

# **Impact of Official Development Assistance on Economic growth in Kenya**

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**BY**

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**DECLARATION**

This research paper is my original work and has not been presented to any other university for the award of any degree or other award.

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This research paper has been submitted for examination with our approval as university supervisors.

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## **ABSTRACT**

Kenya has been dependent on ODA since its independence in 1963. The significant amount of ODA has been coupled with substantial private resource flows and other loans. ODA is expected to bring forth economic growth, reduce poverty and better living standard. However, the effectiveness of ODA in promoting growth has received much attention from researchers but there is still no solid consensus on whether ODA spurs economic growth. Inspired by the refutable empirical results on aid-growth relationship, dismal economic performance, and the limitations of the country specific studies; this study examined the impact of ODA on economic growth in Kenya.

The study applied VECM estimation technique and time series data for the period 1970-2012 to investigate the ODA-Growth relationship. Solow growth model was used to establish a link between theory and empirics. The findings from the study show a long run causality running from ODA, private external resource flows, gross domestic capital formation, final government consumption expenditure, trade openness, broad money, and inflation; to GDP growth per capita. While ODA seems to contribute to economic growth in the short run, its effect is not statistically significant. A statistically significant negative effect in the short run of private external resource flows and trade openness was established. The results also suggest that previous year's GDP growth per capita, gross domestic capital formation, and broad money (as a measure of financial depth) are the important factors that stimulated economic growth over the study period in the short run. It could be concluded that Kenya should focus on internal factors to induce economic growth rather than depending on external factors especially in the short run.

## TABLE OF CONTENTS

Declaration.....	2
Acknowledgement.....	3
Abstract.....	4
List of Tables and Figures.....	6
Abbreviations and Acronyms.....	7
1.0 Chapter One: Introduction.....	8
1.1 Background Information.....	8
1.2 Statement of the Problem.....	13
1.3 Research Questions.....	15
1.4 Research Objectives.....	15
1.5 Significance of the study.....	15
1.6 Limitations of the Study.....	16
2.0 Chapter Two: Literature Review.....	17
2.1 Theoretical Literature.....	17
2.2 Empirical Literature.....	21
2.3 Overview of the Literature.....	24
3.0 Chapter Three: Methodology.....	26
3.1 Conceptual Framework.....	26
3.2 Theoretical Framework.....	27
3.3 Model Specification.....	29
3.4 Sources of Data.....	31
3.5.0 Data Analysis Technique.....	31
3.5.1 Time series property tests.....	31
3.5.2 Diagnostic tests.....	33
4.0: Chapter Four: Empirical Results and Interpretation.....	34
4.1: Empirical Results.....	34
4.2: Interpretation and Discussion of Results.....	36
5.0: Chapter Five: Summary, Conclusion and Recommendation.....	40
5.1: Summary.....	40
5.2: Conclusion.....	41
5.3: Policy Implications.....	41
5.4: Recommendation for further study.....	41
References.....	42
Appendix.....	46

## LIST OF TABLES AND FIGURES

### TABLES

Table 1: Definition and description of variables.....	30
Table 2: Augmented Dickey-Fuller tests for unit root (Radom walk-No trend, No intercept).....	34
Table 3: Johansen tests for cointegration.....	34
Table 4: Vector Error-Correction estimates.....	35
Table 5: Diagnostic test statistics.....	35
Table 6: Data.....	47

### FIGURES

Figure 1: Net ODA, Net ODA % of NRF, and Private Resource Flows (PRF) to Kenya (1970-2012).....	10
Figure 2: Composition of Net ODA flows by major donors to Kenya over the period 1970-2012.....	11
Figure 3: Net ODA (% GDP) and Real GDP growth (1970-2012).....	12
Figure 4: Effects of aid flows on capital stock.....	19
Figure 5: Stability condition.....	46

## **ABBREVIATIONS AND ACRONYMS**

ADF-Augmented Dickey-Fuller

ARCH-Autoregressive Conditional Heteroscedasticity

DAC-Development Assistance Committee

EAC-East African Countries

ECM-Error Correction Model

ECOWAS-Economic Community of West African States

ERS-Economic Recovery Strategy for Wealth and Employment Creation

FDI- Foreign Direct Investment

GDP-Gross Domestic Product

GMM-Generalized Method of Moments

IDA-International Development Association

IMF-International Monetary Fund

KESSP-Kenya Education Sector Support Project

LM-Lagrange Multiplier

MDGs- Millennium Development Goals

NRF-Net Resource Flows

NGOs-Non-Governmental Organizations

NEPAD-New Partnership for Africa's Development

ODA -Official Development Assistance

OECD-Organization for Economic Coordination and Development

OLS-Ordinary Least Squares

PRF-Private Resource Flows

SAPs-Structural Adjustment Programmes

SSA- Sub-Saharan Africa

2SLS-Two Stage Least Squares

TCG-Technical Cooperation Grants

UN-United Nations

UNDP-United Nations Development Programme

VECM-Vector Error Correction Model

## **1.0: CHAPTER ONE: INTRODUCTION**

Official development assistance (ODA) is given by member countries of OECD-DAC; to promote both economic and welfare development in developing countries and is a concessional loan with a grant element of at least 25 percent (OECD Fact sheet, 2008:1). ODA accounts for more than 90% of the official aid spending (House of Lords sixth report, 2010-12:12). ODA can be provided bilaterally- direct from one government to another- or multilaterally through multilateral agencies such as IDA (World Bank), regional development banks and United Nations Agencies (Todaro and Smith, 2002:132-133). Although the global donor community subscribes to promoting economic growth and poverty reduction in developing countries as the primary motive for providing aid; Alesina and Dollar (2000) found that the pattern of aid giving was dictated as much by strategic (to cement commercial and financial relations, open markets, and ensure opportunities for investors) and political (to maintain aligned with the donor) considerations as by the economic need and policy performance of the recipients. This study is limited to ODA and thus non –concessional loans, humanitarian aid, and aid provided by Non-Governmental Organizations (NGOs) were not considered.

### **1.1: BACKGROUND INFORMATION**

Developing countries face low-income levels, growing unemployment, widening current account deficits, high inflation, and high poverty levels. African countries should focus on building a good investment climate so as to enhance their prospects for achieving sustainable development. Although the private sector leads in the most of the effective approaches to development; Goldin et.al (2002) argues that an effective government is required to provide governance framework, human capital investment, facilitation in provision of physical infrastructure, and social cohesion necessary for growth and poverty reduction. Since Africa lacks sufficient financial resources, ODA is assumed to fill in for the lacking resources (by augmenting domestic savings, providing additional foreign exchange and assisting with the promotion of domestic capacity) so as to support the recipient's effort in accelerating growth and reducing poverty. However, the impact of ODA on growth has been questioned for



decades. The empirical literature on the impact of ODA on growth has not produced irrefutable results on the impact of ODA on economic growth and poverty reduction.

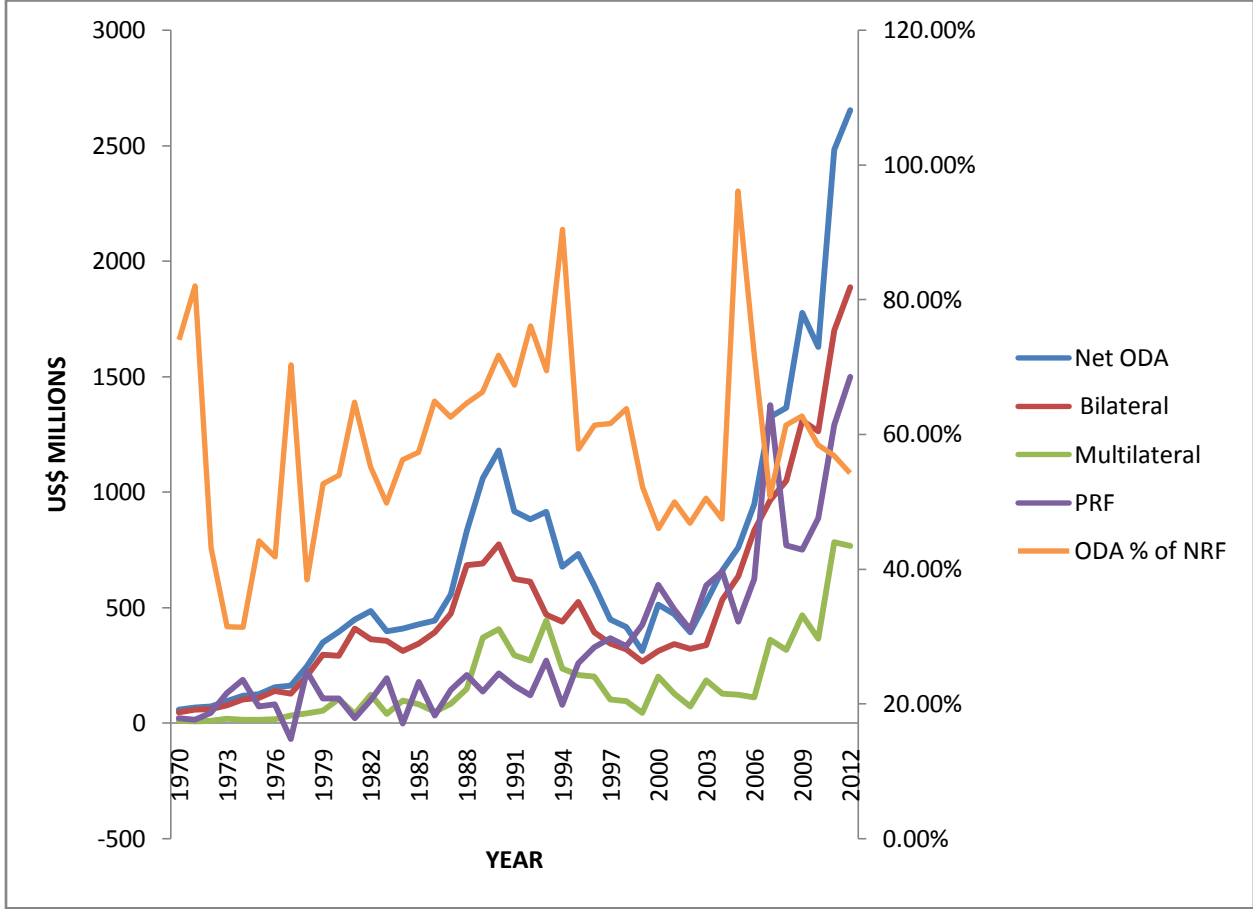
Critics of ODA argue that aid breeds corruption (Erega et.al, 2012), weaken governance (Abuzeid, 2009), and causes Dutch disease (Doucouliagos and Paldam, 2009). The 2009 Kenyan government audit report revealed that aid from Canada meant for Kenya education sector support project (KESSP) was embezzled. A total of Kenyan shillings 103 million was not accounted for. Transparency international (2012) ranked Kenya among the top three most corrupt countries (number three) in east Africa but precise causal links between ODA and corruption are hard to identify. Supporters of ODA advocate for an increase in ODA flows to developing countries so as to stimulate economic growth (Mckee and Bells, 2013; Bruckner, 2013; Driffield and Jones, 2013, Sakyi, 2011; etc).The inconclusive results coupled with recently refined econometric methods of estimation leaves the subject matter widely open to debate.

### **ODA FLOWS TO KENYA**

Kenya has been dependent on ODA since its independence in 1963. The significant amount of ODA has been coupled with substantial private resource flows (net inflows on foreign direct investment, portfolio/equity investment, private non-guaranteed long-term debt and workers' remittances received from overseas) and other public loans. In 1991, bilateral and multilateral donor's suspended ODA to Kenya due to government's renege on its commitments to Donors (implementation of structural Adjustment Programs) but Kenya embarked on a major economic reform and liberalization which see it gain trust from donors in 1993. Donors also suspended development aid to Kenya In 1997, when the country failed to meet the governance reforms mandated by International monetary fund (IMF). The establishment of anti-corruption authority in 1999 initiated measures to improve the transparency of the government, but it was the election of a new government in 2002 and Kenya's commitment to reforms (reforming the public finance, automation of payroll and financial management systems, improved audit techniques) that renewed donors' confidence. Therefore, ODA flows to Kenya recovered after 2002. China remains the most significant non OECD-DAC donor especially after 2002 when its share of total aid exceeded 1% (Mwega, 2009:7).

Figure 1 below shows net ODA flows as a percentage of net resource flows, private resource flows and net ODA. The Net ODA % of NRF curve shows how Net ODA as a percentage of net resource flows have been fluctuating over the years between a low of 31.45% in 1973 and a peak of 96.09% in 2005. The fluctuation can be explained by aid embargo and external shocks such as an increase in oil prices and global financial crisis among other factors.

**Figure 1: Net ODA, Net ODA % of Net Resource Flows (NRF), and Private Resource Flows (PRF) to Kenya (1970-2012) in Millions US\$**

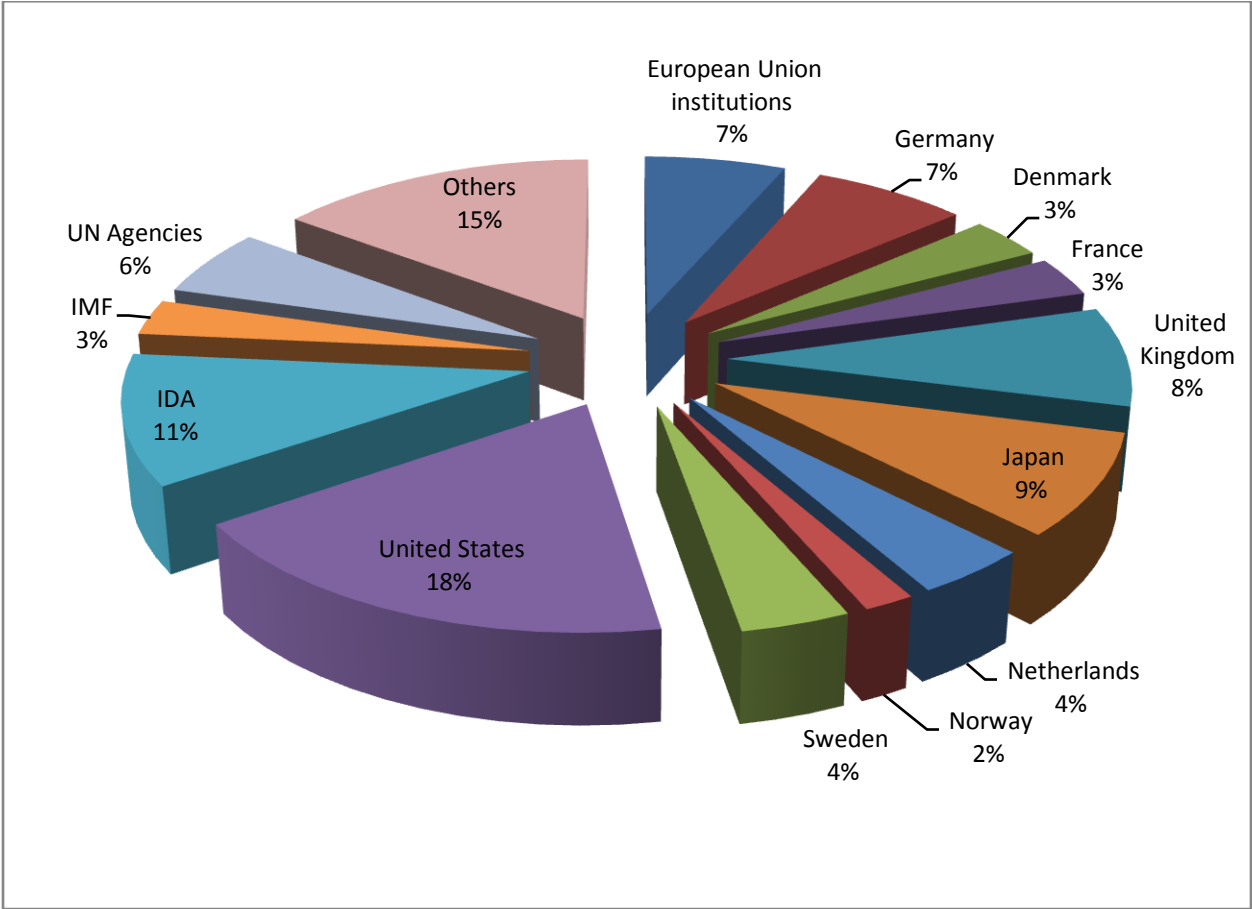


Data Source: World Bank, World Development Indicators 2014.

Figure 1 show that ODA flows were increasing until 1990 before a decline to a low of US\$ 310.47 million in 1999, with some recovery thereafter. The decline was due to suspension of ODA to Kenya by multilateral and bilateral donors in 1991 and 1997. The recovery was accelerated by the election of a new government in 2002 and commitments to reforms. Private resource flows improved after 1996 and has been approaching ODA flows.

70% of the total aid to Kenya is from bilateral donors whereas 30% is from multilateral donors. Figure 2 below shows the major Donors to Kenya. The major bilateral donors to Kenya include United States, Japan, United Kingdom, Germany, and European Union institutions. Others include Sweden, Netherlands, France, Denmark and Norway. The major multilateral donors include IDA (World Bank), UN Agencies, and IMF.

**Figure 2: Composition of Net ODA flows by major donors to Kenya over the period 1970-2012**



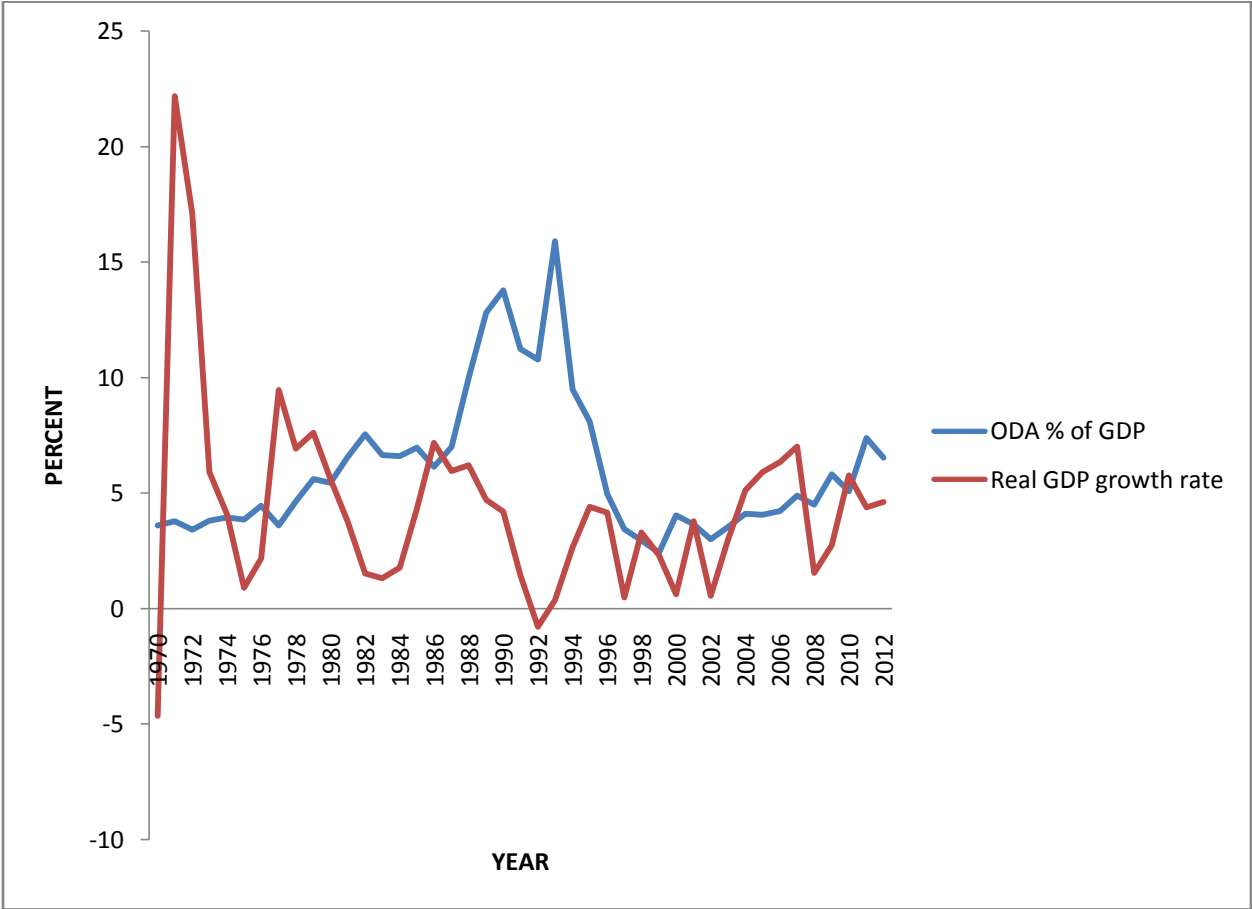
Data Source: World Bank, World Development Indicators 2014.

Although Kenya is still a low-income country, it is progressing toward graduation from aid dependency. According to World Bank (2014), Kenya’s aid dependence has fallen very sharply over the years with a maximum aid as a percentage of GDP of 15.9% in 1993 and a minimum aid as a percentage of GDP of 2.3% in 1999. Graduation from aid dependency demands aid flows to be accompanied by capital accumulation. Hailu et.al (2012) estimated the probability

of exiting from aid-dependence and found that the likelihood of exiting from aid reliance increases significantly with the rate of investment and expansion of manufacturing. Policies and institutions that promote both public and private investment should be strengthened to enhance graduation from aid dependence.

Figure 3 shows Kenya’s real GDP growth and Net ODA (% GDP) over the period 1970-2012.

**Figure 3: Net ODA (%GDP) and Real GDP growth (1970-2012)**



Data Source: World Bank, World development indicators 2014

Between 1970 and 1980, the average real growth rate was 7 %. The period 1980-2002 indicates slow or negative growth in real GDP which can be associated with among other factors severe drought (1983/1984, 1991/1992), increase in oil prices, 1982 military coup attempt, aid embargo (1991 and 1997), and unfavorable economic environment for investment.

Although Kenya's real GDP growth rate increased from 0.5% in 2002 to 6.9% in 2007 (due to implementation of the economic recovery strategy for wealth and employment creation-2003-2007), the post-election violence crisis impacted negatively on the economy decreasing it to 1.5% in 2008. The Kenya Vision 2030 program targeted a 10% growth rate by 2012 in its first medium-term plan (2008-2012) but the annual growth rate in 2012 was 4.6%.

Even with this increasing flow of ODA, economic growth has remained dismal while poverty reduction lags behind growth. Although economic growth is not sufficient condition for poverty reduction, it is essential for sustained progress on poverty reduction. Goldin et.al (2002:26) stated that countries such as China, Vietnam, Uganda, and India grew rapidly in 1990s reducing the share of their people in absolute poverty to 8% per year implying that Poverty reduction depends heavily on sustained economic growth. Goldin et.al (2002:26) indicated that countries can accelerate their poverty reduction by promoting pro-poor growth (both the rate of growth and its distributional pattern determine the rate of change in poverty). Africa requires a growth rate of 7% or more so as to cut the number of poor by half in 2015 (Michael and Moss, 2005:1) but the extent to which income growth reduces poverty depends on the nature and magnitude of existing inequality (Sachs, 2005:72). According to Loxley and Sackey (2008:164), the new partnership for Africa's development (NEPAD) requested for additional capital flows of US\$ 64 billion (12% of GDP) per annum to Africa in order to attain a 7% per annum income growth.

Against the background of inconclusive aid effectiveness results, increasing donor assistance, and dismal economic growth; it was important to analyze the impact of ODA on economic growth in Kenya. VECM and time series data for the period 1970-2012 was used in the analysis.

## **1.2: STATEMENT OF THE PROBLEM**

Developing countries face low-income levels, growing unemployment, widening current account deficits, high inflation, and high poverty levels. These nations lack sufficient financial resources to solve these economic problems effectively and therefore; they depend on ODA to supplement their domestic resources. The primary objective of ODA is promotion of economic growth and welfare. Kenya has been receiving significant amounts of ODA to relax saving, foreign exchange and/or fiscal constraints. The Kenyan government in its attempt to achieve

rapid economic growth has over the years committed to implement policies that promote wealth creation as stipulated in the Economic Recovery Strategy for Wealth and Employment Creation (2003-2007) and in the Kenya vision 2030 programmes. Despite the government's efforts and the increased donor assistance, the country's economic growth has remained dismal. The Kenya Vision 2030 program, for example, targeted a 10% growth rate by 2012 in its first medium-term plan (2008-2012) but the annual growth rate in 2012 was 4.6%. While there could be many qualitative and quantitative factors explaining the poor performance, the unfavorable trend suggest that there could be more to Kenyan economic problems than low revenue base, and also puts into question the impact of ODA on growth.

The statistical evidence on the relationship between ODA and growth remains inconclusive. Researchers have found different and contradicting empirical evidence. Some researchers such as Mckee and Bells (2013); Sakyi, 2011; maintain that ODA has a significant positive impact on economic growth with a subset of them claiming ODA to be growth enhancing in certain macroeconomic policy environment (Bhavan, 2013; Driffield and Jones, 2013). Others (Erega et.al, 2012; Liew et.al, 2012; etc) stress the detrimental effect of ODA on growth while others such as Kolawole, 2013; Wako, 2011; found insignificant role of ODA on growth. Therefore, it is uncertain that ODA makes significant contribution to economic growth leaving the subject matter widely open to debate.

Cross-country aid-growth regressions dominate the existing empirical literature and therefore; the contribution of analytical country study was required. The few studies done in Kenya on the subject have one or more of the following limitations: use total aid in the analysis (but humanitarian aid and military aid is not made for promoting growth), consider ODA as exogenous variable (even though there are reasons for reverse causality), consider a short period, use few variables in the analysis (omitting important variables that determine growth), as well as tool of analysis limitation. The study accounts for these limitations by: considering ODA that is made for stimulating growth and development, considering a longer period (1970-2012), including as many variables as possible which determine growth, and by adopting VECM in the analysis.

### **1.3: RESEARCH QUESTIONS**

This study sought to respond to the following research questions:

1. What is the relationship between ODA and economic growth?
2. What are the policy implications of the findings from the study?

### **1.4: RESEARCH OBJECTIVES**

The general objective was to examine the impact of ODA on economic growth in Kenya.

The specific objectives were:

1. To assess the relationship between ODA and economic growth.
2. To draw policy implications arising from the study findings.

### **1.5: SIGNIFICANCE OF THE STUDY**

Cross-country aid-growth regressions dominate the existing empirical literature and therefore; the study focus on one country (Kenya) rather than a large sample of all developing countries and accounts for the limitations of the few country-specific studies. The statistical evidence on the relationship between ODA and growth remains inconclusive. The inconclusive results coupled with recently refined econometric methods of estimation leaves the subject matter widely open to debate. The study focuses on Kenya for the period from 1970 to 2012, which constitutes the most up-to-date data.

The results from this study will give insight especially to policy makers on whether ODA is an appropriate policy to promote economic growth. With availability of more data and advanced econometrics methods, the study forms the basis of further research on aid effectiveness argument.

## **1.6: LIMITATIONS OF THE STUDY**

- The greatest challenge was assessing and measuring what would have been if Kenya had not received any ODA.
- The study used secondary data and therefore; would not control data collection or constraints in the original data analysis.



## **2.0: CHAPTER TWO: LITERATURE REVIEW**

This chapter provides a brief summary of related literature. It starts with a brief review of theory, followed by empirical literature, and ends with the overview of the literature.

### **2.1: THEORETICAL LITERATURE**

Growth and development models indicate that the main factors that influence long-term growth and development are availability of capital and labor as well as their productiveness (investment/savings) and technological progress. The low domestic savings in developing countries cannot meet the required investment, and the unsustainable current account deficit prevents these economies from importing capital goods for investment. The arguments justifying ODA flows to developing nations range from giving a big push out of a poverty trap, bridging the financial gap to inducing better policies and institutional environment.

The success of the Marshall plan in 1950s created a great deal of optimism that ODA flows to developing countries would spur economic growth and development in recipient nations. The classical economists considered capital accumulation as the engine of growth but in the absence of technological progress and ODA was assumed to increase physical capital stock. Schumpeter (1954) stresses that technological progress was an important determinant of growth and therefore; ODA only spur growth when combined with the transfer of entrepreneurship and new skills.

Until late 1960s, only few aid data was available, and the IS-LM (Investment Saving-Liquidity Preference Money Supply) macroeconomic theory was used in the aid-growth literature. The IS-LM framework was used to evaluate the impact of aid by assessing the activity or growth that is caused by a given amount of aid that enters a country and researchers classified primary effects, marginal effects and total effects of ODA on output. Doucouliagos and Paldam (2008) reported two main problems: the marginal outcome is often different from what aid actually finances (because aid is fungible) and separating the long-run capacity effect (change in investment) and the short run activity effect.

The big push theory which was first conceptualized by Professor Paul Rosenstein-Rodan in 1943 and later modified by Murphy, Shleifer and Robert Vishny in 1989 was the most used theory in aid-growth literature. The theory assumes that poverty traps- which arises from various factors such as weak savings, low production capacity and high population- hampers growth and development and therefore; a big push (involving a temporary injection of capital in form of ODA) increases investment in many different sectors leading to a take off into self-sustaining growth. Collier (2007) identified internal conflict traps, bad governance traps, natural resources traps, and landlocked by bad neighbor traps as the four significant traps that affect the bottom billion of the world's population. Rostow (1990) sees ODA as a precondition for take-off into self-sustaining growth. Sachs et.al (2004) claims that sub Saharan-Africa require temporary big push from ODA so as to spur economic growth and reduce poverty. The big push model lost credibility for a while but gained it again in 2005 and is used as a rationale for large foreign aid programs. Sachs (2005) argues that it is feasible for aid to accelerate growth in Africa to meet the MDGs target of halving the poverty rate by 2015 if aid flows are increased. The big push theory assumes that once a country attains self-sustaining growth, it will stop receiving aid. Rostow (1960) argued that aid could be discontinued after 10-15 years while Sachs (2005) predicted the discontinuation of aid in 2025. Easterly (2006) found no evidence of poverty traps and also never found much data in support of take-offs induced with aid and investment and therefore; found very little evidence in support of the theory. To Easterly, some poor countries such as China, Botswana, India and Lesotho advanced quite nicely and rapidly out of poverty without significant foreign assistance while other countries like Zaire and Chad had no growth or declined despite massive foreign assistance.

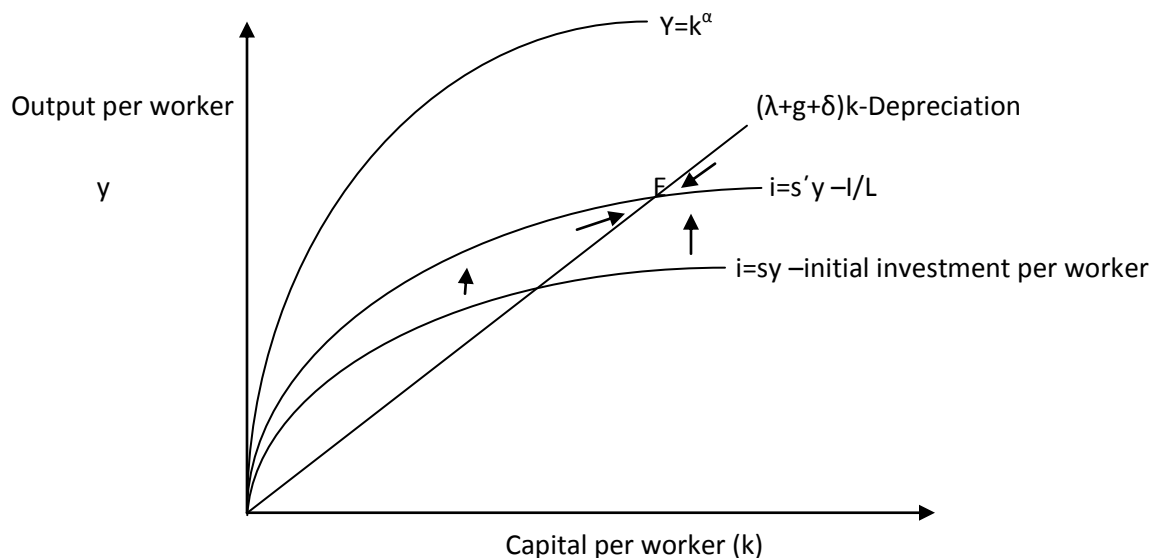
The Harrod-Domar growth model indicated that saving rate and capital-output ratio jointly determine full capacity growth rate ( $g=s/v$ ) of a closed economy (Harrod, 1939; Domar, 1946). Chenery and Strout (1966) extended the Harrod –Domar model into two-gap model by introducing foreign exchange shortage [ $g = (s/v) + (a/v)$ ]. The smaller gap is considered binding and foreign aid is perceived to fill the gap. The dual gap model was used throughout the 1970s and 1980s to justify the effectiveness of ODA on growth. Bacha modified the two-gap model to three gap model by incorporating the fiscal gap (Bacha, 1990). Foreign aid was expected to

finance the most pressing gaps leading to an increase in investment and hence economic growth; initiating an upward path to economic development. Weisskopf (1972) argues that aid substitute's domestic savings. The gap models are oversimplified (assumes that aid converts entirely into investment which in turn converts entirely into growth). The financial gap model is still used by World Bank in judging the extra resources that developing economies would need to finance investments and imports.

The neoliberal ideology (Washington consensus) was the basic development model in 1980s and ODA -in form of SAPs- was used to force developing countries to adopt a liberated market economy. Changing policy was not successful since SAPs were associated with dismal outcomes.

Due to its simplicity and flexibility, the neoclassical model forms the basis for various extensions and identifies the core determinants of long-term growth and development. Solow model together with subsequent extensions and refinements have been used in aid-growth literature since the late 1990s. The model predicts that the economy will converge to a steady state growth determined by rate of population growth and rate of technological change. The model attempts to explain that aid inflows are important in the short-run, but the steady state growth rate will be reached at a higher level of GDP per capita.

**Figure 4: Effects of aid flows on capital stock**



Source: Romer, D., (1996:16). Advanced Macroeconomics.

Where  $s$ -saving rate,  $\lambda$ - labor force (population) growth rate,  $g$ -rate of technological change,  $\delta$ - capital depreciation rate. At steady state, actual investment ( $s'y$ ) equal break even investment  $(\lambda+g+\delta)k$ .

Figure 4 illustrates how aid will increase capital stock leading to an increase in GDP per capita. However, without change in any fundamental factors (e.g. technology), an increase in capital above steady state (Point E) will begin to depreciate and therefore; countries will be pushed back towards the steady state level. Using calibrated neoclassical growth model, Dalgaard and Erickson (2009) offers a basic framework in which to analyze progress towards halving poverty by 2015 and concluded that past and future expectations for aid in promoting growth and reducing poverty have been too high.

Endogenous growth models developed by Lucas (1988)-Romer (1986) are praised for incorporating human capital, institutions and policy factors as well as endogenising technological progress and growth in labor productivity. The argument is that low human capital (poor health and education) and infrastructure causes poverty and hence ODA is assumed to improve human capital and infrastructure necessary for sustained growth.

The new aid model which incorporates ownership and performance points to principle-agent model. The theory shows that strong domestic ownership can work in both donors and recipient interest since the donor has limited control over the recipient and therefore; the agency problem is to align the objectives of all stakeholders. Martens et.al (2001) used agency theory (same as principal-agent theory) to form an institutional analysis in which the incentive problem (that may occur in ODA) results in ineffective aid expenditure. The principal (donor)-agent (beneficiary) relationship have either moral hazard or adverse selection. Asymmetric information leads to adverse selection and beneficiary's incentive to follow policies that advance themselves at the cost of the donor cause moral hazard and this affects recipient compliance with the agreement (Martens et.al, 2001:12). Using complexity theory, Eyben (2006) shows that both relationship management and money management are important for

the effectiveness of aid and therefore; donors should develop relationship building skills since aid is a matter of relationship.

## **2.2: EMPIRICAL LITERATURE**

The statistical evidence on the relationship between ODA and growth remains inconclusive. Researchers have found different and contradicting empirical evidence. Some found that ODA promote growth with a subset of them claiming ODA to be growth enhancing in certain macroeconomic policy environment. Others stress the detrimental effect of ODA on growth while others found no significant effect at all. The surveyed recent empirical literature is organized according to the three views.

### **Studies that Shows ODA Flows Enhances Growth**

Mckee and bells (2013) using a sample of thirty sub-Saharan African countries, tested the joint effect of ODA and technical cooperation grants (TCG) on GDP per capita. Their analysis shows that growth increases significantly with ODA, domestic investment, human capital, and international trade over the period of thirty years. While TCG seems to contribute to growth, they found its effect statistically insignificant. They also found a statistically significant negative joint effect of ODA and TCG ( $ODA*TCG$ ) on economic growth. They further analyzed the possibility of diminishing returns to aid, but their results lacked evidence of diminishing returns to aid. They concluded that foreign aid irrespective of the source or type should be directed to areas where it will have the greatest impact like education and public health programs, trade, and job training. Bruckner (2013) in a study of 47 least developed countries over the period 1960 to 2000 shows that foreign aid positively affects real per capita GDP growth, only after adjusting for the endogeneity problem caused by reverse causality in the growth regression. Mitra (2013) examined the long run relationship between foreign aid and economic growth of Cambodia (a south East Asian developing country). The structural VECM estimates for the period 1971 to 2009 revealed that foreign aid spurs economic growth in Cambodia if the aid is directed towards expansion of the industrial sector. Using ARDL bounds test approach to cointegration, Sakyi (2011) found that foreign aid and trade openness significantly contributed to growth (both in the short run and long run) in the post-liberation Ghana. Loxley and Sackey

(2008) examined the effectiveness of aid and sources of growth finance in Africa. Using a sample of 40 African countries over 28 year period, they estimated fixed effect growth models, and found that aid effectively promotes growth and that aid, worker's remittances, debt-service resources and domestic savings are the important sources of development finances.

The major policies that influence growth rate also determine aid flows to Sri Lanka (Bhavan, 2013). He applied both two-stage least squares (2sls) and instrumental generalized method of moment (GMM) in his analysis and found that a good policy environment is a necessary condition for aid effectiveness and aid transfers to Sri Lanka. Using three stage least squares panel system estimation, Driffiield and Jones (2013) found that ODA, FDI and migrant remittances had a positive and significant impact on growth in developing countries when institutions are taken into account. In a panel regression model estimated using both OLS and 2SLS and covering 20 SSA countries, Salisu and Ogwumike (2010) found that sound macroeconomic environment was important not only for effective contribution of aid to sustainable growth but also for promoting growth in SSA. They recommended that SSA governments should pursue economic policies that reflect low inflation rate, productive budgetary balance, and competitive and unimpaired exchange rate.

### **Studies that Shows ODA Flows hampers Growth**

The ineffectiveness of foreign aid in enhancing growth in Africa is as a result of diverting aid into unproductive consumption and into facilitating corruption (Erega, Sede and Ibidapo, 2012). Erega et.al (2012) analyzed whether uncertainty influenced the link between aid, investment and growth in ten ECOWAS countries using pooled panel regression method and found that foreign aid hurt growth with or without uncertainty although the uncertainty effect was not statistically significant. They concluded that donor agencies and recipients should establish systems for monitoring and audit so as to enhance aid effectiveness in the region. They recommended the use of foreign aid in addressing other factors that are detrimental to economic growth in the region rather than as an avenue for achieving economic growth. Liew et.al (2012) in a study of five East African countries (EAC) over the period 1985 to 2010, shows that foreign aid negatively impact on economic growth in EAC. Developing countries requires

sound policy and good economic management more than foreign aid (Abuzeid, 2009). He stated that foreign aid undermines governance and therefore; any assistance efforts should be directed towards improving the quality of governance before devoted to economic development especially in developing countries which lack strong institutions. A study by Mallik (2008) investigated the effectiveness of foreign aid on economic growth in six African economies (Malawi, Central African Republic, Togo, Sierra Leon, Mali and Niger) considered being highly aid dependent and the poorest. His results indicated a significant negative long-run relationship between aid and growth of five out of the six countries. The cointegration analysis showed a short run significant effect of aid on Niger's growth but for the other countries it was insignificant. He attributed the negative effect of aid on growth in the five countries to: aid being a substitute for domestic savings, volatility of aid, governments using aid as a substitute for domestic tax revenue, and the use of foreign aid to meet humanitarian needs rather than expanding productive activities.

### **Studies that Shows insignificant role of ODA on Growth**

Among the studies that found an insignificant role of foreign aid on growth is a study conducted by Kolawole (2013). In this study, Kolawole (2013) investigated the link between ODA, FDI and real growth in Nigeria over the period 1980 to 2011 using two- gap model, ADF test, ECM among other econometric techniques. His results suggested that ODA has no impact on growth and FDI impact negatively on growth in Nigeria. Wako (2011) using a sample of 42 sub-Saharan African countries examined the effectiveness of bilateral and multilateral development aid on economic growth. He found no significance evidence of any positive or negative relationship between aid and growth of both kinds of development aid either conditional or unconditional on policy and therefore; disaggregating aid into bilateral and multilateral does not make a difference. He found that the economic performance of the 42 countries was explained by accumulation of physical capital, good policy, openness to trade and foreign direct investment. Doucouliagos and Paldam (2009) used meta-regression analysis to examine: the pattern of aid effective findings over time, distribution of results, and whether learning by doing has improved aid effectiveness. Their findings indicated an insignificant positive effect of aid on growth

implying that even after 40 years of ODA, aid have not been effective and the lack of learning by doing by the aid industry. They concluded that the Dutch disease on exchange rates explains the observed aid ineffectiveness. Using one framework, Rajan and Subramanian (2008) presented results on the different aspects of the aid-growth relationship in one place. Their results indicated little robust evidence of a positive or negative link between aid and growth. They never found any evidence that certain forms of aid works well than others or aid works better in a good policy environment. They recommended a rethought about the aid apparatus so as to enhance future aid effectiveness.

### **2.3: OVERVIEW OF THE LITERATURE**

The arguments justifying ODA flows to developing nations range from giving a big push out of poverty trap, bridging the financial gap to inducing better policies and institutional environment. Theoretically, an increase in ODA flows should lead to increased growth. The empirical review indicates a lack of universal agreement among researchers as to the effectiveness of ODA in enhancing growth. Some found that ODA spur growth with a subset of scholars revealing that, aid only promote growth in a sound macroeconomic policy environment; others found that ODA hampers growth while others found insignificant positive or negative relationship between ODA and growth. Also within the literature, some scholars found that aid works but with diminishing returns while others never found diminishing returns to aid but all the researchers agreed about the endogeneity of ODA which create a spurious correlation between aid and growth. The inconclusive results coupled with recently refined econometric methods of estimation leaves the subject matter widely open to debate.

Most studies evaluating the effectiveness of ODA on growth use cross country regressions but countries are heterogeneous and therefore; the applicability of the cross country findings to the countries in the sample is not guaranteed, even after controlling for all possible ways in which countries might differ. Country-specific studies can solve the heterogeneity problem. The country-specific studies in the literature have one or more of the following limitations: use total aid in the analysis (but humanitarian aid and military aid is not made for promoting growth), consider ODA as exogenous variable (even though there are reasons for reverse causality),

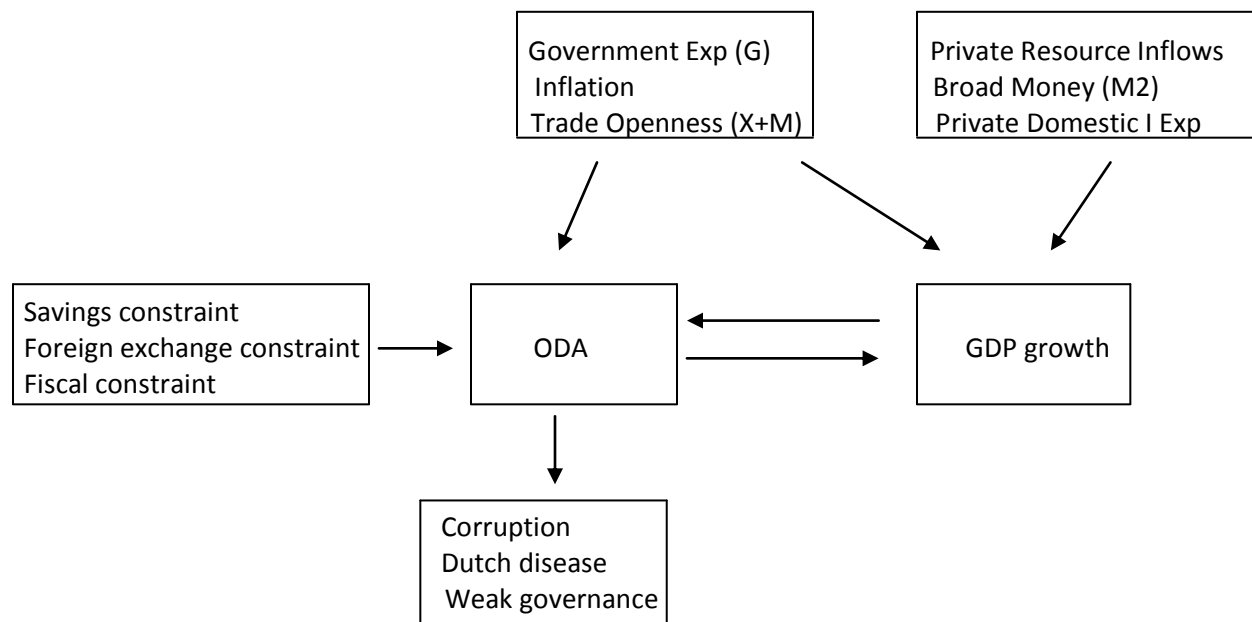


consider a short period, use few variables in the analysis (omitting important variables that determine growth), as well as tool of analysis limitation. This study accounts for these limitations by: considering ODA that is made for stimulating growth and development, considering a longer period (1970-2012), including as many variables as possible which determine growth, and by adopting VECM in the analysis.

### 3.0: CHAPTER THREE: METHODOLOGY

This chapter provides a description of the manner in which the objectives of the study were achieved. The chapter starts with a conceptual framework, followed by the main hypothesis of the study, theoretical framework, model specification, data source, data analysis technique, time series property tests and ends with diagnostic tests.

#### 3.1: CONCEPTUAL FRAMEWORK



Source: Author's compilation based on reviewed literature.

The conceptual framework shows that a country faced by savings, foreign exchange and/or fiscal constraints will require ODA which is given by donors based on recipient country's budget expenditure, inflation rate, trade openness and GDP growth rate; to relax the constraints. The main aim of ODA is promotion of welfare and economic growth. ODA may breed corruption, weaken governance and/or cause Dutch disease in the recipient country and therefore; ODA should be directed to domestic productive investments.

### 3.2: THEORETICAL FRAMEWORK

The empirical model specified in this paper is motivated by Solow (1956) growth model and was used to establish a link between theory and empirics. The relative slowness in adjustment outside steady state justifies the use of Solow model.

Let  $Y_t = K_t^\alpha [A_t L_t]^{1-\alpha}$  be the Cobb-Douglas production function of an ODA recipient country.

Where;  $A_t$  is labour augmenting technology which grow in time at  $g$  rate;

$L_t$  is labour force which grows in time at  $\lambda$  rate;

$K_t$  is capital;

$Y_t$  is total production (GDP);

$[A_t L_t] = E_t$  is effective labour force which grows ( $\dot{E}/E_t$ ) in time at  $(g+\lambda)$  rate

$E_t = L_0 e^{g+\lambda,t} = L_t e^{\lambda,t}$  ;  $L_t = L_0 e^{g+\lambda,t}$  , Where  $L_0$  is initial labour force.

$\alpha$  – output elasticity of capital

#### GDP PER CAPITA

##### Assumption

Effective units of labour = total population

$$\frac{Y_t}{E_t} = \frac{K_t^\alpha E_t^{(1-\alpha)}}{E_t}$$

$$y_t = K_t^\alpha E_t^{-\alpha} = (K_t/E_t)^\alpha = k_t^\alpha \dots\dots\dots(1)$$

##### CAPITAL ACUMULATION

$$\dot{K} = I_t - \delta K_t \dots\dots\dots(2)$$

Where:  $\dot{K}$  -  $(\Delta K_t/\Delta t)$

$I_t$  – Investment

$\delta$  – Capital depreciation rate

$$I_t = I_g + I_p$$

$$\dot{K} = I_g + I_p - \delta K_t \dots\dots\dots(3)$$

Where:  $g$  and  $p$  represents public and private sector respectively

ODA stimulates economic growth through investment. Mwega (2009) reported that only a fraction of ODA is spend on investment. Suppose a fraction  $\phi$  of ODA is invested by the public sector and the remaining  $(1-\phi)$  consumed or wasted, we can rewrite equation three as;

$$\dot{K} = \phi ODA + Ip - \delta K_t; \text{ where ODA is Official Development Assistance.}$$

In per capita terms

$$\frac{\dot{K}}{E} = \frac{\phi ODA}{E} + \frac{Ip}{E} - \frac{\delta K_t}{E} = \phi oda + i - \delta k$$

$$\text{But } \dot{k} = \frac{\Delta(K_t/E_t)}{\Delta t} = \frac{E_t \dot{K} - K_t \dot{E}}{E_t^2} = \frac{\dot{K}}{E_t} - \frac{K_t \dot{E}}{E_t E_t} \quad \text{Where: } \dot{K} = (\Delta K_t / \Delta t), \dot{E} = (\Delta E_t / \Delta t), (\dot{E}/E) = (\lambda + g)$$

Therefore;

$$\dot{k} = \phi oda + i - \delta k - (\lambda + g)k = \phi oda + i - (\delta + \lambda + g)k \dots\dots\dots (4)$$

Expressing the rate of growth of GDP per capita in terms of the rate of capital stock per capita and substituting equation 4 yields

$$\frac{\dot{y}}{y} = \alpha \frac{\dot{k}}{k} = \alpha \frac{[\phi oda + i - (\delta + \lambda + g)k]}{k} = \alpha \frac{(\phi oda + i)}{k} - \alpha (\delta + \lambda + g) \dots\dots\dots (5)$$

Differentiating equation 5 with respect to oda per capita we have

$$\Delta \left( \frac{\dot{y}}{y} \right) = \alpha \phi \frac{1}{k} \dots\dots\dots (6)$$

Equation 6 implies that a 1%point increase in oda per capita should at most raise the long run growth rate by  $(\alpha\phi)/k$  percent and therefore; the coefficient of oda in the regression should be related to the  $\alpha$  (capital share in output),  $\phi$  (fraction of aid invested), and  $k$  (capital per capita).

Equation 5 justify the choice of the model

### **3.3: MODEL SPECIFICATION**

The variables are integrated and cointegrated and therefore; the adequate model was a vector error correction model (VECM- also called cointegrated Vector Autoregressive model).

#### **The general VEC representation**

$$\Delta X_t = \phi + \pi X_{t-1} + \sum_{i=1}^{p-1} \psi_i \Delta X_{t-i} + \varepsilon_t$$

Where  $X_t$  denote vector of variables in the model,  $\phi$  is vector of constants,  $\pi X_{t-1}$  represent the error correction term whereby  $\pi$  denote two factors-the maximum rank (vector of cointegrating parameters) and VEC coefficients that measure the speed of adjustment to the long run steady state,  $\psi$  denote vector of parameters containing short run information,  $\varepsilon_t$  is vector of white noise errors, and  $p$  represent maximum lag.

It should be noted that;

- If rank ( $\pi$ ) = 0; the variables are not cointegrated and non-stationarity of **I (1)** type vanishes by taking first difference.
- If rank ( $\pi$ ) =  $k$  where  $k = \text{full rank}$ ; the variables are stationary and therefore; no need to refer to the VEC representation. We don't deference the variables, but we model their relationship in level.
- If rank ( $\pi$ ) =  $m$  where  $0 < m < k$ ; the variables are cointegrated, and there are  $m$  linear combinations ( $m$  cointegrating relations) which are stationary.

Equation (1) below is model of interest in the VECM

$$\Delta \text{gdp} = \alpha + \eta Z_{t-1} + \sum_{j=1}^{p-1} \gamma_j \Delta \text{gdp}_{t-j} + \sum_{j=1}^{p-1} \beta_j \Delta \text{oda}_{t-j} + \sum_{j=1}^{p-1} \delta_j \Delta \text{pf}_{t-j} + \sum_{j=1}^{p-1} \lambda_j \Delta \text{gcf}_{t-j} + \sum_{j=1}^{p-1} \varphi_j \Delta \text{fce}_{t-j} + \sum_{j=1}^{p-1} \theta_j \Delta \text{to}_{t-j} + \sum_{j=1}^{p-1} \vartheta_j \Delta \text{m2}_{t-j} + \sum_{j=1}^{p-1} \sigma_j \Delta i_{t-j} + \varepsilon_t \dots \dots \dots (1)$$

Where  $\Upsilon, \beta, \delta, \lambda, \varphi, \sigma, \theta, \vartheta$  is the short run dynamic coefficients,  $p$  denote maximum lag length for each variable,  $\varepsilon$  is the error term,  $t$  denote time, and  $\eta Z_{t-1}$  is the error correction term whereby  $\eta$  represent speed of adjustment to equilibrium.

**Table 1: Definition and description of the above variables**

Abbr.	Name	Unit	Description	Expected sign
gdp	Real GDP per capita growth rate	% annual	The annual growth rate of total market value of all final goods and services per capita, produced with domestic factors of production relative to GDP.	Positive(expected sign of the lagged variable)
oda	Official Development Assistance	% of GDP	Net ODA relative to GDP. It excludes humanitarian aid, non-concessional loans & aid provided by NGOs.	Positive
pf	Private external resource flows	% of GDP	Sum of net inflows on foreign direct investment, net inflows of portfolio/equity investment, net flows on private non-guaranteed long-term debt and workers' remittances received from abroad relative to GDP.	Positive
fge	Final government consumption expenditure	% of GDP	Public final consumption expenditure relative to GDP.	Negative
gcf	Gross capital formation	% of GDP	Sum of domestic public and private investments relative to GDP.	Positive
to	Trade Openness	% of GDP	Total value of trade flows (Exports + Imports) / GDP	Positive
m2	Broad money	% of GDP	Sum of currency in circulation and deposits (cheque deposit, time and saving deposits) relative to GDP. Measure financial depth.	positive
i	Inflation	% annual	Annual percentage change to consumer price index.	Negative

The choice of the control variables was based on reviewed literature, and only those factors researchers found them more important in driving growth were considered. Data availability also determined the choice of the control variables.

### **3.4: SOURCES OF DATA**

The study used secondary data and covered the period from 1970 to 2012. The time period choice was based on availability of data. The time series data for all the variables were sourced from World Development Indicators 2014 (World Bank).

### **3.5.0: DATA ANALYSIS TECHNIQUE**

The study used Vector Error Correction Model (VECM) in the analysis after undergoing time series property tests. According to granger representation theorem, the relationship between two cointegrated variables can be expressed as error correction model (Gujarati, 2004). The error correction model is a means of reconciling the short run behavior of economic variable with its long run behavior (Gujarati, 2004). The Vector error correction model does not suffer distortion due to estimation of mini lags when the data set are non-stationary, overcomes loss of information that occurs from simple attempt to address non-stationarity through differencing, and it's also unlikely to exhibit some degree of multicollinearity between regressors in the model. VECM limits the number of variables to those relevant for a particular theory (model) and treats all the variables as endogenous. Eviews econometric software was used to carry out the regression.

### **3.5.1: TIME SERIES PROPERTY TESTS**

#### ***Testing for stationarity***

A series integrated of order zero  $I(0)$  is said to be stationary. Many of the macroeconomic variables that are normally used are non-stationary. Non-stationary series have infinite variance asymptotically which leads to invalid asymptotic analysis since they face spurious and inconsistency regression problems. Existence of unit roots in each series was tested using Augmented Dickey-Fuller test.

## Cointegration analysis

The general rule of cointegration is that if two or more series are individually integrated but their linear combination of them has a lower order of integration; the series are cointegrated. There is one exception of the general rule called the special case of cointegration and that's why cointegration tests such as Engle-granger tests, Philips-perron test and Johansen test depend on series that are strictly integrated of order one  $I(1)$ , assuming that there exist special cases where a linear combination is  $I(0)$  stationary variables and hence cointegrated.

### Lag length selection

Too small lag length could lead to model mis-specification while too large lag length uses up degrees of freedom (Enders, 1995). Using different lag length for each variable in the system can minimize the loss of degrees of freedom but Enders (1995) noted that using different lag length causes asymmetry in the system. Use of the same lag length allows for efficient application of OLS estimation method. Pesaran and Shin (1999) recommends choosing a maximum of two lags for annual data and therefore; this study set a maximum lag of two in selecting the optimal lag to be used. Pesaran and shin (1999) found Schwarz Bayesian criterion (SBC) a consistent model selection criterion, unlike Akaike information criteria and was used in selecting the optimal lag for both the cointegration test and the VECM. The error term should be distributed as white noise.

Johansen test for cointegration was used to test existence of long run relation between the variables.

$H_0$ : No cointegration

$H_A$ : cointegration

If the trace or maximum eigen value statistic > 5% critical value, we reject the null hypothesis. Basically the two statistic arrives at the same conclusion (that's whether the variables are cointegrated or not and if cointegrated; the number of cointegrating equations) but if that's not the case, it's up to the researcher to decide which statistic to consider.



### **3.5.2: Diagnostic tests**

Diagnostic tests such as serial correlation, normality test, conditional heteroscedasticity, and stability of parameters were conducted to ensure that the coefficients of the estimates are efficient, consistent and reliable in making economic inference.

The study used Breuch-Goldfrey langrange multiplier (LM), ARCH test, Jargue-berra statistic, and both cumulative sum and cumulative sum squares test in testing for serial correlation, heteroscedasticity, normal distribution, and stability respectively.

## 4.0: CHAPTER FOUR: EMPIRICAL RESULTS AND INTERPRETATION

This chapter presents and explains the empirical findings of the study. Table 2 and 3 presents the time series property tests (unit root test and cointegration result respectively). The VECM estimates are in Table 4 while table 5 presents the diagnostic test results. The chapter ends with the interpretation and discussion of results.

### 4.1: EMPIRICAL RESULTS

**Table 2: Augmented Dickey-Fuller test for unit root (Random Walk -no trend, no intercept)**

VARIABLE	ADF STATISTIC		5% CRITICAL VALUE	DECISION
	LEVEL	1 <sup>ST</sup> DIFFERENCE		
gdp	-4.966630		-1.948886	<b>I(0)</b>
oda	-0.635749	-6.967410		<b>I(1)</b>
pf	-0.635749	-7.937717		<b>I(1)</b>
gcf	-0.603488	-9.622522		<b>I(1)</b>
fge	-0.006669	-6.642559		<b>I(1)</b>
to	-0.062151	-7.812110		<b>I(1)</b>
m2	1.197896	-7.002724		<b>I(1)</b>
i	-1.823739	-6.796759		<b>I(1)</b>

HO: non-stationary (unit root)

**Table 3: Johansen tests for cointegration**

Trend: constant

Number of obs = 41

Sample: 1972 - 2012

Lags interval: 1 to 1

Unrestricted Cointegration Rank Test (Trace and Max-Eigen)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Max-Eigen Statistic	5% Critical Value
None *	0.840302	239.0714	159.5297	75.21341	52.36261
At most 1 *	0.741754	163.8580	125.6154	55.50757	46.23142
At most 2 *	0.640259	108.3504	95.75366	41.91720	40.07757
At most 3	0.513555	66.43321	69.81889	29.54588	33.87687
At most 4	0.350888	36.88732	47.85613	17.71813	27.58434

Trace and Max statistic indicate three cointegrating equation at the 5% level

\* denotes rejection of the hypothesis at the 0.05 level

**Table 4: Vector Error-Correction Estimates**

Sample: 1972 - 2012

No. of obs = 41

AIC = 36.74779

Log likelihood = -633.3296

SBIC = 41.76312

	Coefficient	Std. Error	t-Statistic	Prob.
<b>D(gdp)</b>				
CointEq1	-0.665970***	0.135857	-4.901995	0.0000
CointEq2	0.211454	0.148156	1.427244	0.1642
CointEq3	0.981644	0.278231	3.528158	0.0014
D(gdp(-1))	0.297304***	0.107726	2.759809	0.0099
D(oda(-1))	0.324875	0.238197	1.363896	0.1831
D(pf(-1))	-0.651334**	0.254863	-2.555620	0.0161
D(gcf(-1))	0.490567***	0.171048	2.868006	0.0076
D(fge(-1))	-0.476332	0.423267	-1.125372	0.2697
D(to(-1))	-0.242413***	0.077088	-3.144607	0.0038
D(m2(-1))	0.336482**	0.144068	2.335574	0.0266
D(i(-1))	0.068794	0.057432	1.197831	0.2407
C	-0.493578	0.339657	-1.453165	0.1569
R-squared	0.634644	Mean dependent var	-0.393114	
Adjusted R-squared	0.496060	S.D. dependent var	2.964362	
S.E. of regression	2.104362	Akaike info criterion	4.564992	
Sum squared resid	128.4219	Schwarz criterion	5.066525	
Log likelihood	-81.58233	Hannan-Quinn criter.	4.747622	
F-statistic	4.579507	Durbin-Watson stat	2.453784	
Prob(F-statistic)	0.000487			

\*\*\*, \*\* indicate significant at 1% and 5% levels respectively.

**Table 5: Diagnostic test statistics**

	TEST	HO	Obs*R-squared	Prob > chi2
Serial correlation	Lm test	No autocorrelation	5.934131	0.0515
Normality	Jarque-bera test	Residuals normally distributed	4.761653	0.092474
Heteroscedasticity	ARCH test	Homoscedastic	0.261991	0.6088
Stability	CUSUM	Stable		
	CUSUMQ	Stable		

The null hypothesis (HO) is rejected if the probability value  $\chi^2$  is less than 5%.

## **4.2: INTERPRETATION AND DISCUSSION OF RESULTS**

### **Stationarity**

The guideline for the ADF test is that once the absolute value of ADF statistic is greater than the 5% critical value, we reject the null hypothesis of unit root and conclude that the series is stationary. The ADF results indicate that the variables are integrated of order one except GDP growth per capita which is stationary at level [**I(0)**].

### **Cointegration**

The guideline is that if the trace and the max statistic are greater than the 5% critical value, we reject the HO. Basically, the two statistics arrives at the same conclusion but if that's not the case, it is up to the researcher to decide which statistic to consider. The set of variables was found to have at most three cointegrating vectors (equations) and therefore, VECM was the suitable estimation technique for the growth model.

### **The VECM model**

#### **(A)The long run causality**

The cointegrating equation one (cointEq1) coefficient is negative and significant and therefore; there is a long-run causality running from the explanatory variables to GDP per capita growth.  $\text{cointEq1} = \eta = -0.665970$  implies that the deviation from the long-term in economic growth the previous year is corrected by 66.6% in the following year.

#### **(B) The short run causality**

$\Upsilon = 0.297304 > 0$  (positive) and therefore; conforms to the expectations.  $\Upsilon$  is statistically significant implying there is a short run causality running from previous year's GDP growth per capita to GDP growth per capita. This means that if the previous year's GDP growth per capita increases by 1%, GDP growth per capita in the current year increases by 0.297304% in the short run. Current year's growth is influenced by last year's growth.

$\beta = 0.324875 > 0$  (positive) and therefore; conforms to the expectations but it is not statistically significant implying that official development assistance has insignificant impact on growth in the short run. This result authenticates the findings of Doucouliagos and Paldam (2009); Wako (2011); and Kolawole (2013) that ODA has no significant impact on economic growth. Doucouliagos and Paldam (2009) suggest that the Dutch disease on exchange rates explains the observed ODA ineffectiveness. The ineffectiveness of ODA can also be attributed to the volatility of ODA flows to Kenya. Mwega (2009:12) found that aid to Kenya is highly volatile at a rate of 24.1% compared to 13.3% for all developing countries. Mwega (2009) also found that three out of the selected four projects funded by ODA were frustrated by financial uncertainties which were reflected in the deviations from actual plans (for example, Bura irrigation and settlement scheme), discontinuation of projects (for instance, the third Nairobi water supply project) and under-provision of services (for example, the Tana delta irrigation project). Celasun and Walliser (2008) found that the uncertainty of aid hampers aid management even in countries with stable macroeconomic policies since government spending is shifted from investment to consumption activities. It may also be that the Kenyan government lacks fiscal discipline and uses ODA resources to substitute for the country's effort to raise domestic revenue and contain expenditure. Gomanee et al (2005) and Mosley et al (2004) demonstrated that a substantial amount of ODA is allocated to pro-poor expenditure in social sectors (health and education sectors); which contribute to welfare rather than growth in the short run and this can also explain the aid ineffectiveness in the short run.

$\delta = -0.651334 < 0$  (negative) and therefore; does not conform to the expectations.  $\delta$  is statistically significant implying there is a short run causality running from private external resource flows to GDP growth per capita. This means that a 1% increase in private external resource flows leads to 0.651334% decrease in growth in the short run. Orlik (2008/2009) found that external capital flows to developing countries induce financial instability, which modify key prices and depress economic activities and therefore; this could be the case for Kenya.

$\lambda = 0.490567 > 0$  (positive) and therefore; conforms to the expectations.  $\lambda$  is significant implying that there is a short run causality running from gross capital formation to GDP growth per capita. This means that if gross capita formation increase by 1%, GDP growth per capita increases by 0.490567% in the short run. Capital accumulation paves the way to increased production capacities thereby raising production and employment opportunities.

$\varphi = -0.476332 < 0$  (negative) and therefore; conforms to the expectations but it is not statistically significant meaning that final government consumption expenditure has insignificant negative impact on GDP growth per capita and therefore; there is no short run causality running from final government consumption expenditure to GDP growth per capita.

$\theta = -0.242413 < 0$  (negative) and therefore; does not conform to the expectations.  $\theta$  is statistically significant implying that there is a short run causality running from trade openness to GDP growth per capita. This means that a 1% decrease in total value of trade flows leads to 0.242413% increase in growth in the short run. The negative impact could be associated with the ineffective movement of the exchange rate in balancing the current account and also failure in linking the domestic institutions to productive activities.

$\vartheta = 0.336482 > 0$  (positive) and therefore; conforms to the expectations.  $\vartheta$  is significant implying there is a short run causality running from broad money to GDP growth per capita. This means that if broad money increases by 1 %, GDP growth per capita increases by 0.336482% in the short run. The result is in line with the finding of odhiambo (2009) that financial deepening induces economic growth in Kenya. The financial sector channels scarce resources from small savers to large investors and this stimulates economic growth.

$\sigma = 0.068794 > 0$  (positive) and therefore; does not conform to the expectations.  $\sigma$  is statistically insignificant implying there is no short run causality running from inflation to GDP growth per capita.

### The R<sup>2</sup>

$R^2 = 0.634644$  gives a good fit. It means that the explanatory variables in the model explain 63.46% of the variation in GDP growth per capita over the study period and 36.54% is explained

by other variables not included in the model. Since more than 60% of the variation is explained by the explanatory variables in the model, we conclude that the model fits the data observation well.

#### The F statistic

$F = 4.579507$  and its probability value is 0.000487 which is less than 5% and therefore; all the parameters are statistically significance at 5% level of significance. This means that all the explanatory variables jointly explain GDP growth per capita well.

#### **Diagnostic tests**

The results from diagnostic tests indicate that the coefficients of the estimates are efficient, consistent and reliable in making economic inference since the residuals are homoscedastic, normally distributed and are not autocorrelated. Both cumulative sum and cumulative sum square test indicates that the parameters are stable (the curve is within the two red lines-see appendix stability condition).

## **5.0: CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATION**

This chapter provides an overview of the entire study, the researcher's interpretation of the findings, policy implications and ends with a recommendation for further study.

### **5.1: SUMMARY**

The study is limited to ODA, which accounts for more than 90% of official aid spending. A great deal of optimism was created by the success of the Marshall plan in 1950s and therefore; it was assumed that ODA would induce economic growth in the recipient nations. The arguments justifying ODA flows to developing nations range from giving a big push out of poverty trap, bridging the financial gap to inducing better policies and institutional environment. Theoretically an increase in ODA flows leads to increased growth. However, the empirical literature on the impact of ODA on growth has not produced irrefutable results on whether ODA spur economic growth.

Kenya's economic performance has remained dismal even after decades of receiving ODA, significant private resource flows and other loans. The study examined the impact of ODA on economic growth in Kenya. The study applied VECM estimation technique and time series data for the period 1970-2012. Solow growth model was used to establish a link between theory and empirics.

The empirical findings suggest a long-run causality running from the explanatory variables to GDP growth per capita and 66.6% speed of adjustment to equilibrium; implying that 66.6% of discrepancy in GDP growth per capita the previous year is adjusted for the current year. The results also indicate that trade openness and private external resource flows have a negative influence on economic growth in the short run. The study found a positive impact of previous year's growth, broad money and gross domestic capital formation on growth in the short run. Although the ODA coefficient was positive; it was statistically insignificant and therefore; ODA flows to Kenya does not spur economic growth in the short run.



## **5.2: CONCLUSION**

The insignificant effect of ODA on growth in the short run could be attributed to dutch disease, volatility of ODA flows to Kenya and/or diversion of ODA resources into unproductive use (white elephants and wrong projects). Some of the projects funded through ODA do not provide benefits as expected as they die within the funding period (for instance, Tana delta irrigation project which was damaged by floods the same month it was completed) and therefore; sustainability of projects is key. It could also be hypothesized that the insignificant effect of ODA on growth is due to allocation of more ODA to social sectors which contribute to welfare rather than economic growth. Kenya should focus on internal factors rather than external factors to stimulate economic growth.

## **5.3: POLICY IMPLICATIONS**

- ❖ ODA should be channeled to productive sectors so as to complement current investments and attract new investments.
- ❖ The dynamic productive sector should not rely on low wages in search of an elusive foreign demand but instead need to be linked to the domestic economy.
- ❖ Policies and institutions that promote both public and private investment should be strengthened.
- ❖ Long-run sustainability of projects should be emphasized.

## **5.4: RECOMMENDATION FOR FURTHER STUDY**

The ODA- growth literature has not gone full circle and therefore; this calls for further research to investigate the possible channels through which ODA can have positive significant influence on economic growth.

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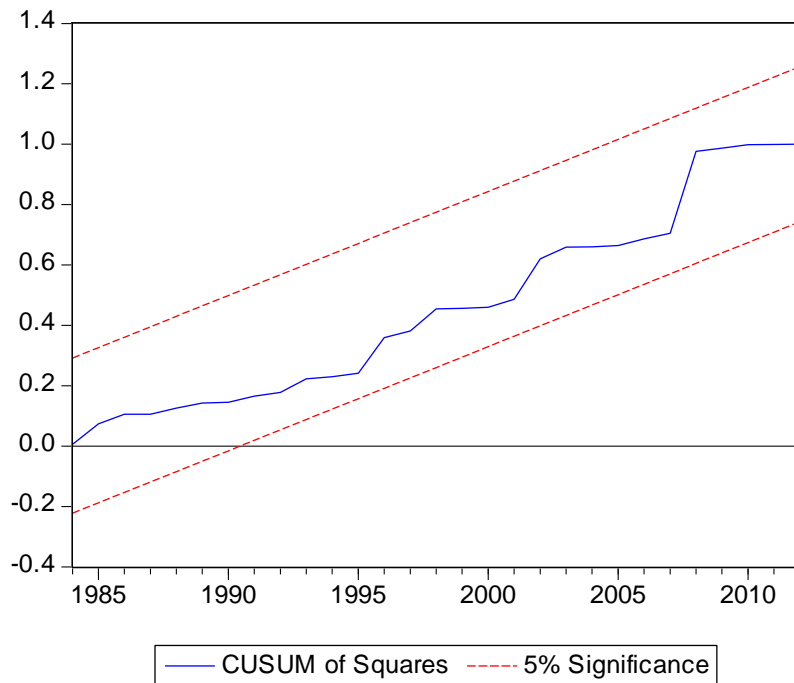
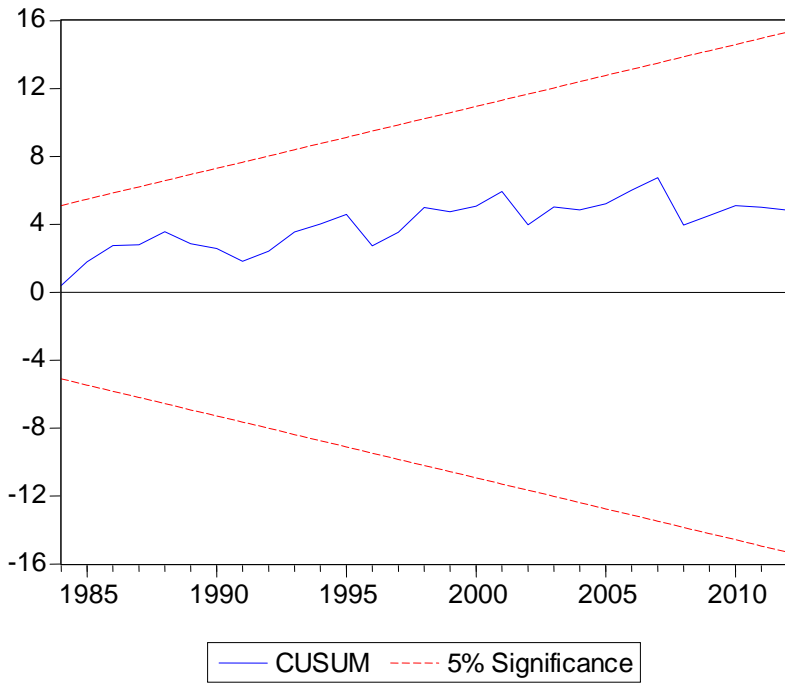
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APPENDIX

Figure 5: stability condition



**Table 6: Data**

Year	gdp	oda	pf	gcf	fge	to	m2	i
1970	-7.91551	3.576669	1.31342	24.39668	16.25747	60.48964	30.60656	2.188527
1971	17.92925	3.759015	0.824341	23.91599	17.98029	63.82846	29.6744	3.780206
1972	12.95769	3.410085	2.16203	22.32261	17.63221	55.31491	28.53554	5.831645
1973	2.121759	3.795547	5.167572	25.81124	16.45224	56.06285	30.49112	9.281194
1974	0.321415	3.920884	6.299378	25.75657	17.03592	74.5734	25.71029	17.80995
1975	-2.77423	3.829604	2.188511	18.14156	18.3254	64.33527	27.39467	19.12018
1976	-1.56663	4.449507	2.318149	20.2394	17.4601	64.20611	28.18176	11.44903
1977	5.451187	3.576913	-1.52746	23.65719	17.20523	66.55197	32.79569	14.82096
1978	2.98216	4.630888	4.216163	29.76002	19.51477	67.62354	34.52913	16.93178
1979	3.631207	5.587394	1.723503	18.13278	19.19578	57.36417	34.3548	7.979353
1980	1.655777	5.4339	1.463987	24.50714	19.80338	65.4168	29.9314	13.85818
1981	-0.11469	6.538049	0.309105	22.91344	18.58875	64.28019	29.4702	11.60305
1982	-2.30107	7.534697	1.559196	21.86021	18.43303	58.21574	30.42047	20.66671
1983	-2.4763	6.624634	3.248242	20.92507	18.42165	54.16271	28.17589	11.39778
1984	-2.01063	6.596692	-0.02239	19.81103	17.38183	58.8039	28.34209	10.2841
1985	0.493786	6.954484	2.898858	25.32482	17.46029	55.44543	26.68185	13.00657
1986	3.328777	6.11897	0.449858	21.76804	18.31957	55.74139	30.38808	2.534276
1987	2.198152	6.990748	1.791301	24.28943	18.56876	47.70277	30.24395	8.637673
1988	2.524258	9.958014	2.488868	25.44904	18.40579	49.97498	28.90107	12.26496
1989	1.13475	12.7935	1.657467	24.86208	18.05661	53.15638	28.39891	13.78932
1990	0.72711	13.78022	2.496782	24.16409	18.64243	57.02091	29.57702	17.78181
1991	-1.87059	11.24285	1.998543	20.97051	16.77135	55.5977	30.98193	20.0845
1992	-3.96877	10.75803	1.476445	16.92084	15.68227	52.93087	36.5178	27.33236
1993	-2.76233	15.8975	4.710379	17.61044	14.47997	72.85848	37.06523	45.97888
1994	-0.43266	9.465808	1.091846	19.29324	15.15493	71.26613	38.01601	28.81439
1995	1.423013	8.09003	2.87551	21.81976	14.84292	71.74574	42.23227	1.554328
1996	1.30857	4.93962	2.722485	15.00382	15.18057	57.31211	35.79169	8.864087
1997	-2.15441	3.420312	2.807452	15.14099	15.53615	54.05712	38.42265	11.36185
1998	0.652169	2.946006	2.364872	16.69272	16.24996	48.89724	35.80718	6.722437
1999	-0.30053	2.407489	3.291284	15.52141	15.7533	48.19227	35.7708	5.742001
2000	-1.99352	4.035465	4.705233	17.41409	15.05429	53.30904	35.16473	9.980025
2001	1.062195	3.628756	3.787547	18.79034	15.97291	55.94684	35.24074	5.738598
2002	-2.11659	2.987662	3.066874	15.13822	17.078	55.17267	38.15891	1.961308
2003	0.186537	3.509006	3.993628	16.48215	18.13132	54.13227	39.02316	9.815691
2004	2.29949	4.102062	4.073301	16.9625	17.86007	59.477	39.32703	11.62404
2005	3.091881	4.051682	2.344704	17.64968	17.38021	64.47887	38.90671	10.31278
2006	3.519506	4.206782	2.76811	18.48836	17.56821	64.94416	39.7084	14.45373
2007	4.173919	4.871288	5.04725	19.1192	17.88468	64.47774	42.31659	9.75888
2008	-1.14645	4.483631	2.520639	19.24008	16.47775	69.35491	42.54033	26.23982
2009	0.022858	5.808302	2.453716	19.93174	16.22721	61.62815	44.138	9.234126

2010	2.961112	5.057961	2.751487	19.77488	17.61312	67.85467	50.07657	3.961389
2011	1.597659	7.383609	3.835502	21.18368	18.03626	75.13108	50.98023	14.02155
2012	1.811592	6.521536	3.680827	20.08805	17.22001	71.79353	50.61717	9.378396

Source: World Bank, World Development Indicators (2014)