THE IMPACT OF PUBLIC EXPENDITURE COMPONENTS ON ECONOMIC GROWTH IN KENYA: 1964-2011

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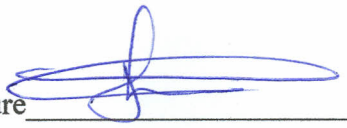
RESEARCH PROJECT PRESENTED TO THE SCHOOL OF ECONOMICS, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF ECONOMICS (ECONOMETRICS) OF KENYATTA UNIVERSITY.

OCTOBER 2012

DECLARATION

This research paper is my original work and has never been presented for the award of a degree in any other University.

Signature  Date 30/11/12.

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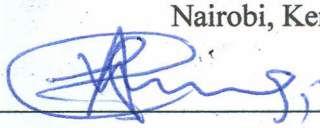
Signature  Date 30/11/12

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DEDICATION

I dedicate this paper to my wife Salome, my son and daughter Michael Chege and Valentine Wandai, and to my mother Esther Wandai.

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I thank the Almighty God for the strength given unto me to write this paper. I sincerely wish to thank God for the good health; strength, financial providence and grace freely granted. God continually gave me favour and guidance.

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May the Lord Almighty Bless You all

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ACRONYMS AND ABBREVIATIONS

ADF	-	Augmented Dicky – Fuller
ASAL	-	Arid and Semi Arid Lands
CAP	-	Capital to total government expenditure ratio.
COMESA	-	Common Market for Eastern and Southern Africa
ERS	-	Economic Recovery Strategy
GDP	-	Gross Domestic Product
GOK	-	Government of Kenya
IMF	-	International Monetary Fund
MTPs	-	Medium Term Plans
OECD	-	Organization for Economic Co-operation and Development
OLS	-	Ordinary Least Squares
PPP	-	Public Private Partnership
PRSP	-	Poverty Reduction Strategy Paper
SAPs	-	Structural Adjustment Programmes
VECM	-	Vector Error Correction Model

OPERATIONAL DEFINITION OF TERMS

Economic growth: This is the increase in the value of goods and services produced in an economy. It is measured as the percent rate of increase in gross domestic product, or GDP. It is calculated in real terms; with inflation-adjusted terms, in order to net out the effect of inflation on the price of the goods and services produced.

Government expenditure: It is the government acquisition of goods and services for current use to directly satisfy individual or collective needs of the members of the community (government final consumption expenditure) and to create future benefits, such as infrastructure investment or research spending (government investment). Another government expenditure is through transfer payments. Government expenditure can be financed by seigniorage, taxes, or government borrowing.

Gross Domestic Product: It is the total market value of the goods and services produced by a nation's economy during a specific period of time, normally one year period.

Market failure: It refers to a situation whereby the allocation of goods and services by a free market is not efficient. It can be viewed as scenarios where individuals' pursuit of pure self-interest leads to results that are not efficient.

Vector Error Correction Model is a statistical technique for testing and estimating causal relations using a combination of statistical data and qualitative causal assumptions.

ABSTRACT

Kenya has been faced with severe macroeconomic imbalances in the past, As such; the purpose of this study was to find out the impact of public expenditure composition on economic growth in Kenya from 1964 to 2011. The specific objectives of the study were to investigate the impact of government expenditure on components: education, infrastructure, health, defense and public order and security on economic growth in Kenya

The growth models specified in this study only takes into account potential determinants of growth in Kenya. The key explanatory variable in the model is GDP growth. This is the increase of GDP or other measure of aggregate income. This study employed use of annual Kenyan data for the period 1964 to 2011 for all the variables. The study conducted Stationarity Test, Causality Test, Cointegration Tests before using vector error correction model to estimate the data.

The survey showed that though government expenditure on education is positively related to economic growth it does not spur any significant change to growth. Based on this, investing in more and better-distributed education in the labor force will help create conditions that could lead to higher productivity and higher economic growth. It is also necessary to adopt policies that lead to the creation of diversified, dynamic, and competitive sectors capable of absorbing the more educated labor force to translate human capital into higher economic growth.

On health while an increased expenditure on improving health might be justified purely on the grounds of its impact on labor productivity. This supports the case for investments in health as a form of human capital. To reduce the huge budget

outlay for importing medicine and drugs, this study recommended for government to support research and development in this sector locally

Public investment in human capital (health and education), public law and order, research and development, and social and economic infrastructure leads to creation of positive externalities which in turn improve the productivity of private investment. It was also noted that the government should encourage programs like Build Operate and Transfer (BOT) to foster increased investment and provision of public utilities. As a result of this relationship between private and public investment, the government should come up with policies that brings a balance between the two.

CHAPTER ONE

INTRODUCTION

1.1 Background of the study

The link between government expenditure components and economic growth is a critical subject of analysis as the two are interrelated (Stieglitz, 1989). There has been increased contention among development economists as to the relationship between public expenditure and economic growth in Kenya (Jerono, 2009).

Government expenditure has been seen to boost productivity but on the same breath it has been seen as impediment to development because of the way it's financed. By borrowing to finance public expenditure the government compete with private investors for capital thereby crowding out private investment and instigating enormous foreign debt burden (World Bank, 1991). On the other hand Development studies literature based on mercantilist ideology support government involvement role in the economy due to market failures, public goods and externalities. Amanja (2005) reported that government expenditure is indeterminate of economic growth. Kenya has had mixed economic performance since independence and this study sets out to investigate the role of government expenditure components on economic growth for this period.

1.2 Public expenditure policy in Kenya

The size and distribution of government expenditure have changed remarkably since Kenya got her independence. (Jerono, 2009). The government have been guided in its expenditure by several sesional papers, medium term plans,

vision 2030 and the constitution. Since independence in the early 1960s, the country has been able to maintain a high level of investment, much of it financed from domestic savings. The savings investment gap has; however, expanded over time — from about 3.2% of GNP in 1965-69 to 6% in the 1980s — thus the country has come to rely increasingly on external resources to finance its capital formation. A cutback in the availability of net foreign capital inflows is therefore likely to have a negative impact on economic growth, while the high dependence of external capital inflows results in large outflows of investible resources in the form of debt repayments. A major cause of the widening savings—investment gap has been the large budget deficits incurred by the public sector. The overall budget deficit increased from 4.9% of GDP in 1969-73 to 9.4% in 1979-83 and was about 5.0% in 1989-1990. In 1986, the Kenyan Government published a sessional paper, Economic Management for Renewed Economic Growth. This study argued that if Kenyans were to enjoy an improvement in their living standards, it was imperative that economic growth become the primary concern of economic policy and that the rapid growth rates experienced in the 1960s be restored and sustained. This was to be brought about by the implementation of appropriate policies, particularly those that alleviate saving, fiscal, and foreign exchange constraints.

From the report by the National Accord Implementation Committee on National Reconciliation and Emergency social and Economic Recovery Strategy the government launched A medium term fiscal expenditure plan to

run for the period 2008-2012. Within its first year, the Medium Term Policy, (2008-2012) incorporated interventions underscored in the report. The MTP aimed at increasing real GDP growth from an estimated 7 per cent in 2007to 7.9-8.7 per cent by the years 2009-2010; and to 10 per cent by 2012.Over the next five years, savings and investment levels were targeted to increase in order to support economic growth and employment creation envisaged under the Plan.

1.3 Composition of government expenditure in terms of capital and current expenditure in Kenya

Public expenditure in Kenya classified in terms of capital and recurrent expenditure for the period 1963 to 2011 is summarised in percentage form in figure 1.1

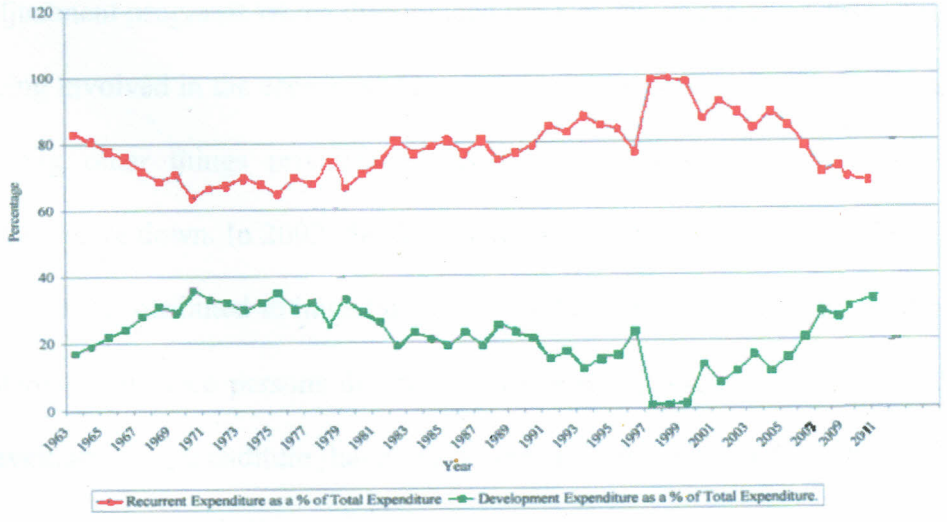

Figure 1.1 Public expenditure allocations in terms of capital and recurrent expenditure in Kenya.

Source: Republic of Kenya statistical abstracts and economic survey for different years

It is evident from figure 1.1 above that the recurrent expenditure has been more than development expenditure since 1963. This could be attributed to the fact that during the early days of Kenya acquiring her independence the then president Mzee Jomo Kenyatta government was guided by African socialism which dictated that there should be a deliberate effort to eradicate poverty, ignorance and disease. Government had to take over the mantle of providing for those needs. And in the subsequent years, in efficiency, corruption, bloated government ministries and excessive members of parliament salaries can partly account for the trend (Republic of Kenya, 2008).

Recurrent expenditure ratio being higher than that of development could be partly attributed to the IMF and World Bank spearheaded structural adjustment programs which discouraged the Kenyan government from directly being involved in the economy. The structural adjustment programs advocated among other things privatization, cost sharing which brought about the expenditure down. In 2002, the development expenditure ratio went down and this can be attributed to huge budget outlay to fund the election and settle the internally displace persons due to the post election violence. After 2002 the development expenditure have witnessed an upward trend as the NARC government embarked on massive infrastructure development as enshrined in the strategy for poverty eradication sessional paper of 2002 (Republic of Kenya, 2002). This period have seen road infrastructure such as Thika road, bypasses, communication infrastructure including the fiber optic cable installation, education enrolment record growth. In 2008 to 2011 the

development expenditure remained high as most of the development projects were still underway coupled with the 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.

1.4 Composition of Public Expenditure by Components in Kenya

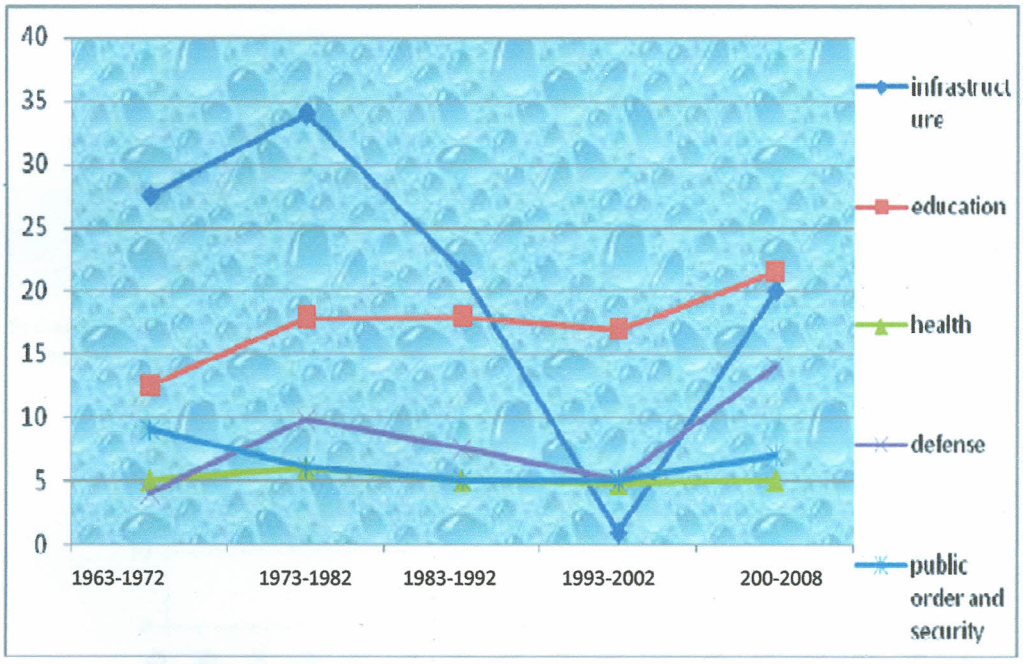

Figure1.2 Government expenditure in various components of the economy.
Source: Republic of Kenya Statistical Abstract and Economic Survey for year 1963 – 2008

As shown in the figure 1.2, the government expenditure on public order and security went down from 8 per cent to 6 per cent from 1963 to 1982. However, public expenditure in all other components went up in the same period 1963-1982. This is attributed to the fact that the government was in the business investing in infrastructure. There was a decline in expenditure during the period 1983 – 1992 on components such as defence and infrastructure due to the reallocation of funds to cater for 1992 election. On the same period Kenya

experienced a foreign aid freeze which partly accounted for constriction in public expenditure. In 2002 there was a sharp increase in infrastructure allocation as the NARC government embarked on construction of roads and other infrastructures as they had pledged during the campaigns (Republic of Kenya 2003).

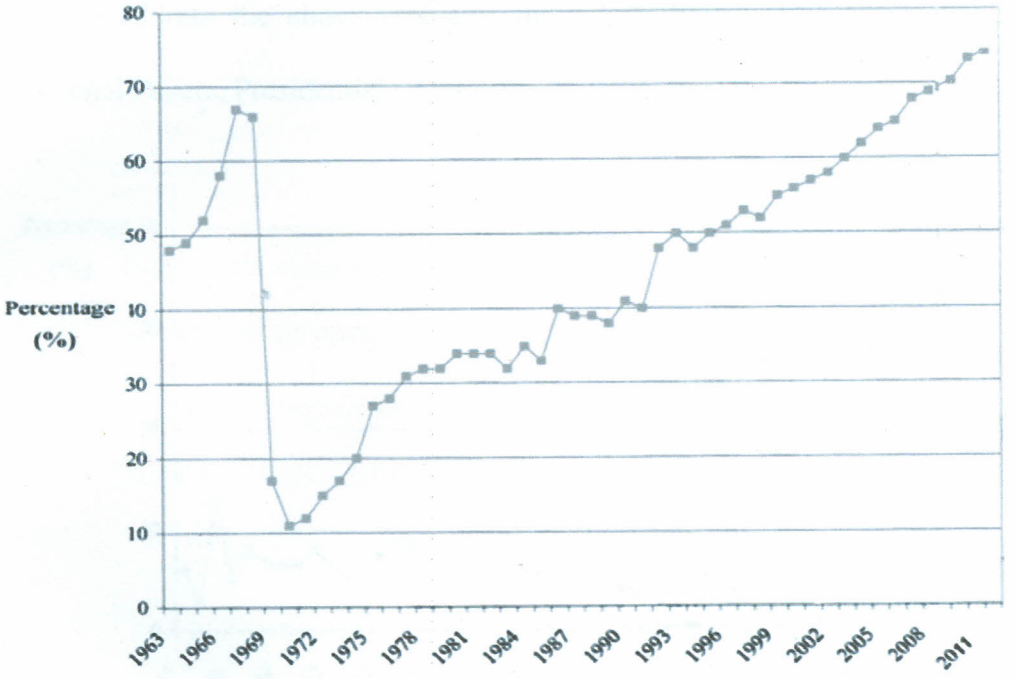

Figure 1.3 An overview of trend of public expenditure growth 1963 – 2011

Figure 1.3 shows a generally upward trend of public expenditure in Kenya. Since 1969 the percentage of the public expenditure has been going up in most of the years, by the year 2011 the percentage of public expenditure had more than quadrupled, in 1970 it was slightly more than 10% and by 2008 it was in excess of 60%. In 2011 the budget estimates indicated a total figure of public expenditure in excess of one trillion.

1.5 Overview of Economic Growth in Kenya.

Growth in national income is necessary, though not sufficient, for poverty reduction. In 1963, the Government of Kenya (GoK) identified illiteracy (ignorance), disease, and poverty as the main problems to be addressed in order to achieve sustainable national economic growth. The Government has tried to address the above problems through National development Plans, Sessional Papers, Presidential Commissions, Task Forces and various studies.

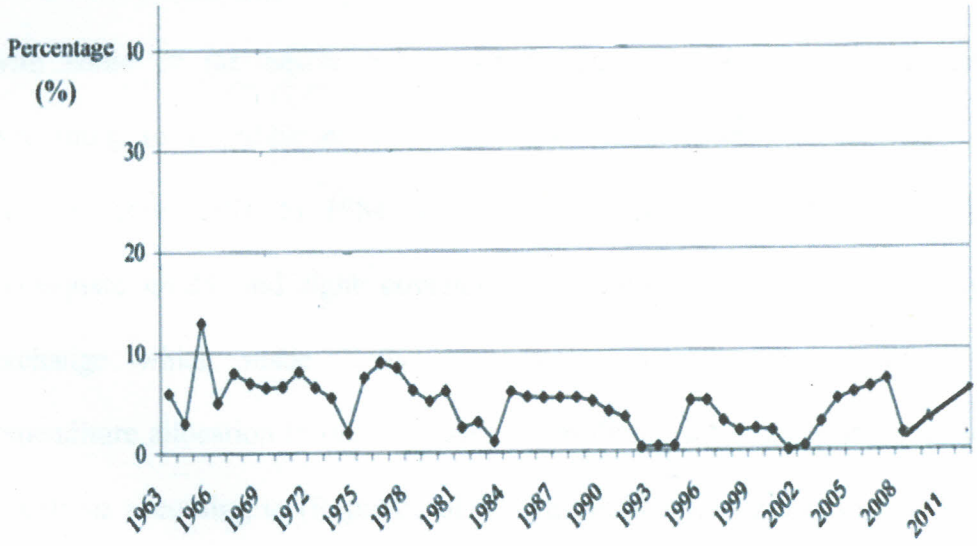

Figure 1.4 Percentage of GDP growth in Kenya overtime

On Kenya gaining her independence in 1963, and in a bid to redistribute her national cake in favour of its indigenous part of the populace, she embraced a development strategy African Socialism philosophy to guide her to that end. The other major objective by then other than to fight poverty, ignorance and disease, was to create employment and tame foreign dominance in the economy. Kenya also opened a window for supporting private investors and encouraging foreign investment to give herself an edge in her bid to be

industrialised (Republic of Kenya, 1974). However, Kenya by then did not have enough well trained and skilled people in the private sector. As a consequence the government did set up many parastatals and maintained the ones already set up during the colonial time by the British colonialist. During the time the government had its tentacles in many industries such as banking, insurance, and transport (EAMAT, 1999). During the period between 1964 and 1974 the economy grew by an average of 6.6% because of the massive private investment encouragement. At that time Kenya competed favourably with some of the newly industrialized countries (NICs) of East Asia. According to Republic of Kenya (1985), the Kenyan economic growth declined from 1976 to 1984 due to in appropriate agricultural policies, inadequate credit and tight government controls on imports and foreign exchange which made Kenya unattractive to investors. Government expenditure allocation to the ministries did not necessarily go to the intended intentions according to (Republic of Kenya Public expenditure review, 1997 and 2003). In period 1960 to 1991 the public servant figure rose from 60,000 to 272,000 (Republic of Kenya, 2001). This was also a period Kenya saw many white elephant projects come up with less benefit to show for them, many government departments were run down. A case in point is 1980 when the government invested $1.4 billion it was receiving a meagre return of 0.2 per cent. There was also a huge capital outlay to subsidise loss making state enterprises amounting to about 0.3 per cent of the GDP in the years 1986 – 1991 (EAMAT, 1999).

In 1991 to 1993 Kenya's economic performance hit rock bottom. Education attainment, health and poverty reduction among Kenyans did show a declining trend thus necessitating adoption of sessional paper no 1 of 1986. The Economic Management for Renewed Growth (1986) forced the government to cut back on spending amid criticism from international community and Kenyan development partners over the structure of government spending in Kenya which was in favor of consumption and paying local and foreign debts as a trade off for capital expenditure outlay.

In the 1990s Breton wood institutions and other donors caused Kenya to accent into structural adjustment programs (Saps). The saps had been hatched to aim at improving African economy if implemented through enhanced saving, efficient use of public scarce resources, restructuring parastatals to be managed efficiently and competitively. The saps also targeted abolishing 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 the 207 paratatals in Kenya and to nature 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. This elicited a heated debate about those purchasing the enterprises and the ensuing political

debacle delayed the implementation of the reform program (Republic of Kenya 2003).

The other reform program that came into effect in 1993 entailed downsizing of the public sector work force which had been seen as bloated and unnecessary financial burden to the exchequer (World Bank, 2003). It was also intended to eliminate duplication of functions in different government departments, training and capacity building to revitalize service delivery and stipulate each department's roles to avoid conflicts among government departments. The golden hand shack (voluntary early retirement) was introduced and that among other instruments brought the civil service labor force down from 272,000 in 1991 to 194,900 in 2002. However this brought another problem of jeopardizing service delivery due to staff shortage. Government was cought in the middle of forces from Briton wood institutions to cut down the number of workers and at the sometime it needs to be a champion of job creation and ensure that quality of service delivery is not affected by understaffing (Republic of Kenya, 2003).

All in all inefficiencies in government, lack of political good will and numerous vested interests lead to shoddy, poor prioritizing, and reluctant implementation of the policies, sometimes some policies were reversed halfway, others suspended momentarily and this lead to the collapse of the saps regime (Republic of Kenya, 2003).

Economic blue print namely (Economic Recovery for Wealth Creation, 2003 – 2007) was promulgated. It had envisioned creation of 500,000 jobs per year, taming poverty level from 56.8 per cent to about 51.8 per cent level, achieving a GDP growth rate of about 10 per cent per year, taking the inflation rate to a low of below 5 per cent and increase domestic savings among other positive targets (Republic of Kenya, 2003).

Guided by the strategy, important policies were hatched; they included strengthening of the institution of governance, rapid economic growth, rehabilitation of physical infrastructure and enhance human capital among the poor. As a consequence the economy grew by 0.5 per cent in 2002 and it culminated to a growth rate of 7.1 per cent in 2007. In 2008 due to post election violence which rocked Kenya and erratic rainfall patterns, the economy registered a less growth of 1.7 per cent. In 2009 the government increased the public expenditure figures and economy grew at 3.2 percent, a 1.5 per cent growth better than in 2008 (Republic of Kenya 2008). In the budget estimates of 2009/2010 an amount totalling Kshs 140 billion was allocated into infrastructure development. This money was expected to spur up growth to the Kenya economy through direct investment and trickledown effect in the period 2009 up to 2011.

In the period 2008 to 2030 Kenya will be guided in her public expenditure decisions by the vision 2030 (Republic of Kenya, 2007). The vision's main objective is to make Kenya a prosperous and globally competitive nation. This

will happen by transforming Kenya into a middle income industrialized country providing high quality of life to all living in Kenya by a time line of 2030. Vision 2030 is advised by three pillars, the political, social and the economic pillars. The political pillar is geared towards a democratic political system founded on respect of rule of law, protects human rights, and issue based politics as opposed to tribal and draconian political dogmas and ideologies. The social pillar on the other hand aims at building a just and cohesive society with social equity in a clean and very secure environment. In the vision 2030 Republic of Kenya (2007) Kenya targets under economic pillar, to raise its GDP growth to a sustained rate of an average of 10 per cent per annum. To attain this goal Kenya should do a strength, weakness, opportunity and threat (SWOT) analysis and emphasise on areas it has comparative advantage while building on the weak and deficient areas. Kenya should also embark on taking advantage of the globalization and trend cautiously to protect her interest abroad together with nurturing her local industries.

In the vision 2030 Republic of Kenya (2007) the drafters has identified some strategic components of the economy and earmarked them as key drivers of our economy to the actualization of the vision. The components include health, infrastructure, retail and wholesale component, business offsoring, manufacturing both for local and regional market and financial services.

In the year 2010 Kenya promulgated the new constitution which advocates for improved standards of living for all. The constitution also enshrines human rights and mandatory provision for basic needs by the government to all citizens. This was a prelude for special programmes like urban poor subsidies, sack shambas campaign all geared towards achieving sustained economic growth rate of 10% (Vision 2030, 2007).

1.6 The Statement of the problem

There have been numerous studies on the role components of government spending in the long-term growth of economies (Aschauer, 1989; Barro, 1990; Maingi, 2010; Tanzi and Zee, 1997). These studies reported conflicting results about the impacts of government spending on economic growth. Nijkamp and Poot (2002) conducted a meta-analysis of past empirical studies of public expenditure and growth and found that in a sample of 41 studies, 29% indicated a negative relationship between public expenditure and economic growth, 17% a positive one, and 54% an inconclusive relationship. Barro (1990) was among the first to formally endogenize government spending in a growth model and to analyze the relationship between size of government expenditure and rates of growth and saving. He concluded that an increase in resources devoted to non-productive (but possibly utility enhancing) government services is associated with low economic growth. Tanzi and Zee (1997) found no relationship between government size and economic growth. On the other hand, Aschauer's (1989) empirical results indicate that non-military public capital stock is substantially more important in determining productivity than is the flow of non-military or military spending, that military capital bears little relation to productivity, and that the basic stock of infrastructure of streets, highways, airports, mass transit, sewers, and water systems has most explanatory power for productivity

Though these studies have their merits they severely suffer from the heterogeneity of the underlying data set, different estimation techniques,

different time periods and different variable measurement techniques can yield different results (Easterly, 2003). To avoid parameter heterogeneity, time series studies have been recommended by (Shioji, 2001).This study therefore sought to fill in the apparent gap in literature by using time series data set specifically for Kenya

Keynesian theory states that the government expenditure encourages economic growth. Jerono (2009) reported that studies done in Kenya on effect of public expenditure on economic growth have reported contradicting results; some say its growth enhancing; other studies indicate public expenditure is growth impending while still some studies reported that the expenditure cannot predict economic growth in Kenya.

This study set out to investigate and fill the gap in the literature of whether public expenditure components enhance, deter or are indeterminate of economic growth in Kenya. The study also seeks to establish the impact each component contributes to the scenario. As a result the following research questions emerge.

1.7 Research Questions

i. What is the impact of public expenditure on health on economic growth in Kenya?
ii. What is the impact of public expenditure on defense on economic growth in Kenya?

iii. What is the impact of public expenditure on education on economic growth in Kenya?

iv. What is the impact of public expenditure on infrastructure on economic growth in Kenya?

v. What is the impact of public expenditure on public order and security on economic growth in Kenya?

1.8 Objectives of the Study

The general objective of the study was to investigate the impact of public expenditure components on economic growth in Kenya. The specific objectives were to:

i) Investigate the impact of government expenditure on health on economic growth in Kenya

ii) Find out the relationship between defense expenditure by the government and economic growth in Kenya

iii) Investigate the impact of public expenditure on education on economic growth in Kenya

iv) Find out the impact of public expenditure on infrastructure on economic growth in Kenya.

v) Investigate the impact of government expenditure on public order and security on economic growth in Kenya.

1.9 Significance of the Study

The purpose of this study is to develop an analytical framework for determining differential impacts of various government expenditures components on economic growth. This is with a view to assist the policy

makers have an empirical way of determining the economic componets allocation of public funds and avoid intuition in making expenditure decisions which mostly lead to disastrous economic consequences. This is more so now that Kenya have county government and devolution of funds and the masses too need to be educated in deciding and voting for the decision on what to devote their share of the devolved fund prudently now that the new constitution gave the populace the power to make such decision.

The debate on government expenditure components impact on economic growth have been there for many years. This study sought to contribute to the body of knowledge which exists now by providing empirical evidence specifically on impact of government expenditure components on economic growth in Kenya.

1.10 Scope, Organization and limitation of the Study

This study used time series data for the period 1964 to 2011. The study only looked at the funds allocation going to the various components of the economy but the study did not intend to check for distortions and misuse of finance within the components. This study is organized into five chapters. In chapter one, the study looked at the background of the study, the public expenditure policy in Kenya, profile of public expenditure and an overview of GDP growth for the period of the study. It also contains the research questions, general objective and subsidiary objectives of the study.

Chapter two of the study contains Literature Review, the Theoretical, Empirical and a summary of the Literature. In Chapter three the study model impacts of government expenditure components on gross domestic product (GDP) growth by estimating a GDP function to show the impact of various public capitals on the components of the economy to GDP growth.

In chapter four and five study concludes with the study's major findings and recommendation respectively

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

It is in this chapter that a review of theoretical literature and empirical literature on composition of public expenditure and economic growth is done. The chapter is divided into three sections. Part one looks at theoretical literature relevant to the study at hand; part two looks into empirical literature while part three is an amalgamation of the two prior parts to yield the synthesis of the literature.

2.2 Theoretical Literature

Several theories explaining government expenditure are explained below.

2.2.1 Musgrave Rostow's Theory

The 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 exist market failures and hence there should be robust government involvement to deal with these market failures. This theory is faulted because it ignores the contribution to development by the private sector by assuming the government expenditure is the only driver of economic growth.

2.2.2 Wagner Theory of Organic State

Among the pioneer literatures on public expenditure was one associate with a German economist called Wagner. The literature opines that growth of public expending was a natural consequence of economic growth. Specifically Wagner law viewed public expenditure as behavioral variable that positively

responds to the dictates of a growing economy. The hypothesis tries to find either a positive relationship between government spending and income and / or a unidirectional causality running from government spending to economic growth. The Wagner law is admired because it in many ways attempt to explain public expenditure and economic growth.

The law is faulted because of its inherent assumption of viewing the state as separate entity capable of making its decisions ignoring the constituents populace who in actual fact can decide against the dictates of the Wagner law.

2.2.3 Keynesian Theory

The Keynesian model 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 with a view that increases in government spending leads to increased employment in public sector and firms in the business sector. The employment rises, income and profits of the firms increase, and this would result in the firms hireling more workers to produce the goods and services needed by the government. In consonance to the above, the work of Barro (1990) has stipulated a new perspective in which the investigation of the impact of fiscal budgetary expansion through public expenditure can enhance output growth. The authors employed a Cobb-Douglas model and found that government activity influences the direction of economic growth (Barro & Sula-i-martin, 1992).

However, one of the greatest limitations of Keynesian theory is that it fails to adequately consider the problem of inflation which might be brought about by the increase in government spending.

2.2.4 The Peacock and Wiseman Theory

This theory dealing with growth of public expenditure was advanced by peacock and Wiseman in their study of public expenditure in the UK for the period 1890 – 1955. It's based on premise that, the populace is naturally tax averse while the government on the other hand has an inherent appetite for expenditure. During times of shocks like calamities and war, the government would expeditiously increase the public expenditure, this necessitates moving taxes upwards, the researchers argued that the populace (tax payers) would allow and condone such an increase in tax. This scenario is referred to as *displacement effect*, though it's meant to be a short term phenomenon it normally assume a long term trend (Wiseman and Peacock, 1961). This can attempt to explain how government expenditure in Kenya has taken unrelenting upward trajectory. Every time Kenya has experience shocks like, 1984 famine, resettlement of IDPs, and upsizing of the government structure to accommodate the many ministries intended to serve the citizens, the taxes intensity and scope danced in tandem with the public expenditure.

One of the shortcomings of this theory is that it sidelines the fact that government can finance an *upward displacement* in public expenditure using other sources of finance such as donor funds, external borrowing or even sale

of government fixed asset and this needless to say may not affect taxes in an upward trend.

2.3 Empirical Literature

Ashauer (1989) conducted a study on the impact of government spending on economic growth in the united states of America and found that, expenditure on the main infrastructure (streets and highways, mass transit, water and sewage systems and electricity and gas supplies) had a powerful explanatory role in economic growth, while infrastructure such as police and fire stations, court houses office buildings etc had a mild positive statistically significance impact on growth, while education infrastructure such as construction of classroom were statistically insignificant in impacting on economic growth.

Devarajan *et al.* (1993) used functional categories of public expenditure in their economic growth regressions. The study found out that public expenditure had a negative impact on developing countries but had a positive impact on developed countries. The study had categoriesed expenditure into productive and non productive categories by taking into account the level of resources invested and output produced by different programs. For instance the study reported that government expenditure on health and transport and communications to be growth promoting but found no positive impact of education and military spending on economic growth.

Albala and Mamatzakis (2001) using time series data covering 1960-1995 to estimate a Cobb-Douglas production function that includes public

infrastructure for Chile, found a positive and significant correlation between public infrastructure and economic growth. The study reported that public investment crowds out private investment. One major weakness of the study was that it omitted impact of important variables such as education, health care and public order and security.

Were (2001) conducting a research on impact of external debts on economic growth and investment in Kenya, found out that current investment in human capital development to be growth supporting. But lagged public investment in human capital was found to adversely affect growth. The weaknesses of the study were that the time series data used was for a short period of time and it took into account investment in human capital ignoring investment in physical infrastructure.

Dar and Khalkali (2002) set out to determine how government size affected the economic growth by looking at OECD countries in the period 1970 – 1999. The study using panel data alluded to the fact that the government size had a negative and statistically significant impact on economic growth. The only countries which did not fall under the above conclusion were USA, Sweden and Norway with their coefficients turning out to be statistically insignificant.

Jerono (2009) conducted a study on the impact of government spending on economic growth in Kenya and found that though expenditure on education

had a positive relationship with economic growth; it does not spur any significant change to growth. Given the reason that the expansion of education is higher than that of job growth in Kenya and there are relatively few job opportunities outside government for secondary and university graduates hence education have been blamed for producing surplus graduates, and long waits for government jobs. The study also asserted that a mare expenditure growth does not necessarily bring potential to spur growth; growth on the GDP was dependent on other factor too such as political will efficiency and also prioritization on the key components of the economy.

Maingi (2010) while conducting study on the impact of government expenditure on economic growth in Kenya reported that improved government expenditure on areas such as physical infrastructure development and in education enhance economic growth while areas such as foreign debts servicing, government consumption and expenditure on public order and security, salaries and allowances were growth retarding.

2.4 Overview of Literature

The question of whether or not public expenditure stimulates economic growth has dominated theoretical and empirical debate for a long time. One viewpoint believes that government involvement in economic activity is pro growth, but an opposing view holds that government operations are inherently inefficient, bureaucratic and therefore stifles rather than promotes growth, while some studies still are of the view that public expenditure is indeterminate of economic growth (Najkamp & Poot, 2002). In the empirical literature, results

are equally mixed. it's evident that most of the empirical literature focuses on developed countries, even so all of it has not come up with similar relationship between public expenditure and economic growth, and some sharply contradict others (Jerono, 2002). The methodologies used in those literatures reviewed might not be very applicable in Kenya due to divergence in geographical region, political difference and level of economic growth between the studied countries and Kenya. In Kenya studies on public expenditure impact on economic growth are rare and even the ones available have reported contradicting results as to the impact of public expenditure on economic growth (Jerono, 2002). As shown on the empirical literature the results of Kenya's expenditure on economic growth have been divergent, some say its growth enhancing, other studies indicate public expenditure is growth impending while still others argue that the expenditure cannot predict economic growth (were, 2001). Finally with a lot of contention, the underlying argument is that public expenditure is capable of enhancing economic growth in short and in the long run in both developing and developed countries.

CHAPTER THREE

METHODOLOGY

3.1 Introduction

This chapter starts by specifying the model and the methodology used to examine the relationship between the public expenditure components and economic growth in Kenya. It's followed by an explanation of variables used, sources of the data and the diagnostic tests employed in the study.

3.2 Research Design

This study aims at establishing the impact of public expenditure components on economic growth in Kenya. The study also intends to use data for the period 1964 – 2011 for the following components of government expenditure; infrastructure, education, health, defense and public order and security. The data was collected and subjected to robust time series property tests after which Vector Error Correction Model (VECM) was used to analyze the data

3.3 Theoretical frame work

The theoretical framework that the study is based on is Keynesian theory. Keynesian theory states that public expenditure determines economic growth. 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), the employment rises, income and profits of the firms increase, and this would result in the firm's hireling more workers to produce the goods and services needed by the government.

$$gpk = f(GEPGDPt) \qquad (3.1)$$

3.4 Model Specification

The Keynesian modeled economic growth as a function of public expenditure.

$gpk = f(GEPGDPt)$ *(3.2)*

Jerono (2009) defined total public of expenditure as a function of summation of all individual government expenditure in all components.

GEPGDPt = f(government expenditure in all components) (3.3)

In this study combining the two models will yields a richer econometric model that will facilitate estimation

The government expenditure *GEPGDPt* is defined as the five components; this modification will help us investigate the impact of government expenditure on economic growth in Kenya.

$GEPGDPt = f$[(gdfn, ghlth, gedu, gtrnc, gpos), Ut].....(3.4)

And because,

gpk = $f(GEPGDPt)$ according to the Keynesian,

Hence

gpk = f[(gdfn, ghlth, gedu, gtrnc, gpos), Ut].....(3.5)

Where;

gpk = Economic growth rate

gedu = Expenditure on education

gpos = Expenditure on public order and security

ghlth = Expenditure on health

gtrc = Expenditure on infrastructure

gdfn = Expenditure on defense

Ut =Error term (causes of economic growth not explained by variables in the model)

3.5 Working Hypothesis

i) Government expenditure on education contributes negatively to economic growth in Kenya.

ii) Public expenditure on infrastructure has a positive contribution to economic growth in Kenya.

iii) Public expenditure on public order and security contribute positively to economic growth in Kenya.

iv) Public expenditure on health contributes positively to economic growth in Kenya.

v) Public expenditure on defense contributes negatively to economic growth in Kenya.

3.6. Definition of Variables and Measurement of Variables

Economic Growth (GDP)

This is the percentage rate of increase in gross domestic product. It captures the change in value of goods and services produced in a given economy for a specified period of time. It will be calculated as a percentage rate of change of the GDP

Public Expenditure on Defense (gdfn)

This is the fraction of expenditure on defense against the gross government expenditure. It includes expenses such as buying military gadgets and equipments, salaries, training the defense force, supporting missions and operations such as operation Linda *inchi in Somalia.*

Public Expenditure on Education (geduc)

This is the share of expenditure in education to total government expenditure. It includes the expenditure the government incurs to fund basic up to higher education, by paying teachers and lecturers, construction of learning infrastructure such classrooms, lecture halls, offices and purchase of learning equipment. It also includes expenses on scholarships whether local or abroad.

Public Expenditure on Health (ghlth)

This is the share of public expenditure on health to total government expenditure. It consists the amount the government spends in construction of hospitals building structures, equipping the hospital institution with equipments and drugs, training of doctors and nurses and paying their salaries.

Public Expenditure on Infrastructure (gtrc)

This is the share of public funds over the total government expenditure directed to activities such as, construction of air and seaports, construction of highways, fiber optic cable connection lay outs.

Public Expenditure on Public order and security (gpos)

This is expenditure comprising expenses on administration and supervision of judicial services in Kenya. The study intend to measure expenditure on public order and security as a percentage of the total government expenditure.

3.7 Data Type and Source

This study used secondary data for the period 1964 - 2011. The data was extracted from government official documents namely Economic Surveys, Statistical Abstracts, Economic reports, public expenditure reports and sessional papers as need dictates.

3.8 Data Collection and Refinement Procedure

During data collection, a deliberate effort was made to ensure consistency in source for all the series. But should the preferred series not give all the information needed, other sources will be referred and data converted where necessary to reflect the form in which they will be useful for estimation purpose in this study.

3.9 Time Series property of the data

In view of the fact that this study will use time series data and inherently it might exhibit some strong trends, the non random disposition of the series might undermine the use of some of econometrics tests such as F and t tests. This is because they can cause rejection of a hypothesis which would have otherwise not been rejected. This study intends to conduct stationarity and co integration tests to mitigate such situations.

3.9.1 Testing for Stationarity.

In empirical analysis, non-stationarity of time series data is a perennial problem. To avoid estimating and getting spurious results, the study intend to conduct test for stationarity. For this the study will employ augmented dick fuller test and look out for stationarity and establish the order of integration.

The (ADF) test for stationarity in a series of say GDP, involves estimating the equations.

$\Delta GDP = \alpha 0 + \beta t + \theta yt - 1 + \sum_{i=1}^{m} \rho \Delta GDPt - i + et$ (This is for levels)

$\Delta\Delta GDP = \alpha 0 + \beta t + \theta \Delta yt - 1 + \sum_{i=1}^{m} \rho \Delta\Delta GDPt - i + et$ (This is for first differences)

There are cases where ADF doesn't have a drift and a trend but the example has both a drift (intercept) and a trend. Where $\alpha 0$ is a drift, m is the number of lags and e is the error term and t is trend.

The null hypothesis will be HO: $(\alpha 0, \beta, \theta) = (\alpha 0, 0, 1)$ (No– stationarity)

The alternative hypothesis H1: $(\alpha 0, \beta, \theta) \neq (\alpha 0, 0, 1)$(Stationarity)

If the test reveals that null hypothesis should be rejected than the variable will be said to be stationary.

3.9.2 Testing for Co-integration.

The study data was tested for co integration by using Johansen Co integration test method. Co integration 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

3.9.3 Granger Causality Test.

Granger causality shows whether the past values of say X can be able to predict current or future values of Y. Granger causality test is used to test the

causal direction. It's also used to test for exongineity and enables the study to know whether the study should estimate the model using simultaneous or single equation. In this study, it's predicted that the composition of government expenditure predicts the economic growth. On the same breath the economic growth (GDP levels) can as well influence the government expenditure and this can lead to our model suffering from simultaneous bias. Just in case the study estimates the model and gets a statistically significant association between economic growth and government expenditure. The study need to conduct the causality test to know the direction of causation. To establish whether its government expenditure causing growth to GDP or whether it's the GDP leading to growth in government expenditure or if there is a case of bi-directional causation (a feedback system).

The procedure the study shall follow is to test for granger causality of GDP on GE by running a linear equation with GDP as independent variable and GE as the dependent variable, and then do the F-test for the joint significance of the variables. If it's significant then the study conclude that GDP granger causes GE, that is a long term relationship between GE and GDP exist whereby the past values of GDP can be used to predict current or future values of GE

Similar test but then in reverse. Where the study test whether GE granger causes. If both granger causes each other that is GE granger causes GDP and GDP intern granger causes GE then a conclusion that there is bi-directional relationship (feedback system) is made.

3.9.4 Vector Error Correction Modeling.

A vector error correction model (VECM) is a modeling technique which adds error correction features to a multi-factor model such as a vector autoregression model.

3.10 Data Analysis

The study is expected to address six objectives. The general objective is to investigate the relationship between total government expenditure on economic growth in Kenya; the study intends to achieve this objective by estimating equation economic growth as a function of total public expenditure. The second, third, fourth, fifth and sixth objective are to investigate the impact of government expenditure on the components defense, health, education, infrastructure and public order and security on economic growth in Kenya; this will be done by employing a modeling technique called Vector Error Correction Modeling.

CHAPTER FOUR

EMPERICAL RESULTS AND DISCUSSIONS

4.1 Introduction

Chapter four presents the data set used in this study and the empirical results based on the empirical model developed in chapter three. Data conversion was done and time series properties of the data determined using Augmented Dickey Fuller (ADF) tests before estimation.

4.2 Unit Roots Tests Results.

When time series data is non stationary and used for analysis it may give spurious results because estimates obtained from such data will possess non constant mean and variance. Because this study used time series data, it was important to establish the stationarity of the data or what order they are integrated to make sure that the results obtained are not spurious. In this regard Augmented Dickey Fuller (ADF) was used to test for unit roots. The unit roots results of the variable in the model are reported in table 4.0. As shown in table 4.0 the results of the unit root show that economic growth, government expenditure on defense, on education, on health, on infrastructure and on public order and security were not stationary at level; but they were stationary after first differencing that is they were integrated of order one I(1) as shown in figure 4.1. .

Table 4.0: Stationarity test (at level) results

Variable at Level				
	With intercept and trend	**ADF**	**Critical values at**	**probability**
Defense	„	-2.304546	1% -4.170583 5% -3.510740 10% -3.185512	0.4231
Education	„	-2.992834	1% -4.170583 5% -3.510740 10% -3.185512	0.1452
Health	„	-3.031382	1% -4.170583 5% -3.510740 10% -3.185512	0.1351
Infrastructure	„	-0.826732	1% -4.180911 5% -3.515523 10% -3.188259	0.9551
Public Order and Security	„	-1.566651	1% -4.175640 5% -3.513075 10% -3.186854	0.7904

Source: Worked out from the study data set collected.

Non of the variables is stationary at level, this necessitate test for stationarity after first difference.

Table 4.1: Stationarity test (after first difference) results

Variable At First difference				
	With intercept and trend	**ADF**	**Critical values at**	**probability**
Defense	„	-6.542502	1% -4.175640 5% -3.513075 10% -3.186854	0.0000
Education	„	-4.928912	1% -4.186481 5% -3.518090 10% -3.189732	0.0013
Health	„	-8.213643	1% -4.175640 5% -3.513075 10% -3.186854	0.0000
Infrastructure	„	-5.383366	1% -4.180911 5% -3.515523 10% -3.188259	0.0003
Public Order and Security	„	-10.21180	1% -4.175640 5% -3.513075 10% -3.186854	0.0000

Source: Worked out from the study data set collected.

4.3 Cointegration.

Because the variables are not stationary at level as evident from the unit root test results but are integrated of order one, thus the linear combination of one or more of these variables might exhibit a long run relationship. In order to capture the extent of cointegration among the variables, the multivariate cointegration methodology proposed by (Johansen 1990) was utilized. The number of integrating vectors are presented in table 4.2 below

Table 4.2 Cointegration test results

Maximum rank	parms	LL	Eigenvalue	Trace statistic	5% critical value
0	42	-479.28191		124.9000	94.15
1	53	-456.98744	0.62874	80.3111	68.52
2	62	-442.39106	0.47729	51.1183	47.21
3	69	-432.24107	0.36308	30.8184	29.68
4	74	-423.5612	0.32007	13.4586	15.41
5	77	-418.84275	0.18918	4.0217	3.76
6	78	-416.83189	0.08549		

4.4 Lag Selection Criteria

The study uses the lag selection criteria namely the Alkaike Information Criteria (AIC). The results of these selection criteria are reported in table 4.3.

Table 4.3 Lag selection criteria

lag	LL	LR	df	p	FPE	AIC	HQIC	SBIC
0	-555.83				8995.12	**26.1316**	26.2223	26.3774
1	-429.315	253.03	36	0.000	135.896	**21.9216**	22.556*	23.6419*
2	-391.534	75.561	36	0.000	138.179	**21.8388**	23.0169	25.0335
3	-358.329	66.41	36	0.002	207.201	**21.9688**	23.6907	26.638
4	-299.423	117.81*	36	0.000	130.871*	**20.9034***	23.169	27.0471

The decision rule is to choose the model with the lowest value of the information criteria. This ensures that the error term is not mispecified (Enders 1995).

The results of the Alkaike Information Criteria lag selection in table 4.3 points to the use of 4 lags as the most appropriate lag length that would minimize the value of the selection criteria. Based on the results in table 4.3 the study employed the use of four lags.

4.5 Granger Causality Test

After establishing that the data set is stationary after first differencing meaning there was a long term relationship between the variables; the study needed the direction of causality whether GDP growth granger causes public expenditure or whether public expenditure granger causes gdp growth or whether there was a multidirectional causation. To that end, the Granger Causality Test was conducted. The findings are as shown in Table 4.4 below

Table 4.4 Granger Causality Test

Null Hypothesis:	Obs	F-Sta.	Prob.	Conclusion
GDP does not Granger Cause DEF	45	0.13633	0.87296	No Granger causality
DEF does not Granger Cause GDP		0.63988	0.53267	
GDP does not Granger Cause EDU	45	0.04988	0.95140	No Granger causality
EDU does not Granger Cause GDP		0.50711	0.60605	
HEA does not Granger Cause GDP	45	1.66945	0.20121	No Granger causality
GDP does not Granger Cause HEA		0.29067	0.74933	
INFL does not Granger Cause GDP	45	4.37998	0.01905	uni directional granger causality
GDP does not Granger Cause INFL		0.17815	0.83748	
POS does not Granger Cause GDP	45	3.56318	0.03766	uni directional granger causality
GDP does not Granger Cause POS		1.25202	0.29689	

Nb. rejection of the null hypothesis at 5% significance level
Source: constructed from the study data

4.6 Empirical Results and Discussions

The main objective was to investigate the impact of government expenditure component on economic growth in Kenya.

The specific objectives were to investigate the impact of government expenditure on: education, infrastructure, health, defense and public order and security on economic growth in Kenya. This was done by use Vector Error Correction Model, impulse responses analysis was done and used to interpret the data.

The impulse response to one positive standard deviation of the variables under study were captured on graphs as indicated in the following headings respectively.

i) The impact of public expenditure on defense on economic growth

Figure 4.0 shows the impact of one standard deviation change to public expenditure on defense on economic growth.

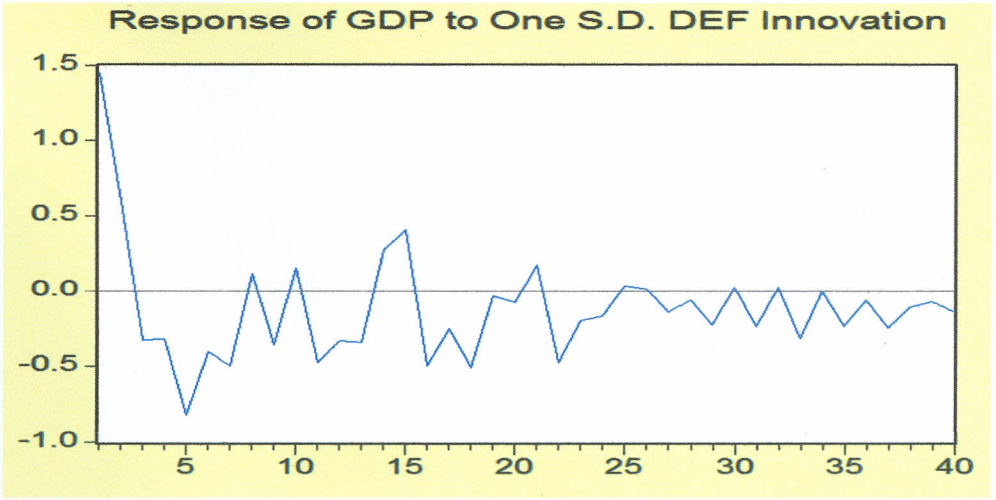

Figure 4.0 the impact of public expenditure allocation to defense on economic growth rate
Source: Prepared from the data collected for the study.

There is an immediate positive change to economic growth due to a one standard deviation on public expenditure on defense in Kenya. The impact starts dwindling from the second year and it hits negative by the end of the third. The negative impact does fizzle out in some years thirtieth and thirty forth year but it borders on the negative for the rest of the fourty years period. This empirical finding that public expenditure on defense causes a negative impact to economic growth in Kenya on the third year is in line with what Aschauer (1989) found out that military expenditure derail economic growth. This could be explained because mostly in Kenya the capital expenditure is in most of the time not put into use because the Kenyan army is in most times not engaged in war; while the money used to purchase the items would have otherwise been used in investment and promote growth in the economy. The funding of such capital outlay is also blamed for capital crowding out (Jerono, 2009.

ii) The impact of public expenditure allocation to education on economic growth

The impact of one standard deviation change to public expenditure allocation to education on GDP growth rate is shown in figure 4.1

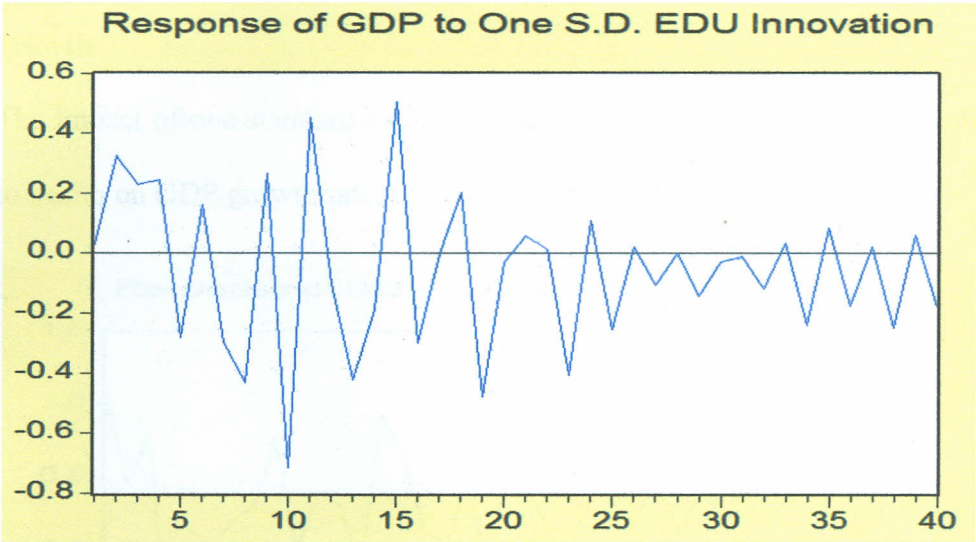

Figure 4.1 the impact of public expenditure allocation to education on economic growth rate
Source: Prepared from the data collected for the study.

The impact of one standard deviation shock to public expenditure allocation to education on GDP does not fizzle out for forty years. The shock affects economic growth since the first year. The impact was found to be mixed as the graph keeps oscillating to the positive and negative periodically. This is partly in line with Maingi (2010) whereby in his study the impact of government expenditure on economic growth in Kenya he concluded that the impact of public expenditure on education in the first nine years has a positive impact on economic growth. This case is supported by the argument that educated and skilled personnel are more productive than illiterate and unskilled personnel. The reason why the impact oscillates to the positive and to the negative can be

explained by the mismatch between appropriate skills acquired and the needs in the market for labour. The negative impacts on economic growth posited by this study are supported by Jerono (2009) who found out that public expenditure on education have a negative impact on economic growth.

iii) The impact of public expenditure allocation to health on economic growth

The impact of one standard deviation change to public expenditure allocation to health on GDP growth rate is shown in figure 4.2

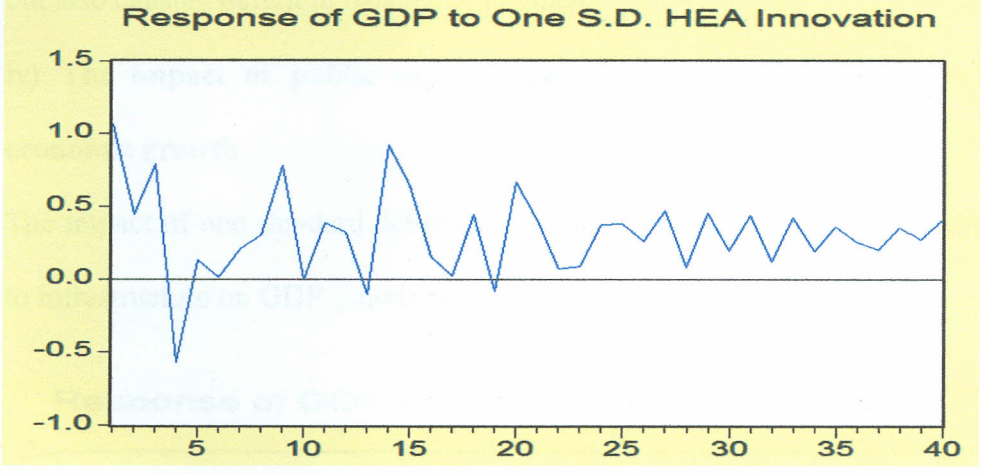

Figure 4.2 the impact of public expenditure allocation to health on economic growth rate
Source: Prepared from the data collected for the study.

The positive impact reflected in the table 4.2 supported by research finding by (Miangi, 2010). The literature behind this is that when populace is healthy it becomes more productive and it also reduces the days off work due to sickness. After the laps of the first two years of the one standard deviation shock on public expenditure allocation on health component, the impact goes to the negative whereby it fizzles out on the end of the eighteenth year. The negative impact on public expenditure on health in the forth and fifth year is

supported by the findings of an empirical study conducted by (Were, 2001). According to Were (2001) the public expenditure on health have a negative impact on economic growth because the expenditure does not directly go to investment in the country thereby not supporting economic growth. Were (2001) argued that most of the expenditure on health in developing countries causes them to spend a lot of foreign currency in importing Medicare facilities as most of the developing countries are not involved in the business of manufacturing drugs thereby not only negatively affecting economic growth but also causing deficit in balance of payment.

iv) The impact of public expenditure allocation to infrastructure on economic growth

The impact of one standard deviation change to public expenditure allocation to infrastructure on GDP growth rate is shown in figure 4.3

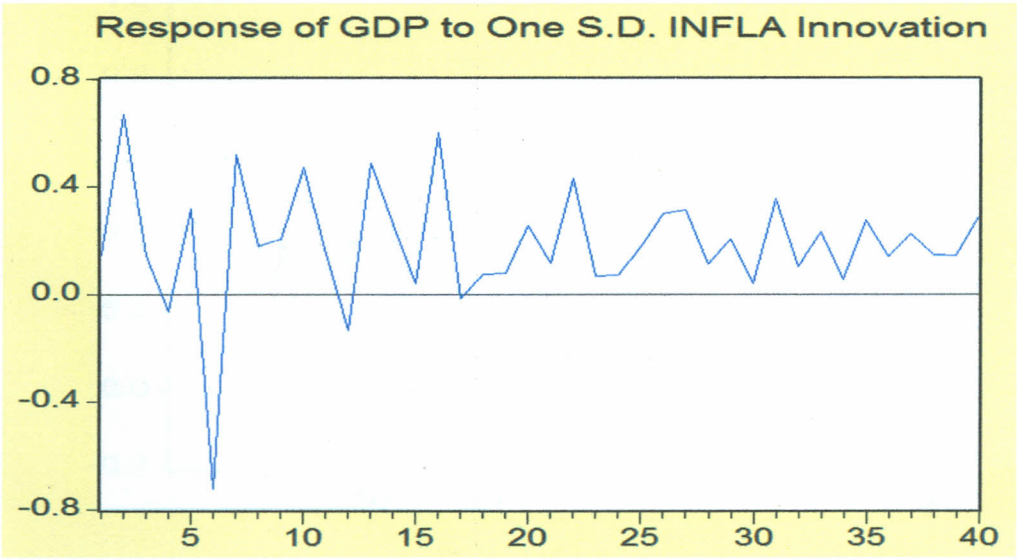

Figure 4.3 the impact of public expenditure allocation to infrastructure on economic growth rate
Source: Prepared from the data collected for the study.

The study found out that, impact of one standard deviation shock to public expenditure allocation to infrastructure on GDP growth is felt immediately and it is felt it's a positive one. This positive relationship between public expenditure in infrastructure and economic growth which does not fizzle out even in the fortieth year is supported by (Maingi 2010; Were 2001; Jerono 2009). This is so because a robust infrastructure reduces the cost of doing business by lowering the amount spent on vehicle repairs, it also saves on manpower time and fuel lost in traffic jam snail ups and unwarranted delays.

v) The impact of public expenditure allocation to Public Order and Security on economic growth

The impact of one standard deviation change to public expenditure allocation to Public Order and Security on GDP growth rate is shown in figure 4.4

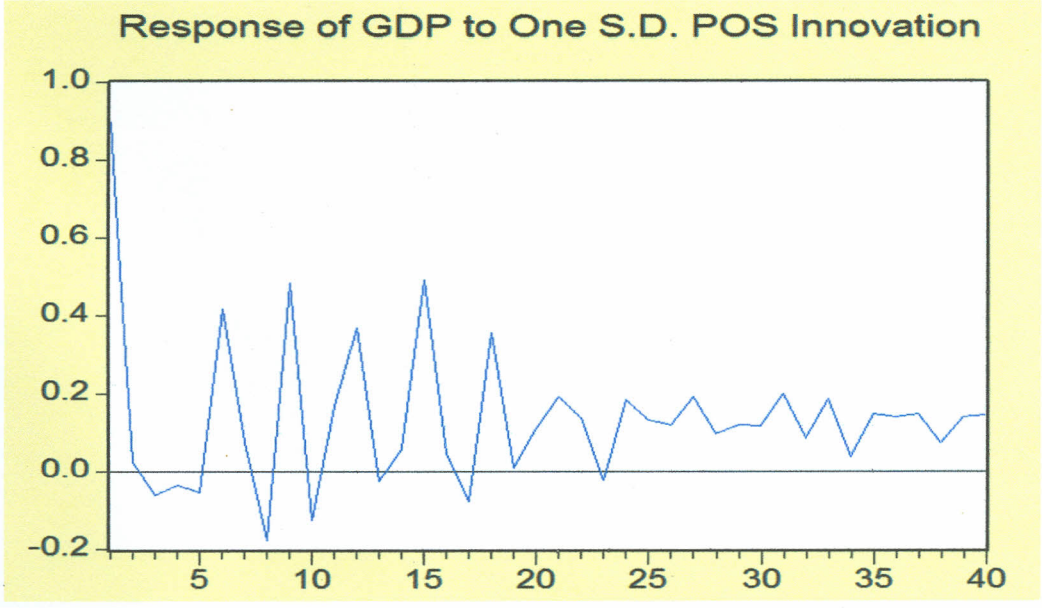

Figure 4.4 the impact of public expenditure allocation to Public Order and Security on economic growth rate
Source: Prepared from the data collected for the study.

The empirical findings of this study are that an impact of one standard deviation change to public expenditure allocation to Public Order and Security on GDP growth rate is in most of the years positive in the period of forty years in focus of the study. The positive impact of public expenditure on public order and security is refuted by (Jerono, 2009). The theory supporting this positive relationship between public expenditure in public order and security is supported by (Were, 2001). The main reason behind the positive relationship between public expenditure in public order and security is that for businesses and investment to thrive, there must be peace tranquility in the immediate business environment. Public order and security foster a healthy business environment and as such expenditure in that component is expected to trigger and or support economic growth.

CHAPTER FIVE

SUMMARY, CONCLUSION AND POLICY IMPLICATIONS

5.1 Summary

The main objective of this study was to investigate the impact of public expenditure components on economic growth in Kenya. To achieve the objective of the study, time series data for the period 1964 to 2011 was collected for the various macroeconomic variables. Unit root tests were conducted to test the stationarity level of the data which was found to be integrated of order one. The data was also tested for Cointegration and revealed long run relationship between economic growth and its determinants.

From theory, public spending is widely seen as having an important role in supporting economic growth. Public spending is a key variable that influences the sustainability of public finances via effects on fiscal balances and government debt. On the other hand, a lower level of spending implies that fewer revenues are needed to achieve balanced budgets, which means that lower taxes can be levied, therefore contributing to stimulate growth and employment.

Using the collected data, the study found out that government expenditure on defense had a negative impact on economic growth in Kenya. Public expenditure on education had a mixed relationship with economic growth in Kenya as the impulse responses graph showed the impact keep moving to the

positive and to the negative periodically for the period of the study. Public expenditure on public order and security was found to have a positive relationship with economic growth, expenditure on transport and communication had a positive relationship with economic growth. Public expenditure on health was found to contribute positively to economic growth and the impact did not fizzle out for the forty years period in the study.

5.2 Conclusion

Overall, the analysis shows that on average public expenditure and potential economic growth are linked by a long-run relationship. However, the net impact of potential growth on the future stream of government budget balances depends also on other factors like the political will, the efficiency and also on prioritizing on the key sectors of the economy. The results suggest that, increased economic growth would differ quite considerably across sectors. In order to realize the expected economic growth in the country the performance will largely depends on the efficiency of scaled-up expenditure.

From the study, it is evident that the composition of government expenditure affect economic growth. It is however worth noting the key public expenditure components like education transport and communication and public order and security are the major drivers of economic growth. This is based on the simple fact that Kenya is a developing country and any investment in infrastructure will bring in many economic benefits to the country. Kenya also being a developing country public order and security will avail a conducive

environment for business people to operate their businesses in peace. The possible explanation as to why public expenditure in health contributes negatively to economic growth in Kenya is that Kenya is a net importer of Medicare facilities and drugs.

5.3 Policy Implications

On the basis of the study findings the following policy recommendations arose:

The survey showed that though government expenditure on education is positively related to economic growth it does not spur any significant change to growth. Based on this, investing in more and better-distributed education in the labor force will help create conditions that could lead to higher productivity and higher economic growth. It is also necessary to adopt policies that lead to the creation of diversified, dynamic, and competitive sectors capable of absorbing the more educated labor force to translate human capital into higher economic growth. The evidence supports the view that countries that combine both do better on average than those that do one without the other.

Given the reason that the expansion of education is higher than that of job growth in Kenya and there are relatively few job opportunities outside government for secondary and university graduates, the expansion of education has produced a large surplus of graduates, high unemployment, and long waits for government jobs. This means that rates of return to higher

education are probably not rising. There is need for the government to ensure a conducive and attractive environment for private investors who can absorb the large number of unemployed but educated people. Kenyans also need to take advantage of the new integrated East Africa Community and the whole world in general due to globalization and look outside our borders for employment opportunities.

On health while an increased expenditure on improving health might be justified purely on the grounds of their impact on labor productivity. This supports the case for investments in health as a form of human capital. To reduce the huge budget outlay for importing medicine and drugs, it would be advisable for government to support research and development in this sector locally.

High investment ratios do not necessarily lead to rapid economic growth; the quality of investment, its productivity, existence of appropriate policy, political, and social infrastructure are all determinants of the effectiveness of these investments. Private investment is often seen as the engine that drives a country's economy, while public investment provides the necessary infrastructure. The two however are related, as public investment may crowd in (if it provides the infrastructure to support the private sector) or crowd out (by increasing costs of borrowing or cherry-picking the best investment opportunities) private investment. Public investment itself affects growth either directly, via its productivity, or indirectly via its effect on private

investment. Public investment in human capital (health and education), public law and order, research and development, and social and economic infrastructure leads to creation of positive externalities which in turn improve the productivity of private investment. It was also noted that the government should encourage programs like Build Operate and Transfer (BOT) to foster increased investment and provision on public utilities. As a result of this relationship between private and public investment the government should come up with policies that brings a balance between the two.

5.4 Suggestions for Further Research

An area that is not clear and worthy of further research is the opportunity costs faced by the government and other social planners as a measure against loss of societal benefit while implementing the policies suggested herein. It can be noted that constraints such as cultural, environmental, and the non development of the manufacturing sectors of the economy will reduce the business activities within the country as foreign countries with well developed manufacturing sectors and economies of scale will have lower and more competitive prices and quality of goods and services alike imposed on the economy thereby hindering the growth of local industries and increasing unemployment which invariably implies an increase on dependence on public welfare and an increase in unproductive government expenditure and of course a reduction in economic growth. This area of how to balance the opening up of the economy by encouraging public private partnership and enjoining the rest

of the world in the rush for globalization and the need to cuddle Kenyan infant industries need to be researched further.

Another area worth researching on is how economic growth is affected by other factors other than components of public expenditure.

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APPENDICIES

Appendix 1 : components of government expenditure and gdp (Raw data).

Table A1: Total gdp, gdp growth, recurrent expenditure, capital expenditure, total expenditure, expenditure in defense, expenditure in education, expenditure in health, expenditure in infrastructure and expenditure in public order and security.

YEAR	GDP TOTAL	gdp %	RE	CE	TOTAL EXP	TTTL DE	TTLE ED	TTLE HEA	TTL INFLA	TTLE POS
1964	6602.0	5.0	1138.0	272.0	1410.0	60.80	136.2	63.4	68.2	163.2
1965	6665.4	2.0	1214.6	335.6	1550.2	80.60	137.8	74.4	113.0	176.6
1966	7622.6	14.7	1295.8	402.0	1697.8	105.80	158.4	81.4	127.8	196.2
1967	8624.0	3.4	1402.2	489.2	1891.4	122.60	196.8	102.6	146.0	223.4
1968	8786.2	8.0	1504.4	595.2	2099.6	111.20	237.8	118.2	183.4	223.2
1969	9492.6	8.0	1726.6	702.4	2429.0	113.80	350.8	158.8	255.8	239.2
1970	10250.2	-4.7	2035.0	1101.0	3136.0	129.40	551.6	202.2	374.4	268.4
1971	11412.0	22.2	2480.0	1130.4	3610.4	185.80	673.6	256.4	484.6	339.6
1972	12970.4	17.1	2754.2	1274.0	4028.2	239.00	807.6	255.4	581.8	315.2
1973	14497.0	5.9	3236.6	1366.6	4603.2	285.20	922.4	288.6	658.2	361.6
1974	17906.0	4.1	4180.8	1849.0	6029.8	382.20	1276.0	414.6	792.4	424.4
1975	20560.4	0.9	4971.8	2490.4	7462.2	412.40	1444.8	485.8	829.6	491.4
1976	25562.0	2.2	5740.2	2455.0	8195.2	858.20	1616.4	591.2	949.2	473.6

1977	32813.0	9.5	8046.2	3761.6	11807.8	1588.00	1890.0	738.0	1310.2	685.6
1978	35768.2	6.9	9550.4	4402.0	13952.4	2113.20	2182.2	862.4	1700.8	710.4
1979	39592.4	7.6	10985.2	4641.0	15626.2	2236.80	2740.8	1089.4	1312.8	791.8
1980	44707.4	5.6	13786.6	5654.8	19441.4	1794.80	3526.4	1304.6	1332.4	1184.0
1981	51944.6	3.8	16605.0	5841.4	22446.4	2622.80	3953.4	1422.6	1804.4	1236.4
1982	58637.4	1.5	19353.2	4460.4	23813.6	2755.00	4128.6	1394.0	1558.8	820.6
1983	66532.2	1.3	2169.4	4925.2	26619.2	2800.60	4401.4	1465.8	1576.6	1258.8
1984	77035.6	1.8	20534.4	10158.8	30693.2	2244.40	5196.2	1654.6	1419.8	1361.0
1985	87492.4	4.3	26932.2	6182.4	33114.6	2546.80	6593.8	1854.2	1336.6	1622.4
1986	101679.6	7.2	32526.2	9243.6	41769.8	3335.40	7930.0	2213.4	1339.8	1922.4
1987	112998.0	5.9	36379.0	8172.0	44551.0	4886.40	9138.6	2358.6	1300.8	2391.0
1988	127822.2	6.2	46725.6	12608.2	59333.8	4886.40	9132.6	2358.6	1300.8	2391.0
1989	139867.0	4.7	50009.4	15253.6	65263.0	5385.20	11298.6	2886.6	2375.2	3246.0
1990	167555.6	4.1	65564.8	16462.6	82027.4	5909.80	13739.0	3458.2	518.0	3692.2
1991	190806.6	1.3	75899.6	12997.6	88897.2	4647.60	14444.4	3800.4	2205.8	3764.8
1992	219719.8	-1.1	106310.6	17028.2	123338.8	5406.20	17095.8	4645.0	3215.2	4632.2
1993	283708.2	-0.1	159621.4	20532.8	180154.2	6855.80	21393.0	6541.2	3228.0	5795.4
1994	338064.8	2.5	139489.6	26124.4	165614.0	6297.20	28275.6	7015.6	7481.0	7675.6
1995	393766.6	4.3	155909.2	27683.2	183592.4	9039.00	31813.4	9114.6	11612.4	8143.8
1996	528739.5	4.0	156897.4	26843.6	183741.0	10471.80	33483.0	10567.8	2199.8	9610.0

1997	623235.1	0.2	291067.4	24072.5	315139.9	10182.20	46226.3	12883.9	8520.6	11764.9
1998	694028.7	3.3	222641.0	20100.0	223646.0	10579.60	47225.2	10449.8	8967.2	11664.8
1999	743479.5	2.4	206571.0	19583.1	226154.1	10427.30	47736.8	9188.6	9852.8	13088.6
2000	982855.0	0.6	235066.0	33364.5	268430.5	14261.10	49868.2	11898.2	10242.7	16839.7
2001	1025918.0	4.7	283314.1	27817.6	311131.7	16265.40	55596.5	15198.5	6925.8	18028.0
2002	1029978.0	0.3	273387.6	31775.7	305163.3	17603.00	65134.8	15351.1	8272.0	18612.9
2003	1058470.0	2.8	321754.0	54558.0	376312.0	23397.08	78138.6	15304.4	20633.9	24672.1
2004	1104356.0	4.6	339689.3	40141.0	379830.2	20979.29	84726.3	16308.9	13507.3	30424.6
2005	1445477.0	6.0	370209.3	62381.9	432591.3	25608.64	96027.4	22963.8	18821.9	39804.2
2006	1622565.0	6.3	402248.4	106597.1	508845.5	25122.90	109238.9	27517.7	31250.9	41790.9
2007	1833511.0	7.1	501718.5	162896.2	664614.8	37241.12	127424.2	27479.3	43223.7	51284.1
2008	2111173.0	1.5	553452.4	160713.0	714165.4	41183.21	144439.2	33181.2	57955.0	60616.5
2009	2365453.0	2.6	620469.5	184794.2	805263.7	47852.48	182336.2	38361.3	61910.4	41329.4
2010	2551161.0	5.6	691563.5	5.3	998192.9	54021.92	197502.0	54531.4	92709.3	76167.9

Sources: Republic of Kenya economic survey and statistical abstract for various years: government printers.

Appendix II: Total government expenditure and dgp expressed in percentage form.

Table A2: total gdp, gdp%, total public expenditure and public expenditure expressed as percentage

YEAR	GDP TOTAL	gdp%	TOTAL EXP	exp%
1964	6602.0	5.0	1410.0	9.9
1965	6665.4	2.0	1550.2	9.5
1966	7622.6	14.7	1697.8	11.4
1967	8624.0	3.4	1891.4	11.0
1968	8786.2	8.0	2099.6	15.7
1969	9492.6	8.0	2429.0	29.1
1970	10250.2	-4.7	3136.0	15.1
1971	11412.0	22.2	3610.4	11.6
1972	12970.4	17.1	4028.2	14.3
1973	14497.0	5.9	4603.2	31.0
1974	17906.0	4.1	6029.8	23.8
1975	20560.4	0.9	7462.2	9.8
1976	25562.0	2.2	8195.2	44.1
1977	32813.0	9.5	11807.8	18.2
1978	35768.2	6.9	13952.4	12.0
1979	39592.4	7.6	15626.2	24.4
1980	44707.4	5.6	19441.4	15.5
1981	51944.6	3.8	22446.4	6.1
1982	58637.4	1.5	23813.6	11.8
1983	66532.2	1.3	26619.2	15.3
1984	77035.6	1.8	30693.2	7.9

1985	87492.4	4.3	33114.6	26.1
1986	101679.6	7.2	41769.8	6.7
1987	112998.0	5.9	44551.0	33.2
1988	127822.2	6.2	59333.8	10.0
1989	139867.0	4.7	65263.0	25.7
1990	167555.6	4.1	82027.4	8.4
1991	190806.6	1.3	88897.2	38.7
1992	219719.8	-1.1	123338.8	46.1
1993	283708.2	-0.1	180154.2	-8.1
1994	338064.8	2.5	165614.0	10.9
1995	393766.6	4.3	183592.4	0.1
1996	528739.5	4.0	183741.0	71.5
1997	623235.1	0.2	315139.9	-29.0
1998	694028.7	3.3	223646.0	1.1
1999	743479.5	2.4	226154.1	18.7
2000	982855.0	0.6	268430.5	15.9
2001	1025918.0	4.7	311131.7	-1.9
2002	1029978.0	0.3	305163.3	23.3
2003	1058470.0	2.8	376312.0	0.9
2004	1104356.0	4.6	379830.2	13.9
2005	1445477.0	6.0	432591.3	17.6
2006	1622565.0	6.3	508845.5	30.6
2007	1833511.0	7.1	664614.8	7.5
2008	2111173.0	1.5	714165.4	12.8
2009	2365453.0	2.6	805263.7	24.0
2010	2551161.0	5.6	998192.9	

Appendix III: Components of public expenditure expressed as percentage.

Table A3 gdp, recurrent, capital, expenditure on defense; on education; on health; on infrastructure and on public order and security.

YEAR	gdp %	RE%	CE%	TTTL DE/ttl exp	TTLE ED/ttal exp	TTLE HEA/ttal exp	TTL INFLA/ttal exp	TTLE POS/ttal exp
1964	5.0	80.7	19.3	4.3	9.7	4.5	4.8	
1965	2.0	78.4	21.6	5.2	8.9	4.8	7.3	11.4
1966	14.7	76.3	23.7	6.2	9.3	4.8	7.5	11.6
1967	3.4	74.1	25.9	6.5	10.4	5.4	7.7	11.8
1968	8.0	71.7	28.3	5.3	11.3	5.6	8.7	10.6
1969	8.0	71.1	28.9	4.7	14.4	6.5	10.5	9.8
1970	-4.7	64.9	35.1	4.1	17.6	6.4	11.9	8.6
1971	22.2	68.7	31.3	5.1	18.7	7.1	13.4	9.4
1972	17.1	68.4	31.6	5.9	20.0	6.3	14.4	7.8
1973	5.9	70.3	29.7	6.2	20.0	6.3	14.3	7.9
1974	4.1	69.3	30.7	6.3	21.2	6.9	13.1	7.0
1975	0.9	66.6	33.4	5.5	19.4	6.5	11.1	6.6
1976	2.2	70.0	30.0	10.5	19.7	7.2	11.6	5.8
1977	9.5	68.1	31.9	13.4	16.0	6.3	11.1	5.8
1978	6.9	68.4	31.6	15.1	15.6	6.2	12.2	5.1
1979	7.6	70.3	29.7	14.3	17.5	7.0	8.4	5.1

1980	5.6	70.9	29.1	9.2	18.1	6.7	6.9	6.1
1981	3.8	74.0	26.0	11.7	17.6	6.3	8.0	5.5
1982	1.5	81.3	18.7	11.6	17.3	5.9	6.5	3.4
1983	1.3	30.6	69.4	10.5	16.5	5.5	5.9	4.7
1984	1.8	66.9	33.1	7.3	16.9	5.4	4.6	4.4
1985	4.3	81.3	18.7	7.7	19.9	5.6	4.0	4.9
1986	7.2	77.9	22.1	8.0	19.0	5.3	3.2	4.6
1987	5.9	81.7	18.3	11.0	20.5	5.3	2.9	5.4
1988	6.2	78.8	21.2	8.2	15.4	4.0	2.2	4.0
1989	4.7	76.6	23.4	8.3	17.3	4.4	3.6	5.0
1990	4.1	79.9	20.1	7.2	16.7	4.2	0.6	4.5
1991	1.3	85.4	14.6	5.2	16.2	4.3	2.5	4.2
1992	-1.1	86.2	13.8	4.4	13.9	3.8	2.6	3.8
1993	-0.1	88.6	11.4	3.8	11.9	3.6	1.8	3.2
1994	2.5	84.2	15.8	3.8	17.1	4.2	4.5	4.6
1995	4.3	84.9	15.1	4.9	17.3	5.0	6.3	4.4
1996	4.0	85.4	14.6	5.7	18.2	5.8	1.2	5.2
1997	0.2	92.4	7.6	3.2	14.7	4.1	2.7	3.7
1998	3.3	91.7	8.3	4.7	21.1	4.7	4.0	5.2
1999	2.4	91.3	8.7	4.6	21.1	4.1	4.4	5.8
2000	0.6	87.6	12.4	5.3	18.6	4.4	3.8	6.3

2001	4.7	91.1	8.9	5.2	17.9	4.9	2.2	5.8
2002	0.3	89.6	10.4	5.8	21.3	5.0	2.7	6.1
2003	2.8	85.5	14.5	6.2	20.8	4.1	5.5	6.6
2004	4.6	89.4	10.6	5.5	22.3	4.3	3.6	8.0
2005	6.0	85.6	14.4	5.9	22.2	5.3	4.4	9.2
2006	6.3	79.1	20.9	4.9	21.5	5.4	6.1	8.2
2007	7.1	75.5	24.5	5.6	19.2	4.1	6.5	7.7
2008	1.5	77.5	22.5	5.8	20.2	4.6	8.1	8.5
2009	2.6	77.1	22.9	5.9	22.6	4.8	7.7	5.1
2010	5.6	100.0	0.0	5.4	19.8	5.5	9.3	7.6

Source: calculation from the data collected