

CHAPTER 1

INTRODUCTION

1.1 Background

Capital flight has been a problem as early as the seventeenth century in Europe and in the early twentieth century in the United States of America, Kindleberge (1987) stated that the subject matter in the modern world only gained recognition again in the early 1980s during the debt crisis of Latin American and African countries. This renewed interest in the study of capital flight is due to the significant impact that external assets stored overseas have on the domestic economy. Until recently Sub-Saharan African countries received less attention than other Less Developed Countries. In fact, most studies on capital flight up until the early 1990s treated “capital flight as an exclusively Latin America problem” (Hermes and Lensink, 1992:1). However, since the mid-1990s, research on capital flight has extended to the African continent.

Capital flight has become one of the major challenges for many Less Developed Countries (LDCs). This is because mobilization of national resources in these developing countries is vital for economic development and for domestic investment both private and public. Therefore, these efforts are at risk by the acute shortage of capital. Different scholars have tried to define capital flight but have not agreed on one general definition. One of the common definitions of capital flight is in Ndikumana and Boyce (2002:1)

where capital flight is stated as “residents’ capital outflows, excluding recorded investment abroad.”

The Sub-Saharan African countries have also experienced capital flight. One of the earliest studies on capital flight from Sub-Saharan Africa was by Chang and Cumby (1991) where they found that many African countries experienced higher capital flight than their Latin American counterparts did. These high levels of capital flight in these developing countries were actually posing a huge threat on domestic resource mobilization and contributing to the mounting foreign debt challenges and the slow progress in economic developmental efforts. Recent studies by Boyce and Ndikumana (2001) reveal that the Sub-Saharan Africa (SSA) region is being viewed as a “net creditor” to the rest of the world because private assets held abroad as measured by accumulated capital flight exceeded total liabilities as measured by the stock of debt. In the study of 25 SSA countries, estimated cumulative stock of capital flight for the period 1970 to 1996 was approximately US\$287 billion. Meanwhile, the stock of external debt in SSA was at US\$178 billion for the same period.

In fact, “the existing evidence also indicates that compared to other developing regions, SSA has a larger share of private wealth held abroad.” Ndikumana and Boyce (2002:1). Therefore, capital flight deserves serious attention because of the long-term effects, which worsen the capital scarcity problem, combined with the lack of financial resources and infrastructure and leading to economic development retardation. Another reason why capital flight deserves serious attention is that it effects investments because the capital

that has fled is viewed as the foregone investment in infrastructure, manufacturing and productivity capacity and the same capital escapes government taxation, which can assist in the revenue needed to promote developmental programmes as well as to service external and internal debt. Ayadi (2008) concludes that tax evasion due to capital flight by the highest income class accelerates income disparities and aggravates social instability.

Another reason is that most SSA countries are experiencing severe external debt predicaments. By 2000, debt service amounted to 3.8% of gross domestic product (GDP) for SSA countries as a whole. As a result, efforts of donor organizations in increasing savings in SSA countries may be unsuccessful, as capital flight tends to lead to loss of scarce domestic savings.

Zambia has also experienced massive capital flight since 1970s. Studies done by Nyatepe-Coo (1994) and Boyce and Ndikumana (2001) found massive capital out flow from Zambia with the major determinants being macroeconomic instability, higher inflation, unsustainable government budget deficits, foreign debt and political induced uncertainties.

Capital flight should be viewed as one the economic challenges that Zambia is facing because not only does it aggravate the shortage of resources for development, but indirectly leads to a decline in domestic investments and reduction in the tax receipts of the government. This can cause the growth of a country to reduce because investments

have been diverted abroad and the necessary imports are limited by foreign exchange drain. The earnings on assets abroad are often not repatriated. Therefore, capital flight can erode a country of the critical financial resources that could have been used for investment, tax revenues, and infrastructure development over the years.

1.2 The Problem

Capital flight deprives Zambia of financial resources for investment and growth. This is a major problem because at independence Zambia was one of the strongest economies in SSA region with real per-capital income of just above US\$1,200, real growth rate of 5.2 percent, external debt of US\$ 155 million dollars and a single inflation digit of 8.2 percent in 1965. Zambia's rapid economic growth largely depended on favourable international copper price during the 1970s. However, the debt crisis of 1980 and the drop in copper prices did not spare Zambia just like the rest of the LDCs in the late 1980. Zambia started experiencing sluggish growth and persistent BOP deficits resulting in slow economic growth and high unemployment despite large aid inflow.

Zambia like many developing countries in SSA region started witnessing high levels of capital flight since independence. In 1970, the country lost US\$3.13 billion in capital flight, which was equivalent to 90 percent of the country's GDP in 1970 and 1971. Ndikumana and Boyce (2007) estimated that the cumulative stock of capital flight from Sub-Saharan Africa between 1970 and 2004 to be US \$420 billion, a figure that is 2.9 times the region's total stock of debt of US \$178 billion. Of this total, Zambia accounts for US \$9.78 billion or 2.3 percent, although its share was much higher (6.4 percent)

between 1970 and 1990. After 1990, capital flight declined substantially from 62 percent of GDP prior to 1991 to negative 6.3 percent of GDP after 1991 (figure 3.1). This implies that the country moved from a position of largely being a “net lender” to that of being a “net recipient” of capital between 1992 and 2003. According to Boyce and Ndikumana (2008), capital flight reached a peak of US\$2 billion in 1989 with US\$ 1 billion in 1990.

Capital flight reduces the amount of domestic financial resources available to finance developmental programmes. High levels of capital flight from the necessary financial resources which if returned would assist social-economical developmental programmes such as improvement in security, pro-growth policies to alleviate poverty and infrastructure development. All these programmes would help to reverse the economic downturn and put the much needed confidence in the country.

Therefore, capital flight should be one of the economic issues that Zambia should address because it can hinder the country’s ability to deal with issues of financial resources for investment, savings and development. As a result, there is need for urgent policy action to reverse the capital outflows from Zambia because its reversal could contribute to filling the resource gap in the country and have a great influence on the availability of domestic resources for development.

1.3 Objectives

1.3.1. Principal Objective

The principal objective of this study is to analyse the levels and trends in capital flight and to document the key economic and political factors that influence capital flight in Zambia. This principle objective will be attained by addressing the following specific objectives:

1.3.2. Specific Objectives

1. To analyze the levels and trends in capital flight in Zambia between 1970 and 2004.
2. To document and analyze the political and economic determinants of capital flight in Zambia since 1970.
3. Provide policy recommendations that would help limit capital flight and enhance the stock of domestic financial resources available to finance development programs in Zambia.

1.4 Hypotheses

1. Unfavourable macroeconomic factors such high inflation, exchange rate volatility and high fiscal deficits increase capital flight in Zambia
2. Stable economic growth reduces capital flight.
3. Political and policy uncertainty increase capital flight

1.5 Rationale

There is limited number of empirical studies on determinants of capital flight in Zambia, despite realizing that Zambia's resource gap requires the national resources that may have been put away abroad. Several studies have been done on capital flight in Latin American countries but very few studies have been done on the causes, measurements, determinants and empirical investigations and consequences of capital flight in Africa including Zambia.

The study is also motivated by the fact that Zambia, being one of the counties in SSA has also experienced massive capital flight since 1970s. Nyatepe-Coo (1994) found heavy capital out flow from Zambia and the major determinants were macroeconomic instability, higher inflation, unsustainable government budget deficits, foreign debt and political induced uncertainties. Meanwhile, Boyce and Ndikumana (2001) made a cumulative estimate of capital flight from Zambia of about US\$5,807.1 millions between 1970 and 1991 and the external debt stood at US\$7,639.4 millions during the same period. This reveals the fact that if the US\$5,807.1million debt is retained and used to assist in expelling some of this debt, the Balance of Payment (BoP) situation in Zambia can greatly improve.

During the same period, Zambia experienced high foreign debt, high inflation, unsustainable government budget deficits, different policy reforms, and political uncertainties. Therefore, the high level of capital flight represents an enormous sacrifice and missed opportunities that can assist Zambia in servicing its foreign debt, improve and

maintain sound macroeconomic environment. The high level of capital flight in Zambia creates serious challenges for domestic resource mobilization in support of investment because acute shortage of capital does retard investment and development. Capital flight has also been regarded as a major factor contributing to the mounting foreign debt challenges and slowing down development efforts because of its negative impact on the economy in the form of forgone private investment, tax revenue, and potential public investment in most African countries. Thus, reversal of capital flight in Zambia will be seen not only as an improvement to the external liability situation of the country but also to promote development.

The choice of the sample period (1970-2004) has been based on the view that necessary data is available. During the same period SSA countries, Zambia inclusive exhibited a situation where external assets accumulated via capital flight exceeded the public debt. It is imperative that we investigate determinants of capital flight in Zambia so as to be able to minimize or curb it and be able to create awareness on whether or not capital flight should be viewed one of the causes of the declining economic trend in Zambia.

To this end, this research therefore seeks to add to the current literature on capital flight in an African context, with specific references to Zambia and the study will motivate further studies into this phenomenon.

It is important to note while this paper is not an attempt to resolve any policy issues surrounding capital flight, its contribution to these seemingly exhaustive debts, declining

public investment, sluggish growth, and persistent BOP deficits will be useful to government planners and policy makers in providing evidence. This will create awareness as to whether or not capital flight can be viewed as a one of the source for declining economic trends in Zambia.

1.6 Organization of the dissertation

The remainder of the dissertation is organized as follows: Chapter 2 dwells on the various definition and measures of capital flight and the different determinates of capital flight. Chapter three discusses the trends of capital flight in Africa and Zambia from 1970 to 2004. Chapter four deals with literature review. In this chapter, literature relating to the study was reviewed in order to find out other studies on capital flight and to see whether the current subject has been done before. Chapter five gives information on the methods of collecting and analyzing data used in this study. The major results are presented and discussed in chapter six. Finally, chapter seven and eight present the discussion on results and the conclusion and recommendations of the study.

CHAPTER 2

CAPITAL FLIGHT

2.1 Definition of Capital Flight

There is no universally accepted definition of capital flight. Basically, there are two schools of thought concerning capital flight. The first school of thought refer to capital flight as, having specific features and should be distinguished from the “normal” residents’ cash outflows while the second school of thought makes no such distinction.

According to the first school of thought, it is argued that normal capital outflows is motivated by search for returns by resident investors and that it is motivated by avoidance of risks incurred at home and is often related to illegal activity. Deppler & Williamson (1987). However, the second school thought does not distinguish capital flight from normal capital outflows.

Kindleberger (1987:3) referred to capital flight as “an illegal movement of capital from one country to another implying that there may be ‘normal’ or ‘legal’ and ‘abnormal’ or ‘illegal’ flows.” Normal capital flows are those, which are sanctioned by the government. The question of the legality of capital flows, then implies that the country in question imposes exchange or capital controls.

Lessard and Williamson (1987) described capital flight as capital that “runs away” or “flees” abnormal risks at home regardless of whether or not the flight is legal. Measuring capital flight requires an attempt to measure “normal” capital outflow and deduct it from total outflow.

Dooley (1986) defined capital flight as capital propelled by the desire to escape the control of the domestic authorities, which corresponds, to the concept of capital fleeing abnormal risk at home. This definition of measuring “normal” capital flows has generated controversy and is not acceptable in the literature. Lessard and Williamson (1987)

Cuddington (1986: 2) defined capital flight as “short-term capital outflows involving ‘hot money’ that responds to political or financial crises, burdensome taxes, and a prospective tightening of capital controls or a major domestic currency devaluation as well as actual or developing hyperinflation.”

Morgan Guaranty Trust Company (1986:13) defined capital flight as “the reported and unreported acquisition of foreign assets by the non-bank private sector and elements of the public sector.”

Khan and Haque (1985) defined capital flight in terms of domestic and foreign investors’ response to an asymmetric risk of expropriation.

The World Bank (1985:4) defined capital flight as “net private unrecorded capital outflows from capital-scarce developing country.” This simply means that capital flight is the illegal movement of capital from one country to another.

And recently, Harrigan et al (2007:8) defined capital flight to be “capital that is running away from the domestic financial market in order to avoid losses and is in conflict with the interests, goals and objectives of the domestic society.”

The above survey of literature testifies to the fact that there are different views amongst economists regarding the concept and definition of capital flight. This paper proposes to use the World Bank (1985) definition of capital flight because the net unrecorded capital outflows are the lost funds that could have been invested in the domestic economy to generate additional output and employment so as to promote development.

2.2 Measures of Capital Flight

In as much as there is a no widely accepted definition of capital flight, the same is true with regards to its measurement. Harrigan et al, (2007) distinguished between direct and indirect approaches to the measurement of capital flight. He states that the direct approach chooses certain variables that constitute capital flight and attains data directly for the variables while the indirect approach measures capital flight indirectly using a residual of some other variables. In general, the indirect measure defines capital flight more broadly than the direct measure.

Several capital flight measures are available in the literature. In general, the following measures of capital flight can be distinguished in the literature. (i) the Residual Method; (ii) the Dooley method; (iii) the Hot Money Method; (iv) the Trade Mis-invoicing Method; and (v) the Asset method. In Table 2.1, we will briefly describe these different methods of measurement.

The broadest definition (residual method) of capital flight has the advantage in that it incorporates all the reported as well as unreported build-up of foreign assets for both public and private sectors. This is appropriate if one thinks that most of the funds used for capital flight would have been utilized for more productive and beneficial domestic investment activities.

The Residual Method appears to give a rather straightforward calculation of capital flight, and that would be the reason why it is the most widely accepted and applied method in the literature.

2.3 Determinants of Capital Flight

In summary capital flight is directly connected to the behaviour of a risk-averse individual who diversifies his/her wealth in order to maximize asset returns. This gives emphasis to the decision to hold assets abroad as part of the process of portfolio diversification (Lensink et al. 1998). Differences in rates of return between domestic and foreign asset holdings, the amount of wealth, and risk and uncertainty aspects normally influence this decision (Hermes et al. 2002).

Table 2.1: Measures of Capital Flight

	Residual (Broad) Method (Trade Misinvoicing Method)	Dooley Method (Asset Method)	Hot Money Method
Origins	World Bank (1985) -Capital flight is calculated as the difference between sources and uses of capital inflows.	Hermes et al (2002:2) -Capital flight is distinguished between normal capital flows from abnormal capital flows and is based on individual assumptions about individuals' motives.	Cuddington (1986) -Capital flight is the sum of net short-term capital outflows of the non-bank private sector plus recorded errors and omissions (statistical discrepancy) in the BoP.
Method	$KFr = \Delta ED + FDI - CAD - \Delta FR \dots \dots \dots (1)$ <p>Where: -KFr is capital flight Δ =change, ED is stock of gross external debt, FDI is the net foreign investment inflows, CAD is the current account deficit/surplus and FR is the stock of official foreign reserves.</p> <p>The result can accommodate trade misinvoicing in form of either underinvoicing of export or overvoicing of imports.</p> $KF = \Delta ED + DFI (CA + RES) + MISINV \dots \dots \dots (2)$ <p>-DFI is the net direct foreign Investment, CA is the current account deficit, RES is the change in stock of international reserves and MISIN is the trade mis-invoicing</p>	$TKO = FB + FDI - CAD - \Delta FR - EO - \Delta WBIMF \dots \dots \dots 3$ <p>Where: -TKO is total capital outflows, FB is foreign borrowing as reported in the balance of payments statistics, EO is net errors and omissions (debit entry), and WBIMF is the difference between the change in the stock of external debt reported by the World Bank and foreign borrowing reported in the balance of payments statistics published by the IMF</p> <p>The asset method is considered to be a short cut measure of capital flight and is seen as an indication of the minimum amount of assets held abroad, since residents may hold their assets in other forms next to bank accounts, for example, in foreign equity holdings.</p>	$KF_h = SKONB + EO \dots \dots \dots 4$ <p>where : -SKONB is short-term capital outflows by the non-bank public; EO are errors and omissions, representing unrecorded capital outflow.</p>

Although a number of determinants are found in literature, the following main factors will be discussed: (i) macroeconomic instability; (ii) political instability; (iii) rate of return differentials; (iv) capital inflows; (v) stock of capital flight; (vi) public policy uncertainty; (vii) corruption and (viii) external debt. These determinants have a direct influence on portfolio decisions of individuals and most of them are closely interlinked.

2.3.1 Macroeconomic Instability

The indicators of macroeconomic stability that have been used mostly in the empirical studies of capital flight are inflation, economic growth and exchange rate volatility.

Higher economic growth is associated with lower capital flight because it is a signal of higher expected returns on domestic investment. Pastor (1990) supported the hypothesis that capital flight is higher when a country's rate of economic growth is low. This is because Gross Domestic product (GDP) growth is normally used as a barometer for assumed economic performance as well as a measure for real rate of return of the economy.

High inflation directly erodes the real value of domestic assets, stimulating residents to hold assets outside the country. Inflation can also be perceived as a signal for how much the government has resorted to taxing domestic financial assets through money creation (inflation tax). For instance in Zambia, the high inflation did result in a vicious circle of printing more money in the 1980s. In this case, higher inflation can cause capital flight.

Overvalued exchange rate is often found to be an important variable in studies of capital flight and its underlying determinants. An overvalued exchange rate leads to increase in the expectations of depreciation of the currency in the near future (Harrigan et al. 2007). Zambia like many countries in the SSA region has had its domestic currency overvalued since her independence in 1964 and black market premium was very high in the 1980s through to the 1990s. A positive relationship between capital flight and the exchange rate is expected.

2.3.2 Debt

Empirical evidence suggests that external debt and capital flight has many components and annual flows of external debt constitute the most consistent determinant of capital flight. In this line of thought, Ajayi (1995) and Boyce (1992) distinguish four possible casual links.

- i. Debt-drive capital flight – This is the “capital that flees a country in response to economic circumstances attributed to external debt itself” (Boyce 1992:337)
- ii. Debt-fuelled capital flight - Foreign borrowing provides the resources as well as the motive of channeling private capital abroad thus causing capital flight.
- iii. Flight-driven external borrowing – This is the capital flight that drains national foreign exchange resources, forcing the government to borrow abroad.
- iv. Flight-fuelled external borrowing – This is the “capital that directly provides the resources to finance foreign loans to the same resident who export their capital, a phenomenon know as ‘round-tripping’ or ‘back-to back loans’.” (Boyce and

Ndikumana 2008:10) Hence a positive relationship between the capital flight and debt is expected.” (Makochekanwa 2007:35)

2.3.3 Political Instability

High political instability has played a significant role in the high capital outflow experienced in SSA Countries. In a study of South Africa, Seeraj & Finnoff (2004) found that both the change in political rights dispensation and an index of political instability were positively related to capital flight. More specifically, residents may decide to hold their assets abroad based on lack of confidence in the domestic political situation and perceived high levels of corruption. In the Zambian context, political stability has been tense since the introduction of multi-partisan politics in 1990.

2.3.4 Rate of Interest Differentials

Relatively low and unattractive domestic real interest rates can be a reflection of domestic financial repression that can stimulate outflows, especially when they are at levels. In this case, capital flight may occur simply because the returns on assets are higher abroad as compared to assets held domestically.

2.3.5 Capital Flight

Countries that have experienced high levels of capital flight in the recent past are likely to experience higher capital flight in subsequent years (Boyce et al 2002). This is mainly due in part to the momentum created by capital flight. In most cases, for a given level of government expenditure, the presence of high capital flight may lead private agents to

expect higher tax rates by virtue of the resulting lower tax base. Thus in such a case the consequent decline in expected after-tax returns discourages domestic investment and induces private agents to seek higher returns abroad. Moreover, capital flight may be 'habit-forming,' making investors unlikely to respond rapidly to any improvements in the investment climate (Boyce et al 2002).

2.3.6 Corruption

Corruption is now being discussed as one of the problems of capital flight in SSA countries. This is because capital flight can be considered as an asset which is often acquired illegally domestically and channeled abroad illegally. There is also the contagious nature regarding corruption. As government, officials engage in capital smuggling and embezzlement of nature resources, private agents are also induced to engage in little illicit transfer of assets abroad as a result of the collapse of the mechanisms of control and accountability. "High levels of corruption are seen as a symptom of failure of government system which may result in economic risk" (Boyce 1992:13)

2.3.7 Public Policy Uncertainty

An environment where the content and direction of current and future public policies are uncertain and/or unstable, domestic investors will be uncertain about the impact of these policies on the real value of domestically held assets in the future (Hermes et al 2002).

This uncertainty may stimulate investors to sell their domestic assets and buy foreign assets.

2.4 Evaluating Empirical Studies of the Determinants of Capital Flight

2.4.1. External Debt

Several studies find that external debt was positively related to capital flight, that is, a high external debt is associated with greater capital flight. Chipalkatti and Rishi's (2001) results on India validated the hypothesis of a bi-directional, contemporaneous relationship between debt and capital flight. The author concluded that India's case was characterized by a financial revolving door, where external debt and capital flight fuel each other by providing capital for the reverse flow. That is, external borrowing causes capital flight by contributing to an increased likelihood of debt crisis, worsening macroeconomic conditions and the deterioration of the investment climate. Beja (2006) analysed the relationship between capital flight and external debt using a model he called "revolving door model" which hypothesizes a direct and indirect link between the two. The direct causal link states that external debt provides the fuel and /or motivation for capital flight and vice versa. Therefore "external borrowing is transformed –sometimes instantaneously from capital inflow to capital flight, ultimately ending up abroad, usually in a private foreign account. A study done by S. I. Ajayi (1992) in Nigeria confirms the Dooleys Revolving Door Theory.

2.4.2. Political Instability

Some studies, for instance Nyoni (2000) and Lensink et al (2000) considered political instability, political rights and civil liberties as determinants of capital flight. Lensink et al (2000) results showed that civil liberties were one of the factors propagating capital flight from most of the 84 least developed countries (LDCs) that the paper investigated.

Political instability has great influence on capital flight as it directly induces greater capital flight and can lead to macroeconomic instability thus reducing investment opportunities and increasing the risk associated with holding domestic assets. In general, most research investigations support the view that indicators of political instability and bad governance and capital flight are positively related.

2.4.3. Capital Inflow

In many studies, capital inflow variables have been taken into account. Foreign Direct Investment (FDI), aid and other forms of proxies have represented this variable. Among others, Beja (2006) argues that development aid would be used to finance capital flight. Other studies also indicate long-term debt inflows to have a statistically significant influence on capital flight.

2.4.4 Foreign Direct Investment

The simultaneous occurrence of capital inflows and capital outflows has caused some authors to argue that capital inflows in the form of aid disbursements/Foreign Direct Investment (FDI) to developing countries are a major cause of capital flight. Ajayi (1995). If the case involves public sector borrowing, the availability of foreign exchange increases the potential for graft and corruption. Unreliable evidence shows that over the years, significant proportions of aid inflows which were managed by the Zambian government ended up roughly half the aid amounts reaching the intended beneficiaries while the other portion was 'lost' within the government structures.

2.4.5 Interest Rate Differential

Interest rate differentials have been used in some studies to measure the relative attractiveness of domestic assets as compared to foreign assets. In most cases, researchers have calculated some kind of exchange rate differential between the domestic interest rate on deposits and a foreign deposit rate, normally the US deposit rate. Another proxy for the attractiveness of different assets used is the growth rate of GDP or Gross National Product (GNP).

Nevertheless, measures of the interest rate differential do not always have a statistically significant relation to capital flight. This may indicate that other determinants, such as macroeconomic and political instability, are more important to explain capital flight (Hermes et al. 2002).

2.4.6 Macroeconomic Instability

Several studies have found evidence that high inflation encourages capital flight. (Lensik et al (1996), Boyce (1992). A high inflation makes assets dominated in domestic currency less attractive compared to those dominated in foreign currency. Meanwhile a negative correlation is expected between capital flight and domestic GDP growth rate. Therefore, good economic performance, that is high economic growth, is linked to lower capital flight. This found in study done by Ndikumana and Boyce (2003) in SSA countries from 1970 to 1994.

CHAPTER 3

TRENDS OF CAPITAL FLIGHT

3.1. Capital Flight in Africa

Capital flight development in the contemporary world gained significance in the early 1980s, most studies on capital flight until 1990 was treated as an “exclusively Latin America problem.” Hermes and Lensink (1992:1)

It was not until the mid-1990 that research on capital flight was extended to Africa. Chang and Cumby (1991) did one of the early cross-country studies on capital flight from Africa in 1991. They examined 36 African countries from 1976 to 1987 and found evidence of capital flight from these countries. Since then many studies have been done on capital flight in Africa. Hermes and Lensink (1992) estimated capital flight from six countries (Congo, Cote d’Ivoire, Nigeria, Sudan, Tanzania, and Uganda) between 1976 and 1989 and found the same results as Chang and Cumby (1991) that capital flight did exist in these countries despite being small as compared to the Latin American countries.

Ojo (1992) estimated capital flight from three heavily indebted countries (Cote d’Ivoire, Morocco and Nigeria) from 1971 to 1991 and found heavy capital outflows. Ajayi (1997) did another study on capital flight in severely indebted low-income countries in SSA over a period of 1980 to 1991. He found that cumulative capital flight in the period averaged

40% of external debt. High conservative estimates of capital flight from Africa suggest that it averaged \$3billion per year between 1970 and 1997 that is an annual loss of 2.6 percent of GDP. Lensink et al (2000). Salisu (2005) estimated capital flight levels to be above \$13 billion per year between 1991 and 2004, a staggering 7.6 per cent of annual GDP.

Boyce and Ndikumana (2001) added to the list of the studies done on capital flight by studying capital flight in 25 low-income countries between 1970 and 1996. In another study Boyce and Ndikumana (2007) found cumulative stock of capital flight from SSA between 1970 and 2004 to be US \$420 billion in the region as whole, whereas the total external debt stood at US\$178billion in 1996 and the cumulative capital flight amounted to US\$193billion in 1996. This figure (US\$420 billion) is 2.9 times the region's total stock of debt of US\$ 178 billion in 1996. As a result, Africa has been seen as a net creditor to the world because its external assets accumulated via capital flight exceed the public external debt.

3.2 Capital Flight in Zambia

Many studies have confirmed the existence of capital flight from Zambia in absolute and relative terms Nyatepe-Coo (1994) and Boyce and Ndikumana (2001). Boyce and Ndikumana (2001) is one of the early studies on capital flight that included Zambia, along with other 25 developing countries from Africa between 1970 and 1996. They estimated cumulative stock of capital flight from Zambia to be US \$10.623billion. This

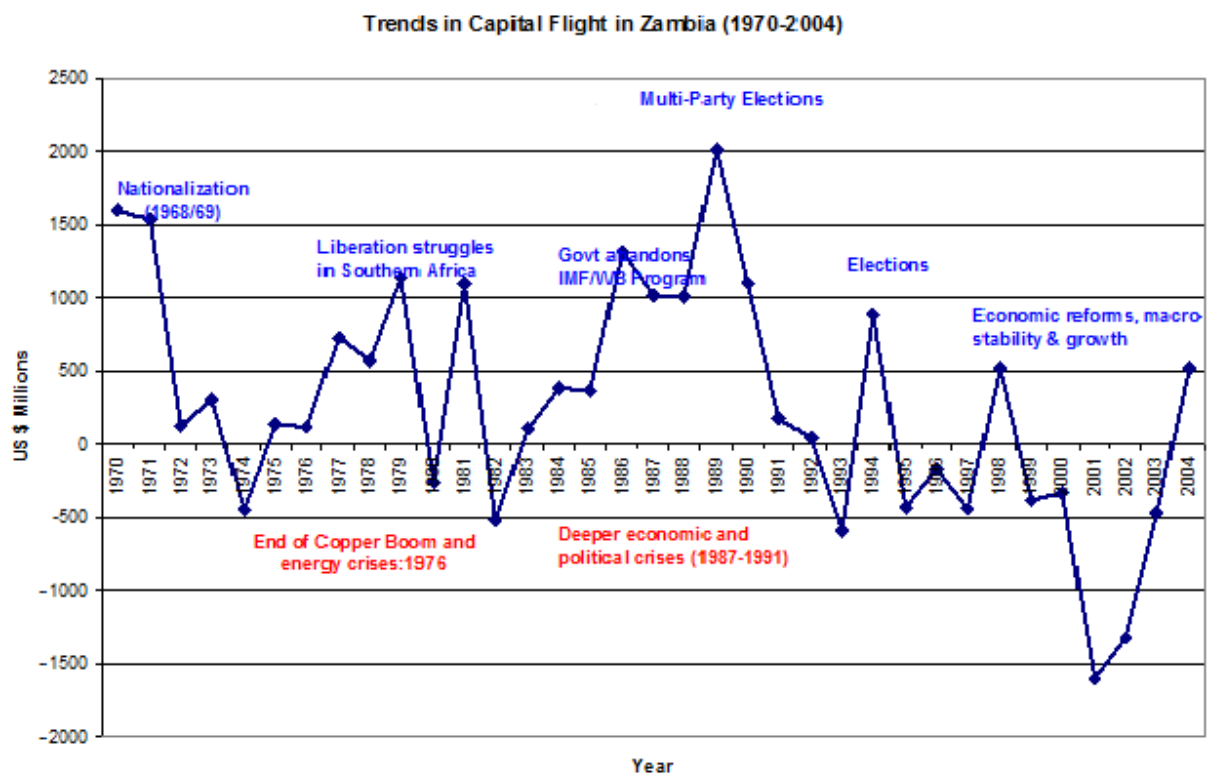
figure was about 5.6% of the total figure of US\$186.8 billion estimated in the 30 SSA countries investigated under the same period.

Using the residual method in Boyce and Ndikumana (2001) which was modified with adjustments for underreporting of remittances and the change in debt, the study done by Boyce and Ndikumana (2008) “New estimates of Capital Flight in SSA Countries’ for 40 countries”, confirmed the existence of capital flight in Zambia. Capital flight in Zambia measured to US \$9.78 billion which represented about 2.3% of the combined total figure of US\$420.0 billion estimated in 40 countries. After 1990, capital flight declined substantially from US\$2.010 billion in 1989, US\$1.096 billion in 1990 to US\$ 174.7 million in 1991. This shows a significant decrease from 12% in 1989 to the total figure of US\$16.544 billion in 1989 to about 0.8% in 1991 of the total figure of US\$21.741 billion. Figure 3.1 and Table 1 in appendix clearly show capital flight in Zambia as calculated by Boyce and Ndikumana (2008) with two improvements made to the original estimates done in 2001 by Boyce and Ndikumana.

Figure 3.1 was constructed using the Data in Table 1 in the Appendix. At independence in 1964, the Zambian people took over the reins of the government while the economic sector still remained in the non-citizen, “whites”. Therefore, during the period 1964 to 1968, the economy was controlled by the non-Zambian with very little input from the indigenous citizens of Zambia. This led to the process of re-organisation of the policies to increase Government upper hand in the management of the economy. The nationisation program was initiated by the ‘Mulungushi’ reforms in the non-mining sectors in 1968

followed by the ‘Matero’ reforms that mainly covered the mining industry in 1969. These reforms induced substantial capital flight in the early 1970s (Figure 3.1.). Just two years after implementation, Zambia lost US\$3.13billion in capital flight, which was about 90% of the GDP in 1970 and 1971. According to these reforms, private companies in both mining and non-mining sectors were to surrender 51% of their controlling shares to the state. These policies had a negative impact on the confidence of investor on the economy and as such, capital flight was relatively high during the 1970-1973.

Figure 3.1.



Source: UNTAD Report (2008)

Therefore this was one of the earliest negative policy responses in Zambia after the implementation of the Mulungushi and Matero reforms. Foreign investors were unhappy

with the two reforms and in response, a number of them closed down their companies and moved abroad. This led to massive disinvestments and capital flight

The second wave of significant capital flight occurred between 1975 and 1981 due to external shocks of the 1979/80 oil crises and debt crisis of the 1980s and the end of the copper boom. Capital flight in Zambia fell from a negative US\$447.1 million in 1974 to US\$1.097 billion in 1981. The other reason which accounted for capital flight during this period was that huge financial resources were transferred abroad to support liberation struggles in several Southern African countries including Zimbabwe, Namibia and South Africa. These transfers are believed to be more of government unofficial transfers.

The third wave of capital flight occurred between 1985 and 1991 totaling about US\$7.0 billion. In 1985, the Zambian Government abandoned the IMF/World Bank structural adjustment program in preference to the home grown National Economic Reform Programme (NERP) in 1986. The multilateral institutions lobbied other bilateral donors to withdraw their support to the government, which led to high disinvestment in the country as it raised questions about consistency and creditability of the Zambian policies being introduced. Figure 3.1 reveals that during this period, the country experienced massive capital flight out of the country. However, in 1987, the country resumed the Structural Adjustment Programme and among other reforms, reduced urban food subsidies in an effort to regain its fiscal position and reduce the budget deficit but this did work but only aggravated the problem further with food riots and the need of political reforms to allow for multi-party political system. In 1991, the country went to the polls

and the new government was formed. During the period leading to first multi-party elections, capital flight was the highest with US \$2.10 billion and US\$1 billion in 1989 and 1990 respectively.

The period between 1991 and 1995, capital flight rapidly declined. During this period, Zambia pursued liberal economic policies. Important to this framework, Zambia embarked on a very painful and rigid International Monetary Fund/World Bank supported Structural Adjustment Programme (SAP) which saw a total shift from the previous closed one party state led growth strategies to more open and free market friendly multi party state led economic management. The only exception is 1994 and 2004, which were years leading to elections, when the country recorded US\$512 million and US\$ 517 million respectively. Therefore, between 1990 and 2004 capital flight averaged negative 6.3% and negative 21% of the GDP respectively.

CHAPTER 4

LITERATURE REVIEW

4.1. Empirical Review

Past studies have revealed significant capital outflow from SSA since 1970. The estimated magnitudes of the capital flight have varied due to differences in data and time-period coverage. One of the early studies on capital flight from Sub-Saharan Africa by Chang and Cumby (1991) examined a sample of 36 African countries from 1976 to 1987. They found that absolute levels of capital flight from individual African countries were smaller than those from Latin American countries but relatively larger when compared to external debt and GDP and that many African countries experienced higher capital flight than their Latin American counterparts.

Hermes and Lensink (1992) estimated capital flight from six countries (Congo, Cote d'Ivoire, Sudan, Tanzania and Uganda) over the period of 1976 to 1989. They found that while capital flight from Sub-Saharan African countries was smaller than the capital flight from Latin American countries, the burden of capital as a percent of GDP was about 61% for Sub-Saharan sample compared to 22% for Latin America. The econometric analysis of the determinates of capital flight in the same study found that the most important explanatory variable was external borrowing meaning that for each dollar publicly borrowed, 75 to 90 cents goes back as capital flight. These results were

consistent with the results found by Boyce (1992) that capital flight and external debt are closely intertwined, but most of these studies are based on pooled data in several countries and country specific studies are still sparse.

A study by Nyatepe-Coo (1994) found heavy capital outflow in the seven sub-Saharan African (Congo, Ghana, Kenya, Nigeria, Sierra Leone, Tanzania, and Zambia) in the period 1970 to 1992. Relative to external borrowing, capital flight was equivalent to 91%, 58%, 35% and 32% from Nigeria, Ghana, Congo, and Zambia respectively. This was attributed to political instability, macroeconomic uncertainty and weak credibility of government policies. Ndikumana and Boyce (2001) found capital flight to total US\$ 193 billion while the combined external debt of these countries stood at US\$ 176 billion in 1996. The study concluded that Sub-Saharan African countries were net creditor despite being heavily indebted.

In addition to cross country studies, several studies have focused on capital flight from individual African countries. A study by Ajayi (1992) estimated capital flight from Nigeria in 1972-1989 using the residual method put much special emphasis on trade faking or mis-invoicing in the oil industry in the country. Ajayi found capital flight to be positively related to corruption, governance failures and trade faking. He, therefore, concluded that it was important to maintain sound domestic macroeconomic policies to curb capital flight.

Makochekanwa (2007) investigated capital flight in Zimbabwe for the period 1980-2005. In his calculations, he estimated capital flight to be US\$10.1billion and that external debt, foreign direct investment inflows and foreign reserves caused capital flight. His results also showed that economic growth was negatively correlated to capital flight.

A study done by Ajayi (1992) found that domestic economic environment was negatively correlated to capital flight. In fact, Ndikumana and Boyce (2002) observed that good economic performance, measured simply in terms of higher economic growth tends to minimize capital flight. And a study by Akanni L. (2007) on Nigeria, revealed that real GDP growth, real interest rate differential, parallel market exchange rate premium, inflows of debt capital, domestic debt, fiscal deficit and change in inflation rate systematically explain the portfolio behaviour of private wealth holders in Nigeria. These are the same factors that influence capital flight.

Empirical studies by Boyce and Ndikumana (2001), Collier, Hoeffler and Pattillo (2004) indicated that the annual flows of external borrowing constituted the most consistent determinant of capital flight. Their results also supported the theory that debt projection has an independent effect on capital flight. The causality between external debt and capital flight has many facets, though all the possible relationships results in capital flight.

Several studies by Collier, Hoeffler, and Pattillo (2004), Nyoni (2000) and Lensink et al (2000) agree on the concept that high political risk has played a significant role in the

capital hemorrhage experienced by Sub-Saharan African countries over the past decades. Some examples are that political office holders in some developing countries abuse their offices by using their position to demand for kickbacks from government contractors and because these funds are acquired illegally, these funds are usually banked abroad. In addition, Africa has been characterized by coup and counter coups, which create uncertainty and insecurity, which will serve as an incentive for residents to take their assets out of the country. In the case study of South Africa, Seeraj & Finoff (2004) found that both the change in political rights dispensation and an index of political instability are positively related to capital flight.

Hermes and Lensink (1992), Murinde, Hermes and Lensink (1996), and Nyoni (2000) also agree with the theory that inflation induces capital flight. That is, high inflation directly erodes the real value of domestic assets, stimulating residents to hold assets outside the country. Bauer (1981) argued that development aid would be used to finance capital flight and in his study, he found that aid does influence capital flight. In this context, it is evident enough that high levels of capital flight have a negative effect on the economy of the host country. And different studies have shown that capital flight does exist in Sub-Saharan countries and is highly influenced by macroeconomic instability and variability of government policies and political instability.

4.2. Theoretical Review

The theoretical debates on capital flight mainly focus on portfolio choice decisions. From this perspective, profit-maximizing investors will decide to invest abroad even when risk-

adjusted returns are higher. Therefore, capital flight is seen as a response to changes to an individual's portfolio bundle arising from factors such as the fear of appropriation of assets, potentially higher taxes or perceived lower returns at home.

Forgha (2008:17) explained capital flight using as "investment diversion theory". This theory assumes that dishonest, corrupt leaders and bureaucrats usually drain off scarce capital resources from their countries to developed countries because of macroeconomic and political uncertainty in their country. The simultaneous existence of better investment opportunities in developed countries like high foreign interest rates, wide array of financial instruments, political and economic stability, favourable tax climate and secrecy of accounts will attract such funds. Thus these funds are not available for investment at home leading to decline in aggregate investment, low economic growth, decline in employment opportunities can create an increase in dependency ratio and high death rate. These negative macroeconomic effects on these countries sometimes motivate the necessity to borrow from abroad to reactivate the domestic economy. Ayayi (1992) also agrees and reveals that this will in turn create crowding out effect due to the depreciation of the domestic currency if it is a floating exchange rate system. Investment diversion will provide negative consequences on capital flight in the country involved. Capital flight is therefore a diversion of domestic savings away from domestic investment.

"The relationship between capital flight and external borrowing has also been a centre of focus because of its deleterious effect on investment and through it on growth." (Iweala

et al 2003:136) This relationship addressed in terms of macroeconomic relationship between external borrowing and capital flight which argues that when capital flees a country, that amount of money that flees was potentially for investment in the productive sector. These monies would have earned foreign exchange if such investment were made in tradable sector and generate through the multiplier effect the necessary growth in the economy. As earlier allude to in the introduction, the popular call for these countries has been capital flight reversal because the heavily indebted countries will be in better position if funds held abroad are returned to be used to boost domestic investment and thereby enhance debt-servicing capacity. The second perspective is the linkages between external borrowing and capital flight which run in both ways. Boyce (1990) and Ajayi (1992) reveal that there is the debt- driven capital flight and the flight-driven external borrowing as earlier discussed on the determinants of capital flight in chapter 2.

Iweala et al (2003) mentioned another theory concerning the causes of capital flight. It is Tax-Depressing Theory, which assumes that capital flight, leads to revenue loss because capital that flees the country, is not taxed as it is outside the control of the government. As a result, there will be a fall in government revenue which is much needed for investment to promote growth and the outcome of this is the reduction in debt-servicing capacity of the government. This in turns increases the debt burden, which constrains economic growth and development. Thus, a direct resultant of capital flight is the reduction in revenue generating potential of government.

Iweala et al (2003) concluded by saying that income distribution in these countries is negatively affected by capital flows because the poor are subjected to severity measure by government to pay for debt obligations to international banks that in turn pay interests to flight capital from residents in these countries (Pastor 1990). Furthermore, the tax that the poor may pay is small, which again constrains the ability of government to muster enough resources to promote growth and development with poverty alleviation. Thus, a vicious circle of external debt, capital flight, poor growth, poverty and external debt is created.

From the above analysis, capital flight destroys the domestic macroeconomic environment and enhances the absence of transparency and accountability. These distortions will manifest themselves in weak governance, large government deficits, overvalued exchange rate, high and variable inflation coupled with financial repression.

CHAPTER 5

METHODOLOGY

5.1. Method of analysis

This chapter gives the methodology employed in the study, involving a discussion of data collection techniques and data analysis. The study covered Zambia with time series rather than cross-sectional data. Data relating to capital flight was collected for the years 1970-2004 from a study done by Boyce and Ndikumana (2008) Therefore, this study uses regression analysis and employs Ordinary Least Squares (OLS) method to test for the determinants of capital flight in Zambia The data is processed using an econometric software package –*Eviews*.

5.2. Theoretical Model specification

In this study a macro economic model (as developed by Alam and Quazi (2003) and Boyce (1992)), which permits the analysis of different determinants in developing nations was used. Alam and Quazi (2003) analysed the determinants of capital flight in Bangladesh for the period 1973 and 1999. They analysed such economic factors as the effect of aid, exchange rates, economic growth, interest rates and political factors in Bangladesh on capital flight. They specified the relationship between capital flight (as dependent variable) and several macroeconomic and political determinants as follows:

$$KF=F (AID, FEX, GR, INF, CTX, RD, FD, REER, DP).....5.1$$

Where

- KF is the real volume of capital flight using the residual method estimated by Boyce and Ndikumana (2008), for 40 countries that were classified as severely indebted low income countries.
- AID is the real foreign aid inflow;
- FEX is the real foreign exchange reserves;
- GR is the real GDP growth rates;
- INF is domestic inflation rates;
- CTX is the ratio of the corporate taxes to total taxes;
- RD is the real interest rate differentials between the US dollar and Zambian Kwacha;
- FD is the fiscal deficits as a percentage of GDP
- REER is the real exchange rate:
- DP is the dummy variable for political instability.

The econometric model estimated is specified as follows in Alam & Quazi (2003):

$$\mathbf{KF}_t = \alpha + \beta_1 \mathbf{AID}_t + \beta_2 \mathbf{FEX}_t + \beta_3 \mathbf{GR}_t + \beta_4 \mathbf{INF}_t + \beta_5 \mathbf{CTX}_t + \beta_6 \mathbf{RD}_t + \beta_7 \mathbf{FD}_t + \beta_8 \mathbf{REER}_t + \beta_9 \mathbf{DP}_t + \varepsilon_t \dots\dots\dots(5.2)$$

Where β_s the coefficients to be estimated and the rest of the variables are defined above and ε_t is the random error term.

5.2.1. Notes on the models and data

The empirical literature has advanced a number of approaches to measuring capital flight (for discussions, see Lessard and Williamson 1987; Vos 1992; and Ajayi (1997). The measure used in this study is derived using the methodology described by Boyce and Ndikumana (2001). The econometric analysis in this study builds on existing research on the determinants of capital flight from SSA. In particular, according to the residual method, capital flight is calculated as follows:

$$KF = \Delta DEBTADJ + DFI - CA + \Delta RES + MISINV \dots \dots \dots 5.3$$

where *DEBTADJ* is the change in the country's stock of external debt (adjusted for cross-currency exchange rate fluctuations, so as to take into account the fact that debt is denominated in various currencies and then aggregated in US dollars);

DFI is net direct foreign investment;

CA is the current account deficit;

RES . is the change in the stock of international reserves;

MISINV is net trade misinvoicing.

5.2.2. Empirical Model Specification

The empirical model specified extends equation (5.2) by including additional variables that are relevant in determining capital flight in Zambia. The first variable included is external debt (DED) which is ratio of debt stock to GDP because high unsustainable debt signals a cost in terms of fiscal problems and macroeconomic instability. It also reduces domestic resources available for investment and induces foreign exchange losses through resource transfers abroad especially where government accountability systems are weak.

External borrowing can provide resources for capital flight while the growing debt provides a motive for private agents to export capital.

The second variable included in the model captures the effect of policy reforms (DPR) undertaken during the period of study from 1970 to 2004. For example, we believe that the nationalization and Zambianization reforms, in particular Mulungushi and Matero reforms induced significant capital flight in Zambia. Similar reforms have been undertaken after the Mulungushi reforms, and more recently the introduction of structural and stabilization programmes in the late 1980s through 2000. Further, the country recorded progress in implementing these reforms that led to the debt reduction through the HIPC initiative. Such reforms that bring about economic growth can have a positive effect on capital flight.

The third variable included is the political uncertainty (DP) in particular the introduction of multi-party politics. This study will therefore analysis the three regimes that this country has undergone: Dr. Kenneth Kaunda regime (1964-1990); Dr. Fredrick Chiluba (1991-2000) and Dr. Levy Mwanawasa (2001-2004) by constructing a dummy variable with a value of 1 to capture election year and 0 otherwise throughout our data series. Election year is used as a measure of political uncertainty because the data on capital flight in the period under review reveals that capital flight was more evident in the years leading to election. (Figure 3.1) Therefore election years is used as a proxy for political uncertainty.

The fourth variable that is included is economic liberalization that Zambia went through when they moved from a command economy to a “laissez-faire” economy in the 1990s. To capture the effect of economic liberalization on capital flight, we construct a dummy (DPRLIB) for the period 1992 when financial markets were liberalised with a value of 1 and 0 otherwise.

Equation (5.2) is modified and specified to fit the data available as follows:

$$\begin{aligned}
 \mathbf{KF}_t = & \alpha + \beta_1 \mathbf{AID} + \beta_2 \mathbf{FEX} + \beta_3 \mathbf{GR} + \beta_4 \mathbf{INF} + \beta_5 \mathbf{CTX} + \beta_6 \mathbf{RD} + \beta_7 \mathbf{FD} + \beta_8 \mathbf{REER} + \\
 & \beta_9 \mathbf{DP} + \beta_{10} \mathbf{DED} + \beta_{11} \mathbf{DPR} + \beta_{12} \mathbf{DPRLIB} + \varepsilon_t, \dots \dots \dots \mathbf{5.4}
 \end{aligned}$$

All variables as defined above and the β_s are parameters to be estimated. We expect $\beta_1, \beta_4, \beta_5, \beta_6, \beta_7, \beta_9, \beta_{11}, \beta_{12} > 0$ and $\beta_2, \beta_3, \beta_8, \beta_{10} < 0$

5.3. Data Sources

The data employed in this study are annual macroeconomic variables. These include capital flight, real foreign aid inflow, real foreign exchange reserves, real GDP growth rates, domestic inflation rates, ratio of the corporate taxes to total taxes, real interest rate differentials, fiscal deficits as a ratio of GDP, debt as a ratio of GDP, policy reforms, real exchange rate and political instability. Data on capital flight is obtained from a study done by Boyce and Ndikumana (2008), for 40 countries that were classified as severely indebted low income countries using the residual method. The data is covering a period between 1970- 2004.

All data except the political instability, corporate taxes and capital flight were directly obtained from the International Financial Statements (2008) for Monetary Fund country and complimented with economic and survey reports from Bank of Zambia, Central Statistics Office and Ministry of Finance and National Planning. Data on interest rate differential was not directly available and as such direct computation was done having obtained the Zambia’s short-term treasury bills and inflation rate from the Central Statistics Office publications between United States of America treasury bills and the Zambian treasury bills.

Data on corporate taxes was collected from Zambia Reveune Authority and data on capital flight from Zambia was obtained from a working paper on “New Estimates of Capital flight in Sub-Saharan Africa” Boyce and Ndikumana (2008). Data on aid was also not available, we used a grants granted to Zambia as a proxy. Debt is also calculated as stock of domestic debt as percentage of GDP and fiscal deficit as government overall budget surplus (-)/Deficit (+) as percentage of GDP.

5.4 Econometric Approach

5.5 Diagnostics Tests

5.5.1 Testing for Normality

Normality is a condition in which the used variables follow the standard normal distribution. A normally distributed data set has a probability density function of the form

$$F(x) = \frac{e^{-(x-\mu)/(2\sigma^2)}}{\sigma\sqrt{2\pi}} \dots\dots\dots 5.5$$

For the Standard normal distribution $\mu = 0$ and $\sigma = 1$ thus

$$F(x) = \frac{e^{-x^2/2}}{\sigma\sqrt{2\pi}} \dots\dots\dots 5.6$$

The Jarque-Bera statistic was used to test for normality with the hypotheses stated as:

Ho : The series is normally distributed

H1 : The series is not normally distributed

The Jarque-Bera statistic tests whether the series is normally distributed by measuring the difference of the skewness and kurtosis of the series with those from the normal distribution.

$$\text{Jarque-Bera} = \frac{N - K}{6} \left(S^2 + \frac{1}{4}(k - 3)^2 \right) \dots\dots\dots 5.7$$

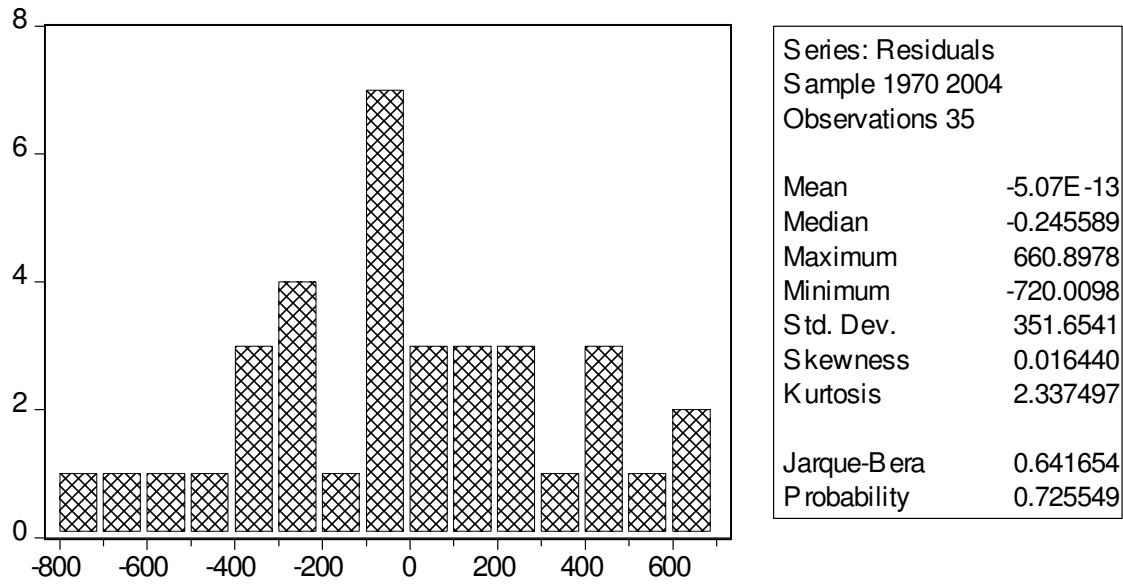
Where S – skewness

K – kurtosis

k – number of estimated coefficients used to create the series

If the residuals are normally distributed, the histogram should be bell-shaped and the Jarque-Bera statistic insignificant. It thus follows that a series will be normally distributed if the probability of the J-B statistic is greater than 0.05. Figure 5.1 show the normality test for residuals in our data set of capital flight.

Figure 5.1 **Normality Test Results**



An observation made from the normality test results in figure 5.1 is that the residuals were normal distributed because the probability of the Jaque-Bera statistic was above 0.05 and insignificant.

5.5.2 Testing for Multicollinearity

Multicollinearity among the independent variables implies that they are highly correlated. If there exists highly correlation between the independent variables, the parameter coefficients will be biased and inefficient. It is worth noting that economic magnitudes are influenced once the determining factors become operative and the economic variables then show the same broad pattern of behaviour over time. In the presence of multicollinearity, there will be large standard errors of the estimated coefficients. This violation is not a problem of the model or the disturbance term and therefore does not affect the BLUE properties of the OLS estimates.

Various statistical methods that can be used to test the degree of multicollinearity. Some of these methods include the magnitude of the Tolerance value, checking stability of the coefficients when different samples are used, checking significance of the t-ratios, the f-statistic, and examining the bivariate correlations between the independent variables. In this study, a coefficient covariance matrix was used to test for multicollinearity.

Using undifferenced data, all the variables were found to have a linear dependence between them (i.e. correlated). Political uncertainty was not perfectly correlated with any variable though a weak correlation was observed to exist between Political and external debt and political instability and economic liberalization. These results confirmed the existence of multicollinearity among the variables.

The variables were differenced and lagged, and no variable was highly correlated with another and therefore the model was adopted.

5.5.3 Serial Correlation Test

Serial correlation is usually a result of model mis-specification or genuine autocorrelation of the model error term. In the presence of serial correlation, ordinary least squares estimators are no longer Best Linear Unbiased Estimators (BLUE). Moreover, the R^2 may be overestimated, standard errors underestimated and t-statistics overestimated. If there are lagged dependent variables on the right hand side, OLS estimators are biased and inconsistent. There is therefore need to test for serial correlation.

The Durbin-Watson (DW) statistic is used to test for first order serial correlation. This statistic measures the linear association between adjacent residuals from a regression model. The DW test is based on the hypotheses:

$H_0: \rho = 0$, no serial correlation

$H_1: \rho = 1$, presence of serial correlation

A rule of thumb for this test is that:

DW \approx 2, there is no serial correlation

DW < 2, there is positive serial correlation

DW > 2, there is negative serial correlation

This test however has been observed to have two limitations. Firstly, the distribution of the DW statistic under the null hypothesis depends on the data matrix. A usual approach to handling this problem is to place bounds on the critical region. Secondly, the DW test becomes invalid if there are lagged dependent variables on the right hand side of the regression.

The Correlogram-Q-statistics test was also used to test for serial correlation. This test displays the autocorrelation and partial autocorrelation functions of the residuals, together with the Ljung-Box Q-statistics for high-order serial correlation. If there is no serial correlation in the residuals, the autocorrelations and partial autocorrelations at all lags will be nearly zero, and all Q-statistics will be insignificant with large p-values.

Figure 5.2 **Correlogram-Q-statistics**

Autocorrelation	Partial Correlation	AC	PAC	Q-Stat	Prob
-----------------	---------------------	----	-----	--------	------

. .	. .	1	-0.036	-0.036	0.0486	0.826
. .	. .	2	-0.040	-0.042	0.1119	0.946
** .	** .	3	-0.211	-0.214	1.9091	0.591
* .	* .	4	-0.103	-0.129	2.3532	0.671
** .	** .	5	-0.194	-0.242	3.9737	0.553
* .	* .	6	-0.066	-0.184	4.1711	0.654
. .	* .	7	0.019	-0.115	4.1885	0.758
. .	* .	8	0.044	-0.134	4.2808	0.831
. .	** .	9	-0.021	-0.199	4.3020	0.890
***	**	10	0.377	0.277	11.665	0.308
* .	* .	11	-0.094	-0.142	12.138	0.353
* .	** .	12	-0.160	-0.240	13.585	0.328
. .	*	13	0.042	0.172	13.691	0.396
* .	* .	14	-0.089	-0.162	14.180	0.436
. .	. .	15	0.003	-0.006	14.180	0.512
* .	* .	16	-0.104	-0.082	14.911	0.531

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.282248	Prob.	0.000194
Obs*R-squared	0.981003	Prob.	0.612319

Figure 5.2 shows the Correlogram Q-statistics used to test for the presence of serial correlation in the residuals. Insignificance of the Q-statistics coupled with large probabilities indicates that there was no serial correlation detected in the residuals, which is confirmed by the insignificance of the f-statistic in the Breusch-Godfrey Serial Correlation LM Test. This result is supported by the Durbin-Watson statistic of 2.0955 as seen in Table 6.2

5.5.4. Heteroscedasticity Tests

The White General Heteroscedasticity is used to correct for heteroscedasticity.

Table 5.1 White Heteroscedasticity Test

White Heteroscedasticity Test:

F-statistic	1.311116	Prob.	0.320191
Obs*R-squared	23.67962	Prob.	0.308839

Based on the results above, white Heteroscedasticity found that there was no problem of heteroscedasticity.

5.5.5 Testing for Stationarity

Since we are using time series data in this study, there may be a problem of the presence of deterministic time trends in any two rates that can lead to misinterpretation of an essentially pro-cyclical movement of series over time for a deeper relationship between them. The model can produce non-spurious results. The stationarity or non-stationarity of a variable depends on the behaviour of its moments overtime i.e. the mean, variance and auto-covariance. In this study, time series properties of the data are investigated to enable increase in confidence of the results and avoid inappropriate model specification. The Augmented Dickey-Fuller (ADF) unit root test was used to test for stationarity. The ADF test takes the unit root as the null hypothesis. A variable is taken to be stationary if the computed ADF test statistic is greater than the critical value, in absolute terms. The critical value is taken at a 5% level of significance.

5.5.6 Correcting for Non-Stationarity

Using non-stationary variables to perform a regression generates spurious results (i.e. results for which the adjusted $R_2 >$ Durbin Watson) and in most cases leads to poor forecasts. Differencing the non-stationary variable makes it stationary and use of differenced variables to perform a regression improves the forecasts since the results are then unlikely to be spurious. In this study ,non-stationarity was corrected by differencing the variables. If, after being differenced once, a variable remained non-stationary, then second and third differencing, where necessary, was done. To this end, Table 6.4

provides unit root test results (ADF) and the test indicate that all the variables are stationary at first difference. That is they are integrated to first degree I(1) variables.

Table 5.2 **ADF Test Results before Differencing**

Variable	ADF test Statistics	1% critical Value	5% Critical Value	10% Critical Value
Aid	1.889076	-2.6344	-1.9514	-1.6211
CTX	-0.607041	-2.6344	-1.9514	-1.6211
DED	-0.436714	-2.6344	-1.9514	-1.6211
DP	-5.744563	-2.6344	-1.9514	-1.6211
DPR	-5.744563	-2.6344	-1.9514	-1.6211
DPRLIB	-0.885615	-2.6344	-1.9514	-1.6211
FD	-2.026527	-2.6344	-1.9514	-1.6211
FEX	-1.508447	-2.6344	-1.9514	-1.6211
GDP	1.896453	-2.6344	-1.9514	-1.6211
INF	-1.450033	-2.6344	-1.9514	-1.6211
RD	-2.147330	-2.6344	-1.9514	-1.6211
REER	6.64774	-2.6344	-1.9514	-1.6211
KF	-2.541966	-2.6344	-1.9514	-1.6211

The variables were tested for stationarity using the Augmented Dickey Fuller test. The variables presented in Table 5.2 were found to be non-stationary. The stationarity of the variables was tested using the ADF unit root test. Results in Table 5.2 show that all the variables were non-stationary at the 5% level of significance though capital flight and real interest differentials were stationary at a 10% level of significance. It was thus necessary to transform the non-stationary variables.

Table 5.3: **ADF Test Results after Differencing**

Variable	ADF test Statistics	1% critical Value	5% Critical Value	10% Critical Value
Aid	-3.678972	-2.6369	-1.9517	-1.62123
CTX	-7.644129	-2.6369	-1.9517	-1.62123
DED	-4.271298	-2.6369	-1.9517	-1.62123

DP		-2.6369	-1.9517	-1.62123
DPR		-2.6369	-1.9517	-1.62123
DPRLIB	-5.744563	-2.6369	-1.9517	-1.62123
FD	-11.56860	-2.6369	-1.9517	-1.62123
FEX	-6.398629	-2.6369	-1.9517	-1.62123
GDP	-5.489699	-2.6369	-1.9517	-1.62123
INF	-5.709071	-2.6369	-1.9517	-1.62123
RD	-7.262744	-2.6369	-1.9517	-1.62123
REER	-1.674454	-2.6369	-1.9517	-1.62123
KF	-4.272149	-2.6369	-1.9517	-1.62123

Once the variables were differenced the results above show that all the variables became stationary. This satisfies the condition that they are integrated to the order I(1) means that we can perform the cointegration test because there is a long-term relationship between the dependent (capital flight) and independent variables.

This study utilizes cointegration and error correction methods to estimate the variables so as to produce a meaningful result of capital flight model (given the non-stationarity of our series). The error correction mechanism based on Engle-Granger's two-step error correction model (ECM) approach is used. This procedure involves the estimation of static or long-run relationship using the Ordinary Least Squares (OLS) in Table 6.2. The change in the error term (obtained from the OLS) is then regressed on one-year lagged value of the error term. The t-statistic obtained is then compared with the Engle-Granger critical τ (tau) value at the 5% level of significance.(Equation 6.1) If the computed t-statistic is smaller than the critical tau, then a stationary residual is obtained and it can be concluded that a cointegration relationship exists between these variables. In other words, those variables must obey an equilibrium relationship in the long run even if there can be divergence from equilibrium in the short run.

The unit root test is applied on the residuals obtained from OLS i.e;

$$\Delta\mu_t = \alpha_1\mu_{t-1} \dots\dots\dots 5.8$$

The Engle-Grangers' one percent critical τ value (without constant) is -2.66. If the computed τ (= t) value is much more negative than this value (-2.66), the conclusion is that the residuals from the regression of capital flight on the independent variables are integrated of order zero I(0). That is, they are stationary since the linear combination of these variables cancel out the stochastic trends in the individual series.

The second step is the regression of the first differences of the one year lag effect on the independent variables and an error correction term (ECM) on the first difference of capital flight (KF) in Table 6.3 The error correction term is used to capture the dynamic relation of the adjustment in the short run. A statistically significant ECM indicates the speed of adjustment in the short-run capital flight when long-run disequilibrium occurs.

$$\begin{aligned} \Delta\mathbf{KF}_t = & \alpha + \beta_1 \Delta\mathbf{DED}_{t-1} + \beta_2 \mathbf{FEX}_{t-1} + \beta_3 \Delta\mathbf{GR}_{t-1} + \beta_4 \Delta\mathbf{INF}_{t-1} + \beta_5 \Delta\mathbf{CTX}_{t-1} + \\ & \beta_6 \Delta\mathbf{RD}_{t-1} + \beta_7 \Delta\mathbf{FD}_{t-1} + \beta_8 \Delta\mathbf{RER}_{t-1} + \beta_9 \Delta\mathbf{DP} + \beta_{10} \Delta\mathbf{AID}_{t-1} + \beta_{11} \Delta\mathbf{DPR} + \beta_{12} \Delta\mathbf{DPRLIB} \\ & + \beta_{13} \Delta\mathbf{ECM}_{t-1} + \varepsilon_t \dots\dots\dots 5.9 \end{aligned}$$

The error correction model equation above states that $\Delta\mathbf{KF}$ depends on $\Delta\mathbf{DED}_{t-1}$, $\Delta\mathbf{GR}_{t-1}$, $\Delta\mathbf{INF}_{t-1}$, $\Delta\mathbf{CTX}_{t-1}$, $\Delta\mathbf{RD}_{t-1}$, $\Delta\mathbf{FD}_{t-1}$, $\Delta\mathbf{RER}_{t-1}$, $\Delta\mathbf{DP}$, $\Delta\mathbf{DPR}$ and also on the equilibrium error term of the previous period ($\Delta\mathbf{ECM}_{t-1}$). The model is out of equilibrium if the error

correction term is non-zero. For example, if changes in the independent variables are zero and $\beta_{13} \Delta ECM_{t-1}$ (or $\beta_{13} \Delta \mu_{t-1}$) is positive (or negative). This means KF_{t-1} is too high (or low) to be in equilibrium. Gujarati (2003,825)

Once the long run relationship has been established in stage one, we now estimate the parameters of the long run relationship and the associated short run dynamic Error Correction Model (ECM) using an Autoregressive Distributed Lag (ARDL) approach. It is important to note that the ECM is useful for the formulation of a short term capital flight reverse adjustment model, which will enable us to explain changes in capital flight as other key explanatory variables changes and determine the speed of adjustment towards the long run equilibrium. The error correction term is used to capture the dynamic relation of the adjustment in the short run. A statistically significant ECM indicates the speed of adjustment in the short-run capital flight when long-run disequilibrium occurs.

$$\begin{aligned}
 ECM_{t-1} = & [\Delta KF_{t-1} \alpha_0 + \alpha + \beta_1 \Delta DED_{t-1} + \beta_2 \Delta FEX_{t-1} + \beta_3 \Delta GR_{t-1} + \beta_4 \Delta INF_{t-1} + \beta_5 \Delta CTX_{t-1} \\
 & + \beta_6 \Delta RD_{t-1} + \beta_7 \Delta FD_{t-1} + \beta_8 \Delta RER_{t-1} + \beta_9 \Delta DP + \beta_{10} \Delta AID_{t-1} + \beta_{11} \Delta DPR + \beta_{12} \Delta DPRLIB \\
 & + \varepsilon_t] \dots\dots\dots 5.10
 \end{aligned}$$

ECM_{t-1} in the above equation is the one-period lagged value of the error from cointegrating regression equation.

Given the above, this study presents three sets of empirical results. First, results based on standard OLS procedures followed by results that correct for such problems as heteroscedasticity, stationarity, serial correlation, multicollinearity and autocorrelation. The third sets of results are those which account for time series characteristics of the data. The purpose for presenting results in this format is to allow systematic comparison and show results from which to draw policy conclusions.

CHAPTER 6

Results

6.1 Estimation Results

Results of the OLS econometric analysis of the capital flight in equation 5.8 are presented in Table 6.1.

Table 6.1: OLS Results of Capital Flight Model (Levels)

Dependent variable is KF

Variable	Coefficient	t-statistics	Probability
Constant	584.5230	0.859700	0.3992
AID	1.534363	1.551922	0.1349
CTX	1653.874	0.518706	0.6091
DED	5.329589	3.119381*	0.0050
DP	-252.8882	-1.108154	0.2798
DPR	844.9062	1.210825	0.2388
DPRLIB	115.4468	0.240976	0.8118
FD	9.642164	0.563448	0.5788
FEX	-18.94259	-0.765090	0.4523
GDP	-377.1462	-0.883068	0.3867
INF	-0.708115	-0.156385	0.8772
RD	-10.01360	-0.500978	0.6214
REER	-0.613460	-2.006767**	0.0572
R ²	0.646150		
R ² -Adjusted	0.453142		
F-stat.(Prob)	3.347776(0.006812)*		
DW	1.913163		

* means significant at 1% level

** means significant at 5% level

*** means significant at 10% level

The table shows that the model fits the data well as evidenced by the relatively high value of R-squared which is about 64 %. The regression results indicate that not all the variables are significant except for external debt and real exchange rate which are both significant at 5% and 1% respectively. The results indicate that external debt and real

exchange rate are the determinants of capital flight in Zambia looking at the OLS regression table above. These results clearly supports the theory that external debt pushes capital flight and lower than expected real exchange rates make capital owners be aware of the possible currency devaluation thereby prompting them to send capital outside the country.

We introduce a lag on the dependent variable to track the rate of adjustment of the portfolio, and also allow for testing of a one-year lag effect of the explanatory variables. Since our variables are I(1) cointegrated in our specification, the long-run parameters of an error correction model can be estimated consistently by OLS.

However running the regressions with current values variables yielded a poor performance. Allowing the variables to feature with their one year lag variable significantly improved the results of the regressions as shown in Table 6.2

The statistical fit of the capital flight equation below with lags from Zambia appears to be relatively good as indicated by adjusted R-squared of about 71% and a high F-statistic value of 10.35. (Table 6.2)

Table 6.2: OLS Table with Lagged Variables

Dependent Variable KF

Variable	Coefficient	t-statistics	Probability
C	-14.96931	-0.026271	0.9793
AID(-1)	1.862521	-0.031524	0.9751
CTX(-1)	45.83227	1.626500	0.1188

DED(-1)	3.012574	2.069359***	0.0510
DP	-251.4203	-1.435662	0.1658
DPR	847.4371	1.795651**	0.0870
DPRLIB	-320.3205	-0.802104	0.4315
FD(-1)	23.25234	1.689582	0.1059
FEX(-1)	-53.16153	-2.986996**	0.0390
GDP(-1)	-11.92075	2.201467*	0.0070
INF(-1)	6.493192	1.973686***	0.0617
RD(-1)	-45.62002	-2.994584*	0.0069
REER(-1)	-0.628523	-2.459850**	0.0227
R ²	0.853607		
R ² -Adjusted	0.712811		
F-stat.(Prob)	10.352466(0.000419)		
DW	2.095547		

* means significant at 1% level

** means significant at 5% level

*** means significant at 10% level

These results suggest that external debt, interest rate differentials, high inflation levels, episodes of policy reforms, exchange rate volatility, real foreign exchange reserves and low real GDP growth rates are the determinants of capital flight in Zambia. Other variables included in the initial model (political instability, aid, corporate taxes, fiscal deficit and financial liberalization.) appear to have insignificant effect on capital flight in Zambia because they do not exhibit much fluctuation during the sample period.

The unit root test on the residuals obtained from the OLS results of capital flight (Table 6.2) is: $\Delta\mu_t = \Delta\mu_{t-1}$ produces the following results:

$$\Delta\mu_t = -1.004654\mu_{t-1} \dots\dots\dots 6.1$$

Standard error (0.167084)

t-statistics (-6.01287)

R-squared (0.522260)

DW (2.079411)

Since the computed t value is much more negative than the Engle-Grangers one percent critical τ value with a constant which is -2.66, then the results indicate that the residuals in the regression of capital flight on the independent variables are integrated of order zero $I(0)$, that is they are stationary.

6.2 Error Correction Modeling (ECM) Results

Since capital flight and other independent variables are cointegrated, an ECM model was estimated. The error term μ_t in the ECM model in Table 6.3 is obtained from equation 5.9 and 5.10. All the variables in the ECM are entered in first difference form of the lag variable, and the ECM is a lagged error factor. The ECM_{t-1} is a stationary linear combination of variables and a cointegrating vector. The coefficient of ECM_{t-1} shows the speed of adjustment to long run solution that will influence the short run movements. The sign and the magnitude of the coefficient of the ECM_{t-1} makes us understand the short term theory states that if the value is between -1 and -2 then the ECM_{t-1} will produce dampened oscillations in the dependent variable about its equilibrium path.

Results in table 6.3 show that the coefficient has the correct sign (a negative sign) and significant at one percent level of significance. This ensures that all the explanatory variables in ECM work together for capital flight to get to equilibrium in the short run. Its magnitude is between -1 and -2 implying that error correction process oscillates around

the long run value in a dampened manner before converging to the equilibrium path relatively quickly.

These results imply that the error correction process fluctuates around the long run value in a dampening manner before converging to the equilibrium path relatively quickly instead of monotonically converging to equilibrium path directly, The ECM Model for Zambia appears to be relatively good as indicated by the adjusted R-squared of 81% and a significant F-Statistic value of 6.567(0.000140). The cointegration test table 6.4 confirms that there are six variables which are cointegrated at 5% level of significance. Therefore the negative sign of the ECM coefficient and statistically significance confirms the presence of the long run equilibrium relationship between capital flight and DED, DP DPR, FD FEX, INF, RD and GDP as confirmed in Table 6.3 and 6.4

Table 6.3 Error Correction Model Results of Capital Flight (Short-Run)

Dependent variable is DKF

Variable	Coefficient	t-statistics	Probability
C	-9.795284	-0.132284	0.8962
DAID(-1)	1.044879	1.389707	0.1807
DCTX(-1)	5481.892	3.112773	0.3274
DDED(-1)	4.959788	2.206347**	0.0399

DDP	-230.9030	-2.362976**	0.0289
DDPR	946.7843	2.346965**	0.0299
DDPRLIB	-213.8951	-0.347177	0.7323
DFD(-1)	16.04135	2.083032	0.0510
DFEX(-1)	-62.50001	-3.724280	0.2014
DGDP	-489.8958	-1.005199*	0.0006
DINF(-1)	8.479380	2.978712*	0.0077
DRD(-1)	-52.55710	-4.108248*	0.0057
DREER(-1)	-0.382189	-1.026526**	0.3175
ECM _{t-1}	-1.215430	-5.700388*	0.0000
R ²	0.817971		
R ² -Adjusted	0.693424		
F-stat.(Prob)	6.567604(0.000140)		
DW	2.013779		

- * means significant at 1% level
** means significant at 5% level
*** means significant at 10% level

Table 6.4 Cointegration Test

	Likelihood	5 Percent	1 Percent	Hypothesized
Eigenvalue	Ratio	Critical Value	Critical Value	No. of CE(s)
0.897711	239.2261	156.00	168.36	None **
0.768930	168.5474	124.24	133.57	At most 1 **
0.700444	123.1314	94.15	103.18	At most 2 **
0.608324	85.76237	68.52	76.07	At most 3 **
0.573906	56.70545	47.21	54.46	At most 4 **
0.407395	30.25946	29.68	35.65	At most 5 *
0.360418	14.03940	15.41	20.04	At most 6
0.005926	0.184261	3.76	6.65	At most 7

*(**) denotes rejection of the hypothesis at 5%(1%) significance level

L.R. test indicates 6 cointegrating equation(s) at 5% significance level

CHAPTER 7

DISCUSSION

7.1 Discussion of Results

Capital flight was specified as a function of real foreign aid inflow, real foreign exchange reserves, real GDP growth rates, domestic inflation rates, ratio of corporate taxes to total taxes, real interest rate differentials, fiscal deficits as a ratio of GDP, real exchange rate, political instability, policy reforms, debt as a ratio of GDP and economic liberalisation.

Regression results in Table 6.2 suggest that the independent variables explain 61.3% of the variations in the dependent variable, which is capital flight. The probability of the F-statistics (0.00419) shows that the model was perfectly specified and the regression gives a short-term model.

The tabular representation of the error correction result of capital flight is shown in Table 6.3. Statistically, the model is out of equilibrium because the coefficient equilibrium is negative. Changes in capital flight depend on the changes in all independent variables and the equilibrium error term in the ECM. Since the error term is negative, for the model to be able to return to equilibrium, all the combined independent variables apart from the error term must be positive.

The statistical significance and the correct sign of the ECM coefficient in Table 6.3 further confirms the presence of a long run equilibrium relationship between KF and GDP, DED, INF, FD, DPR, AND DP. These results suggest that capital flight in Zambia primarily adjusts to changes in the one year lagged value of debt stock, real GDP growth rates, inflation, interest rate differentials, high fiscal deficit and episodes of political and

policy uncertainty. These results indicate that unfavourable macroeconomic factors, political and policy uncertainties are the major causes of capital flight in Zambia.

The other observation to be made is that a 1% change in debt increases capital flight by 3.01% while a percent change in real output growth decreases capital flight by 53.1%. The computed value $t_o(2.069359)$ for debt is greater than the critical value $t_o(2)$, proposes that there is sufficient evidence that there is a direct relationship between debt and capital flight and indirect relationship between real output growth between capital flight. These result support the hypothesis that a huge external debt can directly cause capital flight by providing the necessary liquidity need for capital flight in Zambia.

The findings above are in line with the findings in other developing African countries like Ghana, Nigeria, Morocco, Cote D'Ivoire, Gabon, Namibia, Angola and Zimbabwe. It is also consistent with a study done by Nyatepe-Coo(1994) in which he found high capital outflow relative to external borrowing in Zambia to be 32%. The results prove that one-year lagged external debt significantly increases capital flight in the short-run and in the long-run in our study which confirms the reality of the Dooley's revolving door relationship between external borrowing and capital flight by Beja (2006).

The results also reveal that real output growth is another major determinant of capital flight in Zambia and it is inversely related to capital flight. This means that there is a negative relationship between real output growth and capital flight from Zambia.

The negative coefficient of real GDP is consistent with the hypothesis that stable real GDP growth increases incentives for capital to remain in the domestic economy and consequently discourage capital flight in Zambia. The result is also statistically significant at one percent meaning that reducing capital flight from Zambia must take into account the economic growth parameter.

This result is also consistent with past studies and findings in other developing African Countries like Ghana, Nigeria, Morocco, Cote D'Ivoire, Gabon, Namibia, Zambia and Angola. Ojo (1992) found a negative relationship between capital flight and real GDP growth in developing countries in Africa, a result in line with a study done by Ajayi (1992) where he found domestic economic environment to be negatively correlated to capital flight in Nigeria.

The one-year lag of inflation is positively related to capital flight in the short run and long run. This implies that high inflation motives private wealth holders to shift abroad thereby inducing capital flight in Zambia. This is consistent with the findings that Boyce (1992) found that inflation tends to encourage capital flight in a lot of developing countries.

The fiscal behaviour of government positively affects capital flight in Zambia because higher unsustainable fiscal deficit increases capital flight as this usually brings out inflationary financing, however it is only statistically significant in the long run with a one year lagged effect.

Real exchange rate significantly explains capital flight in the short run and has a negative relationship with capital flight. This is in agreement with Hermes et al (2002) which confirms the fact that volatility in exchange rate does lower expected returns on domestic investment, which further induce capital owners to send their capital abroad.

From the above analysis real exchange rate, high inflation, huge fiscal deficit and huge external debt support the hypothesis that unfavourable macroeconomic factors such high inflation, exchange rate volatility and high fiscal deficits increase capital flight in Zambia.

Policy reforms in Zambia turn out to be a very significant determinant of capital flight both in the long run and the short run. Zambia has over the years implemented different policies from the Nationalisation reforms in the 1970s to the introduction of the structural and stabilization reforms of the 1990s and all these episodes have undoubtedly been detrimental to the investor's confidence in the local economy. As a consequence, episodes of policy reforms in Zambia are found to coincide significantly with episodes of massive capital flight as shown in Figure 3.1. In short, these economic shocks induce capital flight in Zambia.

The findings that policy uncertainty has a positive effect on capital flight in Zambia, is in line with the study done by Hermes et al (2002). Hermes et al (2002) found a positive relationship between policy uncertainty and capital flight because when investors have

low confidence on the impact the policies will have on the domestic assets, they tend to hold their assets abroad thereby increasing capital flight.

As for political uncertainty which is captured in our study as the three periods of our election, it is statistically significant in the long run. From Figure 3.1, one can conclude that during the years when elections were being held, there was a lot capital flight because there was a lot of political uncertainty about who was going to be elected. This was detrimental to investor confidence in the local economy and as a consequence, episodes of political destabilization in Zambia are found to coincide with massive capital flight.

This result is consistent with a study done by Seeraji and Finoff (2004) where they found political risk in South Africa was positively related to capital flight and the hypothesis that political and policy uncertainty increase capital flight in Zambia.

Although interest rate differentials is highly significant in both the long run and the short run, the expected relationship between capital flight and interest rate differentials has not been achieved in this study.

Finally, the ECM results verify the suitability of the Error Correction approach framework. The coefficient of the ECM is negative and is stable. This result is also statistically significant at more than 99 percent level of significance. The long run stability and reliability of this result reveals that it could be used for forecasting and

policy recommendations therefore government policies designed to control capital flight should have an immediate effect.

7.2 Areas for Future Research

The research was conducted to assess the determinants of capital flight in Zambia. However, further research is required to close the gaps in understanding the different determinants of capital flight. Capital flight has become one of a widely-debated concept as one of the major causes of slow economic growth in developing countries. However due to time, financial and data constraints, not all essential issues could be analysed.

Based on the current findings, the recommendations for further research are listed below:

- i. An investigation of the impact on the non-financial aspects of fiscal policy as one of the determinants of capital flight.
- ii. There is need to include a trade variable that captures trade between developing countries and developed countries as one of the determinants of capital flight.

7.3 Limitations of the Study.

One of the major shortcomings of the study is the failure to capture corruption in Zambia which has become a very sensitive issue especially since 2000. This is another important determinant of capital flight in most developing countries because corruption erodes the much needed capital form these countries. Corruption has become a major contributing factor of capital flight because government officials tend to acquire wealth illegally through capital smuggling and embezzlement of natural resources which they deposit

abroad to avoid suspicions. Therefore governments in these developing countries should put in place measures to curb corruption surge.

Another limitation is the failure to capture trade elements in this study. Trade is very important variable because of the huge trade activities that exist between Zambia and other countries. It is possible that capital may be leaving Zambia due to the unfair terms of trade that exists between developed and under-developed countries.

The other limitation is that there is no clear difference between legal and illegal capital flight as the statistical distinction between the two is not clearly defined in literature.

CHAPTER 8

Conclusion

Having carried out our analysis of the data collected and after discussing the results, there was need to summaries this dissertation and also make recommendations. In this chapter, the summary of the findings, implications of these findings and possible recommendations for better anti-capital flight policies formulation are presented.

8.1 Summary of Findings

The study was conducted on Zambia. The main objective was to establish the level and trends in capital flight and to document the key economic and political factors that determine capital flight in Zambia using data for the years 1970-2004. Data on key determinants used was obtained from the International Monetary Fund country Data (2008), Bank of Zambia, Central Statistics Office and Ministry of Finance and National Planning and Zambia Revenue Authority publications.

The results from the study reveal that external debt, real GDP growth, fiscal deficit, inflation, and political instability and policy reforms to be the most important determinants of capital flight in Zambia. I can therefore safely conclude that if the policy measures outlined below are adopted consistently, there is every reason to hope for the repatriation of the capital flight.

From the study, the significance and the importance of external debt causing capital flight suggests that the phenomenon of revolving door model where external debt provides the motivation for capital flight has been present in Zambia. Fiscal deficit, interest rate

differentials, economic growth, and inflation are the other determinants of capital flight and are significant in the long-run. This trend of events calls for better and continued administration of sound economic policies which promote stability in economic growth and better management of the fiscal position in Zambia.

8.2 Policy Recommendations

Based on the above mentioned, the following measures are suggested.

1. Since unfavorable macroeconomic variables such as high inflation, volatility in exchange rate, high fiscal deficit, low economic growth have a been found to be the major determinants of capital flight in Zambia in this study, government strategy to fight capital flight should include Capital-Flight Economic Reforms by emphasizing on policies which are Pro-Growth policies. These policies should target economic stability and removal of structural distortions.
2. Better management of foreign exchange reserves should be vital so as to avoid the same financial resources going out as capital flight. The government of Zambia should intensify its efforts to ensure and maintain the sound domestic macroeconomic policies such as creation of single digit inflation, stabilization of the local currency, strengthening of international reserves, price stability and competitiveness of the domestic interest in the world interest rates. This will definitely create the much need confidence in the economy for investors.

3. Debt relief strategies such as the HIPC which Zambia saw a reduction of the Zambian debt of US\$3.8 billion can help dispel capital flight especially if compiled with less dependence on the external borrowing. The lesson from this is that, the beginning of such policies will encourage both creditors and debtors to promote responsible lending, accountable debt management and domestic borrowing. This calls for fiscal discipline in Zambia as government should keep to the budgetary provisions.

4. Interest rates are still not competitive, although the government has adopted the policy of market determination of interest rates. Therefore, government should make deliberate policy to have positive real interest rates that will capture both covered and uncovered parity conditions.

In conclusion, this analysis points to the importance of maintaining a stable and predictable economic and business environment and the need to maintain political stability. High levels of capital flight from Zambia were largely induced by policy reversals, especially those that generate economic and political uncertainty, and made the investment and business environment less conducive and a huge external debt. To keep capital flight to minimum, government will need to continue to improve its governance record and to maintain a consistent and predictable economic and business environment that is conducive to private sector investment and growth. It also appears that maintaining high and sustainable real economic growth rates helps to attract and retain private capital in the economy.

This is evident from low levels of capital flight after 1995 when real GDP growth averaged 4-5 percent per annum.

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Appendix

Table 1. Capital Flight between 1970-2004 in Zambia

year	CAPITALFLIGHT	Capital flight
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	(Kwacha Billion)	(million US\$)
1970	918.1196	1597.4
1971	866.8541	1534.0
1972	69.6272	125.3
1973	153.9818	304.1
1974	-229.3618	-447.1
1975	69.41441	136.6
1976	56.97818	115.6
1977	359.9965	729.2
1978	263.9697	570.0
1979	528.7306	1136.2
1980	-193.408	-261.0
1981	555.8407	1097.6
1982	-263.6568	-521.6
1983	60.73211	102.7
1984	282.4944	381.6
1985	304.7895	363.3
1986	1785.216	1312.3
1987	1190.284	1014.7
1988	707.2659	1008.1
1989	1105.894	2010.2
1990	673.3969	1096.5
1991	120.7541	174.4
1992	30.34201	42.5
1993	-404.9483	-593.6
1994	591.0595	883.0
1995	-286.1369	-434.6
1996	-112.691	-170.2
1997	-263.3803	-444.4
1998	351.1507	512.6
1999	-272.0413	-384.2
2000	-255.0444	-337.1
2001	-1193.155	-1603.9
2002	-998.0525	-1325.3
2003	-322.9686	-473.1
2004	310.395	517.4

Source: Ndikumana and Boyce(2008)