CAUSAL RELATIONSHIP BETWEEN CAPITAL FLIGHT AND CHANGES IN EXTERNAL DEBT IN KENYA: AN EMPIRICAL ANALYSIS 1980-2000

BY

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

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DEDICATION

This study is dedicated to my wife, Evelyn, my two sons, Bryan Adams and Eric Monari. Without their support, I would have not been able to mobilize the energy and motivation required to write a research paper of this nature.

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ACKNOWLEDGEMENT

ABSTRACT

The phenomenon of capital flight and external debt has triggered a debate among analysts as to whether debt crisis predated capital flight or capital flight predated debt crisis. Some analysts claim that the international debt crisis in the early 1980s was a significant factor in the large-scale capital flight during that period. Others have argued before the eruption of debt crisis, capital flight was in existence and contributed to developing countries' inability to meet their debt obligation, which eventually resulted into the debt crisis.

The uncontrolled capital flight and increasing debt burden coupled with dwindling real per capita incomes and generally unsatisfactory macroeconomic performances pose significant strains on the fiscal budgets and overall economic growth in many developing countries including Kenya. Most governments have undertaken reactive austere measures to sustain the provision of government services (in particular to the poor), inter-alia. However, these goals are potentially undermined by the recognized practice of capital flight and mounting external debt.

The study examines the twin issues using the Granger causality test to generate the missing knowledge for informed policy actions towards enhanced economic growth. We also examine the relative influence of other variables on capital flight. The study employs data from Kenya for the period 1980-2000. An appropriate econometric procedure is used to establish these relations and the results appraised on the basis of the standard diagnostic tests and economic theory criteria.

The results show that though changes in external debt and capital flight move together for the period under investigation there is however, no causal relationship that exists between the two as our empirical results suggests. In other words capital flight did not Granger cause external debt and neither did changes in external debt Granger-cause capital flight in the domestic economy. What we note is that changes in external debt, fiscal deficits both present and past compounded with other macroeconomic imbalances not withstanding some elements of political tension among other factors did have significant influence on capital flight during this period. This in essence implies that causality applies indirectly since it is not only one factor that give rise to capital flight. We therefore recommend that appropriate domestic macroeconomic policies specifically those geared towards reduction in foreign debt, fiscal deficits and creation of a conducive and stable investment environment coupled with political stability should be allowed to reign and be maintained at all times.

CHAPTER ONE

INTRODUCTION

1.1   BACKGROUND

There has been a general contention that capital flight[1] in developing countries contributes

significantly to external debt problems. This is may occur when capital-scarce countries borrow

heavily in international capital markets. This phenomenon can be counterproductive and hence

contribute to domestic macroeconomic imbalances. The macroeconomic argument against

capital flight is that it is "a perverse exportation of domestic savings and foreign exchange that

given the insufficiency of both in low income countries has consequences that may severely

hinder their potential for growth" (Lessard and Williamson, 1987). Capital flight in this sense is

Viewed as a diversion of domestic savings away from financing domestic real investment and in

favor of foreign financial investment. As a result, the pace of growth and development of the

economy is retarded from what it otherwise, would have been.

Estimates from Latin American economies have shown that in the years 1973-85 the exit of

residents' own capital amounted to US$ 151 billion during the period. When compared to the

increase in debt over the same period, the result is startling: Over 40% of the debt build-up was

used to finance capital flight (Pastor 1990).

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[1] For the purpose of this study, flight capital is defined as the stock of assets that is outside the borders of a given country to offset large portions of the total external debt. Capital flight is the capital that flees (Walter 1986, Kindleberger 1987). Adopting the International Monetary Fund (IMF) definition we define Gross External Debt as "the amount at any given time of disbursed and outstanding contractual liabilities of residents to repay principal with or without interest, or to pay interest with or without principal".

These high levels of capital flight could considerably present several economic and political problems. First growth is reduced, partly because investment has been diverted abroad but also because necessary imports are limited by foreign exchange drain from both the flight itself and the fact that earnings on such flight assets are often not repatriated. Second, the combination of debt accumulation and capital flight creates a perverse distributional dynamics: the poor undergo austerity in order to pay international banks which in turn make interest payments to those residents wealthy enough to have assets abroad. Finally, capital flight impedes a resolution of the overall debt problem by increasing the cost of raising revenue to service debt and consequently generating concerns about the prospects for debt repayment (and by extension, a recovery of world trade) since it is difficult to persuade developed nations to extend new credit or debt relief when such a high percentage of the new resources may merely "slip out" of the country again as capital flight (Pastor, 1990).

The implication therefore is that resources available for domestic investment and capital formation are reduced hence adversely affecting the country's current and future prospects. The income generated as well as wealth held abroad is a loss to the government and is outside the purview of relevant authorities and cannot be taxed. The resulting effects are a reduction in government revenue and its debt servicing capacity. Further an exacerbation of the balance of payments crisis and worsening foreign finance problems of the heavily indebted countries may emerge as creditors become reluctant to give further assistance as a result of capital outflows.

Capital flight from LDCs to developed countries may be attributed to a number of factors. The preponderant of the causes are economic in nature, which again are inextricably interwoven with political causes and favourable foreign economic incentives. Thus, these factors can be grouped under relative risks, exchange rate misalignment, financial sector constraints, fiscal deficits and external incentives (Khan, 1987) and disbursement of new loans to developing countries (Cuddignton, 1987). Besides, these economic factors, there are however, other non-economic factors which, though important, are often ignored (Ajayi, 1995). These include corruption of political leaders and extraordinary access to government funds. Some leaders may even use their offices to siphon funds to foreign countries. There are anecdotal evidence that highly placed public officials using the paraphernalia of their office siphon some of the money under their care to foreign countries solely for their own private use. The best examples on this relate to the late Ferdinand Marcos, president of the Philippines and the former leaders of Haiti and Zaire (now Democratic Republic of Congo) Ajayi (1995).

In sub-Saharan Africa (SSA)[2] it is interesting to note that after half a century of channelling resources to these countries, little of the much advocated for development has been achieved, save for few isolated cases (Iyoha, 1999). These countries are now characterized by high degree of indebtedness, low standards of living, high unemployment level, poverty and poor economic performance. The average per capita income in SSA has fallen since 1980 despite the high external assistance. Both external and internal resources are badly needed for development and

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[2] The SSA countries are Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon Cape Verde, Central African Republic, Chad, Congo, Côte Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mauritius, Mayotte, Mozambique, Namibia, Niger, Nigeria, Reunion, Rwanda, São Tomé and Principe, Senegal, Seychelles, Sierra Leone, Somalia, South Africa, Sudan Swaziland, Tanzania, Togo, Uganda, Zambia and Zimbabwe.

their exit to foreign countries could have serious ramifications in the domestic economy Collier et al, (1999).

The growth in external debt in sub-Saharan Africa over the past two decades has given rise to concerns about the detrimental effects of the debt on investment and growth, principally the well-known "debt overhang" effect. For example, in 1975 the external debt of SSA amounted to about US$ 18 billion. By 1995, however, the stock of debt had risen to over US$ 220 billion. It was estimated to be US$ 320 billion at the start of the new millennium. Furthermore, there is now considerable evidence that the buildup in debt was accompanied by increasing capital flight from the region. In other words, SSA was simultaneously an importer and exporter of capital Iyoha (1999). For instant in 1990, 40 per cent of private wealth left Sub-Saharan Africa a proportion considered to be so high compared to other regions as Latin America (10%), South Asia (5%), East Asia (6%) and Middle East (39%) (World Bank Economic Review (2000)). Thus in addressing the twin issues of external debt and capital flight in sub-Saharan Africa, it is necessary to understand the nature of the problem at the country level (Ajayi, 1995).

The study seeks to establish the relationship between capital flight and foreign borrowing. To gain insight into the problem we shall be guided by the hypothesis that the government engages in foreign borrowing while the private sector shifts its funds abroad. This theory undoubtedly has some validity, since the bulk of financing to developing countries has been contracted by governments and comes from donor countries and multilateral agencies. And of course capital flight is purely a private sector activity. The drain of foreign exchange resources through capital

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flight creates a greater need for governments to borrow abroad.

The motivation for this study is on the observation that despite positive net private transfers and long term capital inflows into Kenya, the economy has continued to register a sluggish economic growth, persistent increases in external debt and capital outflows. (see Graph1: and Appendix)

1.2 MACROECONOMIC OVERVIEW

Kenya's macroeconomic performance as examined by Bevan et al (1987), Bevan and Karlstrom (1988), Killick (1984), Killick and Mwega (1990) and Ng'eno (1991) shows that during the first decade (1964-73) of Kenya's independence the economy witnessed one of the most impressive economic growth and macroeconomic stability. The economy grew at an annual average rate of 6.5 per cent during these first decades through the late 1970s. The impressive growth performance was attributed to sound macroeconomic policies, favourable investments and low inflation rates. The current account was modest and was more than compensated by net long-term capital inflows; hence the basic balance was positive. The national debt was confinable within the means of government and as such many writers on the Kenyan economic scene have referred to this decade as the "golden decade" (Killick, 1984). Since the 1980s to date the economy has not performed so well, the average real growth rate was only 4 percent, inflation rate averaged 11 per cent, the currency continued to depreciate and the external account kept worsening (see Table: 1). The Gross Domestic Product growth rate has been unstable and plummeting to as low as negative 0.3 per cent in 2000. (Economic Review March 2001)

Table: 1 Selected indicators of economic performance in Kenya for the period: 1980-2000

Year	GDP Growth (%)	Annual Inflation (%)	Exchange Rate	External debt (US$M)	Change In external debt (US$M)	CF (US$ M)
1980	4.0	12.9	7.4	3,394	1,217	554.3
1981	6.0	12.6	9.1	3,234	-160	-448.8
1982	3.4	22.1	11.0	3,375	141	-390.0
1983	3.0	4.7	13.4	3,638	263	72.0
1984	0.4	9.1	14.5	3,521	-117	-249.8
1985	5.1	8.7	16.4	4,201	680	590.4
1986	5.5	8.4	16.2	4,724	523	486.2
1987	4.9	8.7	16.5	5,755	1,031	724.9
1988	5.1	12.3	17.9	5,781	26	-453.6
1989	5.0	13.4	20.7	5,862	81	-368.9
1990	4.3	15.6	23.2	7,056	1,194	434.9
1991	2.3	19.7	27.8	7,455	399	293.0
1992	0.5	27.1	32.5	6,907	-548	-600.3
1993	0.2	46.0	60.1	7,118	211	-69.0
1994	3.0	28.8	55.7	7,160	42	-8.4
1995	4.8	1.6	51.8	9,121	1,961	1,797.2
1996	4.6	9.0	56.9	8,917	-204	-657.9
1997	2.4	11.2	58.5	8,284	-633	-1,032.0
1998	1.8	6.6	60.4	7,429	-855	-1,021.8
1999	1.4	3.5	70.3	6,429	-1,000	-983.7
2000	-0.3	6.2	79.0	6,771	342	-336.0

Sources:
1. Central Bank of Kenya, Annual, Monthly and Quarterly Reports
2. Economic Survey – Various Issues
3. World Bank Debtor Reporting System
4. CF – Capital flight computed using World Bank formula (Refer to Chapter 3)

Deterioration in economic performance can be traced to various adverse exogenous developments, inappropriate fiscal and monetary policies, especially in the 1980s and the domestic structural factors. Exogenous development in this period include the oil crisis which

occurred between 1979–80 and the consequent world recession, increased protectionism in developed countries; high external interest rates and decline in concessionary capital inflows; the droughts of 1979-80 and 1983-84 adversely affected the economy. The military coup attempt in 1982 significantly affected investment and caused some capital flight(Ng'eno, 1994). The unfolding events such as the unpredictable scenario with the first multiparty elections in 1992, eruption of ethnic clashes, the withholding of foreign aid by donor countries, poor delivery of public services, power cuts or rationing, official corruption, political uncertainty due to the constitution review impasse, issues of succession and forthcoming general election continue to contribute to the slowdown in both sectoral and economic performance. Economic observers agree that the government needs to institute major structural policy changes to stabilize the economy, restore a reasonable rate of economic growth in the domestic economy and guard against increasingly hostile international environment.

Kenya sought to restructure the economy with a view to making it efficient, competitive and adaptable to shocks to enhance its growth potential. Economic growth was to be enhanced mainly by liberalization of the economy to make it more market oriented and hence increase the productivity of the public sector. The Structural Adjustment Policies (SAPs) in a great way attempted to bring a fairly sustained stabilization and economic growth efforts. GDP growth rate increased from 0.4 percent in 1984 to 5.1 percent in 1988. The rate of inflation also declined from 9.1 percent in 1984 to 8.4 percent in 1986 before rising again steadily to 46 percent in 1993. The situation was exacerbated by political uncertainty due to the first multiparty elections of 1992. Various authors (Ndung'u, 1996, Kabubo and Ngugi 1996) are in agreement that

despite the embracement of SAPs, a gradual decline and deterioration of the economic environment ensued. Consequently, GDP growth rate declined steadily from 5.0 percent in 1989, to 2.3 percent in 1991. In 1992 it dropped drastically to 0.5 percent and worsening to a meager 0.2 percent in 1993. However, in 1994, the GDP growth picked up, registering a 3 percent growth, this was relatively sustained up to 1996 when the economy started performing poorly again. By the year 2000, Kenya recorded a negative GDP growth of 0.3 percent. Overall sectoral performance was not very impressive and hence propagating to a decline in economic growth.

However, in this process, Kenya realized large external capital inflows for the financing of imports and as a consequence incurred a large external debt burden. Thus the arguments, by many development economists in the late 1940s and early 1950s that external borrowing would be the engine of growth to the third world countries may not be clearly justified. Indeed external resources constitute an integral part of development expenditure in developing countries including Kenya but their effectiveness and efficacy remain wanting. Consequently exit of these resources to foreign countries in the form of capital flight pose a greater challenge on growth and development of the domestic economy.

1.3   EXTERNAL DEBT AND CAPITAL FLIGHT PROFILE
The genesis of external debt problem in Kenya and other countries of sub-Saharan Africa (SSA) is best understood when considered as an integral part of the global debt crisis, which emerged in the early 1980s. There is some agreement among researchers and policy makers that the global debt burden arose as a result of a number of factors. These are: over-borrowing by developing countries in the 1970s, the cold war and alignment of countries for support, the collapse of world

commodity prices (especially petroleum) in the early 1980s, the sharp increase in international interest (lending) rates in 1982. The external debt servicing has become one of the critical issues that must be addressed and considered alongside capital outflows from the country if the growth of the economy is to be stimulated and sustained.

Kenya falls in the category of severely indebted low-income countries. With a ratio of the net present value of debt to exports in excess of 200 percent and debt- service ratio higher than 25 percent, Kenya was considered to have not only a high liquidity problem but also a large debt overhang in 1991-93 (World Bank, 1994). In 1980 total debt was US$ 3.4 billion with a temporal stability up to 1984 and started rising again in 1985 to a high of US$ 5.8 billion in 1987. The debt stabilized again at US$ 5.8 billion to US$ 5.9 billion in 1988 and 1989, despite debt write-offs amounting to about US$ 627 million between 1987 and 1990 (Republic of Kenya, 1990). The total debt rose to US$ 7.5 billion in 1991 but declined to US$ 6.9 billion in 1992 as a result of the aid embargo by donors. The end of the embargo in December 1993 led to a rise in debt from US$ 7.1 billion in 1993 to US$ 7.3 billion in 1995 and by 2000 it stood at US$ 6.8 billion.

Following the trend of external debt above it is no doubt that Kenya is one country that is heavily indebted and hence the issue of capital flight becomes an important variable to examine in an attempt to restore Kenya's growth prospects. Thus the severity of Kenya's external debt crisis cannot be underestimated. The debt burden is continually on the rise, and the capacity to service the debt is becoming alarming. This could possibly lead to capital flight and more so accelerate the debt overhang problem. In which case therefore, some of the returns from investing on the

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domestic economy are 'taxed away' by foreign creditors therefore discouraging investment by domestic and new foreign investors. In such circumstances, the debtor country shares only partially in any increase in output and exports, because a fraction of that increase will be used to service external debt.

The phenomenon of capital flight and the associated external debt in Kenya dates back to the time the country attained independence. The exit of the colonialist saw the indigenous people assume leadership and the non-indigenous people spelling uncertainties about the country's economic and political future. These looming uncertainties created a lot of fear regarding their role in the newly independent nation. Thus there was substantial outflow of private capital (Mulati 1995).

Despite its long existence, capital flight in Kenya was brought to the forefront in 1991. The withholding of quick disbursement of aid by the international donor community particularly the Bretton Woods institutions of World Bank (WB) and International Monetary Fund (IMF), balance of payments disequilibrium, structural adjustment programmes coupled with inconsistent macroeconomic policies evoked great interest in the issue of private capital outflow from Kenya to "safe havens" among policy makers, both locally and internationally.

In recognition of this problem, the government in 1991 sought to stop and reverse the outflows of capital from the country. Some of the measures included a one-month amnesty to foreign assets holders to bring back the wealth to the country; relaxation of foreign exchange controls

and consequently a floatation of the Kenyan shilling in 1993 followed this amnesty[3]. An estimated US$ 200 Million was repatriated to the country at the end of 1993 following the government's effort to reverse the outflow of capital (Ngeno 1994).

We argue here that reversal of capital flight could significantly contribute to the solution of external debt problem and poor economic performance. These considerations should send signals to the government to institute appropriate policy measures to encourage repatriation of capital flight and the investment income that is generated outside the country.

Related to this argument of repatriation of domestic capital invested abroad, is the removal of the debt overhang and making domestic policies that are sufficiently attractive to induce reversal of capital outflows. Indeed substantial amounts of repatriated capital have been noted in Latin America following such policies. Traditionally, capital flight has been viewed as an affliction of a few Latin American countries and one or two others. Recent studies, however, have suggested that the stock of flight capital from Africa and other regions may also be large Collier et al (1999).

Attempts to control capital flight and reduce external debt and debt service of developing countries including Kenya have not been very successive and the situation continues to be severe and remains an impediment to sustained economic growth. In most cases however, this has

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[3] After recognizing the problem, the government took some austerity measures to reverse the outflow of capital, which included relaxing foreign exchange controls, amnesty and reminding Kenyans through the media of the illegality of operating foreign accounts that were the dens of domestic resources.

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become a fiscal priority subsequently forcing many governments to reduce essential public investment on physical as well as social infrastructure. Such unfolding fiscal outlay programs have led to a sharp increase in poverty levels and decline in basic social indicators. Indeed, the concerted national effort to eradicate poverty, ignorance and disease in the country has since been reversed. In the 1996/97 fiscal year for example, two thirds of Kenya's budgetary resource allocation was channelled into servicing both domestic and foreign debt. Such budgetary resource outlay scenario has subsequently constrained resource allocation to investment in both physical and human capital development. With little doubt, such skewed spending patterns are inconsistent with any sustainable economic growth initiatives. In fact, it shuts all the rays of hope in the economic recovery. One is therefore left to wonder whether the lost decade of economic growth in Kenya will ever resurface if the external debt and capital outflows continue to build-up (Monthly Economic Review- Various Issues).

It is in light of the foregoing discussion that we seek to investigate why there is a coexistence of inverse capital flows despite enormous capital inflows to developing countries. The renewed debate on capital flight and external debt and their overall impact on growth form a central focus in this study. The extent to which one causes the other will be an empirical issue to investigate. The established link in terms of causality will be crucial in policy design in an attempt to arrest the phenomenon of capital flight.

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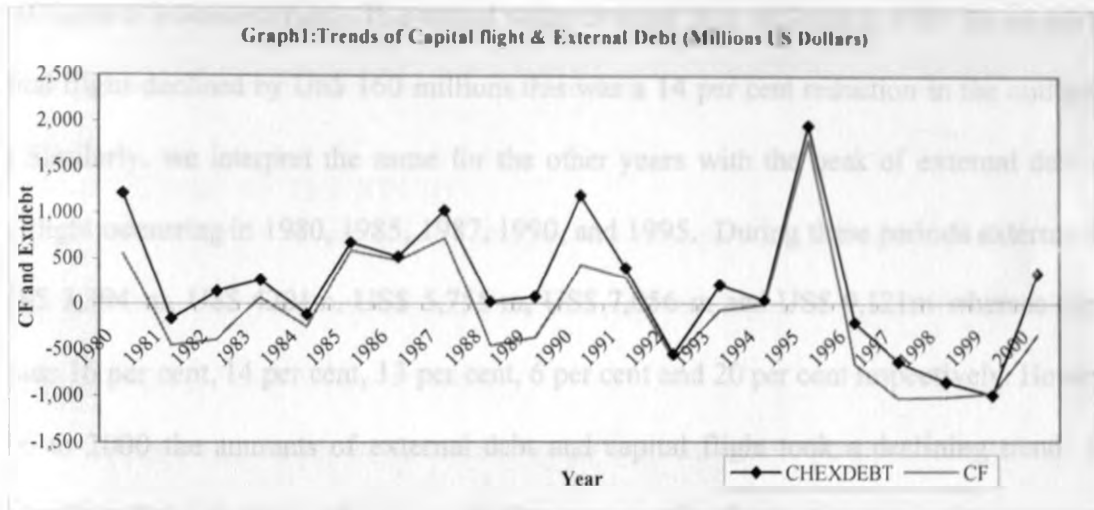
Source: Generated from data in Table 1 above

1.4   STATEMENT OF THE PROBLEM

Much of the literature has been concerned with explaining two way capital flows: private capital

flight occurring simultaneously with private or public foreign borrowing. This phenomenon is

not easy to rationalize within the standard theoretical models of optimal borrowing decisions. In

this study we seek to establish the nature of the relationship between foreign borrowing and

capital flight. The issue of rationalising two-way capital flows is thus a prior question to

causality-that is, why do foreign borrowing and capital flight occur at the same time?

Kenya like most other SSA countries is today facing a serious foreign debt and

underdevelopment crisis. External borrowing contracted in 1980s from the international capital

markets has been escalating. The amount of capital flight has also been taking the same pattern

in relation to the changes in external debt (see Graph: 1 above). For instance in 1980 when

external debt stood at US$ 3,394 millions, capital flight was US$ 554.3 millions reflecting a 16

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per cent flight of borrowed funds. In contrast when external debt declined in 1981 the proportion of capital flight declined by US$ 160 millions this was a 14 per cent reduction in the outflow of funds. Similarly, we interpret the same for the other years with the peak of external debt and capital flight occurring in 1980, 1985, 1987, 1990, and 1995. During these periods external debt was US$ 3,394 m, US$ 4201m, US$ 5,755 m, US$ 7,056 m and US$ 9,121m whereas capital flight was 16 per cent, 14 per cent, 13 per cent, 6 per cent and 20 per cent respectively. However, in 1996 to 2000 the amounts of external debt and capital flight took a declining trend. This maybe attributed to a decline in the donor funding among other factors.

As the proportion of external debt and debt servicing continue to rise amidst exit of domestic resources to foreign countries the economy is likely to continue registering low or even negative GDP growth. Huge external debt may impact seriously on the economy prompting to large-scale unemployment, capacity under utilization, reduction in consumption, slow rate of capital formation and declining overall living standards of the people. Consequently, the growth of capital flight besides other effects may become a factor in the provision of new lending to the country. This view is predicted on the possibility that foreign lenders will be unwilling to give loans that will end up being used to finance private acquisitions of foreign assets by domestic agents instead of the intended uses.

The greatest concern in this study is to examine if there is a relationship between capital flight and external debt and if so what type of relationship, is the relationship a short term or a long term phenomenon? The study also takes a critical analysis of other factors responsible for capital

flight during the period and on the basis of the outcome we suggest remedial policy measures to address the problem in an attempt to restore the lost glory of rapid economic growth.

1.5   OBJECTIVES OF THE STUDY

The aim of this study is to empirically analyse the relationship between capital flight and external debt. An appropriate econometric model and procedures are used to establish the direction of causality. Specifically, the study,

a) Analyses the relationship in terms of causality between external debt and capital flight for the period 1980 –2000

b) Examine the relative influence of other factors on capital flight over the same period using a structural model

c) Finally on the basis of the findings we draw appropriate policy recommendations to address the twin issues.

1.6   SIGNIFICANCE OF THE STUDY

Kenya is a severely indebted low-income country. However, there is little empirical evidence to assess the impact of capital flight on the country's real debt service capacity and overall growth. The study attempts to bridge this gap. The study is also useful in augmenting the limited literature on the specificity of the linkages between capital flight and external debt. Depending on the direction of causality, appropriate remedial policy response will be suggested. We recommend measures to prevent the out-flow of capital and generation of an inflow of funds held outside the country. Finally, it is hoped that the study will generate further interest in research in the area.

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LITERATURE REVIEW

The issue of capital flight and external debt assumed critical importance during the "debt-crisis" in the summer of 1982, when Mexico suspended debt-service payments (Iyoha, 1999). The flawed and sometimes ill-conceived economic policies pursued by the World Bank (WB), the International Monetary Fund (IMF), and other International Financial Institutions (IFIs) in relation to the developing countries is partly responsible for the third world debt crisis. Many of these third world countries, especially those of SSA fell in the debt crisis through debt accumulation brought about by the over-ambitious desire of many governments to speed up the process of growth (Iyoha, 1999). International creditors also facilitated this process. Many creditors over estimated the potential capabilities of the now debtor countries to meaningfully absorb and pay for debts. The fundamental relationship underlying the notion of sustainability of the stock of foreign debt is that borrowing should augment domestic capital stock to contribute to growth, development, and the ability of the country to make payments to creditors (Greene and Khan, 1990). Unfortunately, this has so far not been the case. Instead resources have been "fleeing" from these countries to "safe havens".

2.1 THEORETICAL LITERATURE

Capital flight loosely defined, as the unreported private accumulation of foreign assets is by itself difficult to measure. There are numerous definitions of capital flight and as such the term capital flight has often drawn mixed reactions among analysts. Some analysts view it as a symptom of a sick society, while others see it as the cause of the heavily indebted countries' inability to recover from their debt problems (Deppler and Williamson, 1987). The absence of a precise and

universally acceptable definition makes it possible to view capital flight in two perspectives. Capital outflows from developed countries are viewed as foreign investment while the same activity when undertaken by the residents of a developing country is referred to as capital flight (Pastor, 1990).

Khan and Ul Haque (1985) argue that in a decision making process on investment, the wealth holder looks at the various risks. There are certain inherent characteristics of developing countries, which make risks attached to investments larger than those of developed countries. Using the concept of expropriation risk within the context of an intertemporal model, they argue that in any increase in a rational expectations setting would tend to increase the outflow of private capital from the domestic economy into foreign countries where investment are less risky. This expropriation risk could include a variety of distortions such as differences in taxes in and political instability resulting in possible destruction of private property. Their analysis of the phenomenon covered eight highly indebted developing countries for the period 1974-82. In the study they recognised that capital flight result from a variety of often-related factors, which include overvaluation of exchange rate, financial sector constraints, fiscal deficits, risk factors and external incentives. They classified the effects of capital flight on the economy into two categories i.e. short term and long-run effects. The former includes destabilising effects on the domestic interest rates, foreign exchange and the country's international reserves position while the latter comprises of the reduction in government's ability to tax all the incomes of residents and the increase in foreign debt burden.

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Eaton (1987) builds on the Khan-Haque model by relating the risk of expropriation of capital owned domestically, which is defined, especially in this case, as higher taxation to capital and publicly guaranteed foreign debt. The tax obligation arising from an increase in external debt can lead to capital flight. The flight of one investor leads to a rise in the potential tax obligations of other remaining investors. This also may create the incentive for other investors to move their assets abroad.

Dornbush (1985) in his theoretical analysis has shown that capital flight is typically accompanied by fiscal deficit. When a rising fiscal deficit is financed through printing of money, it leads to inflationary pressure. To avoid the erosion of their monetary balances by inflation, moving out domestic assets is one way of avoiding inflation tax. When fiscal deficit is financed through bond sales, domestic residents may expect that at some future date their tax liabilities may increase to pay for the national debt. This would encourage domestic investors to move their assets to foreign countries to avoid potential tax liabilities.

Ize and Oritz (1987) formalized the link between deficit financing and capital flight. In the Ize and Oritz model, capital flight is related to the overall financial solvency of government. Insolvency and default risks created by fiscal deficit appear explicitly as the determinants of capital flight. This view complements the fact that fiscal rigidities create difficulties for serving foreign debt, a scenario that leads to foreign borrowing. On that basis residents will expect higher domestic asset taxation to service future debt and as a consequent therefore they will want to invest their resources where returns are high.

The World Bank, (1985) defines capital flight as the sum of gross capital inflows and current account deficit less increases in official foreign reserves; where capital inflows are the sum of net direct foreign investment and changes in gross public and private debt. The report notes that large-scale capital flight was a significant factor in the balance of payments pressure on several countries in the early 1980s. The flight of capital in selected countries in the 1979-82 period was attributed to overvaluation of exchange rates, high and variable inflation, repressive financial policies and high domestic protection in these countries. These factors make the expected returns from holding money abroad higher and safer than at home, which in turn motivates outflows of capital.

Dooley (1986) defines capital flight as stock of privately held foreign assets, which earn income, but the income is not reported to domestic authorities and therefore is not recorded in the balance of payments accounts. The study brings out the normality of capital flows by specifically separating out normal and abnormal capital flows. Normal outflows are those outflows that generate a stream of income recorded in the balance of payments, while abnormal outflows are those motivated by desire to place assets beyond the control of domestic authority. This dichotomy of normal and abnormal flow introduces a legal dimension to capital flight. Normal flows would be regarded as being within the law and thus legal activity, while abnormal flows are outside the law, and are not reported and therefore very difficult to measure as part of capital flight. The Dooley method seeks to measure the stock of privately held foreign assets that do not generate income that is reported to the domestic authorities. The identified capital outflows in the balance of payments accounts are cumulated, and three adjustments are made to capture the

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unreported capital outflows. First, errors and omissions are added. Second, a comparison is made between the stock of external debt as reported in the World Bank data and those reported in the balance of payments statistics. This adjustment is made on the basis of the fact that the change in external debt reported by the World Bank is often larger than flows recorded in the balance of payments accounts. Dooley assumes that the whole difference consists of the private claims on foreign assets. The third adjustment is made first by calculating the stock of external assets required to obtain capitalized non-foreign direct investment income. Discounting reported direct foreign investment income by an international market rate of interest does this. The result is compared with the private sector external claims inclusive of the first two adjustments. The difference in the stock of capital flight and the year-to-year changes measure capital flight.

Dooley (1988) also focuses on the notion that domestic and foreign investors face asymmetric risk but broadens the source of the risk to wide range of implicit taxes; generated by, say rapid inflation or exchange rate depreciation. A fiscal shock may lead to increased government reliance on the inflation tax, which erodes the value of domestic financial assets and leads residents to acquire foreign assets. Foreign investors could be attracted by the fall in prices (increase in yields) as domestic residents liquidate their domestic securities. Foreigners face less risk because they are often able to get claims denominated in foreign currency, and these have explicit government guarantees.

Cuddington (1986) takes a different approach to define capital flight as short-term speculative outflow, which, according to him is the typical meaning of capital flight. It is therefore defined

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as short-term external assets by the non-bank private sector plus the errors and omissions in the balance of payments. Following this approach capital flight is geared towards portfolio diversification and to attract higher returns. According to this definition, capital flight is the "hot money" that responds to political or financial crises, heavier taxes, a prospective tightening of capital controls or devaluation of the domestic currency or actual or incipient hyperinflation. He concentrates on 'hot money funds' because of the fact that these funds will quickly be brought back once the country's economic conditions improve.

Ishrat and Diwan (1989), note that the flight of capital in several Latin American Countries and the Philippines was large in the 1970s and early 1980s, the time these countries were borrowing heavily abroad. They attributed the massive capital outflows (which they estimated using various residual techniques based on balance of payments and debt data) to various macroeconomic factors. The factors include overvaluation of the domestic currency, domestic inflation and interest rates, domestic economic growth and loan disbursement.

Husted and Melvin (1990), in their theoretical analysis, defined capital flight as "large capital outflows resulting from unfavourable investment conditions in a country". They argue that the change in the risk-return relationship that gives rise to flight of capital may be due to political or financial crisis, tightening capital control, tax increases and fear of domestic currency devaluation.

Ajayi, (1991) defines capital flight as "a perverse exportation of domestic savings and foreign exchange". After reviewing the existing literature on capital flight the study attributed the problem of capital flight to overvaluation of domestic currency, domestic interest and inflation rates, domestic economic growth and incentives provided by foreign banks and governments. The study argues that in third world countries the problem of capital flight is related more to being in "power" and having access to domestic and foreign money. As far as measurement of capital flight is concerned, the study admits there is no precise method of measuring it. However, it suggests three approaches to measure the problem namely, balance of payments accounts approach, the residual approach and increase in the recorded foreign bank deposits owned by the residents of a country approach. Using the last approach the study found that capital flight from Nigeria was episodic between periods of capital inflows and periods of high external debt and that capital flight tended to exhibit a trending pattern with external debt.

The IMF (1991) identified capital flight as a component of private capital outflows resulting from attempts to avoid "exceptional sacrifices" on rates of return at home. It notes that the total capital flight in thirteen highly indebted countries[4] was about US$ 184 billion by end of 1988. It attributed these outflows of capital to factors affecting expected rate of return, which includes risks of expropriation, debt repudiation, introduction or strengthening of capital controls, taxation, financial repression and perceptions of the likelihood of inflation and exchange rate depreciation.

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[1] The 13 countries are Argentina, Bolivia, Chile, Colombia, Ecuador, Gabon, Jamaica, Mexico, Nigeria, Peru, Philippines, Venezuela and Yugoslavia.

Rojas- Suarez (1991) in a theoretical analysis of risk and capital flight in developing countries defined capital flight as the fraction of a country's stock of external claims that does not generate recorded investment income. The study notes that, stock of capital flight increased for a group of developing countries that had faced debt servicing problems over the 1978-1988 period from US$ 47.3 billion to US$ 184.01 billion. He estimates capital flight as total external claims less stock of external claims that would generate the income recorded in the balance of payments statistics for the thirteen countries mentioned above.

Ajayi, (1995) discusses this relationship in terms of causality. He argues that the linkage can be from debt to capital or vice versa, or whether one simply provided the motive for the other or whether it provided the means as well. He observes that, consequent to external borrowing, residents of a country can be motivated to move their assets to foreign countries, thus capital flees or leaves the country in response to attendant economic circumstances directly attributable to external debt itself. The economic circumstances leading to debt – driven capital flight are expectations of exchange rate devaluation, or fiscal crises, possibility of crowding out domestic capital and avoidance of taxes and ex-appropriation risk. Consequently, there can be debt–fuelled capital flight. The inflow of capital provides both the motive and the resources for capital flight. In this case borrowed funds are themselves transferred abroad. Domestic residents through legal or illegal means can transfer borrowed money abroad. This is guaranteed as long as the government provided foreign exchange. In this case, the external borrowing provides the necessary fuel (the resources) for capital flight.

2.2   EMPIRICAL LITERATURE

A striking feature of several of the large debtor countries is the extent to which private capital outflows have eroded net inflows. Using different methodologies, Dooley, Helkie, Tryon and Underwood (1986) and Cuddington (1986a) estimated the outflows of capital and found out that up to a half or more of the increase in gross indebtedness of Argentina[5], Mexico, and Venezuela during 1974– 82 was offset by private capital outflows. Recent data provided by Dooley (1986b), and Cumby and Levich (1986) support the conclusion that capital flight from these countries has been substantial. Most empirical studies on capital flight are predominantly confined to Latin American countries. Estimates of capital flight in SSA are scanty. Studies on capital flight from Africa include those by Ajayi, (1985) from Nigeria, Baruani (1995) and Nyoni (1995) for Tanzania, Ng'eno (1994) and Mulati (1995) for Kenya, and Olopoenia (1995) for Uganda.

Cuddignton (1986) measures capital flight by isolating short-term capital movements that might reasonably be considered capital movements by agents other than monetary institutions. He defines capital flight as "hot money" or "short term speculative capital outflows". The estimates were made for six Latin American countries plus Korea during 1974 – 82. For each country the errors and omissions item is used plus certain subcategories of recorded short-term capital flows. Cuddington points out that errors and omissions is net by definition since it contains unrecorded capital inflows as well as outflows. The author estimates capital flight using errors and omissions plus short-term non-bank private sector external asset flows. For this period he estimates that US $ 32.6 billion in flight capital left Mexico. This figure is then compared to the increase in

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[5] From 1979-1982, Argentina experienced capital outflows of $19.2 billions while increasing foreign debt by US$ 26.5 billion that is 65 per cent of the borrowing went to allow Argentina residents to acquire foreign assets rather than to finance imports. Mexico's experience was only marginally less extreme. Such massive capital flights occurred under similar circumstances. In each case, a combination of adverse external shocks and the legacy of past policy mistakes made adjustments inevitable, but governments used external financing to postpone this adjustment.

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Mexico's external debt over the same period, which he places at US$ 82.6 billion. Roughly 40% of the increase in Mexico's foreign debt is estimated to have financed capital flight. This measure however, does not capture capital flight through trade mis- invoicing[6] and it is also too restrictive because it excludes long-term assets. Cumby and Levich (1987) argue that unreported short-term capital are not the only items in the errors and omissions account of the balance of payments accounts. There is also no particular reason why agents cannot acquire long-term foreign assets as a hedge against unfavorable economic conditions in their countries. Moreover, in countries with strict exchange control regulations it is not obvious that short-term capital will react quickly to changes in the domestic economy. Despite the shortcomings, estimates obtained using this method are useful and may be treated as lower bound estimate of assets, which can easily be repatriated home.

World Development Report (1985) estimated capital flight in Mexico during 1979 – 82 to be US$ 26.5 billion. It is approximately equal to 50% during the period. In the methodology used capital flight is defined as the "sum of gross capital inflows and the current account deficit, less increase in official foreign reserves", where capital inflows are the sum of net direct foreign investment and the changes in gross public and private debt. It assumes that any capital inflow that does not finance the current account deficit or reserve accumulation leaves the country in the form of flight capital. To the extent that normal portfolio investment abroad and any trade mis-invoicing exist, they are included in their measure. Thus capital flight is given as change in stock

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[6] Trade mis-invoicing is one way of channelling capital flight. Bhagwati (1964), Bhagwati, Kruger and Wibulswadi (1974), Gulati (1987) and Vos (1990) have shown that over invoicing of imports and under invoicing of exports are important means of capital flight in LDCs. Mis-invoicing occurs as a result of high trade taxes, quantitative restrictions and exchange controls all of which are common regimes in LDCs

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of gross external debt plus net direct foreign investment (new and reinvested), current account

balance less change in the stock of official international reserves.

Morgan Guaranty Trust Co. (1986) defines capital flight as "the reported and unreported

acquisition of foreign assets by the non-bank private sector and some elements of the public

sector". Capital flight is therefore net investment inflows plus changes in gross external debt plus

the current account balance and changes in selected foreign assets. This method estimates

capital flight as a residual based on the balance of payments identity. The residual is derived as

"sources of funds", or resource inflows less official "use of funds" as recorded in the balance of

payments statistics. This method was developed by Dooley, Helkie, Tryson and Underwood

(1983) and has been applied by World Bank (1985), Erbe (1985) and Cumby and Levich (1987).

The variants of this model are discussed in Chang and Cumby (1991) and Gajdeczka (1990).

Using this method Morgan estimates net capital flight to be US$ 53 billion for 1976-85. Capital

inflows during the period, according to Morgan, amounted to US$ 75 billion in additional

external debt and US$ 11 billion in direct investment flows.

Cline (1986) modifies the Morgan method by excluding certain items from the current account.
These are:

       i)   Travel (credit)

      ii)   Reinvested foreign investment income (abroad and domestically), and

     iii)   Other investment income (credits).

Cline's rationale for exclusion of these items is that such incomes are beyond the control of the

foreign exchange authorities and therefore should not be treated as capital flight. The problem in Kenya's case is that tourism earnings form a large part of current account. The exclusion of the earnings would, therefore, lead to significant differences between Cline estimates and the World Bank/Erbe and Morgan estimates. Cline's method will overestimate the extent of Kenya's capital flight. Cumby and levich (1987) however suggests that if Cline's estimates show reduced capital flight then it can be concluded that controls on the capital account have been successful in reducing capital flight.

Pastor (1990) measures capital flight by first estimating gross outflows, using the sources and use approach. He estimates the stock of external claims of residents over some period using the following formula:

$$CS_t = \sum(CS_{t-1} + GPCX_t + r^*CS_{t-1} - FII_t),$$

Where;

$GPCX_t$ = gross private capital outflow given at time t and GPCX is defined as

$(A+B+D+C+F+H)^7$

CS_t = stock of private resident's external claims at time t

r^* = appropriate foreign interest rate,

CS_{t-1} = stock of private external claims in the previous period

FII_t = foreign investment income inflows at time t

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[7] The notations are defined in World Bank, Erbe, Morgan Trust, Cline, Duwendag methodologies. A= represents current account balance, B= net foreign investment, C = private short-term capital outflow, D= portfolio investment, F= changes in reserves and H= changes in debt.

This formula does not just measure the stock of external claims arising from private capital outflows by taking the existing stock of such claims and current outflows but also adds estimates of potential interest income to the stock of capital outflows. The difference is then taken as an estimate of capital flight over the period. This method may not be very reliable since it can lead to underestimation, especially when the reported repatriated income exceeds the estimated potential earnings.

Ng'eno, (1994) using quarterly time series data for the period 1981(4) to 1991(2) and various approaches for Kenya found out that in 1974, 1979, 1987 and 1990 capital flight was high relative to that of 1986. During these years the country experienced a balance of payments crisis while in 1986 capital flight was low because of the mini-tea boom. The periods in which capital flight bottomed out (1975, 1984, 1988 and 1991) were also marked by poor economic performance. The decline in capital flight during these years reflects the depressed growth and incomes, which reduced savings to be expatriated. Decline in capital inflows especially after 1990 contributed to lower capital outflows. The generalized functional form of the model is stated as: $CF = (r, r^*, \pi, R, Y)$

Where:

CF = Capital flight measured by cross border non-bank deposits approach.

r = domestic interest rate

r^* = foreign interest rate

π = domestic inflation rate

R = real effective exchange rate

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$$Y = \text{real GDP}$$

The study found that lagged capital flight and domestic inflation were statistically significant. Real GDP was insignificant but with the expected sign. The other three variables were statistically insignificant and with unexpected signs, this may be due to model mis-specification. This model however, ignored the variable of external debt, which may have contributed to the high capital flight for the specified years. The other limitation is that it employed cross border bank deposit, which has been accused of underestimating the magnitude of capital flight. In the study the coefficient for inflation was positive 0.9 while that of lagged capital flight was positive 0.7. The R^2 was 0.98, which contrasts sharply with a similar study by Olopoenia (1995) for Uganda in which the R^2 was less than 0.3 and that of Ajayi (1992) for Nigeria range between 0.32 and 0.49 The low explanatory power in Olopoenia (1995) and Ajayi (1992) raises concern on the difficulty of estimating capital flight in African countries, which arise mainly from poor quality of data. However, the study is commendable on the basis of it being the first country specific and giving a quest for further research.

2.3   OVERVIEW OF THE LITERATURE

What seems to emerge from the literature review is that there is no universally acceptable definition of the term capital flight and that the term itself is subject to debate, and hence no precise method of measuring it. Essentially the methods that have been used to estimate capital flight include: (1) the residual approach; (2) Dooley approach; (3) the "hot money" method, (4) non-bank cross-border deposits; and (5) trade mis-invoicing. Each method has its own limitations. However, the appropriate choice of one will depend on the country for which capital

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flight is being estimated and the time period under study. In the Kenyan context, of all the definitions presented, World Bank (1985) definition seems to be more elaborate, comprehensive and hence taken as the most appropriate and suitable for our study.

It is also clear from the literature that most econometric studies from the developing countries including those from Africa seem to suggest that capital flight result mainly from inappropriate domestic macroeconomic policies, external factors and political instability. Very few empirical studies have been done in Kenya on capital flight. The few however, do not focus on the analysis of capital flight and external debt (For example: Ng'eno 1994 and, Mulati 1995). In their analysis they measure capital flight and discuss the underlying determinants of the phenomenon. They agree that the main determinants of capital flight for Kenya are the exchange rate misalignment, interest rate differential, domestic inflation, fiscal deficits, level or degree of financial repression, lagged capital flight and political instability. No attempt to establish the linkage between capital flight and external debt has been done hence there is a knowledge gap. Our study therefore examines the causality between the two and also updates the existing literature on capital flight. In addition the study contributes to the scope of knowledge in terms of the methodology adopted. It will also assist policy makers in designing appropriate measures to contain capital flight and sustainable debt obligations, otherwise the combined problem of capital flight and external debt can have detrimental effects on the country's economic growth prospects and general welfare of the citizens.

Ajayi (1995) discusses the linkage between external debt and capital flight for Nigeria in a theoretical form and makes no attempt to empirically test the hypothesis. Thus the direction of causality between capital flight and external debt remains an issue that has to be empirically verified whether it is capital flight that propels/fuels external debt or it is the other way round.

In summary however the presentation above provides a wealth of knowledge and some useful insights for individual developing countries on capital flight and external debt. What emerges from the studies is that external debt is generally considered to be so high as to be unsustainable. All the studies view the policies of debt reduction as unambiguously good, in that reducing the debt burden would yield positive benefits in terms of both investment and growth. In addition, all the countries studied experienced large-scale capital flight, caused mainly by macroeconomic imbalances and the risks of punitive domestic asset taxation increases. Thus the remedy for capital flight would be the adoption of sound macroeconomic policies, including lower fiscal deficits, reduced monetary expansion, positive real interest rates, an appropriately valued exchange rate and political stability. And above all developing countries including Kenya require international assistance to get control over their external debt burden, and they need to follow sensible domestic policies to limit the loss of critical foreign exchange resources through capital flight. This strategy can see most affected developing countries sustain a higher rate of economic growth and improved living standards for its population.

CHAPTER THREE

METHODOLOGY

In this chapter we explain the theoretical methodology including the concept of Granger causality and its application in 3.1. We then discuss briefly the concept of capital flight in section 3.2. The model for causality between capital flight and external debt and the hypotheses are given in section 3.3. Also in this section we complement our methodology using a structural model so as to capture the impact of other factors on capital flight over the same period. Data type and the sources are given in section 3.4 while the estimation technique is explained in section 3.5.

3.1 THEORETICAL METHODOLOGY

The definition of causality used in this study does not conform to the conventional understanding of the term, but offers a concept of causality that is empirically testable (Mwega and Ngola, 1988). According to Mohammed (1993), Granger causality test is used for temporal leads and lags of one variable over another.

The detection of causal relationship among a set of variables is one of the objectives of the empirical research. A high degree of correlation between two variables does not necessarily mean the existence of a causal relationship between them; it may simply be attributable to the common association of a third variable. Accordingly, Granger formulated a procedure for detecting a causal relationship among the variables. The concept of causality in the Granger sense is mainly based on the following two assumptions: (a) that the future cannot cause past, it is the past and present which cause future; (b) that detection of causality is only possible between

two stochastic process. It is not sensible to talk about causality when two series are deterministic. Thus, it is assumed that the two series X_t and Y_t are; linear, covariance stationary and purely non-deterministic; if originally non-stationary, they can be suitably transformed to make them stationary.

In the Granger definition therefore, we say a variable X "causes" Y in the "proper" sense relative to given information set if past Xs are significant in explaining Y when past Ys are included as explanatory variables of present Y in a regression model. This is akin to saying that a series X_t causes Y_t if Y_t is better predicted by a model using the past values of X and Y than by a model using Y alone. If simultaneously X and Y cause X, it can be said that there exists a feedback; otherwise causality is considered non-directional implying that the variables X and Y are independent. Granger methodology is considered parsimonious with data and easier to implement over Sims[8] methodology that includes leading variables in the regression hence using up more degrees of freedom.

Testing for causality between two stationary time series (X and Y), given the initial information, which contains lags of the depended variable, can be illustrated as follows:

$$Y_t = \sum_{i=1}^{k} \alpha_{1i} Y_{t-i} + \sum_{j=1}^{m} \alpha_{2j} X_{t-j} + u_{1t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(a)$$

The added information in predicting Y_t is contained in lagged values of X_1 and the error term u_{it}. We therefore test the significance of the coefficients using the F- statistics. If the α_{2i}'s are identically zero, then Y_t is predicted solely from its own past values and the stochastic term u_{it}.

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[8] C.A. Sims, "Money, Income and Causality" American Economic Review, September 1992

The interpretation in this case will be that X_t does not Granger-Cause Y_t. We can also test for Granger- causality in the reverse direction (i.e., from Y to X) by specifying the above equation as follows:

$$X_t = \sum_{i=1}^{k} \gamma_{1i} X_{t-i} + \sum_{j}^{m} \gamma_{2j} Y_{t-j} + u_{2t} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(b)$$

If the null hypothesis of $\gamma_{2j} = 0$ is rejected, then we say Y_t Granger-causes X_t The series of F-statistics produced after regressing equations (a) and (b) any of the following outcomes:

    i)   One variable Granger-Cause the other;

    ii)   Both variables, (i.e., presence of feedback between them);

    iii)   The variables do not cause each other (i.e., there is no Granger causality).

Several studies have used the concept of Granger causality to investigate the causal patterns between economic variables. Hsiao (1979) uses the concept of Granger causality to test for the relationship between Canadian post- war money and income. He found a feedback relationship between M_1 and GNP, while a one-way causal relationship from GNP to M_2 exists.

Mwega and Ngola (1988) tests whether the flow of domestic credit has been a significant Granger-cause of changes in net foreign reserves in Kenya in the period 1970(II) to 1985(IV). The study did not find any significant feedback effects and apparently supported the monetarist studies that the flow of domestic credit was a significant cause of changes in net foreign reserves in the country.

Mohammed (1993) examines the direction of causality between economic growth and military burden in 13 sub-Saharan Africa countries using the Granger test. The results show that military burden is not determined by economic growth and hence confirming the importance of the economic effects of military expenditure.

Ndung'u (1996) uses it to investigate the relationship between monetary base growth, exchange rate movements, real income growth, the foreign rate of inflation and interest movements on one hand and inflation on the other, using data on Kenya. He found out that the monetary base growth; interest rate and financial exchange rate movements have strong feedback effects with inflation while broad money is driven by inflation without any feedback effects.

Sirengo (1998) employs the Granger test to establish the direction of causality between financial development and economic growth. Using annual data for Kenya 1967-1997, he found out that there existed a feedback effect between the two.

3.2 THE CONCEPT OF CAPITAL FLIGHT
The underlying fundamental on capital flight is based on the notion that residents from LDCs would want to invest in DCs as a means of diversifying their portfolio. Investing in domestic economy is perceived to be risky because of poor economic performance, inefficient capital markets and/or fragile political systems. Moreover, the risk of expropriation of assets is higher in developing countries than developed ones. However, this argument does not explain why foreign residents would want to invest in developing countries. Another plausible explanation for "cross-transfer" of capital is the existence of asymmetry risks between residents and non- residents.

Asymmetric risks may be due to different tax treatment and credit guarantees offered to domestic and foreign residents. A tax system that discriminates in favor of foreign investment may induce increased foreign capital inflow and an outflow of domestic capital to avoid taxes. Government guarantee of foreign debt can also induce capital inflows and when domestic investments do not enjoy similar guarantees, capital is more likely to "flee" to "safe havens". At the extreme, local investors could contract publicly guaranteed external debt while acquiring foreign assets at the same time. This is the most likely scenario in many LDCs facing high capital flight.

The most straightforward way of empirically modelling capital flight then, given the foregoing, is to look at how domestic agents react to the changes in macroeconomic variables in reallocating their wealth among domestic and foreign assets. Agents involved in exporting capital to "safe havens" do that in order to avoid the unfavourable investment climate in the domestic economy, and other negative exogenous shocks. In this study therefore we agree that uncontrolled capital flight and the increasing debt burden coupled with dwindling real per capita incomes and poor domestic macroeconomic performances can pose significant strains on the fiscal budgets and overall economic growth in Kenya and many other developing countries. We anticipate a causal relation from capital flight to external debt. At the same time, we expect that as the amount of external debt builds up it also spurs the amount of capital flight. We therefore expect a priori a feedback causal relationship between capital flight and external debt.

3.3   MODEL SPECIFICATION:

Our research objective stated in chapter one is addressed using both descriptive and econometric approaches consistent with theoretical background and empirical literature given in the preceding section.

Following Granger (1969), the causal models are specified as:

$$CF_t = \delta_0 + \sum_{i=1}^{k} \alpha_{1i} CF_{t-i} + \sum_{j=}^{m} \alpha_{2j} \Delta ED_{t-j} + e_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots3.a_1$$

$$ED_t = \omega_0 + \sum_{i=1}^{k} \beta_{1i} \Delta ED_{t-i} + \sum_{j=}^{m} \beta_{2j} CF_{t-j} + u_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots3a_2$$

Where, CF^9_t and ED_t are two stationary series representing capital flight and external debt respectively, i is the lag length and e_t and u_t are error terms and are mutually uncorrelated white noise series, so that $E(e_t e_s) = E(u_t u_s) = 0$ for all t and s.

The hypotheses for the regression models (3a₁) and (3a₂) are:

$$H_0 : \alpha_{21} = \alpha_{22} = \alpha_{2i} = 0 \text{ (ED does not Granger-cause CF)}$$

$$H_1 : \alpha_{21} \neq \alpha_{22} \neq \alpha_{2i} \neq 0 \text{ (ED does Granger-cause CF)}$$

$$H_0 : \beta_{21} = \beta_{22} = \beta_{2j} = 0 \text{ (CF does not Granger-Cause ED)}$$

$$H_1 : \beta_{21} \neq \beta_{22} \neq \beta_{2j} = 0 \text{ (CF does Granger-cause ED)}$$

The joint significance of the coefficients in equation (3a₁) and (3a₂) will then be evaluated by using the F-test with the equations fitted first in the constrained form with $\alpha_{2j}=\beta_{2j}=0$ for all j and then in the non-constrained form. The F-statistic is stated below:

$$F(J,DF) = \frac{(ESS_c - ESS_{nc})/J}{ESS_{nc}/DF}$$

[9] Capital flight is measured using the residual measure or "sources and uses" approach developed by Dooley, Helkie, Tryson and Underwood (1983). The World Bank (1985), Erbe (1985) and Cumby and Levich (1987) have also applied this measure. Thus the resulting formula is given as:
CF=CHEXXTDEBT +DFI+CAB-CHRESERVES
Where:
CF= capital flight measured as a residual between capital inflows and official use of the inflows
CHEXTDEBT =change in gross external debt
DFI= net direct foreign investment (new and reinvested)
CAB= current account balance (negative is deficit)
CHRESERVES= change in the stock of official international foreign reserves

Where ESS$_c$ and ESS$_{nc}$ are the sums of estimated squared residuals in the constrained and non-constrained equations respectively, J is number of lags and DF is the degrees of freedom in the non-constrained equation.

In order to achieve objective (b) on other factors responsible for capital flight during the same period a structural model is used to capture the effects of other variables cited on economic theory a *priori*, those used in previous studies and some other variables we believe to be relevant. The model is specified as below.

$$CF = \beta_0 + \beta_1 RGDP + \beta_2 RER + \beta_3 CHEXDEBT + \beta_4 TBR + \beta_5 FD + \beta_6 PEDU \ldots\ldots\ldots\ldots 3.a_3$$

$$\beta_1 < 0, \beta_2 > 0, \beta_3 > 0, \beta_4 < 0, \beta_5 > 0, \beta_6 < 0$$

Where:

CF = A measure of capital flight

$RGDP$ = Real gross domestic product(lagged)

RER = Real exchange rate [*]

TBR = Treasury bill rate

FD = Fiscal deficit

$CHEXTDEBT$ = Change in external debt

$PEDU$ = Dummy variable for political instability and external shocks
$PEDU$ = 1 if there is stability 0, otherwise

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[*] Is the degree of overvaluation. Measured as the average real exchange rate for the current year related to an "equilibrium" value where the real exchange rate (RER) is :

$$RER = \frac{P}{e * P^{us}}$$

where p is the domestic price level, e is the ratio of local currency per dollar and P^{us} is the US price level and the measure is adjusted for changes in the value of the dollar.

3.4 DATA TYPE AND SOURCE

The study utilises secondary time series annual data collected from the Central Bank of Kenya Monthly and Quarterly Bulletins and the Kenya/world Bank interface. Capital flight is computed from these sources while the figures for external debt are drawn from the Government Publications/IMF International Financial Statistics (IFS) and World Debt Tables of recent publications. The study period covers 1980-2000.

3.5 ESTIMATION PROCEDURE

Time series data have always been affected by the problem of non-stationarity and therefore regressing a model without checking and correcting the problem leads to results, which do not make economic sense (Cherameza and Deadman 1986, Ngugi and Kabubo 1998).

Economic theory requires that all variables be made stationary if regressions are to be realistic and non-spurious. A variable is said to be stationary if the joint and conditional probability distributions of a process are unchanged if displaced overtime. The mean, variance and covariance of a series help us to check for stationarity. A stochastic process is said to be stationary if the mean and variance of the variable do not vary in any systematic way through time. Thus if X_t is a stationary variable, then it will have the following properties:

- the mean is constant through time, $E(X_t) = \mu$,

- the variance is constant through time, $Var(X_t) = E(X_t - \mu)^2 = \sigma^2$; and

- the covariance depends, only upon the number of periods between two values.

$$Cov(X_t, X_{t+k}) = E[(X_t - \mu)(X_{t+k} - \mu)] = \gamma_k$$

For the results of any time series regression to be meaningful, it is important that the series be stationary. If the series are not stationary, the above properties do not hold. A series may be non-stationary because it has a trend. The trend could be either deterministic or stochastic. A series has a deterministic trend if its mean is a function of time. Thus if a function is a linear one, we can demonstrate it as:

$$X_t = \mu_t + e_t$$

Where $\mu_t = \lambda + \beta_t$

or $X_t = \lambda + \beta_t + e_t$

A stochastic trend is manifested in a series if the series moves upward and downward as a result of stochastic effects.

Besides time series being non-stationary, studies have shown that one can still get good regression results. In this case it is difficult to make a judgment as to whether an economic relationship suggested by theory has any empirical support for the data. Hence the regression results will only make sense if the series are not affected by a trend. We therefore have to detrend any variable subjected to a trend. If we have a stochastic series X_t with a trend such that:

$$X_t = X_{t-1} + e_t$$

Then our detrended variable will be

$$\Delta X_t = X_t - X_{t-1} = e_t$$

Where ΔX_t is stationary

This means that a non-stationary variable can be made stationary by differencing it once. In this

case the variable is said to be integrated of order one. However, a non-stationary variable can be made stationary by differencing it **d** times. Such a variable is said to be integrated of order **d** and is denoted as $X_t \sim I(d)$. Clearly a stationary series is integrated of order zero (i.e. I (0))

A time series can also be non-stationary if it is subject to a drift or seasonality and to make it stationary we difference the series.

The order of integration of each variable in this study is therefore identified using the Dickey-Fuller (DF) class of unit root tests suggested by Dickey and Fuller (1979). The DF test involves testing the size of the coefficient ρ in the equations as shown below.

$$X_t = \delta_0 + \alpha X_{t-1} + e_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(3.a_4)$$

We test for the hypothesis $\alpha = 1$ (i.e., unit root test). The above equation can be rewritten as:

$$\Delta X_t = \delta_0 + \rho X_{t-1} + e_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(3.a_5)$$

Where

$$\alpha = 1 + \rho \text{ or } \alpha - 1 = \rho$$

In the last equation we test for negativity of ρ in the OLS regression, that is:

$H_0 : \rho = 0$ which implies that $\alpha - 1 = \rho = 0$ then $\alpha = 1$

$H_A : \rho < 0$ which implies that $\alpha - 1 < \rho < 0$ then $\alpha < 1$

If ρ is negative, thus rejecting the null hypothesis implies that $\rho < 1$ and that X_t is integrated of order zero. This means X_t is stationary (i.e., $X_t \sim I$ (0)). However, if the null hypothesis

cannot be rejected, then the series has a unit root and is non-stationary at levels. Hence the order of integration could be higher than zero or may not be there at all.

If X_t is non-stationary, we continue testing for the order of integration by differencing further until it is established or until X_t cannot be made stationary by differencing.

The DF test, however, does not take into account the possibility of autocorrelation in the error term and if the error term (e_t) is not a white noise process, then the OLS estimate will not be efficient. The appropriate method that is therefore used to overcome this problem is the Augmented Dickey-Fuller (ADF) test as proposed by Dickey and Fuller (1981). This involves using the lagged values of the endogenous variable as additional explanatory variables to approximate autocorrelation. Further we perform the Phillips-Perron test in supplement to the Dickey-Fuller class of tests. We therefore specify our ADF equation as:

$$\Delta X_t = \delta_0 + \rho X_{t-1} + \sum \Delta X_{t-1} + e_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots(3.a_6)$$

We again test the hypothesis:

$H_0 : \rho = 0$

$H_A : \rho < 0$

If the null hypothesis is rejected and the alternative accepted, the series is stationary at levels. If the null hypothesis cannot be rejected, the series is non-stationary at levels, though it could be stationary at higher levels or not stationary at all.

There is another test for order of integration besides the DF and ADF tests. This is the Sargan Bhargava Watson (SBDW) test. It is used together with the DF and ADF with the null hypothesis same as the alternative hypothesis in DF and ADF to cross check the tests. This is because tests for unit root are usually biased and have low power in detecting stationary series. We therefore make inferences on order of integration based on more than one test.

3.6 COINTEGRATION ANALYSIS

The model will also be subjected to cointegration[10] test in order to ascertain whether there is a stable long run relationship between the dependent variable and its regressors. This test is basically required to guard against loss of information relating to possible long run relationship in a model specified in first differences.

Cointegration tests require that variables involved be integrated of the same order. This implies that all the series should be stationary in differences but not in levels. Dickey and Fuller (1979, 1981) provide one method of determining the order of integration for individual series. They suggest the following regression to test for the presence of unit roots in a given variable Y;

$$\Delta Y_t = \omega_0 + \omega_{1t} + (\rho - 1)Y_{t-1} + \sum_{i=2}^{n} \omega_i \Delta Y_{t-1+1} + e_t \quad \text{.............................4a_1}$$

This equation is known generally as the Augmented Dickey- Fuller (ADF) regression. The number of lags n is chosen to purge possible serial correlation in the error term.

Thus the process of testing for the existence of cointegrating relationship is two fold. First, test for the unit root on the individual series and if the variables of interest appear to have a unit root,

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[10] Variables are said be cointegrated if a linear combination of these variables assumes a lower order of integration. These variables must always be of the same order of integration individually. That is they are individually non-stationary integrated of the same but their linear combination is integrated of a lower order.

then a model in the static form is estimated for the cointegrating regression. Second, test for order of integration of the residuals generated from the static model in step 1. In line with the two steps outlined above, cointegration in this study will be conducted using analogous tests to those used for integration tests of the series.

Using both DF and ADF tests discussed above, we specify the cointegrating regressions as:

$$\Delta\varepsilon_t = \pi\varepsilon_{t-1} + v_t \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\text{.....3.}a_7$$

$$\Delta\varepsilon_t = \alpha + \pi\varepsilon_{t-1} + v_t \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\text{.....3.}a_8$$

$$\Delta\varepsilon_t = \alpha + \pi\varepsilon_{t-1} + \beta T + v_t \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\text{.....3.}a_9$$

Where

$$\Delta\varepsilon_t = \varepsilon_t - \varepsilon_{t-1}$$

ε_t = Residuals generated from the static equation

α =a drift term, T =Trend and v_t =error term

In both cases stated above H_0 and alternative H_A hypotheses to be tested are given as:

$H_0 : \pi = 0$ (not cointegrated)

$H_A : \pi < 0$ (cointegrated)

The Augmented Dickey Fuller (ADF) unit root test used in this study to test for cointegration is based on the following model:

$$\Delta\varepsilon_t = \alpha + \beta T + \pi\varepsilon_{t-1} + \sum_{i=1}^{k}\pi\Delta\varepsilon_{t-1} + v_t \quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\quad\text{.....3.}a_{10}$$

Where i is the number of lags for $\Delta \varepsilon_{t-i}$ and the other notations as defined above. The null and alternative hypotheses to be tested are given as:

$$H_0 : \pi = 0 \text{ (not cointegrated)}$$

$$H_A : \pi < 0 \text{ (cointegrated)}$$

The t-statistics of the coefficient of ε_{t-1} using both versions of DF and ADF tests determine whether the variables are cointegrated or not. If the computed t-value is less than the critical t-value then cointegration is accepted.

CHAPTER FOUR

DATA ANALYSIS AND EMPIRICAL RESULTS

This chapter presents empirical result of the view that capital flight occurs in circumstances in which residents have perceived different portfolio diversification incentives, return differentials and the relative risk incentives associated with domestic investments. Hence different countries may experience capital flight on the basis of domestic macroeconomic imbalances that prevails. In this chapter we analyze the data and present the empirical results of the model specified in chapter three. In sections 4.1 and 4.2 we both test for stationarity and cointegration while in section 4.3 and 4.4 we derive the empirical results of our parsimonious empirical model.

4.1 UNIT ROOT TESTS

In this section, we report the results of the unit root test for each variable and show whether or not the variables are stationary. The tests used are the Augmented Dickey-Fuller (ADF) Philips Perron's and Sargan Bhargava Durbin Watson (SBDW) tests.

Table2. Augmented Dickey- Fuller Unit Roots Tests (in levels)

Name of Variable	Lag length	ADF	PP	Order of Integration
Capital Flight (CF)	2	-2.675275	-3.609949**	I (1)
Real Gross Domestic Product (RGDP)	2	-1.177051	-1.349167	I (1)
Real Exchange Rate (RER)	2	2.1032283	2.720711**	I (2)
Change in external debt (CHEXDEBT)	2	-2.330081	-3.990997**	I (1)
Treasury Bill Rate (TBR)	2	-0.401462	-0.828670	I (1)
Fiscal Deficit (FD)	2	-1.013952	-1.942700	I (1)
Critical Values at 1% 5% 10%		-2.7057** -1.9614 -1.6257	-2.6889** -1.9592 -1.6246	

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1. ADF and PP – Augmented Dickey–Fuller and Philips-Perron tests in levels.
2. ** Mackinnon critical values for rejection of hypothesis of a unit root
3. Lag length (2) for Augmented Dickey-Fuller test and Bartlett Kernel for Phillips-Perron test.

Differencing a non-stationary series to obtain stationarity helps to overcome the problem of spurious regression as it leads to non-recovery of long run properties since a model in differences form lacks long run solutions. A possible solution to this problem of loss of long run properties in econometric modelling revolves around the specification of an Error Correction Model (ECM). However, the ECM is specified in cases where the series of the model are cointegrated.

Table 3. Augmented Dickey- Fuller Unit Roots Tests in First Difference

Name of Variable	Lag length	ADF	PP	Order of Integration
Capital Flight (CF)	2	-4.074594**	-6.546668**	I (0)
Real Gross Domestic Product (RGDP)	2	-3.579712**	-4.364859**	I (0)
Real Exchange Rate (RER)	2	-3.450864**	-11.80772**	I (0)
Change in external debt (CHEXDEBT)	2	-3.604910**	-6.885351**	I (0)
Treasury Bill Rate (TBR)	2	-4.529334**	-6.918876**	I (0)
Fiscal deficit (FD)	2	-4.153957**	-4.926627**	I (0)
Critical Values at				
1%		-2.7158**	-2.6968**	
5%		-1.9627	-1.9602	
10%		-1.6262	-1.6251	

Notes:
1. ADF and PP – Augmented Dickey–Fuller and Philips-Perron tests in first difference
2. ** Mackinnon critical values for rejection of hypothesis of a unit root
2. Length (2) for Augmented Dickey-Fuller test and Bartlett Kernel for Phillips-Perron test.
3. D is the first difference operator
4. RER is stationary after second difference

Comparing the unit roots test statistics with their corresponding critical values suggest that most of the variables are I (1) with the exception of real exchange rate (RER), that is an I (2) process in levels. This means that differencing the series twice will render it stationary. Table 3 above shows clearly that all other variables become stationary after first difference except real exchange rate (RER) that is an I(2) and becomes stationary after second difference and their values are then compared with the critical values at 1%, 5% and 10% level of significance.

We have used both the Augmented Dickey-Fuller (ADF) and Phillips-Perron tests to show that CF, RGDP, RER, CHEXDEBT TBR and FD variables are non-stationary at 1% levels of significance in levels. The null hypothesis of non-stationary or unit root is accepted at 1% level of significance. The ADF test shows that the first difference of these variables are stationary (integrated of order zero) at 1% level of significance. The PP (Phillips-Perron's test) show the same results. Since differencing once produces stationarity we can conclude that these variables are integrated of order one I~I (1). As a result therefore the model will be specified in first differences.

4.2   COINTEGRATION TEST-RESULTS

The test statistics generated are presented in table 4 below.

Table 4 Cointegration Test

Name of Variable	ADF	PP	Order of Integration	Reject/Accept
ECM	-3.429208	-3.647229	I (0)	Accept
Critical Value at				
1%	-2.7057**	-2.6968**		
5%	-1.9614	-1.9602		
10%	-1.6257	-1.6251		

Notes: ** Mackinnon critical values for rejection of hypothesis of a unit root

The result above accepts cointegration among the non-stationary variables. The null hypothesis of no cointegration is rejected at all levels of significance. These results suggest that an error correction specification will provide a better fit than will be the case without it. The acceptance of the existence of cointegration between variables implies that the model of capital flight to be estimated will therefore have to contain an error correction variable. Thus to capture possible short run dynamics, we would impose lag structures on the variables included in the model and apply the Engel-Granger Error-Correction Mechanism (ECM) in order to achieve the most efficient estimates. To work towards a more parsimonious equation, variables with low t- values will be dropped in the restricted model.

4.3   Model Re-Specification and Results of Estimation

Having identified a stable long-run relationship between capital flight and real gross domestic product ($RGDP$), real exchange rate (RER), change in external debt($CHEXDEBT$), Treasury bill rate(TBR) and (FD), we proceed to specify an error correction model (ECM), which includes the residuals from the cointegrating regression as a regressor. The error correction model may be written as follows

$$DCF_t = \beta_0 + \beta_1 DRGDP_t + \beta_2 DDRER_t + \beta_3 DCHEXDEBT_t + \beta_4 DTBR_t + \beta_5 DFD_t + \beta_6 DUM + ECM_{t-1}$$
$$+ e_t \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots 3.a_3$$

Where ECM is the error correction term i.e. the residuals from the cointegrating equation. Essentially the ECM captures the long run relationship. It reflects attempts to correct deviations from the long run equilibrium path and its coefficient can be interpreted as the speed of adjustment or the amount of disequilibrium transmitted each period to capital flight.

The above-specified model and its associated lags was estimated using OLS and employing the concept of general to specific estimation procedure, the general model is reduced to obtain the preferred results as shown in regression 2.

Regression Results1:

Variable	Coefficient	Std –Error	t- Statistic	Prob.
Change in external Debt (CHEXDEBT)	0.820288	0.044085	18.60679	0.0000
Real Gross Domestic Product (RGDP (lagged))	-0.359065	0.130194	-2.757932	0.0116
Real Exchange Rate (RER)	-4.813731	1.792076	-2.686119	0.0198
Treasury Bill Rate (TBR)	-13.69700	5.239816	-2.614023	0.0226
Fiscal deficit (FD)	0.015760	0.005297	2.975197	0.0116
Political instability dummy	26.96814	43.70665	0.686119	0.5487
Error Correction Model (ECM (-1))	-0.937122	0.314567	-2.97088	0.0115
R^2 Adjusted	0.965983			
Sample Size	19			

Source: Author's Calculations

Regression Results2:

Variable	Coefficient	Std –Error	t- Statistic	Prob.
Change in external Debt (CHEXDEBT)	0.837525	0.036580	22.89549	0.0000
Fiscal deficit (FD)	0.018876	0.004717	4.001825	0.0015
Fiscal deficit lagged once (FD_1)	0.013989	0.005154	2.714169	0.0177
Fiscal deficit lagged twice (FD_2)	0.016267	0.005199	3.128732	0.0080
Error Correction Model (ECM (-1))	- 1.091901	0.203509	- 5.365358	0.0001
R^2 Adjusted	0.977510			
Sample Size	18			

Source: Author's Calculations

Diagnostic Tests

AR 1- 2F(2, 11)	= 2.8915 [0.0979]
ARCH 1 F (1, 11)	= 0.69681 [0.4216]
Normality $Chi^2(2)$	= 2.326 [0.3125]
Xi^2 F (10, 2)	= 0.48219 [0.8236]
RESET F (1, 12)	= 0.2179 [0.6490]

Before interpreting the above results, it is important to subject the models to rigorous diagnostic tests. These tests are reported beneath the respective models. The tests indicate whether the model is consistent with data or not. If the models do not track the data well over the sample period, it will be needless interpreting the results. Among the diagnostic tests considered are the mis-specification tests testing on the residuals for a range of null hypothesis of interest, including autocorrelation (AR), autoregressive conditional heteroscedasticity (ARCH), the Jarque-Bera normality of the distribution of the residuals and functional form misspecification (Ramsey's RESET test).

The diagnostic tests for all the models are not significant starting with AR for autocorrelated residuals, the ARCH for heteroscedastic errors, normality test for the distribution of the residuals and the RESET test for the regression specification both at 1% and 5%. The null hypothesis is accepted in all cases. The test outcomes are satisfactory, consistent with the equations estimated.

The normality of the error term is necessary for the efficiency and consistency of the OLS estimates to hold. The RESET test shows that the model was correctly specified as linear. The ARCH test indicates absence of heteroscedasticity, that is, it does not reject the hypotheses that the conditional variance of the estimated model is not related to the size of its past errors.

The test statistic obtained revealed that the parameters were stable. We now proceed with the discussion of the results under the assumption of best linear unbiased estimates with residuals being a white noise process.

4.4   CAUSALITY TESTS

Having established that the model is correctly specified. this section gives a discussion of the results in model 3.a_1 and 3.a_2 (Testing for Granger Causality). Using the Eviews package to run causality. we clearly see that capital flight did not granger cause external debt and neither does the causality run from external debt to capital flight. This is possibly because change in external debt may be influenced by other factors such as level of fiscal deficit. trade disequilibrium, and other macroeconomic ills. The following results were obtained

Granger Causality Tests Results

Null Hypothesis	observations	F-Statistic	Probability
Change in external debt does not Granger Cause Capital Flight	18	0.53642	0.59724
Capital flight does not Granger Cause External debt	18	0.47858	0.63016

The above results are consistent with those found earlier by Ajayi (1997) for a sample of Sub-Saharan African countries on causality between foreign debt and capital flight. In his study, he noted that there was no relationship between external debt and capital flight although the methodology and results are not reported. Indeed the nature of foreign debt-flight relationship has been controversial both in the literature and for international lenders and country governments. In the analysis above, we can therefore consider the relationship as an indirect linkage, which we refer herein as debt-motivated capital flight, and essentially this means that capital flees or leaves the country in response to attendant economic circumstances directly

attributable to external debt itself. The attendant economic circumstances leading to debt-driven capital flight are expectation of future tax increases, or fiscal crisis, possibility of crowding out domestic capital and avoidance of taxes and expropriation risk. These expectations and other uncertainties about the type of future government (for example multi-party system, the forth coming general elections, corruption aspects, emergence of clashes, poor delivery of government services, issues of succession and overall growth of the economy), large foreign debts and low domestic investment all combined could trigger capital flight.

Turning to the structural linear model specified in equation 4a₁, we report the results for flight capital as a proportion of change in external debt and fiscal deficits. In our first regression all variables analysed during the period have their hypothesised signs except real exchange rate (RER) that is significant with a wrong sign. This variable was dropped in regression 2 and we included more lags in an attempt to arrive at a more parsimonious model.

From our final regression result 2 we see that the overall explanatory power of the model is 0.98 meaning that changes in external debt and fiscal deficits explained much of the capital flight from the country during this period. This meant that a large proportion of capital flight was triggered or rather fuelled by huge stocks of foreign debt. Implying that a one per cent change in external debt led to about 84 per cent of capital outflows from the country. In essence we see that although causality was non-directional as found earlier, it is sufficient to say that changes in external debt strongly relate to the concept of capital flight. This relationship is viewed as an indirect cause, that is, high levels of foreign debt creates expectations of heavy future taxation.

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This accompanied by uncertainties about the type of future government and low levels of investment generates capital flight.

Current and past fiscal deficits were also a significant factor that contributed to capital flight over the period. This meant that a one unit increase in the level of fiscal deficit led to a one percent outflow of capital from the country. Indeed fiscal deficit is primarily a problem that arises from macroeconomic imbalances that creates avenues for high government spending. Huge fiscal deficits could stifle economic growth and impinge on other macroeconomic aggregates and significantly accelerate the debt overhang problem.

Another important finding from the above error correction model is that the lagged error correction variable (ECM_{t-1}) that was included in the model to capture the long run dynamics between the integrating series is correctly signed (negative) and statistically significant at 1%, 5% and 10% levels. The strong significance of the coefficient on the lagged error correction term (ECM_{t-1}) constitutes a clear verification of our earlier finding of a stable long run relationship among the five variables of interest derived in the previous section. The reconfirmation of cointegration among the series implies that the Error Correction Model (ECM) is appropriate for the capital flight equation. The co-efficient indicates a speed of adjustment of over 100 per cent from actual capital flight in the previous year to equilibrium capital flight; this implies that the errors are corrected within one year.

The inclusion of a dummy variable to capture possible effects of political instability on capital flight did not reveal much significant estimates. Hence it was dropped from the final specification of capital flight equation. This is not in any way surprising since Kenya has enjoyed and continues to enjoy an undisturbed political climate up to the early 1990s when some disturbance emerged following the opening up of the political arena to multi-partism. But we stand to suspect that the elapsed time is too short to be captured in a model as the one we have specified herein.

CHAPTER FIVE

CONCLUSION AND POLICY IMPLICATIONS

5.1 CONCLUSION

This study analyzed capital flight as measured by the residual approach adopted by the World Bank (1985). We argued that this measure is more elaborate and appropriate in computing capital flight. The central focus of the study was to establish the causal relationship between capital flight and change in external debt. In addition the study was also to examine the relative influence of other factors on capital flight for the period 1980-2000. The analysis rests on the simple framework that capital flight thrives in the context of residents' portfolio choice. This is based on the rate of return on domestic assets and their riskiness relative to foreign assets.

The most striking result is that we find no evidence of causal relationships running from capital flight to changes in external debt. On the other hand, changes in external debt do not granger cause capital flight. This result implies that causality is non-directional suggesting that other variables especially those attributable to changes in external debt were significant in explaining capital flight.

The empirical findings of this study have demonstrated that the outflows of capital from Kenya since 1980's have stemmed primarily from domestic macroeconomic policy errors. Of significance in the area of policy errors are high domestic fiscal deficits and high external indebtedness.

Changes in external debt were found to have a positive significant contemporaneous effect on capital flight. This shows the significant role-played by "external indebt-ness" in fuelling outflows of capital from the country since huge external debts creates uncertainty about future taxes and possible loss of real returns on the residents hard earned income. In this regard economic agents holding firm to this expectation would cause residents to avoid the potential capital loss by converting into foreign claims.

Coefficients on current and lagged fiscal deficits were correctly signed. This meant that huge fiscal deficits trigger high taxes on assets and therefore propelling the amount of capital outflows as a means of avoiding the taxes. The positive effect of lagged fiscal deficit is an indicator of poor economic performance. Measures to curtail spending must consist of policies designed to reduce deficits. The government can reduce deficits by enhancing tax collections and cutting unproductive expenditure. The latter calls for budget restructuring, improved tax collections that will go a long way to reduce government borrowing, which is a low- cost mode of financing public spending. Thus promotion of economic growth and credibility of government policies, are a sure way of reversing or reducing capital flight.

The analysis also demonstrates that capital flight is typically accompanied by fiscal deficit. When a rising fiscal deficit is financed through the printing of money, it leads to inflationary pressure. To avoid the erosion of their monetary balances by inflation, moving out of domestic assets is one way of avoiding inflation tax. When fiscal deficits is financed through bond sales, domestic residents may expect that at some future date their tax liabilities may increase to pay

for the national debt. This would encourage domestic investors to move their assets to foreign countries to avoid potential tax liabilities.

In Kenya, it is difficult to rank the various causes of capital flight in any order of importance. It is important however, to point out that a poor macroeconomic policy stance has resulted in all kinds of distortions. At the same time, the role-played by other factors such as access to foreign exchange, through various perquisites of offices and consequent possible abuse cannot be underestimated.

5.2   POLICY RECOMMENDATIONS

Policy measures to arrest the problem of capital flight and even attract capital inflow can be suggested based on the empirical findings reported in this paper. What is certain, however, is that political and macroeconomic stability play a big role in the flow of capital. A suitable and stable macroeconomic environment that eliminates domestic macroeconomic policy errors will ensure that the economic functions, which bring about capital flight, are eliminated. Policies aimed at reducing fiscal and external indebtedness to sustainable levels are recommended.

Based on the findings, the following policy options can be used in arresting capital flight:

The government pursue and adopt appropriate fiscal and monetary policies to guarantee a stable macroeconomic environment that ensure reduction in foreign borrowing to avoid running into deficits. Thus if the government wants to reduce its deficits, it should not determine the level of spending on political grounds and consequently adjust tax revenue accordingly. The amount of funds available should determine the level of spending. This maybe achieved by adoption of a

sound budgetary process that ensures financing expenditures that are tenable. It should also without fail enforce on the spending limits.

As Kenya dreams to become an industrialized nation, a lot has to be done on external debt problem. Every effort must be taken to overcome the external debt problems by strengthening the measures and cultivating the right policies. This would involve exploring and using available channels for debt reduction. The government should also undertake the economic reforms necessary to move the economy into sustainable growth, thus providing a favourable climate for debt reduction in the long run.

Thus given the potential beneficial effects of debt stock reduction on investment and GDP in Kenya, it is recommended that the international community make a greater effort to provide debt reduction, preferably through debt forgiveness, as a matter of priority. It seems clear that, provided appropriate domestic macroeconomic policies are adopted and implemented along with debt reduction packages, debt reduction would provide a much–needed stimulus to investment recovery and growth in Kenya in the years head.

This therefore means that, the issue of debt crisis in LDCs cannot be fully solved single-handedly since debt-related problems are both domestically and externally initiated. It requires consolidated efforts by debtors as well as creditors, supported by a friendly international environment. The new debt relief initiative of the International Monetary Fund and World Bank, to the highly indebted poor countries (HIPC) arrangement should be extended to Kenya in an

attempt to lower the foreign debt ratio. Thus if Kenya benefits from the debt forgiveness under the HIPC initiative her debt problem will drastically reduce and probably this may be a stimulant towards foreign investment and overall reduction in the proportion of Kenya's private wealth held abroad.

The state should also create a wide menu of domestic financial assets in which local investors can invest their wealth. This can be achieved through the establishment of an active secondary market for government securities and creation of unit trusts for small investors. Such a policy measure can be supplemented by provision of amnesties. This will encourage repatriation of capital that has remained in safe "havens" in order to avoid legal consequences of violating control and regulations of taxes.

Last but not least the issue of corruption though not captured in our model is an important aspect to consider in an attempt to arrest the vice of capital flight. The only safe thing that can be said is that there is need for attitudinal changes, which would require serious commitment to honest government on the part of political office holders.

5.3   STUDY LIMITATIONS

In spite of the efforts expended on ensuring that the study is complete, it must be conceded that our study has some inherent limitations. First, the study adopted a standard portfolio model where domestic agents are assumed to allocate their portfolio in explaining the causes of capital flight in Kenya. However, this approach fails to distinguish "normal" capital outflows and capital flight. The second weakness of the study has to do with the cointegration and error correction

technique employed in the analysis. This methodology in general requires a large sample size to make reliable inferences for policy implications.

In light of the above limitations, one could suggest that a similar study be examined under the "risk differential" approach, which emphasizes the differences in the perceived risk to residents and non-residents of holding capital in developing countries as a key determinant of capital flight. It may also be interesting if an empirical analysis into the problem of capital flight can be done using high frequency time series data, specifically, quarterly time series data, since it could give more precision and enable one to analyze short term variations in capital flight.

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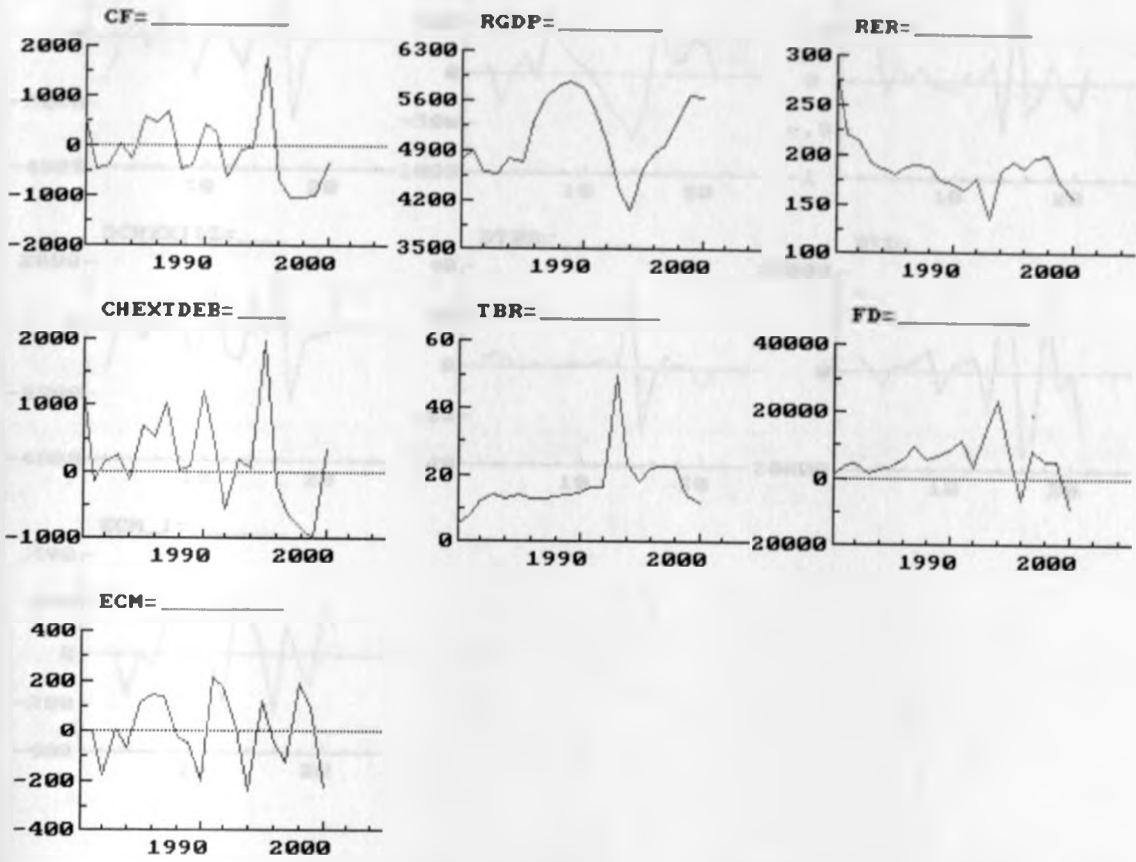
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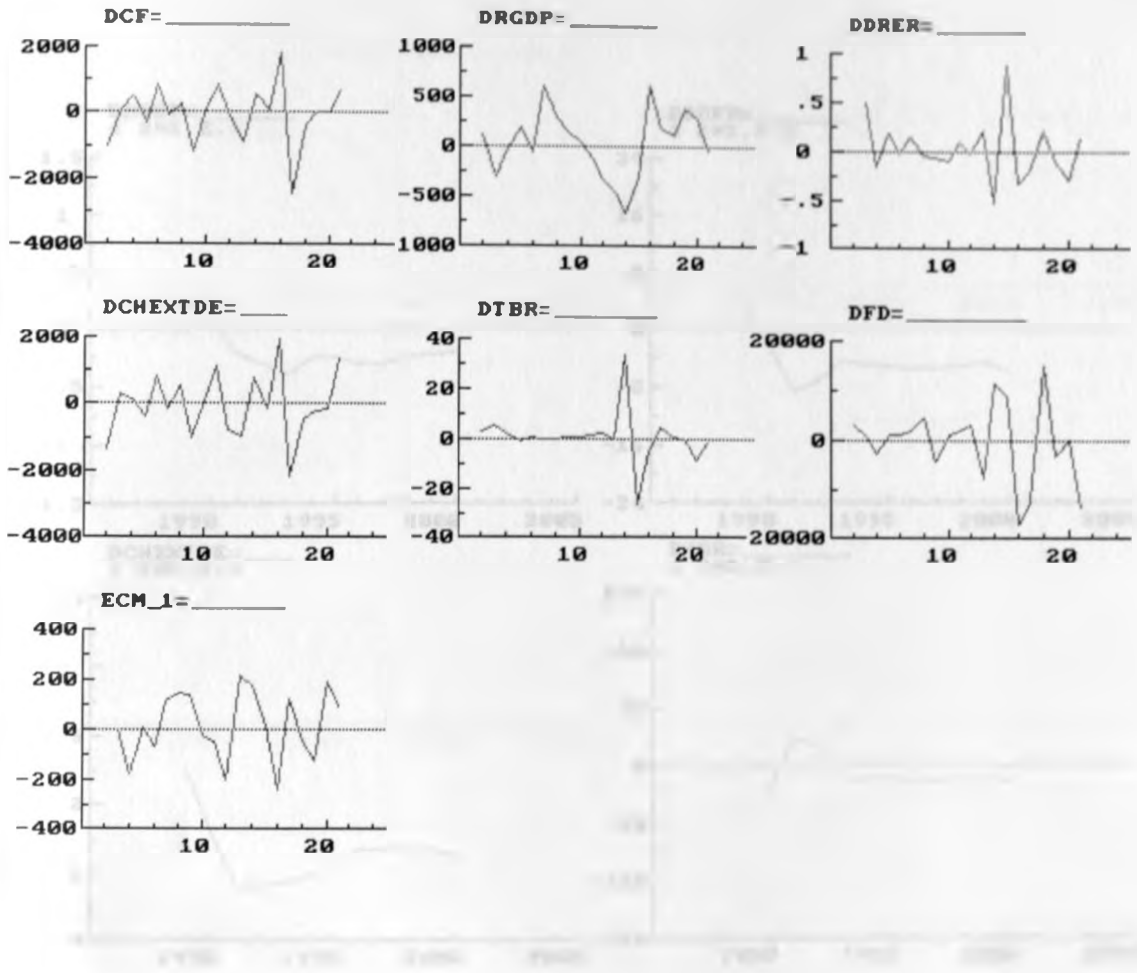
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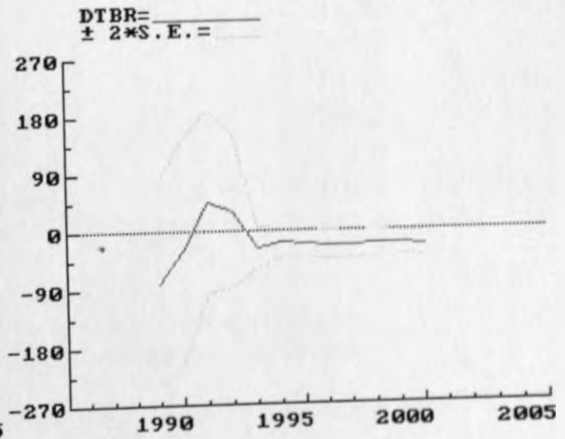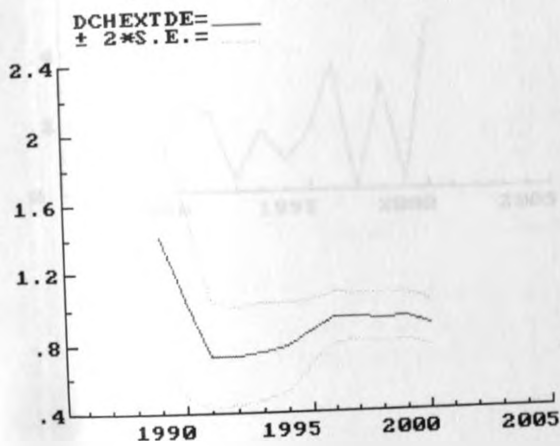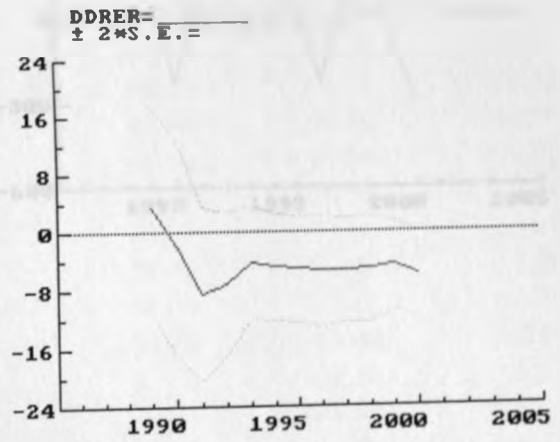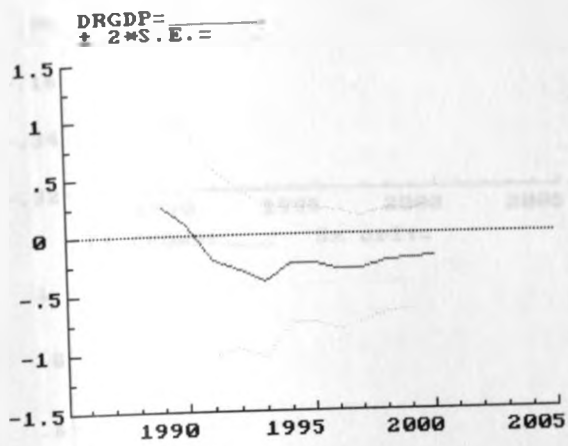
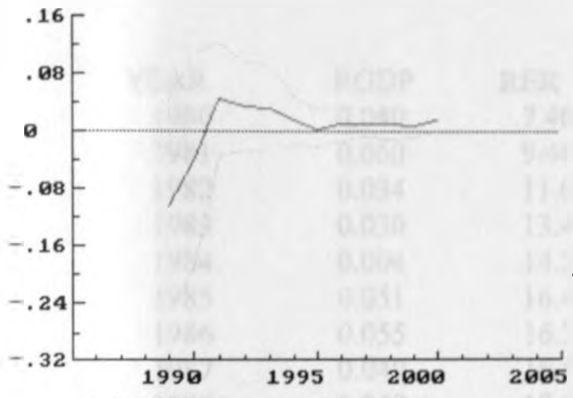# APPENDIX1: Graphical Representation of Variables at Levels

CF=_____

RGDP=_____

RER=_____

CHEXTDEB=_____

TBR=_____

FD=_____

ECM=_____

APPENDIX2:   Graphical Representation of Variables in differences

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DFD=
± 2*S.E.=

Res1Step=
± 2*S.E.=

.16
.08
0
-.08
-.16
-.24
-.32
1990   1995   2000   2005

600
300
0
-300
-600
1990   1995   2000   2005

1↑ CHOWs=____   5% crit=

1
.8
.6
.4
.2
0
1990   1995   2000   2005

YEAR	RGDP	RER	CPI (K)	CPI (US)	TBR
1980	0.040	7.40	11.10	54.10	5.26
1981	0.060	9.40	12.40	59.70	7.61
1982	0.034	11.0	14.90	63.30	12.58
1983	0.030	13.4	16.70	65.40	14.15
1984	0.004	14.5	18.40	68.20	13.24
1985	0.051	16.4	20.80	70.60	13.90
1986	0.055	16.2	21.80	71.90	13.23
1987	0.049	16.5	23.40	74.60	12.86
1988	0.050	17.9	26.00	77.00	13.48
1989	0.043	20.7	29.40	81.40	13.86
1990	0.043	23.2	34.00	85.70	14.78
1991	0.023	27.8	40.70	89.40	16.59
1992	0.005	32.5	52.70	92.10	16.53
1993	0.002	60.1	76.90	94.80	49.80
1994	0.030	55.7	99.20	97.30	23.32
1995	0.048	51.8	100.0	100.0	18.29
1996	0.046	56.9	108.8	102.9	22.25
1997	0.024	58.5	121.9	105.3	22.87
1998	0.018	60.4	129.0	107.0	22.83
1999	0.014	70.3	132.4	109.3	13.87
2000	(0.003)	79.0	140.1	113.0	12.05

Notes:

The figures in parenthesis represent negative values

The values for the RER are expressed in terms of one US dollars

Capital flight computed using the formula given in chapter three

Sources:

1. IMF, International Financial Statistical Yearbook 2000 and March 2001 Publication
2. World Bank, World Debt Tables, Various Issues
3. Monthly Economic Reviews- Various Issues

YEAR	CHEXTDEBT	CF	FD	PEDU
1980	1,217	544.3	(1,122)	1
1981	(160)	(448.8)	(3,897)	1
1982	141	(390.0)	(4,462)	0
1983	263	72.0	(1,597)	1
1984	(117)	(249.8)	(2,710)	1
1985	680	590.4	(3,775)	1
1986	523	486.2	(5,587)	1
1987	1,031	724.9	(9,841)	1
1988	26	(453.6)	(5,587)	1
1989	81	(368.9)	(6,574)	1
1990	1,194	434.9	(8,374)	1
1991	399	293.0	(11,171)	1
1992	(548)	(600.3)	(3,443)	0
1993	211	(69.0)	(14,931)	0
1994	42	(8.4)	(23,415)	1
1995	1,961	1,797.2	(6,172)	1
1996	(204)	(657.9)	6,228	1
1997	(633)	(1,032.0)	(8,728)	1
1998	(855)	(1,021.8)	(5,304)	1
1999	(1,000)	(983.7)	(5,189)	1
2000	342	(336.0)	8,5741	1

Notes: The figures in parenthesis represent negative values
                                 The values for the RER are expressed in terms of one US dollars
                                 Capital flight computed using the formula given in chapter three

Sources: 1.   IMF, International Financial Statistical Yearbook 2000 and March 2001 Publication
               2.   World Bank, World Debt Tables, Various Issues
               3.   Monthly Economic Reviews- Various Issues