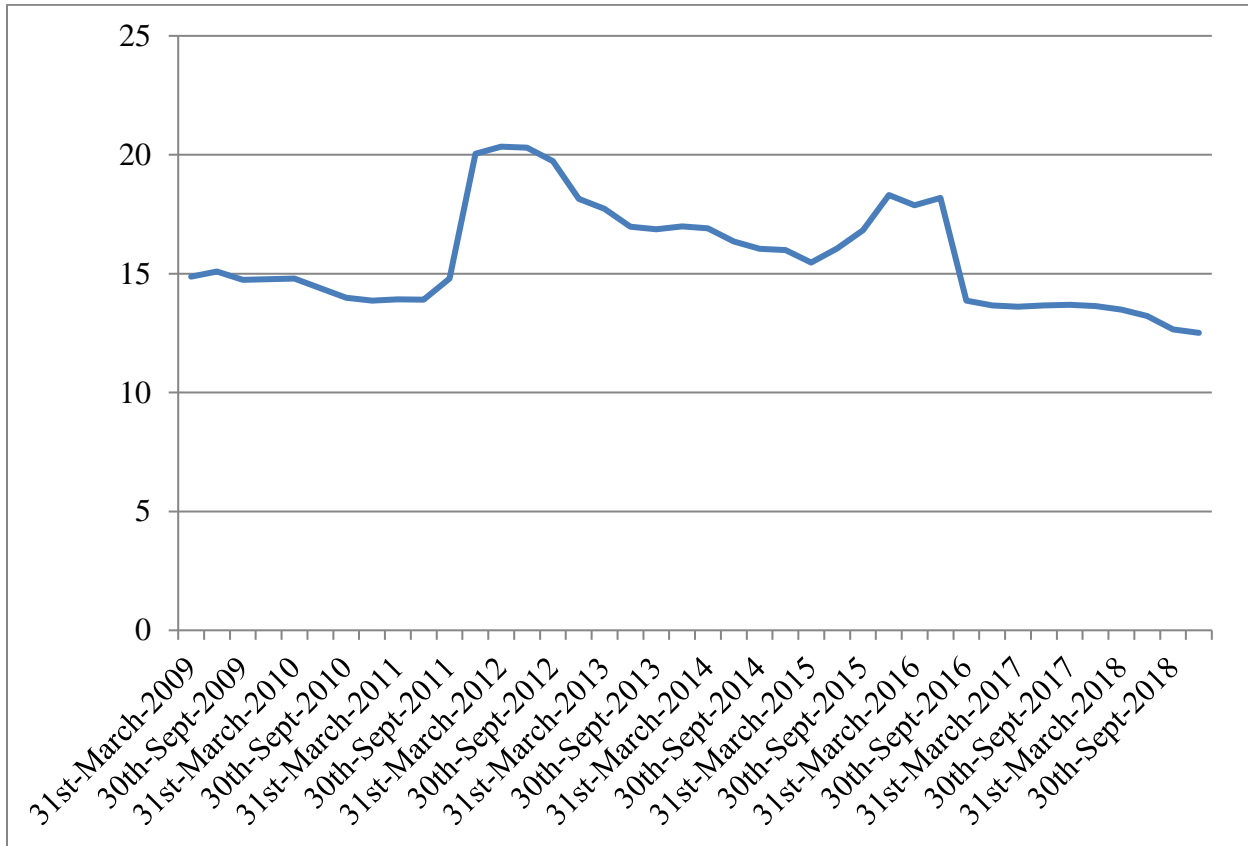


**Figure 4.3: Domestic Debt**  
**Source; Research Data (2019)**

Figure 4.3 shows that domestic debts have increased in Kenya across the period of consideration. This means that the government has relied heavily on borrowing in order to fund the projects. It is this increased domestic borrowing by the government according to Ayturk (2017) that squeezes away credit available to private sectors and thus negatively affecting private investment. However, contradictory findings were obtained by Akomolafe et. al. (2015) and Hashibul Hassan (2015) who established a direct link between debts and PI, implying that this increasing trend in government borrowing is beneficial to private investment..

### 4.3.4 Interest Rate

Interest rate was used a control variable in the study. It was determined by the interest rate that commercial banks charge on lending to customers. The findings of the movement in this interest rate across the period of consideration are indicated in Figure 4.4.

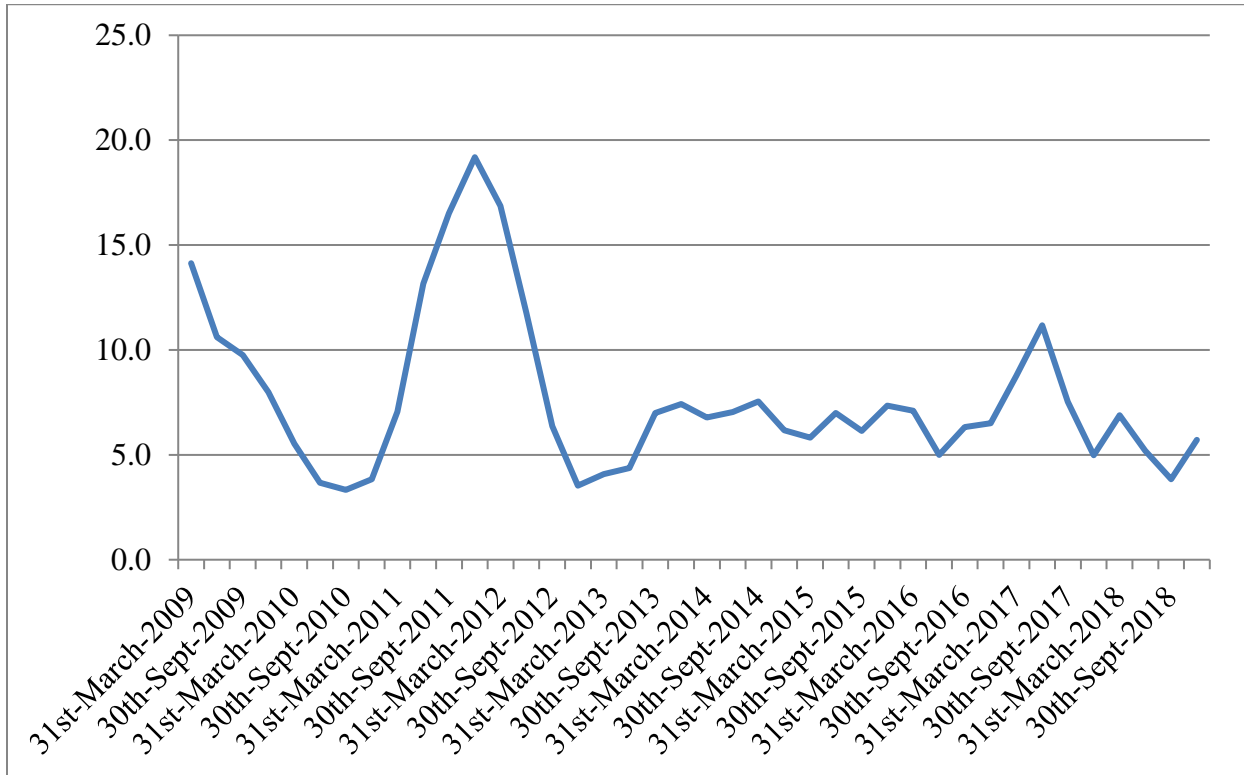


**Figure 4.4: Interest Rate**  
**Source; Research Data (2019)**

From the results in Figure 4.4, it can generally be seen that the interest rate fluctuated across the period of consideration. The most striking finding is that from the end of 2016 all through to present, interest has steadily decreased. This can be explained by the interest capping legislation that came into effect in August 2016. This legislation eliminated the previous fluctuations in interest rates among commercial banks.

### 4.3.5 Inflation

The other control variable used in the study was inflation. It was represented by Consumer Price Index. The findings of trend analysis across the study period are indicated in Figure 4.5.



**Figure 4.5: Inflation**

**Source; Research Data (2019)**

Figure 4.5 indicates that there was instability in inflation rate across the study period. This trend in fluctuation of inflation could be attributed to persistent fluctuation in prices of commodities as informed by macro-economic factors.

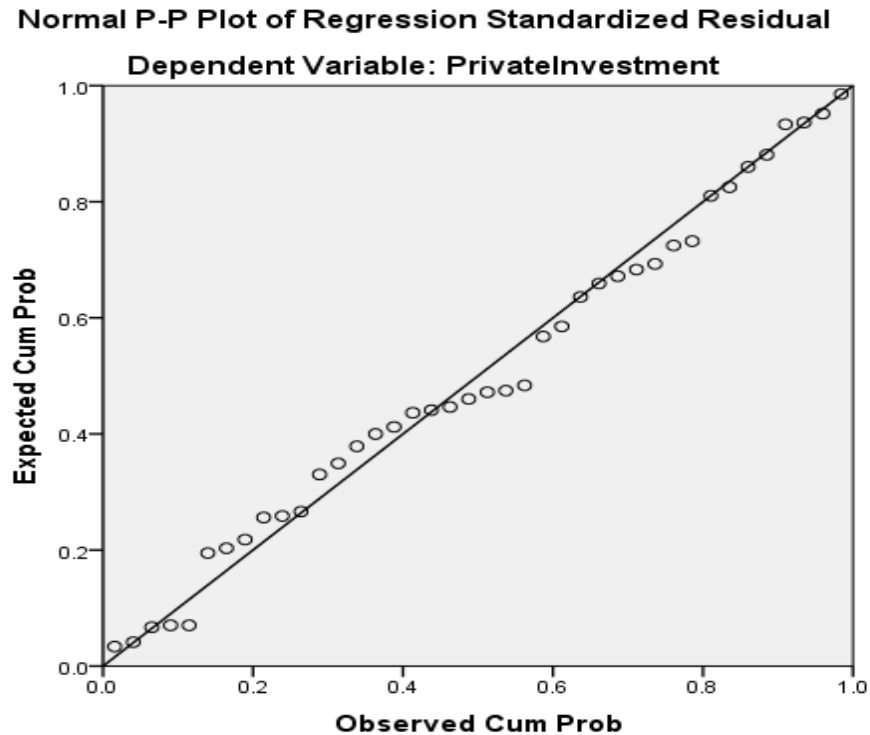
### 4.4 Diagnostic Tests

It was essential to conduct diagnostic tests before the regression analysis was conducted. This was justified and informed by the need to be sure that the data set of the study is in line with assumptions of regression analysis.



#### 4.4.1 Normality Test

The study used Normal PP plots to determine normality of the data set as presented below.

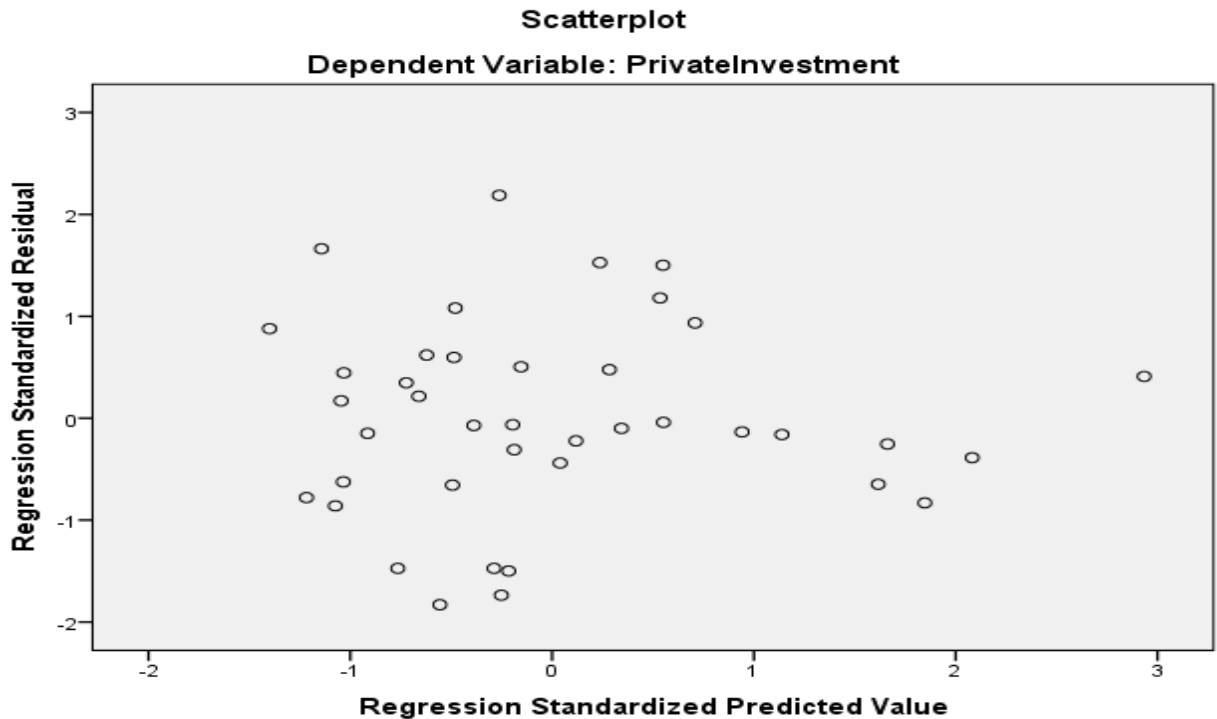


**Figure 4.6: Normal PP Plot**  
**Source; Research Data (2019)**

The inference drawn from this finding in Figure 4.6 is that the data set of the study was normally distributed, thus suitable for regression analysis and modeling.

#### 4.4.2 Heteroskedasticity Test

The findings on heteroskedasticity tests are illustrated in Figure 4.6. It was determined using Scatter Plots.



**Figure 4.7: Scatter Plots**  
**Source; Research Data (2019)**

Figure 4.7 indicates the data points of the study that are spread all over without a clearly established pattern. The deduction drawn from these findings is that the data had no heteroskedasticity and thus relevant for regression modeling as supported by Atkinson, Riani & Torti, 2016).

#### 4.4.3 Multicollinearity Test

Table 4.3 illustrates the VIF results of the study.

**Table 4.3: Multicollinearity Test**

	Collinearity Statistics	
	Tolerance	VIF
External Debts	.634	1.578
Domestic Debts	.434	2.307
Interest Rate	.407	2.457
Inflation	.824	1.214

**Source; Research Data (2019)**

From the results in Table 4.3, all the variables had VIF values of above 1 and less than 3. The rule of thumb is usually that VIF values within a range of 1-10 indicate absence of multicollinearity in the study (Vatcheva, Lee, McCormick & Rahbar, 2016). Hence, it can be shown that the data set had no multicollinearity and thus suitable for regressing.

#### 4.5 Relationship between Government Borrowing and Private Investment

In order to make appropriate inferences and deduction on the interaction between government borrowing (GB) and PI, the study used correlation analysis. The findings of the values of Pearson Correlation Coefficients (r) are indicated in Table 4.4.

**Table 4.4: Correlation Results**

		Private Investment	External Debts	Domestic Debts	Interest Rate	Inflation
Private Investment	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	40				
External Debts	Pearson Correlation	-.742**	1			
	Sig. (2-tailed)	.000				
	N	40	40			
Domestic Debts	Pearson Correlation	.423**	-.554**	1		
	Sig. (2-tailed)	.000	.000			
	N	40	40	40		
Interest Rate	Pearson Correlation	.127	.562**	-.733**	1	
	Sig. (2-tailed)	.000	.000	.000		
	N	40	40	40	40	
Inflation	Pearson Correlation	-.206	.314*	-.329*	.406**	1
	Sig. (2-tailed)	.202	.049	.038	.009	
	N	40	40	40	40	40

**Source; Research Data (2019)**

From Table 4.4, the study established that external debts ( $r=-0.742$ ) has a strong and negative relationship with private investment. Surprisingly, domestic debts ( $r=0.423$ ) was found to have a

relationship with private investment contrary to the expected negative relationship. The implications of these findings are that it is not domestic but external debts that adversely affect private investment. On the other hand, interest rate ( $r=-.127$ ) was found to have a controlling effect in the interaction between government borrowing and private investment. Inflation ( $r= -0.202$ ) was found to have a negative controlling effect in the interaction between government borrowing and private investment.

## 4.6 Effect of Government Borrowing on Private Investment

In order to establish the effect of GB on PI, the study used regression analysis as detailed in subsequent sections.

### 4.6.1 Model Summary

Table 4.5 details the model summary.

**Table 4.5: Model Summary**

<b>Model</b>	<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
1	.873 <sup>a</sup>	.762	.734	.09345

a. Predictors: (Constant), Inflation, External Debts, Domestic Debts, Interest Rate

#### **Source; Research Data (2019)**

Table 4.5 indicates the value of R as 0.873; meaning that government borrowing has strong and far reaching consequences on private investment of an economy. Stowell (2017) argues that private investment is largely supported by private borrowing which is key for the entire private sector. Similarly, Al-Majali (2018) established that government borrowing from domestic markets is key factors bringing about crowding out effect in an economy. The value of R square is 0.762; which shows that on overall, the model for the study was fit. The adjusted R square is 0.734; showing that 73.4% change in private investment is jointly explained by changes in government borrowing as well as the inflation and interest rate as the control variables.

### 4.6.2 Analysis of Variance

Table 4.6 gives the ANOVA results.

**Table 4.6: Analysis of Variance**

	<b>Sum of Squares</b>	<b>df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	.977	4	.244	27.954	.000 <sup>b</sup>
Residual	.306	35	.009		
<b>Total</b>	<b>1.282</b>	<b>39</b>			

a. Dependent Variable: Private Investment

b. Predictors: (Constant), Inflation, External Debts, Domestic Debts, Interest Rate

The findings in Table 4.6 indicate that F calculated is 27.954 with a  $p=0.000 < 0.05$ . The F calculated value is large enough to infer that the model of the study was significant.

### 4.6.3 Regression Beta Coefficients and Significance

Table 4.7 gives the study beta as well as significance thresholds.

**Table 4.7: Regression Coefficients**

	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>		<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>	<b>t</b>	
(Constant)	1.661	.213		7.800	.000
External Debts	-.036	.004	-.879	-8.477	.000
Domestic Debts	.183	.052	.437	3.485	.001
Interest Rate	.059	.011	.719	5.558	.000
Inflation	-.004	.004	-.079	-.872	.389

a. Dependent Variable: Private Investment

**Source; Research Data (2019)**

Consider the following equation:

$$Y = 1.661 - .036X_1 + .183X_2 + .059X_3 - .004X_4 \dots\dots\dots(i)$$

Where Y is = Private investment (Natural logarithm of quarterly Private Investment)

X<sub>1</sub> = External debt (stock of external debt as a portion of imports)

X<sub>2</sub> = Domestic debt (stock of quarterly domestic debt as a ratio of GDP)

X<sub>3</sub> = Interest Rate (quarterly lending by commercial banks)

X<sub>4</sub> = Inflation (quarterly Consumer Price Index CPI)

In consideration of the 5% level of significance, the study noted that external debt, domestic debts and interest rates ( $p < 0.05$ ) all have significant influence on PI. It can therefore be inferred that GB has significant effect on private investment. The finding contradicts Okorie (2013) who documented that a rise in private sector credit has no influence on domestic investment of the country.

#### **4.7 Discussions**

From the findings of trend analysis, it was shown that external debts have consistently increased over the studied period. This finding is supported by Kerrow (2014) who indicated that Kenya has witnessed a consistent rise in government borrowing over the past decade to finance an ever increasing budget from as a low Kshs. 1.026 trillion in 2014/2015 to as high as Kshs. 3.02 trillion for the financial year 2019/2020. Similarly, the latest statics from CBK indicate that the value of debt from government borrowing was at Kshs 5.398 trillion (\$53.64bn) in February 2019 up from Kshs KSh5.146 trillion in September 2018 and Kshs. 4.57trn in December 2017 respectively (CBK, 2019).

The findings of correlation analysis indicated that external debts and private investment are strongly and negatively correlated, which is consistent with regression results. These findings are empirically supported by Ayturk (2017), Kingw'ara (2014) and Al-Majali (2018) who all

established an inverse link between GB and PI. Salotti and Trecroci (2016) noted that GB adversely affect PI.

The study noted that domestic debts have been increased over the considered time frame. This trend is well illustrated by the statistics from the National Treasury (2018) showing that the current government borrowing in Kenya has shifted to domestic markets where T-bonds explain 62% while 35% is accounted for by T-bills as of the end of March, 2019. At the start of January, 2019; a total of Kshs. 40 billion bond with a maturity of 15 years was issued by the government with an oversubscription of 255% (National Treasury, 2018). In February 2019, a total of Kshs. 50 billion bonds with a maturity of 10 years was further issued that attracted an oversubscription of 156% (CBK, 2018).

Correlation results showed that domestic debt has relationship with private investment. Tkačevs and Vilerts (2019) noted a and significant link between government borrowings has influence on economic growth. Silva (2018) indicated that external debts by the government have a influence on growth of the economy. Sánchez-Juárez and García-Almada (2016) established correlation between GB and PI. The study established that domestic debt has significant effect on private investment.

The study found out that interest rate has a and significant effect and relationship with private investment. Das (2017) argue that interest rate has an effect on the of savings and the available credit among lending institutions. Trend analysis indicates that there was variation in interest rate across the study period. This finding is supported by Sorensen and Jagannathan, (2015) who noted that interest rate on government securities usually vary based on maturity dates. There was instability in inflation rate across the study period. Inflation was seen to hasve an inverse

interaction with PI. The finding is supported by Oshikoya (1994) who noted that high rate of inflation especially in developing countries is connected with reduced PI. From regression results, inflation had insignificant link with PI.



## **CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS**

### **5.1 Introduction**

This chapter is a summary of the findings of the analysis from the secondary data that was gathered by the study. There are conclusions as informed by the findings of analysis as well as the recommendations. The limitations and the areas for further studies are well discussed.

### **5.2 Summary of the Findings**

This study was established to bring out the interaction between government borrowing and PI. Government borrowing was represented by external as well as domestic borrowing. The control variables included interest rate and inflation while private investment was the dependent variable. The Crowding out Theory, the Ricardian Equivalence Theory and the Keynesian theory provided anchorage to the study. The study gathered secondary data on a quarterly basis covering a ten year time horizon (2009-2018). The rationale for selection of this period was that majority of the data could easily be found.

Trend analysis was conducted on all the variables covered by the study to establish and describe the pattern and movement over time. From the findings, the study established that external debts increased over the period. Domestic debts also increased over the study period. The interest rate fluctuated across the period of consideration. There was instability in inflation rate across the study period.

In order to infer the direction of the relationship between government debts and private investment, correlation analysis was conducted. The results indicated that external debts have a strong and negative relationship with private investment. Surprisingly, domestic debts were found to have a relationship with private investment contrary to the expected negative relationship. The implications of these findings are that it is not domestic but external debts that adversely affect private investment. On the other hand, interest rate was found to have a controlling effect in the interaction between government borrowing and private investment. Inflation was found to have a negative controlling effect in the interaction between government borrowing and private investment.

To infer the effect of government borrowing on private investment, regression analysis was conducted. Prior to this regression analysis, the data was tested through use of diagnostic tests and it was found to be suitable for regression analysis. The value of  $R$  was large enough to infer a strong link between government borrowing and private investment. The value of  $F$  calculated was large enough to infer that study's model was significant thus suitable for the study. The study's adjusted  $R$  square was 0.734; which inferred that 73.4% change in private investment is explained by government borrowing, inflation as well as interest rate as the control variables. At 5% level of significance, regression results showed that external debt, domestic debts and interest rates all have significant effect on private investment.

### **5.3 Conclusion**

The study was set out to determine the interaction between government borrowing and private investment with the control of interest rates and inflationary pressure in an economic system. The objective was largely attained through the use of correlation as well as regression results. As informed by the results, the study comes to conclusion that external debt has a negative

relationship with private investment. This negative effect can be interpreted to mean crowding out effect of government borrowing to the private sector. This is consistent with the Crowding out Theory. External debt was found to have significant effect on private investment.

Based on results, domestic debt has a relationship with private investment contrary to the expected negative relationship. It was anticipated that an increase in domestic borrowing by the government could reduce the credit available to the private sector hence the possible crowding out effect. Thus, this conclusion contradicts the Crowding out Theory while support the Keynesian Theory, which provide argument for the need for government borrowing but at the same time gives a precaution of not having too much debt as it may lead to crowding out effect. Domestic debt was found to have significant effect on private investment. Aside from the interaction between domestic debts and private investment being significant, it is also . This relationship implies that any effort to increase domestic debts may result into an increase in private investment which is not practically true.

The study further concludes that while interest rate has relationship with private investment, inflation recorded a negative relationship. Based on regression results, while interest rate was found to have significant effect on private investment, inflation on the hand was found to have insignificant effect.

#### **5.4 Recommendations of the Study**

There was an increasing trend in domestic as well as external debts in Kenya. This study therefore recommends the need to have a ceiling on the maximum external debt that the government should borrow. This is because too much external borrowing is likely to become unsustainable on long term hence adversely affecting the ability of economies to grow.

Creativity in the ways of generating revenues for instance widening of tax bases to reduce domestic borrowing and thus possible crowding out effect would be eliminated is needed. The study recommends that the government should productively utilize any borrowed funds since the obtained funds will need to be repaid back in form of interest and the principal amount.

Inflation rate was found to have an inverse link with PI. This study therefore recommends for effective monetary and fiscal policies by the Central Bank and the National Treasury to stabilize the fluctuations in inflation rates hence boosting private investment. Some of the monetary policies include the interest rate mechanisms which shall played an important role in stabilizing the interest rates that were established to have been fluctuated across the period of consideration. On the other hand, fiscal policies include measures like the use of government expenditure and taxes to achieve the desired economic outcomes.

This study anticipated an inverse interaction between domestic debts and private investment as theoretically supported by the crowding out theory. However, this was not the case as external debt as opposed to domestic debt was found to adversely affect PI. The implication of these findings to policy makers is that the government should strike a balance between external and domestic debts so as to stimulate private investment.

## **5.5 Limitations of the Study**

The conceptual limitation of this study was informed by the fact that it focused on bringing out the interaction between government borrowing and private investment. Two control variables: inflation and interest rate were used in the study. Thus, three broad variables informed this study: the independent, the control as well as the dependent variable. This means that similar studies

conducted by with other variables like moderating or intervening ones may not necessarily give similar results on the basis of the concepts.

Theoretically, the study was limited to Crowding out Theory, the Ricardian Equivalence Theory and the Keynesian theory. The justification for use of crowding out effect theory was that it provided the basis of the negative relationship between government borrowing and private investment. In essence, the theory was used to explain how borrowing by the government reduces the available credit to the private sector and thus adversely affecting private investment in any economic system.

Methodologically, the study used secondary sources of information that was gathered on a quarterly basis over a ten year period (2009-2018). By limiting to the ten year period, it means that similar studies in future conducted with a larger time frame may not necessary give similar results. The study was further limited to the economy of Kenya as a whole.

## **5.6 Areas for Further Research**

From the results, the study established that government borrowing and inflation and interest rates as control variables jointly explain 73.4% change in private investment. Hence, other items with an influence on PI exists which should be central in further research. These include the issue of tax policies including provision of tax incentives. Some measures are usually taken up by the government to enhance private investment including the tax issues and this requires an empirical support and evidence hence the rationale for future studies to focus on it.

The study recommends further research to be conducted on say foreign direct investment aside from private investment which is more broad and general. This is justified and informed by the conceptual gap created by the current study in the limitations already pointed out. The other

areas that the future studies should focus on include the growth as well as development of economies that is the influence of government borrowing on growth of economies.

Further research is also required across the member countries of say East Africa Community (EAC) for comparative purpose. It is important for further studies to be conducted in emerging economies like Somalia and the advanced economies like USA for the sake of comparison of the results. Such comparative studies should employ more advanced and complex methods of analysis including the use of time series as well as panel data methodologies since the data involved shall be so huge.

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## APPENDICES

### APPENDIX I: DATA COLLECTION SHEET

Year	Quarter	Private Investment	Domestic debt	External debt	Interest rate	Inflation	Imports
2009	Q <sub>1</sub>						
	Q <sub>2</sub>						
	Q <sub>3</sub>						
	Q <sub>4</sub>						
2010	Q <sub>1</sub>						
	Q <sub>2</sub>						
	Q <sub>3</sub>						
	Q <sub>4</sub>						
2011	Q <sub>1</sub>						
	Q <sub>2</sub>						
	Q <sub>3</sub>						
	Q <sub>4</sub>						
2012	Q <sub>1</sub>						
	Q <sub>2</sub>						
	Q <sub>3</sub>						
	Q <sub>4</sub>						
2013	Q <sub>1</sub>						
	Q <sub>2</sub>						
	Q <sub>3</sub>						
	Q <sub>4</sub>						
2014	Q <sub>1</sub>						
	Q <sub>2</sub>						
	Q <sub>3</sub>						
	Q <sub>4</sub>						
2015	Q <sub>1</sub>						
	Q <sub>2</sub>						
	Q <sub>3</sub>						
	Q <sub>4</sub>						
2016	Q <sub>1</sub>						
	Q <sub>2</sub>						
	Q <sub>3</sub>						
	Q <sub>4</sub>						
2017	Q <sub>1</sub>						
	Q <sub>2</sub>						
	Q <sub>3</sub>						
	Q <sub>4</sub>						
2018	Q <sub>1</sub>						
	Q <sub>2</sub>						
	Q <sub>3</sub>						
	Q <sub>4</sub>						

## APPENDIX II: RAW DATA COLLECTED ON VARIABLES

Quarter	Private Investment	Domestic debt	External debt	Interest rate (Lending)	Inflation	Imports	GDP
31st-March-2009	551.74252	474,749.81	513,623.00	14.87	14.1	61,296.80	737906
31st-June-2009	342.97508	518,346.15	535,143.70	15.09	10.6	62,910.79	713364
30th-Sept-2009	283.32724	550,613.80	524,982.60	14.74	9.8	69,361.44	705260
31st-Dec-2009	313.15116	588,970.31	588,970.31	14.76	8.0	78,274.61	707159
31st-March-2010	443.13235	639,116.32	538,157.99	14.8	5.5	75,233.43	786481
31st-June-2010	275.46065	660,267.68	565,452.00	14.39	3.7	79,208.22	767418
30th-Sept-2010	227.55445	704,702.77	594,223.00	13.98	3.3	88,640.52	761159
31st-Dec-2010	251.50755	720,207.97	599,930.46	13.87	3.8	93,411.69	789245
31st-March-2011	536.67353	754,048.10	642,847.92	13.92	7.0	109,732.89	845684
31st-June-2011	333.60787	764,222.80	722,888.31	13.91	13.2	104,304.80	818325
30th-Sept-2011	275.58911	764,274.59	799,834.03	14.79	16.5	123,700.96	807482
31st-Dec-2011	304.59849	799,880.06	685,607.92	20.04	19.2	116,937.25	823748
31st-March-2012	510.66993	887,871.40	676,330.00	20.34	16.9	128,775.76	880802
31st-June-2012	317.44347	858,829.55	774,550.00	20.3	11.8	112,058.43	853430
30th-Sept-2012	262.23591	922,196.19	802,457.33	19.73	6.4	107,467.85	847709
31st-Dec-2012	289.83969	971,265.44	821,972.82	18.15	3.5	117,057.91	862398
31st-March-2013	413.96525	1,074,797.69	832,238.14	17.73	4.1	108,816.01	934348
31st-June-2013	257.32975	1,050,628.57	843,562.27	16.97	4.4	97,060.75	917590
30th-Sept-2013	212.57675	1,168,115.36	889,313.51	16.86	7.0	112,317.66	902361
31st-Dec-2013	234.95325	1,189,182.59	922,369.15	16.99	7.4	118,982.26	892522
31st-March-2014	303.74854	1,231,183.10	940,402.99	16.91	6.8	107,990.37	982917
31st-June-2014	188.81666	1,284,327.25	1,085,928.57	16.36	7.0	113,690.24	972761
30th-Sept-2014	155.97898	1,260,874.56	1,087,827.67	16.04	7.5	159,936.01	944087
31st-Dec-2014	172.39782	1,307,748.71	1,170,696.28	15.99	6.2	138,182.69	942421
31st-March-2015	229.29603	1,397,125.72	1,278,107.87	15.46	5.8	114,862.49	1039433
31st-June-2015	142.53537	1,420,444.38	1,408,613.59	16.06	7.0	128,167.64	1026833

30th-Sept-2015	117.74661	1,388,262.31	1,550,232.74	16.82	6.1	138,743.16	1001471
31st-Dec-2015	130.14099	1,540,579.13	1,615,184.20	18.3	7.4	124,450.72	994165
31st-March-2016	252.08877	1,646,527.48	1,665,578.04	17.87	7.1	114,420.69	1091627
31st-June-2016	156.70383	1,815,470.50	1,803,256.30	18.18	5.0	127,317.35	1090392
30th-Sept-2016	129.45099	1,854,554.56	1,849,019.87	13.86	6.3	124,427.15	1053065
31st-Dec-2016	143.07741	1,930,855.01	1,896,443.05	13.66	6.5	123,150.81	1065614
31st-March-2017	471.88246	1,945,253.27	2,159,068.94	13.61	8.8	141,129.27	1148770
31st-June-2017	293.33234	2,111,710.44	2,294,735.88	13.66	11.2	143,013.54	1138921
30th-Sept-2017	242.31802	2,172,835.15	2,310,198.99	13.69	7.5	141,786.92	1100320
31st-Dec-2017	267.82518	2,220,345.35	2,349,284.44	13.64	5.0	141,763.03	1121811
31st-March-2018	601.59114	2,371,650.53	2,512,430.94	13.49	6.89	152,038.51	1224051
31st-June-2018	373.96206	2,478,835.09	2,560,199.43	13.22	5.2	142,525.14	1212373
30th-Sept-2018	308.92518	2,540,833.74	2,605,334.58	12.66	3.83	129,796.06	1170193
31st-Dec-2018	341.44362	2,548,768.78	2,723,734.27	12.51	5.71	126,686.88	1188216

**Source; Central Bank of Kenya (2019) & KNBS (2019)**



**APPENDIX III: RAW DATA USED**

<b>Year</b>	<b>Private Investment</b>	<b>External Debts</b>	<b>Domestic Debts</b>	<b>Interest Rate</b>	<b>Inflation</b>
31st-March-2009	2.74	8.38	0.64	14.87	14.1
31st-June-2009	2.54	8.51	0.73	15.09	10.6
30th-Sept-2009	2.45	7.57	0.78	14.74	9.8
31st-Dec-2009	2.50	7.52	0.83	14.76	8.0
31st-March-2010	2.65	7.15	0.81	14.8	5.5
31st-June-2010	2.44	7.14	0.86	14.39	3.7
30th-Sept-2010	2.36	6.70	0.93	13.98	3.3
31st-Dec-2010	2.40	6.42	0.91	13.87	3.8
31st-March-2011	2.73	5.86	0.89	13.92	7.0
31st-June-2011	2.52	6.93	0.93	13.91	13.2
30th-Sept-2011	2.44	6.47	0.95	14.79	16.5
31st-Dec-2011	2.48	5.86	0.97	20.04	19.2
31st-March-2012	2.71	5.25	1.01	20.34	16.9
31st-June-2012	2.50	6.91	1.01	20.3	11.8
30th-Sept-2012	2.42	7.47	1.09	19.73	6.4
31st-Dec-2012	2.46	7.02	1.13	18.15	3.5
31st-March-2013	2.62	7.65	1.15	17.73	4.1
31st-June-2013	2.41	8.69	1.14	16.97	4.4
30th-Sept-2013	2.33	7.92	1.29	16.86	7.0
31st-Dec-2013	2.37	7.75	1.33	16.99	7.4

31st-March-2014	2.48	8.71	1.25	16.91	6.8
31st-June-2014	2.28	9.55	1.32	16.36	7.0
30th-Sept-2014	2.19	6.80	1.34	16.04	7.5
31st-Dec-2014	2.24	8.47	1.39	15.99	6.2
31st-March-2015	2.36	11.13	1.34	15.46	5.8
31st-June-2015	2.15	10.99	1.38	16.06	7.0
30th-Sept-2015	2.07	11.17	1.39	16.82	6.1
31st-Dec-2015	2.11	12.98	1.55	18.3	7.4
31st-March-2016	2.40	14.56	1.51	17.87	7.1
31st-June-2016	2.20	14.16	1.66	18.18	5.0
30th-Sept-2016	2.11	14.86	1.76	13.86	6.3
31st-Dec-2016	2.16	15.40	1.81	13.66	6.5
31st-March-2017	2.67	15.30	1.69	13.61	8.8
31st-June-2017	2.47	16.05	1.85	13.66	11.2
30th-Sept-2017	2.38	16.29	1.97	13.69	7.5
31st-Dec-2017	2.43	16.57	1.98	13.64	5.0
31st-March-2018	2.78	16.52	1.94	13.49	6.89
31st-June-2018	2.57	17.96	2.04	13.22	5.2
30th-Sept-2018	2.49	20.07	2.17	12.66	3.83
31st-Dec-2018	2.53	21.50	2.15	12.51	5.71

**Source; Central Bank of Kenya (2019) & KNBS (2019)**