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SCHOOL OF ECONOMICS

IMPACTS OF REMITTANCE INFLOWS ON DOMESTIC SAVINGS IN KENYA

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**THIS PROJECT IS SUBMITTED IN PARTIAL FULFILMENT OF THE
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2013

DECLARATION

This research proposal is my original work and has not been presented for academic purposes in any other University.

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This research project report has been submitted examination to the School of Economics, University of Nairobi with our approval as university supervisors.

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DEDICATION

I dedicate this project report to my family and friends who have been a source of inspiration and support all through my life. To you all-you are truly cherished for without you, I would not have accomplished this feat.

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I wish to acknowledge the enormous contribution made by several individuals in the course of this research work. I wish to recognize the work done by my supervisors- Dr Mbithi and W.O. Ochoro for their constant and analytical criticisms, corrections, guidance and encouragement, all through I admired their dedication. Special thanks go to my parents who have always been my model, and my colleagues who were handy in my research work. Last but not least, to God almighty for giving me continued good health as I pursued my academic goals.

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ACRONYMS/ABBREVIATIONS

ECM	Error Correction Model
IMF	International Monetary Fund
ODA	Official Development Assistance
FDI	Foreign Direct Investment
CBK	Central Bank of Kenya
M2	Money Supply

ABSTRACT

The main objective of this study was to find out the impacts of remittance on domestic savings levels in Kenya for the period between 1970- 2011. Secondary data sourced from the World Bank database and Kenya National Bureau of Statistics was used. The Error Correction Model (ECM) was used. Empirical results show that GDP per capita, exports and investment affect domestic savings positively and significantly. Real interest rate does not have a significant effect on domestic savings. Remittance affects positively and significantly domestic savings positively. We therefore conclude that remittance inflows affect positively the rate of domestic savings. We therefore recommend, among others, that government's effort should be geared towards improving the inward flow of remittances by considering a favorable tax treatment for migrant investment in securities and offer the same tax treatment offered to foreign investors for certain classes of investment.

CHAPTER ONE

1.0 INTRODUCTION

Workers' remittances are becoming an important monetary flow in the world today and their importance has increased considerably in recent years. According to the world bank estimates, remittance flows to developing countries recovered by 8% to USD 351 billion in 2011, compared to USD 129 billion global official development assistance in 2010(world bank 2010). The doubling of recorded remittances over the past five years is because of a combination of factors; better measurement of flows, increased scrutiny since the terrorist attacks of September 2001, and reduction in remittance costs and expanding networks in the money transfer industry. It is also due to depreciation of the US dollar (raising the dollar value of remittances in other currencies) and growth in the migrant stock and incomes. Despite the above increase, there is a likelihood that these flows could be more if those send in informal channels and those in kind were included (World Bank 2010, IMF 2009).For instance 75% of the remittance sent to Africa is informal (Freund and Spatafora, 2005).According to World Bank estimates the amount of remittance received by the developing countries were expected to grow to US\$346 billion by 2011 and US\$374 billion by 2012 (World Bank, 2011).

Compared to other capital flows, migrants' remittances are smaller than foreign direct investment (FDI) (83.7%), but significantly larger than portfolio investment flows, by more than eight times, and three times larger than official development assistance (ODA).Thus remittance remain a very important capital source for developing countries.

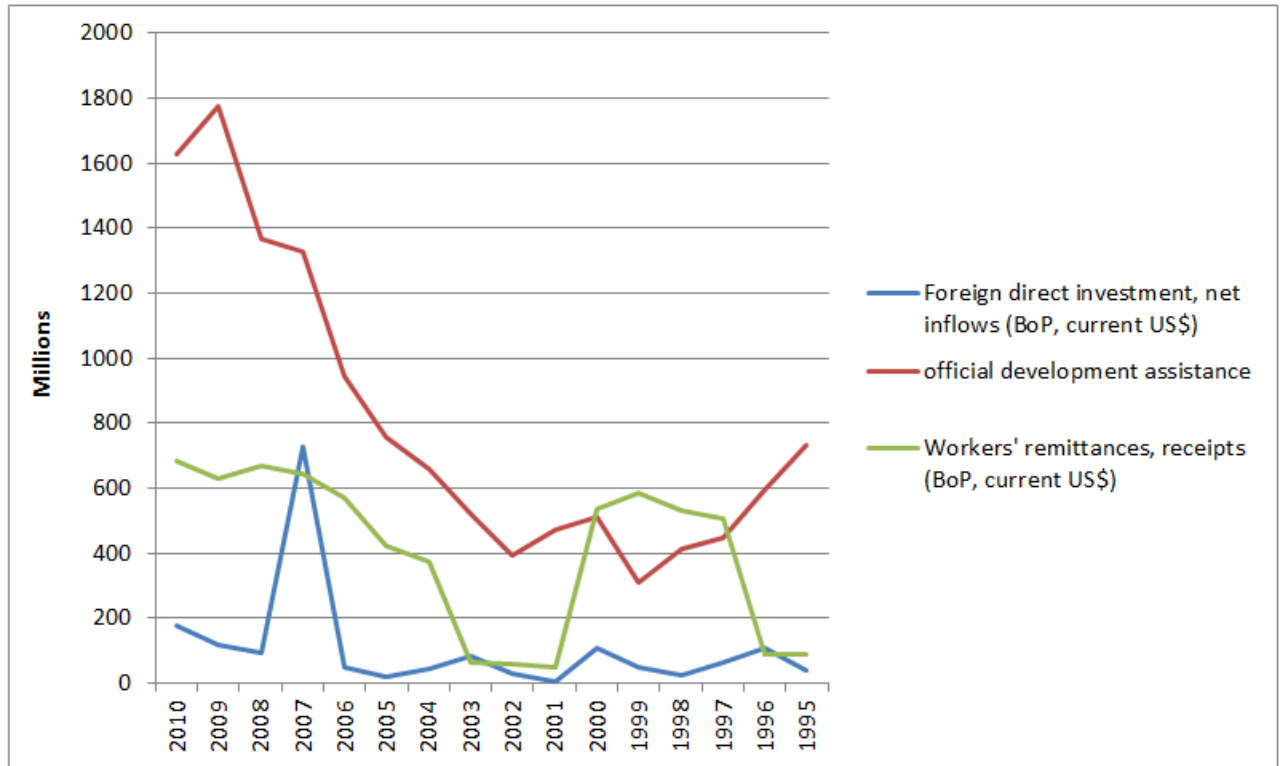
The total amount of remittance to Africa according to African Economic Outlook were about USD 41.6 billion in 2011 which was an increase of 5.9% over 2010. It's share to GDP across Africa remained stable at 2.3%. For different countries its share to GDP varied, for instance they were high for Lesotho at 28%, Gambia 11%, Senegal 10%, Togo 9% and Cape Verde at 8%. Lesotho has the second largest share of remittance to GDP in the world (African Economic Outlook 2012).

Due to their increasing size and stability unlike other capital inflows, they have achieved a greater position in the economy. They help increase the level of national income this is by providing the foreign exchange and raising national savings, which in turn will lead to investments. It's also a source of income that can be used to finance imports thus help in lowering the probability of current account reversals (Taylor et al. 1996 and 1996b).

They also help to stem investor panic when international reserves are taking a downward trend or external debt is rising thus improves a country's creditworthiness for external borrowing. As such, the inflow of remittance leads to acquisition of skills and techniques, improvement in health conditions, attainment of education and technological progress (Adams, 2005).

Figure 1 below shows the relationship between remittance and other inflows; foreign domestic inflows and

Figure 1: RELATIONSHIP BETWEEN FDI, ODA AND REMMITANCE IN KENYA



Source: IMF, 2012

From the above diagram we find that, migrants' remittances are smaller than foreign direct investment (FDI) but significantly larger official development assistance (ODA). Thus remittance remains a very important capital source for developing countries.

1.1 Remittance in Kenya

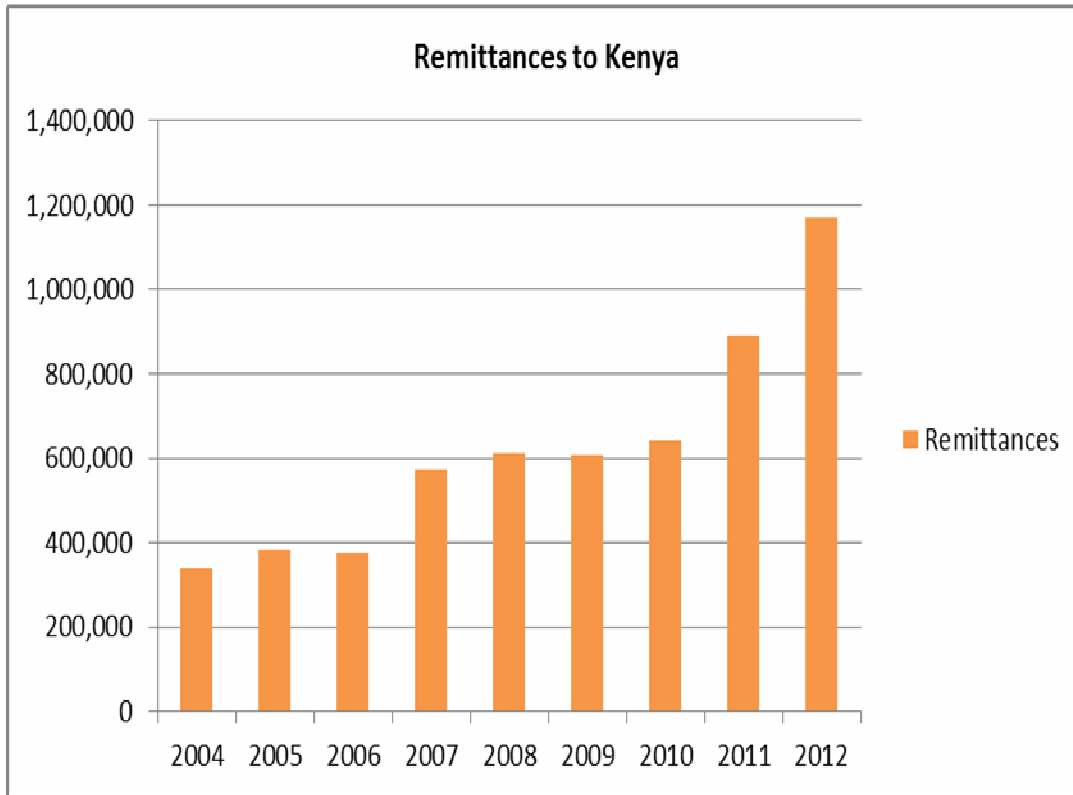
Many Kenyans have emigrated abroad and some of the major reasons for their emigration include high population growth, political instability especially the PEV, high levels of unemployment, intercommunity inequality and the high rates of unemployment. Although the government tries to capture all the data on emigrants, it remains a challenge because there are still a high number of undocumented Kenyans (Ghai, 2004).

According to estimates based on census data for the period 2000-2002 by the Centre on Migration, Globalization and Poverty from Sussex University; the United Kingdom had 14.5%, Tanzania 13.5%, United States of America 4.98%, Uganda 3.6% and Canada 2.2%. It also indicated that 41.5% of Kenyan emigrants resided in Africa, 37.9% in Europe, 14.4% in North America, 4.2% in Asia and 0.2% in Latin America. This shows that more than half of the emigrants from Kenya live in Europe and North America.

The magnitude of remittance to Kenya has always increased steadily over the years until 2002 when it dropped slightly but picked up again and continued to increase on yearly basis (World Bank staff calculations). According to CBK (2012), the 12-month cumulative average remittance have been on an upward trend. In April 2011 they increased by 33% from 2010, this was basically due to economic recovery that continued in Europe and North America. 56% of the remittance came from North America while 26% came from Europe in the same year (Central Bank of Kenya, website). In the year 2010, remittance as a percentage of GDP was at 5.4%.

Figure 2 shows the average remittance inflows to Kenya between the period 2004-2012

Figure 2: Trends in Remittances to Kenya



Source; CBK, 2012

From figure 2, we find that remittances inflows have been increasing over time. The weak Kenyan shilling in 2011 resulted in a temporary surge in remittances inflows to Kenya in 2011. Depreciation of the local currency had a strong impact on remittances by increasing the purchasing power of money sent home, creating an incentive to increase the amount of remittance.

This was mainly because it created incentives to send remittance to take advantage of the sale effect on local currency. In addition, remittances have remained resilient despite a volatile economic climate as Kenyans abroad send money to cushion their relatives.

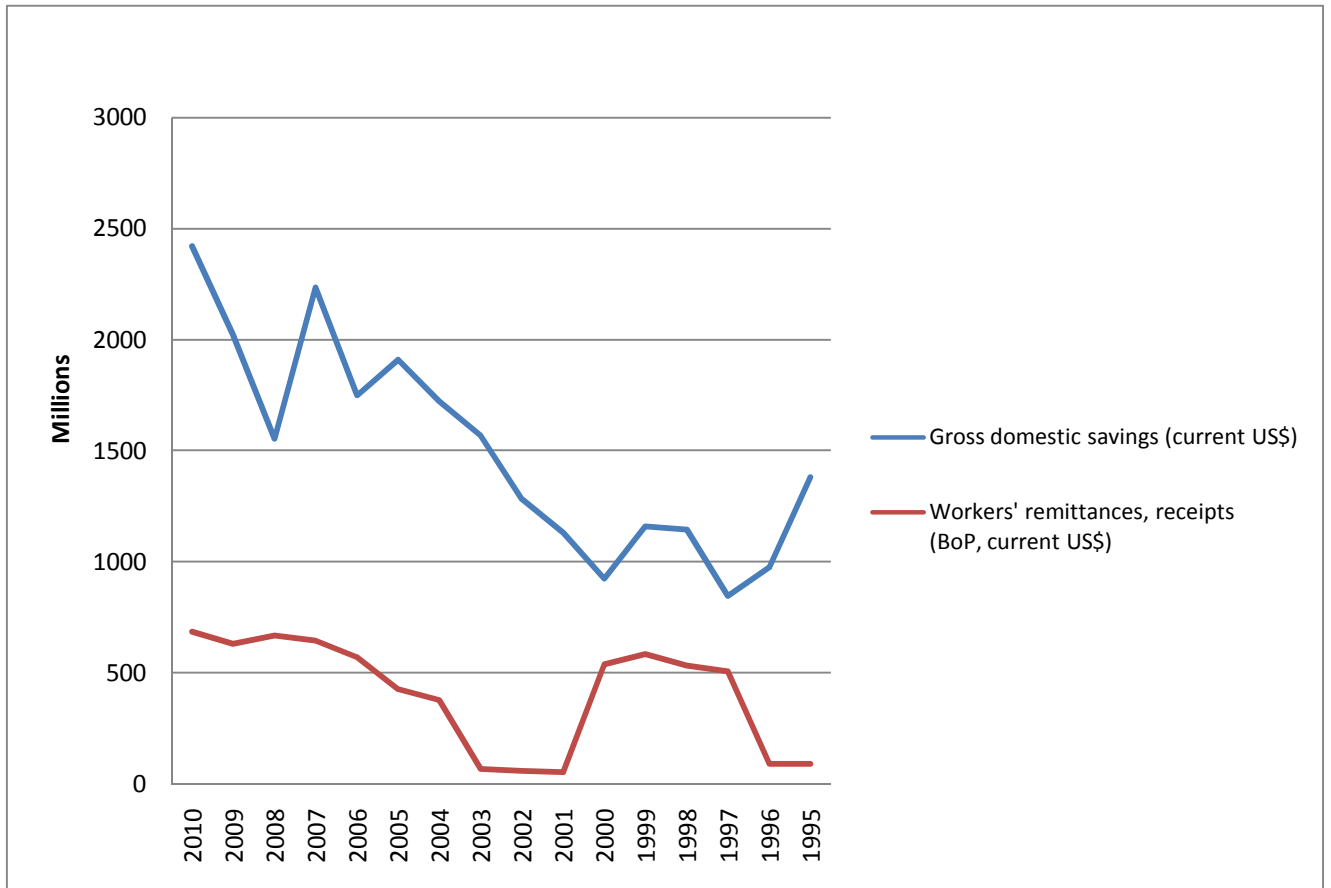
The increase in remittance has also been attributed to aggressive government efforts to draw Kenyans living in the Diaspora to invest in government securities.

There is an increasing awareness among the public authorities on the contribution of Diasporas' remittance to the country's development; they have a potential to generate positive impact on the recipient since they receive them directly and hence can use them according to their priority. For instance in Kenya ,the house hold use them to invest in real estate and property development, investment in business, finance education ,health and for basic consumption(Kiiru, 2010).Although this depends on political stability and sound economic policies.

Despite the upward trends in remittances to Kenya, there are factors, which in the end would lead to a decrease in the level of remittance. These factors include persistent unemployment in Europe and U.S, which affects employment prospects of existing migrants and hardening political attitudes towards new immigration. In addition, the issue of volatile exchange rate and uncertainty about the direction of oil prices is also another major factor.

Figure 3 below shows the relationship between remittance and savings in Kenya. From the diagram we find that there is a positive relationship between remittance and savings in Kenya

Figure3: Relationship between Remittance and Domestic savings



Source: IMF, Balance of Payments Statistics Yearbook, 2012;

1.2 Overview of savings in Kenya

Savings are key to increasing a country's capital-output ratio since its important both for investment and as an aspect for macroeconomic stabilization (Leff and Sato 1987). Domestic savings comprise of both public and private savings though the contribution of public savings in domestic savings is negligible but this can be improved by boosting national savings through a strong tax reform that includes financial liberalization, this process would bring about virtuous growth that would in turn increase private savings and majorly household savings. Mwega, Ngola and Mwangi (1990) found out that a larger amount of national savings in Kenya is mainly from the private sector.

One of the major determinants of savings is the interest rate. Low interest rate is believed to discourage savings mobilization. This in itself will eventually bring about negative impacts on investment and eventually on economic growth, McKinnon (1973). While high interest rate on bank deposits stimulates total domestic savings (Athukorala, 1998). This could be achieved by avoiding regulation of interest rates since this leads to the attainment of efficient allocation of financial resources (Shrestha and Chowdhry, 2007).

Economic theory, including Keynes, states that savings are an increasing function of income level. Hence, an increase in income attributable to remittance makes the economy to realize an excess of investment over domestic saving with a correspondence of excess imports over savings. Well-developed markets and financial institutions encourage savings by facilitating

banking services access. There is also evidence to suggest that controls on external trade and capital flows relatively contributes to a high private savings rate.

Credit markets play an important role in smoothing consumption and that a small fall or increase in income leads to disaving or saving in the economy (Deaton, 1992). Thus you will find that a variation over time of income majorly affects savings.

It should be understood that low savings relative to investment translates to persistent current account deficits. An increased current account deficit raises the magnitude of a country's vulnerability. Also through its impact on investment, domestic savings may help in maintaining high growth rates.

In Kenya the rate of domestic savings as always grown with the increase in the influx of remittance as shown in the diagram below

1.3 Savings in Kenya and Kenya's economy

Kenya's recent GDP growth can be characterized as sluggish at best and varying somewhat dramatically from year to year. The Gross Domestic Product (GDP) in Kenya expanded 0.1% in the second quarter of 2012 over the previous quarter. Historically, from 2005 until 2012, Kenya GDP Growth Rate averaged 1.11% reaching an all-time high of 4.30% in June of 2008 and a record low of -3.90% in March of 2008. This has been driven by the increase in the financial sector (8.2%), construction (8.1%) transport and communication (5.2%), tourist arrivals which increased by 13.6% which led to a further increase in hotels and restaurants by 6.4%.

Exports in Kenya increased to 43884 Million KES in August of 2012 from 42901.80 Million KES in July of 2012 (Central Bank of Kenya). From 1998 until 2012, Kenya Exports

averaged 22128.42 Million KES reaching an all- time high in August of 2011 and a record low in January of 1999. Agricultural products are central to Kenya's export industry with horticultural and tea being the most important. Other export items include textiles, coffee, tobacco, iron and steel products, petroleum products, cement. Kenya main exports partners are UK, Netherlands, Uganda, Tanzania, United States and Pakistan.

The factors that have contributed to slowdown in economic growth include higher global fuel prices which increased by 37.4% which led to an increase in its imports to 42.2%. There has also been escalation in food prices. It also can be attributed to the drought in the Horn of Africa that has lead to massive influx of refugees and significant loss of livestock. There is also the Euro crisis, which created uncertainty in global markets and the increased currency volatility, which affected the export sector. The increase in inflation which is mainly due to high food and fuel prices, this causes the poor to spend a significant amount of their income on food and transportation

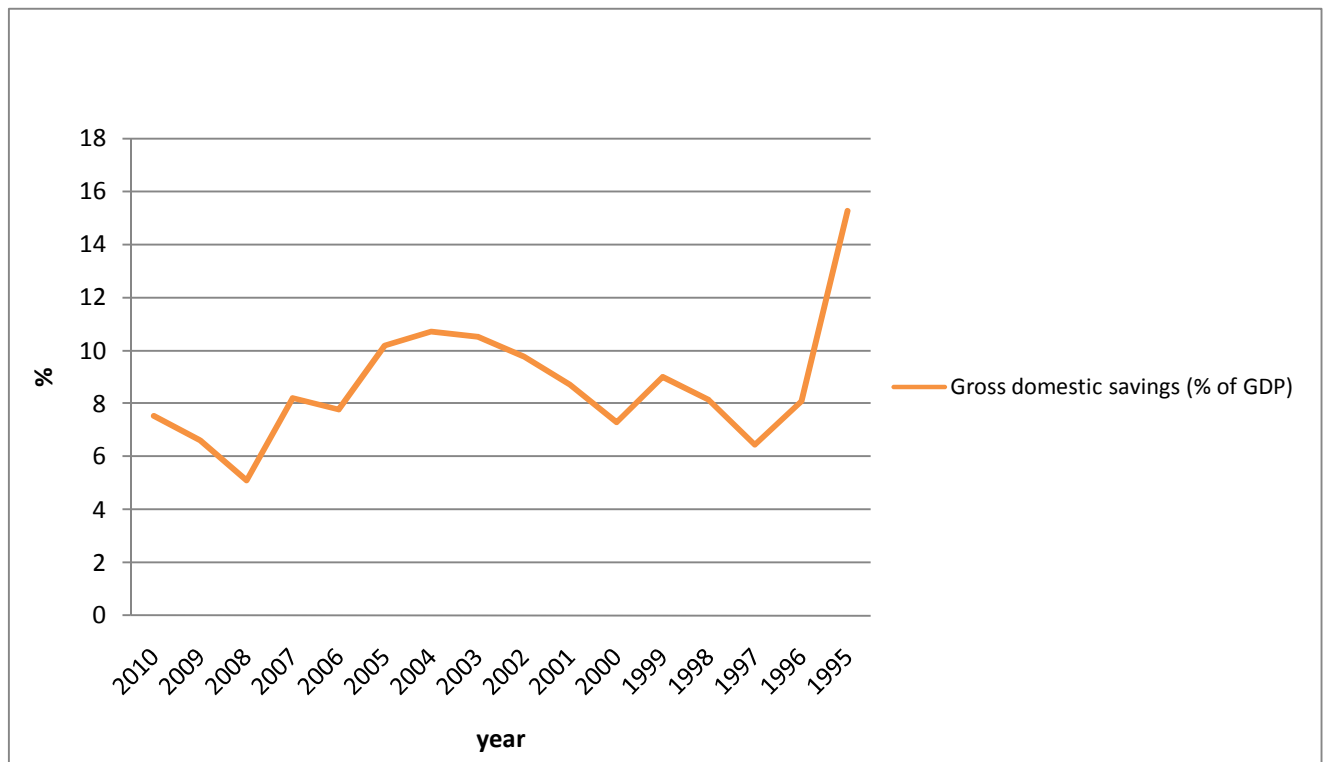
The government Debt to GDP has always remained high at an average rate of 48.90% of the country's Gross Domestic Product. Investors to measure a country's ability to make future payments on its debt, thus affecting the country borrowing costs and government bond yields, use this.

Savings levels in Kenya have been declining over time for instance between the period 1993-2000, the average domestic savings declined from 15.9% to 10.4%. Thus, the government policy should aim at increasing and stabilizing domestic savings over time, these include

policies that encourage an increase in savings and reduction in consumption. These policies include reduction in taxes. This will have the effect of increasing both consumption and savings but in the end, it will lead to increase in current account deficits. The other means is to use the tax policy to encourage Kenyans to save rather than consume by increasing consumption taxes and decreasing taxes on savings, the main limitation is the fact that Kenya is a developing economy and a large proportion of its population is living below the poverty level and this will limit access to basic goods.

Gross domestic savings as a percentage of GDP has always grown over time as shown in the figure 4 below.

Figure 4: Gross Domestic savings (% of GDP)



Source: World Bank (2012)

1.4 Problem statement

On the current debate on migration and development, many researchers have pointed out that the way in which migrants and households spend remittances have a significant effect on the development of local economies. In the 70s until the late 80s, the economic literature has not found a positive relationship between remittances and development, arguing that remittances are mainly used for subsistence consumption, non-productive investments, repayment of debts, and that these kinds of expenditures tend to have little positive impact on local economies development. Rempel and Lobdell (1978) note that remittances are mainly devoted to daily consumption needs. Lipton (1980) estimates that purchases of consumer goods related to daily needs absorb about 90% of remittances received.

However, more recent studies conducted in most case for Latin America and Asia found that migrants and households spend a share of remittances on investment goods (i.e. education, housing and small business),and that these types of expenses would strengthen the human and physical capital of the recipient countries. My study would like to show that remittance is not only used for consumption but is indeed invested on capital goods e.g. housing and out of its multiplier effect it leads to an increase in investment and hence savings.

1.5 Objectives

The overall objective of the study was to analyze the impacts of remittance on the level of domestic savings in Kenya. The specific objectives were:

- (a) To determine the impacts of remittance on domestic savings in Kenya.
- (b) To establish the effects of remittance on economic growth in Kenya
- (c) To draw policy implications from the study findings

1.6 Significance of the study

Past studies have arrived at varying conclusions over the effect remittances has had on Kenya over the years. Supporters of remittances believe that growth and poverty reduction can only arise when there are remittances. However, critics have disputed this adding there has been no strong link between remittance and economic expansion since most of it is only used in consumption. It is also believed that remittance reduce the rate of domestic savings. It is such varying conclusions that give credence to this study which seeks to establish how remittance has impacted on savings.

The findings from this research can be applied to help guide on use of remittance as well as help shape public policy as regard to remittance inflows. Additionally, the conclusions made in this study can provide a basis for further academic research on public financial management and policy.

A number of scholars have delved into this topic looking at various economies. Previous country specific studies have considered regression of remittance on growth only. As such this research will seek to go beyond this to find out the link between remittance and domestic savings. It is hoped that the findings of the study will help in formulating appropriate policies and programs to stimulate economic expansion.

CHAPTER TWO

2.0 LITERATURE REVIEW

This section reviews the existing theoretical and empirical literature on the impacts of remittance on domestic saving

Theoretical literature

2.1.1 Theory of permanent income hypothesis

Friedman (1957) argues that people base consumption on what they consider their normal income. In doing this, they attempt to maintain a fairly constant standard of living even if though their income may vary considerably from month to month or year to year. As a result, increase or decrease in income that people see as temporary have little effect on the consumption spending. Their argument has come to be known as permanent income hypothesis. The idea behind this hypothesis is that consumption depends on what people expect to earn over a considerable period of time. As in the life cycle hypothesis, people smooth out fluctuations in income so that they save during periods of usually high income and dissave during periods of low income. In this hypothesis savings is influenced by both permanent and transitory component of income.

2.1.2 Theory of portfolio management choice

Remittances are not however only sent for the direct support of the family but some are a transfer of migrant savings for deposit, in a portfolio choice framework and for investment (Brown, 1994, p.363). This portion of remittances, for which the yield of savings or the return to investment count is expected to be positively related to the exchange rate and the home country interest rate. In this context, inflation plays a more complex role because apart

from changing the purchasing power of remittances, it is often taken as a sign of economic and political instability and scares away remittance.

2.1.3 Relative Income Hypothesis

Duesenberry (1942, 1952) propounded the relative income hypothesis which concerns savings and consumption in relation to the income of other household and past income. The first implies that the proportion of income consumed and saved remains constant provided that the household position on the income distribution curve holds constant in the long run. Higher up the income curve, however, there is a lower average propensity to consume but a higher propensity to save.

He shows that savings relationships are irreversible. He concludes that first, saving- income ratio is dependent on the ratio of current income to previous peak income and second, during periods of steadily rising income, the aggregate savings ratio is independent of income. He also concludes that secular relation between income and saving is one of the proportionality.

2.1.4 Absolute Income Hypothesis

Keynes (1963) claims that consumption and hence savings are related to current income, which could be remittance. He introduced a short –run consumption function that shows that as income increase people tend to save and increasing percentage of income (Branson, 1988). According to the theory an individual consumption increase at a decreasing rate as current and real income increase but savings increase at an increasing rate as disposable income increases . Thus, marginal propensity to consume and save varies with income. Then since

both consumption and savings are increasing functions of current income then investment and economic growth are a function of savings.

2.1.5 The McKinnon – Shaw Hypothesis

The seminal work of Shaw (1973) and McKinnon (1973) emphasized on the role of interest rates in mobilizing savings for production and investment. They suggested that financial repressions had retarded the growth of many less developed countries. The argument involved interest rate regulation and restrictions that lead to below market rates, which hamper the level of savings.

The hypothesis argues that oppressive regulations more especially with high levels of inflation in an economy kill the motives for individuals to save and invest in an economy. Deposit interest rate ceilings , maximum/ minimum lending rates, quantity restrictions on lending, lead to negative and unstable real interest rates which hinder savings mobilization and hence capital formation, which in turn hinders economic growth

2.2 Empirical literature

Balde (2010) investigated the macroeconomic impact of remittances on savings and investment in Sub-Saharan Africa (SSA).He analyzed comparatively the effectiveness of remittances and foreign aid (official development assistance) in promoting savings and investment. He used a respective sample of 37 and 34 SSA countries over the period 1980-2004. Using OLS and instrumental variables (2SLS) estimation methods. He found the coefficients of remittances to be 6 to 7 times higher than those of foreign aid. It also showed that a 10% increase in remittances increases savings by 7% while the same 10% increase in

foreign aid increases savings and investment by respectively 1.6 % and 1%. This showed that remittances are not entirely spent on basic consumption needs; but are also either saved or invested.

Azam and Shakeel (2012) analyzed the impact of foreign capital inflows on household saving of Pakistan. Multiple Regressions was applied to predict the relationship between foreign capital inflows and household savings. The foreign capital inflows considered here were foreign direct investment, remittance and foreign aid. The study used the data for the period of 1981-2010. The obtained results showed that foreign direct investment, remittances are having positive and significant impact on household saving but foreign aid is having negative and insignificant impact on household saving. Thus, for a developing country like Pakistan to increase its savings, then it should give importance to foreign direct investment and remittance.

Fernando and Eva (2008) investigated the microeconomic linkages between remittances and financial sector development. Using a detailed household survey for Moldova with propensity score matching (PSM) and instrumental variable (IV) estimation technique, we find that remittance-receiving families have a higher probability of having a bank account or high savings than non-receiving ones. For instance, it shows that households that receive remittances have higher shares of bank accounts (5.4% and 10.9% for the rural and urban area) or high savings (17.1% and 19.3%, respectively) than on bank accounts in Moldova.

Khan and Hye (2010) used the ARDL cointegration technique on annual time series data for the years 1988 to 2008 to examine the relationship between the financial sector reforms and

household savings in Pakistan. Empirical findings indicated that the financial liberalization index negatively created an impact on the household savings in the short-run. However, per-capital income, agriculture sector, GDP and remittances positively affected the household savings in the short-run, while the real deposit rate negatively affected the household savings in the end. It is important for the country to increase per-capital income, growth of agricultural sector and remittance that would contribute in enhancing household savings.

Arif (2009) analyzed the social and economic impacts of remittances on households. Data for this were obtained from Household Survey on Overseas Migrants and Remittances. Several factors were considered and they include migration process and its cost, methods used in money transfer. Results concluded that remittances are having positive significant impact on the savings of the migrants in their own home.

Zhongmin Wu et al. (2009) analyzed the impact of remittances on the savings behavior of rural households in China, using a cross-sectional survey. A sample of 1346 households was used for the study. The ordinary least squares estimation technique was used. The results suggested that the marginal propensity to save out of remittances is higher than any other sources of income.

Paolo Giuliano and Ruiz-Arranz (2005) examined the relationship between remittance and economic growth. They used cross-country data on remittances for 73 developing countries from 1975-2002. They carried out regression analysis in order to focus on a country's capacity to use remittances and its effectiveness. They found the marginal impact of remittances on growth to decrease with the level of financial development. They argue

remittances ease credit constraints in developing countries that do not have well-functioning financial markets, thus playing an important role in providing the initial start-up capital for productive investments.

Zieseimer (2008) using a dynamic panel data for about thirty years in two samples of countries with per capita income above and below \$1200 estimate analyzed the impact of worker remittances on savings, taxes, and public expenditures on education, all as a share of GDP. The study found out that taxes are reduced but remittances caused higher savings and an increase in expenditure on education

Horioka and Hagiwara (2011) tried to find out the determinants and long-term projections of saving rates in developing Asia. They presented data on trends over time in domestic saving rates in twelve economies in developing Asia during the 1966-2007 period and conducted an econometric analysis of the determinants of the trends. The variables considered were age structure of the population (especially the age dependency ratio), income levels, and the level of financial sector development. The results showed that both income levels and financial sector development were positive and significant while the age dependency ratio was negative.

Bwire et al (2007) analyzed the determinants of national savings in Uganda in which he used time series data for the period 1975-2006 which was taken from the International Finance Statistics published by the International Monetary Fund. Ordinary Least squares estimation was used and the Augmented Dickey Fuller (ADF) unit root testing procedure was applied to

test for stationarity since some of the variables were spuriously related. The variables considered for this research included past national savings levels, inflation rate, real exchange rate, and financial intermediation ratio and per capita income. The result showed that policies that promote financial sector development and macroeconomic stability in general must become a cornerstone of the efforts geared towards the promotion of national savings culture.

Mwega et al. (1990) undertook a study on the factors determining savings in Africa. The objective of this paper was to test, within Kenya's institutional framework whether an upward adjustment in real deposit rates significantly increases the private sector's financial and non-financial savings per McKinnon-Shaw hypothesis. The results fail to support and instead found that the private saving rate and the real demand for money are non-significantly responsive to a deposit rate of interest.

Uremadu(2007) investigated the core leading determinants of financial savings in Nigeria. He used time series data covering 21 years (1980-2001). OLS estimation technique is used for analysis. The variables considered in this research include GDP, total institutional savings, value of imports and exports, external debts, inflation rates and interest rates, broad money supply (M2) and GDP per capita. The result showed that M2, GDP per capita and interest rates were positive and significant while the rest were negative.

Horika and Wan (2006) analyzed the determinants of the household saving rate in China using a life cycle model and panel data on Chinese provinces for the period from 1995-2004 using China's household survey data. The findings found showed that China's household

savings rate has been high and rising and the main determinants are the lagged saving rate, the income growth rate, the real interest rate, and the inflation rate. However, the variables relating to the age structure of the population have the expected impact on the household saving rate in the least cases.

Athukorala and Sen (2004) analyzed the determinants of private saving in the process of economic development in the light of the Indian experience. Time series data for the period 1954-1998 was used. The methodology involved the estimation of a saving rate function derived within the life cycle framework. The variables included in the study were; per capita income, the real interest rate on bank deposits, the inflation rate, the terms of trade, remittances and bank density. The result pointed out that the real interest rate, growth and the level of per capita income, spread of banking facilities, and the rate of inflation as statistically significant and has a positive influence on domestic saving. Terms of trade changes and inward remittances by expatriate Indians seem to have a negative impact on the saving rate.

Waithima (2008) using annual time series data for the period 1960 to 2005 and the Hendry Model with a two-step method modeled a saving function for Kenya. GDP per capita is found to Granger cause private savings. There is always a double causality between GDS and investment. Four variables; GDP growth rate, import share, export share and population growth rate were found to have a significant long run effect on private saving.

Ahmad et al (2006) analyzed the behavior of household saving in Pakistan. He used the Augmented Dickey-Fuller (ADF) and Johansen-Juselius co-integration technique. He used time series data for the period 1972-2003. The variables considered in this research are dependency ratio, inflation rate, growth rate per capita income, per capita income, real interest rate and household saving as the dependent variable. Results showed that growth rate per capita, per capita income and inflation rate have significant positive impact on household savings, while dependency ratio have significant negative impact on household savings.

Kibet et al (2009) undertook a study on the factors of household savings in Nakuru District of Kenya. He sampled 359 respondents who included entrepreneurs, teachers and farmers. The least squared technique of estimation was used. The findings showed that the main factors that determine household savings are; household income, age and gender of household head, occupation, dependency ratio, level of education and credit access. This study proofed important for policy makers and financial institutions.

Kiplang'at (2012) analyzed the determinants of aggregate domestic private savings in Kenya. He used a model including variables identified from the permanent income hypothesis, the life cycle hypothesis and the simple Keynesian hypothesis. The study found out that deposit rate is an important factor explaining changes in private savings in Kenya.

Nwachukwu and Odigie (2011) studied on the impacts of income growth and real interest rate on domestic savings. They used time series data for the period 1970-2007. They analyzed using the error-correction modeling procedure. The study found out that income growth and real interest rate positively affects domestic savings. Sharma (2006) uses macro

level data to estimate the impact of remittances on GDP growth in Nepal. Using OLS regressions, she finds out that the effects of remittances on the GDP growth are negative. This she attributes to the fact that remittances are largely compensatory and have no effect on the savings and investments, thus resulting in the negative impacts on the country's economy.

2.3 Overview of Literature

The review has shown that empirical work on savings behavior has involved both single and country analysis. A number of factors have been identified as important in explaining savings behavior. This can be categorized into income variables, demographic variables, fiscal variables and variables that capture the financial system. Income variables include per capita income and growth in per capita income while financial system characteristics capture real deposit rate and degree of financial depth.

The relationship between remittance and domestic savings is mixed. For instance, some researchers find out that there is a negative relationship between savings and remittance while some find a positive relationship. My study is aimed at bringing forth the actual impact of remittance on domestic savings. In Kenya there has been no study done on the impacts of remittances on domestic savings, so my study is aimed.

CHAPTER THREE

3.0 METHODOLOGY

3.1. Theoretical foundation of the study

The theoretical underpinnings of this study are essentially based on the lifecycle hypothesis proposed by Modigliani and Brumberg (1954). This postulates that the consumption decisions of individuals are subject to an intertemporal decision-making process, the aim of which is to maximize utility. In its simplest form, the model divides the lifetime of individuals into a working period and a retirement period. The model predicts that consumption in a particular period depends on expectations about lifetime income. . Individuals smoothen consumption over their lifetimes, and are consequently, net savers during their working years and dis-savers during retirement. The major determinants of the saving rate are the rate of growth of per capita income, and the age structure of the population. It predicts that an increase in per capita income will increase the savings rate.

The other determinants of private saving suggested by the LCM are the real interest rate on bank deposit, and wealth. A higher interest rate increases the present price of consumption relative to the future price (the substitution effect), and thus provides an incentive to increase saving. A second consideration relates to the hypothesis of perfect capital markets on which the link between income growth and saving rate is based. Households can effectively smooth consumption over the lifetime only if they can freely borrow and lend within the limits of their lifetime budget. However, if the households are liquidity constrained (that is, they are unable to borrow freely against future income), saving behaviour could well be linked to current income rather than to lifetime income

A third issue relates to the role of inflation in determining saving. In the standard life-cycle model, the only impact of inflation on saving is through its role in determining real returns to saving (the real interest rate). This postulate is based on the implicit assumptions of inflation neutrality (the absence of money illusion) in saving behavior and the absence of the real balance effect of inflation. There future income streams and can thus lead to higher saving on precautionary grounds.

The fourth issue relates to the effect on saving behavior of changes in the external terms of trade (the ratio of an export price index to an import price index, popularly known as the terms of trade, TOT) The traditional explanation of the relationship between the terms of trade and private saving is rested on the Harberger- Laursen-Metzler hypothesis according to which a deterioration in the terms of trade, that is, a reduction in the price of domestically produced goods relative to that of foreign goods, reduces real income and hence saving.

One more explanatory variable is chosen in the light of the debate on the determination of domestic saving in Kenya, inward remittances by expatriate relative to income is considered. Since the mid-1970s, there has been a significant increase in inward remittances. It is generally asserted that most of remittance income is frittered away as wasteful consumption, and the demonstration effects of ostensible consumption by families of migrant workers have a profound unfavorable effect on the saving behaviour of other households as well, resulting in a negative effect on the domestic saving rate.

The Life Cycle Hypothesis can be explained by the equation

$$C = (W + RY) / T \dots \dots \dots (1)$$

Where W = Initial endowed wealth, R = Retirement age, Y = Income, and T = Number of years of the individual's lifespan.

Rewriting the equation or consumption function,

$$C = (1 / T) W + (R / T) Y \dots\dots\dots (2)$$

If every individual plans their consumption in such way, the aggregate consumption function of the economy, will take the form

$$C = aW + bY \dots\dots\dots (3)$$

Where parameter a is the marginal propensity to consume out of accumulated wealth and b is the marginal propensity to consume out of income

3.2 Model specification

Based on the above discussion on both the empirical and theoretical foundation of the study, the saving function for the ensuing empirical analysis can be specified as;

$$DS = \beta_0 + \beta_1 GDPGR + \beta_2 RNR + \beta_3 REM + \beta_4 INF + \beta_5 Inv + \beta_6 EXP + \epsilon \dots\dots\dots (4)$$

Where;

β_0 and β_1 for $i=1, 2,3,4,5$ are the intercept and slope coefficient respectively and

DSR-Domestic savings, they are calculated as GDP less final consumption expenditure (total consumption). Data are in current U.S. dollars.

GDPGR =Real GDP Growth Rate is based on constant local currency. GDP per capita is gross domestic product divided by midyear population and measured in current U.S. dollars

RNR =Real Interest, is the lending interest rate adjusted for inflation as measured by the GDP deflator.

REM =Remittance consist of all current transfers in cash or in kind made or received by resident households to or from nonresident households. They are measured in current U.S. dollars

INF =Real Rate of Inflation is measured by the annual growth rate of the GDP implicit deflator shows the rate of price change in the economy as a whole. The GDP implicit deflator is the ratio of GDP in current local currency to GDP in constant local currency

EXP = Terms of Trade equals capacity to import less exports of goods and services in constant prices. Data are in constant local currency.

ϵ =Error term

3.3 Data types and sources

In this study, we source data from the World Development Indicators a dataset compiled by the World Bank. The sample size ranges between 1980- 2010.

3.4 Some Priori Expectations

GDP growth

(Modigliani 1970, Maddison 1992, Bosworth 1993, and Carroll and Weil 1994) postulates that a higher growth would increase savings. This is because it is an important factor, creating a virtuous cycle in which rapid income growth makes it easy to save, and high saving feeds back through capital accumulation to promote further growth. Thus, we expect a positive relationship between GDP growth and savings

Inflation

In terms of inflation and uncertainty, the life cycle model posits that inflation affects savings through its role in the interest rates. This is based on the assumption of the absence of real balance effect of inflation and the non-existence of money illusions in people's savings behavior. Inflation brings about uncertainty and this may induce precautionary savings.

Exports

In general a change in terms of trade has an ambiguous effect on savings. The Harberger(1950) and Lausern-Meltzer(1950) effect holds that an improvement in terms of trade increase income and hence savings especially when the improvement is considered transitory and therefore not expected to last. With this kind of argument a positive relationship is expected between savings and growth in terms of trade. However it depends crucially on terms of trade shock. If expected to be permanent it would have limited impact on savings as postulated by the permanent income hypothesis.

Remittance

Despite some literature that shows, that remittance has no effect on savings, remittance positively and significantly influences savings. This is because they help relax liquidity constraints. Thus, we expect a positive relationship between remittance and domestic savings

Real Interest rate

As regards interest rates, the life cycle hypothesis predicts positive correlation between interest rate and savings. If a household is a net lender on the other hand, an increase in interest rate will increase life time income, and so increase consumption and reduce savings.

This in line with intertemporal model, the impact of interest rate on savings is ambiguous. The Mackinnon and Shaw doctrine, however postulates that under conditions of financial repression the substitution effect dominates the income effect.

3.5 Estimation Method

In order to understand the relationship between savings and remittances, time series modeling is employed. Times series modeling requires several procedures to be undertaken initially to determine the regression model to be estimated. The first step is to determine the stationarity or non stationarity of the time series. The second step involves establishing co-integration among non-stationary time series variables. If the times series are found to be stationary, ordinary least squares is used to estimate the regression equation. If the times series are found to have a unit root (non stationary) but are co integrated with the same order of co integration, error correction models may be used to determine to estimate the regression model. Finally, if the time series are non-stationary and non co integrated, “models in difference may be used to estimate the model.

The presence of a unit root can be tested using the Dickey Fuller test and the Augmented Dickey Fuller test. In these tests, the null hypothesis is the existence of a unit root while the alternative hypothesis is reversion to mean or stationarity. If the null hypothesis is rejected, the alternative hypothesis of stationarity is accepted and the regression model can be estimated using ordinary least squares method. The existence of a unit root makes it impossible to make any meaningful interpretation of the results of the regression model. According to Harris (1995, p.25), regression of non stationary time series which are not co

integrated may lead to spurious regression which “do not reflect long-run economic relationships but, rather, reflect the ‘common trends’ contained in most non-stationary time series.”

If the time series variables are found to possess a unit root, the next step is to establish whether they are co integrated. There are two tests for co integration: the Engle Granger test (1987) and the Johansen maximum likelihood test. This paper uses the Engle and Granger (1987) test. The Engle and Granger (1987) test is a two -step procedure. In the first step, the regression equation is estimated by ordinary least squares procedure and the residuals (error terms) from the regression are regressed again and tested for stationarity.

$$DS_t = \beta REM_t + u_t \dots\dots\dots (5)$$

In this case, the null hypothesis of no co integration is tested against the alternative hypothesis of co integration. In the second step, if the null hypothesis of no co integration is rejected, an error correction model (ECM) is estimated. According to Granger representation theorem, if two or more variables are found to be co integrated, then there exists an error correction model between them. The error correction model captures the short run dynamics of the model with the error correction term containing information about the long run relationship between the variables. The implication is that if the error correction term is significant, then co integration exists between the variables. The error correction model is constructed by replacing the coefficient with the estimated coefficient from the first equation.

$$\Delta DS_t = \alpha_1 \Delta REM_t + \alpha_2 (DS - \beta REM)_{t-1} + \varepsilon_t \dots\dots\dots (6)$$

Alternatively, the same can be achieved by substituting the residuals from step one in place of the error correction term (DS-βREM). The coefficient on the error correction term may

used in another test of co integration. This test is called the Bannerjee ECM test. The error correction term describes the speed of adjustment back to long run equilibrium after a temporary exogenous shock. The error correction term must be negative. This indicates a return to equilibrium. A positive sign indicates a move away from equilibrium.

CHAPTER FOUR: EMPIRICAL ESTIMATION AND RESULTS.

4.1 Introduction

This chapter shall present the results obtained from the empirical estimates, all the tests conducted will also be included as well as the interpretation of results in both the short run and long run models.

4.2 Descriptive Statistics.

In order to ensure that the data exhibited the right time series properties, a number of statistical tests were conducted before the data was subjected to regression namely: stationary tests, normality tests, as well as cointegration test. The first test that was conducted was the test for normality to ensure that the data that is used is normally distributed and that there is no presence of outliers. In order to test when the series used in the analysis is normally distributed this study adopted Jarque—Bera (Jarque, 1980) test statistic. Through this test statistic the study is able to measure the differences of both the skewness and kurtosis of the series from those of a normal distribution. Skewness is the tilt of distribution and in a normally distributed series it has a range of between -2 and +2 while kurtosis which basically measures the flatness of the series has a range of between -3 and +3 for normally distributed series.

Table4.1: A Summary of Descriptive Statistics for all the Variables

	ds	inv	inf	ri	exp	Rem	Gdp per capita
Mean	14.48	19.19	11.77	6.76	27.198	1.737	4.354
Median	16.5	19.885	10.418	5.585	27	1.45	4.1062
Kurtosis	0.2000	0.0495	0.0002	0.7327	0.2428	0.2754	0.0001
Skewness	0.6804	0.3376	0.000	0.4477	0.0368	0.1314	0.000
Maximum	27	26.4	45.98	21.096	39	4.2	22.17
Minimum	2	10.88	1.554	-7	20	-1	-4.655t
Std. dev	6.30	4.131	8.195	7.012	4.211	1.165	4.404
Jarque-Bera	5.37	4.76	23.86	0.72	5.48	3.71	23.65
Probability	0.0682	0.0923	0.000	0.6980	0.0646	0.1561	0
Observations	42	42	42	42	42	42	42

Source: Author's computation from STATA

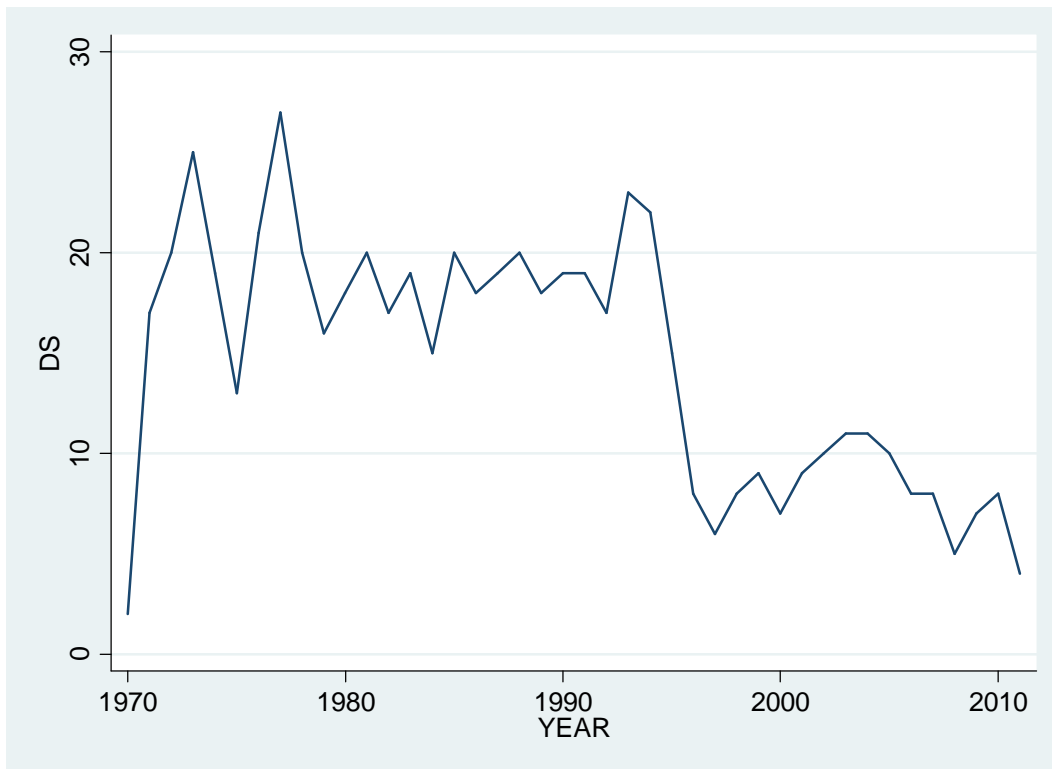
The normality test has the null hypothesis of residuals being normally distributed against the alternative of not being normally distributed and the null hypothesis is rejected if the probability value is less than the chi-square at the significant level of 5% then the stated null hypothesis is not rejected. This implies that a small probability value usually leads to the null hypothesis of normal distribution being accepted in the analysis. From the table all the variables have been found to be normally distributed since the Probability value of all the variables are less than the chi-square and therefore the null hypothesis is not rejected.

The table evidently shows that the standard deviations of all the variables are relatively small implying that these variables are not significantly detached from their mean values.

4.3 Graphical Presentation of the Data.

All the variables under study were subjected to a trend analysis in order to capture the movement as well as analyze any possible causes of such observed movements over the study period and the results are as presented below:

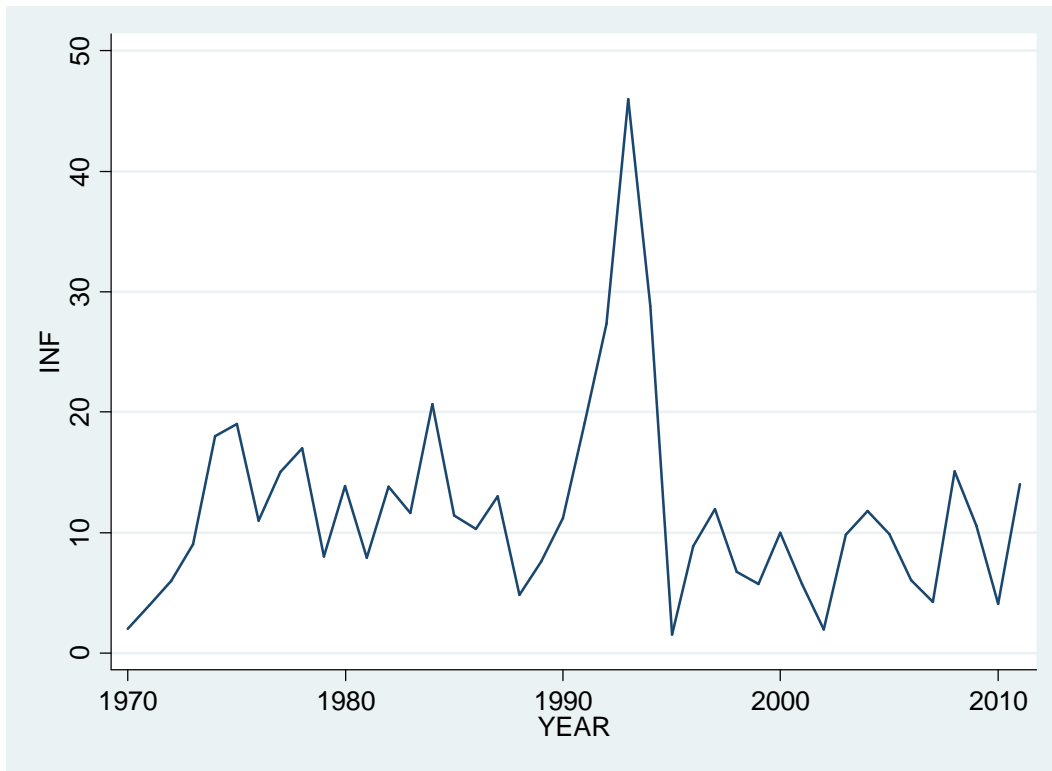
Figure 4.3.1 Trends in the growth of domestic savings



source: world bank

From the graph above we find that there has been no absolute trend on the level of domestic savings. But for the period between 1980- 1990, it has remained somehow constant.

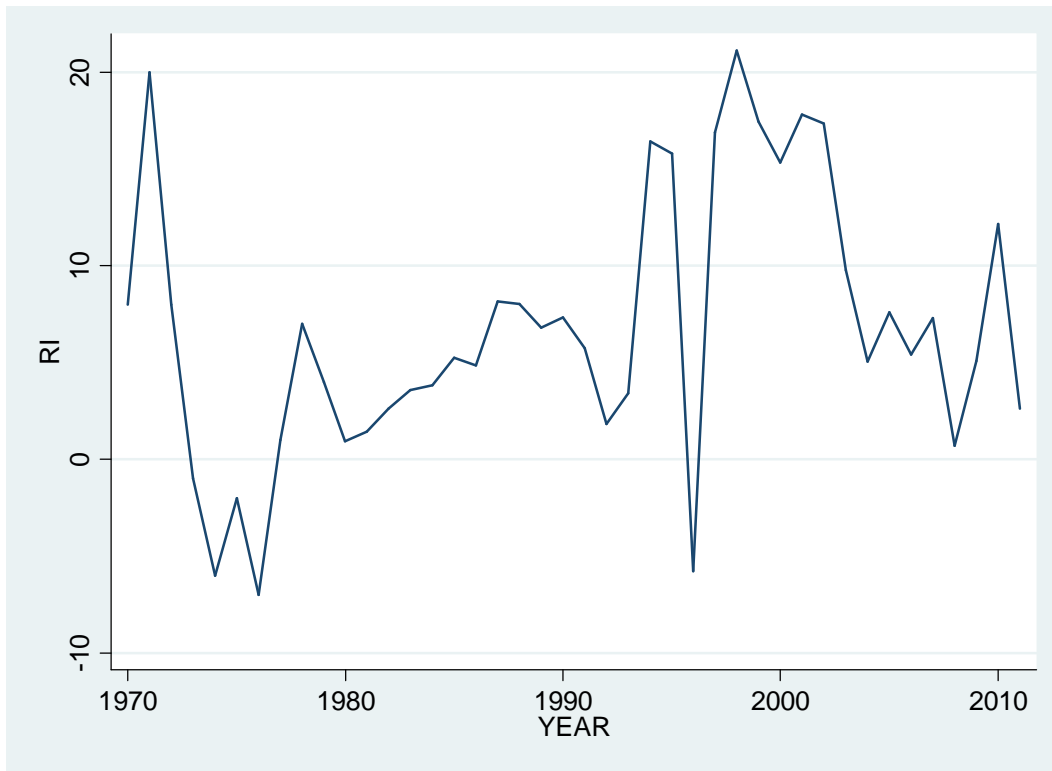
Figure 4.3.2 Trends in the growth of inflation



Source: world bank

From the above graph we find that the inflation rate increased from 1970 to mid 1970's, then began to be constant till around 1990 where it increased to a very high level. The main causes of inflation include determinants: exogenous factors (i.e. world food and fuel prices); structural characteristics (i.e. domestic production); policy variables (i.e monetary, fiscal and exchange rate policies).

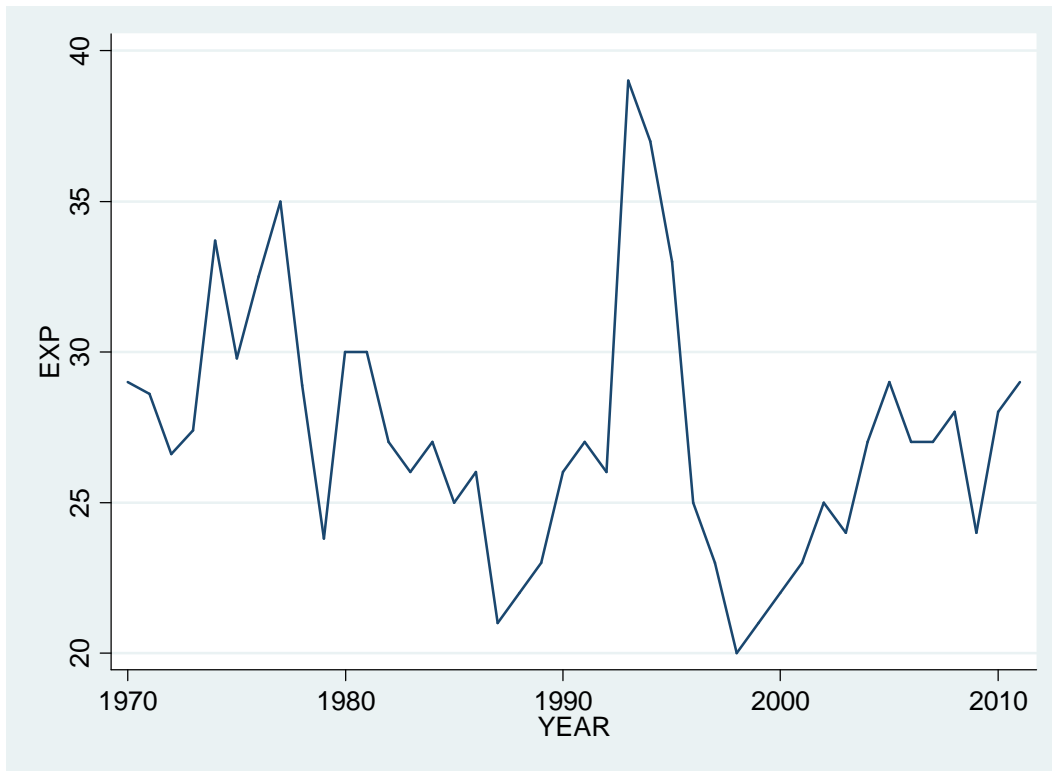
Figure 4.3.3 Trends in the growth of real interest rate



Source: world bank

According to the graph we can deduce that real interest rate decreased from around 1970 to almost 1975 then began to pick again. But decreased sharply between 1995- 1998, then increased till 2000 before decreasing again. The main increase in interest rates in Kenya is attributed to the yet to be gained efficiency and high intermediation costs.

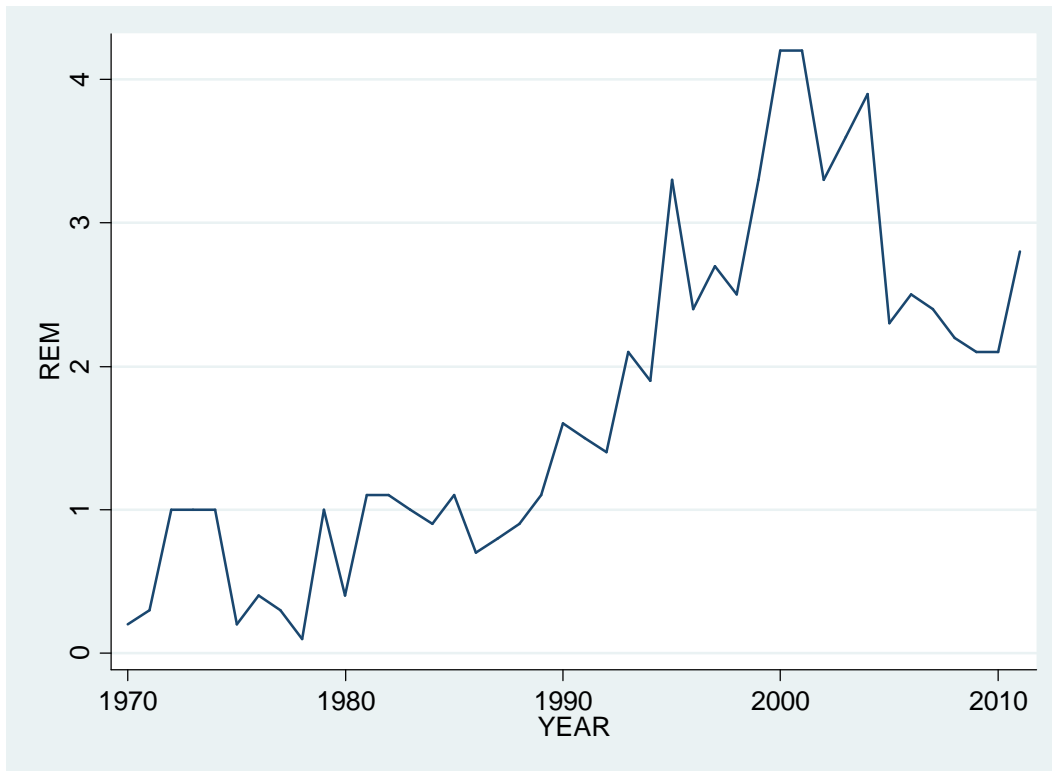
Figure4.3.4 Trends in the growth of exports



Source: world bank

Between the period 1974- 1978, Kenya was not doing well in the export sector mainly as a result of the decline in manufactured exports. Part of the decline was as a result of the consequence of incidental factors such as the breaking up of the East African Community, unfavorable domestic policies and the difficulties Kenyan exporters found in entering new markets. It can also be seen that exports increased towards 1990 until mid 1990's. There was also an increase between 2000 and 2005 which was mainly due to the increase in services exports, as well as the increase in manufactured exports.

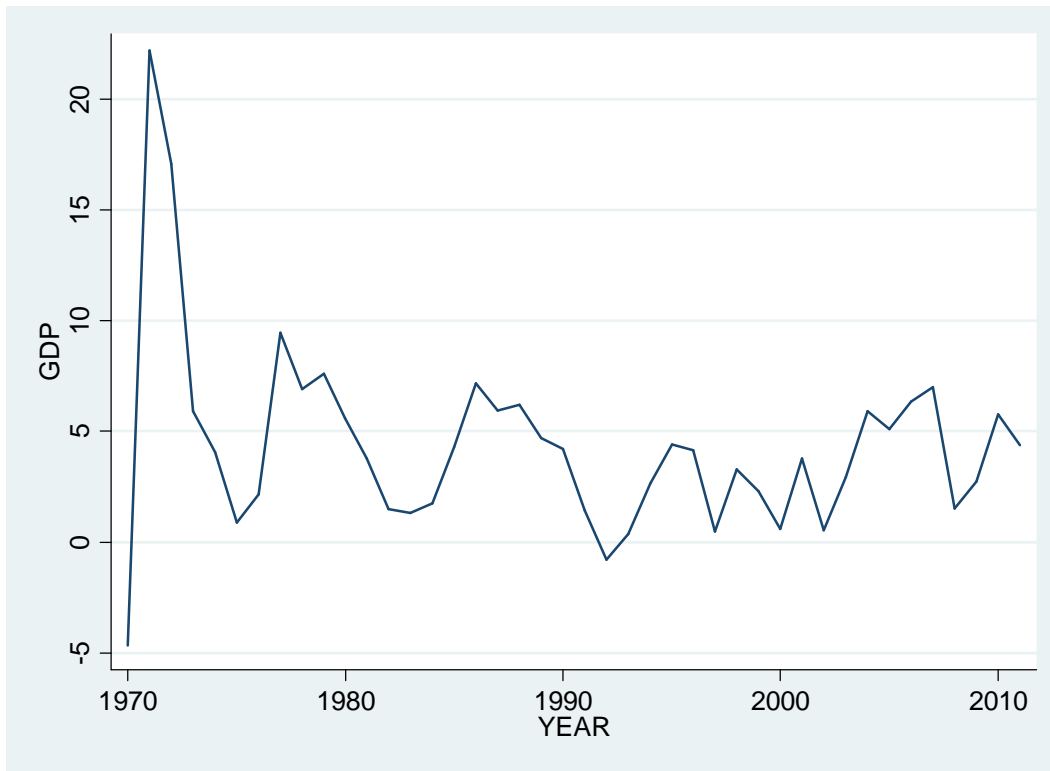
Figure 4.3.5 Trends in the growth of remittance



Source: world bank

Remittances to Kenya have been increasing continually over time. Though it reduced at some point in 2007. Increased inflows are attributed to better investment opportunities in the local market that persons in the diaspora could engage in including the infrastructural bond that had been issued targeting them. Also the sharp depreciation of the Kenyan currency relative to the US dollar created a sale –effect in the assets of Kenya. Thus the increase in purchasing power of each dollar of remittance may increase the incentive to remit to take advantage of the purchasing power of the home country.

Figure 4.3.6 Trends in the growth rate of GDP



Source: world bank

From the graph we can see that GDP grew from the period between 1970 to around 1975, this was because Kenya promoted rapid economic growth through public investment, encouragement of smallholder agricultural production, and incentives for industrial investment. Between 1974 and 1990, however, Kenya's economic performance declined. Kenya's inward-looking policy of import substitution and rising oil prices made Kenya's manufacturing sector uncompetitive. The government began a massive intrusion in the private sector. Lack of export incentives, tight import controls, and foreign exchange controls made the domestic environment for investment even less attractive. We can also deduce that from the period between 1991 to 1993, GDP was at its lowest and this led to the agricultural production and an increase in inflation.

4.4 Unit Root Test.

For time series data analysis the presence of unit root is major concern because its presence implies that the data that is being used is non stationary that is the means and variances are not constant. If non stationary data is used in the analysis it could lead to spurious regression whose results could be misleading and questionable and thus produce invalid conclusions. This study adopted Augmented Dickey-Fuller tests to test for Stationary. For a variable to be said to be cointegrated at order zero or 1 (0), then it should be stationary at levels and without differencing.

Table 4.2 the unit root test results with ADF at levels

Variable	ADF Statistics	Critical Value at 1%	Critical Value at 5%	Critical Value at 10%	Nature
ds	-0.399	-3.662	-2.964	-2.614	Non-stationary
inv	-1.315	-3.648	-2.958	-2.612	Non-stationary
inf	-3.988	-3.648	-2.958	-2.612	stationary
ri	-3.422	-3.648	-2.958	-2.612	Stationary
exp	-3.077	-3.648	-2.958	-2.612	Stationary
rem	-1.091	-3.655	-2.961	-2.613	Non-stationary
gdp	-6.637	-3.648	-2.958	-2.612	Stationary

*Source: STATA Note: *indicates the level significance*

From the table it can be seen that inf, ri, and gdp are the variables that are stationary at level. This is because ADF t-statistics is greater than the t-critical value at 1%, 5% and 10% level of significance, exp is also stationary at level because the ADF t-statistics is greater than the t-critical value at 5% and 10% level of significance The second step was to difference the variables there were not stationary at level and subject them to the same tests and the results are presented in the table below

Table 4.3 Unit root test after first difference.

Variable	ADF Statistics	Critical Value at 1%	Critical Value at 5%	Critical Value at 10%	Nature
ds	-7.053	-3.662	-2.964	-2.614	Stationary
inv	-5.939	-3.655	-2.961	-2.613	Stationary
rem	-5.093	-3.655	-2.961	-2.613	Stationary

Source: STATA

Here ds, inv and rem are now stationery after the first difference.

The variables which turn out to be stationary after first difference are said to be integrated of order one that is I (1).

4.5 Cointegration Analysis.

This analysis while maintaining stationarity in all the variables it does at the same time combines both short run and long run proprieties. Cointegration basically tries to establish whether there exist a long relationship between the dependent variable and its independent

variables. There are two main methods that can be used to test for cointegration namely Johansen approach as well as Engle-Granger two step approach. This study uses Johansen approach and for there to be cointegration among the variables in question then the trace statistic should be greater than the critical values. The null hypothesis is no rank and therefore no cointegration and from the results presented below the value of r is 3 meaning that we should reject the null hypothesis and accept the existence of cointegration since the trace statistic indicate that there are at least three cointegrating vectors in the study analysis. The presence of cointegration among the variables in question therefore means there is need to establish their relationship in the long run and the Error Correction Model (ECM) will provide a better fit for this kind of analysis.

Table 4.5 Cointegration Results

Maximum rank	LL	Parms	Eigen Value	Trace statistic	Critical value at 5%
0	-665.18241	56	.	230.4062	124.24
1	-614.15099	69	0.92204	128.3433	94.15
2	-590.10636	80	0.69948	80.2541	68.52
3	-571.79284	89	0.59975	43.6271*	47.21
4	-556.95665	96	0.52375	13.9547	29.68
5	-552.68523	101	0.19231	5.4118	15.41
6	-550.76602	104	0.09150	1.5734	3.76
7	-549.97931	105	0.03857		

Source: STATA.

4.6 Structural Analysis

In this section we shall present the regression results of the equations specified in chapter three for both the long run as well as the short run models.

4.6.1 The long run model

Below is the long run model capturing the relationship between the dependent variable Gross domestic savings and the explanatory variables namely, INV, INF, RI, EXP, REM and GDP.

Table 4.6 Results for the long run model

Variable	Coef.	Std. Err	t	p>/t/	95% conf.	Interval
Inv	.364892	.2771264	1.32	0.196	-.1977045	.9274886
Inf	.2883474*	.1130813	2.55	0.015	.0587802	.5179146
Ri	.0523736	.1343143	0.39	0.699	-.2202989	.3250461
Exp	.1569182	.2160272	0.73	0.472	-.2816402	.5954767
Rem	1.487856	.9754485	-1.53	0.136	-3.468122	.4924095
Gdp	.4003514*	.1900247	2.11	0.042	.0145807	.786122
_cons	.2940694	9.199526	0.03	0.975	-18.38196	18.9701

Source: STATA.

$$Ds = 0.2941 + 0.365inv + 0.288inf + 0.0524ri + 0.1569exp - 1.4879rem + 0.4003gdp$$

(0.03)
(1.32)
(2.55)
(0.39)
(0.73)
(-1.53)
(2.11)

The values in bracket below each variable denotes the t-statistic

4.6.2 The Error Correction Model (ECM)

This method of econometric analysis of time series data can only be applied to the data processes that are stationary even though non stationary data is a key occurrence in most economic variables that are used in analysis. However for this model to capture valid long run relationship and estimation that make economic sense then these non stationary variables should be cointegrated otherwise we could end up with spurious relations.

Table 4.7 Estimated results are shown in the table below:

Dependent variable :D1ds				
variable	coefficient	Std. error	t -statistic	P-value
L1D1ds	.2704003**	.1412589	1.91	0.065
L1D1inv	.4012294**	.2274225	-1.76	0.088
L1inf	.0917175	.0879975	1.04	0.305
L1ri	.1391932**	.0796207	-1.75	0.09
L1exp	.4361002*	.1566514	-2.78	0.009
L1D1rem	.9623034	1.023884	0.94	0.355
L1gdp	-.0589188	.1578316	-0.37	0.711
ECM(-1)	-.4850215	.1556462	-3.12	0.004
_cons.	11.7853	3.837328	3.07	0.004
Number of obs =40				
F(8,31) =3.00				
Prob>F =0.0131 Adj. R-squared=0.2907				
R-squared 0.4362 Root MSE=3.1128				

4.8 Summary and Discussion of the Results.

The residuals ECM ($_1$) was generated and tested for Stationarity and turned out to be stationary and therefore said to be cointegrated. The value of R² is 0.4362 implying that approximately 43.62% of all the changes in the dependent variable are brought about by the changes in the explanatory variables, that is, the explanatory power is about 43.62%. The value of Durbin Watson test is 1.9312 which can be approximated to 2 meaning that there is no problem of serial correlation of the residuals.

From the results presented in Table 4.7 the coefficient of the error term ECM (-1) is negative and significant and this confirms the expected results from economic theory. The result shows that 48.50% of the error in the model can be corrected by the error correction mechanism of the immediate past (ECM₁). This means that the model returns to equilibrium by 48.5%. This may be due to some structural rigidity that affects savings in the economy, as well as other economic and political factors that inhibit the speed of adjustment between the short run and long run.

The coefficient of investment is positive and significant at 10%. This shows us that investment is a major determinant of savings i.e an increase in savings will eventually lead to a growth in domestic savings.

Real interest rate is positive and significant at 10%. These results collaborate with the findings of Shrestha & Khorshed (2005) and Lewis (1992) and therefore supports the crux of the first part of McKinnon and Shaw savings hypothesis in the Kenya case. The results are not consistent with Mwegu et al (1990) who concluded that real interest rate is not an important tool for mobilizing private saving in Kenya.

Export will generally tend to generate income for the exporting country. A 1% increase in export share leads to a 0.43% increase in the saving. For a country such as Kenya, this result is not surprising. Kenya has heavily relied on her export mainly of tea and coffee for the generation of her export earnings. Export earnings form a significant share of private saving.

The coefficient of remittance shows a positive relationship between worker remittance and savings. The findings are consistent with the findings of recent studies conducted in most cases for Latin America, Sub Saharan Africa and Asia found that migrants and households spend a share of remittances on savings and investment (Mesnard,2001), (Mishra, 2005), (Adams et al. (2008)), (Balde,2010).

GDP per capita is negative and insignificant in the long run. The insignificance of this GDP per capita is caused when the government sector is in deficit, then the government is dissaving and contributing negatively to aggregate domestic saving. We can see then that under those conditions if indeed the national saving rate is thought to be too low, the government itself must share the responsibility of low savings. The result above shows that inflation rate has a significant negative relationship with the size of domestic savings in the long run. This implies that persistent inflation has an adverse effect on private domestic saving in the long run. This conforms with theoretical postulations because during inflation period, savings have lesser value than the amount deposited, hence people are discouraged from saving.

4.9 Post Estimation Diagnostics

Table 4.8 Results of Post Estimation Diagnostics tests

Test	Probability value
Breusch-Godfrey Test	0.9861
Breusch-Pagan/Cook-Weisberg Test	0.3776
Ramsey RESET test	0.4505

4.9.1 Breusch-Godfrey Test for Autocorrelation

This test was adopted to test for serial correlation because it is applicable in both situations where lagged dependent variable is included or when it is omitted unlike DW. The null hypothesis of no serial correlation is tested against the alternative of autocorrelation presence and you reject null if P value is less than or equal to 0.05. From the table the P-value is 0.9861 (98.61%) which is greater than 0.05 and therefore we do not reject the null hypothesis of no serial correlation meaning the residuals of the model adopted for the study has no problem of autocorrelation.

4.9.2 Breusch —Pagan/Cook-Weisberg Test Results for Heteroscedasticity

Heteroscedasticity is a situation of unequal or non constant variance

The null hypothesis of constant variance is tested against the alternative of no constant variance and the null hypothesis is rejected if the P value is less than or equal to 0.05 and from the table the P value is 0.3776(37.76%) meaning that we do not reject the null hypothesis.

4.9.3 Ramsey RESET test

The study adopted Ramsey RESET test as the regression specification error test which is a general test for two main types of misspecifications namely inclusion of irrelevant variables as well as exclusion of relevant variables in the regression model. The null hypothesis of the model has no omitted variables is tested against the alternative hypothesis of the model has omitted and you reject the null if p value is less than or equal to 0.05. From the table above P-value is 0.4505(45.05%) which is greater than 0.05 and therefore we do not reject the null hypothesis meaning that the model that was adopted by the study had no omitted variables.

CHAPTER FIVE

5.1 Summary of study findings

This study has investigated the impact of remittance on domestic savings in Kenya. Also, the coefficient of determination (R^2) was found high which showed that the explanatory variables were able to account for the total variation of the dependent variable – size of saving. The value of Durbin-Watson Statistic (DW) shows that there was no presence of autocorrelation; hence, the model produced a parsimonious result. . The Johansen's test reveals that the macroeconomic variables, real interest rate, exports and remittance were amalgamating with domestic savings to achieve their steady-state equilibrium in the long run, although deviations may occur in the short run. In this study, the normalized coefficients for GDP per capita and inflation are negatively related to domestic savings rate in Kenya over the sample period of 1970 to 2011.

5.2 Conclusions

The objective of this paper is to investigate the impact of remittances on savings in Kenya . Our results show that contrary to the pessimistic literature, remittances positively and significantly influence savings in Kenya. Therefore, remittances are not entirely spent on basic consumption needs; but are also either saved or invested. Remittances help relax liquidity constraints. Even if remittances do not have direct effect on growth, it can have indirect positive effect on growth through saving and investment. According to economic growth remittance has both positive and negative effects. This is because, large-scale migration can have a deleterious effect on domestic labor markets in specific sectors such as higher education, government services, science and technology, and the manufacturing and services, especially where those migrating to other countries are largely skilled workers who

are difficult and expensive to replace. Migrant transfers in the form of remittances can ease the immediate budget constraints of families by bolstering crucial spending needs on food, health care, and schooling expenses for their children. Such an unharnessed market in money transfers is, not only a source of small scale saving, but it can also be expected to pave a way for the development of a formal financial sector which is essential for the economic growth and development.

5.3 Recommendations

A policy implication which may be drawn from this study is that Kenya can improve its economic growth performance, not only by investing on the traditional sources of growth such as investment in physical and human capital, trade, and foreign direct investment, but also by strategically harnessing the contributions of remittances by ensuring their efficient and reliable transfers and reducing the cost of transfers by improving their governance performance. Another policy recommendation is that the government needs a policy scheme that aims to enhance the amount of remittances, particularly through formal channel. There is evidence that around 50 per cent of remittances are under recorded and through informal channel (World Bank, 2006). These informal networks of money dealers commonly offer speedier and cheaper means of transfer than going through the formal channels. However, a number of concerns have been expressed with respect to the operation of the informal fund transfer system, ranging from financial smuggling, money laundering, potential links with terrorist funding, to macroeconomic consequences with respect to inappropriate exchange rate movement and tax collection.

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APPENDICES

APPENDIX I: TIME SERIES DATA USED

	DS	INV	INF	RI	EXP	REM	GDP
1970	2	18.45	2	8	29	0.2	-4.66
1971	17	19.25	4	20	28.6	0.3	22.17
1972	20	19.85	6	8	26.6	1	17.08
1973	25	20.24	9	-1	27.4	1	5.897
1974	19	21.65	18	-6	33.7	1	4.066
1975	13	22.15	19	-2	29.8	0.2	0.882
1976	21	23.2	11	-7	32.5	0.4	2.154
1977	27	22.95	15	1	35	0.3	9.454
1978	20	24.76	17	7	28.9	0.1	6.912
1979	16	22.8	8	4	23.8	1	7.615
1980	18	23.03	13.87	0.943	30	0.4	5.592
1981	20	24.33	7.895	1.411	30	1.1	3.774
1982	17	22.05	13.82	2.605	27	1.1	1.506
1983	19	21.71	11.6	3.572	26	1	1.309
1984	15	20.29	20.67	3.835	27	0.9	1.755
1985	20	26.4	11.4	5.258	25	1.1	4.301
1986	18	23.6	10.28	4.864	26	0.7	7.178
1987	19	24.38	13.01	8.157	21	0.8	5.937
1988	20	24.66	4.804	8.026	22	0.9	6.203
1989	18	18.98	7.617	6.815	23	1.1	4.69
1990	19	23.72	11.2	7.333	26	1.6	4.192
1991	19	20.99	19.1	5.746	27	1.5	1.438
1992	17	15.07	27.33	1.825	26	1.4	-0.8
1993	23	16.69	45.98	3.413	39	2.1	0.353
1994	22	14.9	28.81	16.43	37	1.9	2.633
1995	15	14.71	1.554	15.8	33	3.3	4.406

1996	8	12.53	8.862	-5.78	25	2.4	4.147
1997	6	13.46	11.92	16.88	23	2.7	0.475
1998	8	12.79	6.716	21.1	20	2.5	3.29
1999	9	10.88	5.753	17.45	21	3.3	2.305
2000	7	14.68	9.955	15.33	22	4.2	0.6
2001	9	16.76	5.73	17.81	23	4.2	3.78
2002	10	12	1.97	17.36	25	3.3	0.547
2003	11	13.13	9.81	9.771	24	3.6	2.932
2004	11	14.43	11.79	5.045	27	3.9	5.907
2005	10	16.91	9.87	7.61	29	2.3	5.104
2006	8	17.95	6.041	5.426	27	2.5	6.331
2007	8	19.03	4.265	7.315	27	2.4	6.993
2008	5	19.24	15.1	0.711	28	2.2	1.527
2009	7	19.92	10.55	5.081	24	2.1	2.735
2010	8	20.94	4.086	12.16	28	2.1	5.765
2011	4	20.91	14	2.598	29	2.8	4.376