# RELATIONSHIP BETWEEN MACROECONOMICS POLICIES AND BUDGET DEFICIT IN KENYA.

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**A DISSERTATION SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE IN MASTERS OF SCIENCE COMMERCE (ECONOMICS AND FINANCE) IN THE SCHOOL OF BUSINESS AND PUBLIC MANAGEMENT AT KCA UNIVERSITY.**

**NOVEMBER 2018.**

**DECLARATION.**

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

Reg no……

Sign…….Date……....

I do hereby confirm that I have examined the masters' dissertation of

**Limo Brian kiplangat**

And have certified that all revision that the dissertation panel and

Examiners recommended have been adequately addressed.

Sign…… Date……..

Dr. Christine Nanjala

Supervisor

**ABSTRACT.**

Most of developing nations are facing budget deficit. Budget deficit has been of great concern in many developing economies. The instability in the government fiscal position is attributing to some factors such as low level of economic development, growth and instability of government revenues, control of government expenditure. The objective of the study was to investigate the effect of (macroeconomics) trade openness; money supply; tax revenue on budget deficit. The study employed the descriptive design. The population of this study was on annually money supply (M3), annually trade openness, tax revenue and budget deficit for a period of 30 years since 1985 to 2015.The time series data was collected from Central Bank of Kenya, National treasury, World Bank and International monetary fund (IMF). Stationarity was tested using ADF. Furthermore, Granger causality technique was used to access the direction of causality. The findings provide evidence to support the variable understudy are cointergrated. The budget deficit had bidirectional causality with Tax revenue, Money supply and Trade policy.

The study applied vector Auto regression (VAR) to evaluate the empirical effects of Money supply, Tax revenue and Trade policy on budget deficit. The prediction will help the policy makers as well as analyst in determining monetary policy, fiscal policy and trade policy to apply at certain time in the economy. Thus, economists, analyst and policy makers may take cue on these studies and keep watchful in any changes in macroeconomics performance in the economy.

KEYWORDS; Budget deficit, macroeconomics, vector Auto regression (VAR) stationarity test, granger causality test.

**ACKNOWLEDGEMENT.**

All the praises and glories to God the Almighty to his sufficient grace that has vested me to this height. To him, be glory and honour. I am also grateful to everyone who have involved in different ways include moral, financial and spiritual support.

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I am very grateful to my parents Stanley and Alice kilel for their invaluable and continuous support throughout my studies. Moreover, I would like to thank my friends for their endless support and encouragement in my life….

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DEDICATION.

I dedicate this research paper to my family especially my parents for their wisdom and inspiration which has been my pillar in search for knowledge.

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ACRONYOMS AND ABBREVIATION.

**ADF** Augmented Dickey Fuller.

**ARDL** Auto Regressive Distributed Lag.

**CBK** Central Bank of Kenya.

**ADF** Augmented Dickey Fuller.

**GDP**Gross Domestic Product.

**OLS** Ordinary Least Squire.

**IMF** International Monetary Fund.

**CBK** Central Bank of Kenya.

**VECM** Variance Error correction model.

**FDI** Foreign Direct Investment.

**VAR** vector Autocorrelation model

# CHAPTER ONE

# INTRODUCTION

## 1.0 Background of the study.

Macroeconomics is the largest societal force that affects the economy of a country (Armstrong et al, 2012). The Macroeconomics, therefore, necessitates the development of macro policies which are unique among countries. The policies differ due to political reasons and the state of the nation (Lucotte, 2009). Thus, the Macroeconomics policies deals with issues of controlling and managing the economy over period of time. The Macroeconomics constitute several policies such as; trade policy; income policy; monetary policy; fiscal policy; employment policy and investment policy (Khalid etbal,.2012)) which are interrelated. Every government, therefore, has a responsibility to maintain macroeconomics policies which are favourable to achieve a desirable economic growth (Nayyar, 2011). Indeed, economies are driven by economic plans that specify social and economic objective to be achieved in short run and long run (Debble, 2009). This current study will focus on macroeconomic policies specifically; fiscal policy, monetary policy, and trade policy. Since this macroeconomics policies have become of great importance (Nkalu, 2015; M-amina, 2015; J.saaed al, 2014) in the recent years due to influence in transforming global economy.

Fiscal policy generally refers to the government's choice regarding the use of taxation and government spending to regulate the aggregate level of economic activity (Hilbers, 2004) therefore, fiscal policy influences the direction of government budget. According to Keynesians (1936) when the government increases its spending and reduces taxes, for instance, it will shift the government budget toward a deficit. Thus, the government will have to borrow funds to cover the excess of its spending. Larger budget deficits and increased borrowing are indicative of expansionary fiscal policy (Keynesian,1936). In contrast, if the

government reduces its spending or increases taxes, this would shift the budget toward a surplus. Therefore, budget surplus will reduce the government's outstanding debt.

Keynes (1936) argued that during recession, government should increase spending and reduce taxes in order to shift its budget towards a deficit. Total demand would be directly increased by high level of government spending while lowering taxes increased the after tax –income thus individuals spend most of additional income hence stimulate total demand. Therefore, budget deficit is remedy of recession (Sirere, 2015).

Monetary policy refers to the central bank's control of the availability of the credit in the economy to achieve the broad objectives of economic policy (Hilbers, 2004). According to Friedman (1956) when government increases amount of money in circulation, it will lead to inflation. The government spending will be high thus government budget shift towards the deficit. Therefore, government will have to borrow money or print money to finance excess spending (Ichihashi & Devapriya, 2012). On the other hand, if the government reduces amount of money in circulation, this would shift budget towards surplus since the spending will be low (Friedman, 1956).

Trade policy is defined as regulation and rules governing the import and export in a country. The trade openness affects the instability of government revenue and budget balance (Combes & Salik, 2009) in the followings ways. To start with, more open countries tend to have a lower level of corruption (Ades & Di Tella, 1999; Wei, 2000). For instance, there is more competition in high openness. In situation of less competition, the firms will engage in malfeasant behaviour due to higher incentives. The point is related to the more general idea that rents may foster slack (Ades & Di Tella, 1999). Therefore, less corruption can improve budget position. Indeed, we can argue that less corruption implies more efficient fiscal

systems, thus increasing the ability of government to collect tax revenue and avoiding useless public spending, thus enhancing budget balance (Combes& Salik, 2004)

Then, trade openness increases income inequalities (Savvides, 1998). This increases the demand of public goods and reduces the ability of government to collect taxes (combes &Salik, 2002). Contrary to that, government revenue could be reduced by more openness in the short run. So, at least in the short run, openness could have a negative impact on surpluses (Bevan, 1999) however, government revenue is an increasing function of trade openness at a given level of tariffs. Trade policy could deteriorate the budget balance in short run but it could be improved by long run outward looking policy could improve budget position (combes&Salik, 2002).

Budget deficit refers to government expenditure exceeding government revenue over period of time (Anyanwu, 1997) and macro environment affect budget. For instance, reducing tax rates may also cause a deficit if spending is not reduced to account for the decrease in revenue (Rahman, 2012). However, the role of budgeting in a developing county is much different from that of developed country (Eli, 2010). Therefore, deficit budgeting is a common characteristic of almost all budget in the today's world (Kuncoro, 2011) as a results of increasing government expenditure. It is therefore caused by less revenue collection, natural calamities, insecurity and decline in agricultural production. On the other hand,PKF Kenya, (2012) noted that corruption, unwarranted public expenditure by the government and high noncompliance rate among the tax payers have also been the major contributors to budget deficit in Kenya. Fiscal policies help in mobilisation of revenue although it varies depending on economic factors. Government finances its expenditure through taxes. In fact, reducing budget deficits has been at the centre of many government due to its negative consequences such as ,rising inflation resulting from increased money supply to pay off debts

,over indebtedness from increased borrowings to finance the deficit leading to increased amount in debt servicing, decreased autonomy through impositions of sanctions and conditions by donors and reduced investments as a result of crowding out of the private sector due to deficiency of fund available for borrowing (kosimbei,2009).

This Macroeconomics policy specifically; trade policy, monetary policy and fiscal policy relate to budget deficit. It is widely believe that the huge budget deficit have adverse macro economy effect such as interest rate, money supply, inflation and exchange rate etc. (Bernheism, 1989). According to (Dalyop, 2010) argues that the government narrow revenue base vis-à-vis its expenditure has likely serious effects on its budget deficit. On the other hand, fiscal and monetary policy links together to produce desired budget.

However, budget deficit in open economy reduces loan supply fund. It leads to increase in interest and reduction in net foreign income. Thus, saving in domestic currency will be high due to high return. Likewise, a few individuals will buy few foreign assets and investing. There is no consensus on existing literature about the relationship between macro environment and budget deficit. For instance, according to (Sergent & Wallace, 1981) they argue that tight money leads to unsustainable debt financing in the long run resulting to inflation. In addition, their frame work further state that inflation is fiscal-driven monetary while nominal money supply is endogenous determine to finance exogenous given deficit to satisfy budget constraints. However, in the fiscal theory of price level in non –Ricardian world portrays no significant role of money in determining price level of any goods or service (Woodford, 2001; Buiter, 2002).

### 1.1.1The overview of budget deficit in Kenya.

Kenya government has been having budget deficit for several years since independence (Kosimbei, 2009). The government revenue has been falling short of government

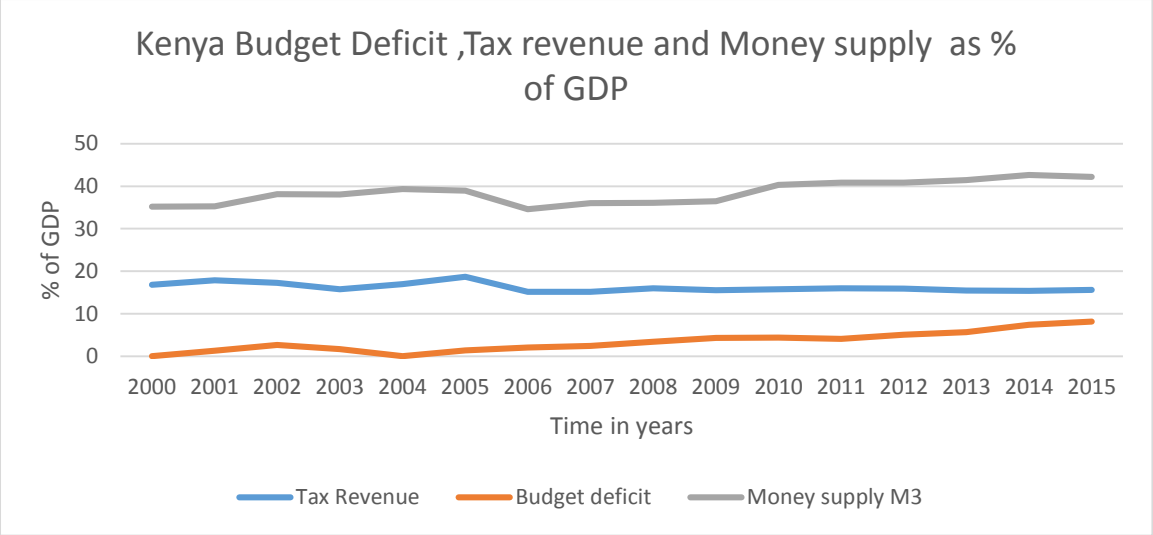
expenditure. This shortfall could be attributed to poor budgetary process, and limited budgetary resources brought about by low economic performance (Wawire,2006). However, the Kenya budgetary constraints arise due to its nature of low resource base associated with low savings and low income (Kosimbei, 2009). Furthermore, budget deficit has contributed to the weak economic performance, by accumulating high public debt and associated high interest rates (Republic of Kenya; 2003a).

Since independence to early 1970s, the government was able to finance all its recurrent expenditure and part of its development expenditure through revenue sources, and thus incurred minimal fiscal deficits (Muriithi & Movi, 2003). Between 1991 and 1993, the economic growth in Kenya declined because IMF has suspended donor fund in that period due to high budget deficit. From late 1970s, the government started having financial imbalance. The budget deficit was caused by ever increasing expenditure and rigid tax system (Osoro, 2016). However, to reduce these budget deficits, the government had to increase its effort on mobilizing revenue while maintaining its expenditures under watch simultaneously (Murithi & Movi, 2003). This is because growth in government expenditure increase the fiscal deficit if revenue is not growing at the same ratio and this can ever be worsened if the rise in revenue is spent in poor and unproductive social programs (Gandoflo, 2003).

Figure 1. Trends in budget deficit, tax revenue, money supply as percentage of GDP, 2000 to 2015.

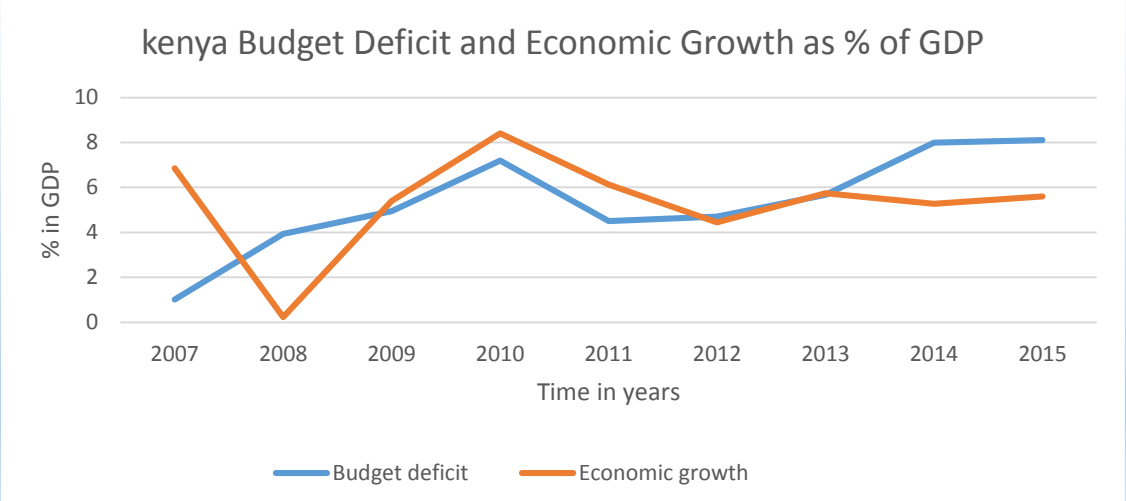
The figure below shows that the budget deficit, tax revenue and money supply trends in the past 15 years. These results support theoretical claims (Kosimbei, 2009; Sirere 2015) that the budget deficit is ever increasing. Furthermore; the money supply is positively related with budget deficit (Aamir et al, 2014). For instance, when money supply increase, interest rate

will increase. Therefore, the government expenditure will increase thus resulting budget deficit




Central bank of Kenya (2015)

Figure 2. Trends in Budget Deficit and Economic growth as percentage of GDP, 2000 to 2015.




Central of bank (2015)

The figure above shows budget deficit and economic rate trends in Kenya in the past 9 years. The results agree with the empirical findings (Kosimbei, 2009) that budget deficit affect economic growth. Recent literature (Emire, 2015; Magehema, 2015; Osoro, 2016) has investigated the effect of budget deficit on economic growth. The budget deficit is positively related to economic growth but has budget deficit increase the impact economic growth decrease (Osoro, 2016). This result supports the Keynesian view of budget deficit which advocates for deficit in stimulating the economy during recession periods

**1.2statement of the problem.**

Budget deficit in Pakistan, a developing nation has varied from 5.4% to 8.7% of GDP during last two decades (Mushtaq &Zaman's, 2013). Just like other nations, Kenya is experiencing Budget deficit. The budget deficits ever increasing while there is shortfall in government revenue (Kosimbei, 2009). The huge budget deficit has caused low growth and high dependence on other countries (Sirere, 2015; Mushtaq. & Zaman's, 2013). The effect of macroeconomic policies on budget deficit in many countries has been empirically studied in various countries by academicians. The empirical literature studies have shown that (Syivya&Venkata, 2014; Georgantopolous &Tsamis, 2011; Omoke & Oruta,2010) there have been no significant relationship between money supply and budget deficit. However, the previous literature (Lozano, 2005; Odienge &Uma, 2013; Mukhatar & Zakari, 2008) have shownthat there have been significant relationship between money supply and budget deficit.

The literature studies on the relationship between trade policy and budget deficit (Nathan, 2012; Larbi, 2012) have shown that trade policy has been significant to the budget deficit in Nigeria however little studies have been done in Kenya. The previous literatures (Aworinde, 2013; Egwaikhide, 1997) have demonstrated that fiscal policy has been statistically

significant to the budget deficit in Kenya and Nigeria. However, (Wosowei, 2013) suggested that there has not been statistical relationship between fiscal policy and budget deficit.

The relationship between macro economies policies and budget deficit, however, has been centre of debate by academicians and policy makers. There is disagreement on the effect of macro environment on the budget deficit. This may be due to different methodology used as evidence from these studies and the time the study was done thus, giving inconsistent results.

Recent literatures (Kosimbei, 2009; Sirere, 2015; and Magehema, 2015) have investigated the effects of macroeconomics variables on budget deficit in Kenya. However, little is known on the relationship between macroeconomics policies and budget deficit. Understanding the nature of this macro economies would help the policymakers with regarding budget. Likewise, it will improve the budgeting process and the overall fiscal policy formulation that is badly required for the attainment of the Vision 2030(Republic of Kenya, 2007).

The aim of this study is to fill the gaps in available literature by seek to test the empirical validity on the relationship between macroeconomics policies such as; fiscal policy; monetary policy; trade policy and budget deficit in Kenya and also provide information to policy makers.

## 1.3 Objective of the study.

### 1.3.1 General objective.

The main objective was to research on relationship between macroeconomics policies and budget deficit in Kenya.

### 1.3.2 Specific objectives.

(i) To investigate the effect of monetary policy on the budget deficit in Kenya.

(ii) To analyse the effect of trade policy on the budget deficit in Kenya.

(iii) To analyse the effect of fiscal policy on the budget deficit in Kenya.

**1.4 Research questions.**

(i) What is the effect of money policy on the budget deficit?

(ii) What is the effect of trade policy on the budget deficit?

(iii) What is the effect of fiscal policy on the budget deficit?

**1.5 Significance of the study.**

This study emphasizes on essentiality of budget deficit in a genitive and globalized economy. Improving economic development requires strong commitment on macroeconomics policies in order to reduce budget deficit. This study will make several contributions to existing literature and policy formulation. Therefore, examining the effect of macroeconomics policies on Budget deficit in Kenya since 1985 will enriches existing literature by providing new evidences on Kenya economy transformations. Furthermore, macroeconomics policies and debt policy is important in Kenya since the country undergoes different transformation in political, social and economic issues. This study covers an interest period where the economy undergoes significant transformations in relation to the constitution 2010. Therefore, this leads to a more open, integrate and globalized Kenya economy.

The empirical findings will improve ways of managing budget deficit using macro economies policies. The policy makers will have indebt knowledge about the relationship between macroeconomics policies and budget.

**1.6Scope of the study.**

The study will be limited to 1985 to 2015 for the following reasons. To start with, the period was long to capture the relationship of macroeconomics policies and budget deficit. Also, the time series data was available for that duration.

### 1.7 limitation of the study.

The study was limited to 30 years' period starting 1985 to 2015.It was limited to establish relationship between macroeconomics policies (money supply, trade openness and tax revenue) and budget deficit in Kenya

## CHAPTER TWO

## LITERATURE REVIEW.

### 2.1 Introduction.

In this chapter, the study focused on empirical and theoretical literature. The empirical literature that was prior to this study and theoretical perspective would discuss the concept of relationship between macroeconomics and budget deficit in Kenya. The conceptual framework and operationalisation of variables in the study were discussed.

### 2.2Theoretical Review.

#### 2.2.1 Keynesian theory.

Keynes (1936) argues that the remedy of economic down turn is to stimulate economy through reduction of interest rate and government spending. Thus, government will enable the commercial banks to reduce the lending rate to its borrower. When government inject money to invest in infrastructure this will create employment, opportunities and demand hence this reverse fiscal imbalance (Magehema, 2015). In this Keynesian traditional approach, it views the existence of unemployed resource in the economy. On the other hand, Keynesian argues that any increase in autonomous government spending will lead to increase in total national output through multiplier effect. Keynesian paradigm of increase output through multiplier will lead to increase in demand of money. However, if bond is used in financing and money supply is constant, the interest rate will rise to counter the rise of

multiplier effect Indeed, when government uses bond to finance its expenditure, government spending exceed tax revenue collected thus this result fiscal deficit.

Keynesian argues that increase aggregate demand results in the profitability of private firms at given rate of interest. Furthermore, the investment is increased due to aggregate demand in the economy. In his conclusion, Keynesian say deficit may be used to stimulate savings and investment due to employing unutilized resource in the economy even if the interest rate is too high. In fully employed resource in the economy, deficits results to crowding out. Keynesian economists' assume the existence of unemployed resources and credit constrains individuals in an economy. They are of the idea that budget deficits are good due to their multiplier effects to the economy. Increased government spending stimulates aggregate demand which leads to employment of idle resources and thus increase output. They advocate the use of budget deficits during economic downturn periods to kindle aggregate demand and thus reduce the period of recovery (Osoro, 2016). Thus, they recommend that budget management should follow anti cyclical economic conditions (Barro, 1989). Keynesian advocates that the budget management should observed economic condition in making budget. In that Keynesian views emphasizes on the short run effects and its paradigm constitute a key policy prescription.

### 2.2.2 Ricardian Equivalence Theory.

In this theory, the budget deficit is neutral, it will neither affect economic growth nor development. When the government reduces taxes and increase deficits, the citizen expect higher taxes in the future and also to repay the government debt. Therefore, the citizen will reduce the rate of spending and raise private savings to meet the decline in government savings. Hence, the value of government spending at the present must be equal to the present value of taxes and non-tax revenue. (Enders & Lee, 1990, p15) Thus, the budget deficit has

no effect on government taxes. The approach also argues that, a debt financed deficit has no effect on the current account and exchange rates (Osoro,2016).

Fiscal deficit is important to the government to meet its huge expenditure or for smoothening the impact of revenue shocks (Barr, 1989). Therefore, it may decrease government savings, however, this may be accompanied by increase in private saving thus offsetting. The government savings remain unchanged likewise to investment. For instance, it implies that there is no change in real interest rate. Ricardian equivalent theory is based on the following assumption; individual agents in the economy is concern with future; both government and individual have equal discount rate on spending and both have extreme long time horizon for calculating the present value of future taxes. The rational agents in economy should recognise the equivalent and continued as debt does not exists, thus debt has effects on economic activities(seater, 1993; Bernheism, 1989).The theory is important to this study since it focus on long period of time. Furthermore, the theory argue fiscal deficits do not really matter except for revenue shock.

### 2.2.3 Standard neoclassical theory.

The standard neo-classical view base on the following assumption. Firstly, Individual has finite life span and each one has specific generation or cohort it belongs on this life span of successive generation overlap. Secondly, the consumption of individual is determined as the solution to an intertemporal optimizing problem, where both borrowing and lending are permitted at the market rate of interest. Thirdly, Market assumed to be clear in all the period (Bernheism, 1989). This theory implies the budget deficit will lead to increase in the current expenditure. For instance, in the case of close economy where there is full employment of resource, an increase in current expenditure will lead to increase interest rate (reduce money supply). Thus, reducing both national savings and future investment. Furthermore, Budget

deficit leads to crowding out of investment, therefore, reduces future capital formation in the economy (Lwanga&Mawejj,2014). However, in open economy the resource is unutilised. For instance, any increase in the current consumption has no effect on interest rate in the world market. The perfect results are to increase in external borrowing thus making the currency to appreciate. Likewise, the import will be cheap and export becomes expensive hence interfering with balance of payment. However, this results in deterioration of the current account position (Bernheism 1989; Yellen 1989). Thus, it affects trade. In conclusion, the standard neo-classical theory, the budget deficits has negative effect on the economy thus, it advocates for balance economic budget at all times (Bernheism 1989).

**2.3 Empirical Review.**

Srivya and Venkata **(**2004) analysed the interaction of budget deficit in India with monetary policy using the data spanned 1970-2002.The technique used include cointegration approach and Variance Error correction model (VECM). Empirically, it showed no significant relationship between monetary policy and budget deficit.,.

Chaudhary and Ahmad (1995) investigated the relationship between government fiscal deficit and monetary policy in development countries. The findings shown that there was no justifiable conclusion that support hypothesis that government fiscal deficit increased money supply in developing countries covered in the study.

Lazano (2005) analysed the relationship between fiscal deficit, monetary policy and inflation in Columbia. TheVECM method used. The findings shown that there is causal long term relationship between budget deficit and money supply and inflation varied due to the degree of central bank independence on different nation and the type of monetary policy used. This study conclusion is in agreement with that of Sargent-Wallance Hypothesis (S-WH) causality linking fiscal deficit to money supply exists.

Odienge and Uma (2013) investigated a study government budget deficit and monetary policy in Nigeria. Findings shown that money supply accounts for about 48% of variations in fiscal deficits in Nigeria. However, Omoke and oruta (2010) analysed the relationship between fiscal deficits and monetary policy in Nigeria. The results shown that no evidence on long run relationship between government budget deficit and money supply and inflation in Nigeria. Granger causality tests shown that it was money supply that caused fiscal deficit which was contrary to the view that fiscal deficit causes money supply.

Chaudhary and Shabbir (2005) analysed the effect of government budget deficit on monetary policy variable, and fiscal policy variable. The data spanned 1965-1999. The method used was simultaneous equation model. The empirical shows fiscal and monetary variables are vital in determining economic stability in the foreign sector of Pakistan. Money supply was positively related to foreign reserve bank, borrowing of the public sector and budget deficit but negatively related to interest rate. Any increase in money due increase in credit affect trade balance.

Mukhatar and Zakaria (2008) empirically examined long run relationship between budget deficit and monetary policy for Pakistan. The study used quarterly time-series data from the period 1960-2005. The technique used in analysis was granger causality test and vector error correction model. The findings revealed that budget deficits had no significant effect nominal interest rate but there is relationship between fiscal deficit and money supply.

Georgantolopous &Tsami **(**2011) empirically investigated the causal links between budget deficit and other macroeconomics policies such as consumer price index, Gross domestic product and nominal effective exchange rate for Greece using technique Vector error correction model and variance decomposition estimate. The data spanned1980-2009. The

variable were cointregrated and only one way causality present run from nominal exchange rate to budget deficit.

Hussain & J.saaed **(**2014) analysed relationship between budget deficit and macroeconomics variable (exchange rate, consumer price index, gross domestic product and money supply) in United Arab. The data on which the period cover is 1985 to 2011.The study employed the following technique methods cointregration approach and granger causality test technique. The findings indicated that the variables understudy was cointegrated and there was directional causality between budget deficit and monetary policy.

Nathan (2012) examined the causal relationship between fiscal deficit, monetary policy and trade policy in Nigeria from 1970-2010.He employed co-integration error correction model (ECM). Two band Recursive least square to test Nigeria economy to find effect of money supply, fiscal deficits and exports on the relative effective fiscal policies in Nigerian Economy. The findings shown that their significant causal relationship between trade deficit and fiscal policies.

Larbi (2012) studied the long –run impact of budget deficit on economic growth in Ghana. The period of study took 30 years. That period covered from 1980-2010.He employed Johannsen cointergration. The budget deficit had no significant long –run relationship on economic growth. Granger causality test has positive significant long-run relationship between the capital stock, openness, total government expenditure and growth with budget coefficient variable –positive statistical significant.

Egwaikhide (1997) examined the effects of budget deficits on the current account balance in Nigeria. The study employed an econometric model that captured in principle the interactions between budgetary developments, money supply, price level, domestic absorption, and

current account balance. The variables used were the general price level, money supply, national income, expected rate of inflation, parallel market exchange rate, import duties, real imports, oil revenue, government expenditures, total government revenue, non-oil exports, output of agriculture, investments, private consumption, disposable income, and a dummy variable that captured the period when government introduced quantitative import restrictions. The study employed OLS estimated method. Results showed strong correlation between the budget deficit, oil revenue, money supply and the current account balance. No causality test in the study. The study did not test for cointregration among variables thus no comment on relationship

Akbostancı and Tunç (2002, p68) investigated the twin hypotheses of the budget deficit and trade deficit in Turkey. The study employed error correction model (ECM). Annual time series used. The data collected from 1987 to 2001.Thefindings showed that in the long-run there was relationship between the two deficits. In short run model, it showed that worsening of budget balance will worsen the trade balance.

Kulkarni & Erickson (2001) examined the relationship between current account balance and budget deficit in 3 countries. Those countries were India, Pakistan and Mexico. The study covered a period of 28 years from 1969-1997. The findings show that no evidence on causality running in any direction in the case of Mexico. In India had a strong evidence of twin deficit. In Pakistan, trade deficit create budget deficit.

Alkswani (2000) conducted a study in Saudi Arabia. The objective was to analyse the relationship between the budget deficit and trade deficits in an open petroleum economy. The study employed Error correction model. The tests used include unit root tests, granger causality tests and Johannes cointergration. It exists long run relationship between the two deficits. Direction of causality run from trade deficit to budget deficit.

Allam (2014, p59) analysed the impact of budget deficit on the trade openness. The study employed ordinary least square technique and Granger causality test for analysis. The Granger causality test showed that exports and import, US dollar VS Indian rupee is causing the fiscal deficit. Regression weight estimation found that fiscal deficit is impacting on planned budget expenditure. T-test hypothesis analysis established significant impact of imports, foreign reserves, and trade balance of payments.

Bwire et al (2014) investigated the relationship between budget deficit, money creation and inflation in Uganda. Using data collected from 1999-2012. Technique used in analysis was Vector Error Correction Method (VECM) and pair-wise Enger –Granger. The results showed that budget deficit did not create inflation in short but in long run. There was unidirectional running from inflation towards budget deficit.

Sirere (2015) found out the relationship between budget deficit financing and economic. Growth in Kenya using annual time series from 2005 to 2014.The study used Pearson correlation co efficient analysis. The findings revealed that there were positive relationship between budget deficit financing and inflation, trade policy and monetary policy.

Wosowei (2013, p75) analysed the relationship between fiscal deficits and macroeconomics performance. The period of study was 1980-2010. The aim of the study was to determine the impact of fiscal deficits on fiscal policy in Nigeria and whether macroeconomics has increased economic growth. Ordinary Least Square method used as estimating model. The findings shown that fiscal deficits had no significant effects on macroeconomics output. The results showed bi-causal relationship between government deficits and government tax (fiscal policy).

Paul et all (1999) investigated Barro's tax –smooth model (this assumed that the government seek to minimised the impact cost of taxation) in seek the sustainability government taxation in south African by using case study of Pakistan and Sri-lanka. The study used time series of period run from 1956-1965 and 1964-1967 respectively. The study found out that Pakistan fiscal behaviour is consistent with tax-smooth model but not in Sri- Lanka.

Oyeleke and Ajilore (2013) investigated the suitability of fiscal policy in Nigeria. The period of study was 1980-2010.This was to analyse whether or not the government had violated intertemporal government budget constraints using error correction method of analysis. The findings indicated that fiscal policy sustainability was weak.

Aworinde (2013) examined the interaction of fiscal deficit and fiscal deficit. The study employed VAR model. The quarterly data were used as oppose to the annually time series which has been used in most of the studies in African. The VAR model explored long-run relationship between the twin deficits. ARLD model was used to access the long run relationship to model inflation as being non-linearly related to fiscal deficit using cointergration approach. The empirical findings showed that fiscal deficits were inflationary in high inflation economies and developing countries. The study also examined the long –run relationship between fiscal deficit and inflation in eleven countries. The results of following countries, Botswana, Egypt, Ethiopia, Ghana, Kenya, morocco and Tanzania revealed that fiscal deficit and inflation were asymmetry. He concluded that large fiscal deficit was cause by trade deficit.

Aisen and Hauner (2008, p15) the study examined the effect of budget deficit on interest rate on 60 advanced and emerging countries. The data were corrected from period 1970 to 2006. Reduced form equation adopted. Empirical findings showed that coefficient are significant.1% increase budget deficits increase 44 points in interest rate. From 1985-1994

budget deficits had a negative effect on interest rate but after 1995 it changed and there was positive effect on interest rate among selected countries. Likewise, Anusic (1993, p10) investigated the impact of budget deficit on Republic of Croatia. The data for the study was collected from 1991-1992 using Keynesian proposition on which showed the increase in budget deficit would cause the increase in the real interest rate thus reducing money supply.

Islam and Wetzel (1994) investigated the role of budget deficit in Ghana economic decline and renewal. Methodoly used in the study ordinary least squares (OLS). The Variables in study were, budget deficit, domestic credit from central bank of Kenya and government borrowing from financial institutions. The study concluded high money finance budget deficit caused severe macroeconomics imbalance and reduce growth rate up to the year 1983.

A Bwire et al, (2014) researched on the relationship among budget deficit and monetary policy in Uganda. They employed Vector Error Correction model (VECM) and pair-wise Engel-Granger non- causality test techniques over the period 1999 - 2012. Results revealed unidirectional from monetary policy to the fiscal deficit. Thus, in the short-term contractionary

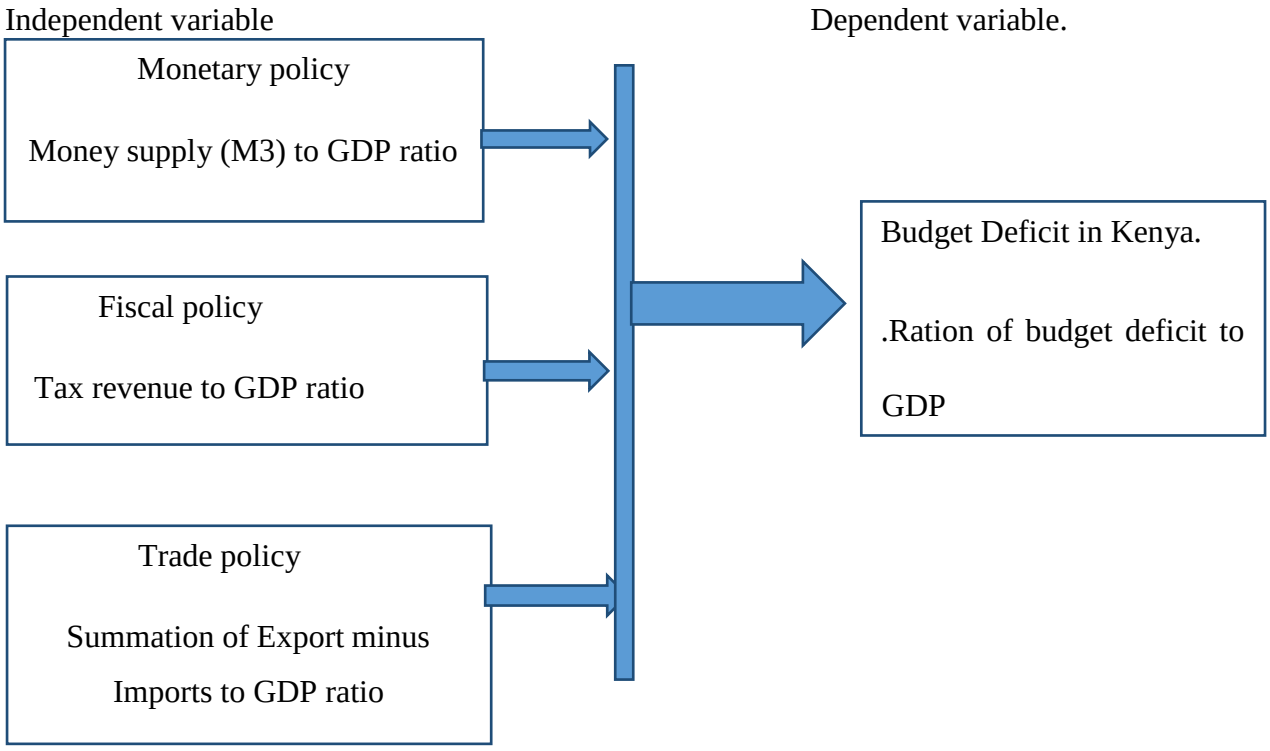
The empirical studied literature(Nathan,2012;Egwaikhide,1997;Aworinde ,2013);Aworinde,2013;Alkswani ,2000;Chaudhary and Shabbir ,2005; Akbostancı and Tunç ,2002, p68 Gulcan & Bilman ,2014, p56) have concluded that there are effect of trade policy, monetary, fiscal policy and budget deficit but some literature have found no effect (Srivya and Venkata **,**2004; Wosowei, 2013; 0moke& Oruta 2010).However, there are few authors who were interested in the topic in Kenya's point of view because empirical review was predominated by international literature than local especially concerning relationship among macro environment and budget deficit. The aim of research is to fill the gaps in the available

literature and provide information to interested policy makers on areas of unexplored opportunity.

### 2.4 Conceptual Framework.

Conceptual framework guides any research study. In this study, it determines what variables the research will measure and what statistical relationship exists between them. The research conceptualizes the trade policy, monetary policy, fiscal policy has effect on budget deficit and vis-visa.

Figure 3. Conceptual framework.




Source author 2017

### 2.5 Operationalization of Variables.

This section presents definition and measurements used to operationalize the study.

| Variable | Definition | Unit of measurement | Source of data |
|---|---|---|---|
| Budget deficit | It is when the government revenue fall short of government expenditure at a particular period of time | It is express as percentage of GDP | World Bank 2015 |
| Money supply (M3). | It is the currency held in circulation, time deposit plus the demand deposit | It is express as percentage of GDP. | World Bank 2015 |
| Tax revenue | It is income gain by the government through taxation | It is express as percentage of GDP | Central Bank of Kenya 2016. |
| Openness to trade | It is summation of export minus import | It is express as percentage of GDP | IMF , World bank 2015 |

## CHAPTER THREE

## METHODOLOGY

### 3.1 Introduction.

The chapter explained the research design to be used. The variables that were used in the study were defined. The data source was explained. The method used in data analysis was explained.

### 3.2 Research design.

A research design is a programme to guide the research in collecting, analysing and interpreting observes factors (Orodho, 2013). The study employed descriptive research design. A descriptive design study concerned with finding out who, what, where when and how much (cooper & schindler, 2006). The study used descriptive because it provides a detailed and highly accurate picture of the situation that was useful in literature review.

### 3.3Target population.

Burns et al, (2003) describe population as all the elements that meet the criteria for Inclusion in the study. The population of this study was all data collected in Kenya on annually money supply (M3), annually trade openness, tax revenue and budget deficit for a period of 30years since 1985 to 2015.

### 3.4Research instrument.

Data was collected using data abstraction tool which include a matrix's four columns of four variables and thirty row of annual data covering period of study. The data analysed using vector Auto regression method after undergoing series of stationarity test.

### 3.5Data collection procedure.

The study used secondary data. The source of data was central bank of Kenya and national treasury of Kenya, International Monetary Fund (IMF). The variables used annual time series from the period 1985-2015.In that period, Kenya underwent a lot of significant in terms of political and development transformation. This study employed vector Auto regression (VAR) to evaluate the empirical effects of Money supply, Tax revenue and Trade policy on budget deficit. The technique showed unbiased estimator. The granger causality test used to test the causality association between variables. The variables understudy were defined as followed;

**Tax revenue**. It is income gain by the government through taxation.

**Money supply (m3)** comprises of currency (coins and notes) held by public, time deposit and demand deposit held in banks.

**Trade openness**. It is summation of export minus import as percentage of GDP

**Budget deficit**. It is when the government revenue fall short of government expenditure at a particular period of time

### 3.6 Diagnostic tests

#### 3.6.1 Stationarity of data.

The first step in statistical analysis was to test stationarity of the data series. This standard procedure performed to ensure that the time series has a constant mean and variance. That was help to avoid spurious results. The main methods of testing stationarity are Augmented Dickey Fuller (ADF) and Phillips perron PP test. The Augmented Dickey Fuller (ADF) procedure was trying to attain validity of the test. This is by ensuring that errors were indeed white noise. While Phillips Perron procedure aim at correcting serial correlation through non

parametric correction to the standard statistic. Philips Perron takes into account the effect of auto correlated errors on the results by using covariance. Phillips perron is preferred. It does not require additional data since no estimation of additional parameters

The ADF include the running of regression of first difference of the series against the series of lagged once. It will be lagged at difference times. This is done by employing constant and a time trend.

$$\Delta Z_t = T_1 \Delta Z_{t-I} + \text{-------} + T_{k-1} \Delta Z_{t-k-I} \pi z_{t-1+} \mu + \in_t \text{----------} \quad (1)$$

The unit root test conducted by coefficient of ($Y_{t-1}$) in the regression. If coefficients regression is statistically significant different from 0 the hypothesis that (y) contains unit root is rejected.

The study used both Augmented Dickey Fuller (ADF) technique used to test stationarity. The null hypothesis on presence of unit root test is rejected when computed Augmented Dickey Fuller (ADF) is greater than theoretical value and the alternative hypothesis of absence of unit roots is accepted

**3.6.2 Granger causality.**

Granger causality is mainly intending to test the relationship in time series variables. This test specifically tests direction and magnitude of variables under study. The notion of long- run equilibrium implies that two or more variables may wonder away from each other in short-run but move together in long-run (Enders, 1995).

Cointegration was tested using Johansen's methodology. The starting point is Vector Auto regression (VAR). This test was carried out using Johansen the systems multivariate cointergration with the system equation below.

$\Delta Z_t = T_1 \Delta Z_{t-I} + \text{-------} + T_{k-1} \Delta Z_{t-k-I} \pi z_{t-1+} \mu + \in_{t;\ t=1\ldots\ldots T}$ ---------- (2)

The above equation from$\Delta$ represent the first difference operator while z denote vector of variables $\in_t \sim \cap ii\ (o, \partial\ 2)$, u is adrift parameter. $\Pi$ is a (m x m) matric in form

$\pi = \propto \beta$ , where $\propto and \beta$ both (m x r) matrix of full rank, with $\beta$ containingthe r cointergration relationship$\propto$ carry corresponding adjustment coefficient in each of r vector.

According to Granger (1969), Y is say to be granger cause x. When X is being predicted by past values of y. If scalar y helps to predict another scalar x, then we say y granger cause of x. If y cause x and x does not cause y, it is said that unidirectional causality exist from y to x. The granger definition is framed with predictability. Generally, if budget deficit share along run relationship with other macro environment variables under the study. The next step is to determine causality if two or more variable are cointegrated then exist causality at least in one direction. Then next step is to investigate if budget deficit granger –cause money supply and other variables using vector error correction model.

**3.7Data processing and analysis.**

**3.7.1 Model of specification**

The model specified was developed from theoretical framework presented in the previous chapters with the variables identified. It was not possible to estimate the equation using Ordinary least squares (OLS) technique. This prompted the use of Vector Auto regression method. This because VAR model is theory free method used for estimation of economic relationship (Sims, 1980).

Modification of equation from chapter two resulted in representation in functional equation.

BD = $f(TR$ MS TP) which put econometric equation as BD = ά0+ά1TR+ά2MS+ά3TP

Where as

MS= money supply ($m_3$)

TR = tax revenue

TP= trade policy

BD = budget deficit

ά0 = interceptwhileά1, ά2, ά3 are coefficient of independent variables ά1ά2ά3 is greater than Zero.

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## CHAPTER FOUR.

## DATA ANALYSIS, FINDINGS AND DISCUSSION.

### 4.1Introduction.

This chapter focused on the data used in this study and the empirical results based on the empirical model developed in chapter 3. Data analysis was done and time series properties of the data determined using Augmented Dickey Fuller (ADF).

### 4.2 Descriptive statistics.

The distribution properties of the variables for the model indicate that most of the variables were well behave (see table 1). To start with, budget deficit had a mean value of 3.76068 and small standard deviation of 3.073077. The budget deficit had maximum value of 11.6 and minimum value of 0.05. All the variables under this study were positively skewness. All variables also has positive kurtosis with values of 0.2694, 0.3979,0.5255, 0.0819 of the following variables budget deficit, tax revenue, money supply and trade policy respectively. The money supply had mean 36.19591 and small standard deviation of 4.430394 with minimum 26.6815 and maximum values of 42.6063. The tax revenue had a mean of 36.19591, a minimum value of, 26.6185 maximum value of 42.6261 and standard deviation of 4.430394. Trade policy has mean of 55.77676 with standard deviation of 6.65. Trade policy had maximum value of 72.8584 and minimum value of 44.8064.

TABLE 1

Descriptive statistics results

| STATISTICS | BD | TR | MS | TP |
|---|---|---|---|---|
| Mean | 3.760968 | 17.72371 | 36.19591 | 55.77676 |
| Maximum | 11.6 | 24.6142 | 42.6063 | 72.8584 |
| Minimum | 0.05 | 14.93543 | 26.68185 | 44.8068 |
| Std. Dev | 3.073077 | 3.042156 | 4.430394 | 6.65 |
| Kurtosis | 0.2694 | 0.3979 | 0.5255 | 0.0819 |
| Skewness | 0.0152 | 0.0039 | 0.1756 | 0.0059 |
| Jarque –Bera | 7.12 | 9.02 | 2.24 | 10.60 |
| Probability | 0.0285 | 0.0110 | 0.3267 | 0.0050 |

Source; Author 2018

### 4.3 Diagnostic tests

#### 4.3.1 Unit root test.

The study used time series data, therefore it was important to establish the stationarity of data to make sure the results obtained are not spurious. In this study Augmented Dickey fuller was used to test for unit root test. The units root results of the variables in the model were

presented in the table below. The results of the unit root showed that budget deficit, tax revenue, money supply (m3) and trade policy were not stationary at level. The ADF values is greater than the critical values at all levels of 1%, 5% and10% respectively in all the variables. All the variables are not stationarity at level thus it necessitate test for stationarity after differencing

TABLE 2

**Stationarity test (at level) results**

| Variable at level | | | Critical values at | | | |
|---|---|---|---|---|---|---|
| | With intercept | ADF | 1% | 5% | 10% | Probability |
| BD | , | -1.433 | -3.716 | -2.986 | -2.624 | 0.5665 |
| TR | , | -2.126 | -3.716 | -2.986 | -2.624 | 0.2343 |
| MS | , | -2.083 | -3.716 | -2.986 | -2.624 | 0.2572 |
| TP | | -2.499 | -3.716 | -2.986 | -2.624 | 0.1158 |

Source: Author 2018

TABLE 3

**Stationarity test (after differencing) results**

| Variable at level | | | Critical values at | | | |
|---|---|---|---|---|---|---|
| | With intercept | ADF | 1% | 5% | 10% | Probability |
| BD | | -3.280 | 3.723 | 2.989 | 2.625 | 0.0158 |
| TR | | -7.141 | 3.723 | 2.989 | 2.625 | 0.0000 |
| MS | | -6.832 | 3.723 | 2.989 | 2.625 | 0.0000 |
| TP | | -5.480 | 3.723 | 2.989 | 2.625 | 0.0000 |

Source: Author 2018

The results after differencing shows that all the variables were stationary

### 4.3.2 Lag selection

The study used the lag selection criteria namely the Alkaike Information Criteria (AIC). The results of the selection criteria are reported in the table below. 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 the above table establish the use 4 lags as the most desirable lag length that would minimise the value of the selection criteria. From the findings from the table above the study employed the use of 4 lags.

TABLE 4

Optimal order lag selection

| Lag | LL | LR | Df | P | FPE | AIC | HQIC | SBIC |
|---|---|---|---|---|---|---|---|---|
| 0 | -249.233 | | | | 3388.31 | 19.4794 | 19.5352 | 19.673* |
| 1 | -227.022 | 44.422 | 16 | 0.000 | 2142.16 | 19.0017 | 19.2804 | 19.9694 |
| 2 | -209.412 | 35.219 | 16 | 0.004 | 2091.57 | 18.8779 | 19.3795 | 20.6198 |
| 3 | -188.328 | 42.168 | 16 | 0.000 | 1862.59* | 18.4868 | 19.2114 | 21.003 |
| 4 | -164.251 | 48.153* | 16 | 0.000 | 1880.17 | 17.8655* | 18.813* | 21.1559 |

Source : Author 2018

### 4.3.3 Cointegrated

The objective of the study was to established the nature of relationship between budget deficit and macroeconomics polies. The study was expected to establish long run or short run relationship between budget deficit and macroeconomics policies

The variables were not stationarity at level as evidence from unit root test but become stationarity after differencing. In that linear combination of one or more of the variable might exhibit long run relationship. To capture how the variable cointegrated, the multivariate methodology by (Johannsen 1990) was used.

TABLE 5

Cointegration test result

| Maximum rank | Parms | LL | Eigenvalue | Trace statistic | 5% critical values |
|---|---|---|---|---|---|
| O | 20 | -267.53582 | | 87.8016 | 47.21 |
| 1 | 27 | -250.766614 | 0.69815 | 54.2623 | 29.68 |
| 2 | 32 | -235.6462 | 0.66040 | 24.0224 | 15.41 |
| 3 | 35 | -228.16984 | 0.41376 | 9.0697 | 3.76 |
| 4 | 36 | -223.635 | 0.27669 | | |

Source; Author 2018

As evident from the above, there is no cointergration therefore we fit VAR model.

### 4.3.4 Granger causality test.

Granger causality was used to determine whether one-time series is useful in forecasting another (Ender, 1995). The table below shows the results of granger causality test.The granger causality test results revealed that there was bidirectional causality between the followings pairs of the variables; Budget deficit and Trade policy ,tax revenue and Budget deficit, Tax revenue and Money Supply , Money Supply and Budget deficit , Money supply and Tax revenue, Money supply and Trade policy ,Trade policy and Tax revenue. This implied that either of the variable predict one another. In additional, either of the variables can be in either site of the equation as dependent or as an independent variable.

**TABLE 6**

**Granger causality test results**

| Variables | Causality Direction | F-stat | lag | Probability |
|---|---|---|---|---|
| BD TR | Unidirectional | 4.6905 | 2 | 0.96 |
| BD MS | Unidirectional | 0.1379 | 2 | 0.700 |
| BD TP | Bidirectional | 1.4773 | 2 | 0.478 |
| TR BD | Bidirectional | 13.039 | 2 | 0.001 |
| TR MS | Bidirectional | 2.3896 | 2 | 0.303 |
| TR TP | Unidirectional | 0.08795 | 2 | 0.957 |
| MS BD | Bidirectional | 4.2931 | 2 | 0.117 |
| MS TR | Bidirectional | 15.75 | 2 | 0.000 |
| MS TP | Bidirectional | 12.472 | 2 | 0.002 |
| TP BD | Bidirectional | 8.2157 | 2 | 0.016 |
| TP TR | Unidirectional | 1.0093 | 22 | 0.604 |
| TP MS | Unidirectional | 0.98273 | | 0.612 |

Source: Author 2018

The variables that had a unidirectional causality include, Budget deficit to tax revenue, Budget deficit to Money supply, Tax revenue to Trade policy, Trade policy to Tax revenue,

and Trade policy to Money supply. In this regards, only one variable could explain the other. In this case, they were required to be only in the right hand side of the equation. There was a unidirectional causality running from the budget deficit to tax revenue. In this,it implies that in the case of estimation of the model, budget deficit were to be on the right hand of the equation.

Granger causality tests found important information on the relationship in the variable budget deficit and macroeconomics policies. Budget deficit predicted Tax revenue and Money supply. Moreover, the relationship between Budget deficit and Tax revenue were very strong unlike the other. Budget deficit and macroeconomics policies had strong causality which suggests that fiscal policy should design carefully in order to avoid fiscal deficit. Budget deficit adversely affect many important macroeconomics variables in the economic.

### 4.3.5 Model Fitting.

The equation for modelling was as follow.BD = ά0+ά1TR+ά2MS+ά3TP.The model was fitted using VAR technique.

dBD= 0.24146998 – 0.096113d TR + 0.3961065DMS – 0.336753 DTP. The model interpretation was as follow

When one percent unit increase in TR would lead to 9.6 percent units decreased in BD.

When one percent unit increased in MS, it would lead to 39.6 percent units increased on BD

When one percent unit increased in TP, it would lead to 33.67 percent units decreased in BD.

TABLE 7.

Vector auto regression

| variables | coefficients | Std .errors | Probability | 95% INTERVALS |
|---|---|---|---|---|
| dBD | 0.2414698 | 0.287444 | 0.401 | -0.321911 |
| dTR | 0.0961113 | 0.3344279 | 0.714 | -0.7515796 |
| dMS | 0.391065 | 0.2649586 | 0.140 | -0.1282474 |
| Dtp | 0.336753 | 0.9409322 | 0.720 | -2.180946 |

Source: Author 2018

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**CHAPTER 5**

# SUMMARY, CONCLUSION AND RECOMENDATIONS

## 5.1 Introduction.

This chapter focused on findings and conclusions. The policy implication from the findings, recommendation and area for future research also presented.

## 5.2 Summary.

The main objective of this study was to analyse the relationship between budget deficit and macroeconomics polies. In order to attain the objective of the study, time series data for macroeconomics variables and budget deficit for a period 1985 to 2015 collected from various source which include; Kenya government document economic survey and sessional papers. Unit roots tests were conducted to test stationarity. Thus, it became stationarity after differencing at order of one. The data was also tested for cointregration and revealed long run relationship. The granger causality was tested. The granger causality test results revealed that there was bidirectional causality between the followings pairs of the variables; Budget deficit and Trade policy, tax revenue and Budget deficit, Tax revenue and Money Supply, Money Supply and Budget deficit, Money supply and Tax revenue, Money supply and Trade policy, Trade policy and Tax revenue. The variables that had a unidirectional causality include, Budget deficit to tax revenue, Budget deficit to Money supply, Tax revenue to Trade policy, Trade policy to Tax revenue, and Trade policy to Money supply. Since it is not possible to ordinary least square directly to estimate the relationship between budget deficit and macro polies, therefore, VAR was used. All variables in the VAR were treated symmetrical by introducing an equation explaining evolution of variables based on its own lags and the lags of all the variables in the model. The VAR employs yield impulse response function.

The first objective was to investigate the effect of monetary policy on the budget deficit.Cointregration revealed long run relationship between budget deficit and money supply. Granger causality showed that there was bidirectional relationship running from money supply to budget deficit and this study support the study of (Lazano 2005), thus this study is constant with Keynesian theory. there was unidirectional relationship running from budget deficit to money supply. However, the study contracted the study of Srivya & Venkata 2004). VAR employs impulse function which showed that budget deficit has significant effect on money supply for over a long period of time.

The second objectives was to analyse the effect of trade policy on the budget deficit in Kenya. Cointregration revealed long run relationship between budget deficit and trade policy.Granger causality showed that there was bidirectional relationship running from budget deficit to trade policy and also from trade policy to budget deficit, thus the study support early studies of (Alkswani 2000, Larbi 2012). Moreover, this study confirms the standard neoclassical theory VAR employs impulse function which showed that trade policy has significant effect on budget deficit for over a long period of time.

The last objectives was to analyse the effect of fiscal policy on the budget in Kenya.Cointregration revealed long run relationship between budget deficit and tax revenue in Kenya. Granger causality showed that there was bidirectional relationship running from Tax revenue to budget deficit but unidirectional causality running from budget deficit to Tax revenue, therefore, this study reject Ricardian Equivalent theory. VAR employs impulse function which showed that trade policy has significant effect on budget deficit for over a long period of time.

### 5.3 Conclusions.

Persistent government budget deficit has remained the concern of subsequent government in Kenya over the decades. It is believe that the budget deficit has significant effect on most of macroeconomics variable. The government need to take step to reduce the annual budget deficit by monitoring macroeconomics under this study; money supply, tax revenue and trade policy.

### 5.4 Recommendations

In the light of research findings, Kenya's fiscal policy, monetary policy and trade policy have been impacted by large budget deficit which adversely effects on macroeconomics performance. Therefore, the remedy of the above is the formulation of the following policies.

1 There is need to have prudent fiscal discipline to combat unsustainable fiscal deficit and ensure economy is not adversely affected.

2 monetary policy is needed in order for a country to achieve currency stability thus budget deficit will be reduce.

3. There is need to develop strong trade policies to ensure the trade between countries are for mutual benefit to both countries. This help in reducing the budget deficit

4. The government should develop optimal levels of spending by having manageable current expenditure and reducing unnecessary expenditure thus it avoids budget deficit.

5. There is need for government to have a diversified tax policy system for efficiency collection of thus the budget is attainable.

## 5.5Limitation of the study.

Secondary data used Central Bank of Kenya, KNBS and World Bank reports. Respective Ministries have incomplete information therefore the data used in the study might not have been accurate for estimation due to the possibility of manipulation by the officials to meet their own country's interests or local interests but not international.

There was no existence of the recently secondary data collected that is why the researcher decided to use the thirty-year period from 1985 to 2015 were also some of the years' data were missing and so necessitate the research to collect data from different sources to fill the gaps existed.

Also the data were not directly as per requirements of the study so there were so many alteration and calculation to fit the requirements.

## 5.6 Recommendation for future research.

1. They are implication for the research to apply the same technique with different period of time to validate the results of the study.
2. There is strong suggest for the research to be done on specific variable money supply affecting budget deficit in order to ascertain Keynes's postulation.
3. They are few people who have carried out the study thus few literature exist on the study especially in the developing countries like Kenya. Also the study should further be developed in details to include more variables that budget deficit that come with more reliable findings.

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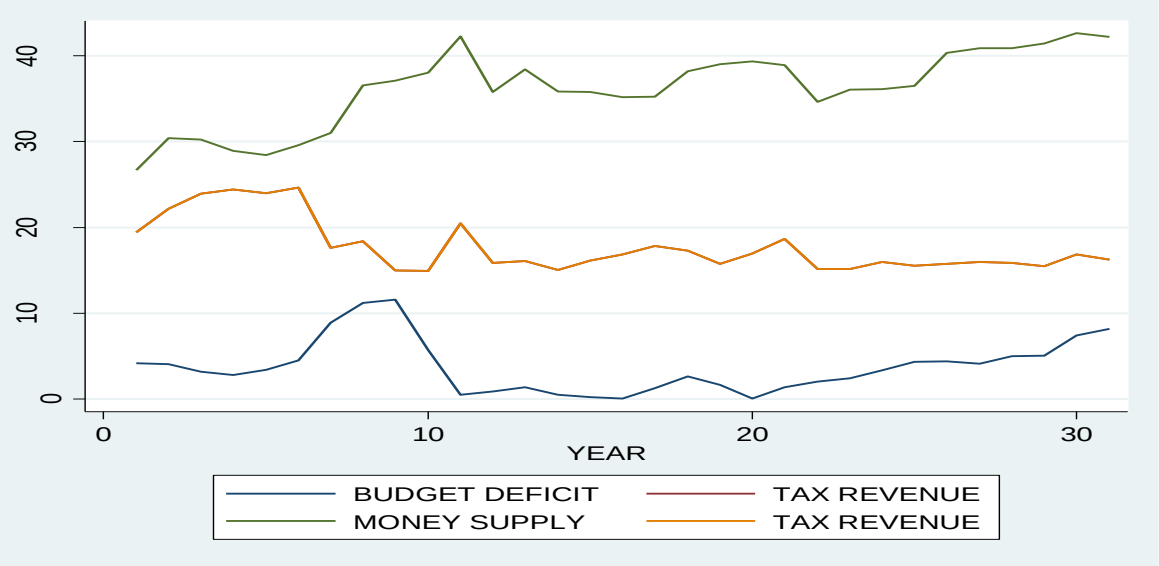
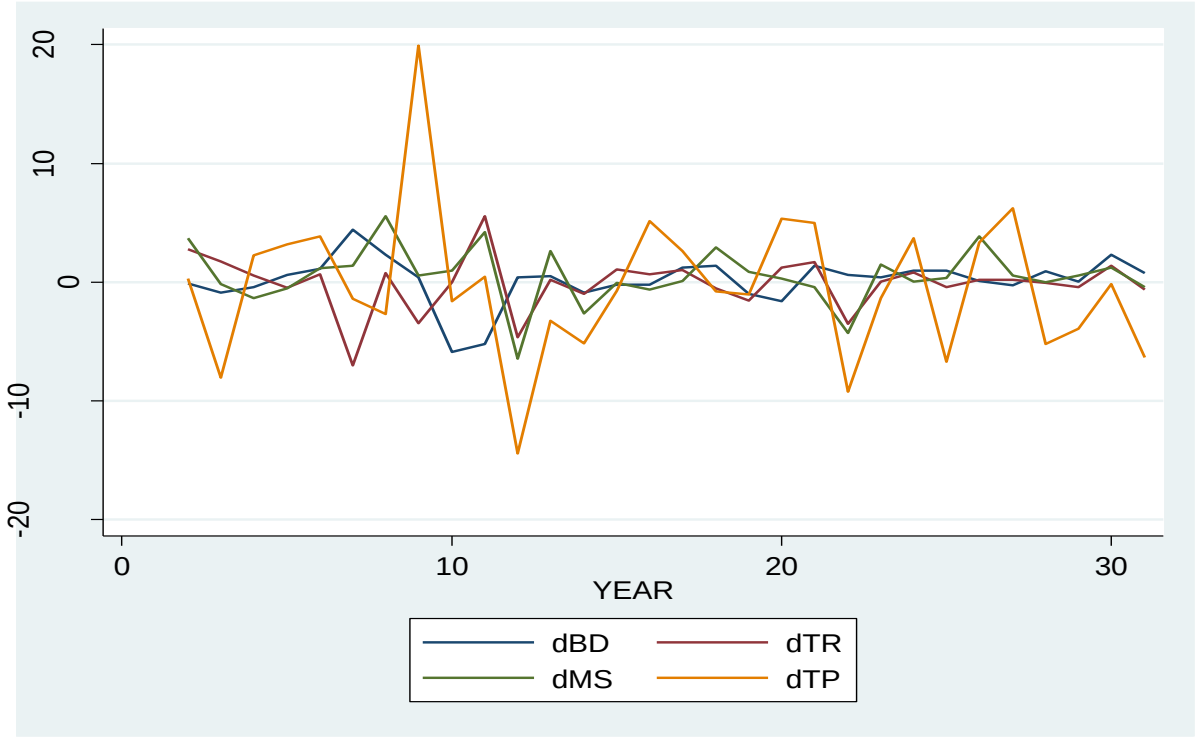
APPENDEX 1

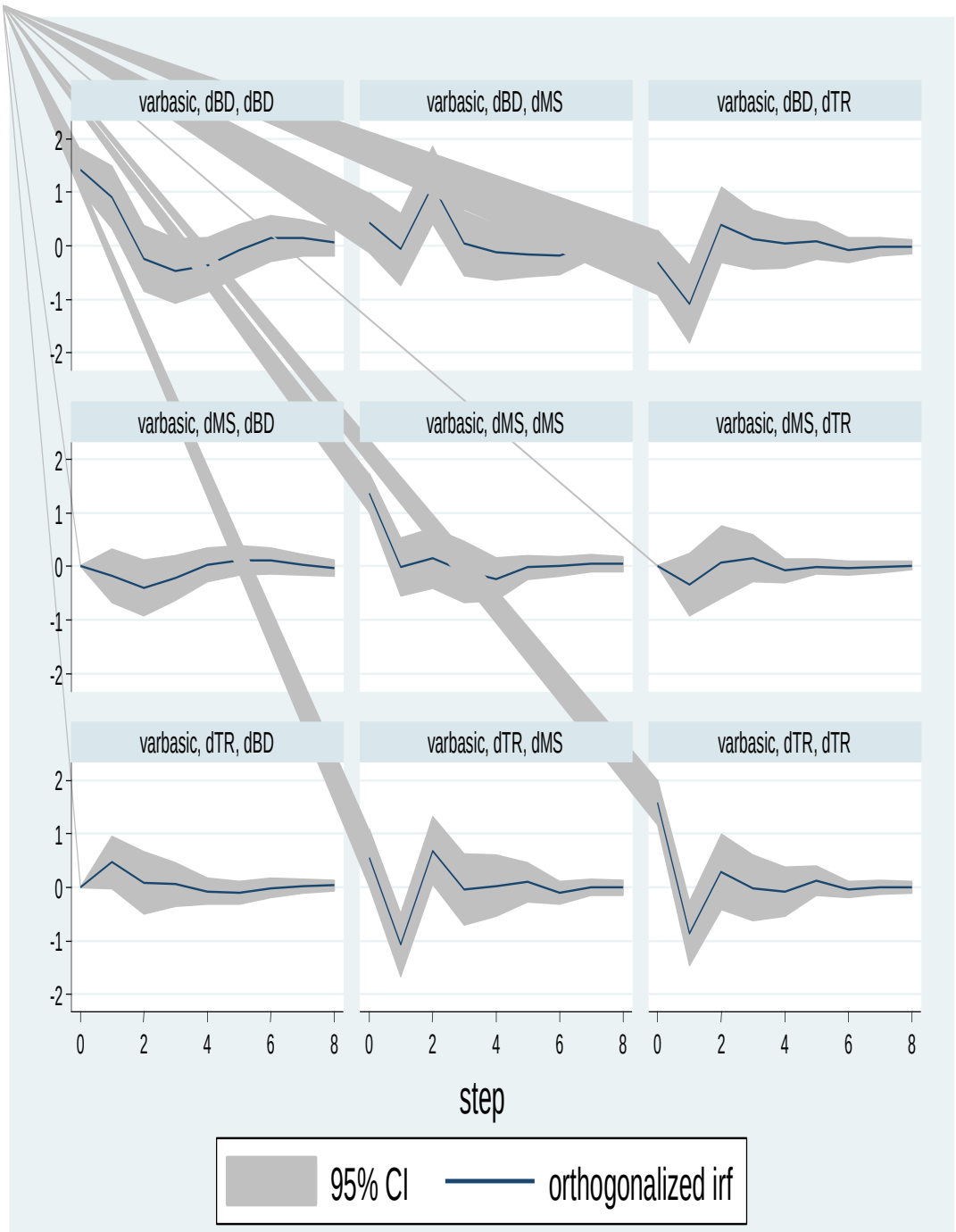
Time plots



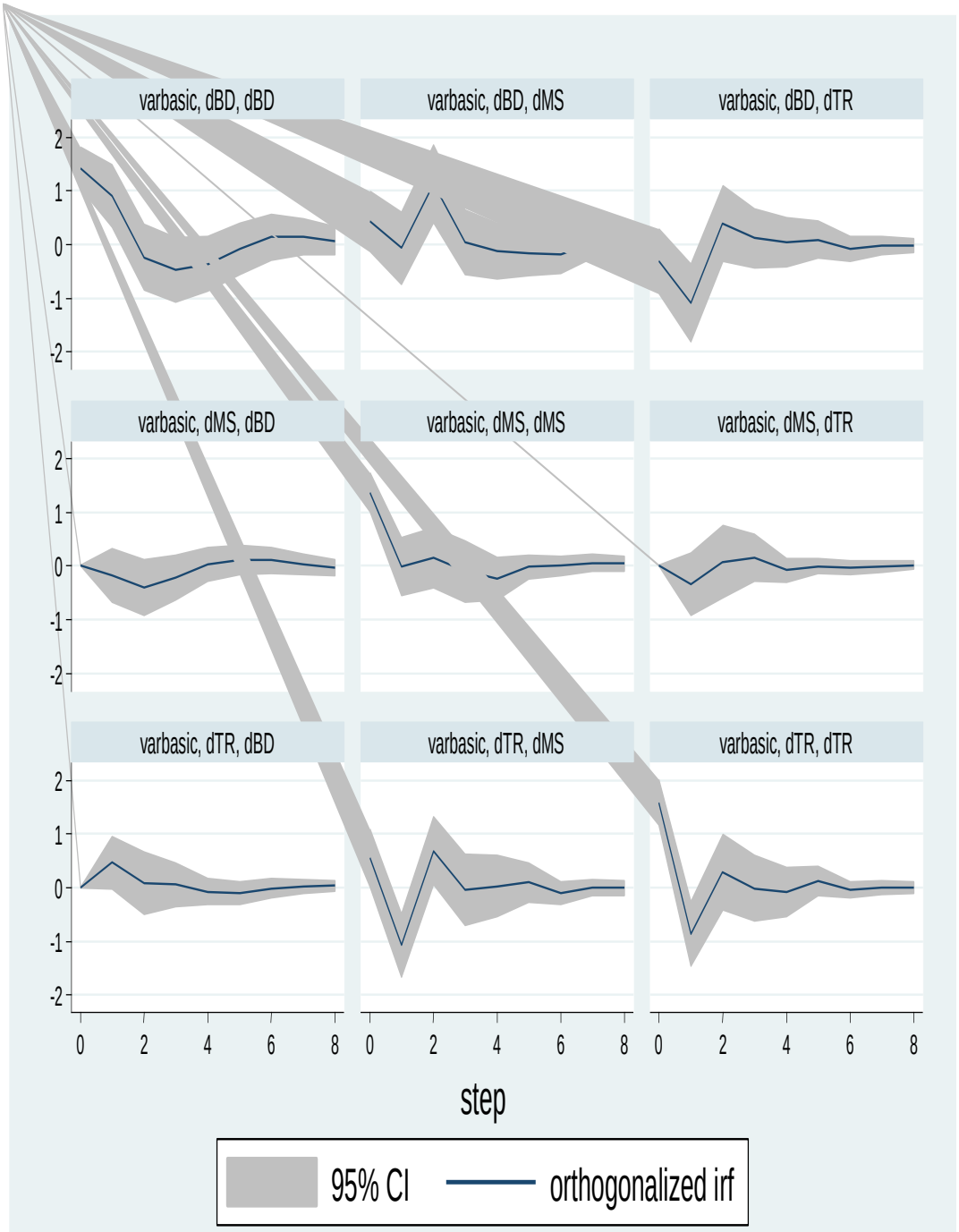
APPENDEX II

Line plots on first difference



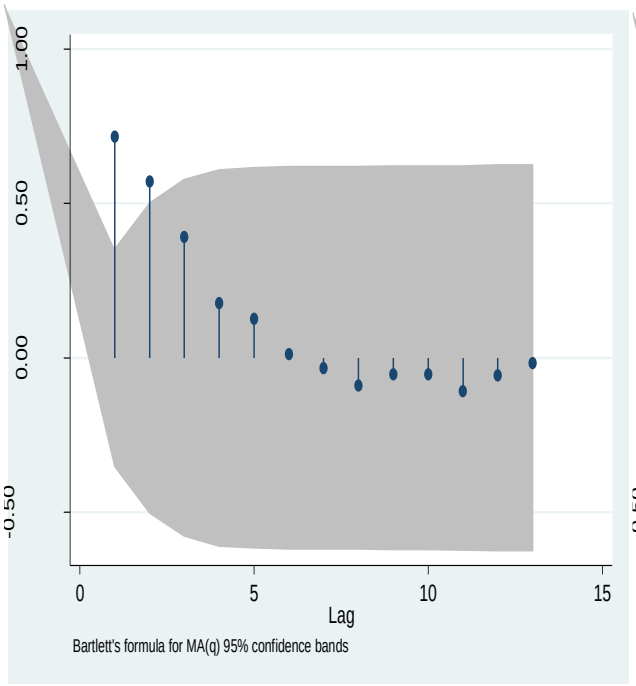

varbasic, dBD, dBD
varbasic, dBD, dMS
varbasic, dBD, dTR
varbasic, dMS, dBD
varbasic, dMS, dMS
varbasic, dMS, dTR
varbasic, dTR, dBD
varbasic, dTR, dMS
varbasic, dTR, dTR
2
1
0
-1
-2
0
2
4
6
8
step
95% CI
orthogonalized irf
Graphs by irfname, impulse variable, and response variable

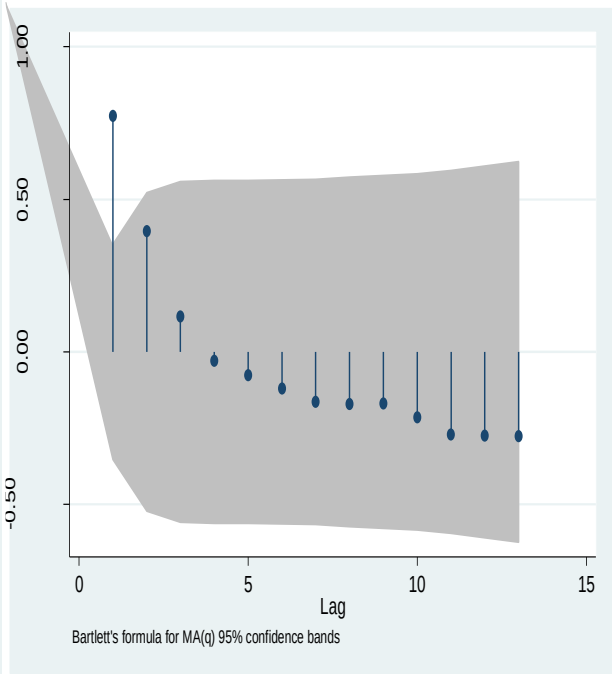
APPENDEX 111

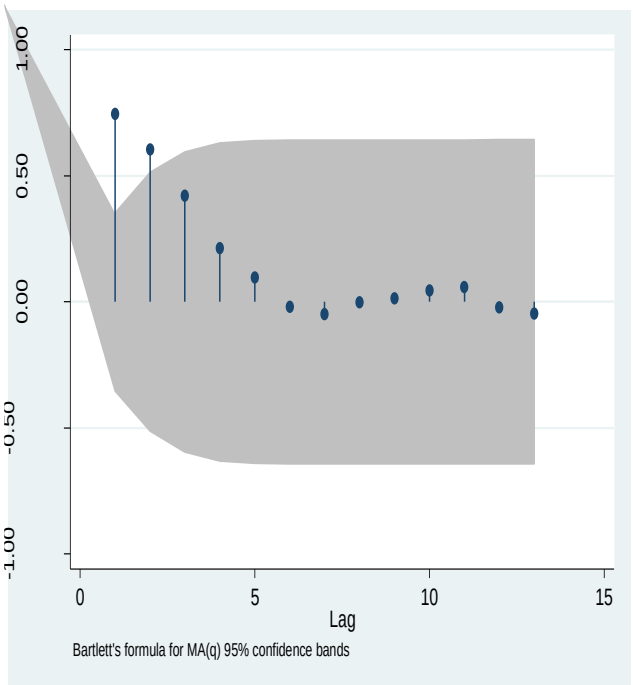


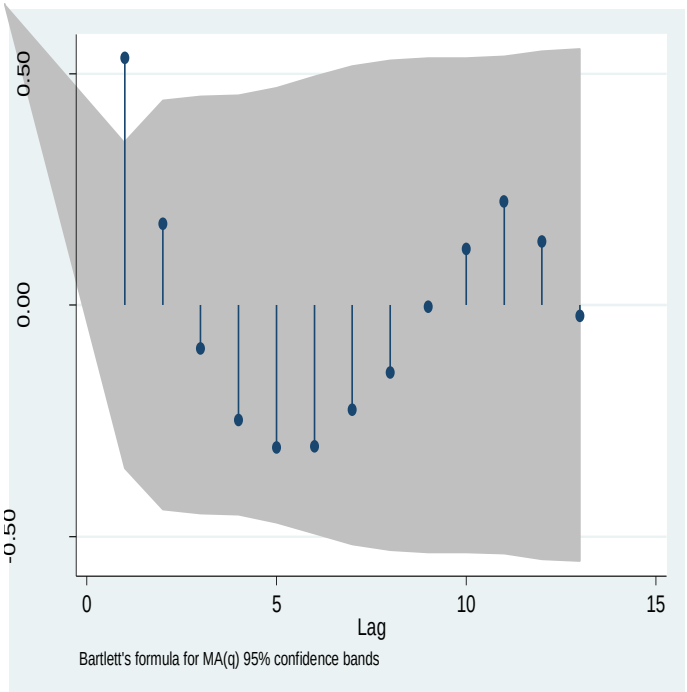
APPENDEX IV

Autocorrrelation function before differencing



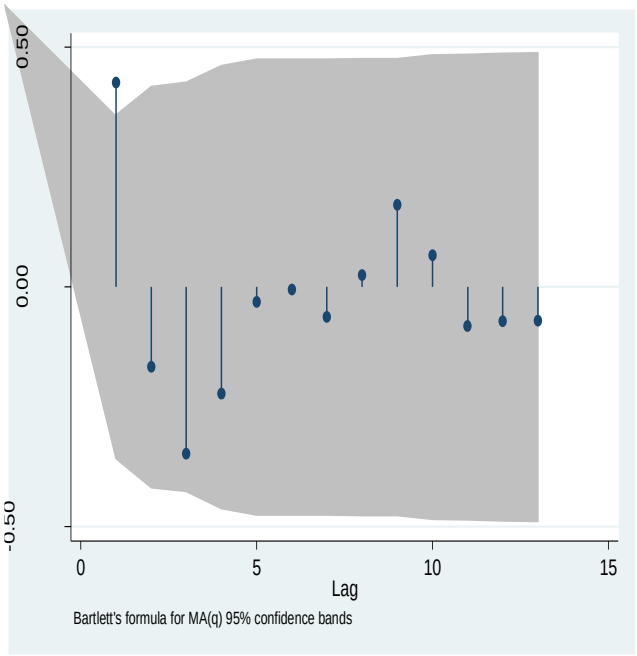



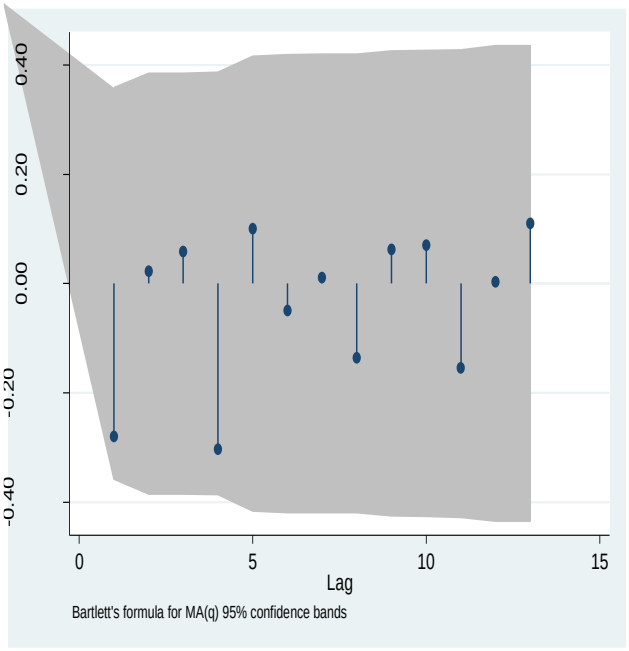



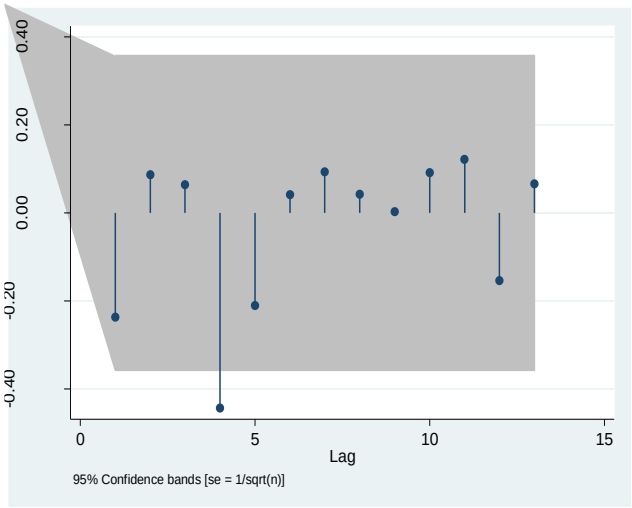



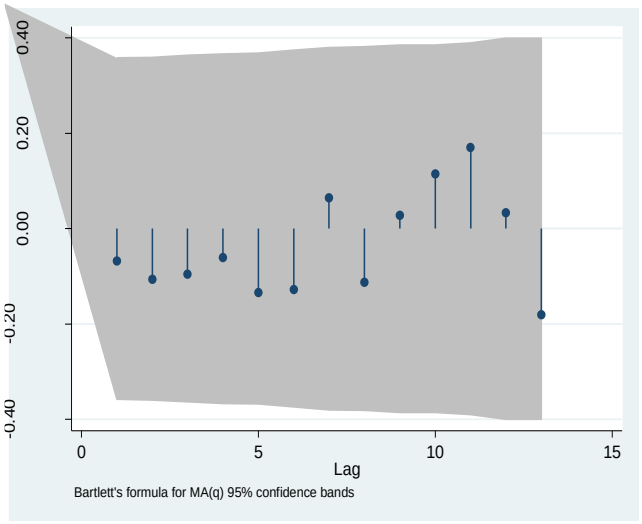
APPENDEX V

Autocorrelation function after differencing



APPENDEX VI

Autocorrelations of residuals