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**ANALYSIS OF PRIVATE DOMESTIC INVESTMENT IN KENYA**

**BY**

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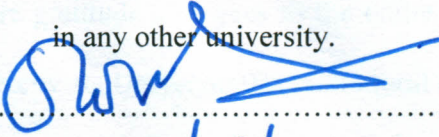
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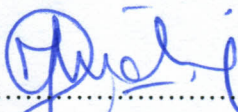
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## ABSTRACT

Private domestic investment is one of the major contributors to economic growth and development in both developed and developing countries. In Kenya the ratio of private domestic investment to GDP has substantial fluctuations. These fluctuations in investment ratio and levels pose a challenge in formulating policies that lead to attaining the desired level of private domestic investment. The Government has been implementing different strategies to boost private domestic investment but it is not clear to which extent each strategy has affected private domestic investment. Policy uncertainty proxied by political instability also undermines private domestic investment in Kenya. This project aimed at studying the determinants of private domestic investment in Kenya from 1970 to 2012 capturing the political instability such as electioneering periods, different economic policies (i.e. the import substitution policy and the export promotion policies), and their impact on the growth of private domestic investment. The effects of elections were captured using a dummy variable for the election years and one year before and after elections. The accelerator model was modified to capture various factors relevant to Kenya in determining the level of the growth of private domestic investment. The test for a unit root was done on the time series data using the conventional unit root tests known as Augmented Dickey Fuller [ADF] unit root test procedure. The unit root test reveals that broad money supply, public investment and previous domestic investment variables under investigation are  $I(1)$  while growth in private investment, real interest, growth in GDP and growth in domestic saving are  $I(0)$ . The results further indicate that in the long run the growth in GDP, previous growth in GDP, growth in domestic investment, and election were significant determinants of growth of the private domestic investment. Whilst real rate of interest, broad money supply, growth in public investment, previous period growth in domestic investment and dummy variable of were not significant determinants of growth of private domestic investment

## **ACRONYMS AND ABBREVIATIONS**

BOP - Balance of Payments.

EAC - East African Community.

ERC - Economic Recovery Strategic Plan.

FDI - Foreign Direct Investment.

GDP - Gross Domestic Product.

IFIs - International Financial Institutions.

IMF - International Monetary Fund.

MTP - Medium Term Plan.

SAP - Structural Adjustment Programme.

SSA - Sub-Saharan Africa.

UNCTAD - United Nations Conference on Trade and Development.

## **DEFINITION OF TERM**

Political instability: It is the uncertainty caused to private domestic investors when government changes political leaders during an election.

## Chapter 1

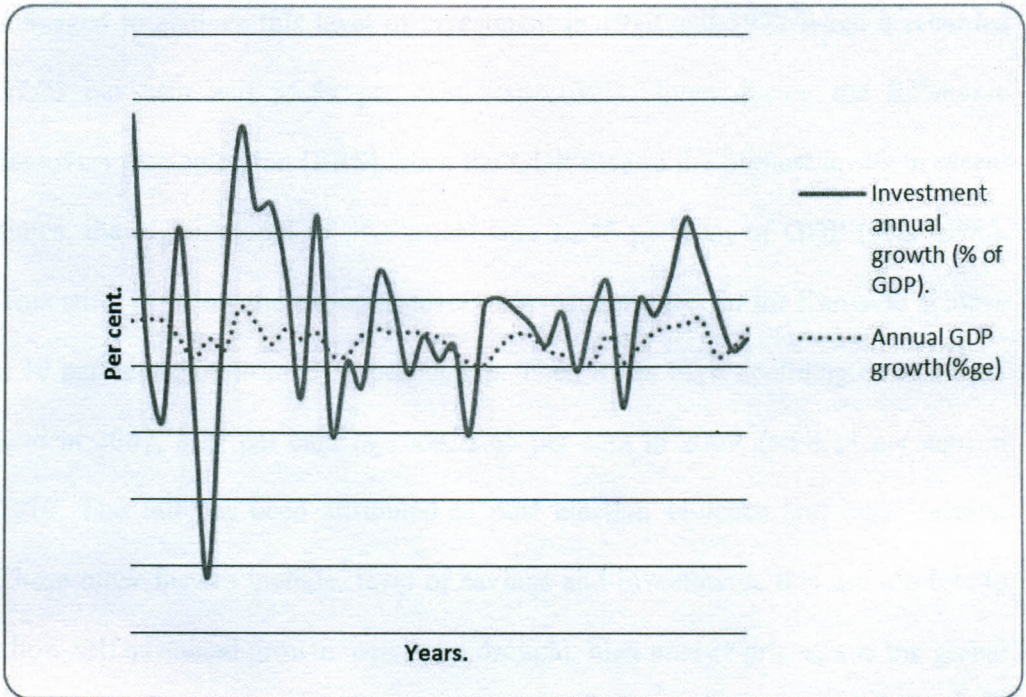
### 1.1 INTRODUCTION

#### 1.1.1: Background

Investment is the change in capital stock during a given period. Unlike capital, investment is a flow term and not a stock term. According to the Investment Promotion Act (IPA, 2004), investment means the contribution of locals or foreign capital by an investor. This includes the creation of, or acquisition of business assets by or for business enterprises by expanding, restructuring, improving or rehabilitating of business enterprise. When exploring economic success or failure of a country, economists look at its investment rate as the key determinant of economic development. Developed countries are rich because they have a large capital stock per person (Solow, 1957). Investment has a considerable effect on economic activities and long term growth; countries rely on investment to solve their economic problems such as poverty and unemployment. Low growth performance in Sub-Saharan Africa has been attributed to low investment to Gross Domestic Product (GDP) ratio. In the 1990s the ratio of investment to GDP was around 17 per cent in Sub-Saharan Africa, (SSA), 22-23 per cent in developing countries of Latin America and 27-29 per cent in Asia, (Herandez-Cata, 2004).

In Kenya the investment levels have been generally low compared to the 30 per cent levels required to drive it to a competitive and prosperous nation globally

(World Bank, 2013). The ratio of investment to GDP was 10.91 per cent in 1990, this was even below that of Sub-Saharan Africa of 17 per cent. Fig. 1.1 shows the investment growth (per cent of GDP) in Kenya and annual per cent GDP growth from 1970 to 2010.



**Figure 1.1:** Growth in investment and GDP.

**Source:** Economic Surveys (various issues).

This figure shows that the levels of investment declined sharply in the early 1970's then picked up in mid 1970's but remained highly volatile during the whole period. On average these levels performed worse in 1980s than all the other three decades between 1970 and 2010. The levels showed some improvements in the periods between 1990s and 2000. The government of Kenya has recognized the important role played by investment in economic growth and has therefore

emphasized private investment in the long-term planning document: The Kenya Vision 2030. To achieve the Vision 2030 growth objectives, the level of investment is expected to rise to 31.3 per cent of GDP by 2012/2013 and remain above 32 per cent for the 2014 to 2030 period. However, since 1970 Kenya only managed to achieve this level of investment in 1970 and 1977 when it recorded 37.75 per cent and 35.89 per cent respectively. Even during the Economic Recovery strategic plan [ERS] when the GDP rose to the highest levels in recent times, the highest level of investment was 22.45 per cent of GDP (year 2006). This still fell below the expected level of investment needed for Kenya to achieve a 10 per cent growth in GDP per annum. Then it has been declining to 16.13 per cent in 2007, 8.79 per cent in 2008, 2.45 per cent in 2009 and 4.13 per cent in 2010. The fall has been attributed to post election violence and other factors. These other factors include, level of savings and investments that are too low to allow self sustained growth, persistent drought, high energy prices, and the global economic recession.

Investment may originate from both domestic and foreign sources. Domestic sources include public and private savings. Foreign investment comprise of deposits in financial institutions and securities issued by non-resident entities held by the government for liquidity purposes. Public investments are government expenditures. Private domestic investments are the expenditure by firms and private persons towards the creation and accumulation of both physical and liquid stock for productive purposes (World Bank, 2000). Private domestic investment is

a crucial pre-requisite for economic growth because it allows entrepreneurs to set economic activity in motion by bringing resources together to produce goods and services, thereby playing a crucial role in models of economic growth. It is an essential component of aggregate demand and fluctuations. Serven and Solimano (1990) and Coutinho and Gallo (1991) indicated that private sector-led growth has a stronger positive impact on growth than public investment because private investment is relatively more efficient than public sector investment.

### **1.1.2: The importance of Private Domestic Investment**

Private domestic investment is essential for economic growth, sustainable development and poverty reduction. It increases the productive capacity of an economy, drives job creation, brings innovation and new technologies, and boosts growth. This type of investment is a good source of employment creation in the country through capital accumulation for productive purposes. It leads to equity in income distribution and improved standards of living because more people engage in income generating activities that increase their incomes. Moreover, the government is able to collect taxes from the private sector out of the incomes earned by the factors of production. In addition, the social problems arising from unemployment, for instance, crime, immorality, drug abuse among others are reduced leading to improved social welfare. Furthermore, domestic private investment may have a direct impact on foreign direct investors who prefer committing their funds in countries where domestic investors are thriving. Consequently, this may lead to technological transfer into the country and this

will contribute to increased productivity of factors of production (United Nations, 1993).

The experience in many developing countries has shown a close correlation between private investment growth and economic growth (Seruvatu and Jayaraman, 2001). This is because domestic private investment not only adds to the productive capacity, but also creates new opportunities for the acquisition of new and often more efficient technology. It does not only determine the rate of gross capital accumulation, but also the growth of the economy. It also complements the public sector investment activities, by letting public sector investment to be directed towards improving physical infrastructure development. Improved infrastructure reduces the cost of production for private investors thereby reducing prices of goods consumed locally and abroad. In the longrun, exports become competitive in the world market, and consequently impacts positively on the balance of payment and terms of trade. This has a further effect on the future investment since the country's ability to import especially capital goods may be enhanced and as a result there may be robustness in the economic growth (Kahuthu, 1999).

The level of domestic savings and investment in developing countries is inadequate to fuel the growth needed to raise living standards and generate sufficient productive employment (World Bank, 1991). The bank states that the major share of the additional saving and investment required must come from private sources. Rapid and sustained growth is facilitated by a virtuous circle

whereby entrepreneurship and investment lead to higher productivity, making it possible to invest larger sums in the future. In the course of this process, jobs are created and new technologies are introduced, especially through international trade and investment linkages. Competitive and well-functioning markets are crucial for development of private domestic investment because they promote and reward innovation and diversification, foster firm entry and exit and help to ensure a level playing field for all private sector actors. They also have an important role in making the economic growth process more socially and geographically inclusive, which expands the opportunities for poor people to participate in and benefit from the economic growth. Successful mobilization of private domestic investment is thus increasingly important for creating employment, raising growth rates and reducing poverty.

### **1.1.3: Macroeconomic policies, Political uncertainty and private domestic investment**

According to the neoclassical growth models, such as Solow (1956), macroeconomic policies may affect economic growth either directly through their effect on the accumulation of factors of production, namely capital, or indirectly through their impact on the efficiency with which factors of production are used. Macroeconomic policies are important to the private domestic investment because they facilitate long-term planning and investment decisions thereby encouraging savings and private capital accumulation (Ghura & Hadjimichael, 1995).

Fiscal policy can foster growth through the influence of the public investment, as a catalyst, on private investment as well as through its influence on the efficiency of resource use. Governments conduct fiscal and monetary policies to stabilize the economy and achieve the desired level of the aggregate variables of the economy. These policies are not only conducted from economic objectives perspective but also for political and other interests of the government bodies. The poor empirical performance of deterministic investment models has kindled a growing interest in the role played by uncertainty (Abel and Blanchard, 1986)). Once uncertainty becomes a potential determinant of investment investors may be averse to taking risks at firm level for fear of the repercussions of such decision.

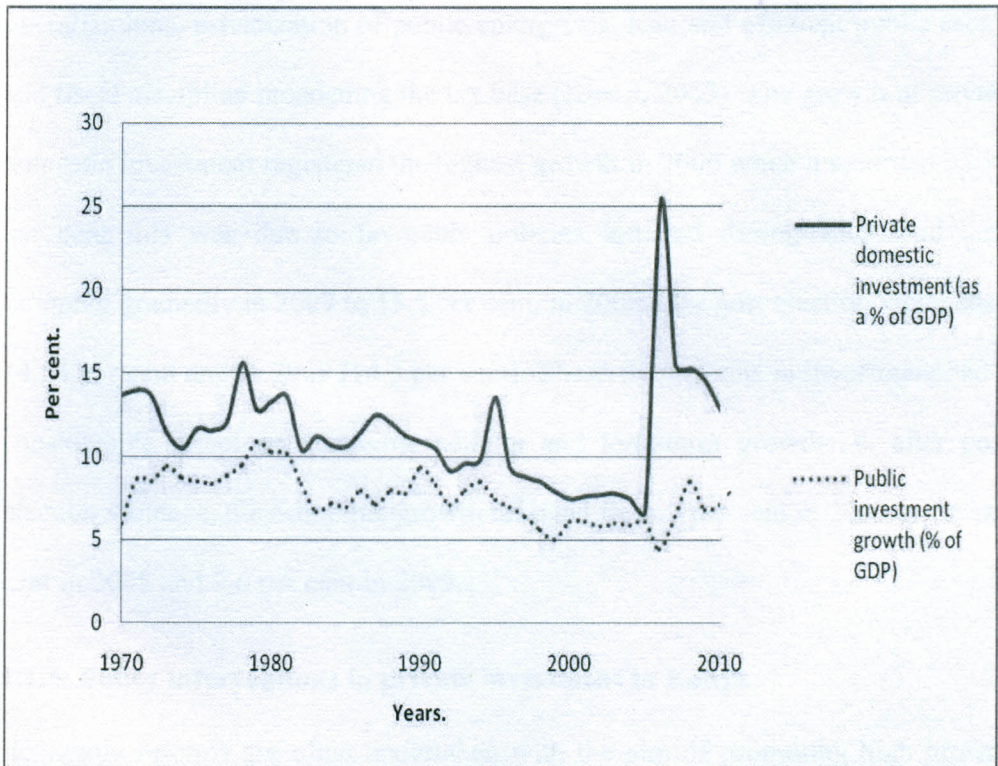
Political instability and social unrest are potential sources of uncertainty and may even be highly damaging factors of the private investment environment. Seyoum (2002), states that there are two important mechanisms through which socio-political factors could influence private investment in developing countries. The first relates to extreme cases of instability that lead to changes in the rules of the game and threatens investment. The other, and perhaps the most common one relates to the unpredictability of the political environment say due to repeated changes of government or officials of key government institutions which undermines the responsiveness of private investors to economic incentives or reform measures. This can bring about civil unrest and armed conflicts that destroy human lives and physical infrastructure thereby disrupting the working of institutions and increase government expenditure on avoidable spending such as

strengthening of military and civil defense forces. Such expenditures crowd-out private investment and result in the reduction of expenditures on physical and social infrastructure. For instance, the coup attempt in 1982, the electioneering periods in (1978, 1983, 1988, 1993, 1997, 2003 and 2007) and the post election violence in 2007 caused the level of private domestic investment to decline. The decline in the capital accumulation was due to increased uncertainties among investors. The basic idea is that investors may not regard government policy under political instability as credible, hence creating a value for waiting. This indirectly weakens the effectiveness of fiscal policy measures taken by government bodies to improve the share of private investment in the economy

#### **1.1.4: Private Domestic Investment Trends in Kenya**

Private domestic investment has a strong relationship with economic growth in developing countries. It contributes on average 74.6 per cent of the total investment levels in Kenya. In Kenya private domestic investment growth as a percentage of GDP has been oscillating between 6.71 per cent and 25.38 per cent since 1970. Generally, public investments have been lower than private investment due to the need by government to adhere to fiscal discipline. This is through reforming and privatizing public sector, removing price distortions, liberalizing foreign trade and payments, opening the markets up to foreign direct investment and strengthening the capacity of the financial systems to mobilize domestic savings and allocate financial resources, factors which have all contributed to increasing share of private domestic investment. The general

decline of public investment is attributed to the fiscal stress that accompanied debt problems and restructuring. The figure 1.2 shows the trends in Private domestic investment growth (as per cent of GDP) and Public investment growth (per cent GDP).



**Figure: 1.2:** Growth in Private domestic investment and public investment.

**Source:** Economic Surveys (various issues).

The level of private domestic investment in early 1970s declined due to the external shocks caused by the oil crisis of 1973-1974 triggered by Yom Kippur war. There was a slight improvement in 1978 and 1979 due to coffee boom that sparked off government spending but this was not sustained due to Iranian revolution in 1978-1980. (Njeru and Randa, 2001).

In the 1980s when structural adjustment programmes were introduced in the country by World bank and International Monetary Fund (IMF), both private and public investment declined steeply up to 1992 when it started increasing again up to 1995. This was attributed to opening up of the economy i.e. financial liberalizations, privatization of public enterprises, lean and efficient public sector and fiscal discipline broadening the tax base (Kiptui, 2005). The growth of private domestic investment registered the highest growth in 2006 when it recorded 25.38 per cent this was due to favorable policies initiated during ERS, and then dropping gradually in 2007 to 15.5 per cent, in 2008 after post election violence to 14.54 per cent and in 2009 [14.3 per cent]. These fluctuations in investment had a considerable effect on economic activity and long-term growth i.e. after post election violence, the economic growth dropped from 7 per cent in 2007 to 1.5 per cent in 2008 and 2.6 per cent in 2009.

#### **1.1.5: Policy interventions in private investment in Kenya**

Economic reforms are often undertaken with the aim of promoting high growth and improved welfare in the long-run. In Kenya the overall investment suffered in the 1980's and 1990's due to the following combination of factors that include poor infrastructure (roads, telecommunication & electricity), corruption, high cost of borrowing, crime and insecurity, poor economic performance & lack of investor confidence due to weak commitment to reforms. (UNCTAD, 2005). The government of Kenya has adopted a number of promotional policies meant to provide a conducive environment for investment for both locals and foreigners.

These policies have been reviewed regularly to enhance their effectiveness. These promotional policies can be summarized into three periods in order to evaluate their effectiveness, these are, Africanization (controlled regime), import liberalization (the SAP period) and liberal trade regime periods.

The Africanization or controlled regime period was the one in which the Kenyan economy was government based, and it started soon after independence in 1963 to mid 1980s. This move largely motivated by *sessional paper No.10 on African socialism and its application to planning in Kenya*. This paper of 1965 sought to Africanize the economy and jumpstart industrialization. Government intervention in many economic activities was evident by streamlining domestic market to avoid unfair competition to the local entrepreneurs from already established foreign producers. Government took an active role as an investor in the economy establishing parastatals that provided essential services such as post and telecommunication (Gitahi, 2004).

The second period was import liberalization (1980-1990) where government control on economy declined. The large state-owned enterprises lagged behind in economic performance and heavily drained the budget. This is when international Financial Institutions (IFIs) came with reform recipe in the form of SAPs. The government presented a structural adjustment programme in *sessional paper No. 4 of 1980 on economic prospects and policies*. This programme suggested the need to eliminate quantitative restriction on imports, replace them with equivalent tariffs, relaxed industrial protection and the need for a relatively high interest rate

structure. However, these attempts were not successful because they coincided with a period of macroeconomic crisis, followed by rapid stabilization therefore making trade policy to become hostage to the needs of stabilization (Swamy, 1994). This led to the preparation of *sessional paper No. 1 of 1986 on Economic Management for renewed growth*. In this document the government acknowledged the need to limit its primary role in the development process to facilitate growth of private sector. With minimal achievement having been made in the implementation process, there was a shift in the implementation strategy from broad to sectoral basis. The World Bank moved into Sectoral Adjustment Lending as a way of focusing structural transformation into narrower areas (Swamy, 1994).

The third period was the liberal trade regime started in 1990 to present where government changed from import substitution to export promotion strategies. Export processing zones programme started in 1990 was another ambitious strategy of government meant to promote production for export purposes. Any investor who takes advantage of this programme and produces goods for export only, is entitled to ten years tax holiday, capital allowance, exemption from import duties on machinery, raw materials and intermediate industrial inputs among other incentives (Investment Promotion Centre, 2000). In the 1990s the government undertook several reforms such as trade reforms aimed to promote exports, financial reforms including liberalization of interest rates, removal of credit control and streamlining of the money market, public sector and civil

service reforms. The department of government investment and public enterprises was created to oversee the restructuring and privatization of public enterprises. This was aimed at enhancing the role of the private sector, reducing the claims on the budget and improving regulatory environment and broadening the base of ownership.

## **1.2: Problem statement**

Empirical studies have confirmed that private investment is the engine of economic growth and as such it is vital to understand its determinants. The government of Kenya has been formulating various policies aimed at improving the levels of investment. For instance, after independence the economy was centrally planned and as a result the economy performed poorly because Government took an active role as an investor. From 1987 the government pursued import substitution strategy and export promotion strategy. While both strategies aimed at boosting private domestic investment, it is not clear the extent to which these strategies affected private domestic investment growth. The low level of investment in Kenya is of concern to policy makers not only because it affects economic development but also increases the volatility of the economy (Mlambo and Oshikoya, 2001).

The level of private investment as a percentage of GDP in Kenya had been on average 11.45 per cent since 1970 to 2012. This percentage was below the target set in the Kenya Vision 2030 which envisaged that private domestic investment should rise from 15.6 per cent of GDP in 2006/07 to 22.9 per cent in 2012/13 and

to over 24 per cent of GDP for the rest of the period 2020/21 to 2030. In other words, it was expected that by 2030 private domestic investment as a proportion of GDP should increase by about 100 per cent compared to the past 40 years. Attaining the desired level of private investment poses challenges to policy makers in Kenya. Those formulating policies will be expected to assess how private investment responds to government policy when designing long-term development strategies, and also when implementing short term stabilization programs.

Previous studies on Kenya have focused on the economic factors that determine private domestic investment (see for instance Matin & Wason 1992, Gitahi 2004, King'ori 2007, Musengele 2008). This study considered how private domestic investment behaves during periods of political instability such as electioneering periods. As a result, this study would assist the policy makers to better control private domestic investment in the desired direction to foster economic growth and development by considering both the economic and non-economic factors that may affect the level of private domestic investment. In view of the problem stated, this study seeks to address the following research questions:

### **1.3: Research questions**

- i. What is the relative significance of the factors that influence private domestic investment in Kenya since 1970 to 2012?

- ii. How does political instability affect the growth of private domestic investment?
- iii. What are the effects of different policies on private domestic investment in Kenya since 1970 to 2012?

#### **1.4: Objectives of the study**

The general objective of the study was to analyze private domestic investment in Kenya.

The specific objectives were:

1. To determine the relative significance of the factors that influence private domestic investment in Kenya.
2. To determine how political instability affect the growth of private domestic investment in Kenya since 1970.
3. To analyze the effects of different investment policies from 1970 to 2012 on private domestic investment.

#### **1.5: Significance of the study**

Kenya has decided to prioritize private sector investment led growth as a way to expanding its overall economy. The result of this study would enable the policy makers to formulate policies that attract private sector investment. Ronge and Kimuyu, (1997) noted that Kenya has been analyzed in cross country studies by Blejer and Khan (1992), Greene and Villaneuva (1991) and Oshikoya (1994). In these studies, Kenya is just one of the countries pooled from the group of

developing or African countries. However, this particular study is country specific to Kenya in terms of analyzing how political instability affects the level of private domestic investment in the country among other determinants.

### **1.6: Scope and Organization of the study**

This study analyzed private domestic investment in Kenya from 1970-2012. The period is chosen because a number of substantive reforms were undertaken during those decades. In early 1970s there were reforms in the financial sector and in mid 1980s investment incentives given to investors by government. In addition, the period after 1970 has data that is not only available but consistent.

This project is organized into five chapters. In chapter one, the study looked at the background of the study, the problem statement, research questions, and general objectives. Chapter two contains Literature Review, theoretical, empirical and over view of literature. Chapter three outlines methodological approach and data sources. Chapter four presents data analysis and interpretation of the empirical results while chapter five gives the summary of the study, conclusions and draw policy recommendation.

## Chapter 2

### LITERATURE REVIEW

#### 2.0: Introduction

This chapter reviews literature on the determinants of private investment and its effects on economic growth. It reviews theoretical literature about private investment and empirical literature of studies on the determinants of private domestic investment mainly in developing countries like Kenya.

#### 2.1: Theoretical literature

Several theories explaining investment are explained below.

##### 2.1.1: The accelerator theory

This theory originates from Carver (1903), while the name “Accelerator Principle” was coined by Clark in 1917. This theory makes investment a linear proportion of changes in output where expectations, profitability and capital costs play no role. Keynesians have traditionally favoured the accelerator theory of investment while disregarding the role of factor costs. A more general form of the accelerator model is the flexible accelerator model. The basic notion behind this model is that the larger the gap between the existing capital stock and the desired capital stock, the greater a firm’s rate of investment. The hypothesis is that firms plan to close a fraction, of the gap between the desired capital stock,  $K^*$ , and the

actual capital stock,  $K$ , in each period. This gives rise to a net investment equation of the form:

$$I = \delta (K_t^* - K_{t-1}) \quad 2.1$$

Where,  $I$  = net investment,  $K_t^*$  = desired capital stock,  $K_{t-1}$  = last period's capital stock and  $\delta$  = partial adjustment coefficient.

Within the framework of the flexible accelerator model, output, internal funds, cost of external financing and other variables may be included as determinants of  $K^*$ . The flexible accelerator mechanism may be transformed into a theory of *investment behaviour by adding a specification of  $K^*$  and a theory of replacement investment*. Alternative econometric models of investment behaviour differ in the determinants of  $K^*$ , the characterization of the time structure of the investment process and the treatment of replacement investment. In the flexible accelerator model,  $K^*$  is proportional to output, but in alternative models,  $K^*$  depends on *capacity utilization, internal funds, the cost of external finance and other variables*.

### **2.1.2: Keynesian theory**

The theory shows the existence of an independent investment function in the economy which originated from Keynes (1936). A central feature of the Keynesian analysis is the observation that although savings and investment must be identical ex-post, savings and investment decisions are, in general, taken by different decision makers and there is no reason why ex-ante savings should equal ex-ante investment. Keynes did not believe it was legitimate to hold income

constant when analyzing aggregate saving, as in neoclassical theory. This is because since the level of investment is highly unstable, it is likely that the equilibrium output level will not equal the full employment level of output. He also disagreed with the neoclassical belief that saving is primarily a function of the rate of interest and investment is primarily a function of the rate of interest. Keynes did not believe it was legitimate to hold the state of investor expectations constant in analyzing aggregate investment, as in neoclassical theory. Expected profitability of investors and lending institutions are both required for investment to take place. Keynes distinguished between risk, which is calculable, and uncertainty, which is not conducive to statistical probability. He believed most important determinants of investment described by uncertainty, not risk. In neoclassical theory, uncertainty in this sense is not recognized. Also, even under risk, the confidence of whether one will 'beat the odds' is subject to unpredictable variation. Business and political climate will influence investment decisions, as will many other factors.

### **2.1.3: The Q theory**

In the "Q" theory of investment (which is also in the neoclassical framework) associated with Tobin (1969), the ratio of the market value of the existing capital stock to its replacement cost (the "Q" ratio) is the main force driving investment. Tobin argued that delivery lags and increasing marginal cost of investment are the reasons why Q would differ from unity. McKinnon (1973) and Shaw (1973) emphasized the importance of financial deepening and high interest rates in

stimulating growth. The core of their argument rests on the claim that developing countries suffer from financial repression (which is generally equated with controls on interest rates in a downward direction) and that if these countries were liberated from their repressive conditions, this would induce savings, investment and growth. Not only will liberalization increase savings and loanable funds, it will result in a more efficient allocation of these funds, both contributing to a higher economic growth. The rise in interest rates increases the volume of financial savings through financial intermediaries and thereby raises investible funds, a phenomenon that McKinnon (1973) calls the “conduit effect”. Thus, while it may be true that demand for investment declines with the rise in the real rate of interest, *realized* investment actually increases because of the greater availability of funds. This conclusion applies only when the capital market is in disequilibrium with the demand for funds exceeding supply.

#### **2.1.4: Uncertainty theory**

This has introduced an element of uncertainty into investment theory due to irreversible investment. It argues that, since capital goods are often firm-specific and has a low resale value, disinvestment is more costly than positive investment. Pindyck (1991) argues that according to the net present value rule, one should invest when the value of a unit of capital is at least as large as its cost and must be modified when there is an irreversible investment because when an investment is made, the firm cannot disinvest should market conditions change adversely. This lost option value is an opportunity cost that must be included as part of the cost.

Accordingly, the value of the unit must exceed the purchase and installation cost, by an amount equal to the value of keeping the investment option active.

Rodrik (1991) introduced the element of policy uncertainty as a determinant of private investment. When a policy reform is introduced, it is very unlikely that the private sector will see it as one hundred percent sustainable. A number of reasons may be adduced, among them the expectation that the political-economic configuration that supported the earlier policies may resurface. There is also the fear that unexpected consequences may lead to a reversal. Investors must respond to the signals generated by the reform for it to be successful. However, rational behaviour calls for withholding investment until much of the uncertainty regarding the eventual success of the reform is eliminated.

In general, this approach argues that most investments are irreversible and therefore represents sunk costs. This is because capital once installed cannot be used in different activities without incurring a substantial additional cost in doing so. The decision to invest in uncertain environment involves exercising an option, which is the option to wait for the new information. The loss of this option, which must be considered as part of the opportunity cost of investment, is overlooked in the conventional calculations of net present value. This opportunity cost according to this theory can be substantial and it is also sensitive to the prevailing degree of uncertainty about returns to investment.

It is clear from the discussion in this section that private investment depends on three broad categories of variables: Keynesian, neoclassical, and uncertainty

variables. Variables that may be included in the Keynesian tradition include growth rate of GDP, internal funds (for example, change in credit to the private sector) and capacity utilization. The neoclassical determinants of private investment include Tobin's Q, real interest rate, user cost of capital and public investment ratio. There are three uncertainty variables. The first is variability (variance, moving standard deviation or moving coefficient of variation) of the user cost of capital, real exchange rate, inflation rate, distortions in the foreign exchange market (proxied by the black market premium) and real GDP. The second uncertainty variable is the debt/GDP ratio and the third is debt service as a ratio of exports of goods and services.

## **2.2: Empirical literature from Developing countries**

Islam and Wetzel (1991), in a World Bank Study empirically examined the link between real private investment on one hand and real public investment/GDP, corporate tax revenues/GDP, credit to the private sector /GDP, real rate of interest and a dummy for 1976. The dummy for 1976 was included because of the large and unexplained drop in private investment in that year. Employing Ordinary Least Squares (OLS), they found a negative relationship between public and private investment in the case of Ghana. The study also established a positive relationship between the private sector and the corporate tax revenue and flow of credit. However, real interest rate was found not to have a substantial effect on private investment even though it had the expected negative sign.

Oshikoyo (1994) analyzed the determinants of domestic private investment in eight African countries (including Kenya) during 1970-1988. He used the neoclassical flexible accelerator model. Results found that infrastructure investment had a positive impact while non-infrastructure had negative impact on private investment. Also the estimated impact of domestic inflation rate on private investment behaviour in middle income countries was positive and insignificant.

Asante (2000) employed the Ordinary Least Squares approach to model private investment behaviour in Ghana using time series data over the period 1970 to 1992. Asante found a positive public-private investment relationship which was significant suggesting a “crowding-in” effect of public investment on private investment. The growth rate of real credit to the private sector had a significant positive sign. Further, the measure of macroeconomic instability had a negative sign and significant (particularly inflation rate). The political dummy representing political instability was highly significant and negative. Lagged private investment /GDP ratio was also found to be positive and significant indicating a good investment climate acts as a good indicator for current investment decisions.

Ibrahim (2000) utilized a vector error correction model within a restricted Vector Autoregressive (VAR) framework to model the long-run determinants of private investment using a dynamic optimization approach. A significant positive relationship was found between mark-up, inventory of finished goods and real GDP whilst a significant negative relationship was found between the general

price levels; real cost of investment and private investment in Ghana in the long-run.

Ribeiro (2001) employed the Johansen (1988) multivariate co-integration technique and Engle-Granger Two Step approach to model private-sector investment in Brazil during the period 1956-1996. The study found a positive impact of the output, public investment and financial variables on private domestic investment and a negative effect of exchange rate. A test for weak exogeneity and super-exogeneity were carried out and the result showed the importance of credit and public investment as economic policy instruments.

Mbanga (2002) investigated the impact of external debt on private investment in Cameroon from 1970-1999. Using time series data the study found that there was a significant positive relationship between real GDP and private investment. The “debt overhang” hypothesis was also confirmed in the case of Cameroon as well as the “crowding-out” effect of debt service ratio. Public investment however crowded-in private investment while the investment climate, captured by the lagged value of private investment, stimulates current levels of investment. There was also a confirmed positive and significant relationship between credit expansion and private investment whereas deteriorating terms of trade and depreciating real exchange rate had negative effects on private investment.

Akpalu (2002) used annual time series data from 1970 – 1994 in Ghana, on Private Investment, Public Investment, Real GDP, Consumer Price Index

(CPI), Lending Rate, Credit to the private sector and GDP per capita to model the determinants of private investment. Using the Engle-Granger Two Step procedure and the Johansen multivariate test. The study revealed that in relative terms private investment in the short-run responds more to the real per capita income growth, credit availability and public investment. Public investment was found to crowd-out private investment. There was also a significant negative relationship between cost of capital and private investment in both the short and long run. Further, a significant positive relationship between real GDP and private investment was found in both the short and long run models but was not significant in the short-run. The Consumer Price Index however was found not to be significant in both situations.

Badawi (2004) investigated the impact of macroeconomic policies on private investment in Sudan employing annual data over the period 1969-1998. The focus was on public investment, credit, devaluation, and interest rate policies while blending cointegration, vector autoregressive (VAR) and error correction techniques to estimate the long and short run coefficients. The results suggested significant crowding-out effect of public investment on private investment in Sudan. Devaluation policies also contributed to discouraging private sector capital expansion. Monetary policy in the form of restricting domestic credit appeared to have had a significant impact on private investment. This was indicated by the positive impact of banking sector credit on private investment. Increasing real interest rates impacted negatively on private investment in Sudan.

Vergara (2004) empirically modeled the link between corporate tax reform and private investment performance of Chile in 1975-2003. The result confirmed that private investment is negatively affected by higher corporate tax rates. Furthermore, crowding-in effect of public investment was established while the investment climate, proxied by the lagged private investment was found to boost private sector investment in Chile.

Lesotho (2006) using flexible accelerator model studied determinants of private investment in Botswana and found a positive and significant impact of GDP growth on private investment. Public investment had a negative relationship with private investment depending on the situation that there was public non infrastructural investment in the country. This study found an insignificant impact of inflation rate on private investment in both short and longrun.

### **2.3: Empirical literature specific to Kenya**

Ronge and Kimuyu (1997) examined the determinants of private sector investment for Kenya using data over the period 1964-1996. A double-logarithmic form of the investment equation was estimated using OLS. The results indicated that both the availability of credit and foreign exchange exerts significantly positive effects on private investment. Private investment however, was adversely affected by the stock of debt. Specifically, a 1% increase in the lagged debt to GDP ratio reduced private investment by 0.3%. The study also established a negative of exchange rate depreciation on investment while public

investment crowded in private investment. The study ignored the effects of policy uncertainty and financial liberalization.

Gitahi (2004) using accelerator model studied determinants of domestic private investment in Kenya. The study employed ordinary least squares estimation method and found out that there exists a significant positive relationship between lagged domestic private investment, return on investment, foreign direct investment, public investment, terms of trade, savings rate and private domestic investment but literacy level and credit availability were insignificant. While real interest rate, exchange rate, inflation rate, fiscal deficit and external debt have negative relationship with private domestic investment. The study considered financial liberalization but ignored the effects of individual strategies i.e. the import liberalization and the export promotion strategies. It also did not capture the effects of the changes in output as a factor that influences investment as indicated in the neoclassical theory of investment.

King'ori (2007) using neo-classical accelerator model studied the factors influencing private investment in Kenya. The study employed generalized instrumental variable estimation method and found out those factors that significantly and positively influence private investment included foreign exchange reserves, real GDP growth rate, public investment, savings and interest rates while inflation, openness to international trade, real foreign exchange rates and external debt influenced private investment negatively. The study ignored the effects of policy uncertainty, irreversibility and uncertainty of investment.

Kiprono (2009) using flexible accelerator model studied determinants of private investment in Kenya. The study employed OLS regression analysis based on cointegration and error correction model. The study found out that in the short run real GDP growth rate, real exchange rate, broad money supply and real deposit interest rates have a positive and significant impact on private investment while political regimes had a negative effect. But in the long run political regimes and credit to the private sector affect negatively the private investment while real GDP growth, real exchange rate and broad money supply affect positively the private investment. The study tried to measure the effects of policy uncertainty proxied by political regimes i.e. the Kenyatta's, Moi's and Kibaki's regimes ignoring the effects of general elections.

#### **2.4: Overview of literature**

Many researchers have studied private investment from different perspectives, and discussed focused variables and their relationship differently. Neoclassical flexible accelerator model have been mostly used. The variables in the model include private investment, real GDP growth, real interest rate, inflation, public investment, savings and real exchange rate. This study will augment the neoclassical investment model to include some variables which have an influence on private investment. These are trade liberalization, effects of financial deepening proxied by broad money supply as a ratio of GDP and political instability. Secondly, this study adds to Kenya specific studies because most studies have been carried out in developing countries whose investment

conditions are very different from those found in Kenya. Thirdly, this study will use the simple model in the estimation as opposed to the error correction model used by all studies done. Lastly, the timeframe used in this study is long enough to capture well the variables used earlier if they have changed with the changing environment.

## Chapter 3

### RESEARCH METHODOLOGY

#### 3.0: Introduction

This chapter deals with the methodology employed in the study. It examines the relationship between the private investment and other factors that affect its growth.

#### 3.1: Research design

The study tried to cover the question of how to improve private domestic investment in Kenya using diagnostic research design. This study used secondary data from statistical reports for the period from 1970 to 2012. The ordinary least squares estimation method was used to analyze the data after subjecting it to robust time series property tests.

#### 3.2: Theoretical model

This study undertook the issue of identifying key variables that strongly influence private domestic investment in Kenya. The choice of variables was guided by previous studies on this topic in different years in different countries. Theoretical analysis indicated that there is no consensus in terms of the determinants of investment. This study initially estimated the standard accelerator investment model and subsequently modified it to include other variables. Subsequently, insignificant variables were discarded to obtain a specification with only

significant regressors. The accelerator theory specifies the investment model as a function of economic growth. In the long run representation of the accelerator model, desired capital stock (K), is assumed to be proportional to expected level of output (Y).

$$K_t = \alpha Y_t \quad (3.1)$$

Where  $\alpha$  is the capital-output ratio and is assumed to be constant, the subscript  $t=1 \dots T$ . differencing equation (3.1) with respect to time, we obtain equation (3.2) below;

$$\Delta K_t = \alpha \Delta Y_t \quad (3.2)$$

Where the  $\Delta$  is the difference operator. In order to obtain an expression for the relationship between desired capital stock and investment, the convectional capital accumulation identity specified in equation (3.3) below is used to define investment (I);

$$K_t = (1-\delta) K_{t-1} + I_t \quad (3.3)$$

Where;  $\delta$  refers to the rate of depreciation of capital. From equation (3.3), the following expression is obtained;

$$K_t - K_{t-1} = I_t - \delta K_{t-1} \quad (3.4)$$

Rearranging equation (3.4), and assuming  $\delta=0$  and solving for  $I_t$  yields the following expression;

$$\Delta K_t = I_t \quad (3.5)$$

Substituting equation (3.5) into equation (3.2) we obtain;

$$I_t = \alpha \Delta Y_t \quad (3.6)$$

This equation represents the basic investment function. To account for the slow adjustment of the actual capital stock to the desired capital stock, lagged values of the dependent variable are introduced into the equation to yield the following model.

$$I_t = \beta I_{t-1} + \phi_1 \Delta Y_t + \phi_2 \Delta Y_{t-1} + \varepsilon_t \quad (3.7)$$

Where the first two terms on the right hand side are lagged investment and output growth rates respectively.  $\Delta Y_{t-1}$  represents lagged growth of output,  $\phi$  represents respective coefficients,  $\varepsilon_t$  is the error term.

From the equation (3.7) we add a variable to represent factors applicable to developing countries such as neoclassical factors, policy related factors, financial factors, political and social stability, openness of the economy and general macro economic factors.

$$I_t = \beta I_{t-1} + \phi_1 \Delta Y_t + \phi_2 \Delta Y_{t-1} + X_t + \varepsilon_t \quad (3.8)$$

Where  $X_t$  represent factors applicable to developing countries such as neoclassical factors, policy related factors, financial factors, political instability, openness of the economy and general macro economic factors.

### 3.3: Model Specifications

Therefore our model for private domestic investment which was used to test the relationship between private domestic investment and its different determinants is represented as follows;

$$IP = f(RI, GDP, D.sav, M3, PUBI, PIP, PGDP, Del, Dpol, \varepsilon) \dots \quad (3.9)$$

Private domestic investment (IP) is the dependant variable in the model. The remaining variables are considered as independent or determinants of private investment.

$$IP = \beta_0 + \beta_1(RI) + \beta_2(GDP) + \beta_3(D.sav) + \beta_4M_3 + \beta_5(PUBI) + \beta_6(PIP) + \beta_7(PGDP) + \beta_8(Del) + \beta_9Dpol + \varepsilon$$

.....(3.10)

Where:

IP: Annual growth rate of Private Domestic Investment

RI: Real rate of Interest.

GDP: Annual growth rate of real Gross Domestic Product.

D.sav: Growth rate of Domestic savings.

M3: Broad Money Supply.

PUBI: Annual growth rate of Public Investment.

PIP: Previous Period Annual growth rate of Private Investment.

PGDP: Previous Period Annual growth rate of real Gross Domestic Product.

Del: dummy variable used as a proxy for election, takes value one during the election year and a year (before and after elections) and zero otherwise.

Dpol: dummy variable used as a proxy for trade liberalization; takes one for the period without the trade liberalization.

$\varepsilon$ : Error term.

### 3.4: Definition and measurement of variables

The dependent variable is private domestic investment. It is proxied by the difference between the gross capital formation and public investment less foreign direct investment. It is measured in terms of nominal private domestic investment as a percentage of nominal GDP.

The explanatory variables are;

1. Rate of Interest (Discount rate). [RI]. This study will use CBK average lending interest because majority of Kenyans borrow money from financial institutions to finance their investment. Thus, a negative coefficient of real interest rate ( $\beta_1 < 0$ ) will imply user cost of capital effect whereas a positive ( $\beta_1 > 0$ ) one would support the complementarity hypothesis.
2. Annual growth rate of real Gross Domestic Product. [GDP]- Annual growth rate of real GDP is used to capture the aggregate demand conditions in the economy and it is expected to exert a positive effect on private investment. Consequently, the study expects the coefficient of real GDP to be positive [ $\beta_2 > 0$ ].
3. Growth rate of Domestic savings. [D.sav]. - Gross Domestic savings is the net of gross national disposable income after accounting for consumption. These are therefore domestic resources that feed in the monetary system as sources of funds to finance investment. The coefficient is expected to be positive [ $\beta_3 > 0$ ].

4. Annual growth rate of Public Investment. [PUBI]: This is the sum of domestic and externally financed development expenditure. The effect of public investment is ambiguous:  $\beta_5 < 0$  implies crowding-out whereas  $\beta_5 > 0$  suggest crowding-in.
5. Previous Period Annual growth rate of Private Domestic Investment [PIP]: It is the current private domestic investment lagged once. It is measured by total domestic private investment expressed as a percentage of GDP lagged by one period [ $\beta_6 > 0$ ].
6. Previous growth rate of real Gross Domestic Product [PGDP]: It is the current annual growth rate of real GDP less one. The coefficient shows the anticipation of investors and influences private domestic investment in a positive manner [ $\beta_7 > 0$ ].
7. Money Supply [M3]: measure of economy's money supply consisting of currencies, coin and checkable deposits plus savings deposits, small time deposits and money market mutual funds plus negotiable certificates of deposit as a ratio of GDP [ $\beta_4 > 0$ ].
8. Del: dummy variable used as a proxy for election, takes value one during the election year and a year (before and after elections) and zero otherwise.
9. Dpol: dummy variable used as a proxy for trade liberalization; takes one for the period without the trade liberalization.

### **3.5: Data type and sources**

Time series data was used and was extracted from secondary sources i.e. statistical abstracts, economic surveys, World Bank development indicators, public expenditure reports and National integrated monitoring and evaluation reports.

### **3.6: Estimation and Testing Procedure**

In empirical analysis, non-stationarity of time series data is a perennial problem. To avoid estimating and getting spurious result, this study conducted test for stationarity. The test for a unit root was done using the conventional unit root tests known as Augmented Dickey Fuller [ADF] unit root test [see Dickey and Fuller, 1981]. The KPSS was also used to complement the ADF unit root test. Also, in order to capture any possible structural shift over the estimation period Perron (1997) was used. This test allow for a single break at an unknown time under the alternative hypothesis of trend-stationarity. It is true that the Perron (1997) test, by virtue of accounting for one structural break, is an advance over standard ADF tests. The parameters were estimated using OLS. The number of lags was determined using the AIC and the Schwartz. Then the predictive power of the model was determined using the  $R^2$  and F statistics. Objective one was analyzed by evaluating the significance of the individual coefficients, while objectives two and three were analyzed by evaluating the coefficients of the dummies and the t-statistics. However newest method was used to check the presence of heteroscedasticity and auto correlation.

## Chapter 4

### EMPIRICAL FINDINGS

#### 4.0: Introduction

This chapter presents the empirical findings of the study. The chapter is organized as follows: Firstly, Descriptive statistics where each of the variables was discussed. Thereafter, Stationarity test for each of the time series variable was conducted. Finally regression results, relevant diagnostic tests and discussion of the findings were presented.

#### 4.1: Descriptive statistics and Normality Test

This section presents relevant descriptive statistics of the time series data. Table 4.1 shows the mean, median, minimum, maximum, standard deviation, skewness, kurtosis and Jargue- Bera values of each variable.

**Table 4. 1: Descriptive Statistics**

	Growth rate of Domestic savings	Annual growth rate of real GDP	Previous annual growth rate of GDP	Rate of Interest (Discount rate)	Money supply	Previous Period growth rate of Private Investment	Annual growth rate of Public Investment
Mean	14.83907	3.945349	3.935116	7.026744	34.86628	11.59047	8.07907
Median	16.51	4.3	4.3	6.71	34.53	11.4	8
Maximum	27.02	8.8	8.8	21.1	50.98	25.38	17.6
Minimum	5.09	0.2	0.2	-7.49	25.71	6.71	0.4
Std. Dev.	6.058711	2.1199	2.115251	-7.422003	6.521167	3.234482	3.079391
Skewness	-0.04113	0.033319	0.021845	0.147295	0.822016	1.655372	0.483537
Kurtosis	1.751841	2.305455	2.323373	2.467655	3.046705	8.754884	5.211665

Jarque-Bera	2.803363	0.872243	0.823687	0.663228	4.846504	8.97615	10.43949
Probability	0.246183	0.646539	0.662428	0.717764	0.088633	0	0.005409
Sum	638.08	169.65	169.21	302.15	1499.25	498.39	347.4
Sum Sq. Dev.	1541.735	188.7471	187.9201	2313.617	1786.076	439.3988	398.2712
Observations	43	43	43	43	43	43	43

*Source: Own computation*

#### **4.1.1: Descriptive statistics**

From table 4.1 above, the annual growth rate of real GDP and previous annual growth rate of GDP averaged 3.95 and 3.94 respectively. On the other hand Previous Period growth rate of Private Investment recorded a mean of 11.59 and a median of 11.4. While annual growth rate of public investment had a mean of 8.08 and a median of 8, Money supply had a mean of 34.87 and a median of 34.53, and Growth rate of Domestic savings had a mean of 14.84 and a median of 16.51.

#### **4.1:2 Normality Test**

From table 4.1 above, For normality of data the Jarque Bera statistic should be less than 5.9, the skewness should be close to zero and the kurtosis should not be far from three. The table above shows that all the variables met the conditions for normality of data except the data on previous growth in private domestic investment and public investment. For example growth rate of domestic savings recorded 2.8, -0.04 and 1.75 for Jarque Bera statistics, skewness and kurtosis respectively. Annual growth rate of real GDP registered 0.8, -0.03 and 2.3 for Jarque Bera statistics, skewness and kurtosis respectively. Previous period annual

growth rate of GDP recorded 0.82, -0.02 and 2.3 Jarque Bera statistics, skewness and kurtosis respectively. While the Jarque Bera statistics of the rate of Interest (discounted) was 0.66, 0.14 for skewness and 2.47 for kurtosis. The previous Period growth rate of Private domestic Investment did not meet any of the conditions for normality i.e. the Jarque Bera statistics was 8.98 which was above 5; the skewness was 1.66 that was not close to zero and kurtosis of 8.75 that is not close to 3. The skewness of Annual growth rate of Public Investment was close to zero recording 0.48; with a Jarque Bera statistics of 10.43 which was way above 5; and the Kurtosis of 5.21. The data on previous period growth rate of private investment and annual growth rate of public investment did not meet the normality conditions due to high volatility in the data.

#### 4.2: Stationarity test

This study used both Augmented Dickey- Fuller (ADF) and KPSS to test for stationarity of the time series data at 5 per cent significant level. The results of the test were as follows:

**Table 4. 2: Stationarity Test using ADF**

Variable	Estimation Level	ADF critical Value (5%)	t- statistic	p-value	Status
IP(t)	Level	3.520787	4.161774	0.0108	Stationery
RI(t)	Level	3.523623	4.582804	0.0036	Stationery
GDP(t)	Level	3.523623	3.566456	0.0455	Stationery
Dsav(t)	Level	3.523623	4.075521	0.0136	Stationery
M3(t)	Level	3.523623	1.826157	0.6737	Non Stationery
	1 <sup>st</sup> differe	3.526609	4.426861	0.0056	Stationery

	nce				
PUBI(t)	Level	3.523623	3.262178	0.0870	Non Stationery
	1 <sup>st</sup> difference	3.526609	5.967497	0.0001	Stationery
PIP(t)	Level	3.523623	2.810112	0.2020	Non Stationery
	1 <sup>st</sup> difference	3.526609	6.277435	0.0000	Stationery
PGDP(t)	Level	3.523623	3.625291	0.0399	Stationery

*Source: Own Computation*

As per the Table 4.2 above, the p values of the variables growth in private domestic investment, the growth of domestic savings, GDP, previous GDP and real interest were less than the significance level of 0.05 therefore the null hypothesis of unit root was rejected. This means that the variables were stationary at level implying that they are integrated of order zero I(0). While broad money supply, public investment and previous domestic investment were stationary after the first difference. This means that these variables (broad money supply, public investment and previous domestic investment) were integrated of order one I(1).

**Table 4.3: Stationarity Test using Kwiatkowski-Phillips-Schmidt-Shin (KPSS) Unit Root Test**

Variable	Level	LM- statistic	Critical Value (5%)	Status
IP(t)	Level	0.120573	0.146000	Stationery
RI(t)	Level	0.094971	0.146000	Stationery
GDP(t)	Level	0.142807	0.146000	Stationery
Dsav(t)	Level	0.110739	0.146000	Stationery
M3(t)	Level	0.151326	0.146000	Non Stationery
	1st difference	0.050130	0.146000	Stationery

PUBI(t)	Level	0.110116	0.146000	Stationery
PIP(t)	Level	0.124431	0.146000	Stationery
PGDP(t)	Level	0.121854	0.146000	Stationery

*Source: Own Computation*

As per the Table 4.3 above, the LM statistics of the variables growth in private domestic investment, the growth of domestic savings, growth rates of public investment, annual growth in GDP, previous growth in GDP and real interest were less than the significance level of 0.05 therefore the null hypothesis of unit root was rejected. This means that the variables were stationary at level implying that they are integrated of order zero  $I(0)$ . While broad money supply was stationary after the first difference. This means that broad money supply was integrated of order one  $I(1)$ .

### **4.3: Empirical results**

The main objective of the study was to analyze the factors that influence growth in private domestic investment in Kenya. To achieve this objective, the study used a simple model where the growth in private domestic investment was regressed on broad money supply, growth rate in public investment, previous growth in domestic investment, the growth of domestic savings, annual growth rate of GDP, previous growth in GDP and real interest.

First, AIC and Schwarz criteria was conducted to determine the appropriate number of lags to be included in the model, AIC and HQIC showed that the appropriate number of lags was 3 while Schwartz criteria showed that the

appropriate number of lags is one. Since Swartz is superior, it was established that the maximum number of lags to be included in the model is one. A cointegration test was done to determine the existence of cointegrating relationship. The results are shown in table 4.4.

**Table 4.4: Cointegration Test for Determinants of Private Domestic Investment**

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.644058	42.35253	33.87687	0.0039
At most 1	0.454826	24.87263	27.58434	0.1070
At most 2	0.389621	20.24068	21.13162	0.0662
At most 3	0.167248	7.503806	14.26460	0.4314
At most 4	0.001831	0.075159	3.841466	0.7840

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level  
 \*Denotes rejection of the hypothesis at the 0.05 level

*Source: Own Computation*

The results indicate existence of one cointegrating equation which supports the empirical model. Diagnostic tests on regression model estimated using Ordinary Least squares (in table 4.5) showed that there was neither Heteroskedasticity nor multi-collinearity were present in the model. The Durbin Watson test showed that there was no serial correlation.

**Table 4.5: Estimation Results Using Ordinary Least Squares**

S/no.	Variable	Coefficient	t-statistic	p-value	Remarks
1.	<i>RI</i>	0.071559	0.974698	0.3368	Not Significant
2.	<i>GDP</i>	0.806127	2.462759	0.0192	Significant
3.	<i>D.sav</i>	0.187068	2.177512	0.0367	Significant

4.	$dM_3$	0.213959	0.955972	0.3460	Not Significant
5.	$dPUBI$	-0.165031	-0.849236	0.4019	Not Significant
6.	$dPIP$	-0.214401	-1.309375	0.1997	Not Significant
7.	$PGDP$	0.903411	2.845502	0.0076	Significant
8.	$Del$	3.315059	2.686020	0.0112	Significant
9.	$Dpol$	0.349925	0.216685	0.8298	Not Significant

R-squared	0.370373	Mean dependent var	-0.071429
Adjusted R-squared	0.193291	S.D. dependent var	3.592073
S.E. of regression	3.226292	Akaike info criterion	5.384801
Sum squared resid	333.0868	Schwarz criterion	5.798532
Log likelihood	-103.0808	Hannan-Quinn criter.	5.536450
Durbin-Watson stat	1.810986		

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*Source: Own Computation*

The first specific objective was to determine the relative significance of the factors that influence growth of private domestic investment in Kenya. To realize this objective, the model in equation 3.10 was estimated then individual coefficient analyzed for their significance. Generally the results show that GDP, Previous GDP, the growth of domestic savings and election were significant determinants of growth of private domestic investment. The p-values for GDP, Previous GDP, the growth of domestic savings and election were less than 0.05 meaning that the coefficients were significant at 5 percent level of significance. On the other hand, real rate of interest, broad money supply, public investment, previous period domestic investment and a dummy variable for trade liberalization has a p-value which is greater than 0.05. This means that they were not significant at 5 percent significant level.

As expected growth of GDP, the growth of domestic savings, real rate of interest, previous GDP and broad money supply have a positive relationship with the growth of private domestic investment. On the other hand public investment and previous period domestic investment had a negative relationship with the growth of private domestic investment. The postulate in economic theory agrees with the empirical results for all the variables except that of previous period domestic investment. GDP, the growth of domestic savings, real rate of interest, previous GDP and broad money supply influenced the growth of private domestic investment positively while public investment and previous period domestic investment contributed negatively to the growth of private domestic investment growth. However, contrary to expectation real rate of interest and broad money supply were statistically insignificant at 5 percent level of significance. This could mean that, while real rate of interest and broad money supply actually complements the growth of private domestic investment in any country, its elasticity may not have any meaningful relationship with private domestic investment.

The first objective sought to determine the relative significance of the factors that influence the growth of private domestic investment in Kenya. The regression results in table 4.4 show that GDP, the growth of domestic savings and previous period GDP were significantly different from zero. This implies that the growth of private domestic investment is affected by the level of savings, gross domestic product and previous GDP.

The second objective sought to determine how political instability affects the growth of private domestic investment in Kenya since 1970. The results in table 4.4 show that the null hypothesis of significant difference across the election period and non-election period was not rejected at 5 percent level of significance. In this regard, the results established that there was significant change in growth of private domestic investment between the periods of elections and non-election. This implies that the growth in private domestic investment was high during election years as compared to non election years in Kenya. This means that fiscal policy manipulation is of relatively smaller magnitude during this period and also politicians may use some policy instruments to purchase the required support for their campaign.

Objective three was to analyze the effects of different investment policies from 1970 to 2012 on the growth of private domestic investment. The results in table 4.4 show that the average private domestic investment growth rate during trade liberalization was not significant. Further analysis show that the null hypothesis of significant difference across the two regimes was not rejected at 5 percent level of significance. In this regard, the results established that trade liberalization positively affected the growth of private domestic investment but the change was not significant.

#### **4.4: Discussion of the regression results**

The change in the savings variable was found to have a significant positive effect on the change in the private investment. One unit change in amount of savings by

households is associated with 0.18 unit change in the level of private domestic investment. This implies that investors gain greatly from retained earnings due to savings. Poor economic performance and heavy taxation in Kenya aimed at financing heavy external debt discourage savings and therefore slowed down investments. Asante (2000) employing the ordinary least squares approach to model private domestic investment behaviour in Ghana confirms that savings had positive significant effects on private domestic investment. Gitahi (2004) found a positive insignificant relationship between saving rate and private domestic investment. World Bank (2008) investigation found that increase in saving rate affected positively to a greater extent the levels of private investment.

The growth rate of GDP has the expected positive sign, which means that economic growth induces more growth in private investment. This is the “accelerator effect”. A rapidly growing economy would be expected to boost expectations and hence investment. Akpalu (2002) found a significant positive relationship between real GDP and private investment both in the short and longrun models. Mbanga (2002) using time series data found that there was a significant positive relationship between real GDP and private investment.

Broad money supply was found to be positively related to the growth of the private domestic investment but was insignificant. The positive relationship may indicate that investment depends on the amount of money in circulation but at a very insignificant level.

The growth in public investment was found to be insignificant with a negative effect to the growth of private domestic investment implying that most of the government investment crowded out private domestic investment. Crowding-in effect of public investment on private investment is confirmed as the coefficient of public investment is negative but statistically insignificant at the 5 percent significance level and positive. This means that successive government's efforts at providing infrastructure (i.e. energy, telecommunication, roads and transport, irrigation, etc) complements private sector investment in Kenya. This result confirms the findings of Asante (2000) where there was a positive relationship between public-private investments. This suggests a crowding in effect of public investment on private investment. Mbanga (2002) also established a crowding in effect of public investment on private investment.

Real rate of interest was found to be positively related to the growth of the private domestic investment but was insignificant. King'ori (2007) using neo-classical accelerator model confirms that real interest rate positively influences private investment in Kenya but insignificant. But Islam and Wetzel (1991) found out that real interest rates had substantial effects on private investment. The results suggest that there is less significant role of monetary policy to domestic investment in Kenya. Also the positive relationship implies that most domestic investors depended on retained earnings where high interest rates may have led to increased savings and therefore investments.

Lagged growth rate in the private domestic private investment was found to be insignificant at 5 percent significance level with a negative sign. Mbanga (2002) found out contrary results that lagged private domestic investment stimulates current levels of investments in Cameroon. This is evident that private domestic investors in Kenya are not keen on the previous levels of private domestic investment.

Previous period growth in the gross domestic product was found to be significant at 5 percent significance level with a positive sign. This implies that a better performing economy is regarded by investors as an assurance of better returns on the investment in future.

Trade liberalization was found to be positively related to the growth of the private domestic investment but was insignificant. This outcome is contradicted by Gitahi (2004) study that noted that trade liberalization in a market driven economy proved to be hostile to developing domestic private sector. Trade liberalization has a bearing on imported goods (raw materials and capital goods). In, principle worsening terms of trade discourages investment as it becomes relatively expensive to import the necessary raw materials/goods. Also for a less developed country like Kenya, trade liberalization poses a challenge to domestic investors who are unable to cope with the competition. However this study indicates that trade liberalization provides market for locally produced goods and services provided that the country has a comparative advantage to produce. The growth in private domestic investment was high during election years as compared to none

election years in Kenya. This outcome is supported by study done Khemani (1997) confirming that political cycles affected domestic investment positively. The election cycle generated high discounting of the future in an environment of political uncertainties, so that it is only in the election year that incentives to woo the majority of voters are the greatest in developing countries. Kenya being among the developing countries has also experienced peaceful election over the years that may have led to increase in investments.

## Chapter 5

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.0: Introduction

This chapter highlights the summary of the findings of the study, conclusions and policy recommendations of the study. The chapter further gives limitations of the study in addition to recommended areas for further research.

#### 5.1: Summary

This study intended to establish relative factors that affect the rate of growth of private domestic investment. It projected to clarify the extent at which government implemented strategies (import and export promotion strategies) affected the growth in private domestic investment in Kenya. This study has analyzed the growth of private domestic investment in Kenya. To achieve this, the study regressed the Real rate of Interest, growth in Gross Domestic Product, the growth of domestic savings, broad money supply, growth in public investment, previous period growth in private investment and previous period growth in gross domestic product on the growth of private domestic investment. Annual time series data were used. The regression results imply that the growth in GDP, Previous period growth in GDP, the growth of domestic savings and election positively affect the growth of private domestic investment of the country.

Finally, the study indicates that private domestic investment growth showed an insignificant change during the trade liberalization era.

## **5.2: Conclusions**

The main objective of this research work was to determine factors affecting the growth of private domestic investment in Kenya. Macroeconomic secondary data was used to determine this relationship. The results indicate a positive relationship between the growth of private domestic investment and the growth in the GDP, Previous growth rate in GDP, real rate of interest, broad money supply, and growth of domestic savings, election and trade liberalization. The results imply that government can improve the level of private domestic investment by manipulating fiscal policies that encourage domestic savings, growth in GDP and liberalizing trade. Promises made by politicians during election periods also encourage growth in private domestic investment.

## **5.3: Policy Implications**

The study draws the following policy recommendations:

1. Increased savings ensure availability of funds for future investments either as funds available in banks for lending or firms' retained earnings. Therefore there is need to properly coordinate the monetary policies to ensure high savings to GDPs ratios. Savings can also be increased by instituting low tax rates by expanding the tax base and increasing tax compliance. Savings is also increased by providing a macroeconomic

framework in which inflation is low and incentives are predictable. Public-private initiatives would be advisable to come up with an effective strategy for domestic resource mobilization.

2. The positive relationship between the growth of private domestic investment and economic growth suggest that GDP plays a role in private domestic investment growth of the country. Empirical findings obtained showed that there is no doubt that growth in real output or aggregate demand conditions is the engine of private sector investment growth in Kenya. Improving the productivity of sectors such as agriculture and manufacturing by providing more efficient and advanced technologies (ICT) as input subsidies could go a long way to increase private investment levels and growth in output.
3. Several policy implications can be drawn from the significant positive effect of public investment on the growth of private domestic investment. As a matter of policy, it is essential for the central government together with her parastatals to continue to earmark and prioritize public projects, particularly investment in infrastructure and human capital, which have the potential to complement and further boost private sector investment performance in Kenya. Further, government should ensure efficient delivery of services and increased productivity of public investment. These initiatives should be undertaken to sustain peace and prevent civil unrest and armed conflicts so as to increase expenditures on physical and infrastructures

including health and education. Physical infrastructural development in support of private sector may include investment in roads, rail, port, communications, water and energy.

4. A better performing economy is regarded by investors as an assurance of better returns on the investment in future. Positive economic and social reforms need to be undertaken to raise the rate of growth of the economy; and productivity and competitiveness. Political stability sustains high growth in the private domestic investment hence high economic growth. This can be ensured through adequate legal systems, prevention of corruption, and prevention of civil unrest. Civil unrests caused by political instability destroy human capital development and physical infrastructure thereby disrupting the proper working of institutions and increasing government spending on avoidable spending like strengthening of military and civil defense forces. Such expenditures crowd-out private domestic investment.
5. Moreover, fiscal and monetary policy should be not be manipulated during election period to point in the direction of political favors extended in exchange for campaign support. The voters should also evaluate candidates on more micro indicators of performance and accountability.
6. Further, the study recommends further liberalization of the economy to give impetus to economic growth. The adverse effect of trade openness imply that capital formation, and hence domestic production and value

adding has been greatly substituted by foreign production. To ensure positive trade liberalization, efforts should be made to promote fixed domestic investment for export and domestic consumption. Trade liberalization should be selective, protective and supportive to domestic production where potential future international competitiveness is possible. Policies should reduce transaction costs and avail cheap credit to small domestic firms to expand production that will increase exports.

#### **5.4: Areas for further research**

Given the importance of private domestic investment in economic growth of the country, further research is needed to take into account other Micro and Meso-economic factors like corruption, unemployment and poverty and how they affect the growth of private domestic investment in Kenya.

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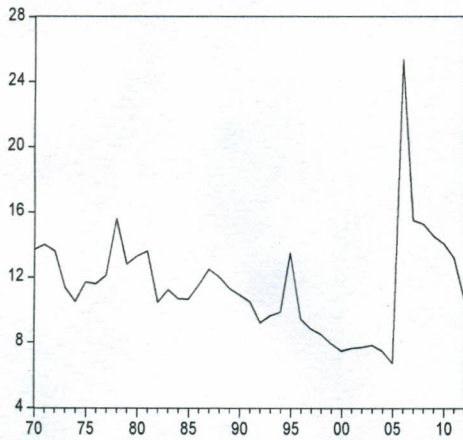
## Appendix 1: Data for the Entire Study Period

YEAR	PIP	RI	GDP	D. SAV	M2	M3	PUBI	PIP	PGDP	DEL	DPOL
1970	13.7	20.5	6.8	23.56	30.61	35.6	6	13.1	4.66	0	1
1971	14	20.07	7	17.37	29.67	35	8.7	13.7	6.8	0	1
1972	13.6	7.7	6.8	20.18	28.54	34.95	8.5	14	7	0	1
1973	11.4	-1.09	4.3	24.54	30.49	34.84	9.4	13.6	6.8	0	1
1974	10.5	-5.64	1.1	18.53	25.71	30.01	8.7	11.4	4.3	0	1
1975	11.7	-1.64	4.1	13.45	27.39	32.56	8.5	10.5	1.1	0	1
1976	11.6	-7.49	2.4	20.93	28.18	32.88	8.4	11.7	4.1	0	1
1977	12.1	-5.9	8.8	27.02	32.8	37.71	8.9	11.6	2.4	0	1
1978	15.6	6.71	6.6	20.01	34.53	40.42	9.5	12.1	8.8	0	1
1979	12.8	4.13	3.3	16.43	34.35	41.31	10.9	15.6	6.6	0	1
1980	13.3	0.94	5.6	18.12	29.93	37.9	10.3	12.8	3.3	0	1
1981	13.6	1.41	4.1	19.55	29.47	38.22	10.2	13.3	5.6	0	1
1982	10.46	2.61	5.1	16.96	30.42	39.27	8.4	13.6	4.1	0	1
1983	11.23	3.57	1.6	18.66	28.18	38.01	6.7	10.46	5.1	0	1
1984	10.68	3.84	1.6	14.51	28.34	40.18	7.2	11.23	1.6	0	1
1985	10.65	5.26	4.8	20.48	26.68	39.17	7	10.68	1.6	0	1
1986	11.54	4.86	5.6	17.72	30.39	42.55	8	10.65	4.8	0	1
1987	12.49	8.16	4.9	19.2	30.24	43.06	7.1	11.54	5.6	0	1
1988	12.02	8.03	5.1	20.22	28.9	41.56	8	12.49	4.9	0	0
1989	11.31	6.82	5	17.77	28.4	41.64	7.8	12.02	5.1	0	0
1990	10.91	7.33	4.3	18.53	29.58	44.67	9.4	11.31	5	0	0
1991	10.49	5.75	2.1	19.46	30.98	46.06	8.3	10.91	4.3	1	0
1992	9.2	1.83	0.5	16.51	36.52	50.88	7.1	10.49	2.1	1	0
1993	9.63	3.41	0.2	22.56	37.07	50.56	8	9.2	0.5	1	0
1994	9.86	16.43	3	22.11	38.02	51.86	8.5	9.63	0.2	0	0
1995	13.51	15.8	4.8	15.26	42.23	50.91	7.4	9.86	3	0	0
1996	9.42	-5.78	4.6	8.09	35.79	40.81	7	13.51	4.8	1	0
1997	8.83	16.88	2.4	6.46	38.42	41.42	6.4	9.42	4.6	1	0
1998	8.48	21.1	1.8	8.13	35.81	38.85	5.6	8.83	2.4	1	0
1999	7.92	17.45	1.4	8.99	35.77	38.46	5	8.48	1.8	0	0
2000	7.47	15.33	-0.2	7.28	35.16	37.71	6.1	7.92	1.4	0	0
2001	7.65	17.81	1.2	8.71	35.24	36.43	6.1	7.47	0.6	1	0
2002	7.69	17.36	0.5	9.76	38.16	39.85	5.8	7.65	4.7	1	0
2003	7.82	9.77	2.9	10.52	39.02	40.7	6	7.69	0.5	1	0

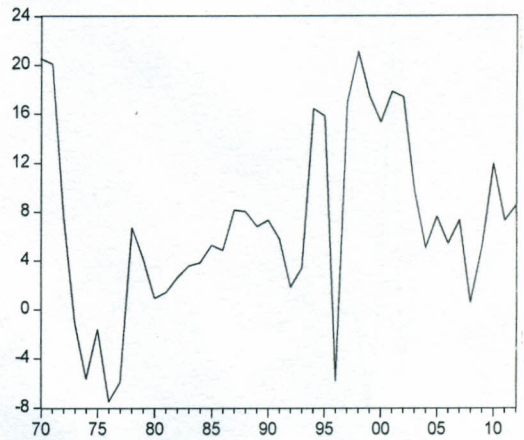
2004	7.46	5.05	5.1	10.71	39.33	40.84	5.9	7.82	2.9	0	0
2005	6.71	7.61	5.9	10.19	38.91	40.33	6.1	7.46	5.1	0	0
2006	25.38	5.42	6.32	8.6	39.71	41.27	0.4	6.71	5.9	1	0
2007	15.5	7.32	7.01	8.11	42.32	43.11	0.6	25.38	6.32	1	0
2008	15.28	0.53	1.53	5.09	42.54	42.23	17.6	15.5	7.01	1	0
2009	14.53	5.17	2.64	6.94	44.14	43.18	13.8	15.28	1.53	0	0
2010	14.07	11.93	5.55	8.95	50.08	48.94	14.5	14.53	2.64	0	0
2011	13.2	7.3	4.4	6.17	50.98	49.25	14	14.07	5.55	0	0
2012	10.7	8.5	5.1	5.74	50.25	60.8	9.6	13.2	4.4	1	0

## Appendix 2: Time Profile of Variables

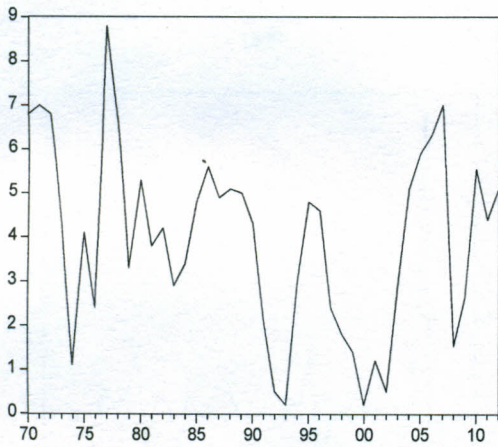
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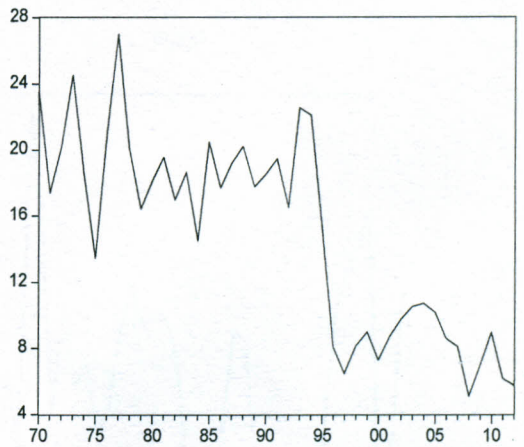
RI



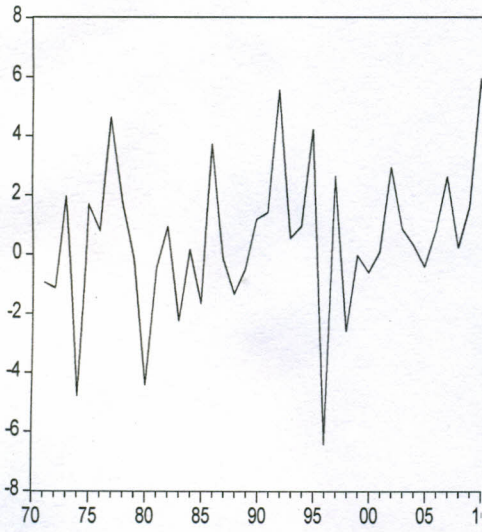
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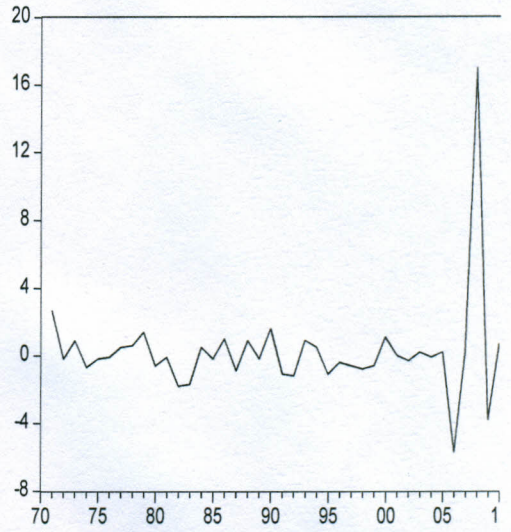
DSAV



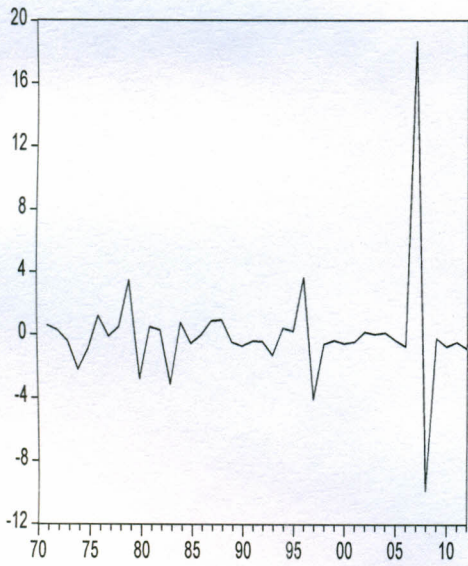
DM3



DPUBI



DPIP



PGDP

