ADDIS ABABA UNIVERSITY

SCHOOL OF GRADUATE STUDIES

Determinants of Capital Flight in Common Market for Eastern and Southern Africa Member Countries: Dynamic Panel Data Analysis

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JUNE 2012

ADDIS ABABA

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A thesis submitted to the department of Economics

Presented in partial fulfillment of the requirements for the Degree of Master of Science in International Economics

Addis Ababa University

Addis Ababa, Ethiopia

June, 2012

Addis Ababa University

School of Graduate Study

This is to certify that the thesis prepared by Yoseph Haregewoin, entitled: Determinants of Capital Flight in Common Market for Eastern and Southern Africa Member Countries: Dynamic Panel Data Analysis and submitted in the partial fulfillment of the requirement for the degree of master of Science in Economics (International Economics) complies with the regulations of the university and meets the accepted standards with respect to the originality and quality.

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Abstract

Determinants of capital flight in Common Market for Eastern and Southern Africa member countries: Dynamic Panel Data Analysis

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Numerous of studies in recent years have focused attention on the determinants of capital flight in the developing countries. This paper contributed to this body of knowledge by filling a noticeable gap. Principally, this paper examines the determinant of capital flight from 13 member countries of COMESA for the period 1990-2009.

The paper employed first difference General Method of Momentum (GMM) and system GMM to find out the determinant of capital flight from COMESA member countries. The study found that capital flight has a tendency to persist over time, which may reflect that *habit-formation effect or* contagion *effect*. The study also found that Foreign Direct Investment (FDI) has a positive and significant effect which may reflect existence of discriminatory-treatment for domestic investors. Capital flight from COMESA member countries is also fueled by the increase of Gross Domestic Product of the country which may reflect money laundering and a high return for investment in the foreign country particularly in advanced countries. Furthermore the study found that budget deficit has a negative impact on capital flight which may reflect that corrupted government officials are the main actors of capital flight from COMESA member countries. The study suggested the need for the policy makers to adopt an investment policy which doesn't discriminate foreign investor from the domestic investors, adjusting the domestic interest rate in accordance with the international market and apply tight control on corrupted government officials to repatriate capital flight from COMESA member countries.

Acknowledgment

Throughout the process of writing this thesis, many people have continuously supported me. I am indebted to my supervisor Dr. Assefa Admasse for valuable comments and suggestions during the development and writing of this research. I am also very thankful Mr. Zerayehu Sime (PhD candidate) for helping me think through the initial concepts that provide the foundation for this paper.

I am very grateful to Ethiopian development research institute (EDRI) and Ethiopian Strategy Support Program II (ESSP II)/IFPRI for their financial support during the development of this research paper.

Most importantly I thank all of my family members supporting, encouraging and surviving me through the years.

Finally I would like to register my profound gratitude to my friends Dagi and Henok for your interactions, it reduced the academic pressure.

Dedication

I sincerely dedicate this work to my family for their untiring moral support and encouraging me all through my studies without which I would not be who I am today.

To Mahlet Tesfaye

And to Mr. Zerayehu Sime

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List of Abbreviations

BD- budget deficit

CC- corruption control

COMESA: Common Market for Eastern and Southern Africa

DCP- domestic credit for private sector

DRC: Democratic Republic of Congo

ECA: Economic Commission for Africa

FDI: Foreign Direct Investment

GDP: Gross Domestic Product

GMM: General Method of Momentum

IMF: International Monetary Fund

PCF- past capital flight

PS- political stability and no violence

CHAPTER ONE

1. Introduction

1.1Background

Financial and economic transactions including direct investment and external financial claims with the citizens of other countries are very common if the economy is an open economy. Due to the associated risk and return of capital in developing countries, local people would like to own foreign assets or invest directly in foreign countries in order to maintain their purchasing power when the local currency expects to be depreciated or when there is a rapid increase in domestic inflation rates. Political Instability, war and bad governance also stimulates people to move their assets to safer places in foreign countries especially in the advanced economy. Although this condition is still regarded as normal capital outflow, many studies believe that the condition is capital flight.

Capital flight remains one of the impenetrable policy and academic issues of the day. Although from the end of the 1980s and early 1990s the debt crisis appeared to be contained and attention to the capital flight phenomenon waned, capital flight still remains a serious problem in a number of countries. The most pronounced concern among policymakers, researchers and the key stakeholders in economic development is that in most developing countries which are riddled with heavy debt burdens, foreign exchange shortages, transient and chronic poverty, capital flight amounts to a substantial

proportion of the very resources which are essential for financing economic growth and reversing the perverse economic trends (Lensink et.al, 2002).

Literature on capital movement from the African continent has revealed that capital flight, as well as any outward movement of capital from African countries, has a harmful effect on the economy of African countries where capital flight has existed since the 1970s (Boyrie, 2010). According the same researcher for the years 1990–2005, the total amount of capital flight was estimated to be $499.8 billion (5.79 percent of GDP) for all countries and $24.7 billion (7.56 percent of GDP) for the Sub-Saharan Africa region. The Common Market for Eastern and Southern Africa (COMESA) economic integration zone is also experiencing high capital flight. Although the COMESA member countries are not yet in a position to attract FDI and portfolio funds at a level which would result in a significant economic impact, because of the real and perceived risks associated with investment in the region[1], the member countries are losing large amount of capital as a form of capital flight. According to Boyeir (2010), the total capital flight from the COMESA region from 1990-2005 was 123 billion USD which represent 7.83% of aggregated GDP.

1.2Statement of the problem

For the past four decades, most Sub-Saharan African countries' economic performance has been characterized by economic stagnation. Due to this reason most part of the region

[1] A report by Economic intelligence unit (2009/2010) indicates that most of the COMESA member countries are categorized as very high risk countries in terms of economic distress and underlying vulnerability to unrest.

has consistently suffered from balance of payment disequilibria, deteriorating government finances, increasing macroeconomic and political instability and as a consequence a higher incidence of poverty (Collier, 2006). The economic performance of Common Market for Eastern and Southern African countries has been disappointing over the last two decades, with overall economic growth averaging 3.07 per cent a year since the 1990 and only marginally above the level of the region's population growth.

Due to higher incidence of poverty in COMESA member countries (UNDP (2011))[2], their governments are trying to attract foreign capital in order to fill the gap between the demand and the availability of capital for investment in the economy. Although, there is a significant inflow of official capital in the form of aid and loan to COMESA member countries, there is a substantial outflow of domestic private capital. Boyrie (2010) in his studies showed that the COMESA and the Arab Maghreb Union (UMA) had the highest level of capital flight both for all countries and on an average per country basis. Governments of COMESA countries faced this economic problem by continuing to borrow, which will lead them to high debt servicing burden, on international markets; placing heavy restrictions on foreign currency transactions to reduce capital flight.

Capital flight from African economies especially from regions like COMESA constitutes a serious development challenge for several reasons. First, in recent decades capital flight has been both sizable and costly in many developing countries. Since capital or foreign

[2] United Nation Development Program (UNDP) (2011) report shows that most of the COMESA member countries scores low human development. According to the human development index UNDP (2011), most of the COMESA member countries (e.g. Kenya, Ethiopia, Malawi, Zimbabwe, Sudan, Madagascar, Zambia, Uganda, Rwanda, Eritrea, Djibouti, Comoros) experienced low human development , low life expectancy, low mean of years of schooling, low expected years of schooling and low per capita income.

exchange is scarce in COMESA member countries, capital flight is costly. The loss of scarce capital and foreign exchange potentially leads to a loss of investment in countries that are in great need of more infrastructure, plant and equipment, and human capital.

Second, capital flight has a substantial regressive impact on wealth distribution (Epstein 2005). This is because it is the members of the subcontinent's economic and political elites that take advantage of their privileged positions to engage in capital flight by acquiring and channeling funds abroad. The impact of the resulting shortages of revenue and foreign exchange is borne by the poorest members of society. The regressive impact of capital flight is compounded when financial imbalances result in devaluation: the wealthy that hold external assets are insulated from the effects, while the poor enjoy no such cushion (Epstein 2005).

Third, most COMESA member countries are still heavily indebted. To the extent that a substantial fraction of external debt was used not to the benefit of the public, but rather to finance the accumulation of private external assets by the ruling elites, the moral and legal legitimacy of these debt-service obligations is open to challenge. The external debt of the COMESA region has increased twenty-fold since 1970 and debt service ratios which, in 1970, were insignificant averaged 45 per cent of export earnings in 1999-2000, making the region one of the most heavily indebted in the world. While member States borrowed heavily to maintain incomes and investments, the collapse of their export earnings undermined attempts to reduce their debts (COMESA, 2010).

A natural question which arises is: what factors are driving private capital out of generally from Africa and specifically from COMESA member countries? This question has attracted a large body of research which, broadly speaking, identifies macroeconomic and political conditions as the main cause of African capital flight (see for example, Lensink et al. (1998), Collier et al. (2001), Ndikumana and Boyce (2003), Ndiaye (2009)).while these contributions have enhanced our understanding of this phenomena, they fail to consider the COMESA region independently and most of them fail to include economic growth as determinant. Since the COMESA economic region has the highest capital flight and the lowest economic growth compared to other economic unions in Africa, it needs more attention to identify the determinants of capital flight.

For this paper, the researcher is interested to conduct this study because of three reasons; first the previous researchers neglect the COMESA region as study area on their studies, second most of the previous researcher failed to include the economic growth as determinant but economic growth and capital flight may have causal links. The causal relationships can in both ways; that is, poorer countries have experienced high capital flight (˘Cerven´a (2006)), while at the same time capital flight can lead to slower economic growth. There are two major ways in which capital flight may have detrimental effects on future economic growth. First, capital that is transferred abroad from the country cannot contribute to the domestic investment. This is diminishing possibilities for further economic development. Second link is through imports. If scarce foreign exchange is used to finance capital flight, it is clearly not available for financing imports that may be crucial for economic growth (Lessard and Williamson (1987)). If flight

capital had been invested in the production of either domestically-produced intermediates or export goods that could finance imports, the import constraint on growth could have been relaxed. And third most of the previous studies were conducted before world financial crises (2007) but after world financial crises most of world economy was changed dramatically consequently, those of previous studies didn't cover this situation. Therefore this study attempted to find out the determinants of capital flight from the COMESA economic region by raising the following research questions,

- ✓ How do macroeconomic factors such as capital inflows, financial development and budget deficit explain capital flight from COMESA member countries?
- ✓ To what extent political factors such as political stability, quality of governance determine the size of capital flight from COMESA member countries?
- ✓ In what way economic growth affects capital flight from COMESA member countries?

1.3Objective of the study

1.3.1 General objective

The general objective of this study is to examine the determinants of capital flight in Common Market for Eastern and Southern Africa (COMESA) member countries.

1.3.2 Specific objective

The study has the following specific objectives,

- ✓ To investigate macroeconomic factors which explains capital flight from COMESA member countries such as past capital flight, capital inflows and financial development
- ✓ To find out how political factors affect capital flight from COMESA member countries such as quality of governance, political stability and no violence.
- ✓ To assess the impact of economic growth in explaining capital flight from the region.

1.4Scope, Limitations and significance

1.4.1 Scope of the Study

The horizon of the study relies on the determinants of capital flight on Common Market for Eastern and Southern Africa member countries' economy. This study identifies the macroeconomics and political factors that explains capital flight from COMESA member countries. In the analysis, thirteen countries were included because parts of the data are not available for other COMESA member countries. Additionally, the study didn't include Egypt, Libya and Mauritius in the sample because of their economic specialty. Including these countries in the sample will make it heterogeneous. The study covered the period from 1990 to 2009.

1.4.2 Limitation

The study had various limitations, which are beyond the capacity of the researchers. Since the topic is very vast and the data for capital flight is not readily available as soon as a year ends, it is difficult to portray all the details and clear picture capital flight from

the economy for the recent years 2010 and 2011. Therefore due to the data generation process the study covered up to 2009.

1.4.3 Significance of the study

This study is very relevant for various reasons:

- It provides some policy implications for the member state government to repatriate capital flight from the economy
- Since the study is conducted for the first time for this region in this area, it inspires other researchers on the area of capital flight for further investigation.
- Although the study doesn't include year 2010 and 2011, it gives sound picture of determinant of capital flight from COMESA member countries even after world financial crisis

1.5Organization of the study

The paper has got six parts. The first chapter is an Introduction. The second chapter provides the theoretical and empirical literature of the study. The third and the forth chapters present an overview of the COMESA member countries' economy and the magnitude of capital flight from the member countries with the major macroeconomic indicators. The fifth chapter engaged in presenting the methodology and Empirical Analysis of the paper. Finally the last chapter presents the conclusions and recommendations of the study findings.

CHAPTER TWO

2 Literature Review

2.1 Theoretical literature review

2.1.1 Definition of capital flight

There is no uniform agreement about what capital flight is and what it includes but different definitions are given. Pastor (1990) defines capital flight as resident capital outflow where capital can be represented by any asset local residents have sent abroad, maintain them out of national regulation. Cooper and Hardt (2000) define capital flight by taking the determinant of capital flight into consideration. For them, capital flight is the flow of financial asset from one country to another resulted from the holder's perception that capital is subject to high level of risk due to devaluation, hyperinflation, and political turmoil....etc.

What is important here is that capital flight is different from capital export which is a normal phenomenon subject to regulation and not posing danger to the national economy.

The main difficulty faced by many researchers when measuring capital flight is that there is no consensus on the definition of the phenomenon. But many authors have been agreed, that the phenomenon is a response to political and economic uncertainty, but still there is no further consensus. There are a lot of definitions and concepts which can be found in the literature but for the purpose of this study, it is sufficient to limit to three

most often used definitions. This research paper therefore limits to the same set of definitions as do Schneider (2003) and Cerven´a (2006).

a. Broad Definition of Capital Flight

According to Schneider (2003), the core idea behind this definition is that capital flight is considered to consist of all outflows of resident capital which would bring a higher rate of economical as well as social return. But, this definition, linking capital flight to lowering of national utility, has a serious weakness.

Boyrie (2010) gave us a broad definition of capital flight and it is the outflow of resident's capital which if invested in the domestic country would yield a high social return. As identified by Schneider (2003) this definition has its own drawback due to attaching capital flight only to a certain country's utilities. It also includes both recorded and unrecorded capital movement which over estimated the level of capital flight. Since it includes all reported and unreported increases in foreign assets of both sectors, domestic and public, it is a very broad measure and is believed to overestimate a real magnitude of the phenomenon. Despite this, it is still widely used mostly due to its simplicity.

In response to the above definition, some scholars used a narrow definition of capital flight which is termed as hot money definition which limits capital flight as short run capital movements. Schneider (2003) defines it as the outflow of resident capital from a country in response to economic and political risk in the domestic economy. Schneider (2003) argues that linking the definition of capital flight to a notion of national welfare might not be the soundest idea. Not only there is a lot of subjectivity involved, this

linkage is also contradictory in a way. The inconsistency lies in the fact that economic theory assumes that utility and profit maximizing behavior leads to a maximum welfare whereas when considering capital flight maximization of utility might lead to a lowering of welfare which is opposing to previous assumption.

b. Capital Flight - A Response to Discriminatory Treatment of Domestic Capital

According to Schneider (2001), due to the reason that this definition tries to capture two-way flows of capital and also distinguish between the normal and flight motivated outflows, this definition is superior to the previous definition because the first definition (broad definition of capital flight) considers one-way flow of capital. In Schneider (2001) argues that capital movements can occur in response to perceived changes and uncertainties which are not always captured by the portfolio theory and summarizes this definition as:

> *Capital flight is a subset of international asset deployments or portfolio adjustments undertaken in response to an unusual perceived deterioration in risk/return profile associated with assets located in a particular country that occur in presence of conflict between the interests of asset holders and governments. Two-way flows of capital occur because of the differential impact on domestic and foreign investors arising from asymmetries in information, risk, return and the impact of political risk.*

According to Schneider (2001), in this case, capital flight is defined as a response to discriminatory treatment of domestic capital. It is a component of private capital

outflows. Capital flight can co-exist with massive inflows of capital. The latter may indeed be a source of finance for the outflow of flight capital. The paradox is explained by asymmetrical information, political and economic risk. Capital flight then, according to this definition, is one side of a two-way flow driven by the attempt to arbitrage a yield/risk differential. Schneider (2001) categories this in to two:

- ✓ *Resident outflows, which finance an inward flow of capital motivated by a desire to arbitrage a tax or risk differential. Capital flight from China is a good example of this. Resident capital comes back into the country in the guise of foreign direct investment.*
- ✓ *Resident outflows that are financed by an inflow of external capital such as external borrowing to finance capital flight. Mexico is a good example of this type of capital flight. In the late 1970s and early 1980s, external borrowing financed capital flight. (pp. 5)*

Capital flight, defined as above, has many advantages. Not only it allows for the inflows of capital, but also they may be financing the flight. These two-way flows occur to arbitrage a yield or risk differential. Asymmetries can arise due to various reasons but they always result in discriminatory treatment of domestic capital.[3] Furthermore this definition was adopted by Dooley (1986; 1988), Khan and Ul Haque (1987), Rojas-Suarez (1990) for their studies.

c. Capital Flight - an Illegal Transaction

[3] According to Cerven´a (2006), asymmetries arise because of different taxation of domestic/foreign investment, due to different ability of investors to bear economic/political risks and also because of the different information that domestic/foreign investors have

Capital flight is often defined as an illegal transaction which occurs when traders keep capital abroad by the falsification of trade documents or trade misinvocing (trade mispricing). Capital flight can be transacted by deliberately under invoicing exports and/or over invoicing imports. Bhagwati (1964) and Bhagwati, Krueger, Wiluswadia (1974) regard the occurrence of capital flight through the faking of trade documents as a consequence of exchange controls in LDCs. Under this interpretation capital flight only occurs when domestic investors transfer illegally earned foreign exchange abroad. The purpose of the transfer is assumed to be a desire to avoid investments in the domestic financial market. (Schneider (2001))

But the definition of this capital in this way is very restrictive. Because, it indicates the occurrence of capital flight to one channel which is only trade and make traders the only actors in the transaction of capital flight. However, the agents transferring money abroad may not only be traders. It is well known that during the debt crisis capital flight transactions were not just carried out by traders, but other private investors as well. Therefore, restricting capital flight to an illegal transaction captures only a small component of total flight capital.

Cash movements or smuggling of goods, antiques, precious gems, gold, silver and other precious metals can also be other channels to transact capital flight from the domestic economy to the foreign countries.

> *Bribery may be another conduit for capital flight and has a special feature: the capital involved need neither originate in the country concerned nor enter the*

country at all. The corruption of government officials and politicians in various arms deals is well known. Bank transfers and swap arrangements are also possible channels for transferring money abroad (pp.5) (Schneider (2001).

A further drawback of this definition, identified by Schneider (2001), is that it may include earnings kept abroad to evade quotas and tariffs. Even though they are included in the estimation, it is not possible to measure them statistically and it is therefore not possible to distinguish between the flight component and the component due to such evasions. This kind of capital flight can be detected by comparing partner country trade statistics as was done in several studies.

It is important to note that capital flight defined as above occurs only when traders are transferring illegally earned foreign exchange abroad with the desire to avoid domestic market. A serious drawback of this definition is that, due to the calculation mechanism, transfers may include earnings kept abroad to evade quotas and tariffs, as well as earnings from smuggling and criminal activities that should not be included otherwise. Nevertheless, it can still be considered a good indicator of illegal concept of capital flight (Cerven´a (2006).

Even though many definitions are given for capital flight many authors agree on the following traits of capital flight:

- It is a response of high political and economic uncertainty

- A net illegal conveyance of capital out of the countries, which is not recorded in the national accounts.

2.1.2 Theories of capital flight

Generally, four main theories have been identified in the area of capital flight

A. Investment diversion theory

According to investment diversion theory due to existed political and macroeconomic risk in developing countries resulted to high capital flight from developing countries to advanced countries. This is because the simultaneous existence of stable macroeconomic and political condition in advanced countries which may gives better investment opportunities such as high interest rate favorable tax climate and secrecy of account condition, some, unscrupulous, corrupt leaders and private investors and bureaucrats usually stole scarce capital resources from their countries to advanced countries. According to Forgha (2008), these funds are therefore, not available for investment at home leading to decline in aggregate investment ,low economic growth, hence declining in employment, increase in dependency ratio and high death rate. These negative macroeconomic effects on these countries sometimes motivate the necessity to borrow from aboard to reactivate the domestic economy, which is sometimes further siphon thereby perpetrating external dependency and indebtedness. The liquidity constraint or crowding - out effect may result to depreciation of the domestic currency if the authorities are operating a floating exchange rate system .Attempts to defend the exchange rate at this time leads to loss of international reserves (Forgha, 2008).

B. Debt- driven capital flight thesis or debt- overhang thesis

According to the debt-driven flight thesis, capital flight reduces the incentive to save and invest in the domestic economy. The debt-driven thesis also called debt overhang thesis states that capital flight reduces the incentive to save and invest. It assumes that, if the country has large foreign debt, there are high of exchange expectation rate devaluation, fiscal crisis, and the propensity of the crowding out of domestic capital and expropriation of assets to pay for the debt (Forgha, 2008). According to Forgha (2008) the debt driven thesis and the investment driven thesis taken together suggest interdependency between capital flight, growth and external debt with the linkages being mutually reinforcing. Capital flight leads to poor growth, which calls for the necessity to borrow in order to promote growth. Further borrowing or indebtedness promotes capital flight, which in turns leads to poor economic growth, and the cycle continues. The debt-driven theory also called debt overhang thesis.

C. Tax depressing thesis

If we begin from the reasonable level of capital flight, it has its own impact on the level of investment in these countries. Reduction in the level of investment also reduces the amount of tax revenue to be collected. Reduction in the level of tax revenue complicated the task of political and economic management to promote growth and development. One outcome of this condition is a country may not be in the position to service its debt which increases the debt burden. This condition may drive the government to difficult forms of

financing which contribute for the instability of the country. This instability then will be accompanied by further capital flight (Ajayi, 1992).

D. Capital flight as a portfolio choice hypothesis

Using a portfolio-choice framework, Ajayi (1992) presents a theoretical model in which capital flight is determined by the usual risk diversification motive along with two important incentives, namely relative risk incentives and return deferential incentives. The first incentive implies that capital flight arises due to factors that raise the relative riskiness of the domestic economy. The second incentive highlights factors that affect the macroeconomic environment adversely and thus reduce the risk-adjusted returns to domestic assets.

2.1.3 Measurements of capital flight

Since there is no general agreement on what exactly is meant by capital flight, several capital flight measures are available in the literature. Not surprisingly, this leads to differences in capital flight estimates for different countries. However, the following three main methods of measuring capital flight can be distinguished in the literature.

a. Direct Measures

Direct measures of capital flight use direct data from the balance of payments. It is particularly focused on short-term capital outflows, known as "Hot Money", which rapidly response to change in the level of investment risk. The hot money, however, also

quickly flows back to the country as soon as the risk turns out to be positive (Chunhachinda and Sirodom, (2003)).

Cuddington (1986) provides that Capital Flight refers to the acquisition of short-term foreign assets by the non-banking private sector. From this, capital flight can be measured by having Errors and Omissions, which reflect Unrecorded Short-term Capital Flows, plus Other Short-term Capital, Other Sector, to be considered according to the respective country.

CFCU = EO + OSC

Where;

CFCU= capital flight

EO= error and omissions

OSC= other short term capital

According to Kant (1996), there are debates on the direct measures of capital flight. This is due to the fact that investors may possess both short-term and long-term foreign assets while having the same motivations and impacts on the country, long-term capital such as government bonds also have a high degree of liquidity, and, Errors and Omissions may be derived from different sources, not recorded in the balance of payments. This implies that interpretation of Errors and Omissions by Cuddington (1986) is too narrow.

There have been also some criticisms of the direct method of measurement which are distinguished by Kant (1996) (pp. 9). The main ones are:

- ✓ *An investor, reacting to unfavorable conditions at home, is free to acquire different types of assets abroad: short-term, long-term, real (including real assets), and financial. The motivations for all such acquisitions, as well as their effects on the investor's home country, will generally be identical (although some assets, such as real estate, are considerably less liquid than others).*

- ✓ *Even if one wishes to restrict oneself to components of those assets that can flow and reflow quickly, it seems best to look beyond short term capital flows. Long-term foreign financial assets, for example, are close substitutes to short-term assets, because active and deep secondary markets in long-term assets exist.*

- ✓ *The errors and omissions line includes not only unrecorded capital flows but also true measurement and rounding errors, unreported imports, and registration delays. In response to these criticisms, some authors have chosen to follow the indirect method of measuring capital flight.*

b. Indirect Measures

Indirect measures of capital flight mainly measure Net Foreign Claims by the private sector. It is stated that capital flight is calculated under the assumption that capital inflows will be used as a basis for capital outflows. As a result of this, the residual of both types of capital flows is regarded as the amount of capital flight of the respective country. This implies that indirect measures of capital flight are not focused on the impact of

national policy on capital flows and do not differentiate between normal and abnormal flows of capital.

The World Bank (1985) suggests the use of indirect measures provided that the Increase in External Debt (IEB) and the Net Foreign Direct Investment (NFDI) show the amount of capital inflows and that the Current Account Deficit (CAD) and the Increase in Official Reserves (IOR) show the amount of capital outflows. Therefore, the difference between Sources of Funds and Uses of Funds refers to the Increase in Net Foreign Claims by the private sector and is regarded as the Capital Flight (CFWB):

CFWB = IED + NFDI – CAD – IOR

Considering the Increase in External Debt (IED), the World Bank does not use data from the balance of payment but from sources of the World Debt Tables instead. Thus, some believe that the figures of external debt from such source may not be inconsistent with those recorded in the balance of payment. It is believed that the inconsistency may possibly come from the exchange-rate revaluation and debt reclassification reported by the World Bank.

Morgan Guaranty Trust (1986) adjusts the World Bank's measurement of capital flight by omitting Short-term Foreign Assets of the Banking System (SFABS) and only regarding foreign assets of the non-banking private sector as the Capital Flight (CFMG):

CFMG = CFWB – SFABS

Still, Morgan Guaranty Trust (1986) fails to prove how motivations of external claims by firms and individuals differ from external claims by the banking system, whereas it is the main reason for adjusting the definition of capital flight introduced by the World Bank.

Cline (1987) readjusts the capital measurement of Morgan Guaranty Trust by omitting the Reinvested Investment Income (RII) and the Income from Tourism and Border Transaction (ITBT) from the current account before measuring the capital flight. The reason for this is that we should not use incomes from external assets which do not return to the country in the calculation of capital flight and that the ITBT involves transactions in the free market, which is beyond state control. The Capital Flight (CFCl), according to Cline (1987), can be measured by:

$$CFCl = CFMG - RII - ITBT$$

In spite of the fact that indirect measure of capital flight is simple, shortcomings are detected from inaccuracy of foreign loans figures and overestimation of capital flight for countries with high level of foreign borrowings that do not experience shortage of domestic reserves. In addition, errors in the capital flight measurement may come from the calculation of external debt merely in the form of US Dollar. This is because some countries may have foreign loans in currencies other than US Dollar, so there exists the change in the exchange rates between US Dollar and other currencies.

c. Dooley measure

Dooley (1987) suggests using a hybrid measure of both direct and indirect methods of measurements. He defines capital flight as the total amount of externally held assets of the private sector that do not generate income recorded in the balance of payments statistics of a country. Or, stated otherwise, capital flight is all capital outflows based on the desire to place wealth beyond the control of domestic authorities.

According to Dooley (1986), first calculate a total amount of capital outflows:

$$TCO = FB + FDI + CAS + FR - EO - \Delta ED,$$

Where FDI, CAS, FR, FB and EO denote foreign direct investment, current account surplus, change in foreign reserves, change in external debt (World Bank data) and errors and omissions respectively. TCO stands for the total amount of capital outflows and ED is foreign borrowing as reported in balance of payments statistics. Second, calculate the stock of external assets corresponding to reported interest earnings:

$$ES = IE/rus,$$

Where ES, IE and rus denote respectively external assets, reported interest earnings and US deposit rate. Capital flight is then estimated as:

$$CFDOOLEY = TCO - \Delta ES.$$

The Dooley method is conceptually different from the residual method. Yet, according to Lensink etal (2000), Claessens and Naudé (1993: 5-7) show that in practice capital flight measured according to the Dooley method and the residual method are fairly similar, since most of the data used for calculation are the same in both cases.

2.1.4 Determinants of capital flight

According to Ndikumana and Boyce (2003), Developing countries have experienced simultaneously high levels of external borrowing and massive outflows of private capital. This phenomenon has been particularly notable in sub-Saharan Africa. Recent estimates indicate that compared to other regions, Africa has a larger proportion of private wealth held abroad (Collier,Hoeffler, and Pattillo 2001). Since most of COMESA member countries are included in the Sub-Saharan region, the estimated results shows that COMESA region is one of the victims.

The literature on capital flight has offered a range of explanations for this opposite international capital movements.

First, according to Ndikumana and Boyce (2003) they observe direct causal links between capital flight and external debt. The causal relationships can run both ways; that is, foreign borrowing can cause capital flight, while at the same time capital flight can lead to more foreign borrowing. Boyce (1992) distinguishes four possible causal links. In the first, foreign borrowing causes capital flight by contributing to an increased likelihood of a debt crisis, worsening macroeconomic conditions, and the deterioration of the general investment climate. In such cases of debt-driven capital flight, "capital flees a country in response to economic circumstances attributable to the external debt itself" (Boyce 1992: 337). In the second, foreign borrowing provides the resources as well as a motive for channeling private capital abroad, a phenomenon Boyce (1992: 338) terms debt-fueled capital flight. In such cases, funds borrowed abroad (by the government or by

private borrowers with government guarantees) are re-exported as private assets. In the other two linkages, capital flight causes foreign borrowing. In the case of flight-driven external borrowing, capital flight drains national foreign exchange resources, forcing the government to borrow abroad. In the case of flight-fueled external borrowing, flight capital directly provides the resources to finance foreign loans to the same residents who export their capital, a phenomenon known as "round-tripping" or "back-to-back loans," motivated by the desire to obtain government guarantees on foreign borrowing, or by the need to devise a pretext for unexplained wealth.

Second, countries that have experienced high levels of capital flight in the recent past are likely to experience higher capital flight in subsequent years (Ndikumana and Boyce (2003)). This condition may be *habit-formation effect*, as private actors gain experience in capital flight operations. It may also be *contagion effect*, as capital flight corrodes the legitimacy of capital controls, particularly if the flight capitalists include government authorities. This is due in part to the momentum created by capital flight itself. For example, 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. The consequent decline in expected after-tax returns discourages domestic investment and induces private agents to seek higher returns abroad (Collier et al 2001).

Third, a potentially important but politically sensitive factor that seldom has been pursued seriously in the empirical analysis of capital flight is the role of embezzlement of borrowed money by government leaders Ndikumana and Boyce (2003). Like natural resources, foreign loans are 'lootable' resources that corrupt leaders can appropriate for

private enrichment and channel abroad for safekeeping. Ndikumana and Boyce (1998) offer evidence that this was a major contributor to capital flight in the Congo (formerly known as Zaïre) under the Mobutu regime. Similarly, Boyce (1992, 1993) reviews evidence suggesting that this type of debt-fueled capital flight was widespread during the rule of Ferdinand Marcos in the Philippines.

2.2 Empirical literature review

Numerous studies have been conducted to identify the key determinants of capital flight in different countries of the world. But the results differ due to the capital flight measures and econometric estimation techniques used. In the literature, the main determinants of capital flight are; past capital flight, capital inflows, macroeconomic instability, rate of return differentials, financial development, governance and institutional quality, political risks and war, and uncertainty of public policies. (Ndiaye, (2009), Ndikumana and Boyce, (2003), Ndikumana and Boyce, (2007), Cerra et al., 2008, Hermes and Lensink, (2001), Vos (1992))

a. Past capital flight

According to Ndiaye, (2009) in the Franco zone Africa past capital flight positively affects current capital flight, implying that capital flight tends to persist over time because of the habit-formation effect which suggests that private actors gain experience in different capital flight episodes. The influence of the inflation differential between the Franco zone countries and France on capital flight was found to be positive and significant, implying that the higher inflation in the domestic environment is predictor of

future capital flight episodes. In the same study Ndiaye, (2009), found that the impact of the credit to the private sector is negative and variably significant. This result suggests that private actors prefer to invest resources they receive from banks locally, reducing capital flight. Cuddington (1987), Vos (1992), Ndikumana and Boyce, (2000), Cerra et al (2008), found that past capital flight positively influence current capital flight.

In contrast to the above authors, Nyoni (2000) found that capital flight is negatively affected by past capital flight from Tanzania. Whereas, Boyce (1992) has found an insignificant effect of past capital flight on capital flight from The Philippines.

Although the study conducted by Ndikumana and Boyce, (2000) and Nyoni (2000) were conducted in the same year and although Tanzania is included in Sub-Saharan African countries, they found different results. And Vos (1992) and Boyce (1992) did the study in the same year on the same country and different period but they found different result. Therefore, the evidence from the previous studies is inconclusive.

b. Capital inflows

Several studies (Hermes and Lensink (1992), Lensink et al (1998), Ndikumana and Boyce, (2003), Ndikumana and Boyce, (2007), Ndiaye (2009), Boyce (1992), Vos (1992),) have found that external debt is one of the most important empirical causes of capital flight. Ndikumana and Boyce, (2003) found that for every dollar of external debt, 80% are re-exported overseas in the form of capital flight. The same researchers (2007) found that for every dollar of external debt, 60% are returned as a capital flight. Ndiaye,

(2009) in the Franco Zone Africa countries, for every dollar of external borrowing by Franco Zone countries in a given year, 96% are channeled overseas as capital flight. Changes in external debt appear then to be one of the most important causes of capital flight. Indeed, corrupt leaders can embezzle part of the external debt and channel the resources overseas in the form of capital flight: a phenomenon known as debt-fuelled capital flight. Ndiaye, (2009) also found that short-term debt was among the most important factors explaining capital flight, a one dollar increase in short-term debt generates 87% of capital flight. But Ajayi, (1992), Nyoni (2000) and Murinde et al (1996) have found insignificant effect of external debt flows on capital flight.

Therefore the previous researches show that there is a contradictory result on different periods and different countries or groups. Though most of the COMESA member countries included in the Ndikumana and Boyce, (2007), the results doesn't show the recent information which is after the world financial crisis.

Research by Cuddington (1987), have found that an augmentation in foreign direct investment may finance capital flight due to foreign currencies inflows. According to the same author, this augmentation may reflect the increase in foreign investors' confidence on the economic perspective of the country, reducing capital flight. In contrast Lensink et al (2000) found an insignificant effect of foreign direct investment on capital flight from 84 developing countries.

Since the data used by the above researchers (Cuddington (1987) and Lensink et al (2000)) are very old and most of COMESA member countries were not included in the data set, the result may not explain capital flight from this region.

c. Macroeconomic instability

Macroeconomic instability may occur in several forms: rise in inflation, decline in economic growth, deterioration in terms of trade, rise in budget deficits, increase in tax, augmentation in current account deficits.

Since high inflation reduces the real value of the domestic assets, inducing the resident to hold their wealth outside the country, Cuddington (1986, 1987) and Dooley (1988) have confirmed the positive effect of inflation on capital flight. But Ndikumana and Boyce, (2003), Ndikumana and Boyce, (2003), Nyoni (2000), Hermes and Lensink (1992), Lensink et al (2000) found an insignificant effect of inflation on capital flight from developing countries. Therefore, evidences from the previous studies are inconclusive.

Morgan Guaranty, (1988) also found that low economic growth cause capital flight. As Ndikumana and Boyce (2007) shows on their study, the reason that low economic growth cause capital may be because investors interpret high growth performance as an indicator of high overall returns to capital in the country. Ajayi (1992) also support this presumption on his econometrics analysis. Results from the study by Ndikumana and Boyce (2007) indicate that the growth rate is negatively related to capital flight from sub-Saharan African countries. Ndiaye (2009) found that the economic growth differential

between the Franco zone African countries and France negatively affected capital flight, but this influence was not found to be significant. According to the author, a decline in the economic growth rate is not enough to induce investors to leave the domestic environment. On the contrary, they could judge this episode of decline as transitory, preferring not to modify their domestic portfolio decision. This means the economic growth rate is not a central indicator in explaining capital flight from the Franco zone countries. Other studies by Mikkelsen (1991) for twenty-two developing countries and Lawanson (2007) for Nigeria also found negative effect on capital flight. But in Ajayi (1992), Herms and Lensink (1992), Olopoemia (2000) found insignificant effect on capital flight from Nigeria, six Sub-Saharan African countries and Uganda respectively.

Due to the difference in the methodology of the study, countries and the period of the study, the results are different across countries and periods.

d. Financial development

Ndikumana and Boyce (2003) found that financial development can reduce capital flight if accompanied by an expansion of opportunities for domestic portfolio diversification. But, according to these authors, financial deepening can also encourage capital flight if it facilitates international capital transfers. In particular, if financial markets are liberalized and international capital movements are deregulated, domestic capital may be expected to flow abroad as long as risk-adjusted returns are higher elsewhere.

Ndiaye (2009) by taking ratio of deposit to GDP as a proxy for financial development found that the effect of ratio of deposits to GDP on capital flight was negative and invariably significant. According to the author, this empirical evidence implies that the more the domestic savings are, the more these resources can be used to finance domestic investment, reducing capital flight. But the size of the financial system appears to be insignificant in explaining capital flight from the Franco zone African countries. Therefore, according to the author the influence of financial development on capital flight depends on the choice of the measure of financial depth.

Other empirical studies have also examined the relationship between financial development and capital flight. Using the money supply in the strict sense broad money to GDP ratio as a measure of financial development, Collier et al. (2001) found that this ratio has no statistically significant impact on capital flight. Ndikumana and Boyce (2003) revealed that the credit to the private sector has a negative and statistically significant effect on capital flight from Sub-Saharan Africa, whereas the influence of this variable on capital flight is not significant Ndikumana and Boyce (2007). With respect to the ratio of total liquid liabilities to GDP, findings from Ndikumana and Boyce (2003) show no significant relationship between this indicator and capital flight. In Cerra et al. (2008), the growth rate of domestic credits has no robust influence on capital flight, and is significant in some regressions and insignificant in others. Therefore, according to the above empirical studies the link between financial development and capital flight thus appear to be sensitive to the choice of the measure of financial intermediation.

e. Governance and institutional quality

According to Ndikumana and Boyce (2003), in a context of poor governance and weak institutions, corrupt elites take advantage of their favorable position to amass personal fortunes that they hold abroad, thus operating massive capital flight episodes. In such context, the preferences of the elite are inconsistent with the national interest.

Ndiaye (2009) , the executive power had a negative and statistically significant effect on capital flight. This result suggests that strong constraints on executive power lead to an aggravation of the phenomenon of capital flight. In other word, bad institutional quality plays an important role in explaining capital flight from Franco zone countries. In contrary to this Lensink et al (2000) and Cerra et al (2008) have found a negative effect of democracy and political freedom and institutional quality on capital flight from 84 developing countries and 134 developing countries respectively.

The above two different result shows that the difference in the time of the study was conducted leads to different results.

f. Political risk and war

Political instability may increase the risks and uncertainty regarding the policy environment and its outcomes for domestic wealth holders. Confidence in the domestic political situation may fall, inducing more capital flight episodes since residents may channel their assets overseas due to the increasing risks of losses in their domestic assets.

According to Ndiaye (2009) the intensity of armed conflict positively affects capital flight. But the author found that this influence was found to be insignificant, suggesting that armed conflict episodes experienced in Franco zone African countries have not caused important capital outflows from those countries.

Others empirical studies also found a positive link between capital flight and political risk except Dooley (1988) who found a negative link between political risk and capital flight. But others like Lensink et al.(2000) revealed that war significantly increase capital flight from developing countries. According to Collier et al. (2004), civil war is among the important determinants of capital flight. Ndikumana and Boyce (2003) also found a positive relationship between capital flight and political risk.

g. Uncertainty of public polices

Hermes and Lensik (2001) found that uncertainty with respect to budget deficit, tax payments, government consumption and real interest rates, positively and significantly affect capital flight, and uncertainty with respect to inflation has no significant effect. Ndiaye (2009) found that the government consumption variability and the real interest rates variability significantly affected capital flight. Lawanson (2007) also found a positively significant effect of budget deficit on capital flight from Nigeria. But in contrary to the above three results Ndikumana and Boyce (2003) found a negative relationship between budget deficit and capital flight from 30 Sub-Saharan African countries. Therefore the result will differ depending on the type of proxy they used.

Generally, the empirical studies on the determinant of capital flight have revealed that the difference in the type of methodology they used, the period and the study area leads to difference in the result of all variables.

CHAPTER THREE

3. COMESA: AN OVERVIEW

3.1 Back ground

COMESA is one of the major trading blocs in the African region, along with the Southern African Development Community (SADC), Economic Community of West African States (ECOWAS), and West African Economic and Monetary Union (UEMOA), Indian Ocean Commission (COI), Intergovernmental Authority on Development (IGAD), East African Community (EAC), etc.

According to the COMESA official website, COMESA traces its genesis to the mid 1960s. The idea of regional economic co-operation received considerable impetus from the buoyant and optimistic mood that characterized the post independence period in most countries of Africa. In 1965, during the ministerial meeting of the United Nations Economic Commission for Africa (ECA) held in Lusaka, Zambia, the creation of an Economic Community of Eastern and Southern African states was recommended.

In December 1981, the Treaty establishing a Preferential Trade Area for Eastern and Southern Africa" (PTA) was signed, which came into force on September 30, 1982. The PTA was established with intent to take advantage of a larger market size, to share the region's common heritage and to allow greater social and economic co-operation, with the ultimate objective of creation of an economic community. Subsequently, the Treaty

establishing the COMESA was signed on November 5, 1993 in Kampala, Uganda and was ratified a year later in Lilongwe, Malawi on December 8, 1994. (COMESA 2010)

As the COMESA official website, the aims and objectives of COMESA have been designed so as to remove the structural and institutional weaknesses in the member States by pooling their resources together in order to sustain their development efforts either individually or collectively. These are as follows:

- ✓ to attain sustainable growth and development of the member States by promoting a more balanced and harmonious development of its production and marketing structures;
- ✓ to promote joint development in all fields of economic activity and the joint adoption of macro -economic policies and programmes; to raise the standard of living of its peoples, and to foster closer relations among its member States;
- ✓ to co-operate in the creation of an enabling environment for foreign, cross-border and domestic investment, including the joint promotion of research and adaptation of science and technology for development;
- ✓ to co-operate in the promotion of peace, security and stability among the member States in order to enhance economic development in the region;
- ✓ to co-operate in strengthening the relations between the Common Market and the rest of the world and the adoption of common positions in international market; and

- ✓ To contribute towards the establishment, progress and the realization of the objectives of the African Economic Community.

The COMESA agenda is to deepen and broaden the integration process among member States through the adoption of more comprehensive trade liberation measures such as the complete elimination of tariff and non-tariff barriers to trade and elimination of customs duties; through the free movement of capital, labor, goods and the right of establishment; by promoting standardized technical specifications, standardization and quality control; through the elimination of controls on the movement of goods and individuals; by standardizing taxation rates (including value added tax and excise duties), and conditions regarding industrial co-operation, particularly on company laws, intellectual property rights and investment laws; through the promotion of the adoption of a single currency and the establishment of a Monetary Union; and through the adoption of a Common External Tariff (CET).(COMESA 2010)

By agreeing to the above, member States have agreed on the need to create and maintain:

- a full free trade area guaranteeing the free movement of goods and services produced within COMESA and the removal of all tariffs and non-tariff barriers;
- a customs union under which goods and services imported from non-COMESA countries will attract an agreed single tariff all COMESA States;
- free movement of capital and investment supported by the adoption of common investment practices so as to create a more favorable investment climate for the entire COMESA region:

- a gradual establishment of a payments union based on the COMESA Cleaning House and the eventual establishment of a common monetary union with a common currency;
- The adoption of a common visa arrangement, including the right of establishment leading eventually to free movement of bona fide persons.

COMESA trade bloc comprises 19 nations which include Burundi, Comoros, Democratic Republic of Congo (DRC), Djibouti, Egypt, Eritrea, Ethiopia, Kenya, Libya, Madagascar, Malawi , Mauritius, Rwanda, Seychelles, Sudan, Swaziland, Uganda, Zambia and Zimbabwe.

3.2 Economic performance of COMESA

Gross Domestic product (GDP)

The GDP of the region was growing at a meager rate from 1990 to 2004. In 1990 the combined GDP was US$144 billion, this amount increased by US$59 billion by the year 2000 (World Bank 2011). After 2000 the economic growth of the region exhibits a negative growth rate up to 2004. But in 2005 the GDP started growing at a good rate up to the world financial crisis (2009) (World Bank 2011).

Economic growth of the region has exhibited resilience in the face of the global economic downturn 2009, despite the many pertinent challenges facing Africa[4]. Notable progress

[4] According to economic report on Africa 2010, there are many economic and social development challenges that face Africa today, including marginalization from globalization, development financing, and climate change. Weak governance and poor leadership persist in many countries. Conflict and post-conflict reconstruction challenges prevail in some countries and regions though on a lower scale,

within the COMESA region has been achieved through improved macro-economic management, market-based reforms and continued structural progress in many countries.

In 2009, the combined GDP for COMESA decreased to an estimated US$ 448.0 billion from US$ 451.5billion in 2008 because of the global economic downturn. Although data are not available for three of the member countries, with a pickup in global economy, total GDP of COMESA was estimated more than US$ 500 billion in 2010, growing at an annual average of 14.4 percent. Per capita GDP, at current prices, of the region as a whole, was estimated at US$ 897 in 2009, up from US$ 858 in 2008 (World Bank 2011).

The economies within the COMESA region are at varying stages of development. For instance, the GDP of Egypt and Libya put together was larger than the combined GDP of the remaining 17 COMESA countries, with GDP of US$ 188.0 billion and US$ 60.4 billion respectively in 2009, as compared to the combined GDP of US$ 200 billion of the remaining 17 countries during the same year.(world bank 2011)

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hampering development efforts. Unemployment, and endemic poverty, stand out as major long-term development issues for the continent to address.

Table 3.1 GDP in COMESA member countries (US$ billions)

Country	total 1990-2009	annual average 1990-2009	annual average 1990-1999	annual average 2000-2009	maximum	Minimum
Burundi	18.24	0.91	0.98	0.86	1.33	0.60
Comoros	6.01	0.30	0.23	0.36	0.54	0.19
DRC	146.89	7.34	7.16	7.50	11.67	4.31
Djibouti	12.26	0.61	0.49	0.71	1.05	0.45
Egypt	1728.74	86.44	60.22	107.89	188.98	36.97
Eritrea	15.71	0.79	0.61	1.04	1.86	0.47
Ethiopia	244.43	12.22	9.61	14.36	31.96	6.88
Kenya	296.71	14.84	9.91	18.87	30.03	5.75
Libya	763.34	38.17	29.59	45.18	93.17	19.84
Madagascar	91.68	4.58	3.33	5.61	9.39	2.65
Malawi	48.31	2.42	1.90	2.84	4.73	1.18
Mauritius	101.64	5.08	3.67	6.24	9.64	2.65
Rwanda	46.10	2.31	1.77	2.74	5.26	0.75
Seychelles	12.86	0.64	0.49	0.76	1.02	0.37
Sudan	412.10	20.61	10.90	28.55	58.03	7.03
Swaziland	36.41	1.82	1.45	2.13	2.95	1.11
Uganda	142.21	7.11	4.83	8.97	15.80	2.86
Zambia	110.77	5.54	3.35	7.33	14.64	3.13
Zimbabwe	132.04	6.60	7.50	5.87	8.78	4.42
Total	4366.46	218.32	157.98	267.81		

Source: computed from World Bank development indicator 2011

Inflation (consumer price index)

Inflation rate is very high in COMESA region compared to other economically integrated regions of Africa. During 1990 to 2000, except Mauritius, Libya, Ethiopia and Seychelles, the remaining 15 of the COMESA member countries were experiencing more than 10% inflation rate. Countries like DRC, Sudan and Zambia experienced a highest inflation rate which was more than 100%. During 1994 DRC scored a 23,773.3 % inflation rate which was the highest inflation rate in the region until the Zimbabwean hyperinflation of 2007. After the year 2000 most of the COMESA member countries was experiencing a high inflation rate. Especially Zimbabwe scored the highest inflation (hyperinflation) record in the region between the years 2003 to 2009.

Table 3.2 inflation (consumer price index) in COMESA member countries (1990-2009) (percentage value)

Country	annual average 1990-2009	annual average 1990-1999	annual average 2000-2009	Maximum	minimum
Burundi	12.00	13.51	11.06	31.11	-1.37
Comoros	NA	NA	3.31	5.55	-0.13
DRC	1824.35	3367.18	110.09	23773.13	3.99
Djibouti	NA	NA	3.63	11.96	0.64
Egypt	9.12	10.49	7.54	19.75	2.27
Eritrea	NA	NA	NA	NA	NA
Ethiopia	9.41	8.04	10.91	44.39	-8.24
Kenya	13.68	17.42	10.91	45.98	1.55
Libya	3.22	6.71	-0.27	11.90	-9.80
Madagascar	13.70	17.33	10.51	49.08	-1.22
Malawi	21.91	31.02	14.25	83.33	7.95
Mauritius	6.60	7.61	5.96	13.49	2.55
Rwanda	2.65	-3.45	8.17	19.64	-100.00
Seychelles	5.34	2.04	9.42	36.97	-1.10
Sudan	43.03	80.41	8.66	132.82	4.87
Swaziland	8.53	9.54	7.92	13.77	3.45
Uganda	9.44	13.00	6.43	33.12	-0.29
Zambia	44.92	76.20	17.29	183.31	9.02
Zimbabwe	1504.57	28.57	3349.57	24411.03	17.36

Source: world development indicator 2011

NA: data not available

During 2009, while countries like Comoros, Djibouti, Libya, Mauritius and Swaziland experienced moderate inflation rates, countries such as D R Congo, Ethiopia, and Seychelles witnessed high inflationary rates.

Foreign direct investment

Foreign direct investment (FDI) has been the largest single source of external source of financing for developing countries. In order to reduce the resource gap arising from imbalances between domestic savings and domestic investment, countries are relying more and more on foreign saving especially by attracting FDI because of its merit in promoting economic growth in host countries. Attracting FDI has become a competition and depends on many factors.

Table 3.3 FDI in COMESA member countries (1990-2009) (US$ millions)

	total 1990-2009	annual average 1990-2009	annual average 1990-99	annual average 2000-09	Maximum	Minimum
Burundi	24.49	1.22	0.74	1.7	11.68	0
Comoros	32.3	1.61	0.39	2.84	9.09	-1.45
DRC	5,581.55	293.77	3.32	616.49	1,808.00	-44.35
Djibouti	736.63	38.77	2.6	71.32	227.65	1.42
Egypt,	54,546.05	2,727.30	746.09	4,708.52	11,578.1	237.4
Eritrea	382.75	27.34	77.39	7.32	148.52	-7.87
Ethiopia	3,787.60	210.42	84.51	311.15	545.26	0.17
Kenya	1,835.59	91.78	52.69	130.87	729.04	5.3
Libya	14,077.65	703.88	-18.87	1,426.63	4,689.00	-133
Madagascar	3,832.31	191.62	18.72	364.51	1,169.36	5.73
Malawi	799.23	39.96	12.74	67.18	170.03	-28.7
Mauritius	1,750.28	87.51	28	147.03	377.72	-27.68
Rwanda	372.33	18.62	3.6	33.63	118.67	0
Seychelles	1,565.57	78.28	33.49	123.06	274.98	9.01
Sudan	18,985.66	949.28	91.92	1,806.65	3,534.08	-31.13
Swaziland	1,148.71	57.44	64.39	50.48	152.72	-60.9
Uganda	5,236.68	261.83	90.83	432.84	792.31	-5.91
Zambia	6,549.69	327.48	141.79	513.18	1,323.90	34.3
Zimbabwe	1,338.84	66.94	90.51	43.37	444.3	-12.21
total (COMESA)	122583.89	6,175.07	1,524.85	10,858.78		

Source: World Bank development indicator (2011)

It can be seen from the above table that Egypt is by far the largest recipient of FDI in the COMESA region. For the period 1990-2009, Egypt managed to attract an average of 2,727.30 million of US dollars, followed by Sudan with an average of 949.28 million of US dollars, Libya with an average of 703.8 million of US dollars, Zambia with an average of 327.48 million of US dollars, Uganda with an average of 261.83 million of US dollars, Madagascar with an average of 191 million US dollars and Ethiopia with an average of 210.42 million of US dollars. The list is closed by small countries like Comoros and Burundi which managed to attract an average of FDI inflows of only less than 2 million of US dollars.

It is however to be remarked that Libya is ranked third among the largest recipients of FDI inflows in COMESA, despite some past years where it was undergoing an embargo, during which period some foreign investors were disinvesting, experiencing hence outflows instead of FDI inflows. Although this shows that Libya is an upcoming attractive country for foreign investors, , the political instability after the downturn of the regime of President Gaddafe (2011) may led to unfavorable condition for foreign investors. Some countries like Mauritius, Seychelles and Swaziland, though small, are attracting some significant FDI because of some economic reforms undertaken that have improved their investment climate. And Rwanda, though among the bottom three (with only an average of 18.62 million of US dollars), should be another upcoming attractive country for FDI in the region because of some considerable efforts made to attract foreign investors, including the country's policies of zero tolerance on corruption (Export-import Bank of India, 2011).

But because in some past years, the attractiveness of FDI might have been hindered in some countries by some exogenous factors like wars, embargoes, political instability and other factors, leading to outflows instead of inflows.

The uneven distribution of FDI inflows in COMESA can be in general explained by differences in host countries attractive conditions economic or political, like the differences in endowments in natural resources, skilled labor and infrastructure, differences in market size, differences in costs of labor but also the differences in the host government's policy framework, business facilitation activities and business conditions. It should also be noted that privatization programmes undertaken in some countries helped them attract some FDI resulting from Cross-border Mergers & Acquisitions.

Current account balance

With the exception of Libya and Egypt, almost all the countries in the COMESA region have registered large and persistent current account deficits for the past two decades. The COMESA member countries overall annual average current account position for the period 1990-2009 was 3.1 billion. But without Libya the overall annual average current account deficit of the COMESA member countries was increased to US$ -5.5 billion for the same period. As is evident from this figure, except Libya, the individual member states of the bloc have been registering persistent deficits in the current account balance.

Table 3.4 current account balance in COMESA member countries (US$ billions)

Country	annual average 1990-2009	annual average 1990-1999	annual average 2000-2009	Maximum	Minimum
Burundi	-0.07	-0.05	-0.10	0.01	-0.24
Comoros	-0.03	-0.03	-0.02	0.01	-0.06
DRC	-0.45	-0.38	-0.52	0.05	-2.03
Djibouti	-0.03	0.00	-0.06	0.02	-0.24
Egypt	0.49	0.12	0.86	3.67	-4.42
Eritrea	-0.03	-0.04	-0.02	0.08	-0.17
Ethiopia	-0.43	-0.12	-0.73	0.19	-1.62
Kenya	-0.43	-0.25	-0.61	0.29	-2.01
Libya	8.58	2.42	14.73	37.08	-0.84
Madagascar	-0.49	-0.26	-0.72	-0.06	-1.94
Malawi	-0.21	-0.17	-0.25	0.04	-0.42
Mauritius	-0.16	-0.07	-0.25	0.28	-0.97
Rwanda	-0.12	-0.14	-0.09	0.04	-0.38
Seychelles	-0.11	-0.04	-0.17	0.01	-0.45
Sudan	-2.40	-1.39	-3.40	-0.70	-7.31
Swaziland	-0.05	-0.02	-0.09	0.09	-0.42
Uganda	-0.32	-0.27	-0.37	0.01	-1.24
Zambia	-0.33	-0.17	-0.49	0.54	-1.05
Zimbabwe	-0.41	-0.31	-0.51	0.42	-1.43
COMESA	-1.16	7.20	3.02	20.944	-13.402
without Libya	-3.58	-7.54	-5.56	-0.246	-22.782

Source: international monetary fund database 2011

According to the data (IMF 2011), significant differences can be seen among the countries in terms of trends of the current account balance. For example During the period 1990-2009 the average annual current account balance of Sudan was US$ -2.40 billion but for the same period the average annual current account balance of Libya was US$ 8.58 billion. This gap was widened for the period 2000-2009. During this period Libya scored current account surplus of US$ 14.73billion annually on average but Sudan scored current account deficit of US$ 3.4 billion annually on average. According to Export-Import Bank of India (2010), this is mainly driven by the trade balance of the countries.

Real GDP growth rate

The real GDP growth in COMESA member countries is at varying stage. During the period 1990-1999 the real GDP growth rate of the region was 2.24% annually on average (table 3.5). But due to the wide difference in real GDP growth rate of the member countries, the real GDP growth rate of the region during the period 2000-2009 was only 3.68% annually on average.

Although the annual average growth rate of the region was less than 3% during the period 1990-1999, some countries like Uganda, Seychelles, Mauritius, Egypt, Malawi and Sudan scored more than 4% percent average annual real GDP growth rate. But due to the political instability, DRC and Burundi experienced a negative real GDP growth during the same period. Although Rwanda has a robust and consistent real GDP growth since

1995, due to the 1994 civil war the country was forced to score less than 3% real GDP growth rate annually on average for the period 1990-2009.

Table 3.5 real GDP growth in COMESA member countries (%)

COUNTRY	Annual average GDP growth 1990-2009 (%)	Annual average GDP growth 1990-99 (%)	Annual average GDP growth 2000-09(%)	Minimum (%)	Maximum (%)
Burundi	0.63	-1.43	2.69	-8.00	5.12
Comoros	1.77	1.55	1.99	-5.40	8.53
DRC	-1.05	-5.47	3.37	-13.47	6.64
Djibouti	0.95	-1.99	3.60	-6.62	5.80
Egypt	4.61	4.34	4.88	1.08	7.16
Eretria	NA	NA	-0.53	-13.12	8.88
Ethiopia	5.38	2.66	8.10	-8.67	13.57
Kenya	2.94	2.24	3.63	-0.80	7.01
Libya	NA	NA	4.32	-4.30	13.00
Madagascar	2.39	1.62	3.16	-12.67	9.78
Malawi	4.15	4.13	4.16	-10.24	16.73
Mauritius	4.72	5.16	4.27	1.24	9.03
Rwanda	4.87	2.09	7.65	-50.25	35.22
Seychelles	3.40	4.86	1.93	-5.89	11.96
Sudan	5.58	4.41	6.74	-5.47	11.29
Swaziland	3.39	3.72	3.07	0.40	10.07
Uganda	7.03	6.88	7.18	3.14	11.52
Zambia	2.79	0.37	5.21	-8.63	6.95
Zimbabwe	-1.43	2.63	-5.48	-17.70	10.36
COMESA	3.07	2.24	3.68	-1.57	5.79

Source: World Bank development indicator 2011

As a result of an increase of world oil price, the real GDP growth of oil exporting countries[5] was increased for the period 2000-2009. Ethiopia and Rwanda a also scored more than 7 percent annual real GDP growth rate for the same period. Other countries like Burundi, Comoros, Eretria, Seychelles, and Zimbabwe, have experienced stagnation or even recession during 2000-2009. Especially due to the hyperinflation of the economy from 2003 to 2009, Zimbabwe scored -5.48 percent of recession annually on average during 2000-2009. Generally the real GDP growth of COMESA was improved during 2000-2009 (3.68% annually on average) compared to the period 1990-1999.

[5] Sudan and Libya, Egypt also started export of natural gas since 2005

CHAPTER FOUR

4. Capital Flight and Major Macroeconomic Indicators in COMESA Member Countries

Several studies have estimated the magnitude of capital flight from developing countries. The results of estimations of capital flight differ in techniques of measure used, period considered and sample taken into account.

As indicated in the methodology section, this study estimates capital flight from 13 member countries of COMESA: Burundi, Ethiopia, Kenya, Madagascar, Malawi, Sudan, Rwanda, Uganda, Swaziland, Seychelles, Zambia and Zimbabwe.

Table 4.1 capital flight from COMESA member countries (1990-2009) (US$ 000,000)

Year	Sum (1990-2009	Annual average	maximum	Minimum	Rank
Burundi	1,123.63	66.10	282.70	(788.36)	12
DRC	15,789.87	1,127.85	3,505.22	236.60	3
Ethiopia	17,452.54	918.55	3,077.40	(1,824.75)	2
Kenya	8,079.17	673.26	2,723.34	(601.27)	7
Madagascar	12,509.98	781.87	3,351.49	(1,325.37)	4
Malawi	1,335.13	95.37	669.95	(1,969.00)	11
Rwanda	762.47	42.36	488.86	(994.00)	13
Seychelles	5,788.36	321.58	867.85	50.30	8
Sudan	37,670.57	3,139.21	9,386.99	94.90	1
Swaziland	1,502.38	93.90	239.70	(395.88)	10
Uganda	4,803.38	300.21	2,101.38	(2,650.11)	9
Zambia	9,256.41	841.49	2,596.48	(1,330.08)	6
Zimbabwe	10,211.40	600.67	1,885.60	(532.73)	5
	126,285.29				

Source: computed from World Bank Development indicator 2011 (World Bank Residual method)

The above table shows the total stock of capital flight of each country from 1990 – 2009, measured by the indirect measure of World Bank residual method. With this measure, it revealed out that the selected 13 COMESA member countries lost US$126,285 billion as a form of capital flight during the period 1990-1999.

But at this point a natural question may arise is: is capital flight more serious in COMESA member countries compared to the other economically integrated zone of Africa? Although this paper doesn't estimate the capital flight from other economic integration of Africa, Boyrie (2010) estimates capital flight from COMESA and other economic integration of Africa for the period 1990-2005.

Table 4.2 capital flight from different economic area of Africa (1990-2005) (US$ million)

Economic area	Sample counties	Capital flight	Rank
Economic Community of Central African States (ECCAS)	All countries	$31,216.64	6th
South Africa Development Community (SADC)	All countries	$61,103.28	3rd
Southern African Customs Union (SACU)	All countries	$6,767.18	11th
Intergovernmental Authority on Development (IGAD)	All countries	$43,814.59	5th
Indian Ocean Commission (COI)	All countries	$10,911.91	9th
Economic community of the great lakes countries	All countries	$3,970.21	12th
Common Market for Eastern and Southern Africa (COMESA)	All countries	$122,535.35	1st
Arab League	All countries	$91,849.52	2nd
Arab Maghreb Union (UMA)	All countries	$55,559.33	4th
Economic Community of West African States (ECOWAS)	All countries	$19,873.46	8th
West African Economic and Monetary Union (UEMOA)	All countries	$21,762.36	7th
Liptako-Gourma Authority (LGA)	All countries	$9,976.80	10th
Mano River Union (MRU)	All countries	$2,197.13	13th

Source: *African Journal of Accounting, Economics, Finance and Banking Research Vol. 6. No. 6. 2010. Maria E. de Boyrie*

The data presented on the above table revealed that capital flight was very huge in COMESA member countries compared to other economic area of Africa. The COMESA member countries are scoring a promising economic growth in recent years (World Bank 2011). But no matter how hard they try to fight their way out of absolute destitution and poverty, they will be swimming upstream against the illegal capital leakage (Global Financial Integrity 2011). Although a finding from Gusarova (2009) revealed that capital flight has a negative impact on economic growth, the COMESA member countries are scoring rapid illegal out flow of capital and an increasing economic growth simultaneously. But as the capital flight data (see table 4.1) and the economic growth data (World bank 2011) revealed that there is a varying stage of capital flight, economic growth and other macroeconomic indicators (FDI, GDP etc) among the member countries. Therefore this section provides answer for the questions; does member countries experience an increasing economic growth and capital flight growth simultaneously? How is the link between capital flight and FDI and GDP in the member countries? Which country is taking a big share of the capital flight from the member countries? And after having this question, this section also investigates the prevailing political condition of the countries when they experience a higher capital flight.

Burundi

One of the world's poorest countries, Burundi is struggling to rebuild after a decades-long civil war that has only recently ended and categorized as a highly risky country in terms of political instability (Economist Intelligence Unit (2011)). The economy contracted severely during the strife due, in part, to an embargo (1996-99) that cut off external aid and killing foreign direct investment in the country (The North-South Institute 2011). During the period 1990-1999, the economy was scoring a negative 1.43 percent on average economic growth due to civil war in the country and the 1996-1998 embargoes. Although the country was having a negative economic growth, the country was losing 119.88 million of capital annually on average as the form of capital flight. In addition to this at this period the foreign direct investment flow was very low compared to other Sub-Saharan least developing countries. Especially from 1996-1998 the amount of foreign direct investment for Burundi was almost zero.

Table 4.3 capital flight and major macroeconomic indicator in Burundi

Variables	Sum (000,000) (1990-2009)	Annual average from 1990-1999 (000,000)	Annual average from 2000-2009 (000,000)
Capital flight	1,123.63	119.8778	5.59125
GDP	18,243.62	979.04	845.32
FDI	24.49	0.74	1.70
Economic growth		-1.43	2.69

Source: capital flight- computed from World Bank Development indicator 2011 (World Bank Residual method). GDP, FDI and economic growth- World Bank development indicator 2011

During the period 2000-2009, the average annual capital flight was decreased to 5.59 million. Though the economy was scoring a positive economic growth, the growth rate of the economy was still very low. The amount of foreign direct investment flow for the country is still very low compared to other Sub-Saharan least developing countries. Generally from 1990-2009, the country lost US$ 1,123.63 million of capital as a form of capital flight, scored US$ 18.24 billion of GDP and earn US$ 24.49 million of FDI which puts the country on the last rank of the COMESA member countries.

Democratic republic of Congo

DRC lost an estimated US$15.79 billion due to capital flight from 1990 to 2009. The amount revealed that DRC has the third highest stock of capital flight from the sample. From 1990-1999 DRC was losing US$768.40 million per year on average in the form of capital flight. But the annual average capital flight was doubled from the year 2000-2009.

Table 4.4 capital flight and major macroeconomic indicators in DRC

Variables	Sum (000,000) (1990-2009)	Annual average from 1990-1999 (000,000)	Annual average from 2000-2009 (000,000)
Capital flight	15,789.87	768.40	1,487.30
GDP	146,891.92	6,901.16	7,886.58
FDI	5,581.55	9.56	608.49
Economic growth (%)		-5.47	3.37

Source: capital flight- computed from World Bank Development indicator 2011 (World Bank Residual method).GDP, FDI and economic growth from World Bank development indicator 2011

DRC has had a history of civil unrest, lack of governance, rampant corruption, as well as economic and political instability. During 2011 the country categorized as a very high risky county in terms of political instability (Economist Intelligence Unit 2011). Because of these reasons the country was not in a position of attracting FDI before 2000. From 1990-1999 the annual average FDI was US$ 9.56 million. After years of civil conflict and political instability, the DRC has started making some economic and political progress since 2001. Prudent macroeconomic policies resulted in rapid disinflation and stabilization of the exchange rate while implementation of structural reforms made the economy more open, reduced major price distortions and strengthened macroeconomic

management (Global Financial integrity 2011). These policies together with the improved confidence fostered by progress on the political and security fronts, including the formation of a transition government of national unity in 2002, helped increase investment and renew growth (averaging nearly 3.7 percent during 2000-09). The annual average FDI is increased to 608.9 from 2000-2009. The country is often cited as an example of the "paradox of plenty" in that it is extremely rich in natural resources (80% of world wide resources of Cobalt, 10% of world wide resources of copper) while its population continues to suffer from extreme poverty (80% of the Congolese population lives of less than US$ 0.20 a day). (Dav Kar etal (2010))

Ethiopia

The Ethiopia economy has consistently shown robust economic growth averaging 8.10 percent for the period 2000-2009 which is very high compared to the average economic growth rate of the period 1990-1999 (2.66 percent). Even the economy has slowed down during 2009 on account of the global recession; it grown at a relatively robust growth rate of 8.79 percent during the year. Although the country is having a progressive economic growth in recent years, the country is losing a huge amount of money as a form of capital flight. For the period 1990-2009 the country lost more than US$ 17.45 billion. This amount puts the country on the second rank from the selected sample COMESA member countries. From 1990 up to 1999 the country was losing US$ 465.76 million annually on average. But this amount was highly increased for the period 2000-2009 to US$ 13.26 billion annually on average. More worrying is that the data shows Ethiopia's losses due to capital flight are on the rise. The scope of Ethiopia's capital flight is so severe that the

amount of capital flight US$3.26 billion (see appendix I A) estimate greatly exceeds the US$2 billion value of Ethiopia's total exports in 2009 (IMF 2011).

Table 4.5 capital flight and major macroeconomic indicators in Ethiopia

Variables	Sum (000,000) (1990-2009)	Annual average from 1990-1999 (000,000)	Annual average from 2000-2009 (000,000)
Capital flight	17,452.54	465.7556	1,326.074
GDP	244,433.00	9,605.665	14,837.64
FDI	3,787.60	84.51	311.15
Economic growth		2.66	8.10

Source: capital flight- computed from World Bank Development indicator 2011 (World Bank Residual method) GDP, FDI and economic growth from World Bank development indicator 2011

Though the country is suffering from a very high and growing capital flight, the country is receiving a high amount of foreign direct investment. From 1990-2009 the country received US$ 3.79 billion of foreign direct investment. From this total investment the period 2000-2009 took the big share. For the period 1990-1999 the country was receiving US$ 84.51 million annually on average. But this amount was increased for the period 2000-2009 to US$ 311.15 million annually on average.

Kenya

Kenya, the most industrialized country from east Africa, lost 8.08 billion of capital in the form of capital flight for the period 1990-2009. At this period, 1990-2009 the country scored 244.43 billion of GDP which is very high compared to the East African countries.

Although the economy was not performing well for the period 1990-1999, the capital flight was relatively low in this period. At this period, especially from 1991 to 1993, Kenya had its worst economic performance since independence (World Bank 2011). Growth in GDP stagnated, and agricultural production shrank, inflation highly increased, and the government's budget deficit was very high (World Bank 2011). As a result of these combined problems, bilateral and multilateral donors suspended program aid to Kenya in 1991. In 1993, the Government of Kenya began a major program of economic reform and liberalization. A new minister of finance and a new governor of the central bank undertook a series of economic measures with the assistance of the World Bank and the International Monetary Fund (IMF). As part of this program, the government eliminated price control and import licensing, removed foreign exchange control, privatized a range of publicly owned companies, reduced the number of civil servants, and introduced conservative fiscal and monetary policies. Though, from 1994 to 1996, Kenya's real GDP growth showed an improvement (World Bank 2011), the economy started going down in 1997 and stayed up to 1999 because of adverse weather conditions and reduced economic activity prior to general elections in December 1997.

Generally, from 1990-1999 the country was growing at 2.24 percent and receiving US$ 52.62 million of FDI which are very low compared to the period 2000-2009.

Table 4.6 capital flight and major macroeconomic indicators from Kenya

Variables	Sum (000,000) (1990-2009)	Annual average from 1990-1999 (000,000)	Annual average from 2000-2009 (000,000)
Capital flight	8,079.17	164.37	643.547
GDP	296,708.35	9,906.05	19,764.78
FDI	1,835.59	52.69	130.87
Economic growth (%)		2.24	3.63

Source: capital flight- computed from World Bank Development indicator 2011 (World Bank Residual method). GDP, FDI and economic growth from World Bank development indicator 2011

Kenya has enjoyed strong economic growth, which averaged 5.4 percent during 2002- 07 (see appendix). But the economy exhibit poor real GDP growth, averaging 1.5 percent and 2.1 percent in 2008 and 2009 respectively, on account of drought and global rescission. Generally, for the period 2000-2009, the county's economy was growing by 3.63 percent on average. The country's GDP increased from US$ 9.9 billion (1990-2000) to 19.76 billion (2000-2009) annually on average. But the country lost US$ 643.55 million of capital in the form of capital flight annually on average for the period 2000-2009. And the amount of flow of FDI also increased from US$52.69 million (1990-1999) to 130.87 million (2000-2009) annually on average.

Madagascar

Madagascar, the world's leading producer of vanilla and accounts for about half the world's export market, lost US$ 12.51billion of capital in the form of capital flight for the period 1990-2009. This amount constitutes 13.64 percent of the country's total GDP of the period 1990-2009. The amount of FDI received at this period was less than by US$ 8.68 billion of the capital flight.

For the period 1990-1999 the growth rate of Madagascar was less than 2 percent. Especially, growth in output in 1992-97 (World Bank 2011) averaged less than the growth rate of the population. Growth has been held back by a decline in world coffee demand, and the erratic commitment of the government to economic reform. At this period the amount of FDI (US$ 18.72 averaged annually) was by far less than the amount of capital flight (US$ 455.78) from the country.

Table 4.7 capital flight and major macroeconomic indicators in Madagascar

Variables	Sum (000,000) (1990-2009)	Annual average from 1990-1999 (000,000)	Annual average from 2000-2009 (000,000)
Capital flight	12,509.98	455.78	795.218
GDP	91,684.25	3,326.31	5,842.11
FDI	3,832.31	18.72	364.51
Economic growth (%)		1.62	3.16

Source: capital flight- computed from World Bank Development indicator 2011 (World Bank Residual method) GDP, FDI and economic growth from World Bank development indicator 2011

Madagascar has enjoyed a strong economic growth, averaged 4.61 percent during 1997-2001. But a six-month political crisis triggered by a dispute over the outcome of the presidential elections held in December 2001 virtually halted economic activity in much of the country in the first half of 2002. Because of this real GDP dropped by 12.7 percent in 2002 (World Bank 2011), inflows of foreign investment dropped sharply. After the 2002 the country started again enjoying positive economic growth until it is dropped in 2009 because of global recession (World Bank 2011). Generally for the period 2000-2009 the country growing by 3.16 percent averaged. But the amount of capital flight at this period was very high compared to the period 1990-1999. Though the country received 364.51 million of FDI, the country lost 795.18 million of capital in the form of capital flight annually on average for the period 2000-2009.

Malawi

Malawi, the landlocked country in south central Africa ranks among the world's least developed countries, lost US$ 1.34 billion of capital in the form of capital flight for the period 1990-2009. This amount is greater than the amount of FDI flow by US$ 535.9 million during the period. The amount of capital lost during this period take 2.76 percent of share from the country's GDP.

Although the economy scored 4.13 percent averaged growth for the period 1990-1999, the country's economy was dropped by 7.33 and 10.24 percent for the years 1992 and 1994 respectively. During this period, the country was losing annually on average US$ 134.04 million of capital in the form of capital flight. This amount exceeds the amount of FDI flow by US$ 121.33 annually on average. And the amount of the capital flight during period takes 7 percent of the annual average GDP of the country.

Table 4.8 capital flight and major macroeconomic indicators in Malawi

Variables	Sum (000,000) (1990-2009)	Annual average from 1990-1999 (000,000)	Annual average from 2000-2009 (000,000)
Capital flight	1,335.13	134.07	-0.557
GDP	48,311.99	1,900.46	2,930.73
FDI	799.23	12.74	67.18
Economic growth (%)		4.13	4.16

Source: Source: capital flight- computed from World Bank Development indicator 2011 (World Bank Residual method) GDP, FDI and economic growth from World Bank development indicator 2011

Due to the higher inflow of foreign capital during 2000 and 2006, the average annual capital flight of the period 2000-2009 was negative. But the most worrying thing is, the country's capital flight is rising rapidly since 2007 (Global Financial Integrity 2011). During this period the country's economy was growing by 4.16 percent on average and the country was receiving annual averaged US$ 67.18 million of FDI flow.

Rwanda

Rwanda, the most densely populated country in Africa; is landlocked; and has few natural resources and minimal industry, lost US$ 762.47 million of capital in the form of capital flight for the period 1990-2009. During this period the country receive US$ 372.33 million of FDI which less than half of the capital flight. At this period Rwanda scored US$ 46.1 billon of GDP totally.

The 1994 genocide destroyed Rwanda's fragile economic base, severely impoverished the population, particularly women, and eroded the country's ability to attract private and external investment. During the 5 years of civil war that culminated in the 1994 genocide, economic growth was negative in 4 out of 5 years, posting a dramatic decline by 50.25 percent in 1994, the year of the genocide. During this civil war the country's capital flight was also very high except 1993 and 1994 (see appendix I A). But after 1994, the increase in GDP for consecutive years signaled the resurgence of economic activity (World Bank 2011). Although the economic performance was faced challenges during the first five years of the 1990's, the country enjoyed a positive economic growth (2.09 percent) for the period 1990-1999. During this period (1990-1999) the amount of capital flight was US$ 73.22 million annually on 65average. But the amount of capital inflow in the form of FDI (US$ 3.6 million annually on average) for the county was very low compared to the capital flight.

Table 4.9 capital flight and major macroeconomic indicator in Rwanda

Variables	Sum (000,000) (1990-2009)	Annual average from 1990-1999 (000,000)	Annual average from 2000-2009 (000,000)
Capital flight	762.47	73.22	3.027
GDP	46,100.12	1,770.72	2,839.29
FDI	372.33	3.60	33.63
Economic growth		2.09	7.65

Source: capital flight- computed from World Bank Development indicator 2011 (World Bank Residual method) GDP, FDI and economic growth from World Bank development indicator 2011

During the period 2000-2009 the amount of capital flight decreased to US$ 3.02 million annually on average. At this period the economic growth started after the 1994 genocide continued until it is slowed by the global recession of 2009. Generally at this period the country was growing by 7.65 percent annually on average. The amount of FDI flow was less than 11 times the amount of capital left from the country illegally.

Seychelles

Seychelles, the smallest country in Africa, lost totally 5.79 billion of capital in the form of capital flight for the period 1990-2009. This amount is 45 percent of the total GDP earned by the country during the same period. But the amount of FDI received during the same period was 3.7 times less than the amount of capital flight.

Seychelles was losing annually averaged US$ 110.23 million of capital in the form of capital flight during the period 1990-1999. The amount of capital flight during this period exceeds the flow of FDI by US$ 76.74 million annually on average. Although the country experienced an average of a positive economic growth (averaged 4.84) during this period, the GDP growth was dropped by 0.8 and 083 percent during 1994 and 1995 (see appendix I B).

Table 4.10 capital flight and major macroeconomic indicators in Seychelles

Variables	Sum (000,000) (1990-2009)	Annual average from 1990-1999 (000,000)	Annual average from 2000-2009 (000,000)
Capital flight	5,788.36	110.23	468.606
GDP	12,863.61	494.38	791.98
FDI	1,565.57	33.49	123.06
Economic growth		4.86	1.93

Source: Source: capital flight- computed from World Bank Development indicator 2011 (World Bank Residual method). GDP, FDI and economic growth from World Bank development indicator 2011

During the period 2000-2009, the average annual capital flight of the country was more than 50 percent of the averaged GDP of the country. The economic growth also scored a negative growth rate in four out of ten years. Especially in 2003 the country's economy dropped by 5.87 percent. Due to the global recession in 2008 and 2009 the country experienced a negative and less than 1 percent economic growth respectively. Like the

period of 1990-2000, the annual average capital flight of the country during 2000-2009 was 3.8 times the annual average flow of FDI to the country.

Sudan

Sudan is a country which is experiencing the highest capital flight from the sample of COMESA member countries (table 4.1). For the period 1990-2009 Sudan lost more than US$ 37 billion of money in the form of capital flight. This amount take 10.94 percent share from the country's total GDP for the same period. Although there was Darfur conflict, two decades of civil war in the south, and lack of basic infrastructure in large areas, the country was in a good position in attracting FDI. For the period 1990-2009 the country received US$ 18.99 billion of FDI.

During the period 1990-1999, Sudan was losing 138.52 million of capital annually on average in the form of capital flight. This amount is very low compared to the period 2000-2009. During this period the amount of FDI flow annually on average was US$ 91.92 million. On 1997, the U.S. government imposed a trade embargo against Sudan and a total asset freeze against the Government of Sudan. The U.S. believed the Government of Sudan gave support to international terrorism, destabilized neighboring governments, and permitted human rights violations. A consequence of the embargo is that U.S. corporations cannot invest in the Sudan oil industry, so annual average FDI flow for the country decreased during the period 1990-1999. But the country was enjoying a positive economic growth averaged 4.41 percent during the period 1990-1999.

Table 4.11 capital flight and major macroeconomic indicators in Sudan

Variables	Sum (000,000) (1990-2009)	Annual average from 1990-1999 (000,000)	Annual average from 2000-2009 (000,000)
Capital flight	37,670.57	138.52	3628.537
GDP	412,104.53	10,895.68	30,314.77
FDI	18,985.66	91.92	1,806.65
Economic growth		4.41	6.74

Source: capital flight- computed from World Bank Development indicator 2011 (World Bank Residual method) GDP, FDI and economic growth from World Bank development indicator 2011

During the period 2000-2009 the annual capital flight was very high. During this period the amount of capital left the country illegally reached averaging US$ 3.63 billion annually. This amount takes 12 percent share of GDP annually on average. Although the amount of illegal flow of capital highly increased, attracting of foreign capital in the form of FDI also increased on the same period. During the period the country received US$ 1.81 billion of FDI annually on average.

Swaziland

During the period 1990-2009 Swaziland lost 1.5 billion of capital in the form of capital flight. The Swaziland economy, which is very linked with the economy South Africa, scored US$ 36.41 billion of GDP for the same period attracted 1.15 billion of foreign capital in the form of FDI. The amount of capital flight exceed the amount of FDI US$ 353.67 million.

Swaziland was enjoying a positive economic growth since 1990. From 1990-1999 the country was growing by 3.72 percent on average. During this period the country was losing 61.84 million of capital in the form of capital flight. But the foreign capital inflow in the form of FDI was greater than by US$ 2.55 million from the capital flight

Table 4.12 capital flight and major macroeconomic indicators in Swaziland

Variables	Sum (000,000) (1990-2009)	Annual average from 1990-1999 (000,000)	Annual average from 2000-2009 (000,000)
Capital flight	1,502.38	61.84	88.398
GDP	36,414.05	1,446.60	2,194.80
FDI	1,148.71	64.39	50.48
Economic growth		3.72	3.07

Source: capital flight- computed from World Bank Development indicator 2011 (World Bank Residual method). GDP, FDI and economic growth from World Bank development indicator 2011

Although the country continued enjoying positive economic growth during the period 2000-2009, year 2002, 2002 and 2009 scored less than two percent. Especially due to the global recession in 2009, the country economic growth was dropped to less than 1 percent. Generally, during this period, the country scored an economic growth which is less than by 0.65 percent from the period 1990-2000. And flow of annual averaged foreign capital in the form of FDI to the country was also decreased by US$ 13.09 million during 2000-2009. But the amount of capital left the country in the form of capital flight increased by 26.55 million annually on average.

Uganda

Uganda, although the economy has enjoyed two decades of uninterrupted economic growth (1990-2009), the country has lost 4.8 billion of capital in the form of capital flight during the same period. But the amount of foreign capital flight in the form of FDI was greater than the amount of capital flight during this period.

Even though the amount of FDI flow for the country was greater than the capital flight for the period 1990-2009, the annual average capital flight of the period 1990-1999 was greater than the amount of FDI by US$ 27.8 million annually on average. During this period the country was a positive economic growth except the year 1990 which was GDP dropped by 5.47 percent.

Table 4.13 capital flight and major macroeconomic indicators in Uganda

Variables	Sum (000,000) (1990-2009)	Annual average from 1990-1999 (000,000)	Annual average from 2000-2009 (000,000)
Capital flight	4,803.38	118.63	361.708
GDP	142,211.84	4,834.76	9,386.43
FDI	5,236.68	90.83	432.84
Economic growth		4.41	7.18

Source: capital flight- computed from World Bank Development indicator 2011 (World Bank Residual method). GDP, FDI and economic growth from World Bank development indicator 2011

The Ugandan economy has consistently shown robust economic growth averaging 7.18 percent for the period 2000-2009. During the same period the annual average FDI flow of

the country exceed the capital flight by US$ 71.1 million annually on average. During this period the average annual capital flight amount only take less than 4 percent of the average annual GDP.

Zambia

Over the last three decades, Zambia has been particularly vulnerable to capital flight but, due to a recent audit of the country's largest copper mining company, Mopani Copper Mines (MCM), Zambia now offers valuable insights into the ***modus operandi*** of tax evasion by multinational corporations. (Erin Torkelson (2011))

During the period 1990-2009, Zambia has lost totally US$ 9.26 billion of capital in the form of capital flight. This amount is greater than the amount of FDI received by the country by US$ 2.7 billion and it takes 8.35 percent of the total GDP of the country during the period 1990-2009.

Although the Frederick Chiluba government (1991–2001), which came to power after democratic multi-party elections in November 1991, was committed to extensive economic reform, during the period 1990-1999 the Zambian economic growth was less than 1 percent on average. The annual average FDI flow the country was less than by US$ 129.14 million from capital flight during the same period.

Table 4.14 capital flight and major macroeconomic indicators in Zambia

Variables	Sum (000,000) (1990-2009)	Annual average from 1990-1999 (000,000)	Annual average from 2000-2009 (000,000)
Capital flight	9,256.41	270.93	654.711
GDP	110,766.73	3,349.49	7,727.18
FDI	6,549.69	141.79	513.18
Economic growth		0.37	5.21

Source: capital flight- computed from World Bank Development indicator 2011 (World Bank Residual method). GDP, FDI and economic growth from World Bank development indicator 2011

Due to the surging copper prices since 2004 rapidly rekindled international interest in Zambia's copper sector, the flow of FDI during the period 2000-2009 reached US$ 513.18 million annually on average. Although the Zambian economy has consistently shown robust economic growth averaging 5.12 percent for the period 2000-2009, the amount of capital flight from the country was increased to US$ 654.71 million annual on average for the same period and the country included in the top ten of the world highest capital exporter which is released by the report of global financial integrity in 2011

Zimbabwe

Zimbabwe, experienced hyperinflation from 2003-2009 (World Bank 2011), lost US$ 10.21 billion of capital in the form of capital flight for the period 1990-2009. This amount constitutes 7.73 percent of the country's GDP for the same period. During this period, although the country was not in a position in attracting FDI since 2003, the

country received US$ 1.33 billion of foreign capital in the form of FDI. In 2009/10 the country is also categorized as the very high risk country in terms of political instability (Economist Intelligence Unit 2011).

During the period 1990-1999 the out flow of capital in the form of capital flight from the country was very. The country was losing US$ 966.31 million annually on average of capital in the form of capital flight from 1990-1999. This amount was 10.77 times the amount of foreign capital received annually on averaged in the form of foreign direct investment for the same period. But during this period the country was enjoying a positive economic growth except for the years 1992 and 1992. On average the country was growing by 2.63 percent (appendix).

Table 4.15 capital flight and major macroeconomic indicators in Zimbabwe

Variables	Sum (000,000) (1990-2009)	Annual average from 1990-1999 (000,000)	Annual average from 2000-2009 (000,000)
Capital flight	10,211.40	966.31	54.83
GDP	132,042.69	7,499.95	5,704.32
FDI	1,338.84	90.51	43.37
Economic growth		2.63	-5.48

Source: capital flight- computed from World Bank Development indicator 2011 (World Bank Residual method). GDP, FDI and economic growth from World Bank development indicator 2011

The economy of Zimbabwe has shrunk significantly after 2000, resulting in a desperate situation for the country and widespread poverty. Hyperinflation has been a major

problem from about 2003 to April 2009, when the country suspended its own currency (World Bank 2011). The economy deteriorated from one of Africa's strongest economies to the world's worst. During the period 2000-2009 the country's economic growth was negative in 7 out of 10 years, posting a dramatic decline by 17..16 percent and 17.70 percent in 2003 and 2008, the years of the starting and the peak years of hyperinflation respectively. But during this period the amount capital flight was very low compared to the period 1990-1999. Especially due to the Zimbabwe dollar was officially abandoned on April 12, 2009 and the country started dollarization process[6], the country received higher capital inflow in 2009. In the same year (2009), Zimbabwe recorded a positive economic growth for the first time since the start of hyperinflation (2003). Like capital flight FDI also decreased due to sanctions imposed by the Western powers. Generally, during the period 2000-2009, the country's economic growth was dropped by averaging 5.48 percent.

[6] Reserve Bank of Zimbabwe (2011)

CHAPTER FIVE

5 Methodology and Empirical Result

5.1 Methodology

As discussed in the previous chapter capital flight is a huge problem in COMESA member countries and as the report of Global Financial Integrity (2011) the growth rate of capital flight from COMESA member countries is increasing. Therefore this research paper examines the determinants of capital flight from COMESA member countries for the period 1990-2009. The sample include 13 COMESA member countries, Burundi, Democratic republic of Congo, Ethiopia, Kenya, Madagascar, Malawi, Rwanda, Sudan, Swaziland, Uganda, Zambia and Zimbabwe.

5.1.1 Nature and sources of the data

a. Dependent variable

In this study all the data used are secondary data. Capital flight, which is the dependent variable, is estimated using the World Bank residual method. The Residual Method estimates net unrecorded capital outflows by considering both sources and uses of funds. The reason that the paper chose this method is that the residual method defines capital flight by considering all resident capital outflows because what really matters is that a country confronted with a lack of financial resources to finance long-term development, experiences an adverse impact on its future growth prospects when net capital outflows occur (Hermes et al, 2002a). The choice of the residual method is also motivated by the

fact that, according to Hermes et al (2002a), the other methods have important drawbacks. Indeed, those authors argue that the Dooley method and the hot money method are conceptually wrong in so far as the distinction between normal and abnormal capital outflows is impossible on an empirical basis. They claim also that the asset method is too narrow.

The World Bank residual method estimation includes changes in the net external position of the official sectors, net Foreign Direct Investment (FDI) flows, financing of the current account, and the change in foreign exchange reserves. All data (1990-2009) used to estimate capital flights under this method are obtained from World Bank's *World Development Indicators 2011*. According to this method, capital flight during a year *t* and for a country i is generated as follows:

$$CCF_{it} = (\Delta DET_{it} + INDE_{it}) - (CC_{it} + \Delta RES_{it}) \qquad (1)$$

Where:

CCF= capital flight according to the residual method

ΔDET=*change in total debt outstanding*

INDE=net foreign direct investment

CC=current account balance

ΔRES=*change in foreign reserve*

b. Independent variables

- ✓ As a measure of capital inflow the paper has used annual foreign direct investment which was generated from World Bank Development indicator 2011.
- ✓ As indicator of financial development, the research paper used amount credit available for private sectors as a percent of GDP. The data was collected form world Bank Development indicator 2011
- ✓ Corruption control index be used as a measure of governance and institutional quality. The data was collected from worldwide governance indicator 2011. The index reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests.
- ✓ As a measure of political risk and war, the paper has used political stability and no violence. The data was collected from worldwide governance indicator 2011. The index reflects perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism
- ✓ As an indicator of fiscal policy, the research paper has used annual budget deficit or surplus as a percentage of GDP. The data was collected from World Bank development indicator 2011.

Table 5.1 Expected result of explanatory variables

Independent variables	Expected relation with capital flight	Reason
FDI	Positive Negative	Positive relations, viewing that increased FDI results from the government's discriminatory policy, which gives privileges to foreign investors over local investors (Discriminatory-Treatment Perspective). This drives investors to move their capital to a country with better investment incentive. Negative relations, according to the investment-Climate perspective theory, high FDI represents excellent domestic investment climate. . Thus, high level of FDI indicates that there is to be lower volume of capital flight.
Political stability and no violence	Negative	According to investment diversion theory, political stability is one of the factors to reduce capital flight. That means, if the

		country is not politically stable, the simultaneous existence of better investment opportunities in advanced and other politically stable countries will facilitate capital flight.
Budget deficit (percentage of GDP)	Positive	Have positive relations with capital flight because the government budget deficit is a bad sign that may lead to higher tax rate in the future. This possibly leads to capital flight.
Domestic credit for of private sectors (percentage of GDP)	Negative	An increase in domestic credit for private sector is one of the key incentives for private investment in the domestic economy. Therefore this may reduce capital flight from the domestic economy.
Corruption control	Negative	Controlling corruption will reduce the flow of capital to advanced countries by some unscrupulous, corrupt leaders and bureaucrats. In addition to this it also reduces capital flight by encouraging private investors to invest in the domestic economy.

GDP	Negative	A higher GDP is a sign of economic progress. Therefore, private sectors will be interested to invest in the domestic economy because the expected higher return and lower risk. This leads to a decrease in capital flight

5.1.2 Model Specification

The theory does not offer a clear-cut way of determining a priori which independent variables should be included when we examine the factors that affect the variation in the capital flight (Ndikumana and Boyce, 2003). Therefore, this research paper follows the literatures and examines the most important variables that have been considered. The literature review in previous section explains which economic factors caused the capital flight in different regions. Therefore, with evidence from the past studies, this research introduces the model to test the hypothesis of the capital flight from 13 COMESA member countries, as follows:

$$CCF = f(PCF, FDI, FD, CI, PII, BD, E_{it}) \quad (2)$$

Where;

CCF=current capital flight

PCF=past capital flight

FDI= net foreign direct investment

FD= amount of credit available to private sectors

CC= corruption control index

PS= political stability and no violence index

BD= annual budget deficit

E_{it}= *the error term*

As in Ndikumana and Boyce (2003) and (2007), this research paper specifies the following baseline equation:

$$CCF_{it} = \beta_1 CF_{(t-1)i} + \beta_2 FDI_{it} + \beta_3 GDP_{it} + \beta_4 DCP_{it} + \beta_5 CC_{it} + \beta_6 PS_{it} + \beta_7 BD_{it} + ui + \varepsilon_{it} \quad (3)$$

Where, u is the country-specific fixed effect; and ε is the error term.

5.1.3 Econometrics\Estimation techniques

As it is discussed on the first section of this chapter, capital flight is estimated using World Bank residual method for the period 1990-2009.The regression analysis was carried out using annual panel data from selected COMESA member countries. The panel data used to estimate this model consist of i cross-sectional units where $i = 1, 2, \ldots, 13$ for the thirteen COMESA member countries observed at each of t time periods, $t = 1, 2, \ldots, 13$ (1990 through 2009). Only the data for these thirteen countries were included in the regression models because part of the data was not available for other COMESA member

countries.

The study has used generalized method of moments (GMM) to run the regression. GMM refers to a class of estimators which are constructed from exploiting the sample moment counterparts of population moment conditions (sometimes known as orthogonality conditions) of the data generating model.

GMM estimators have become widely used, for the following reasons:

- ✓ GMM estimators have large sample properties that are easy to characterize in ways that facilitate comparison. A family of such estimators can be studied *a priori* in ways that make asymptotic efficiency comparisons easy. The method also provides a natural way to construct tests which take account of both sampling and estimation error.
- ✓ In practice, researchers find it useful that GMM estimators can be constructed without specifying the full data generating process (which would be required to write down the maximum likelihood estimator.) This characteristic has been exploited in analyzing partially specified economic models, in studying potentially misspecified dynamic models designed to match target moments, and in constructing stochastic discount factor models that link asset pricing to sources of macroeconomic risk.

The choice of this method is justified in so far as, on the one hand, the model in this paper is dynamic since a lag value of the dependent variable (capital flight) is considered as an explanatory variable, on the other hand, some explanatory variables can be non-stationary also endogenous. Indeed, current stock of capital flight can be explained by its

past level, given the tendency for capital flight to persist over time (Ndikumana and Boyce, 2003 and 2007). The use of GMM allows correcting for insufficiencies related to problems of simultaneity bias, inverse causality and omitted variables (Kpodar, 2005). More specifically the research paper has used the Arellano-Bond (1991) first difference GMM estimator and Blundell and Bond (1998) system GMM estimators.

The Arellano-Bond (1991) first difference GMM estimator, suggested by Arellano and Bond in 1991, is based on GMM of the differenced model using a full set of valid lags as instruments. The estimator is similar to the estimator suggested by Anderson and Hsiao (see Anderson and Hsiao 1981) but exploits additional moment restrictions, which enlarges the set of instruments.

The dynamic equation to be estimated in levels is

$$CCF_{it} = \beta_1 CF_{(t-1)i} + \beta_2 FDI_{it} + \beta_3 GDP_{it} + \beta_4 DCP_{it} + \beta_5 CC_{it} + \beta_6 PS_{it} + \beta_7 BD_{it} + ui + \varepsilon_{it}$$

Where differencing eliminates the individual effects u_i

$$CCF_{it} - CCF_{it-1} = (\beta_1 CFF_{(t-1)i} - \beta_1 CFF_{(t-2)i}) + (\beta_2 FDI_{it} - \beta_2 FDI_{it-1}) + (\beta_3 GDP_{it} - \beta_3 GDP_{it-1}) + (\beta_4 DCP_{it} - \beta_4 DCP_{it-1}) + (\beta_5 CC_{it} - \beta_5 CC_{it-1}) + (\beta_6 PS_{it} - \beta_6 PS_{it-1}) + (\beta_7 BD_{it} - \beta_7 BD_{it-1}) + (ui - ui) + (\varepsilon_{it} - \varepsilon_{it-1}) \quad (4)$$

For each year the instruments are available for instrumenting the difference equation. As can be seen, the time periods valid for instrumentation enlarge and for the equation in the final Period T

$$CCF_{iT} - CCF_{iT-1} = (\beta_1 CFF_{(T-1)i} - \beta_1 CFF_{(T-2)i}) + (\beta_2 FDI_{iT} - \beta_2 FDI_{iT-1}) + (\beta_3 GDP_{iT} - \beta_3 GDP_{iT-1}) + (\beta_4 DCP_{iT} - \beta_4 DCP_{iT-1}) + (\beta_5 CC_{iT} - \beta_5 CC_{iT-1}) + (\beta_6 PS_{iT} - \beta_6 PS_{iT-1}) + (\beta_7 BD_{it} - \beta_7 BD_{iT-1}) + (\varepsilon_{iT} - \varepsilon_{iT-1}) \quad (5)$$

The research paper chose this Arellano-Bond (1991) first difference GMM estimator because of the following problems;

1. Time-invariant country characteristics (fixed effects) may be correlated with the explanatory variables.
2. The presence of the lagged dependent variable CFF_{it-1} gives rise to autocorrelation.
3. Since linear dynamic panel-data models include lags of the dependent variable as covariates and obtain unobserved panel-level effects, fixed or random. By construction the unobserved panel level effect are correlated with the lagged dependent variables, making standard estimators inconsistent.

The GMM estimator which was suggested by Arellano and Bond (1991) is known to be rather inefficient when instruments are weak because making use of the information contained in differences only. In their 1998 paper Blundell and Bond suggest making use of additional level information beside the differences. The combination of moment restrictions for differences and levels results in an estimator which was called GMM system- estimator by Blundell and Bond. There are *T*-2 orthogonality restrictions in levels which are exploited

The research paper also chose Blundell and Bond (1998) system GMM estimator because Monte Carlo simulations and asymptotic variance calculations by Blundell and Bond (1998) show that this extended (system) GMM estimator offers dramatic efficiency gains

in the situations where the basic first difference (Arellano-Bond (1991) GMM estimator performs poorly.

Therefore since both Arellano-Bond first difference and Blundell-Bond system GMM estimator gives us efficient results when the instruments are not correlated to the error term and when the standard first difference GMM perform weakly because of weak instrument respectively, in order to get the appropriate policy variable to reduce capital flight from COMESA member countries this research paper applied both methods. The results from both methods are compared and policy variables are selected if they are significant in both methods simultaneously.

The study also applied Sargan test[7] to test the validity of the overidentifying restriction of the model but only for a homoskedastic error term does Sargan test have an asymptotic chi-squared distribution. Since its asymptotic distribution is not known under the assumptions of the robust model, Arellano-Bond and Blundell-Bond do not compute it when robust model is specified. .

Furthermore, the research paper also tests the autocorrelation of the model errors by referring to the Arellano and Bond (1991) test. The moment conditions used by dynamic panel data are valid only if there is no serial correlation in the idiosyncratic errors. Testing for serial correlation in dynamic panel-data models is tricky because one needs to apply a transform to remove the panel-level effects, but the transformed errors have a

[7] The Sargan test is a test of the validity of instrumental variables. It is a test of the overidentifying restrictions. The hypothesis being tested with the Sargan test is that the instrumental variables are uncorrelated to some set of residuals, and therefore they are acceptable, healthy, instruments.

more complicated error structure than the idiosyncratic errors. Because the first difference of independently and identically distributed idiosyncratic errors will be autocorrelated, rejecting the null hypothesis of no serial correlation at order one in the first-differenced errors does not imply that the model is misspecified. Rejecting the null hypothesis at higher orders implies that the moment conditions are not valid. After the one-step system estimator, the test can be computed only when robust model has been specified.

5.2Empirical Results and discussion

The regression result in both techniques reveled that (from table 5.2) capital flight from COMESA member countries is jointly explained by the independent variables which are past capital flight, GDP, corruption control index, political stability index, annual foreign direct investment, budget deficit as percentage of GDP and credit available for private sector as percentage of GDP.

Table 5.2: determinants of capital flight from COMESA member countries

Variable name	First difference GMM			System GMM		
	Coefficient	Standard error	Z-value	Coefficient	Standard error	Z-value
PCF	0.1222284	0.058963	2.07*	0.1268538	0.048093	2.64**
FDI	1.727693	0.1855382	9.31**	1.549098	0.169	9.17**
PS	-3.05E+07	1.95E+08	-0.16	5616680	1.53E+08	0.04
CC	2.57E+08	2.94E+08	0.87	5.40E+08	2.16E+08	2.50*
GDP	0.0544871	0.0142089	3.83**	0.0604622	0.013556	4.46**
BD	-1.78E+07	8920007	-2*	-1.82E+07	8475650	-2.15*
DCP	-1.25E+07	7800069	-1.6	-565849.4	6436792	-0.09
Wald statistics	Wald chi2(7) = 460.84 Prob > chi2 = 0.000 (jointly significant)			Wald chi2(7) = 561.57 Prob > chi2 = 0.0000 (jointly significant)		
Sargan test	chi2(155) = 213.1661 Prob > chi2 = 0.0014 (Ho: over identification restriction is valid)			chi2(173) = 250.0645 Prob > chi2 = 0.0001 (Ho: over identification restriction is valid)		
Number of instruments	162			180		

**significant at5% of level of significance*

***significant at 1% of level of significance*

Test for zero autocorrelation in the first differenced error also conducted for the model. The Arellano –Bond auto correlation test result (table 5.3) revealed that there is no

significant evidence of serial correlation in the first differenced error at order 2. But unlike the standard first difference regression, system GMM can't run Arellano-Bond autocorrelation test with non robust standard error.

Table 5.3 autocorrelation test

Order	Z	Prob >Z	Test
1	-7.9787	0	HO: no autocorrelation
2	0.11507	0.9084	HO: no autocorrelation

The result of the regression using both Arellano- Bond (1991) and Blundell-Bond (1998) dynamic panel data GMM estimation for the independent variables individual effect on capital flight also reported on table 5.2 and explained one by one as follows;

a. Past capital flight

The first difference one step result indicates that past capital flight has a positive effect on current capital flight. The coefficients on lagged capital flight is positive and statistically significant at 5% level of significance. The result from System GMM also revealed that past capital flight has positive and significant effect on current capital flight from COMESA member countries at 1% of level of significance. The finding suggests that capital flight has a tendency to persist over time. This may reflect a *habit-formation effect*, as private actors gain experience in capital flight operations. It may also reflect a *contagion effect*, as capital flight corrodes the legitimacy of capital controls, particularly if the flight capitalists include government authorities. At the same time, capital flight

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may contribute to the deterioration of the macroeconomic environment, in turn sparking further capital flight. The results from both techniques support findings from Ndiaye (2009), Ndikumana and Boyce (2003) and (2007), Mikkelsen (1991), and Vos (1992).

b. Capital inflow

The finding on table 5.2 shows that foreign direct investment has positive and statistically significant effect on capital flight at 1% level of significance in both techniques. These results indicate that increased FDI results from the government's discriminatory policy, which gives privileges to foreign investors over local investors (Discriminatory-Treatment Perspective). This drives investors to move their capital to a country with better investment incentive. From the first difference and system GMM results, a one dollar increase on foreign direct investment will leads to a US$1.73 and US$1.55 of capital flight from COMESA member countries respectively, which means that a dollar of FDI inflow to COMESA member countries ended up more than a dollar as capital flight. The result shows that foreign direct investment is one of the major determinants of capital flight from COMESA member countries. These results are consistent with the result of Chunhachinda and Sirodom (2003).

c. Political stability and no violence

Supporting the result of Ndiaye (2009), Lawanson (2006) and Nyoni (2000), the results of political stability and absence of violence shows that it has negative but statistically insignificant effect on capital flight. These results suggest that the political condition episodes experienced in the COMESA member countries doesn't have considerable effect on the illegal out flow of capital from COMESA member countries.

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d. Corruption control

As the result from system GMM indicates that corruption control has positive and significant effect on capital flight from COMESA member countries at 5% level of significance. That means very tight control on government official facilitate illegal outflow of capital from COMESA member countries. This may also indicates that corrupted government officials are the main actors of capital flight from COMESA member countries. Since corruption control is one of the main key to induce private investor to invest their capital domestically, the result should be negative if the main actors were private investors. But the result from first difference GMM result, corruption control has positive but insignificant effect on capital flight from COMESA member countries.

e. Economic growth

The impact of an increase in GDP on capital flight was found to be positive and significant at 1% level of significance in both approaches. These results imply that economic growth is an important factor to explain capital flight from COMESA member countries. Although in the literature, capital flight may directly undermine economic growth via several channels (See, Erbe (1985), Cuddington (1986), Ajayi (1997), Schneider (1991), Williamson (1987) and Dooley et al (1994)), in COMESA member countries a 1 dollar increase in GDP will finance a US$0.05 and US$0.06 of illegal outflow of capital from COMESA member countries. This outflow of capital can be activated by both private sectors and government officials. Since investment return is higher in advanced countries, private sectors are interested to invest their additional money in the advanced

economy. On the other hand corrupted government officials may also stole public money through money laundering. These results confirm the result of Murinde, Hermes and Lensink (1996).

f. Financial development

The effect of the availability of credit for private sector on capital flight was negative but this influence was not found significant in both techniques. That means an increase on the amount of credit for private sector is not enough to induce investor to stay in the domestic environment or a decrease on the amount of credit for the private sector doesn't facilitate the illegal capital outflow from COMESA member countries. In other words, amount of credit for private sector is not a central indicator in explaining capital flight from the COMESA member countries. Although the Ndiaye (2009) has found significant effect on capital flight from Franco Zone Africa, the magnitude is consistent with this study.

g. Fiscal policy

Consistent with other empirical evidence (Ajayi (1992) Ndikumana and Boyce (2003) Lawanson (2006)), the impact of budget deficit as a percentage of GDP on capital flight was negative and statistically significant in both techniques at 5% level of significance. Although since the government budget deficit is a bad sign that may lead to higher tax rate in the future and leads to the capital flight from the private sectors, the result revealed that budget deficit reduce the capital flight from COMESA member countries. According to Nidya (2009), capital flight is operated by either private actors or government officials. The activity of private sector in the out flow of capital was expected to increase if the country suffers budget deficit but the result is the opposite.

That means the remaining actors to operate capital flight from COMESA member countries are corrupted government official. Therefore the results suggest that the activity of corrupted government official in the COMESA member countries in the operation of capital flight is much greater than the private actors.

Furthermore this study also confirms the above results by running the robust model. According to first difference GMM and the system GMM one step result, the coefficients of the independent variables' are the same in the case of robust. But the standard error of the robust model is most likely higher than the standard error of the without the robust model. The results can be compared by the following table (table 5.4).

Table 5.4 determinants of capital flight with robust standard error

Variable name	robust model (system GMM)			Robust (first difference GMM)		
	Coefficient	Standard error (robust)	Z value	Coefficient	Standard error (robust)	Z value
PCF	0.1268538	0.0519413	2.44*	0.1222284	0.0439557	2.78 **
FDI	1.549098	0.3236466	4.79**	1.727693	0.3220812	5.36**
PS	5616680	9.00E+07	0.06	-3.05E+07	1.41E+08	-0.22
CC	5.40E+08	2.16E+08	2.51*	2.57E+08	2.01E+08	1.28
GDP	0.0604622	0.0171292	3.53**	0.0544871	0.0181078	3.01**
BD	-1.82E+07	1.52E+07	-1.2	-1.78E+07	1.15E+07	-3.67 **
DCP	-565849.4	5882524	-0.1	-1.25E+07	3397208	-1.55

**at 5% of level of significance*

***at 1% of level of significance*

Generally the research paper has found four significant variables to explain capital flight from COMESA member countries in both Arellano-Bond first difference GMM and Blundell- Bond system GMM econometrics techniques simultaneously. Therefore the four significant variables, past capital flight, FDI, GDP and budget deficit, are selected as policy variables.

CHAPTER SIX

6 Conclusion and Recommendation

The issue of investigating the determinants of capital flight from COMESA member countries is very important. Indeed, if resources that leave a country in the form of capital flight could be attracted back, they would make a major contribution to economic development. It is thus necessary to identify and implement policies that may help to repatriate capital flight. However, identifying which policies can be most effective in achieving the objective of capital flight repatriation depends crucially on what factors initiated these capital outflows in the first place.

This research paper has examined the determinants of capital flight from COMESA member countries. The research paper has estimated the magnitude of capital flight from COMESA member countries by using World Bank 1985 residual method. For the 13 COMESA member countries, the research paper has found, in the period 1990 to 2009, a massive capital flight that amounts to US$ 126.29 billion (representing US$6.65 billion per annum). The average annual Capital flight exceeds the levels of averaged annual FDI and takes a big share of the country's averaged annual GDP for the great majority of the countries of the sample during the period 1990-2009, suggesting thus the importance of investigating the determinants of this phenomenon and of inducing its repatriation.

Since Arellano –Bond first difference GMM econometrics technique gives us appropriate result when the instrumental variables are not correlated to the error term and the

Blundell-Bond system GMM also gives us appropriate result when if the first difference GMM perform poorly because of weak instrumental variables, in order to get the appropriate and efficient result for the selection of policy variables, the research paper has used both of econometrics technique to investigate the determinants of capital flight from COMESA member countries. From the first technique, Arellano-Bond 1991 GMM first difference, the research paper has found four variables, past capital flight, FDI, GDP and budget deficit as percentage of GDP, significant to explain capital flight from COMESA member countries. But other variables, political stability and absences of violence, corruption control and domestic credit available for private sector as percentage of GDP have insignificant effect on capital flight from COMESA member countries.

The research paper has also used Blundell –Bond 1998 system GMM econometrics technique. From this technique, the research paper has found five variables significant to explain capital flight from COMESA member countries. These comprise past capital flight, FDI, GDP, corruption control and budget deficit as percentage of GDP. From both econometrics techniques, four variables, past capital flight, FDI, GDP and budget deficit, are found significant in both techniques simultaneously to explain capital flight from COMESA member countries. Therefore this research paper presents these variables as policy variables to reduce capital flight from COMESA member countries.

The empirical results in this study have some policy implications. On looking at the empirical findings, on the one hand, part of capital flight is operated by government officials, and on the other hand, another part of capital flight is operated by private actors.

One, since past capital flight has a positive impact on current capital out flow, it may reflect a habit-formation effect, as private actors gain experience in capital flight operations. It may also reflect a contagion effect, as capital flight corrodes the legitimacy of capital controls, particularly if the flight capitalists include government authorities. Therefore the government should control the effect of this variable by controlling the current capital flight. Since the current capital flight is determined by other policy variables (FDI, GDP and budget deficit), to control the current capital flight the government should control variables which are selected as a policy variable and discussed on the following paragraphs

Two, it is detected that the Foreign Direct Investment (FDI) can explain the capital flight as most of the research result supports the Discriminatory-Treatment Perspective. All countries featured in this research have been promoting economic policies that push them towards the industrialization or semi-industrialization, focusing on creating a rapid economic growth. Once the countries' savings cannot accommodate such growth, they have to draw a huge amount of foreign investment. The governments, then, have to compete in acquiring investments from overseas. This is, for example, giving privileges to foreign investors despite the fact that there also exists the same kind of businesses by local investors. This causes the gap between the investment opportunities for the local and foreign investors, which drives the disadvantaged local to move their investment to other countries. From this, the governments should be aware of this fact, consider if their investment promotion policy would cause the capital flight and find the solutions to the problem. Therefore, to minimize the impact of this variable on capital flight from

COMESA member countries, the government of COMESA member countries should give investment incentives for the domestic private investor similar to the foreign investors. For example, tax exemption or reduction on the import of capital equipments such as machineries and vehicles.

Third, although GDP growth is one indicator of macroeconomic stability, the result from both regression results revealed that it has positive impact on capital flight from COMESA member countries. According to the portfolio choice theory, a higher return for investment in the advanced countries attracts capital from developing countries. Additional funds earned from an increase in GDP fueled outflow of illegal capital from COMESA member countries by the private sector and government officials. Better return on investment on advance countries motivate private sector to withdraw their money from the domestic market and invest it in the advanced countries. Corrupted government officials also embezzle public money through money laundering. Therefore in order to reduce the effect of GDP growth on capital flight, government should create conducive investment environment for the private sectors and also apply tight control on corrupted government official.

Lastly, the government budget deficit is a bad sign that may lead to higher tax rate in the future. This condition forced the private sector to withdraw their capital from the domestic economy and put or invest it in the advanced countries. But in contrary to the expected positive sign, the result revealed that it has negative relationship with capital flight from COMESA member countries. This result indicates that capital flight is mainly

operated by public leader or government officials in COMESA member countries. Therefore the governments of COMESA member countries should put tight controls on corrupted government officials to reduce capital flight.

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ANNEX I

A. Capital flight estimates from COMESA member countries (1990-2009) World Bank residual method. (US$ 000,000)

Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Burundi	155.1	76.6	118.5	136.5	87.4	282.7	−1.0	68.5	119.7	33.9	71.9
DRC.	1483.4	869.3	752.4	532.0	335.5	973.4	−961.1	−581.2	432.8	−660.8	−143.8
Ethiopia	702.3	584.8	685.5	484.7	675.6	228.3	79.3	375.8	375.5	−596.9	457.6
Kenya	558.4	169.5	−146.6	−110.1	−142.4	75.3	−735.9	179.7	660.8	−475.9	−179.9
Madagascar	296.7	635.5	548.2	556.1	479.1	668.7	−41.8	290.0	515.3	568.2	−100.8
Malawi	155.3	−176.6	−170.0	−90.5	−310.3	392.0	121.9	−314.9	461.3	210.2	−113.2
Rwanda	180.0	147.5	38.9	−0.6	−15.2	121.9	112.8	22.5	76.6	32.0	63.4
Seychelles	99.6	167.7	50.3	−42.9	129.8	114.4	−58.4	104.7	182.5	253.3	318.0
Sudan	971.9	−229.6	140.8	177.6	94.9	−228.2	−1350.9	−1286.6	−384.8	−763.8	167.6
Swaziland	53.1	149.9	−76.4	86.8	84.6	10.8	−36.5	157.5	−122.4	75.7	−54.1
Uganda	227.4	47.7	97.4	231.8	296.6	75.4	−26.8	210.0	−14.1	−115.0	540.4
Zambia	1096.5	174.7	42.5	−593.6	883.0	−434.6	−170.2	−444.4	512.6	−384.2	−337.1
Zimbabwe	535.5	682.4	1462.8	733.2	70.4	751.5	630.8	1885.6	1875.1	1035.8	268.0

Continued

Year	2001	2002	2003	2004	2005	2006	2007	2008	2009
Burundi	−58.3	240.8	224.0	−88.6	-92.36	192.45	151.36	44.94	-788.36
DRC	−1394.7	412.3	1092.1	1104.1	1104.1	1050.15	3010.6	3505.22	236.6
Ethiopia	1153.6	2437.5	1857.2	1759.9	-1037.75	-1824.75	1013.79	2290.75	3077.4
Kenya	−1270.1	424.0	250.8	−331.3	-601.27	144.31	1714.64	2723.34	1779.65
Madagascar	−180.8	592.2	509.3	−323.1	347.87	-1325.3	1655.52	3351.49	2821.17

						7			
Malawi	17.9	41.3	156.0	189.8	198.34	-1969	23.18	669.95	666.96
Rwanda	9.6	59.6	31.2	50.8	-254.81	-994	195.01	380.61	488.86
Seychelles	98.8	424.5	259.4	270.6	461.75	649.36	867.85	785.2	550.6
Sudan	−308.2	−245.3	1121.1	2891.9	3733.72	9386.99	6913.29	4194.67	7876.1
Swaziland	8.8	239.7	182.2	228.9	-155.88	160.92	-395.88	209.92	93.54
Uganda	−69.9	651.2	835.6	162.1	148.44	-2650.11	863.5	2101.38	964.57
Zambia	−1603.9	−1325.3	−473.1	517.4	-1330.01	2596.48	2187.87	2208.36	367.08
Zimbabwe	−125.1	−686.9	−1278.3	28.3	-532.725	406.159	728.955	-9938%	-251.011

B. Growth of real Gross national product of COMESA member countries (1990-2009). (%)

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Burundi	3.50	5.00	1.01	-6.24	-3.83	-7.92	-8.00	-1.59	4.75	-1.01	-0.86
Comoros	5.09	-5.40	8.53	3.01	-5.28	3.61	-1.29	4.03	1.28	1.92	1.42
DRC	-6.57	-8.42	-10.50	-13.47	-3.90	0.70	-1.02	-5.62	-1.62	-4.27	-6.90
Djibouti		-4.28	-0.02	-6.62	-0.94	-3.49	-4.12	-0.75	0.10	2.18	0.42
Egypt	5.70	1.08	4.43	2.90	3.97	4.64	4.99	5.49	4.04	6.11	5.37
Eretria				13.45	21.22	2.86	9.26	7.91	1.77	0.01	-13.12
Ethiopia	2.73	-7.14	-8.67	13.14	3.19	6.13	12.43	3.13	-3.46	5.16	6.07
Kenya	4.19	1.44	-0.80	0.35	2.63	. 4.41	4.15	0.47	3.29	2.31	0.60
Libya											3.70
Madagascar	3.13	-6.31	1.19	2.10	-0.07	1.71	2.15	3.69	3.93	4.66	4.76
Malawi	5.69	8.73	-7.33	9.69	-	16.73	7.32	3.79	3.90	3.04	1.58

					10.24						
Mauritius	7.19	4.44	6.51	5.08	4.14	4.29	5.59	5.69	6.07	2.61	9.03
Rwanda	-2.40	-2.51	5.87	-8.11	-50.25	35.22	12.75	13.85	8.86	7.58	8.10
Seychelles	7.00	2.76	7.16	6.20	-0.80	-0.83	4.92	11.96	8.40	1.87	4.25
Sudan	-5.47	7.51	6.58	4.57	1.01	6.00	5.92	10.57	4.31	3.10	8.38
Swaziland	9.75	2.61	1.65	2.80	3.80	2.94	3.59	3.78	2.75	3.47	10.07
Uganda	6.47	5.55	3.42	8.33	6.40	11.52	9.07	5.10	4.91	8.05	3.14
Zambia	-0.48	-0.04	-1.73	6.80	-8.63	-2.82	6.95	3.30	-1.86	2.22	3.58
Zimbabwe	6.99	5.53	-9.02	1.05	9.24	0.16	10.36	2.68	2.89	-3.60	-2.71

Continued

	2001	2002	2003	2004	2005	2006	2007	2008	2009
Burundi	2.06	4.45	-1.22	4.83	0.90	5.12	3.60	4.50	3.50
Comoros	3.33	4.15	2.47	-0.24	4.23	1.24	0.49	0.97	1.81
DRC	-2.10	3.47	5.79	6.64	6.46	5.08	6.26	6.20	2.83
Djibouti	2.05	2.62	3.20	3.83	3.17	4.80	5.10	5.80	5.00
Egypt	3.54	2.37	3.19	4.09	4.47	6.84	7.09	7.16	4.69
Eretria	8.88	3.01	-2.66	1.46	2.57	-0.96	1.43	-9.79	3.88
Ethiopia	8.30	1.51	-2.16	13.57	11.82	10.83	11.46	10.79	8.79
Kenya	3.78	0.55	2.93	5.10	5.91	6.32	7.01	1.55	2.59
Libya	-4.30	-1.30	13.00	4.40	9.90	5.90	6.00	3.80	2.10
Madagascar	6.02	-12.67	9.78	5.26	4.60	5.02	6.24	7.13	-4.58
Malawi	-4.97	1.70	5.50	5.50	2.60	7.70	5.80	8.60	7.60
Mauritius	2.57	2.11	3.66	5.75	1.24	3.95	5.88	5.52	3.03
Rwanda	8.50	11.00	2.20	7.40	9.30	9.20	5.50	11.20	4.10
Seychelles	-2.27	1.21	-5.89	-2.85	7.47	8.30	9.70	-1.30	0.70
Sudan	6.17	5.36	7.14	1.81	6.33	11.29	10.16	6.84	3.96
Swaziland	1.00	1.83	3.89	2.51	2.21	2.87	3.51	2.40	0.40
Uganda	5.18	8.73	6.47	6.81	6.33	10.78	8.41	8.71	7.25
Zambia	4.90	3.30	5.10	5.38	5.34	6.23	6.19	5.68	6.40
Zimbabwe	2.66	-9.77	-17.16	-6.88	-6.12	-3.33	0.20	-17.70	6.00

ANNEX II

A. First difference GMM one step result (STATA 11)

```
. xtabond cf fdi ps cc gdp dcp bd, noconstant lags(1) artests(2)

Arellano-Bond dynamic panel-data estimation  Number of obs      =       234
Group variable: countrydummy                 Number of groups   =        13
Time variable: year

                                             Obs per group: min =        18
                                                            avg =        18
                                                            max =        18

Number of instruments =     162              Wald chi2(7)       =    460.84
                                             Prob > chi2        =    0.0000
One-step results
```

cf	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
cf						
L1.	.1222284	.058963	2.07	0.038	.006663	.2377938
fdi	1.727693	.1855382	9.31	0.000	1.364045	2.091341
ps	-3.05e+07	1.95e+08	-0.16	0.876	-4.13e+08	3.52e+08
cc	2.57e+08	2.94e+08	0.87	0.383	-3.20e+08	8.33e+08
gdp	.0544871	.0142089	3.83	0.000	.0266382	.082336
dcp	-1.25e+07	7800069	-1.60	0.110	-2.77e+07	2827683
bd	-1.78e+07	8920007	-2.00	0.046	-3.53e+07	-326317

```
Instruments for differenced equation
        GMM-type: L(2/.).cf
        Standard: D.fdi D.ps D.cc D.gdp D.dcp D.bd
```

```
. estat abond

Arellano-Bond test for zero autocorrelation in first-differenced errors
```

Order	z	Prob > z
1	-7.9787	0.0000
2	.11507	0.9084

```
H0: no autocorrelation

. estat sargan
Sargan test of overidentifying restrictions
        H0: overidentifying restrictions are valid

        chi2(155)     =  213.1661
        Prob > chi2   =    0.0014
```

B. System GMM one step result

```
. xtdpdsys cf fdi ps cc gdp dcp bd, noconstant lags(1) artests(2)

System dynamic panel-data estimation          Number of obs      =       247
Group variable: countrydummy                  Number of groups   =        13
Time variable: year
                                              Obs per group: min =        19
                                                             avg =        19
                                                             max =        19

Number of instruments =     180               Wald chi2(7)       =    561.57
                                              Prob > chi2        =    0.0000
One-step results
```

cf	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
cf						
L1.	.1268538	.048093	2.64	0.008	.0325932	.2211143
fdi	1.549098	.1690003	9.17	0.000	1.217864	1.880333
ps	5616680	1.53e+08	0.04	0.971	-2.94e+08	3.06e+08
cc	5.40e+08	2.16e+08	2.50	0.012	1.17e+08	9.63e+08
gdp	.0604622	.0135559	4.46	0.000	.0338932	.0870313
dcp	-565849.4	6436792	-0.09	0.930	-1.32e+07	1.21e+07
bd	-1.82e+07	8475650	-2.15	0.032	-3.48e+07	-1589328

```
Instruments for differenced equation
        GMM-type: L(2/.).cf
        Standard: D.fdi D.ps D.cc D.gdp D.dcp D.bd
Instruments for level equation
        GMM-type: LD.cf
```

Declaration

I the under signed, declare that this is my original work and has not been presented in other universities; all sources of materials used have been duly acknowledged.

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Date of submission: 25/06/2012

This thesis has been submitted for the examination with the approval of University advisor

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