IMPACT OF FOREIGN AID ON DOMESTIC SAVINGS IN KENYA

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DECLARATION

This research paper is my original work and has not been presented for a degree award in any other University.

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DEDICATION

This paper is dedicated to my late parents Kibiru Nyamu, Esther Kibiru, Christopher Gichaga, Loise Gichaga and my son Kelvin Kibiru.

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Irrespective of the aforementioned recognitions, I take full responsibility for any flaws in the writing of this paper. It is my conviction that it will contribute to the knowledge in the field of foreign aid in Kenya.

Abbreviations and Acronyms

DAC	Development Assistance Committee
ECT	Error Correction Term
ESAF	Enhanced Structural Adjustment Facility
GDP	Gross Domestic Product
GNP	Gross National Product
IMF	International Monetary Fund
KIPPRA	Kenya Institute for Public Policy Research and Analysis
LDC's	Least Developed Countries
ODA	Official Development Assistance
OECD	Organization of Economic Co-operation and Development
OLS	Ordinary Least Squares
OPEC	Organization of Petroleum Exporting Countries
UN	United Nations
USA	United States of America
USSR	United Soviet Socialist Republic
WB	World Bank

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Abstract

Earlier papers written on the subject of the effect of foreign aid on domestic savings disagreed on whether this effect is positive or negative. However they were empirically consistent in finding this correlation to be negative.

Theoretically, foreign aid is assumed to be additive to domestic savings, therefore causing an increase in economic growth and hence domestic savings (Chenery & Strout, 1966).This study sought to establish the impact of foreign aid on domestic savings in Kenya. The empirical results established an inverse relationship. There is a negative and significant relationship between foreign aid and domestic savings.

Under Vision 2030, oversees development assistance (ODA) has been identified as one of the ways of alleviating the low savings to GDP ratio constraint .For foreign assistance to be more effective in playing this role, there are areas particularly the frequency and the continuity of the inflow of aid. project and programme combination and the terms on which aid is granted. which could be improved upon so as to make the aid flow more effective. Issues of fungibility and the impact of foreign aid on private sector investment warrant further investigation in Kenya.

The period under study are periods of decadence when foreign aid become the main source of development finance, in which case its effectiveness could have been drowned by the many demands. This period also witnessed two major donor-aid freezes. This aid uncertainty may have had adverse effect on government expenditure causing a reduction in public investment which may have led to lower private investment and ultimately lower economic growth and domestic savings.

The study has also established that growth in GDP and inflation are significant factors. influencing domestic savings in Kenya. Exports are not ambiguous in explaining domestic savings in Kenya. This would simply add to the calls for diversification of exports to include manufactures.

CHAPTER ONE

INTRODUCTION

1.0 Background

Foreign aid inflows are a major form of resource transfer from the developed to developing countries. It adds to the resources available for investment and augments the supply of foreign exchange to finance imports. Aid consists of grants and loans which bear interest rates lower than those charged in the world capital markets.

Organization of Economic Co-operation and Development (OECD) defines foreign aid or official development assistance (ODA) as resource transfers to developing countries and multinational institutions provided by official agencies including state and local governments, or by their executive agencies, each transaction of which meets two conditions. First, it has to be administered with the promotion of economic development and welfare of developing countries as its main objective. Second, it has to be concessional in character and contain a grant element of at least 25% calculated at a rate of 10% discount.

Development assistance is generally classified into three categories: project assistance; program assistance and technical assistance. Project assistance refers to a specific investment in the recipient country, such as the building of a road. Program assistance is usually a cash transfer for the general support of a country's overall development objectives. Technical assistance is represents the transfer of knowledge from the donor to recipient, either by bringing members of the recipient country to the donor country to study or by sending experts from the donor country to the recipient to guide, teach, and ultimately transfer skills and technology. There is no consensus from the development literature as to which type of assistance is most effective.

The issue of foreign aid has attracted considerable attention over the past decades. Since the end of world war 11, a variety of ways to provide development assistance to

developing countries have evolved. these range from outright grants. highly concessional loans, food aid and technical assistance. The number of donors has also increased. Most industrial countries. OPEC members and centrally planned economies have become bilateral donors while multilateral institutions include the World Bank. regional development banks, the OPEC and European community development fund and some UN agencies.

Aid from donor countries and multilateral institutions which assists in the promotion of development has therefore become a characteristic of developing countries economies in the post world war 11 period. It has its origin in the Marshall plan under which American aid was given to assist the recovery of war ravaged economies of Western Europe. Such assistance has been seen and sought by most developing countries as a resource to establish initial development. as a means of augmenting revenue from trade or as a necessary and continuing transfer of assets to help counterbalance the imbalance between development opportunities seen to exist between the industrial and developed world.

Though foreign aid has continued to play an important role in developing countries, especially sub-Sahara Africa, it is interesting to note that after half a century of channeling resources to the Third World. little development has taken place. In almost all of sub-Saharan Africa there is a high degree of indebtedness, high unemployment, absolute poverty and poor economic performance. The average per capita income in the region has fallen since 1970 despite the high aid flows. This scenario has prompted aid donor agencies and experts to revisit the earlier discussions on the effectiveness of foreign aid. One of the central issues in the aid effectiveness literature is the impact of foreign aid flows on domestic savings. The issue raised is that of complementarity and substitutability of foreign aid flows to domestic savings. The early view (see Rosenstein-Rodan 1961. Chenery and Bruno 1962. and Chenery and Strout 1966) was that developing countries lack savings to finance investment requirements and, therefore, foreign aid will act as a complement to help bridge the savings-investment gap. However, this view was challenged later on by Griffin (1970), and Griffin and Enos (1970) who argue that foreign aid inflows would displace domestic savings and thus act as substitutes

rather than complements. The authors pointed out that anticipated aid flows will be treated as an increase in income and hence be used to raise consumption. The empirical literature on the aid-savings nexus seems to ascertain the savings displacement hypothesis on the balance.

1.1 Rationale for giving aid

Economic aid in its present form exists allegedly, because there are great disparities of wealth between countries. However, there is no general agreement that the primary objective of aid is the development of poor countries.

There is also the argument of supporting aid on political grounds. In some cases aid programs were or are supported on the grounds that they further the political interest of the granting nation or group in these countries mostly the promotion of their exports. It's believed that the development of developed countries depends on the expansion of the markets and production of developing countries and that this can be achieved by giving aid for development of poor countries. Nonetheless with the end of the cold war, the essence of this argument is not very strong, although politics continue to be a powerful force in determining who gets aid. Alisena and Dollar (1998) find overwhelming statistical evidence that political and strategic alliances remain important in explaining the distribution of foreign aid across countries.

The third rationale is the moral case. Giving aid seems to be largely an instinctive reaction; it is part of an observable phenomenon, absence of universal solidarity has made remarkable progress in the last hundred years within the nations of the west who more or less accept that certain levels of poverty within a rich country are intolerable and this sealing is being extended to the world as a whole.

1.2 Aid flows to developing countries

The flow of aid from the governments of developed to governments of developing countries is a phenomenon of the post Second World War period. Conceding dismal performance of private capital investments in developing countries in the pre-war period,

most colonial governments started extending grants to their colonies. Following declaration of independence for several of its colonies in the 1950s and 1960s, Britain began to issue soft loans to its former colonies. France, United States of America (USA) and United Soviet Socialist Republic (USSR) and other developed countries began channeling aid to developing countries. Mosley (1987) and Kitchen (1986) have indicated that in the 1950s and 1960s, pro-communist andante- communist competition made Egypt, Iran, Afghanstan, Indonesia and India the principal objects of super-power competition in development aid. Subsequently, as African countries got independence, some of the African countries, particularly Kenya, Ghana, Nigeria and Zambia, also became the object of competitive offers of aid form USA and USSR.

Kitchen (1986) and others have therefore qualified the 'need of the recipient' and the 'political interest of the donor' among other factors, as having influenced bilateral aid flow over time. But all agree that it has never been effectively used to achieve political support The political dimension of aid however slackened over time with the profound role of World Bank an IMF, which became the principal agents of various types of financial support. The entry of Japan, West Germany, Netherlands and Scandinavian countries, none of which had ever been colonial powers of any scale also, contributed to the slackening of direct political role. In the 1980s and early 1990s, the conditionality used by the World Bank and IMF were viewed with political suspicion from the side of developing countries. However in many instances, they have been qualified as being more economic as opposed to being political in nature.

In terms of trend, OECD/DAC members have reduced their development assistance to developing countries over time. Aid donations as a percentage of GNP of the DAC members dropped from 0.51% in 1960 to 0.30% and 0.24% in 1993 and 1998 respectively. For the top five, France and Italy had the largest reductions over the 1993 to 1998 period. On the contrary, the largest contributor, Japan, had its share rising from 0.27% to 0.285 of the GNP despite a drop in absolute terms. The donations have also been slipping further below the United Nation's internationally agreed target of 0.7% of the GNP of DAC members.

1.3 Aid inflows in Kenya

Table 1.1 Average official development assistance in US$ Millions.

1970-1979	1980-1989	1990-1999	2000-2006
582	673	840	578

Source: KIPPRA, World Bank, own extracts from economic survey various issues.

Aid has remained a principal source of development funding in Kenya for the last two decades. Gross ODA inflows increased from an annual average of US$ 582 million in the 1970s to US$673 million in the 1980s and slightly over US$ 800 million in the 1990s. In 1990, the flow reached a record high of over US $ 1 billion. The aid flows exceeded the total receipts from all other foreign exchange earners and at the same time Kenya was ranked the eighth largest aid recipient in the World(aid amounted to over 11.5% of GDP).Thereafter, the flow of aid assumed a declining trend due to the persistent aid cuts in the 1990s. In the 2000s the flow has averaged to US$ 578 million. By 2000, aid flows had declined to US$535 million. In 2001, it rose to US$575 million mainly due to increased flows for emergency response and disaster mitigation and energy sector interventions. It has since risen to US $768 million in 2005.

1.4 Official Development Assistance as a Proportion of Gross National Product

The ratio of aid to GNP rose from a low of 4% in 1970 to 5.6% in 1980 before rising rapidly to a level of 17% in 1993. This was due to the effects of the Enhanced Structural Adjustment Facility (ESAF) and World Bank Agricultural and Export Sector loans. The inability of Government to meet programme requirements resulted in the suspension of IMF/WB supported programmes in Kenya. After the ESAF agreement in 1993, aid was again discontinued in 1995. Another ESAF was agreed upon in 1996 but suspended in 1997 until a new agreement was reached in 2000 based on the country's preparation of the Poverty Reduction Strategy Paper. On that basis, Kenya was given access to the IMF Poverty Reduction and Growth Facility, but due to lack of progress on key governance issues, it was suspended in October of the same year. In 1996 and 1997 the ratio was 6.8% and 4.6% respectively. The flows have since declined to less than 3% by 2001.In the year 2003/04 the inflows averaged to 4% of GNP.

1.5 Domestic savings in Kenya

An interesting feature in Kenya is seen in the trends of domestic savings, which fluctuated from 23.6% of GDP in the 1970 to 13.5% in 1975 before rising to an all time high of 27% in 1977.In the 1980s and 1990s, domestic savings maintained a gradual downward trend dropping from the peak of 24% in 1985 to 11.4% in 1997.The downward trend of domestic savings was attributed to rising levels of government deficit, accentuated by the 1979 oil crisis, food crisis of the early 1980s, debt crisis and the increasing government wage bill. The latter was mainly a factor of the decision to increase civil service employment by 10% in 1979.The National Development Plan (1997-2001) and the economic survey (1999) identifies other factors responsible for low savings as high levels of foreign and domestic debt, low deposit interest rates, inadequate institutional framework for capital markets, and limited diversity of savings instruments. Between 1996-2000 domestic saving declined to 11.8% .This implies that the country ran the risk of under investing and excessive reliance on foreign savings to fund investments which are vital for growth. In the latest few years, domestic saving has become an important component in financing capital formation due to diminishing foreign investments, loans and grants inflows to the country. In 2001, savings ratio was the lowest at 4.6%.It then increased to 8.0% in 2002 and since then it has been on the increase. In the period 2002-2006, the ratio averaged to 12% of GDP, in 2006 the ratio was 17.1% of GDP.

1.6 Problem Statement

Domestic savings are the most important source of capital to finance Kenya's development needs, hence the need to maintain a high saving ratio has been well recognized (Vision 2030, GOK, 2007).The Harrod-Domar model suggests that savings provide the funds which are borrowed for investment purposes. He notes that economy's rate of growth depends on the level of saving, the savings ratio and the productivity of investment. Kenya's saving ratio is relatively low as compared with other developing countries. In India, GDP growth has accelerated from 6% to 9% lifting savings rate from 23% a decade ago to 33% currently. The country saves about 28% of its GDP.

In the last five years savings ratio has averaged to 12% of GDP. This can be attributed to high levels of foreign and domestic debt, low deposit interest rates, inadequate institutional framework for capital markets, and limited diversity of savings instruments. The low savings ratio has been identified as one of the constraints to future growth in Kenya. Under Vision 2030, Kenya aims to increase annual GDP growth rates to an average of 10%. Achieving the 10% growth will require a dedicated campaign to alleviate existing constraints to future growth, and in particular to use resources more efficiently. It must also address other key constraints, notably, a low savings to GDP. Delivering the country's ambitious growth aspirations will require a rise of national savings from the current 17% in 2006 to about 30% in 2012.

Several studies have been done on the impact of foreign aid on domestic savings such as Quattara Bazoumana, 2003; Elbadawi and Mwega, 1999; Dzogbenu,1996 among others. Studies in Kenya have focused on the impact of aid on growth but silent on its impact on domestic savings. According to Harrod-Domar, domestic recourse mobilization is one of the vital determinants of economic growth. It is from this background that this study intends to bridge the gap by testing empirically the impact of aid on domestic savings in Kenya.

1.7 Research questions

1. To what extent does foreign aid affect domestic savings in Kenya?
2. What other factors affect domestic savings in Kenya?
3. How can domestic savings be increased?

1.8 Objectives of the Study

The main objective of the study is to investigate the impact of foreign aid on domestic savings. Specifically, the study seeks:

1 To analyze the impact of foreign aid on domestic savings

2 To investigate other factors affecting domestic savings in Kenya

3 Draw policy recommendations from the findings.

1.9 Justification of the study

This study provides a comprehensive understanding of foreign aid and its impact on domestic savings. Other studies have used current account deficit as a proxy for aid. This study will depart from the use of current account deficit as a proxy for aid by making use of ODA which is a better measure of aid since it excludes private capital and short-term loans.

Based on the results generated, the study will give an insight on how to mobilize domestic resources. The findings will also guide policy makers in designing more effective policies aimed at increasing domestic savings and better utilization of foreign aid while avoiding overdependence on foreign aid.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter examines the theoretical rationale underlying the role of economic aid in development process and the empirical studies undertaken to determine the impact of aid on recipient country's ability to mobilize domestic resources.

2.1 Theoretical literature

2.1.1 Foreign aid and development theory

Efforts of most developing countries of achieving growth and development are hampered by lack of imported raw materials, machinery and technical know-how. This is due to lack of foreign exchange to purchase them. The exports of these countries are mainly primary products whose prices are low and unstable on the world market and the basic infrastructure to attract foreign direct investment are also lacking therefore they may be unable to rely on just foreign trade and private direct investment to accelerate their development efforts. Internally, generated savings and domestic investment cant earn them enough foreign exchange nor can the private market supply the needed resources to invest in agriculture, industrial development and social infrastructure that are vital for economic growth (Ohlin, 1966).

It is for these reasons that aid to these countries is necessary to accelerate their economic development up to the point where a satisfactory growth rate can be achieved and self sustaining. This is possible through aid promoting, improved economic policies and resources allocation in the recipient country strengthening technical, managerial, institution and administrative capacity to increase efficient use of capital and providing the resources needed for development in circumstances inadequately served by private market.

The use of such resources has become an integral part of economic and development plans of developing countries. The need is felt to utilize this externally derived capital in

order to sustain the impetus of development until a sustaining situation can be reached. where perhaps. savings will allow internally derived capital to suffice.

One of the important underpinnings for external capital requirements, which has become part of the standard arguments of foreign aid policy makers and development economists in the late 1950 and 1960s was supplied by Rostow's hypothesis of the "take off" into self sustaining growth. In this hypothesis, Rostow envisaged the following developmental stages: the traditional society; the long period during which economic and social pre-conditions for growth are evolved: the relatively short period of the take-off into self sustaining growth: the rapid rise to maturity .and the era of high mass consumption.

The central argument in Rostow's approach is found in the concept of the "take off" as a unique stage in development which requires the following three related conditions: a rise in productive investment; the development of one or more manufactured sectors with a high rate of growth: and the existence or emergence of institutional framework conducive to the transmission of impulses of expansion throughout the economy including the capacity to mobilize capital from domestic resources. He said that poor countries need to increase their investment from 5 to 10% of national income in order to "take off" into self- sustaining growth. Due to low savings rate, such investments in a poor country require foreign assistance.Rostow's idea was that such investments would lead to automatic increase in the rate of national savings at the same time.

It is in the satisfaction of the first condition of a rise in productive investment, that Rostow made explicit reference to the use of external capital. He suggested that domestic savings during the take-off" stage could be supplemented by capital imports so as to increase the level of investment required for the increase in the growth rate. This aspect of the take off hypothesis provided the rationale for aid to initiate "take-off" process and assure the rapid achievement of self sustaining growth. The rationale has further been broadened to include hastening the pre-conditions for the achievement of sustained growth by massive inflows of aid for infrastructural development.

The two gap model propounded by Chenery and Strout (1966) also provides a theoretical justification for provision of foreign assistance to developing countries. The model is based on the premise that economies are seldom in equilibrium with savings often falling short of desired investments, giving rise to a savings gap. Alternatively the much needed imports would often exceed export earnings, which gives rise to foreign exchange shortage or "foreign exchange gap" If the required level of investment is to be realized, external finance (aid, credit or foreign investment) must be sufficient to fill the larger of the two gaps. The basis of the two gap model therefore is that aid supplements domestic savings and foreign exchange shortages.

Most developing countries are however assumed to often experience higher foreign exchange gap, which therefore means that it is the foreign exchange gap, which is often binding. As Todaro and Smith (2006) put it, "these countries have excess productive resources (mostly labor), and all available foreign exchange is being used for imports". The strategic growth- generating role for foreign aid in the model therefore, is that by making available additional resources, it facilitates the importation of capital and technical assistance, and generates as much growth as would be raised through domestic savings or foreign exchange earnings. To be more realistic, a further qualification draws from the assumption that, in their plans governments want to maximize the rate of economic growth, and so direct aid to productive investment.

2.2 Empirical Literature Review

A number of statistical analysis have been carried out and various models constructed in an attempt to throw light on the aid-saving debate. Most of the equations were estimated with cross-sectional data and the variables used varied both between and within studies. Most involve the use of domestic saving to national income ratio as dependent variable and the current account deficit as the independent variable.

Griffin (1970) in a cross section study of 32 developing countries obtained a negative relationship between foreign savings as a percentage of gross domestic product and gross

domestic savings as a percentage of gross domestic product, using OLS estimation technique with savings rate as the dependent variable. Within the same,13 were from Asia and middle east and a similar analysis for these countries produced similar results. In a specific study on Columbia for the period 1950-1963, Griffin, obtained an inverse relationship between savings and foreign capital. He thus argues that, aid can be a substitute rather than a complement for domestic savings. He contends that aid has a depressive effect on the rate of domestic savings because the recipient governments will be induced to increase expenses on consumption and become less vigorous in their saving efforts.

Gupta (1970) however disagrees with Rahma's results of a negative correlation between foreign aid and domestic savings, criticizing the selection of only 31 countries by Rahma. He performed the regression using the same data source but utilising all the 50 samples of chenery and stout and found that the coefficient on foreign inflows was positive, but the results are not significantly different from zero. He then concludes that the results appear to suggest, foreign capital inflow have virtually no effect on domestic savings in less developed countries.

In a further analysis, with Islam in (1983), using a method that incorporates direct and indirect consequences of foreign aid and also treating savings and growth as jointly dependent variables, Gupta obtained a negative effect of aid on savings both for the direct and total effects. He concluded that the effect of foreign capital on domestic savings cannot be unambiguously stated because the results obtained are very sensitive to the form of equation used.

Mosley (1980) pointed out that none of the estimated equations offers any kind of lag structure relating to the independent and dependent variable. Using a lagged response of GNP to aid. a two stage least squares regression analysis and testing the relationship for the 1960 and 1970s. he found that the overall positive effect of aid on growth adduced by Papanek for the 1960s was non- existent. For 83 developing countries he found a weak and insignificant but negative correlation between aid and growth. Supporting Griffin's

contention, he found a strong negative relationship between aid and saving. His conclusion on causality was however similar to those of Papanek, namely that the negative link was likely to be little more than a reflection of the fact that the poorest countries attract the most aid in proportion to their income and that the poorest countries save least. Thus it may not be a genuine causal relationship.

Mwau (1984) studied the impact of foreign capital inflows o the Kenyan economy. He estimated five equations using OLS to examine the effects of foreign capital inflows in investment, foreign trade and hence balance of trade, money supply and economic growth in Kenya. The findings of the study show that foreign capital inflows have some stimulatory effects on domestic investments with small effects on economic growth.

Bowles (1987) rejects the crowding out effect of domestic savings by foreign capital. Using ODA as a measure of foreign aid, he tests for Granger-causality between savings and aid in time series data for 20 less developed countries form 1960 through 1981.He forcefully counterclaim that the negative correlation between external capital flows and national savings cannot guarantee the existence of causality between these variables. In about half of the sample of 20 countries, no causality of any type could be inferred between foreign aid and domestic savings. In the remaining countries, causal relationships can be inferred but the direction of causality is mixed". His results are consistent with the hypothesis that, across countries aid does not systematically influence savings.

Synder (1990) questioned the results of Enos, Rahma and others which postulated a negative correlation between foreign aid and savings across countries. He advanced the hypothesis that, the negative association between savings and aid is the spurious result of omitted variable, a plausible candidate being per capita income. He therefore analyzed the effect of aid on savings with the explicit controls for the correlated effect of per capita income and other variables using a fixed effect model. The results showed a high correlation coefficient suggesting the importance of omitted variables. The per capita income was the only significant variable in the equation. The aid coefficient, though

small and non -significant was consistently negative. He concluded that there is little support for the Griffin-Enos argument that there is massive aid switching by developing countries. On contrary, aid has relatively little influence on domestic savings, arguing that the previous findings of a strong negative relationship can be explained in terms of a combination of factors: failure to control for omitted variables (especially per capita income), use of unsuitable aid proxy(foreign capital inflows), and problems with sample size and composition.

Boone (1996), using panel data for 91 countries covering the period 1971 90 investigated the impact of foreign aid on investment, consumption, and measures of well-being. He also examined whether aid effectiveness was conditional on political regime. Results indicate that foreign aid leads to increases in government consumption rather than increasing investment or benefiting the poor.

Edwards (1996) found one percent rise in foreign ~~saving~~ aid to have depressed domestic savings to the extent of 0.5 percent. He analyzed a panel data for 36 countries over the period 1970 to 1992, distinguishing between private and government savings. As explanatory variables, he takes a vector of lifecycle factors; monetary and fiscal variables (including measures of macroeconomic stability); external indicators, and political variables. The results were interesting, and Edwards highlighted the following conclusions: per capita income growth is an important determinant of private and public saving; higher government saving crowds out private saving, but less than proportionately; government social security systems affect private saving negatively; high foreign saving is associated with lower domestic saving, and lastly the level of financial development is an important determinant of private saving.

Dzogbenu (1996) carried out a study on the implications of foreign aid inflows on domestic savings in Ghana over the period 1966-1992.The study revealed that foreign aid had significant impact on domestic savings especially during the Economic Recovery Program (ERP) period. He concluded that since investment is a function of savings, then foreign aid has a positive impact on public investments. More aid therefore encourages rather than discourage savings. This conclusion clearly contradicts the strong conclusion

by Griffin (1970); Weisskopf (1972), among others that aid has a negative impact on domestic savings.

The World Bank 1998 report "assessing aid' examined the relationship between aid and growth in a large selection of developing countries and found no systematic association between the two. The report also analyzed the relationship between aid and growth in countries with good monetary, fiscal and trade policies and found a strong positive association indicating that aid is indeed effective where economies are supportive of growth.

Elbadawi and Mwega (1999) studied saving behaviour in SSA countries using cross sectional data. The study established that foreign aid Granger-causes a reduction in both savings and investments. Investments also granger- causes an increase in foreign aid, so that African countries that increase investment receive more aid. The fixed-effects results for the region also show that foreign aid ratio significantly Granger causes a reduction in the saving rate as expected from the permanent income hypothesis provided that aid is not entirely wasted. There is no significant bivariate relationship between aid and growth in the long-run as the Solow model predicts. Fixed effects also show that foreign aid ratio and the investment rate granger cause one another at the 10% level.

Different types of aid have different impacts on growth. In a country analysis of Cote d'Ivoire for the period 1975 to1999, Ouattara Bazoumana (2003) categorizes foreign aid into project aid, program aid, technical assistance and food aid. Using a disaggregation approach with auto regressive techniques, he finds that project aid displaces public savings, impact of program aid is almost neutral while technical assistance and food aid increase public savings. On the other hand, project aid and to a lesser extent, program aid, worsen the foreign dependence of Cote d'Ivoire while technical assistance and food aid reduce the gap.

Njeru (2004) did a research on the impact of foreign aid on public expenditure in Kenya using time series data for the period 1970-1999.He estimated equations linking foreign

aid and government expenditure. The empirical results show that the flow of foreign aid does influence government spending pattern. The findings indicate that foreign aid finances general government spending and not the targeted development activities.

Nyamwaya (2007) studied the effect of foreign aid on Hum development indicators in Kenya. He analyzed the effect of foreign aid on three human development indicators namely; life expectancy, secondary school enrolment and infant mortality rate. The results show that foreign aid impacts positively on secondary school enrolment and life expectancy rate and negatively on infant mortality rate. The positive effect of foreign aid on development outcomes contrasts with other existing literature on the impact of aid on growth. He concluded that the contrast would be explained by the fact that the study focused on the impact of aid on human development and how aid ay promote investment in human capital while the existing studies have focused on the impact of foreign aid on physical capital.

2.3 Overview of the Literature

Theoretically, foreign aid inflows are expected to result in an increase in domestic savings, thus providing the necessary investible resources for investment in recipient countries and hence growth. The foregoing analysis shows that it is difficult to generalize overtime or between countries about the inter relationship between domestic savings and foreign aid, because many factors may influence them (in opposite directions) without suggesting any causal connection between them. The issues raised in the literature and empirical evidence reviewed above, has highlighted the weaknesses in the attempts made to build quantitative model to explain the expected aid- savings relationship.

The cross country tests run to analyze the impact of aid have not provided consistent results. Some of the results show that aid leads to a significant increase in domestic saving levels and a higher rate of economic growth, while others have shown the opposite. Some have ascribed the inconsistent results to omitted variables such as per capita income, political instability, and the use of unsuitable aid proxy in most of the studies.

This study will depart from the use of current account deficit as a proxy for aid by making use of ODA. This is a better measure of aid than current account position since it excludes private capital and short-term loans. To the best of my knowledge no attempt has been done to analyze the impact of foreign aid on domestic savings in Kenya. This study addresses this research gap.

CHAPTER THREE

METHODOLOGY

3.1 Theoretical framework

The two gap model propounded by Chenery and Strout (1966) provides a theoretical justification on provision of foreign assistance to developing countries. The model considers the effect of aid on a broad macroeconomic perspective in explaining how economic growth can be achieved. Even though it supports Harrod-Domar findings, its departure is on the argument that apart from inadequate domestic savings, investment in least developed countries in the early stages of development is limited by lack of exchange earnings required for importation of capital goods that are scarce in developing countries. Hence foreign aid is provided to fill the two gaps; saving-investment gap and the foreign exchange gap (trade gap).

The difference between the required investment and available amount of domestic savings gives us the savings gap defined as below

$I-S_d = FA$.....i

$I=S_d+FA$.....ii

Where I stands for required investment, S_d is domestic savings, FA is the amount of foreign resources and $I-S_d$ is the savings gap. The size of this gap provides an indication on the amount of foreign capital flows required to finance the investment. In this case, the shortfall in required investment is financed by foreign capital inflow (FA).

The gap model also recognizes that LDC's are relatively less endowed with capital resources most of which has to be imported. Countries are encouraged to generate enough export earnings for importing the required capital. However, efforts to generate these earnings are hampered by low prices fetched on international markets as most export goods from these countries are agricultural based. The shortfall in export earnings then is

complemented by foreign resources to close the trade gap and can be shown by using the trade balance below

X- M=FA.....iii

X and M are total exports and imports respectively. Foreign aid in this case ensures that the economy has raised enough resources to purchase the required capital for investment. In the final analysis, the two gaps are essentially supposed to be equal.

FA=X- M=I- S_d.....iv

3.2 Model Specification

This study will borrow Outtara Bazoumana (2003) model which is an extension of Morisset (1989) model by taking into account factors that determine the capacity to save (GDP growth) and factors that determine the willingness to save (interest rate, inflation).In addition to these variables, aid and exports are also included. The savings model to be estimated is, therefore, assumed to take the following functional form:

$$S = \alpha + \beta_1 GP + \beta_2 INF + \beta_3 IR + \beta_4 AID + \beta_5 EX + U$$

Where,

S= Gross Domestic savings as a ratio of GDP

α =Other factors explaining savings

GP = Annual growth rate of GDP

INF =Inflation rate

IR= Interest rate

Aid =Aid inflows as a ratio of GDP

EX= Exports as a ratio of GDP

β =Explanatory Coefficients

U =error term

The ***a priori*** impact of aid as envisaged in the two gap model is expected to be positive since aid supplements domestic savings and foreign exchange shortages. As for income

growth. the life-cycle hypothesis of saving suggests that savings ratio tend to increase with the growth rate of income because the higher the growth rate, the greater the gap between the target levels of consumption of the current generation of working households and dis-saving of retired people from a less prosperous generation (see Modigliani and Brumberg, 1954).

The impact of interest rate on domestic savings would depend on which of the substitution or income effect dominates. The substitution effect of a rise in the interest rate tends to promote savings while the income effect tends to reduce it. Along this line, Fry (1995) argues that changes in the real interest rate might not have a significant effect on domestic savings. The impact of the rate of inflation on domestic savings is ambiguous. High inflation affects negatively real money balance and this could lead to an increase in savings if individuals wish to reinstate their real money balances; however, higher inflation may discourage savings as its real value is falling (Hussein and Thirlwall, 1999).

Finally, the impact of exports is expected to be positive. Lee (1971), Chenery and Eckstein (1970) proposed that rapidly expanding exports can raise savings, because of a higher propensity to save in the export sector, the importance of export taxes for government revenues, the positive influence the tradable good sector can exert on marginal saving propensities in other sectors that benefit as a result of linkages and a more efficient allocation of resources.

3.3 Model estimation

The model will be estimated using ordinary least squares (OLS) estimation technique since it gives the best-unbiased estimates of the parameter, it has widely been used and practically easier to apply in the time series data used in this study. We regress each of the explanatory variables on the dependent variable so as to get the direction and magnitude of the impact. These effects are shown by respective coefficients which will indicate both the direction and magnitude.

3.4 Testing for stationarity

The study will use time series data and therefore, we need to determine whether the variables in question are stationary or non-stationary. Stationary series have finite variance, transitory innovations from the mean and a tendency to return to its mean value as opposed to non-stationary series. We thus need to ensure that the variables we want to estimate have their means and variances as well defined constants independent of time. This is the case with stationary series.

The use of OLS to estimate relationships of variables of a non-stationary series is likely to have misleading inferences which appear either as spurious regressions or inconsistent regression problems. Conventional tests of hypothesis based on statistics computed from such variables are likely to be biased towards rejecting the null hypothesis even when it should in reality be accepted. We will use Augmented Dickey Fuller to test for stationarity.

3.5 Testing for cointegration

Cointegration is a technique used to estimate equilibrium or long-run parameters in relationships with variables in a non-stationary series. This technique enables us to utilize the estimated long-run parameters into the estimation of the short-run equilibrium relationships.

Before we test for cointegration we need to determine the order of integration of the individual time series. According to Granger (1986) and Engel and Granger (1987), a non-stationary time series x_t is said to be integrated of order d or I (d) if it achieves stationary after being differentiated d times. Cointegration implies that even though the series are non-stationary there exists a linear combination that is itself stationary. Cointegration also implies that I(1) variables can be estimated by OLS method to produce an OLS estimator of β that is super consistent in the sense that as that sample size grows larger, the estimator of β converges to its true value much faster.

To test for cointegration, we will use Engel-Granger (EG) two-step method. This involves testing for unit roots in the residuals of the cointegrating relationships. The null hypothesis is that the residuals are non-stationary (have unit roots) against the alternative of stationary residuals. We will use Augmented Dickey Fuller method to test for unit roots in the residuals of cointegrating relationships.

Using the long-run model, we will proceed to construct an error correction term, which is used together with stationary variables in cointegrating relationships, to construct the error correction model (ECM) which integrates shot run and long-run dynamics of the model. The coefficient of the ECT should be negative and significant if the disequilibrium is to be corrected in the subsequent period and the long-run equilibrium restored. This coefficient represents the speed of adjustment to the long-run equilibrium.

3.6 Data type and sources

This study will use time series data. Data for interest rates will be obtained from Central Bank of Kenya, for growth of GDP, inflation and savings will be obtained from Central Bureau of Statistics in the yearly economic surveys and statistical abstracts .Data for aid will be obtained from world tables, a publication of World Bank. The sample will run from 1970 to 2006 for all the data.

CHAPTER FOUR

EMPIRICAL FINDINGS AND DISCUSSION OF RESULTS

4.0 Introduction

This chapter presents the analysis of empirical results of the study.

4.1 Descriptive statistics

Its important to examine whether the data exhibits normality because most economic data is usually skewed due to the presence of outliers and the fact that most of the data has a clear floor but no definite ceiling. The Jarque-bera statistics is used to test normality of the series. It utilizes the mean based coefficients of skewness and kurtosis to check normality of the variables used. Skewness is the tilt of the distribution and should range within -2 and +2 while kurtosis is the peakedness of the distribution and should range within -3 and +3 for normally distributed series. If the probability value is less than the Jarque-bera chi-square at 5% level of significance the null hypothesis is not rejected.Table 4.1 below shows the summary of the descriptive statistics of the data used in the study. The normality test shows that the variables Gdp, ex, sav and int are normally distributed while inf and aid are not normally distributed.

Table 4.1 Summary of Descriptive Statistics

Date: 04/23/08
Time: 13:25
Sample: 1970 2006

	GDP	SAV	EX	INF	INT	AID
Mean	3.824324	17.27297	27.73514	12.98919	9.276486	9.320541
Median	4.200000	18.50000	26.80000	11.20000	8.850000	7.800000
Maximum	8.200000	27.00000	35.00000	46.00000	20.80000	22.90000
Minimum	-0.200000	3.800000	22.70000	2.000000	2.430000	4.100000
Std. Dev.	2.066049	5.359034	3.220612	8.009674	5.064788	4.657855
Skewness	-0.126882	-0.801332	0.710869	2.187459	0.517967	1.224923
Kurtosis	2.425339	3.142695	2.631570	9.276430	2.167136	3.954404
Jarque-Bera	0.608390	3.991207	3.325496	9.023913	2.723851	10.65697
Probability	0.737717	0.135932	0.189617	0.000000	0.256167	0.004851
Observations	37	37	37	37	37	37

Correlation matrix is an important indicator that tests the linear relationship between the explanatory variables. It also helps in determining the strength of the variables in the model. This helps to in deciding which variables to drop from the equation. Table 4.2 shows the correlation matrix of the variables. The table shows that there is positive correlation between the independent variable and the dependent variables. Aid is highly correlated to inflation and interest rates hence indicating a problem of multicollinearity.

Table 4.2 Correlation matrix

	SAV	INT	INF	GDP	EX	AID
SAV	1.000000					
INT	0.010890	1.000000				
INF	0.335462	0.499873	1.000000			
GDP	0.525183	-0.422317	-0.291251	1.000000		
EX	0.050818	-0.162733	-0.142513	0.184888	1.000000	
AID	0.310522	0.591106	0.629624	-0.259867	-0.306215	1.000000

4.2 Time series properties

Non-stationarity of the time series data is often regarded as a problem in empirical analysis since it leads to spurious regressions from which further inference is meaningless. Its therefore important to test for stationarity of the variables. The Augmented Dickey-Fuller (ADF) tests was used to test stationarity of the series. The table below shows the results of stationarity tests.

Table 4.3 Unit root tests

Variable	No. of lags	Critical values at 1%	Critical values at 5%	ADF	Order of Integration
Sav	1	-3.6353	-2.9499	-6.0504	I (1)
Aid	1	-3.6353	-2.9499	-5.1836	I(1)
Gdp	1	-3.6353	-2.9499	-3.9763	I(1)
Ex	1	-3.6353	-2.9499	-6.3611	I(1)
Inf	1	-3.6353	-2.9499	-4.7597	I(1)
Int	1	-3.6353	-2.9499	-3.8699	I(1)

The tests show that no variable is stationary in levels. All the variables are stationary after first differencing.

It is important to test whether the non stationary variables are cointegrated. Differencing of variables to achieve stationarity leads to loss of long-run properties. Cointegration implies that if there is a long-run relationship between two or more non-stationary variables, deviations from this long-run path are stationary.To establish this, the Engel-Granger two step procedure was used by generating residuals from the long-run equation of the non-stationary variables, which are then tested using ADF test. The results of cointegration test are shown below.

Table 4.4 Cointegrating regression, reporting long-run relationship

Dependent Variable: SAV
Method: Least Squares
Date: 05/06/08 Time: 09:55
Sample: 1970 2006
Included observations: 37

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.733921	6.297578	0.275331	0.7849
INT	-0.066329	0.164928	-0.402172	0.6903
INF	0.256333	0.103307	2.481283	0.0187
GDP	1.756281	0.338299	5.191500	0.0000
EX	0.103701	0.205890	0.503674	0.6181
AID	0.346765	0.196430	1.765336	0.0874

R-squared	0.580193	Mean dependent var	17.27297
Adjusted R-squared	0.512483	S.D. dependent var	5.359034
S.E. of regression	3.741809	Akaike info criterion	5.624409
Sum squared resid	434.0352	Schwarz criterion	5.885639
Log likelihood	-98.05157	F-statistic	8.568702
Durbin-Watson stat	1.337021	Prob(F-statistic)	0.000035

ECT is and is derived from the above cointegrating regression and expressed as;

ECT = 1*SAV-1.7339+0.0663*INT- 0.2563*INF-1.7562*GDP-0.1037*EX-0.3467*AID

The long run relationship for saving is thus:

Sav=1.7339*-0.0663*INT+0.2563*INF+1.7562*GDP+0.1037*EX+0.3467*AID

Table 4.5 unit root test on the error correction term

ADF Test Statistic	-3.372782	1%	Critical Value*	-3.6289
		5%	Critical Value	-2.9472
		10%	Critical Value	-2.6118

*MacKinnon critical values for rejection of hypothesis of a unit root.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RESID02)
Method: Least Squares
Date: 05/09/08 Time: 09:53
Sample(adjusted): 1972 2006
Included observations: 35 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID02(-1)	-0.695458	0.206197	-3.372782	0.0020
D(RESID02(-1))	0.030829	0.180235	0.171049	0.8653
C	-0.090405	0.586827	-0.154057	0.8785

R-squared	0.334087	Mean dependent var	-0.135515
Adjusted R-squared	0.292467	S.D. dependent var	4.126578
S.E. of regression	3.471070	Akaike info criterion	5.408619
Sum squared resid	385.5465	Schwarz criterion	5.541935
Log likelihood	-91.65084	F-statistic	8.027148
Durbin-Watson stat	1.949737	Prob(F-statistic)	0.001495

The critical values at 1%, 5% and 10% are -2.63947, -1.95214 and -1.62144 respectively. If the ADF test statistic is greater than the critical values then the residuals are non-stationary , the residuals could not become the error correction term and consequently an error correction model is not adopted. If the residuals are found to be stationary, ie the ADF statistic is less than the critical values at 1%, 5% and 10%, then the residuals become the error correction term and consequently an error correction formulation is adopted. The residuals above are found to be stationary at 1%, 5% and 10% levels of significance. Therefore the residuals become the error correction term and consequently, the error correction formulation is adopted.

4.3 Error Correction Modelling

After accepting cointegration, the next step is to re- specify the equation to include the error correction tem (ECT) which captures the long-run relationship. It reflects attempts to correct deviations from the long-run equilibrium and its coefficient can be interpreted as the speed of adjustment.

Table 4.6 Error correction model reporting the short-run relationship

Dependent Variable: DSAV
Method: Least Squares
Date: 07/01/08 Time: 14:28
Sample(adjusted) 1971 2006
Included observations: 36 after adjusting endpoints

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.076554	0.513958	-0.148950	0.8826
DAID	-0.084341	0.176569	-0.477666	0.0665
DEX	0.034143	0.164532	0.207518	0.8371
DGDP	1.379388	0.328309	4.201490	0.0002
DINF	0.181785	0.092290	1.969718	0.0585
DINT	0.105857	0.218966	0.483442	0.6324
RESID02_1	-0 588376	0.155953	-3.772767	0.0007

R-squared	0.491937	Mean dependent var	-0.102778
Adjusted R-squared	0.386821	S.D. dependent var	3.931447
S.E. of regression	3.078550	Akaike info criterion	5 259460
Sum squared resid	274 8466	Schwarz criterion	5.567366
Log likelihood	-87.67028	F-statistic	4 679927
Durbin-Watson stat	1.694268	Prob(F-statistic)	0.001923

Before embarking on the discussion of regression results, a number of diagnostic tests are performed inoder to evaluate their validity. These includes the LM-autocorrelation which supplements the DW-statistics, the ARCH (autoregressive conditional heteroscedasticity) which detects the problem of of heteroscedasticity, the Jaque-bera test for normality of the residuals and Ramsey RESET test for specification of regression. The results obtained revealed that the parameters were stable and the model could be used for forecasting at 5 percent significant level. Apart from the Jaque-bera test, which is distributed as chi-square statistics, the rest of the diagnostic tests utilized the f-statistics distribution.

The impact of foreign aid is positive and significant in the long run but negative and significant in the short run. In particular. increasing foreign aid by 1% of GDP leads to 0.084% decrease in domestic savings in the short run. Using Griffin's (1970) terminology one could be tempted to argue that foreign aid inflows displace domestic savings. However, foreign aid might reduce domestic savings for other reasons than the ones put forward by Griffin (1970). The financing of the recurrent costs of projects, for example, which is often left to the recipient government could reduce public savings and, hence, domestic savings. These activities would increase government consumption and thus reduce public savings. *Ceterisparibus*, this would tend to reduce domestic savings. It is also important to stress that the conclusions reached by Boone (1996) and *Assessing Aid*(World Bank 1998), who argue that aid is used to finance government consumption, is misleading because they do not highlight the fact that some of the consumption is in fact costs related to the sustainability of the projects (financed by aid).These findings of a negative impact of foreign aid on domestic savings are also consistent with the findings of Synder (1990), Edwards (1996) and Elbadawi and Mwega (1999).

The impact of growth in GDP on saving is positive and significant. A 1% increase in growth of GDP leads to 1.379% increase in domestic savings. The results show a very strong support for the life-cycle hypothesis of saving .This confirms the results by Hussein, K.A and Thriwall, A.P (1999), Dzogbenu (1996) and Bazoumana Quattara (2003) . According to the life cycle hypothesis, Savings ratio will then tend to rise with rise of the rate of growth of income because the higher the growth rate, the greater the gap between the target consumption levels of the current generation of working households and the dissaving of retired people from a less prosperous generation. Thus, countries with higher growth rates might be expected to have at least higher personal savings ratios than countries with lower growth rates. This could also be explained by stabilization and adjustment policies which have put emphasis on reducing public sector consumption which could have a positive effect on public savings, and thus domestic savings.

There is a mild positive and significant relation between domestic savings and inflation. A 1% increase in inflation leads to 0.181% increase in domestic savings. Inflation acts as a tax on money balance holdings, if individuals wish to restore the real value of their money balance holdings (the so-called real balance effect), saving will rise with the rate of inflation This also assumes that the reduction in public savings is more than offset by the increase in private sector savings.

Interest rates exert a negative and insignificant impact on domestic savings in the long-run. This might be explained by the fact that interest rates in Kenya were controlled until 1991. In the short-run the impact of interest rates is positive but insignificant as predicted by Fry (1995).Saving represents an intertemporal choice between consumption today and consumption tomorrow, It might be expected, therefore, that the price of present consumption, namely the rate of interest, will affect saving positively. This assumed positive relation also reflects the classical idea of the rate of interest as the reward for waiting, and lies behind the financial liberalisation programmes in developing countries which seek to raise the real interest rate in order to maximise saving, investment and growth

The impact of exports on domestic savings is positive but insignificant. This could be due to the fact that exports of goods and services in Kenya mainly comprise of agricultural products such as coffee and tea which have been subject to falling terms of trade over time. Furthermore general instability in prices and export volumes in the 1980s and 1990s could be responsible for the dismal influence of exports. Furthermore the general instability in prices and export volumes in the 1980s and 1990s.

The coefficient of the error correction term (ECM) is highly significant, reflecting the joint significance of the long-run coefficients. The speed of adjustment (the coefficient of the ECM term) is –0.588 implying that 58.8 percent of the previous year's domestic savings disequilibrium from its long run or equilibrium value will be corrected each year.

CHAPTER FIVE

CONCLUSIONS AND POLICY RECOMMENDATIONS

5.1 Conclusions

The study set out to establish the impact of foreign aid on domestic savings in Kenya over the period 1970-2006. The study was motivated by the low saving ratio which has been identified as one of the major constraints to future growth in Kenya, under Vision 2030 (GoK 2007).

The residual tests indicate the inferences based on the estimated coefficients are efficient. Stationarity tests indicate that all the variables have unit roots and they attain stationarity after first differencing thus are integrated of order one.

Little support is found for the Griffin-Enos argument that there is massive aid switching in LDCs. However, the negative and significant aid coefficient suggests that some aid-switching may be going on.

Foreign aid flows affect negatively and significantly domestic savings. Although this could be interpreted as foreign aid flows displace domestic savings, the paper warns that doing so might be misleading because this negative effect might be the result of public savings falling (due to the financing of recurrent costs of projects by recipient governments).

The results of the study indicate that aggregate income influences domestic savings positively and significantly. The results do suggest that, the strategy for increasing domestic savings in Kenya must pay attention to income variables and ways of increasing income.

Inflation has positively and significantly influenced domestic savings in Kenya. Inflation therefore appears to play a role in raising the domestic savings ratio, but it would be clearly unwise to recommend more inflation in most developing countries. Equally,

however, it would be a mistake for the government to attempt to squeeze inflation out of the system entirely. There is need to establish the optimal level of inflation that increases domestic savings.

5.2 Policy Recommendations

The study findings have important implications for policy formulation. Understanding the direction of causation between aid and savings is important for the formulation of policies that encourage domestic savings in Kenya.

Though the results have established an inverse relationship between aid and domestic savings, this does not imply that aid is pernicious to Kenya. What the results suggest is that there could be some areas particularly the frequency and the continuity of the inflow of aid, project and programme combination and the terms on which aid is granted, which could be improved upon so as to make the aid flow more effective.

There is need to investigate the influence of aid on government consumption expenditure outlay, whereby aid would be used for purposes other than development. Another factor to consider is the effect of tying aid. The leading OECD/DAC donor (Japan) and (UK) which are the leading aid contributors to Kenya also practice aid trying. If trying of aid is rampant in Kenya, it would explain the unusable equipment reported in development and government policy documents hence this would imply that the quality of aid has reduced its effectiveness.

There is need to priotize key sectors that drive the county's economic growth and hence tie aid to such carefully selected and monitored development projects and programmes which would lead to increase in economic growth and hence domestic savings. This would eventually ensure that the country is weaned from external dependency syndrome.

Since the results have indicated that growth in GDP has influenced domestic savings positively and significantly, the government should implement policies directed towards

improvement in people's income and creation of employment opportunities. Government policies should focus on ways of increasing GDP in Kenya in order to increase domestic savings in Kenya.

Since the period under study was characterized by aid volatility which could have led to the negative impact of aid on domestic savings, the government and donors should develop more stable relationships to ensure certainty in aid flows in order to increase its effectiveness.

Given the unpredictability of foreign aid inflows in Kenya, the government should be careful in relying on foreign aid for its development needs. This is because the impact of curtailment of the same will be far reaching. However, this should not be taken to mean completely doing away with foreign aid.

5.3 Limitations of the Study

A major limitation of the study is the problem of data reliability. Different data sources give different data for the same variable. Secondly, the independent variables specified in the model are treated as the only variables that determine and explain the dependent variable. There are other variable that affect savings but it is not possible to formulate a regression model capturing all the factors that determine domestic savings.

Since the different sources of foreign aid; bilateral and multilateral may have different impacts on domestic savings, there is need to investigate the effect of the different sources of aid on domestic savings. The investigation should also be extended to the impact of aid on public and private investments in Kenya.

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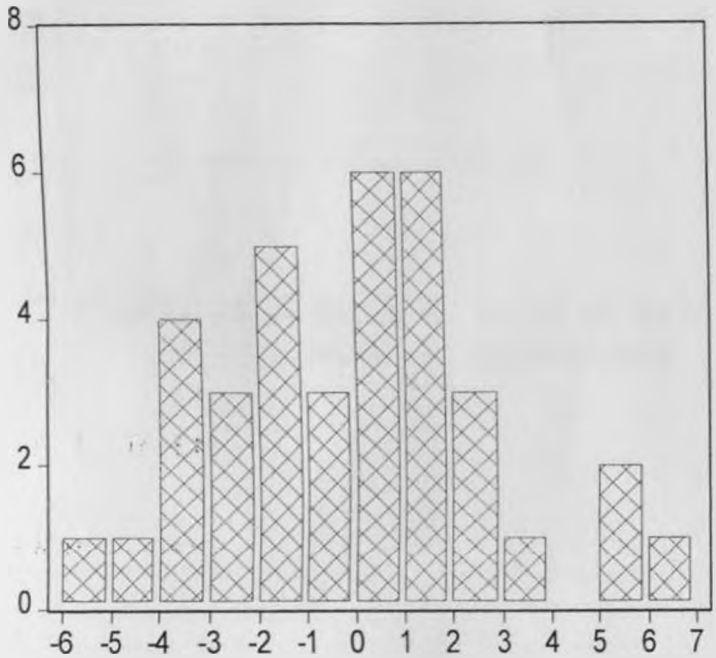
APPENDICES

Diagnostic tests

Normality test



Series: Residuals	
Sample 1971 2006	
Observations 36	
Mean	8.64E-17
Median	0.164355
Maximum	6.524100
Minimum	-5.190624
Std. Dev.	2.907362
Skewness	0.384167
Kurtosis	2.736590
Jarque-Bera	0.989581
Probability	0.609699

Breusch-Godfrey Serial Correlation LM Test:

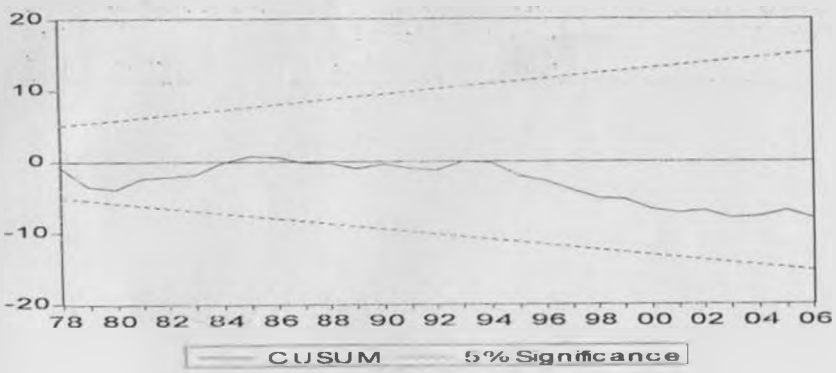
F-statistic	1.762198	Probability	0.195073
Obs*R-squared	2.131534	Probability	0.144296

ARCH Test:

F-statistic	0.193784	Probability	0.662656
Obs*R-squared	0.204328	Probability	0.651250

White Heteroskedasticity Test:

F-statistic	0.670862	Probability	0.761057
Obs*R-squared	9.333625	Probability	0.674201

Ramsey RESET Test:

F-statistic	1.856514	Probability	0.149611
Log likelihood ratio	9.363114	Probability	0.052637