**THE GROWTH OF PUBLIC EXPENDITURE IN KENYA: EXPLORING THE CAUSES (1980-2012)**

**BY**

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## DECLARATION

I declare that this is my original work and that it has not been submitted in any university for any degree award

…………………………………            **Date……………………………**

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**ADMISSION NUMBER:**     **X50/79468/2012**

This project has been submitted in partial fulfilment for the award of degree of Masters of Arts in Economics with my approval as university supervisor.

…………………………………….           **Date……………………………..**

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## DEDICATION

I dedicate this work to my family and friends who supported and encouraged me to pursue my study at the University of Nairobi. Their positive advice and commitment enabled me to accomplish this work. They are much appreciated.

# ACKNOWLEDGEMENT

I would like to extend my foremost gratitude to God for the guidance, grace and mercy which He showed me as I endeavoured to complete this study**.**

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Much thanks to my class mates, for their valuable information they provided to perfect this research project.

I also wish to dedicate this research to my loving wife who walked with me throughout my academic journey.

**Thank you all**

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# LIST OF ACRONYMS AND ABBREVIATIONS

**ADF**    -    Augmented Dickey –Fuller

**GDP**    -    Gross Domestic Product

**IMF**    -    International Monetary Fund

**KNBS**    -    Kenya National Bureau of Statistics

**OLS**    -    Ordinary Least Squares

**PER**    -    Public expenditure review

**SAPs**    -    Structural adjustment programs

**VAR**    -    Vector Autoregressive Regression

**VECM**    -    Vector Error Correction Model

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# ABSTRACT

What explains the growth of public expenditure in Kenya? This study estimates the causes of growth of public expenditure using annual time series data for the period 1980 to 2012. In this study we examined 6 causes of growth of public expenditure in Kenya namely population, foreign Aid, inflation, Gross domestic product, free primary education and coalition government. The data obtained on these variables was subjected to ordinary least Squares and carried out co-integration and stationary tests. The results of the study revealed that Population, GDP, free primary education and Coalition government were integrated with Public Expenditure in Kenya. This means that there is a long run relationship between these variables and public expenditure. The study also showed that population and GDP had a positive relationship with public Expenditure growth while coalition government and free primary education had a negative effect on public expenditure growth in Kenya. Foreign aid and inflation were insignificant in determining the growth of public expenditure. This shows that population, GDP, free primary education and coalition government were the causes of growth of public expenditure in Kenya. The study concluded that for Kenya government to manage its expenditure sustainably there is need for the government to undertake proper fiscal policies and policies geared towards management of population and Free primary education.

# CHAPTER ONE

# INTRODUCTION

## 1.0 Background of the Study

Public expenditure is incurred by the government to provide public goods & services and to service debts. Government expenditure covers spending on goods and services like defence, judicial and education system.

Public expenditure is also defined as expenses a government incurs for its own maintenance, the society, the economy and helping other countries (Bhatia, 2004).

In resource allocation, market mechanism brings about negative externalities because the government is not required to participate in the allocation process. Market forces cannot eradicate all economic problems; in fact they lead to unequal distribution of income and wealth and hence fail to manage inflation and spur growth. It is due to the existence of market failures that the state is required to provide public goods and services. (Musgrave, 1989). It is through the provision of th mentioned services that public sector has expanded and thus expenditure.

When the government expands, there exist adverse fiscal and economic problems which bring about macroeconomic instability. This is because different ways of financing government expenditure such as taxation, borrowing and creating money are considered to have adverse effects on the economy. As suggested by Alm and Embaye (2010), these negative effects include slow economic growth, large budget deficits, huge public debts, mounting inflation and interest rates, trade deficits as well as falling exchange rates. Therefore, in order to address these issues, the understanding of the reasons behind the growth of public spending is necessary.

According to Stratmann and Okolski (2010),an increase in government spending crowds out private spending and interest sensitive investment by increasing the tax burden on citizens which leads to a reduction in private spending and investment. They also figured out that government spending reduces savings in the economy, thus increasing interest rates and this could lead to less investment in productive sectors of the economy. Conversely, when governments cut spending, there is a surge in private investment.

## 1.1: Overview of Kenya's Public Expenditure

Kenya, over the years has been registering an upward trend in public expenditures matched by unequal growth in revenues resulting in deficits. A number of the causes of this growth are notably: high population, growth of public debt, inflation and corruption (Ndun'gu, 1993). Again, government commitment to meet demands for social services and public sector employment explains why this expenditure rises.

Figure 1 below shows a generally upward trend of public expenditure in Kenya. Since 1980 the percentage of the public expenditure has been going up in most of the years. In 2012 the budget estimates indicated a total figure of public expenditure in excess of one trillion (Republic of Kenya, 2012).This is partly attributed to increased inefficiency in the public sector, rise in public debt, growing number of government ministries and excessive expenditure in Salaries for members of parliament.

Between 1980 and 1985, government expenditure had rose by 60.5% from 17800 million Shillings in 1980 to 28556.4 million shillings in 1985. The fiscal year 1984/85 was characterised by drought which led to inflation and increased government expenditure in development projects. ( Republic of Kenya, 1985).Also, this increase can be attributed by the increasing trend of total public debt from Ksh 17110 Million in 1980 to Ksh 44200 Million in 1984 further raising the debt servicing charges(Republic of Kenya, 1985).

The policy on Economic Management for Renewed Growth (Republic of Kenya, 1986) forced the government to cut back on spending due to criticism from international community and Kenyan development partners over the structure of government spending which was in favour of consumption and paying local and foreign debts as a trade-off for capital expenditure outlay.

In the 1990s IMF caused Kenya to accent into structural adjustment programs (SAPS). These structural Programs essentially were found on improving African economy in terms of enhanced saving, efficient use of public scarce resources, and restructuring of parastatals for efficiency and competitiveness. They were also targeted at removal of price controls, reforms in civil service and decontrol of interest rates and trade in general (O'Brien and Ryan, 1999).

The first SAP to be implemented was Privatization of key Parastatals in Kenya and to nurture a culture of ethics and prudent management in the remaining non privatized parastatals. This had a major objective of reducing the bailout burden the parastatals had on the government (Republic of Kenya, 2003).

Between 1991 and 1993, there was a huge inflationary pressure ascribed to a number of factors inter alia: devaluation of the shilling, excessive money supply in 1992 linked with campaign money, decontrol of prices and poor weather conditions. This inflation had an upward pressure on government expenditure from 31.8% in 1991/1992 fiscal year to 50.4% in 1992/1993 (Republic of Kenya, 1994).

In 1993 the government of Kenya introduced a reform program whose objective was to downsize the public sector work force which had been seen as unnecessary financial burden to the exchequer (World Bank, 2003).As a result the golden hand shake (voluntary early retirement) was introduced and the process saw a reduction of the civil service labour force from 272,000 in 1991 to 194,900 in 2002(Republic of Kenya, 2003**).**

**Figure 1: Public Expenditure growth from 1980 to 2012**
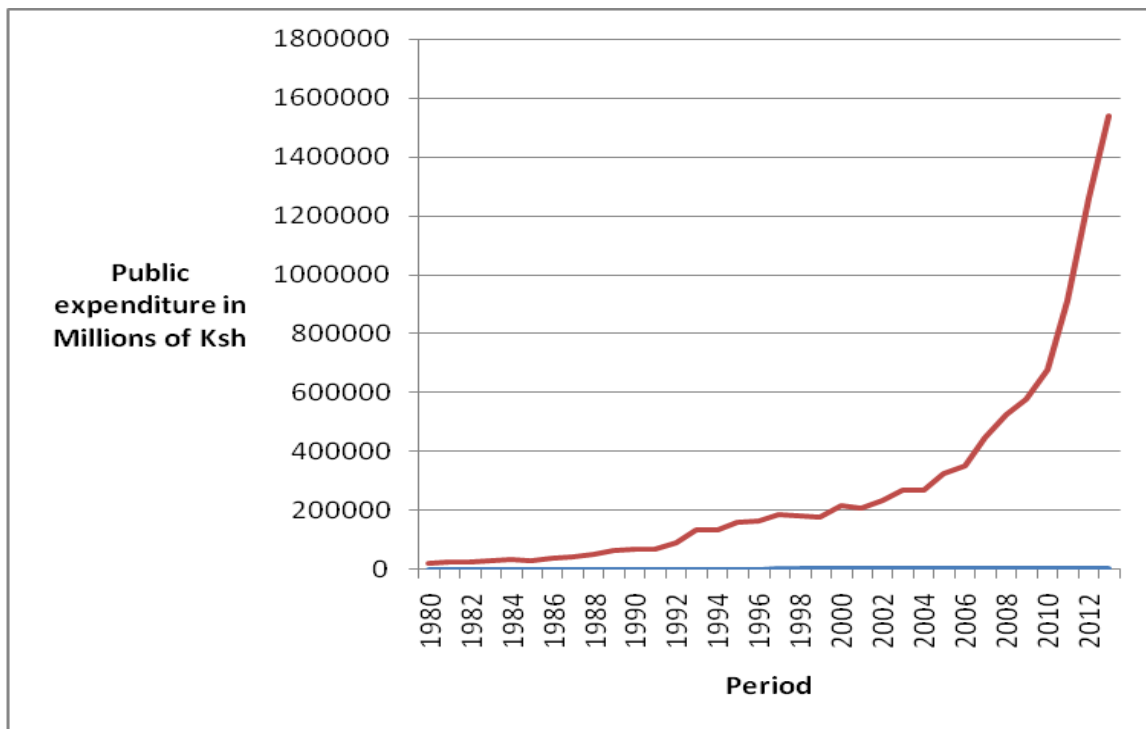


**Source: Economic Surveys, Statistical abstracts (Various issues from1980 to 2012)**

In 2002/2003, public expenditure grew by 14.6% compared to 13.9% in 2001/2002 fiscal year. This growth was attributed by the formation of the NARC government which was ambitious in its development agenda and increase in the number of ministries (Republic of Kenya, 2003).

Between 2003 and 2012, government expenditure had grown tremendously due to increase in development expenditure. This increase in development budget was as a result of increase in infrastructure budget, mainly financed through domestic and external borrowing.(PER, 2012). This budget catered for free primary Education in 2003, Rural electrification, Construction of roads and improvement of health care (Republic of Kenya, 2003). The other factors which explained this exponential rise in the government expenditure in this period

were high pricing of raw materials due to high cost of fuel, weakening of Kenyan shilling and inflation which hit a record high of 19% in the year 2011 ( Republic of Kenya, 2012).

In the fiscal year 2011/2012, Public expenditure was estimated at Ksh 1258 billion(PER,2012).This increase is principally as a result of recent salary increases to teachers, employees in the mainstream civil service and the police coupled with remuneration of constitutional office holders and the incoming positions provided under the devolved government thus increased wagebill. Another reason for the the increase was due to the growth of public debt from ksh 1322.6 billion shillings in 2012 to ksh 1517.7 in2013 billion representing a 14.8% growth. (PER, 2013).

## 1.2 Statement of the problem

Kenya has experienced a persistent increase in government expenditure over recent years, where the public wage bill has hit a record high. This has a negative effect on the growth of the economy because it leads to the freezing of recruitment of citizens to government jobs, low investment and stagnation of the economy due to slow or no growth rate. Sustainable government expenditure is a good recipe for the economy to grow and improve, through employment, development of infrastructure, more investment and savings, while unmanageable government expenditure stagnate the growth of the economy.

Kenya government over the years has been unable to reduce its expenditure even after donor countries imposed tied conditions to the point of freezing foreign aid. This has increased internal borrowing further worsening the existing situation. There has been a major concern from policy makers that this is causing inflation to shoot to souring level and moreover investment in the economy has gone down due to low savings and higher cost of borrowing. This study seeks to find out the factors responsible for the increasing government expenditure in Kenya.

There exists scarce information around the causes of growth of government expenditure and the solutions.

Most studies conducted on government expenditure in Kenya examine the impact of public expenditure on economic growth. Among them was that by Jerono (2009), Kosimbei et al (2013) and Maingi (2010). Little has been done on government expenditure growth and its causes in Kenya, one of them being a study by Kanano (2006) who studied the determinants of public expenditure in Kenya. The study used time series data over a short period .This study therefore seeks to investigate the causes of growth of public expenditure in Kenya using time series data over a period of 33 years.

## 1.3 Research questions

In analysing the causes of public expenditure growth in Kenya the following research questions formed a basis of our study:

a) What causes public expenditure to rise in Kenya?

b) Does a long run relationship exist between public expenditure and its causes in Kenya?

 c) What are the policy options available to manage sustainable public expenditure in Kenya?

## 1.4 Objectives of the study

The general objective of this study was to examine the causes of growth of public expenditure in Kenya.

Specifically the study sought to:

a) Establish the determinants of public expenditure growth in Kenya

 b) To determine whether there is a long run relationship between public expenditure and its causes in Kenya.

c) Based on (a) and (b), suggest policy options to manage sustainable public expenditure.

## 1.5 Significance of the study

The purpose of this study is to develop an analytical framework for determining the causes of increased government expenditure in Kenya.

This study is important as it will assist policy makers to understand the impact of policy decisions that increase government expenditure to both the private and public institutions and bring possible policies to manage sustainable public expenditure.

This study will also benefit the county and national government officers in understanding the specific causes of increased public expenditure and the overall effect on economic growth.

Researchers and scholars in the field of public finance will also benefit from this study as it will form a basis for future research and contribute to the empirical literature of the determinants of public spending growth in Kenya

## 1.6 Organization of the Study

The study is organized in five chapters Chapter one gives the background of the study and presents the statement of the problem as well as objectives of the study. Chapter two, literature review which includes theoretical and empirical literature. Chapter three presents research methodology and the model specification for the study .Chapter four deals with data analysis and interpretation of results. Chapter five presents summary and recommendations of the study.

# CHAPTER TWO

# LITERATURE REVIEW

## 2.0 Theoretical Literature

The problem of determining the size or growth of public expenditures is an important aspect in both empirical and theoretical literature. But what variables would explain public expenditure growth?

Several theoretical constructs have offered to explain the growth or size of government expenditure over the years.

According to Borcherding and Lee (2004), the analysis of government spending growth is generally classified into two categories, namely, a-institutional and institutional approaches.

The a-institutional approach argues that the growth of the level of government expenditure depends on the changing social and market conditions. Under this approach, the median voter is assumed to play a significant role in determining the level of spending by the government and hence the demand for public services is considered to be driven by factors such as the voter's preferences, income, tax-price and relative price of private goods and services. Population also falls under the a-institutional approach as one of the demographic factors affecting the level of public spending.

The institutional approach, on the other hand, emphasizes the role of rent-seeking activities, structural changes and major economic or political shocks on the growth of government spending. For example, the institutional theory is related to the concepts of Wagner's (1893) Law and the displacement effect of Peacock and Wiseman (1961).

Wagner (1890) in his Law of Increasing State Activities explained that there are inherent tendencies for the activities of different tiers of a government (such as federal, state and

municipal government arms) to continually rise, over time, both intensively and extensively. These increases in state activities necessitate increases in government expenditure .Wagner proposed three reasons why the share of government spending would increase in importance as an economy grows. First, as industrialization progresses public sector activity will substitute for private sector activity because state's administrative and protective functions would increase in importance during the industrialization process. Secondly, State's role in maintaining law and order as well as its role in activities related to economic regulation is likely to become more pronounced due to the increasing complexity of economic life and urbanization, which occur during industrialization. Furthermore, public spending on cultural and welfare services (including education and income redistribution) would also increase as a country industrializes due to the high income elasticity of demand for these services - an implicit assumption in Wagner's work. This means that as per capita income increases demand for the services mentioned above, which are usually provided by the government increases rapidly, raising the share of public sector expenditure in GDP.

Wiseman & Peacock (1961) argue that spending increases when governments spend to meet demands made by the population regarding various services. Further during wars, tax rates are increased by the government to generate more funds to meet the increase in defense expenditure; such growth in revenue therefore gives rise to government expenditure (Peacock & Wiseman, 1961).In other words government expenditure is driven by strong economic crises which are able to change public spending.

The Keynesian theory of public expenditure indicates that during recession a policy of budgetary expansion should be undertaken to increase the aggregate demand in the economy thus boosting the Gross Domestic Product (GDP). This is means that, increases in government spending leads to increased employment in public sector and firms in the business sector. When  employment rises; income and profits of the firms increase, and this

would result in the firms hiring more labourers to produce the goods and services needed by the government .This can be linked to the Kenyan case where hiring more workers by the government has led to increased wage bill thus increased public expenditure.

Friedman (1978) put forward the tax and spend hypothesis which states that changes in government revenue bring about changes in government expenditure. It is characterized by unidirectional causality running from government revenue to government expenditure. By this, Friedman noted that increases in tax or revenue will lead to increases in public expenditure.

Musgrave and Rostow's theory asserts that in early stages of economic growth, public expenditure in the economy should be encouraged. The theory further states during the early stages of growth there exists market failures and hence there should be robust government involvement to deal with these market failures.

Tait and Heller (1982), Heller and Diamond (1990) demonstrated that demographic changes are positively associated with government spending on health, education and social security.

Ekpo (1995) illustrates that ideology, bureaucratic controls, demographic changes, increased cost of government production and foreign aid are significant in the growth of public expenditure.

A critical look at these theories will reveal a number of factors that are said to determine the size (and of course, growth) of public expenditure. Some of these factors are inflation, total revenue of the country, public debt, population growth, urbanization effect, foreign Aid and taxation.

## 2.1 Empirical literature

One of the main studies that analysed the determinants of Jordanian Public Expenditure was the one by Abu (2004).In this study, an equation based on co-integration tests was applied to model the relationship between government expenditure and its determinants. The determinants of public expenditures were classified in three groups. The first group, counter-cyclical policies include variables as inflation, unemployment and budget deficit. The second group takes into account demographic factors, namely population growth. The last group is composed of political factors (political stability, interest groups and past real spending of the government). The equation was estimated for the period 1979-2000. The results showed that the inflation rate was negatively related to government expenditure growth.

Abu and Mustafa (2011) in their analysis of the factors that affect government expenditure in Jordan used a simple regression analysis for the data on unemployment, inflation rate and population from 1990 to 2010 and found out that population, unemployment and inflation rates are significantly related to the public expenditures.

Ansari et al (1997) attempted to determine the direction of causality between government expenditure and national income for three African countries Ghana, Kenya, and South Africa, using standard Granger testing procedures and the Holmes-Hutton (1990) causality test, which is a modified version of the Granger test. The study used annual data on per capita government expenditure and national income for the period from 1957 to 1990. Both variables were deflated by using the GDP deflator for each country. The study finds that in Ghana, Kenya and South Africa there was no long run equilibrium relationship which existed between government expenditure and national income over the sample period. For these countries, there was no evidence for causality to run from public expenditure to National income and its reverse.

A study conducted by Ezirim and Muoghalu (2006) to investigate the relationship between public expenditure and its determinants in developing countries revealed that indices of both debts over-hang and debt burden constitutes important factors explaining changes in public expenditure in a typical developing country. Another finding of the study relates to the observed significance of total public revenue in affecting public expenditure.

Kanano (2006) in his study on the determinants of public expenditure in Kenya used time series data analysis technique for the period 1980 - 2004. The main objective of the study was to analyze government budgetary resource composition and; examine the impact of the government budgetary resources on public expenditure growth. The determinants of public expenditure growth model were estimated by the OLS method. The Study results showed that public expenditure growth was explained by internal debt. A strong positive relationship between government revenue and public expenditure was also revealed.

Ndungu (1995) examined the link between government deficit and inflation in Kenya. He identified population growth rate, public sector over reemployment, interest repayment on domestic and foreign debts as the cause of rising public expenditure in Kenya.

Njeru (2003), in his study of the impact of foreign Aid on Public expenditure in Kenya for the period 1970-1999 used Heller's utility (1975) model. He found out that there existed a positive relationship between foreign Aid and government spending. These results did concur with the finding by other country specific studies that on the aggregate, foreign aid leads to increased government spending.

Okafor and Eiya (2011) carried out a study on the determinants of Growth in Government Expenditure in Nigeria between 1999 and 2008. In this study, they examined 4 determinants of growth in public expenditure: Inflation, Public debt, tax revenue and population. The data collected for these variables were subjected to the ordinary least square regression analysis.

The results indicated that: inflation had a negative relationship with total government expenditure (TGEX), population had a positive relationship with TGEX, public debt had a significant positive relationship with TGEX and tax revenue had a significant positive relationship with TGEX. This shows that these variables were the major determinants of growth in the Government Expenditure.

Another Study was done by Omar in Kuwait in 1990 on Growth of public expenditure and bureaucracy in Kuwait. The study attempted to assess the impact of certain macro and micro factors on public expenditure through statistical analysis. The findings showed a very strong positive correlation between public expenditure and certain micro factors such as expansion of education and health services. There was also a positive relation between public expenditure and such macro factors as per capita income and population. The study used panel data between the years 1975 to 1985.

Uchenna et al (2008) investigated the relationship between public expenditure growth and inflation in the United States of America using the co integration analysis and Granger Causality Model applied to Time Series Annual Data from 1970 – 2002. The results indicated that public expenditure and inflation were co integrated and thus there existed a long-run equilibrium relation between the two variables.

## 2.2 Overview of literature

It is evident from the literature review that the causes of growth of public expenditure include: National income, Population, Inflation and foreign Aid.

The above studies have used different estimation techniques, different time periods and, different variable measurement techniques which yield different results (Easterly, 2003).

A number of studies have used time series data (Abu, 2004, Sultan and Abu, 2011 Okafor and Eiya, 2011) without testing the variables for stationarity and co integration. Our study uses time series data and carries out stationarity tests for the variables to avoid spurious results.

Other studies done have found inconsistent results in different countries. For example a study done by Ansari et al (1997) to determine the direction of causality between government expenditure and national income for three African countries Ghana, Kenya, and South Africa found out that in Ghana, Kenya and South Africa there was no long run equilibrium relationship between government expenditure and national income over the sample period except for Ghana. This study examines whether there are different results using GDP between 1980 and 2012 for Kenyan data.

Cognizant of the literature overview, our study utilized Okafor and Eiya's study model. However, it was moderated to capture GDP, foreign aid, Periods of free primary education and Kenya's Coalition government as additional causal factors of growth of public expenditure. We used 33 years as a period of study. The study used analytical approach.

## CHAPTER THREE

## RESEARCH METHODOLOGY

### 3.0 Introduction

This chapter starts by specifying the model that has been used to examine the causes of public expenditure growth in Kenya. The study utilizes economic theory and econometric models to define this relationship.it's followed by an explanation of variables used, empirical and statistical tests, the measurement of variables and finally sources of the data and data type.

### 3.1 Theoretical framework

In the analysis of the determinants of government expenditure growth in Nigeria, Okafor and Eiya (2011) postulated that total Government expenditure (TGEX) was determined by public Debt (PD), Inflation (INF), Population (POP) and Tax Revenue (TREV).

They formulated the following general model.

TGEX=f(INF,PD,TREV,POP)...........................................................................................(1)

Where

TGEX = Total government expenditure growth rate (%)

INF = inflation growth rate (%)

TREV = Tax revenue growth rate (%)

POP = population growth rate (%)

PD = public Debt growth rate (%)

This general model is extended in this study by adding GDP, Foreign Aid, and Dummy for periods of free primary education and Dummy for periods under coalition government.

Hence

PE =f(INF,POP,GDP,FA, DFPE,DCOL)..............................................................................(2)

The model is estimated using the simple ordinary least squares regression (OLS) where the dependent variable is treated as public expenditure growth and dependent variables are population, gross domestic product, Inflation, foreign Aid ,Dummy for periods under free primary education and Dummy for periods under Coalition government. OLS is adopted because it is simple to use, it minimises the sum of squared residuals and yields best linear unbiased estimators.

The model is linear. The parameters of the model are estimated using ordinary least squares (OLS).

The empirical counterpart to equation (2) is as follows:

$$PE=\beta_0 + \beta_1 INF + \beta_2 FA + \beta_3 GDP + \beta_4 POP + \beta_5 DFPE + \beta_6 DCOL + \mu \ \dots\dots\dots\dots\dots\dots \ (3)$$

Transforming (3) into log linear, we obtain

$$LnPE=\beta_0 + \beta_1 INF + \beta_2 FA + \beta_3 GDP + \beta_4 POP + \beta_5 DFPE + \beta_6 DCOL + \mu\dots\dots\dots\dots\dots \ (4)$$

Where

LnPE= Natural Logarithm of Growth of government expenditure

POP = population

GDP= Gross Domestic Product

INF=Inflation

FA= Foreign Aid

DFPE=Dummy for Periods under free primary education which takes a value of 0 or 1

DCOL=Dummy for periods under coalition government which takes a value of 0 or 1

And $\beta_0$, $\beta_1$, $\beta_2$, $\beta_3$, $\beta_4$, $\beta_5$, $\beta_6$ are parameters to be estimated and $\mu$ is the error term.

## 3.2 Definition ,Measurement of Variables and expected Results

This section defines the variables used to carry out the study on the causes of public expenditure growth in Kenya.

**Inflation**

The rate at which the general level of prices for goods and services is rising and subsequently, purchasing power is falling. Central banks attempt to stop severe inflation, along with severe deflation, in an attempt to keep the excessive growth of prices to a minimum. It is expected that inflation will have a significantly positive relationship with public expenditure growth in Kenya.

**Gross Domestic Product**

Gross domestic product (GDP) is defined by OECD as "an aggregate measure of production equal to the sum of the gross values added of all resident institutional units engaged in production (plus any taxes, and minus any subsidies, on products not included in the value of their outputs). GDP) is one of the primary indicators used to gauge the health of a country's economy. It represents the total dollar value of all goods and services produced over a specific time period. It is measured using either the expenditure approach or the income approach. This study has used the real GDP data measured in millions of shillings. The expectation is that GDP will have a significantly positive relationship with Public expenditure growth in Kenya.

**Population**

Population means the number of people in a geographic area. Population size can either be determined after 10 years (census) or estimated annually. It can also be used for subgroups of people. Our study has used the yearly population data expressed in Millions of people. The study Population will have a positive sign to indicate that as population increases, public expenditure will also increase.

**Foreign Aid**

Benham (1962) defines foreign Aid as outright grants and not long term lending for non military purposes by governments and international organisations such as international bank for reconstruction and development (IBRD) and the international finance corporation (IFC).It is also defined as the transfer of goods, capital or services from an international organisation or a country to offer some benefits or help to the recipient country. Aid can be in the form of Emergency or economic aid. Expressed as a percentage of GDP, foreign aid is expected to have a positive relationship with public expenditure.

**Dummy for Free Primary Education**

Represents periods under which there was free primary education in Kenya.

It takes a value of 1 if the period is under free primary education and 0 if otherwise. Free primary education is expected to positively affect public expenditure in Kenya.

**Dummy for Coalition Government**

Represents periods under which there was a coalition government in Kenya. It takes a value of 1 if the period under study is on Coalition government and 0 if single leadership. It is

expected this dummy variable to have a positive sign to show that it significantly affects public expenditure in Kenya.

## 3.3 Estimation techniques

### 3.3.1 Testing for Stationarity and Unit Root

In empirical analysis, non-stationarity of time series data is a perennial problem. To avoid estimating and getting spurious results, the study conducted tests for stationarity.The six variables specified in the model were assumed to have a trend and unit root. The variables were tested for the existence of unit roots in level and in first difference.In order to measure the trend, the study used Augmented Dickey Fuller test (ADF). The reason for using ADF is that it gets rid of serial correlation. To do this, we tested for Unit root of variables. If the variables, when run through ADF happen to be integrated of order Zero, **I(0)** i.e. they are stationary in the first test  will indicate that the variable affects the Public expenditure  in the short run . Conversely if ADF happen to be **I(1) ,I(2) I(3)** etc, it will mean that the variables have a lag length and this indicates that they affect the model in the long run and requires a cointegration test.

### 3.3.2 Cointegration Test

Cointegration is a technique used to test for existence of long-term relationship (co-movement) between variables in a non-stationary series. Before testing for co integration, it is important to determine the order of integration of the individual time series. A variable Xt is integrated of order d (1d) if it becomes stationary for the first time after being differenced d times. Co integration also asserts that 1(1) can be estimate using OLS method and produce non spurious results.

This study measures a long run relationship. The study data therefore was tested for co integration by using Johansen (1988) Co integration test method and Johansen and Juselius

(1990) Maximum Likelihood estimator. This study adopted this technique since it has advantage over other methods in terms of its support to superior properties. The study tested the existence of long run association between the Public expenditure and the causal factors. The study then used both the maximum test method and trace test statistics to determine the number of cointegrating vectors. The comparison of test statistics with the critical value was then estimated in order to provide evidence for co integration or long run relationship between the variables under study.

In Johansen co-integration technique, if there exists long run relationship then a (vector error correction model) VECM is applied while if there does not exists any form of long run relationship then an unrestricted (Vector Autoregressive Regression) VAR model is applied. The guideline here is:

Null hypothesis H0= no cointegration between the variables

Alternative hypothesis H1= there is cointegration among variables.

### 3.3.3 Test for Autocorrelation

This study employed the Breusch pagan and Durbin Watson test statistic to test the assumption of non-autocorrelation. This is to detect whether the error terms relating to any two different observations are mutually independent. This means that the disturbance term of the data collected for public expenditure growth in Kenya from 1980 to 2012, occurring at one period of time does not carry over to another period.

### 3.3.4 Diagnostics Tests For Normality And Serial Correlation

The Jarque-Bera test was conducted to test normality of the error term. This is a test that involves computing standard deviation, skewness, probability and kurtosis. This test is important in helping with the identification of presence of outliers. In case there is presence

of outliers, additional variables can be added to act as control variables. To test for the credibility of the estimated OLS parameters, the degree of multicollinearity was measured.

### 3.3.5 Testing for Homoscedasticity

We used both residual plot method and Breush-Godfrey test to detect for serial correlation and heteroscedasticity. We then tested whether the estimated variance of the residuals for the regression are dependent of the values of the dependent variables. The first step was to apply the OLS in the model and compute the residuals. We then computed the auxiliary regression for residuals. Finally we obtained the test statistic which was equivalent to the coefficient of determination of the auxiliary regression.

### 3.4 Data source and type

The analysis used secondary data sources obtained from the Public expenditure reviews (PER), Kenyan Statistical Abstracts and Economic Surveys published annually by the Central Bureau of Statistics and the Central Government. These annual publications have established themselves as reliable sources of data for the Kenyan Economy.

The period of interest is between 1980 and 2012 which enabled us analyse the causes of growth of public expenditure. Kenya in 1982, 1992 and 1997 experienced a foreign Aid freeze resulting in heavy internal borrowing. During this study period we have had structural adjustment programs in operation, a coalition government between 2007 and 2012 and heavy investments in infrastructure leading to a change in expenditure. Free primary education came also in place between 2003 and 2012. Inflation has also been on the increase during this period.

# CHAPTER FOUR

# STUDY FINDINGS

## 4.1 Introduction

The study investigated the causes of public expenditure growth in Kenya. This chapter has utilized both tables and graphs in the descriptive and regression results of the study. Time series data containing those variables for the period 1980-2012 was been used.

## 4.2 Descriptive statistics

This study analysed the relationship of the following variables; public expenditure, Inflation, Foreign Aid, national income, population, dummy for durations with coalition government and dummy representing periods of free primary education. These variables were analysed as per their Averages, Standard Deviation, Minimum and Maximum variable. Table 1 below shows public expenditure ranging between 17800 and 1,258,203 million Kenya shillings as it maintains a mean of 432124.8 million Kenya shillings. The overall observations for all variables are 33. The two dummies for coalition government and free primary education were given the probability code that is they ranged from 0 and 1. When we observe d the event we coded one and zero otherwise. We had 15.2% periods under coalition government and 30.3% of the total period under free primary education. The average inflation rates and population in Kenya was 12.99% and 28.6 million people respectively.

**Table 1: Summary Statistics**

| VARIABLE | OBS | MEAN | STD. DEV. | MIN | MAX |
|----------|-----|------|-----------|-----|-----|
| PE | 33 | 239099.8 | 279087 | 17800 | 1258203 |
| INF | 33 | 12.99272 | 8.946175 | 1.554328 | 45.97888 |
| FA | 33 | 6.843838 | 3.531127 | 2.440198 | 16.95949 |
| GDP | 33 | 9.07e+11 | 9.31e+11 | 5.39e+10 | 3.40e+12 |
| POP | 33 | 28.5997 | 8.008263 | 16.27 | 43.18 |
| DCOL | 33 | 0.1515152 | 0.3641095 | 0 | 1 |
| DFPE | 33 | 0.3030303 | 0.4666937 | 0 | 1 |

Where PE is the public expenditure, INF is inflation, FA is the foreign Aid, GDP is Gross Domestic Product, POP is the population and DFPE and DCOL are dummies for periods under Coalition government and free primary education respectively.

The equation to be estimated was expressed as;

$$PE = \beta_0 + \beta_1 INF + \beta_2 FA + \beta_3 GDP + \beta_4 POP + \beta_5 DFPE + \beta_6 DCOL + \mu \quad \ldots \ldots \ldots \ldots \ldots \ldots \ldots (1)$$

Where the variables in the equation are described in Table 2 above.

**4.2.1 The trends of the study variables**

We conducted graphical illustrations of public expenditure; inflation rates, foreign aid, gross domestic product and population to enable us identify their pattern throughout the study period.

Public expenditure as shown by Figure 2 below has been increasing constantly with time. However, we observed a steep rise from around the year 2009/2010 to 2012.

**Figure 2: Graph illustrating the trend of public expenditure in Kenya**
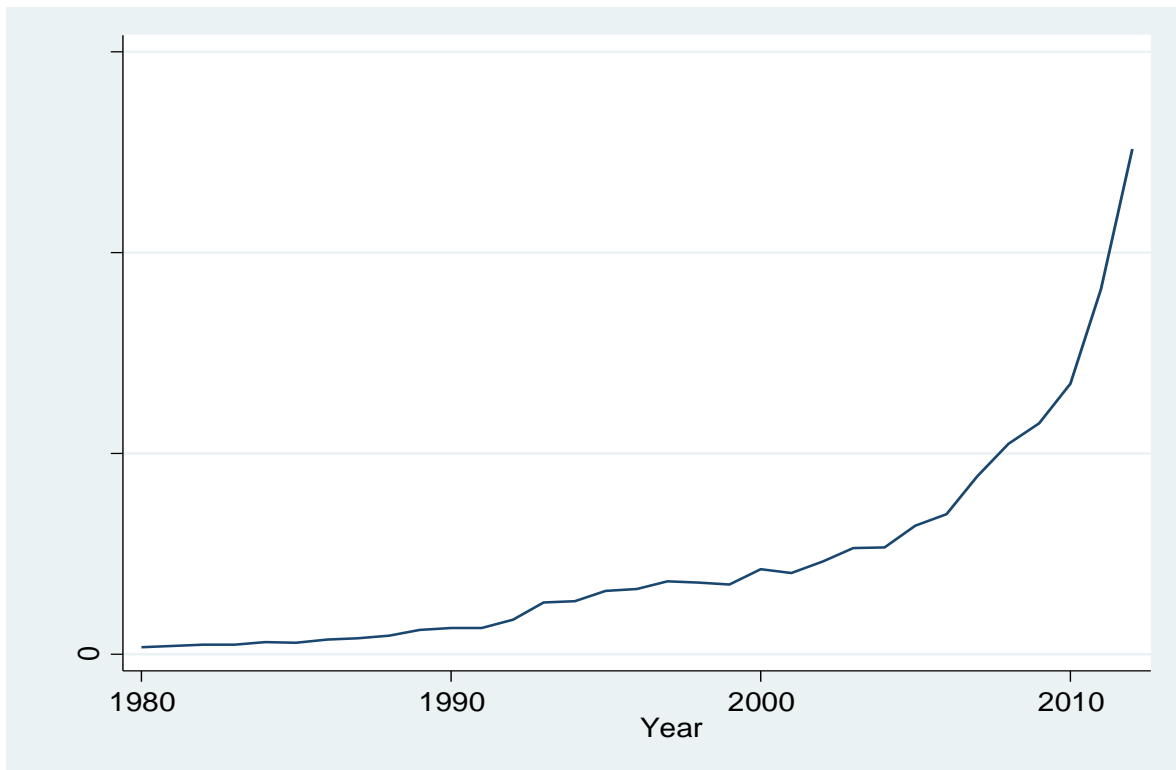
Inflation rate is a macroeconomic variable with a capacity to influence the economy. The unique periods exhibited include the period between the years 1993 and 2009 during which inflation rates were huge.

**Figure 3: Graph illustrating the trend in Inflation rates in Kenya**
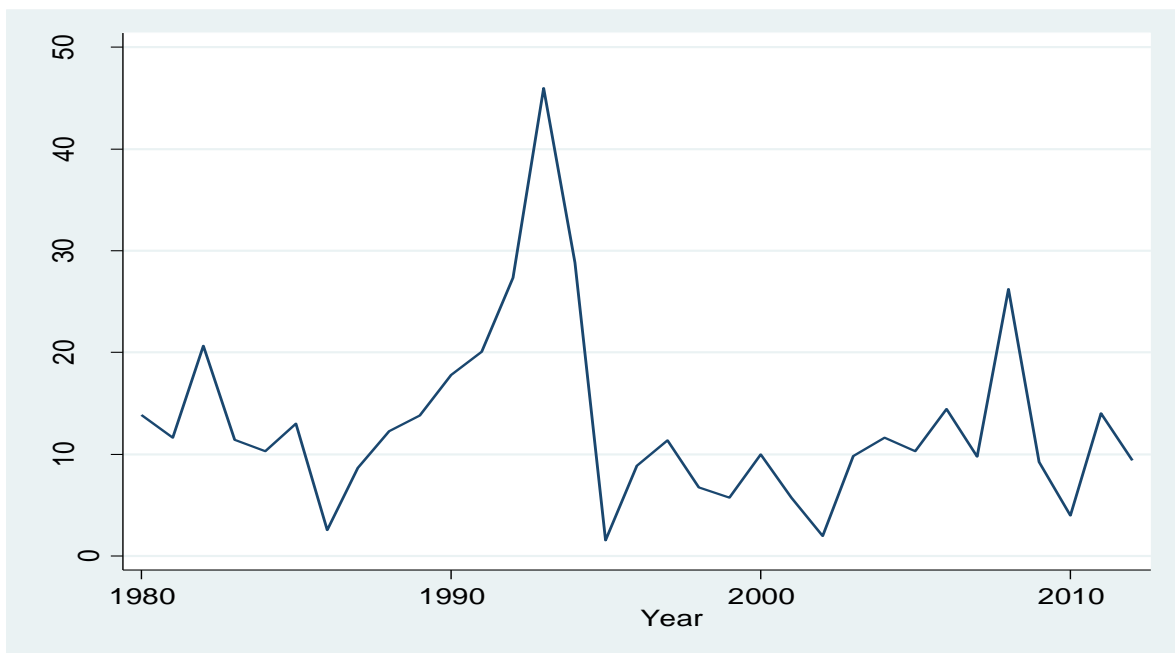
Foreign aid was high between periods 1986 to around the year 1994/1995 from which it declined with increasing rate until around the year 1999 where it maintained relatively constant fluctuations.

**Figure 4: Graph illustrating the trend of Foreign Aid in Kenya**
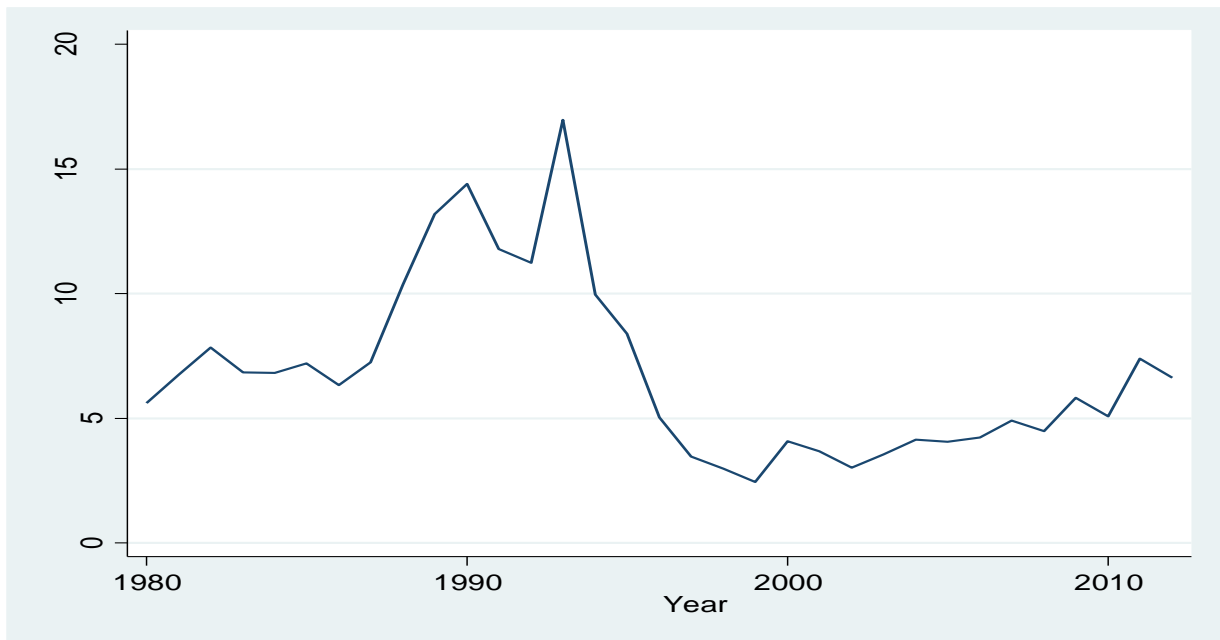
GDP increased at an increasing rate especially from the year 2004 to 2012 unlike in the years 1980 to 1990 where it was almost constant. This might have been due to good investment environment by both external and internal investors and the change of the government regime.

**Figure 5: Graph illustrating the trend of Gross domestic product in Kenya**
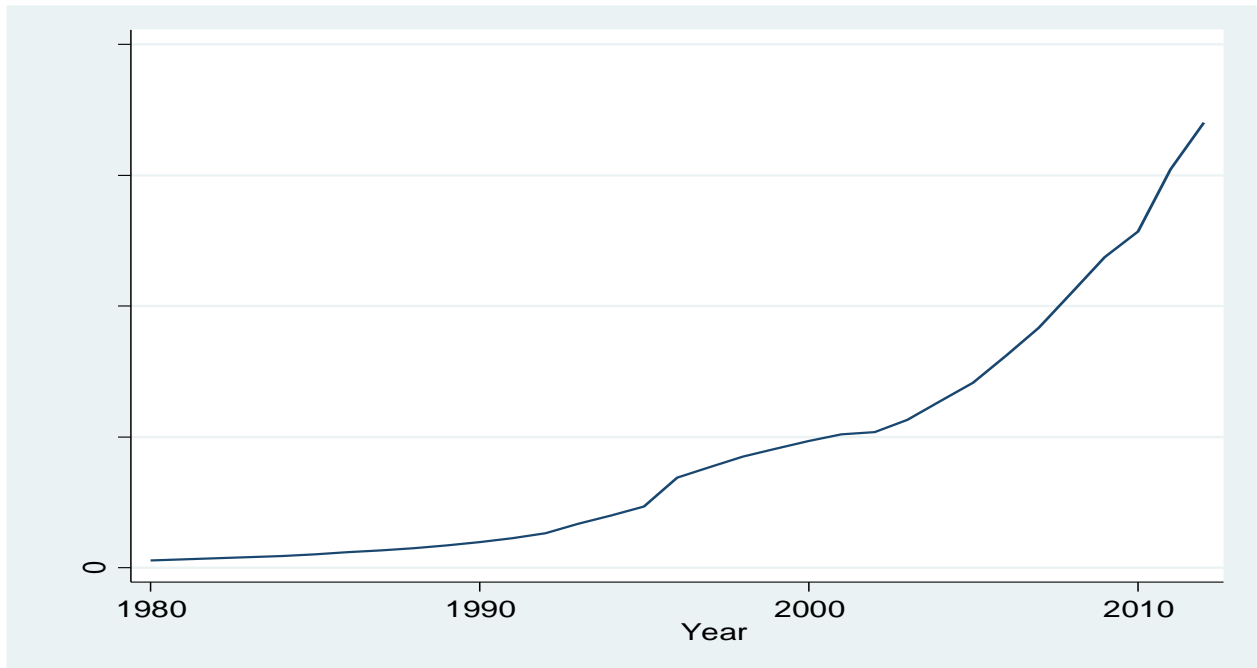
Population is one of the variable which tended to demonstrate a constant trend from 1980 to around the year 1995 from which we observed also a sharp rise from the year 2003 to 2012. This trend resembled that demonstrated earlier by public expenditure (see Figure 2 steepness behaviour).

**Figure 6: Graph illustrating the trend of population growth in Kenya**
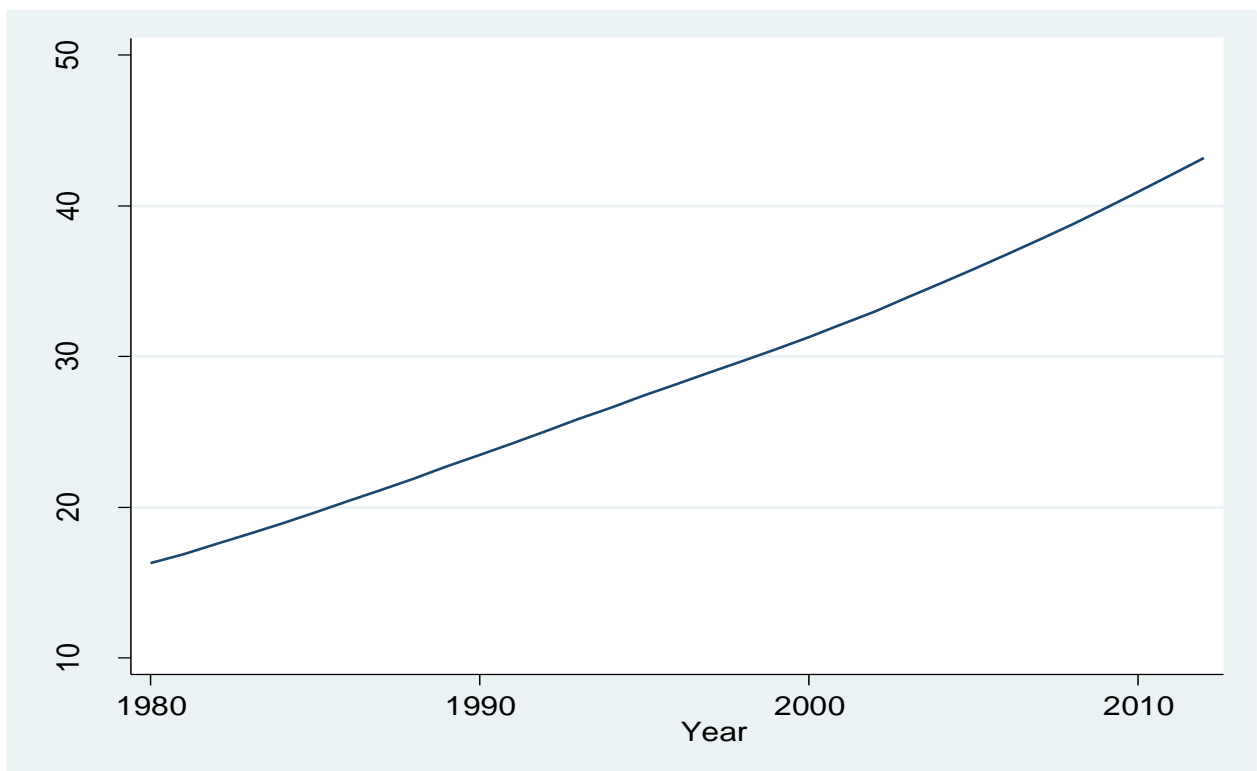
**4.2.2 Correlation Analysis**

The study used correlation matrix to establish the relationship between various variables utilized by the study. From table 3 below, public expenditure was negatively correlated with inflation rates and foreign aid while there was a positive correlation with the rest of the variables. Inflation rate also had a negative correlation with gross domestic product, population and dummy for periods under free primary education while it had a positive correlation with other variables. On the other hand, foreign aid had a negative correlation with all other variables whereas GDP, population and dummy representing era with coalition government showed a positive correlation with their respective variables accordingly. However, having in mind that spear man correlation matrix shows the degree of association between independent variables and public expenditure i.e. public expenditure and its respective independent variables, it does not show the causality. This test gives information on the magnitude with which variables to be estimated change as a result of a unit change in another variable.

**Table 2: Correlation Matrix**

| VARIABLE | PE | INF | FA | GDP | POP | DCOL | DFPE |
|---|---|---|---|---|---|---|---|
| PE | 1.0000 | | | | | | |
| INF | -0.2350 (0.1881) | 1.0000 | | | | | |
| FA | -0.4679 (0.0060) | 0.5505 (0.0009) | 1.0000 | | | | |
| GDP | 0.9977 (0.0000) | -0.2426 (0.1736) | -0.4706 (0.0057) | 1.0000 | | | |
| POP | 0.9957 (0.0000) | -0.2470 (0.1658) | -0.4746 (0.0053) | 0.9980 (0.0000) | 1.0000 | | |
| DCOL | 0.6213 (0.0001) | -0.0444 (0.8063) | -0.0178 (0.9219) | 0.6213 (0.0001) | 0.6213 (0.0001) | 1.0000 | |
| DFPE | 0.7964 (0.0000) | -0.0208 (0.9086) | -0.3047 (0.0847) | 0.7964 (0.0000) | 0.7964 (0.0000) | 0.6409 (0.0001) | 1.0000 |

**Note: The figures in parenthesis are the significance levels at 5%.**

Further, Table 3 above has the ability to inform on the Multicollinearity between variables whereby if the coefficient exceeds |0.6|, then it implies that the two variables have Multicollinearity of which wrong inferences may be made if it is not addressed.

**4.2.3 The Variance Inflation Factors**

From Table 4 below, we observed that population and GDP had the highest inflation factors implying that there is Multicollinearity. This was addressed by introducing the first differences which also made these variables stationary.

**Table 3: Variance Inflation Factors (raw)**

| VARIABLE | VIF | 1/VIF |
|----------|-----|-------|
| POP | 40.10 | 0.024940 |
| GDP | 35.97 | 0.027801 |
| DCOL | 5.67 | 0.176491 |
| DFPE | 3.72 | 0.269101 |
| FA | 2.71 | 0.369380 |
| INF | 1.99 | 0.502893 |
| **Mean VIF** | **15.02** | |

Upon introducing the first differences on population and computing the first difference on GDP, Multicollinearity was reduced/ eliminated where all VIF values were less than 10 and 1/VIF was greater than 0.1 . Table 5 was the outcome of the test.

**Table 4: Variance Inflation Factors (Corrected)**

| Variable | VIF | 1/VIF |
|----------|------|----------|
| DPOP | 8.50 | 0.117622 |
| DFPE | 5.34 | 0.187223 |
| DGDP | 4.90 | 0.204267 |
| DCOL | 3.13 | 0.319669 |
| FA | 2.31 | 0.432340 |
| INF | 2.00 | 0.500159 |
| Mean VIF | 4.36 | |

## 4.3 Linearity

We adopted scatter plot and noted that there was lack of linearity of observations as illustrated by distribution or scatter plots around the 45 degree line as shown in Figure 7 below. We observed a bowed pattern or pattern distributed to the lower right part of the 45 degree line implying non linearity.

**Figure 7: A graph of public expenditure against fitted values**
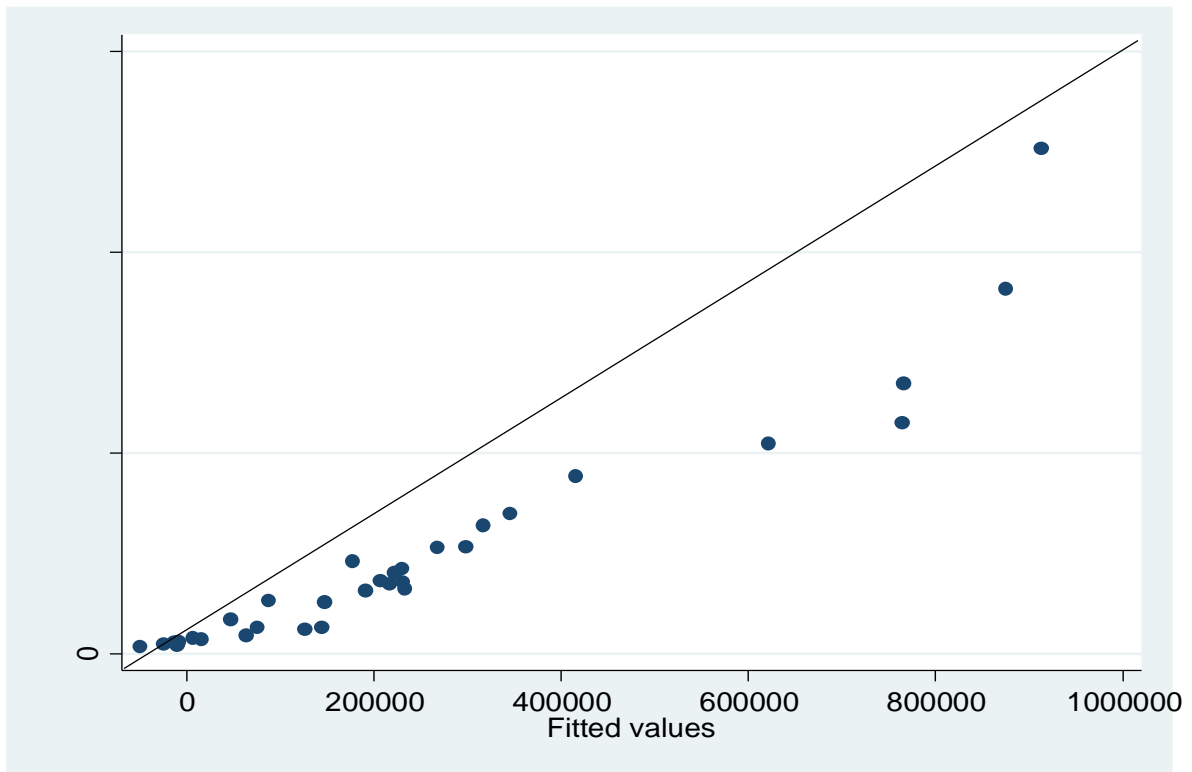


To remedy this assumption of non- linearity, we adopted a logarithmic model which made the distribution fairly around the 45 degree line as shown in the figure 8 below.

**Figure 8: The graph of Natural logarithm against the fitted values**
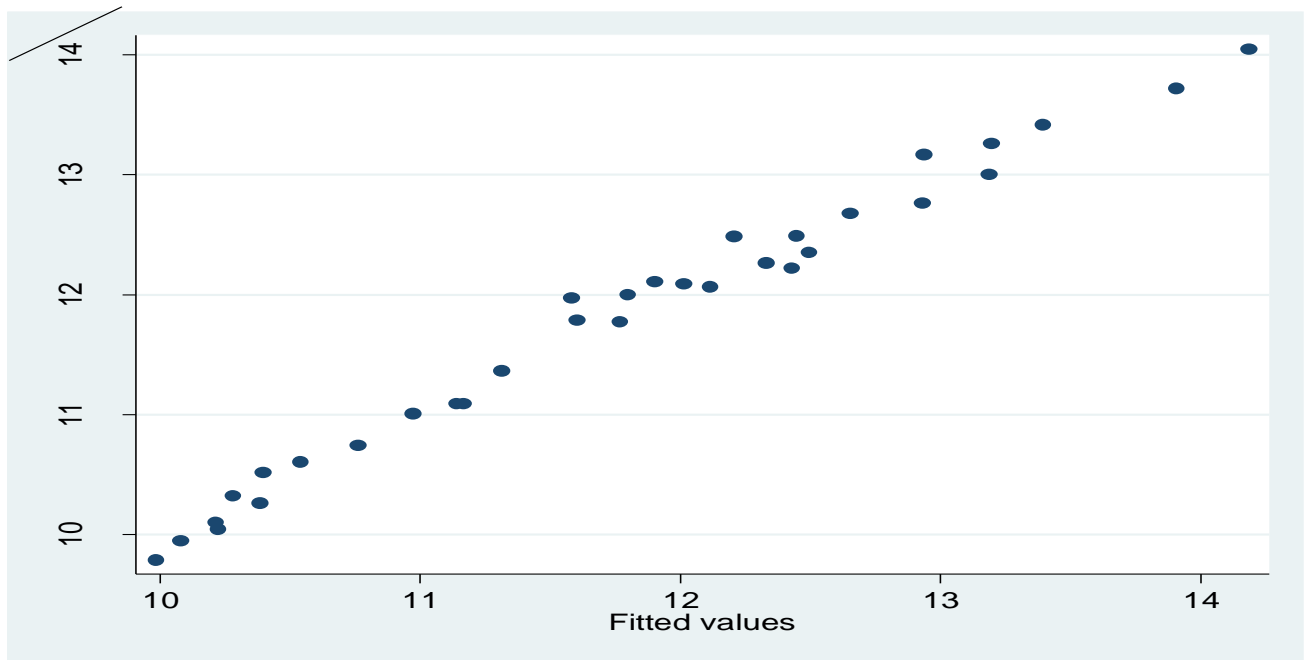


## 4.4 Autocorrelation

This study employed Breusch pagan and Durbin Watson test statistic to test the assumption of non-autocorrelation. This was to detect whether the error terms relating to any two different observations were mutually independent. This means that the disturbance term of the data collected for public expenditure growth in Kenya from 1980 to 2012, occurring at one period of time did not carry over to another period. We found out that there was no autocorrelation as illustrated in the table below as well as Durbin Watson statistic which was 1.372735 and second LM test has a p-value of 0.0884 which was greater than 0.05.

**Table 5: Breusch-Godfrey LM test for autocorrelation**

| Lags(p) | chi2 | df | Prob > chi2 |
|---------|-------|-----|-------------|
| 1 | 2.904 | 1 | 0.0884 |
| $H_0$: No serial correlation | | | |

## 4.5 Homoscedasticity

This is refers to the constant variance of the error terms across all the observations. The residual plot method was used to test for it. We applied both Breusch pagan tests for heteroscedasticity where the p value of 0.8552 was greater than 0.05 and residual plot method. The findings indicated the absence of heteroscedasticity.

**Table 6: Test for Heteroscedasticity**

| **Breusch-Pagan / Cook-Weisberg test for heteroscedasticity** |
|---|
| Ho: Constant variance |
| Variables: Fitted values of natural log of Public Expenditure |
| Chi2(1) = 1.08 |
| Prob > chi2 = 0.8552 |

$H_o$: Homoscedasticity

The figure below shows systematic distribution of residuals implying constancy of the error terms across observations.

**Figure 9: A Graph of residuals squared against the fitted values**
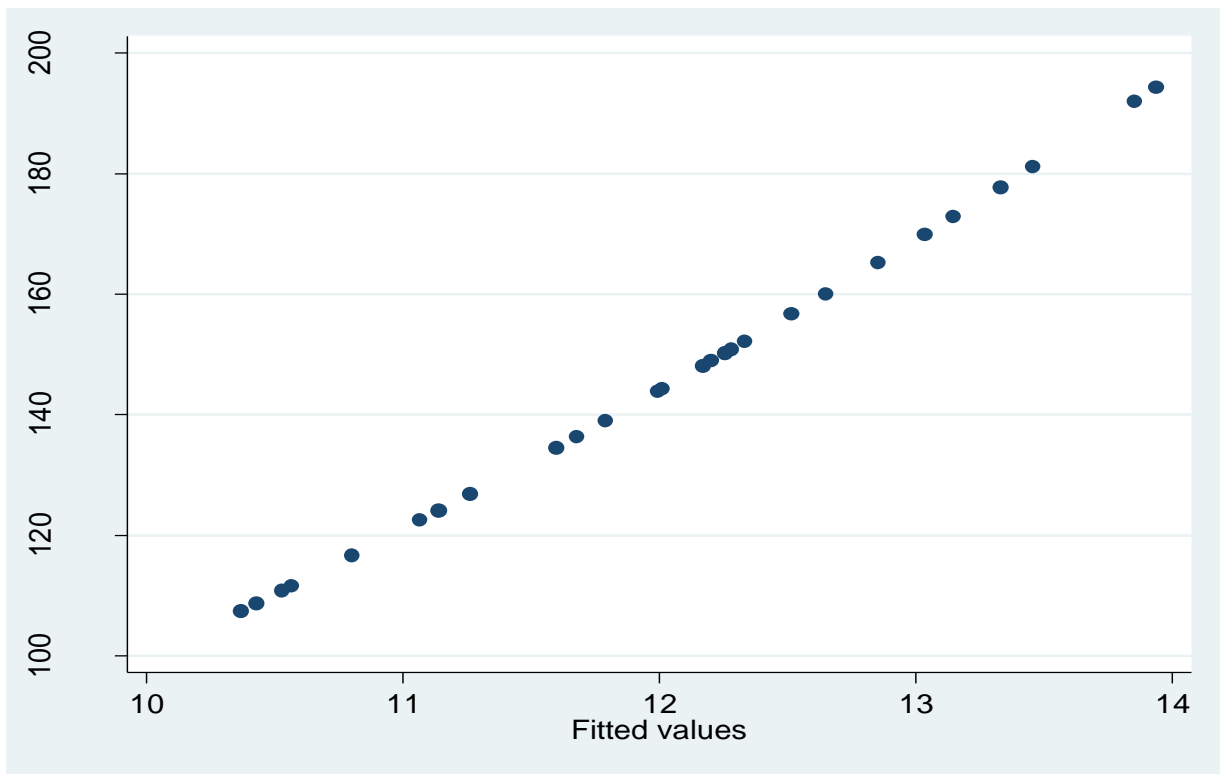


## 4.6 Testing for unit root

The unit root test was applied to detect non-stationarity in all the variables under the study to avoid spurious estimates. The Augmented Dickey Fuller (ADF) test was applied to test whether the collected time series will be stationary or not. The hypotheses tested included;

Null hypothesis: The variable has got unit root

Alternative hypothesis: The variable has got no unit root

From the Table 8 below, we computed test statistics at lags zero, critical values at 95% confidence interval and respective p-values in an effort to determine stationarity. We found that the p-value of inflation rates had unit root but upon successive lagging up to level four, (four lags) it becomes stationary.

**Table 7: Testing for Stationarity**

| Variables | Test statistic at lags (0) | Test statistic at lags (0) after first differencing |
|-----------|---------------------------|------------------------------------------------------|
| **LnPE** | 3.568 | - |
| **INF** | -3.311 | - |
| **FA** | -2.995 | - |
| **GDP** | 2.079 | 10.284 |
| **POP** | 2.882 | 15.696 |
| **DFPE** | -4.619 | - |
| **DCOL** | -3.373 | - |

** The critical value at 5% significance level is 2.980 and the critical value at 5% significant level after first difference is 2.983.

$H_o$: Variable has unit root[1].

The transformed model is as shown below;

$$LnPE = \beta_0 + \beta_1 INF + \beta_2 FA + \beta_3 DGDP + \beta_4 DPOP + \beta_5 DFPE + \beta_6 DCOL + \mu \ \ldots\ldots\ldots\ldots.. (2)$$

Where lnPE is the natural log of public expenditure, INF is the inflation, FA is the foreign

Aid, DGDP is the first difference of Gross Domestic Product, DPOP is the first difference of

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[1] Condition: We reject the null hypothesis of non stationarity if the test statistic is greater than the critical value at 5% significance level.

the population and DFPE and DCOL are as described in Equation 1 above. The above model is stationary.

## 4.7 Cointegration Test

This involves establishment of either a long run or short run relationship between the natural log of public expenditure and other independent variables. Having established the stationarity, we used equation 1 above to generate the residuals and the first differences of the residual. The first differences, lagged values and lagged values of the first differences were included in another successive regression as model regressors. The following was the hypothesis tested;

$H_0$: There is no long run relationship between public expenditure and independent variables

$H_1$: There is a long run relationship between public expenditure and independent variables

From the results in the table below, the p-value of 0.0014 is less than 0.05 implying that there is cointegration. This means that there is a long run relationship between public expenditure and independent variables. The variables under study move together in the same direction in the long run.

**Table 8: The Engle-Granger Test**

| Source | SS | Df | MS | Number of obs | = 27 |
|---|---|---|---|---|---|
| | | | | F( 2, 25) | = 8.60 |
| Model | 0.494758787 | 2 | 0.247379394 | Prob > F | = 0.0014 |
| Residual | 0.719279277 | 25 | 0.028771171 | R-squared | = 0.4075 |
| | | | | Adj R-squared | = 0.3601 |
| Total | 1.21403806 | 27 | 0.044964373 | Root MSE | = 0.16962 |

| D.uhat | Coef. | Std. Err. | t | P>|t| | [95% Conf. Interval] | |
|---|---|---|---|---|---|---|
| Uhat | | | | | | |
| L1. | 0.0133325 | 0.0034597 | 3.85 | 0.001 | 0.0062072 | 0.0204579 |
| LD. | -0.2356313 | 0.196849 | -1.20 | 0.243 | -0.6410493 | 0.1697868 |

## 4.8 Estimation results

The overall objective of this study was to estimate the effects of the various factors identified as contributing to the continued growth of public expenditure in Kenya. The estimated variables were inflation rates, foreign aid, gross domestic product, population, dummy for free primary education and dummy representing coalition government.

**Table 9: Results for the log linear regression model**

| Newey-West | | | | |
|---|---|---|---|---|
| **lnPE** | **Coefficients** | **Std. Err.** | **T** | **P>t** |
| **INF\*\*** | 0.0101178 | 0.0065292 | 1.55 | 0.134 |
| **FA\*\*** | -0.027357 | 0.0172515 | -1.59 | 0.125 |
| **DGDP** | 0.0085765 | 0.0029497 | 2.91 | 0.007 |
| **DPOP** | 0.0716666 | 0.0038178 | 18.77 | 0.000 |
| **DFPE** | -0.8902821 | 0.1676292 | -5.31 | 0.000 |
| **DCOL** | -0.7171592 | 0.1534168 | -4.67 | 0.000 |
| **_cons** | 8.52597 | 0.1725581 | 49.41 | 0.000 |
| Number of observations= 32 | | | | |
| F( 6,  25) =  191.58 | | | | |
| Prob > F     =  0.0000 | | | | |

**\*\*Insignificants at 5% significant level**

The following is the final estimated model after conducting tests for model specification;

*LnPE = 8.52597 + 0.0101178INF − 0.027357FA + 0.0085765DGDP + 0.0716666DPOP-*

*0.8902821DFPE - 0.171592DCOL*

Where; LnPE is the natural log of public expenditure,

INF is the inflation rates,

FA is the foreign Aid,

DGDP is the first difference of the GDP,

DPOP is the first difference population and

DFPE and DCOL are dummies representing for free primary education and coalition government respectively.

The interpretation of the above model proceeds as follows; that for a unit increase in inflation, then public expenditure will increase by 1.01% whereas a unit increase of foreign aid leads to a decline in public expenditure by 2.74% holding other factors constant. On the other hand, a unit increase in the first difference of Gross domestic product attracts an increase in public expenditure by 0.86% holding other factors constant. The unit change in the first difference of the population growth led to an increase in the public expenditure by 7.17% holding other factors constant. The other two dummies that is the introduction of free primary education and the presence of the coalition government were found to reduce public expenditure by 89.03% and 71.72% respectively holding other factors constant. The positive relationship of public expenditure is observed with inflation, population and Gross domestic product.

On model specification, from Table 10 above we found out that all variables fit in this log linear model well with their p-value of 0.0000 implying that they determine public expenditure growth in Kenya. On specific variables, we confirm that all of our variables are highly significant at their respective various p-values in predicting the public expenditure in Kenya except foreign aid and inflation rates which were insignificant with p value of 0.125 and 0.134.the total observations were 32 since population and gross domestic product were differenced once.

**4.9 Discussion of the regression results**

The study explored inflation rates which were found to be insignificantly increasing public spending in Kenya which contrary with the study by Abu and Mustafa (2011) who analysed factors that affect government expenditure in Jordan. They found that inflation rates were significantly related to the public expenditures. However, this study results are contrary to the findings by Abu (2004), who showed that the inflation rate was negatively related to government expenditure growth in Jordan. Foreign aid was also examined and it was found out that it was not only negatively related to the public expenditure growth in Kenya but it was also highly insignificant as a factor determining public expenditure growth. An increase in foreign aid, led to a consequent decline in public expenditure growth in Kenya. Relating with study conducted by Njeru (2003) while exploring the impact of foreign Aid on Public expenditure in Kenya, he found out that there existed a positive relationship between foreign Aid and government spending which was contrary to our findings.

Public expenditure growth was well related to economic growth through gross domestic product in Kenya over the study period and a positive significant relation was established. This implies that as gross domestic product increases, public expenditure also rises. This was also a highly significant factor. This study findings are contrary to the findings of the study conducted by Ansari et al (1997) who attempted to determine the direction of causality between government expenditure and national income for three African countries (Ghana, Kenya, and South Africa) and revealed that in Ghana, Kenya and South Africa there was no long run equilibrium relationship which existed between government expenditure and national income. This may be attributed to the difference in study periods.

Population was also examined and there was a positive relationship which implied that as population increases, public expenditure increases as well. This was also a significant factor

which causes positive growth of public expenditure in Kenya. This factor was also examined by Okafor and Eiya (2011) in Nigeria, in examining the causes of government expenditure growth in Nigeria between 1999 and 2008. They found out that growth in public expenditure was positively related with population growth which is similar to our study findings. On the other hand, the study carried out by Omar (1990) in Kuwait while examining the growth of public expenditure and bureaucracy, confirmed consistent results with our study findings whereby it was found out that there was a very strong positive correlation between public expenditure and population growth. Our findings may be attributed to increase in the incidence of people to old age or there is a young population and old population sandwiching the working population and thus increasing the public consumption and thus expenditure.

The periods which involved introduction of free primary education were found to be significant in contributing towards the reduction of public expenditure in Kenya. This may be attributed to the fact that free primary education is funded externally and the role of the government is to manage the resources. In the process, we expect the resources which were allocated for the same are diverted to other sectors reducing the intended expenditures.

Leadership and governance of any country determines how resources are spent and thus the impact it may have on the economy. We thus estimated the effect of periods under the Coalition government in Kenya and revealed that, there was a significant negative relationship with public expenditure growth. This implies that, comparing with the periods under a single leadership, leadership under coalition government reduces public expenditure growth in Kenya. This may be attributed to the fact that there is more checks before public expenditures are carried forth.

# CHAPTER FIVE

# SUMMARY, CONCLUSIONS AND POLICY RECOMMENDATIONS

## 5.1 Introduction

This chapter summarizes the findings of the study in relation to the objectives, literature review and key variables in our study. It later makes substantive conclusions based on factors which contribute to the growth of public expenditure in Kenya. Policy recommendations are thereafter made.

## 5.2 Summary of the study findings

The continued growth in public expenditure in Kenya since 1980's has brought attention on how best public resources are utilized. This has even been demonstrated by budget estimates which indicated a total figure of public spending exceeding a trillion. This is suspected and thus attributed to increased inefficiency in the public sector as a whole, leading to rise in public debt associated to huge Salaries allocated to top executives in the country with little returns. Apart from these factors, this study has gone deeper into analysing the relationship among the key factors which includes inflation rates, foreign aid, Gross Domestic Product, population, free primary education and coalition government.

The study employed log linear regression model in establishing the relationship whereby it was found that all independent variables explained public expenditure well and majority of the variables were significant. It was revealed that inflation rates insignificantly determined public expenditure together with foreign aid. However, the first difference of the growth domestic product significantly increased public expenditure in Kenya. The two had a positive relationship just like the first difference of the population which significantly increased public expenditure.

We estimated further the effect of the two dummies of the free primary education and coalition government in Kenya where it was revealed that they both reduced public expenditure significantly although with higher magnitude compared to other study variables.

## 5.3 Conclusions

Government expenditure had grown tremendously due to increase in capital expenditure. This increase in development budget was as a result of increase in infrastructure budget, mainly financed through domestic and external borrowing. This budget also integrated free primary Education and improvement of health care which implies that there is likelihood of increase in public expenditure and thus it is necessary to consider significant factors which influence public expenditure in Kenya. Upon examining the impact of the explored factors, we therefore conclude that the key factors which influence or cause public expenditure are economic growth or national income, population and its dynamics, free primary education, leadership and governance.

### 5.4 Policy Recommendations

The study findings suggests that policy makers and the relevant stakeholders consider re-examining public policies which are related to national income, population growth, free primary education and coalition leadership. The government need to consider national income which is likely to increase public expenditure although interest need to be drawn to manage public spending which might lead to public debt. We need to consider that population growth leads to availability of affordable labor which is likely to contribute to reduction on recurrent expenditures and thus public expenditure. However, this might not be the case considering the little output which may not be up to scale. Therefore, the government needs to take caution on its investment plan and policies to avoid approving public expenditures to inappropriate projects with small capacities. Thus, the positive relationship

established has a positive health consequence to the country in terms of providing extra and cheap labor force and thus public spending on key priority areas. The positive significant relationship may be due to the structure in its population as suggested earlier and thus the government has a big task of evaluating the characteristic of its population. We further suggest that the systems for public expenditures be evaluated and realignment of the governance of public resources be examined. This implies that, despite public leadership, proper monitoring of government expenditures will reduce government expenditures in Kenya.

## 5.5 Areas for further research

Having considered growth of public expenditures and their determinants in Kenya, we suggest that more studies be carried out involving more macroeconomic factors which influence public expenditure in Kenya like exchange rates and Treasury bill rates. Also a study is required to explore the impact of public debt and the increasing insecurity situation on growth of public expenditure in Kenya.

## 5.6 Limitations of the study

This study was conducted for the period covering 1980-2012 which despite having updated information, some variables especially the two dummies had fewer observations which is likely to give us the challenge for clear estimates.

# REFERENCES

Abu T, S. (2004). *The Determinants of Public Expenditures in Developing Countries*: *Evidence from Jordan (1981-2001).* A paper presented in the 11th Annual Conference of American Society of Business and Behavioural Sciences, Las Vegas 19-23/2/2004.

Alm, J. and Embaye, A. (2010). Explaining the Growth of Government Spending in South Afric*a, South African Journal of Economics.* 78: 152-169.

Ansari, Mohammed I., Gordon, D. and Akuamoah, C. (1997) *Keynes versus Wagner: Public Expenditure and National Income for Three African Countries*, Applied Economics 29, 543-550.

Bhatia, H. L. (1982). *Public Finance.* New Delhi: Vikas publishing.

Bird, R.M. (1971). *Wagner's Law of Expanding State Activity, Public Finance* 26, 1-26.

Borcherding, T., and Deacon, R. (1972). *The Demand for the Services of Non-federal Governments,* The American Economic Review. 62: 891-901.

Chinedu E., Muoghalu, M and Uchenna, E. (2008). Inflation versus public expenditure growth in the US: An empirical investigation. *North American Journal of Finance and Banking Research* Vol. 2. No. 2.

Easterly, W., and Rebelo S. (1993). *Fiscal Policy and Economic Growth*: An Empirical Investigation. J. Monet.

Ekpo, H.A. (1995). *Government expenditure and Economic Growth in Nigeria*, *1960 – 1992*. AERC Research paper, final report, Nairobi, Kenya.

Ezirim, B. C., and Muoghalu, M. I. (2006). *Explaining the Size of Public Expenditure in Less Developed Countries: Theory and Empirical Evidence from Nigeria.* ABSU Journal of Management Sciences, Vol. 2, No. 2/September, Pp. 134 – 154.

Ezrim .B. C., and Ofurum, C. O. (2003). *Public expenditure growth and Inflation in Developed and Less developed countries.*

Omar, F. A. (1990). *The Growth of public expenditure and bureaucracy in Kuwait.*

Government of Kenya, *Economic Survey*. Government Printer, Nairobi. (KNBS) Various issues.

Granger, C. W. (1969). *Investigating Causal Relations by Econometric Models and Cross-Spectral Methods*, Econometrica 36, 424–438.

Holmes, J. M., and Hutton, P. A. (1990). *On the Causal Relationship between Government Expenditures and National Income,* The Review Of Economics and Statistics 72, 87-95.

James, N. (2004). *Impact of foreign Aid on Government expenditure*: The case for Kenya.

Johansen, S., and Juselius, K. (1990). *Maximum Likelihood Estimation and Inference on Cointegration with Applications to the Demand for Money*, Oxford Bulletin of Economics and Statistics 52, 169-210

Johansen, S. (1988). Statistical analysis of co-integration vectors. *Journal of Economic Dynamics and Control*, 12: 231-254.

Kanano. A. G. (2006). *Determinants of Public expenditure growth in Kenya.*

Maingi, J. (2010). *The impact of public expenditure on economic growth in Kenya*. A Ph.D. Thesis, Nairobi, and Kenyatta University: Unpublished.

Masgrave, R. (1989). *The Theory of public finance.* New York: McGraw-Hill

Ndun'gu, N. (1995). Government budget deficit and inflation in Kenya: An empirical investigation. *Journal of African development*. Vol.2 No.2.

Neck, R., and Schneider, F. (1988). *The Growth of the Public Sector in Austria*: *In Explaining the Growth of Government*, Elsevier Science Publishers, Amsterdam, 231-263.

Okafor C., and Eiya, O. (2011). Determinants of growth in government expenditure: An empirical analysis of Nigeria. *Research Journal of Business management*, 5(1), pp 44-50.

Pack, H., and Pack, J. R. (1993). *Foreign aid and the Question of fungibility*, Review of Economics and Statistics, vol. 75, 2: 258–65.

Peacock, A., and Wiseman, J. (1961). *The Growth of Public Expenditure in the United Kingdom,* Princeton: Princeton University Press.

Public Expenditure Review, *Various issues*

Sultan N. A. T., and Mustafa, H. (2011). The Determinants of Public Expenditures in Jordan. *International Journal of Business and Social Science* Vol. *2 No. 8.*

Thomas, S., and Okolski, G. (2010). *Does Government Spending Affect Economic Growth?* 2Mercatus on Policy No. 76 at George mason university.

Wagner, R., &Weber, W. (1977). Wagner's Law, Fiscal Institutions, and the Growth of Government. *National Tax Journal,* 30, 59-68.

White, H. (1992). The macroeconomic impact of development aid: A critical survey. *Journal of Development Studies*, vol. 28: 163–240.

# APPENDICES

## Appendix 1: Data

| Year | PE | INF | FA | GDP | POP | DCOL | DFPE |
|------|------|------|------|------|------|------|------|
| 1980 | 17800 | 13.85818 | 5.605093 | 5.39E+10 | 16.27 | 0 | 0 |
| 1981 | 20886 | 11.60305 | 6.749357 | 6.20E+10 | 16.9 | 0 | 0 |
| 1982 | 23070 | 20.66672 | 7.845004 | 7.03E+10 | 17.56 | 0 | 0 |
| 1983 | 24330 | 11.39778 | 6.842525 | 7.96E+10 | 18.24 | 0 | 0 |
| 1984 | 30346 | 10.2841 | 6.821222 | 8.92E+10 | 18.94 | 0 | 0 |
| 1985 | 28556.4 | 13.00657 | 7.20012 | 1.01E+11 | 19.66 | 0 | 0 |
| 1986 | 36835.8 | 2.534276 | 6.328427 | 1.18E+11 | 20.39 | 0 | 0 |
| 1987 | 40258.4 | 8.637673 | 7.245167 | 1.31E+11 | 21.14 | 0 | 0 |
| 1988 | 46262.4 | 12.26496 | 10.35935 | 1.48E+11 | 21.9 | 0 | 0 |
| 1989 | 60380 | 13.78932 | 13.18202 | 1.70E+11 | 22.69 | 0 | 0 |
| 1990 | 65556 | 17.78181 | 14.39438 | 1.96E+11 | 23.45 | 0 | 0 |
| 1991 | 65366 | 20.0845 | 11.78282 | 2.24E+11 | 24.24 | 0 | 0 |
| 1992 | 86157.6 | 27.33236 | 11.24356 | 2.65E+11 | 25.04 | 0 | 0 |
| 1993 | 129586.2 | 45.97888 | 16.95949 | 3.34E+11 | 25.84 | 0 | 0 |
| 1994 | 131518.8 | 28.81439 | 9.971227 | 4.01E+11 | 26.63 | 0 | 0 |
| 1995 | 158050.6 | 1.554328 | 8.386846 | 4.65E+11 | 27.42 | 0 | 0 |
| 1996 | 162080 | 8.864087 | 5.034025 | 6.88E+11 | 28.19 | 0 | 0 |
| 1997 | 181396 | 11.36185 | 3.465814 | 7.70E+11 | 28.94 | 0 | 0 |
| 1998 | 177869.5 | 6.722437 | 2.973412 | 8.51E+11 | 29.7 | 0 | 0 |
| 1999 | 174172.7 | 5.742001 | 2.440198 | 9.07E+11 | 30.48 | 0 | 0 |
| 2000 | 211903.7 | 9.980025 | 4.077111 | 9.68E+11 | 31.29 | 0 | 0 |

| 2001 | 202785.5 | 5.738598 | 3.670447 | 1.02E+12 | 32.13 | 0 | 0 |
|------|----------|----------|----------|----------|-------|---|---|
| 2002 | 231154.1 | 1.961308 | 3.015549 | 1.04E+12 | 33 | 0 | 0 |
| 2003 | 264904.1 | 9.815691 | 3.548547 | 1.13E+12 | 33.91 | 0 | 1 |
| 2004 | 266237.2 | 11.62404 | 4.138467 | 1.27E+12 | 34.83 | 0 | 1 |
| 2005 | 320404.9 | 10.31278 | 4.053022 | 1.42E+12 | 35.79 | 0 | 1 |
| 2006 | 349546.1 | 14.45373 | 4.220096 | 1.62E+12 | 36.76 | 0 | 1 |
| 2007 | 443283.1 | 9.75888 | 4.89718 | 1.83E+12 | 37.75 | 0 | 1 |
| 2008 | 524013.6 | 26.23982 | 4.490411 | 2.11E+12 | 38.77 | 1 | 1 |
| 2009 | 574253.1 | 9.234126 | 5.815522 | 2.38E+12 | 39.82 | 1 | 1 |
| 2010 | 673215.9 | 3.961389 | 5.082978 | 2.57E+12 | 40.91 | 1 | 1 |
| 2011 | 909911.3 | 14.02155 | 7.387605 | 3.05E+12 | 42.03 | 1 | 1 |
| 2012 | 1258203 | 9.378396 | 6.619671 | 3.40E+12 | 43.18 | 1 | 1 |