CAPITAL FLIGHT AND ITS DETERMINANTS: EVIDENCE FROM MALAWI

MASTER OF ARTS (ECONOMICS) THESIS

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UNIVERSITY OF MALAWI

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MASTER OF ARTS (ECONOMICS) THESIS

By

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Submitted to the Department of Economics, Faculty of Social Science, in partial fulfilment of the requirements for the degree Master of Arts (Economics)

University of Malawi

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DECLARATION

I JOHN HATMAN MAGOMBO, hereby declare that this thesis is my original work and has not been submitted to any other institution for the award of any degree. However, the use of other people's work has been appropriately acknowledged.

JOHN HATMAN MAGOMBO

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Full Legal Name

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Signature

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Date

CERTIFICATE OF APPROVAL

We declare that this thesis represents the student's own work and effort. Therefore, the thesis has been submitted with our approval.

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Second Supervisor

DEDICATION

I dedicate this work to my father, John H. Magombo Snr, and my mother, Natalia J. Magombo.

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ABSTRACT

Many studies have attempted identifying the determinants of capital flight in the Sub-Sahara African region. Most of them have focused on testing the portfolio choice theory while assuming that capital inflows meant for public investment are diverted by political elites and politically exposed persons and firms to foreign countries' bank accounts or asset markets. Empirical evidence on the role of capital inflows and politics on capital flight is limited. Using Malawi as a case study, this study investigates the determinants of capital flight by extending the portfolio choice model to include the foreign capital source as an incentive for capital flight. The study employed the Autoregressive Distributed Lag (ARDL) framework on annual time series data from 1980-2020.

The study found that external debt inflows are the most significant determinant of capital flight from Malawi. Contrary to expectation, foreign aid inflows are associated with a decrease in capital flight, implying that a decline in foreign aid triggers capital flight from Malawi instead. The evidence found does not link capital flight to the political elites through elections and transitions of executive power of government. The portfolio choice variables such as interest rate differentials, real GDP, and real effective exchange rate are also significant, though with relatively weaker influence. Thus, the result implies that some capital flight from Malawi responds to investment opportunities and macroeconomic policy risk variations. In this regard, there is a need to strengthen transparency and accountability mechanisms, especially concerning acquiring and utilising external debt. Additionally, the government needs to focus on policies that ensure long-term economic growth and avoid depreciation or accelerated devaluations of the Malawi Kwacha to stop capital flight from Malawi.

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LIST OF ACRONYMS

BIS	Bank of International Settlements
BOP	Balance of Payment
BPM4	Balance of Payment Manual 4
CIF	Cost, Insurance and Freight
COVID-19	Corona Virus Disease 2019
DPP	Development Progressive Party
ECF	Extended Credit Facility
ESAF	Enhanced Structural Adjustment Facility
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GFI	Global Finance Integrity
HIPC	Highly Indebted Poor Countries
IDA	International Development Agency
IDS	International Debt Statistics
IMF	International Monetary Fund
MCP	Malawi Congress Party
MRA	Malawi Revenue Authority
ODA	Official Development Assistance
OI	Other Investments
OPHI	Oxford Poverty and Human Development Initiative
PI	Portfolio Investments
PP	Peoples Party
PRGF	Poverty Reduction and Growth Facility
PRSP	Poverty Reduction Strategic Paper
RBM	Reserve Bank of Malawi
SALs	Structural Adjustment Loans
SAPs	Structural Adjustment Programmes

SSA	Sub-Saharan Africa
UDF	United Democratic Front Party
UK	United Kingdom
UNDP	United Nations Development Programme
USA	United States of America
USD	United States Dollar
WDI	World Development Indicators

CHAPTER ONE

INTRODUCTION

1.1 Background

Many developing countries continue losing substantial capital to developed economies and off-shore havens through capital flight. Between 1970 and 2018, capital flight from thirty African countries exceeded $2 trillion. It accelerated bewilderingly in the most recent decade beginning in 2010, with the period accounting for 42 % of the total estimated lost capital (Ndikumana & Boyce, 2021a). However, understanding the motivating factors behind this bewildering resurgence of capital flight remains an inconclusive debate among scholars.

The definition of capital flight lacks such orthodoxy of a unanimous agreement in its meaning and estimation among scholars due to its complexity and largely clandestine nature. These definitions vary regarding drawing lines between “normal capital outflows” and what is truly implied by the word “capital flight”. This study regard capital flight, in general, as the shifting of capital from a resource-constrained country to another by asset holders, whose objectives for doing so tend to conflict with an implied social contract of holding such assets for the benefit of the society (Jimoh, 1991; Walter, 1990). This definition considers that part of capital flight is motivated by intentions to place wealth beyond the control of domestic authorities and not exclusively portfolio choice decisions (Schneider, 2003b).

According to the Heckscher-Ohlin theory, the marginal productivity of capital invested in developing countries is relatively higher than investing it in developed countries, which are already capital-abundant (Markusen et al., 1995). Furthermore, in line with economic growth theory, capital formation is cardinal to technological advancement, necessary for shifting the production function of a particular economy, thus leading to higher income per capita growth (Herr, 1964; Solow, 1956).

By implication, extensive withdrawal of capital from developing countries poses serious consequences on their economic and social development agenda. Capital flight constrains technological advancement, thus slowing down economic production in the region (Orji et. al. 2020). This is accompanied by a widespread lack of public and private investment, low national savings, increased economic instability, and rising unemployment (Fisseha, 2022; Ndikumana, 2003; Moulemvo, 2016). In addition, the higher marginal cost of productivity leads to the country's exports being uncompetitive on the international market (Ampah & Kiss, 2019). Eventually, the current account runs into persistent deficits, increasing reliance on external and domestic borrowing and high tax incidence (Eluyela et al., 2020). However, the high tax incidence would be more on the poor majority, thereby exacerbating poverty and wealth inequality between the rich and the poor (Nkurunzinza, 2014; Ndikumana and Boyce, 2021b). The increasing wealth inequality due to poor economic performance and heavy taxation would create high social tension that may lead to wars, violence, or other forms of social breakdown (Krieger and Meierriecks, 2019)

Authors have therefore variedly argued on determinants of capital flight from Sub-Saharan African (SSA) countries. On one hand, there exists an almost developed consensus that regards capital flight as a portfolio choice problem. Empirics in this frame of thought argue that capital flight follows portfolio choice considerations by individual wealth holders based on perceived macroeconomic and political risk, which would negatively impact their expected returns. The wealth holders diversify their asset portfolio based on perceived risk arising from differences in interest rates, investment opportunities, exchange rates, macroeconomic stability, financial development, and anticipated taxation intensity based on sustainability level of external debt stock between the domestic economy and foreign economies (Anetor, 2019; Egbulonu & Bhattarai, 2020; Forson et al., 2017; Geda & Yimer, 2016; Otieno et al., 2021; Kwesi et al., 2020; Orji et al 2020).

In the early 1980s, capital flight was detected when claims on deposits held by residents from the Sub-Sahara African (SSA) region in Western Bank accounts increased unprecedentedly at a time the region was augmenting domestic capital stock with foreign capital flows through external debt and aid (Erbe, 1986). Recently, Andersen et al (2020) revealed similarity to the earlier trend that the sharp rises in deposits from aid-dependent

developing countries into offshore financial centers correlate with aid disbursements. As such, most empirics have widely held almost as conventional wisdom, an assumption that capital flight is a product of plunder of public resources obtained through foreign aid and debt, mostly by the political elites and politically exposed persons and firms. They argue that such capital inflows facilitate financing of capital flight (Andersen et al., 2020; Asongu & Odhiambo, 2019; Otieno, 2022; Tarawallie & Jalloh, 2021). However, empirical evidence supporting such claims is limited in the SSA region studies.

The role of politics has mostly been discussed in the context of volatile political environment such as political regime changes through coups d'état, wars, terrorism and excessive violence (Davies, 2008; Tarawalie & Jalloh, 2021; Efobi & Asongu, 2016; Geda and Yimmer, 2016). However, others have recently established that even competitive political elections have an impact on capital flight, but the relationship is ambiguous (Frantz, 2018; Goldsmith, 2019).

According to figure 1.1 below, capital flight from Africa existed before the 1973 oil crisis and reached a record high in the pre-millennium period in 1977, before the 1979 oil crisis.

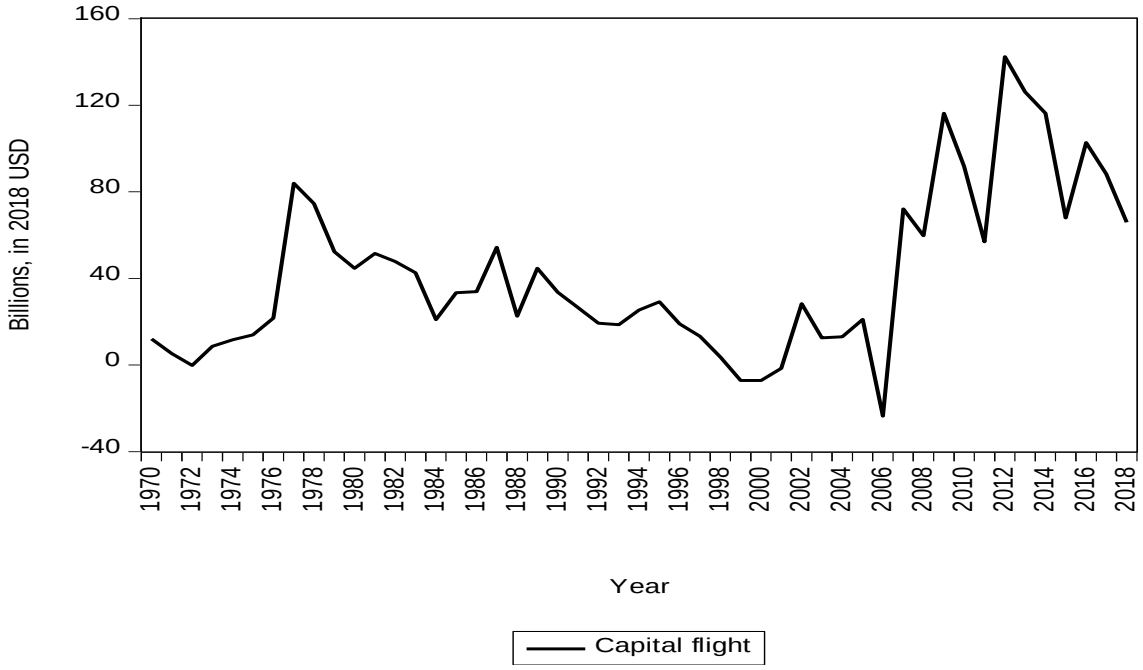

Figure 1. 1 Trend of capital flight from 30 African countries

Source: Compiled by the author based on data from Ndikumana and Boyce (2021a)

The trend of capital flight declined from 1979 to 1984, coinciding with a decline in foreign capital inflows into the region following most western commercial banks' suspension of lending to SSA countries (World Bank, 1985). Capital flight rose again between 1985 and 1990, during which lending had resumed to most countries, owing to financing from the International Monetary Fund (IMF) and the World Bank under the Structural Adjustment Programs (SAPs) (Ezenwe, 1993). The 1990 to 2000 period saw episodes of capital reversal in the SSA as capital flight reduced significantly to negative level. Many countries experienced significant inward capital flight, which occurred within the implementation period of the SAPs, democratization and the introduction of debt relief programmes under the Highly Indebted Poor Countries (HIPC) initiative. Capital flight rose again in 2000, but a significant decline developed into a sharp capital reversal between 2004 and 2006 when many HIPC countries reached completion points for debt relief. From 2007 to 2018, capital flight remained high in the SSA, reaching the highest level of $142 billion in 2012.

Globally, the SSA harbours the poorest population in the world, and Malawi is a typical characteristic of this in the region, with about 50 % of the population living below $1.9 per day (Government of Malawi, 2020; OPHI & UNDP, 2022; World Bank, 2022b). Between 1990 and 2020, Malawi's GDP per capita of $313 was below those of its neighbours, namely Tanzania ($710), Zambia ($1014) and Mozambique ($401), and four times lower than the average of SSA excluding high-income countries (World Bank, 2022b). The low-income country is nevertheless popularly called the "Warm Heart of Africa" due to its generally peaceful status, with no records of civil wars, government coups, or extremism since its independence in 1964.

From 1980 to 2020, the economy received official development assistance (ODA) amounting to $32 billion and external debt of $6 billion. After a debt write-off of $2.4 billion in 2006, the total external debt stock by 2020 was $2.9 billion. It is worth noting that as of December 2020, out of the total outstanding debt stock, the World Bank's International Development Association (IDA) was the leading creditor to Malawi at 42 %, while the IMF came second at 16.4 %. In addition to the aid and external debt inflows, Malawi also had $4.1 billion of net Foreign Direct Investment (FDI) and earned $24.4

billion of foreign currency through exports within the same period (World Bank, 2022b, 2022a)

Malawi's capital flight trend reveals a more peculiar picture of capital flight in the SSA when assessed at the individual unit level. According to figure 1.2 below and table 1.1.

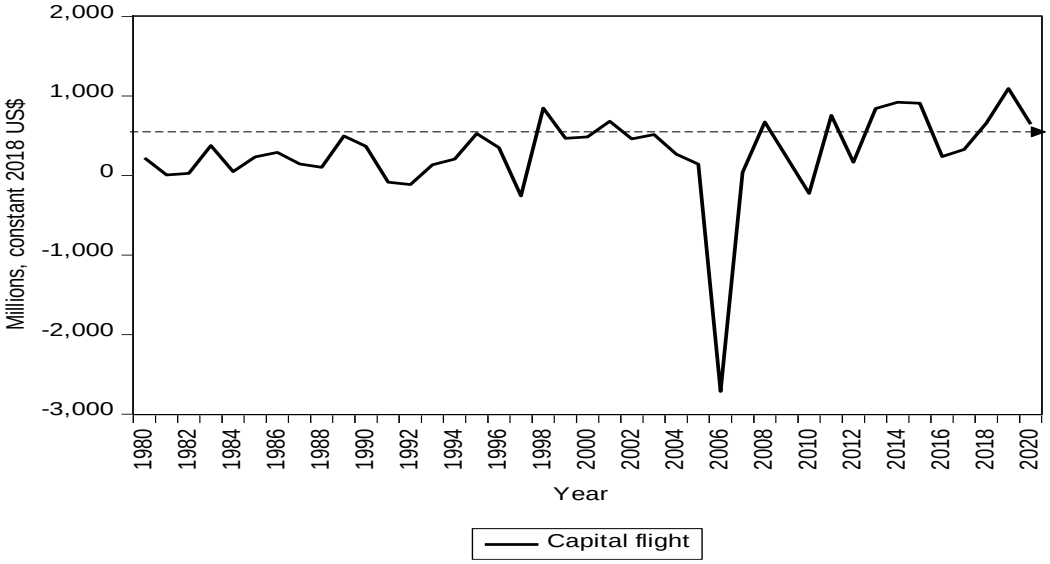

Figure 1. 2 Trend of capital flight from Malawi (1980 -2020)

Source: compiled by the author based on data from Ndikumana and Boyce (2021a) and the author's calculations

Table 1.1: Real capital flight from Malawi, 1980-2020 (in constant 2018 USD)

	(Billion 2018 USD)				
Period (Years)	**Capital flight**	**External debt**	**Aid**	**Percent of debt**	**Percent of aid**
1980-1989	2.1	1.4	3.4	141%	61%
1990-1999	2.4	1.5	7.4	154%	33%
2000-2009	0.7	1.0	7.5	74%	10%
2010-2020	6.3	2.1	13.3	300%	47%

Source: Ndikumana and Boyce (2021a) and authors' computation

Malawi lost about $11.5 billion through capital flight between 1980 and 2020, averaging $283 million or 11 % of Gross Domestic Product (GDP) per year despite being a small

open economy which is heavily donor-dependent. The dollar value of capital flight from Malawi is relatively smaller compared to capital flight from other SSA countries such as Nigeria ($466 billion), South Africa ($329 billion), Zimbabwe ($20 billion), and Tanzania ($42 billion). However, this stock of capital flight represents 157 % of the country's 2018 GDP. It thus ranks higher than the countries mentioned above and only below nine countries, most of which have experienced at least one form of violent political instability between 1970 and 2018, such as the Republic of Congo, Sierra Leone, Mozambique, Rwanda, Mauritania, Burundi, Gabon, and Seychelles. Moreover, since 2000, trade misinvoicing has become Malawi's predominant channel of capital flight (Ndikumana and Boyce, 2021). The severity of trade misinvoicing from Malawi was reported by Global Financial Integrity (GFI), whereby Malawi ranked second highest among 134 developing countries in terms of trade misinvoicing to GDP ratio (GFI, 2021).

1.2 Problem Statement

As a successor to the VISION 2020, Malawi envisages becoming an upper-middle-income country by 2063 through its new long-term goal, Malawi 2063 (MW2063). The midterm term goal of graduating into a lower-middle-income country within the first ten years (2021-2030) of the MW2063 requires a capital investment worth US$15.5 billion. The Malawi government plans to source this capital mostly through aid, external borrowing, and revenue from export receipts (Government of Malawi, 2021).

However, despite the substantial foreign capital inflows for the past four decades, Malawi has been plagued with many economic problems such as; (1) limited availability of funds for public and private investment (Edriss & Chiunda, 2017; Makuyana & Odhiambo, 2019); (2) the declining foreign exchange reserves and worsening current account balance (Nkuna, 2021); (3) low and declining economic growth and export receipts (World Bank, 2022b). These factors, which are also consequences of capital flight, contributed to the catastrophic failure of Malawi's long-term vision, VISION 2020, launched in 1998, which aimed to transition the economy into a technologically driven middle-income country by 2020 (Government of Malawi, 2019).

The worsening capital flight phenomenon threatens the achievement of the MW2063 and its midterm implementation plans. The empirical question of what factors drive capital

flight in Malawi has limited answers. Considering that Malawi heavily depends on foreign aid and external debt, could these foreign capital inflows have financed capital flight in the country such that more financial aid and foreign borrowing will only lead to more capital flight? Looking at the period when capital flight worsened, there were five elections and four transitions in executive power. Can such political events explain the capital flight phenomenon in Malawi? Or perhaps, is capital flight from Malawi a portfolio choice problem responding to variations in exchange rates, real interest rates or level of economic output?

1.3 Objectives of the study

This study intends to answer the questions above to bridge the research gap in the literature on capital flight in Malawi and the SSA region. The study's main objective is to provide evidence on factors determining capital flight in Malawi. Specifically, the study aims to

i. To investigate the effect of external debt inflows on capital flight in Malawi
ii. To analyze the influence of foreign aid inflows on capital flight in Malawi
iii. To examine the role of elections and executive power transitions on capital flight in Malawi

1.4 Study Hypotheses

The study will aim at testing the following null hypotheses in line with the specific objectives in section 1.3 above, in the case of Malawi

i. External debt inflows have no role in capital flight from Malawi
ii. Foreign aid inflows have no role in capital flight from Malawi
iii. Elections and executive power transitions do not influence capital flight from Malawi

1.5 Justification of the study

The accelerating capital flight in Malawi presents a stumbling block to the attainment of both the mid-term and long term goals in the MW2063.Understanding the factors motivating this surge in capital flight is however, critical to designing country-specific policy interventions that would curtail this serious problem. The limited empirical evidence on the determinants of capital flight means policy makers are constrained on how best the

policies need to be formulated. Although Bhalla et al (2000) recommended that deeper investigations on capital flight needed and its determinants, to the best knowledge of the author, only one empirical study by Nyirenda (2000) was conducted. Therefore, this study will bridge this gap in literature on capital flight from Malawi.

Many studies seeking to unravel the determinants of capital flight factors tended to conduct cross-country econometric studies analyses such as Frantz (2018), Goldsmith (2019), Ampah and Kiss (2019), Anetor (2019), Kwesi et al. (2018), and Otieno et al. (2021;2022). However, results from studies conducted in country-specific spirit have exhibited heterogeneity in the determinants of capital flight, thus necessitating the need to conduct country specific studies (Yalta, 2009).

Developments in the capital flight literature in the SSA region have recently shown the increasing need to analyze the role of politics on capital flight from countries. However, most of the empirical work has included political factors focused on the western, northern, eastern and central parts of the SSA. Such studies were motivated by the present and historic volatile political environments in countries such as Tarawalie & Jalloh (2021) in the case of Sierra Leone, Geda & Yimer (2016) in the case of Ethiopia, Oluwaseyi (2018) in the case of Nigeria, and Forson et al., (2017) in the case of Ghana. In addition, some were motivated to study the areas owing to the abundant natural capital resources such as minerals, and petroleum oil (Ndikumana & Boyce, 2021b).

Generally most studies have ignored to empirically ascertain if the availability of foreign currency through external borrowing and foreign aid plays a role in propelling capital flight. This argument has however been held for long as conventional wisdom that the political elites and politically exposed persons and firms divert such funds to foreign countries.

The empirical studies have extensively differed regarding the capital flight estimation procedure. Some studies have employed baseline capital flight estimates that do not adjust the estimates for exchange rate fluctuations in long-term debt, debt forgiveness, interest arrears, trade misinvoicing, and other sources of capital such as other investment flows (OI) and Portfolio Investment flows (PI) (Anetor, 2019; Bosupeng et al 2019). Some have employed the adjusted algorithms, however, which do not include recent updates arising

from the change in Cost, Insurance and Freight (CIF) to Freight On Board (FOB) conversion factor from 6 % to 10 % for all data after 2000, by IMF in 2018, change in the treatment of trade figures to and from unspecified areas, which led to misleading trade misinvoicing figures (Frantz, 2018; Goldsmith 2019; Forson et al. 2017). In the end, the estimates for capital flight are less accurate.

1.6 Study limitation

Although available estimates of capital flight date back to the early 1970s, this study was limited to the period between 1980 and 2020. This is because data for the variables of interest is only consistently available from 1980 to 2020.

1.7 Organization of the paper

The paper proceeds with Chapter two to provide an overview of Malawi's economy and capital flight. Chapter Three presents a review of the theoretical and empirical literature on capital flight and its determinants, followed by Chapter Four, which discusses the methodology used to produce empirical results. Chapter Five presents and discusses empirical results. Lastly, Chapter Six concludes the paper by summarizing the study objective, methods, and results and offering policy recommendations.

CHAPTER TWO

OVERVIEW OF MALAWI AND CAPITAL FLIGHT

2.1 Introduction

This chapter intends to provide a context of the economy of Malawi, within which capital flight manifests itself. Specifically, the chapter sets to achieve three main aims; firstly, to provide the policy context within which capital flight manifested itself in Malawi. Secondly, review the evolution of capital flight and the key factors used in this analysis. Thirdly, to provide a context of the data used in the study.

2.2. Macroeconomic trends, capital inflows and capital flight

2.2.1 The SAPs

Before the 1980s, Malawi's economy was more centrally managed, with trade policies aligned toward import substitution. As such, the government imposed heavy restrictions on imports, while export functions were mainly done through state-controlled enterprises. The economy began to experience a balance of payment problems when global oil prices rose excessively in the late 1970s. In addition, the Mozambican war disrupted the Beira trade route, forcing the country to use a longer and costlier route to Dar es Salaam in Tanzania. The global oil shocks led Malawi to seek external financing through external debt from the IMF and the World Bank. However, the IMF and the World Bank required the countries seeking to obtain debt to implement the SAPs. Malawi implemented the first SAPs from 1981 to the early 1990s upon obtaining Structural Adjustment Loans (SALs). The SAPs were succeeded by World Bank's Poverty Reduction Strategic Papers (PRSPs) and IMFs Enhanced Structural Adjustment Facility (ESAF) in the early to late 1990s. The PRSPs and ESAF were later replaced by the Poverty Reduction and Growth Facility (PRGF) and the Extended Credit Facility (ECF) in the late 1990s. However, all the programs were centred on three key structural adjustment policies as preconditions to

accessing external debt and humanitarian aid, namely; (1) exchange rate liberalization, (2) interest rates deregulation and (3) democratization (Munthali et al. 2010)

2.2.2 Exchange rate

Between 1980 and 2020, Malawi's exchange rate was determined through fixed pegs, limited flexibility and free float approaches. From independence in 1964 to 1994, the fixed exchange rate regime was predominant. In 1994, a free float approach was implemented, and the Kwacha depreciated by almost 290 %. This depreciation caused macroeconomic instability, and the authorities were forced to adopt a managed float exchange rate system between 1995 and 1998. Following two successive devaluations in August 1997, the Malawi Kwacha returned to a free float exchange rate system as a prescription for the 1998 SALs. The system remained in place until 2004, when the Reserve Bank of Malawi (RBM) returned to the managed float system until 2006 when it adopted a *de facto* pegged exchange rate policy. In 2012, the de facto exchange rate policy was abandoned in favour of a free float exchange rate system in response to donor pressure and increasing BOP problems due to the scarcity of foreign exchange. However, the RBM abandoned the free float exchange rate system again for a managed float in 2013, and this approach reigned until 2020. In total, the Malawi Kwacha was devalued thirteen times, with the period between 1981 and 1994 seeing the most devaluations (seven times) (Pauw et al., 2013; RBM, 2000; Silumbu, 1995).

When an exchange is higher than its implied equilibrium rate, it is considered overvalued or misaligned (Otieno et al., 2022). On the other hand, the exchange rate competitiveness is measured by the real effective exchange rate, which is the value of a currency relative to a basket of currencies of its major trading partners (World Bank, 2022b). Figure 2.1 below presents the trends for the Malawi Kwacha's nominal exchange rate and the real effective exchange rate between 1980 and 2020. Three key issues are noted in figure 2.1 and Table 2.1 below. Firstly, the 1980 to 1998 period, dominated by the fixed or pegged exchange rate and consequently the highest number of devaluations, had a lower scale of capital flight than the post-1999 period, predominated by the free float and managed float exchange rates. Secondly, the high rates of capital flight in the post-1999 period could be attributed to the continued depreciation of the Kwacha, as evidenced by lower real effective

exchange rates in the period dominated by currency depreciations. Thirdly, the first capital reversal between 1991 and 1992 came after a series of devaluations from 1985 to 1990, while the second capital reversal followed a stable exchange rate period between 1996 and 1997. Finally, the fourth capital reversal fell within a time when the Kwacha was less competitive, while the final capital reversal in 2010 followed a minor devaluation in 2009

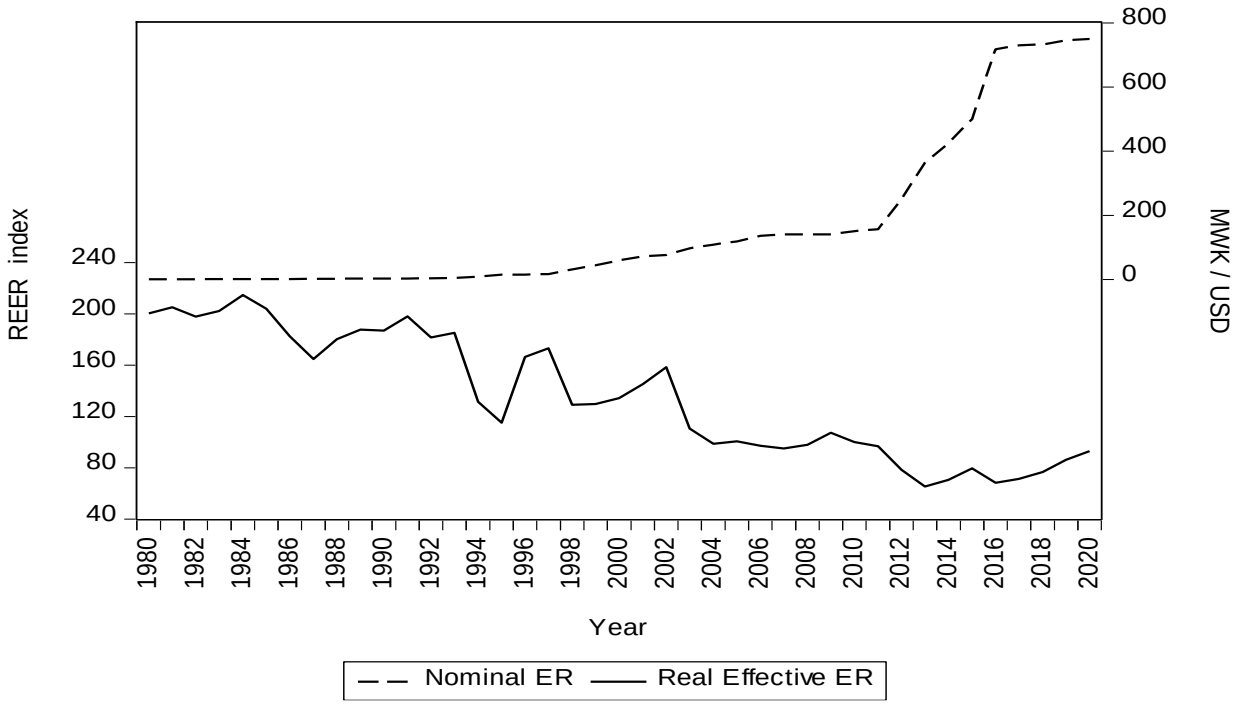

Figure 2. 1 Trends in Malawi Kwacha nominal exchange rate and real effective exchange rate

Source: WDI database, accessed in the year 2022

Table 2.1 summary of exchange rate policy regimes in Malawi

Period	Exchange rate policy	Devaluation	Depreciation	Key reasons
1965-1973	Pegged to Pound Sterling			
1973 – 1981	Pegged to Pound sterling and USD			
1981 -1984	Pegged to SDR	1982 by 15 % 1983 by 12 %		Control appreciation of MWK due to appreciation of USD in the SDR
1984 – 1994	Pegged to a basket of seven currencies	1985 by 15 % 1986 by 10 % 1987 by 20 % 1988 by 15 % 1990 by 7 %		Control appreciation of MWK due to worsening trade margins caused by an increase in transportation costs as a result of the Mozambican war
1994	Free float		1994 by 290 %	BOP disequilibrium due to the 1992 drought and donor withdrawal
1995 -1998	Managed float	1997 August 21 1998, by 28 % August 24 1998, by 23 %		To control the appreciation of MWK due to a rise in inflation, alleged to have been a result of fiscal indiscipline
1998 – 2003	free float		1999 by 38 % 2000-2003 by 64 %	As prescription to 3-year SAPs program. Suspension from IMFs PRGF
2004 – 2006	Managed float		25 % by 2006	To control appreciation of MWK
2006 – 2011	De facto peg to US Dollar	2007 by 3 % 2009 by 8 % 2011 by 10 %		To control appreciation of Kwacha To counter the growing foreign exchange parallel market
2012-2013	Free float	2012 by 33 %	2013 by 74 %	Withdrawal of donors in 2013
2014-2020	Managed float		2014 by 24 % 2015 by 21 % 2016 by 51 % 2017 -2020 (3 %)	BOP disequilibrium due to declining export revenues

Sources: Author's compilation from RBM (2000); Munthali (2010); Silumbu (1995)

2.2.3 Interest rate

With the adoption of the SAPs, Malawi started the liberalization of lending rates in 1987, followed by the deregulation of deposit rates in the following year. By 1990, Malawi had fully deregulated the lending rates. The Reserve Bank of Malawi act of 1988 established the bank rate, from which, since then, the lending and deposit rates have depended. When the RBM adjusts the bank rate upwards, the banking sector also adjusts the lending and deposit rates upwards. Since 2014, the RBM has often used the interest rate channel to effect the monetary policy, intending to correct the macroeconomic environment, mostly inflation. As such, the policy and lending rates follow trends in inflation rates (Kanyumbu, 2021; Ngalawa & Viegi, 2011).

According to figure 2 below, the lending rates in Malawi are much more volatile than in the US. As a result, Malawi's lending rates are higher between the two economies. Between 1980 and 1998, there was a co-movement between the lending rates in Malawi and the real interest rate differential between the United States of America (USA) and Malawi. However, this trend is not reflected in the period between 2000 and 2020, as the rise in the lending rates was associated with a real interest rate differential decline.

Between 1980 and 1988, the real interest rate differential was mostly lower and closer to zero. The liberalization of lending rates in 1988 led to a sharp increase in the real interest rate differential between the USA and Malawi. This increase is mirrored in a sharp increase in the capital flight trend between 1989 and 1990. The differential declined between 1990 and 1992. Similarly, the capital flight trend also declined around the same period. Between 1994 and 1996, capital flight was again higher when the real interest rate differential was high.

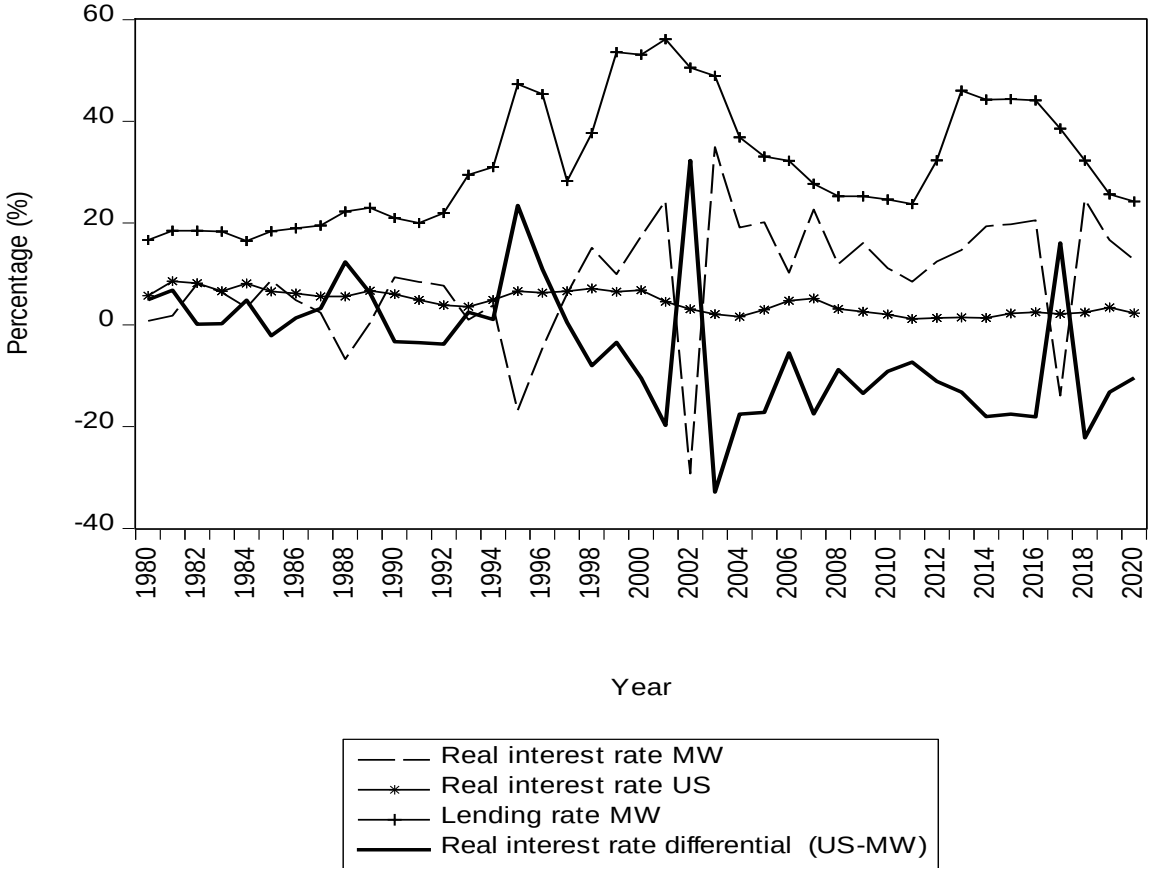

Figure 2. 2 Interest rates between Malawi and US

Source: WDI database, accessed in the year 2022

The interest rate differential has mostly been lower than zero since 1998, as the lending rates also steadily declined between 2004 and 2012. However, from 2012 to 2014, the lending rate went up. Correspondingly, the capital flight trend went up, although the interest rate differential between the USA and Malawi decreased. The differential rose again in 2017 before declining sharply in 2018 and recovering between 2019 and 2020. The sharp rise in the differential contrasts with a decline in capital flight between 2016 and 2018. The rise between 2018 and 2019 corresponds to the rise in capital flight in 2019 and 2020.

2.2.4 The economic growth trends and capital flight

Lower growth rates characterized the period between 1980 and 1999 as compared to the preceding period, which had higher growth rates. According to figure 2.3 below, the lower

growth rates in this period were also moderately volatile, averaging 3.8 %. However, between 1992 to 2001, the rates were highly volatile. First, the growth rate plummeted from 8.7 % in 1991 to -7.33 % in 1992. Then, it rebounded to 9.69 % in 1993 before dropping to a record low of -10.2 % in 1994. Further, In the following year, the growth rate spurred again to a record high of 16.72 % in 1995. After that, the growth rate declined to 7.3 % in 1996, 3.79 % in 1997, 1.5 % in 1998, and a further slide to -4.97 % in 2001. Finally, the growth rate volatility eased during the 2002 to 2019 period, mildly oscillating between 1.7 % (2002) and 9.6 % (2006) while averaging 4.97 %. After that, it plummeted to 0.8 % in 2020 when the COVID-19 pandemic brought about a global economic slowdown. In addition, several other events are attributed to the highly volatile growth rates in the 1980s to 1990s. These include the after-effects of the global oil shocks, the Mozambican civil war, a decrease in capital inflows and severe droughts between 1992 and 1994, and the democratic transitioning of the government from MCP to UDF in 1994, which was preceded by the withdrawal of donor support for humanitarian aid (Munthali et al., 2010; World Bank, 2022b).

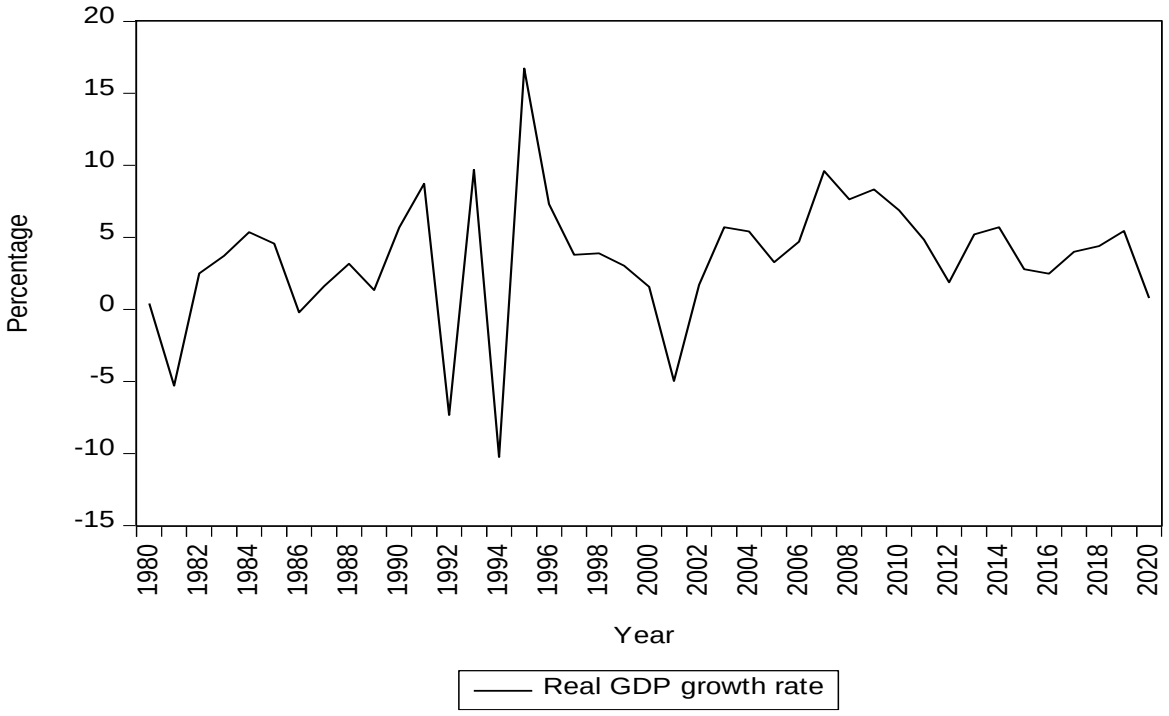

Figure 2. 3 Malawi's real GDP growth rate trends

Source: WDI database, accessed in the year 2022

It can be noted that the economic growth rates have, in general terms, been more positive and relatively stable in the 2000s than in the 1980s and 1990s periods. A general expectation, therefore, would be that capital flight needed to be lower in the latter phase than in the former. However, this does not seem to be the case for Malawi.

2.2.5 External financing and capital flight in Malawi

Due to insignificant trade gains, or low domestic revenue collection, Malawi relied on donor aid for foreign currency and budget support. In this regard, the significance of donor aid to Malawi is highlighted through 40 % direct support to the national budget by donors registered in 2010. However, donors suspended this direct budgetary support at least three times since it began in 2000 due to what donors termed non-adherence to conditions of support by the various government administrations. The first direct budgetary aid suspension to the government was in 2002, as donors protested the failure of the government to manage the fiscal deficit and rising corruption.

This was followed by a second suspension which began in 2010 when the United Kingdom (UK) government withdrew budgetary support due to disagreements with the government's expenditure policies when allegedly donor funds were used to procure a presidential jet. Compounded by what donors viewed as a lack of commitment by the Malawi government to safeguard human rights, the other major donors withdrew their budgetary support in 2011. The budget support was restored in 2012, however, momentarily. In 2013, all the major donors indefinitely suspended budgetary support after revelations of excessive looting of public finances, popularly known as the "cash gate," were publicized. Although some multilateral donors resumed support to the government, mostly through technical support, this support has mostly averaged less than 10% of the total government budget (Orth et al., 2018).

Due to insignificant trade gains, low domestic revenue collection and declining donor aid, Malawi have relied on external debts to bridge the budget deficit gap. In addition, the balance of payments (BOP) problems of the 1980s forced the country to source external debts from multilateral lenders like the IMF and the World Bank. Malawi's external debt stock in 1971 was $152 million only. However, by 1984, the external debt stock had

reached $702 million; by 1995, the figure had grown to $2 billion. Ten years later, the country accumulated an extra $1 billion of external debt, which it struggled to repay.

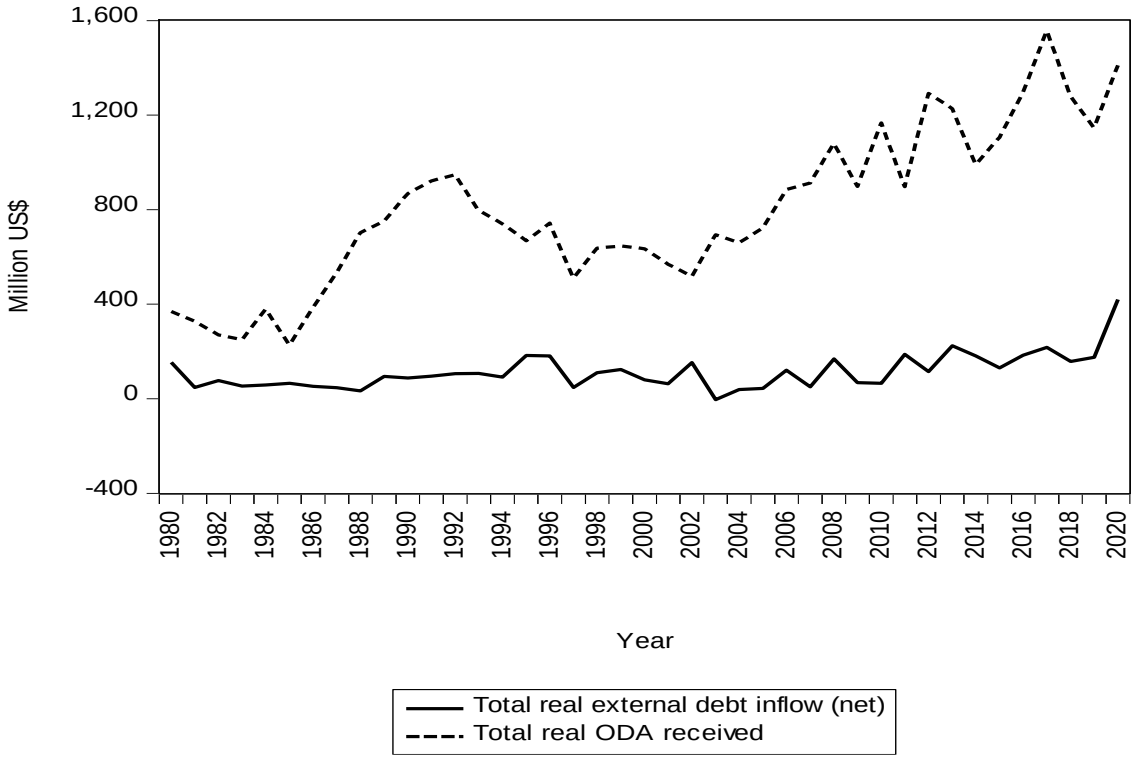

Figure 2. 4 External debt and aid flow trend in Malawi (Constant 2018 US dollars)

Source: compiled by author from IDS and WDI database, accessed in 2022.

As noted in figure 5, external debt flows fluctuated significantly post-2000. Generally, the level of flows has consistently been below $300 million. However, ODA had been on the rise since 2000, before periods of sharp declines between 2009 and 2013. In addition, ODA rose substantially in 2016 before another sharp decline in 2018 and 2019.

2.3 Political history and capital flight

The Malawi Congress Party (MCP), led by Hastings Kamuzu Banda, took over from a 70-year-long British colonial rule in 1964 after Malawi attained independence. Banda and the MCP governed Malawi for 30 years, mostly under a one-party republic without an opposition party (Polity IV, 2010). Despite significant economic achievements during the pre-oil crisis, concerns about human rights abuses, oppression, and dwindling economic performance in the 1980s led to intensified calls for a change of government to a

democratic dispensation. The international community's massive global democratisation campaign further fueled these calls to democratise Malawi. For instance, in the late 1980s, the World Bank attached democratization as one condition for accessing aid (Birru, 2016).

The intense internal and external pressure from other donors led to a 1993 referendum when 64% of voters approved the change to multiparty democracy. As a result, the first multiparty elections were held in 1994. Eventually, the United Democratic Front (UDF) party won the first democratic elections in 1994, and Bakili Muluzi became the second president of Malawi. In 1999, Muluzi won a second term to rule Malawi for another five years. However, towards the end of his second term, political tension began to rise when he allegedly tried to bid for a third term against the constitutionally stipulated maximum of two terms. Ultimately, he picked Bingu wa Mutharika to run for the presidency on a UDF ticket (Polity IV, 2010).

In 2004, Bingu wa Mutharika became the third president of Malawi. Still, one year later, he deflected from the UDF due to internal party wrangles and established his party called Democratic Progressive Party (DPP). However, in his first term, the president faced stiff resistance from the opposition party since his party had less representation in the national assembly than the opposition. Nevertheless, during the 2009 elections, he triumphed with a 66% landslide vote, believed to be a reward for sound macroeconomic performance achieved during the first term of his rule.

A few months into his second term, he fell out with donors, and political divisions ensued within the DPP government. As a result, vice president Joyce Banda in a similar fashion as the sitting president, deflected from the ruling party and formed her political party called the Peoples Party (PP). The economic chaos that became the order of the day led civil society organizations to organize nationwide demonstrations on July 20, 2011. The demonstrations turned out to be catastrophic, and donors immediately suspended donor funding to the government, which led to acute foreign exchange currency scarcity (Wroe, 2012).

After the sudden death of Bingu wa Mutharika in April 2012, his vice president Joyce Banda ascended to the presidency under the PP umbrella. During her tenure, donor aid returned, albeit for a short period, as it was terminated again in 2013 due to the massive

plunder of public resources known as “Cashgate.” In addition, the public became dissatisfied with her economic management policies as the cost of living continued to soar. As a result, she lost the 2014 elections to Arthur Peter wa Mutharika of the DPP, a brother to the late Bingu wa Mutharika (Anders, 2021).

Allegedly, public finance mismanagement and rampant corruption continued under the Arthur Peter wa Mutharika administration. A fallout between the party’s senior members and its vice president, Saulos Chilima, in 2018 led to his defection from the party. This internal political strife led to a further decline in the party’s support.

In 2019, the outcome of the elections, which were declared in favour of Arthur wa Mutharika, was contested in court by the opposition parties. The constitutional court nullified the results, citing gross irregularities in the electoral process, and ordered a re-run of the elections in May 2020. The peaceful re-run elections favoured Lazarus Chakwera of the MCP, whom Saulos Chilima deputized after they had formed a TONSE alliance with other parties (Kondowe & Ngwira, 2019; Magolowondo, 2007). In addition, the same period was affected by the COVID-19 pandemic, which further worsened the country’s economic status. In total, Malawi had six democratic government elections, and despite tensions rising before the elections, the actual elections never resulted in chaotic scenes. However, the country transitioned from one party to another on five occasions. Table 2.2 below summarizes Malawi’s government transitions from independence to 2020.

Table 2.2 Elections periods and transitions in executive power

Period	President	Party
1964	Hastings Kamuzu Banda	MCP
1994	Bakili Muluzi	UDF
1999	Bakili Muluzi	UDF
2004	Bingu wa Mutharika	UDF
2009	Bingu wa Mutharika	DPP
2012	Joyce Banda	PP
2014	Peter wa Mutharika	DPP
2019	Peter wa Mutharika	DPP (Nullified)
2020	Lazarus Chakwera	MCP

Source: Author's compilation

Generally, peaceful and democratic government executive power transitions are anticipated to lead to a reduction in capital flight. However, the opposite seems to be true for Malawi. According to Hussein (2005), the attainment of political power in government administration through the executive arm of government is considered a pathway to self-enrichment in Malawi, thus perpetuating corruption, abuse of public funds and undermining government authority.

The argument thus seems to correspond with the trend of capital flight in Malawi. Capital flight worsened when there were more elections and more transitions in the government's executive power(1998 to 2020). However, on the contrary, the period of only one general election (1980 to 1997) corresponds to a lower occurrence of capital flight in the country.

2.4 Mechanisms of capital flight in Malawi

2.4.1 Trade misinvoicing

According to a report published by Global Financial Integrity (2021), Malawi ranks second among 134 developing countries globally, with a trade value gap or trade misinvoicing of 36%. The Gambia is first at 45 %, while Suriname (31.9 %), Kyrgyzstan (30.6 %), and Belize (29.2%) complete the top five. In juxtaposition, SSA, where Malawi belongs, ranks

at the bottom of the five developing regions, namely Developing Asia (US $388.6 billion), Developing Europe (US $158.6 billion), Western hemisphere (US $97.4 billion), and the Middle East & North Africa (US $58.6 billion) (GFI, 2021). According to the figure below, trade misinvoicing has grown in the post-2000s era after a substantial decline during the 1990s. The rise in trade misinvoicing in the post-2000s era coincides with the growing capital flight in that period.

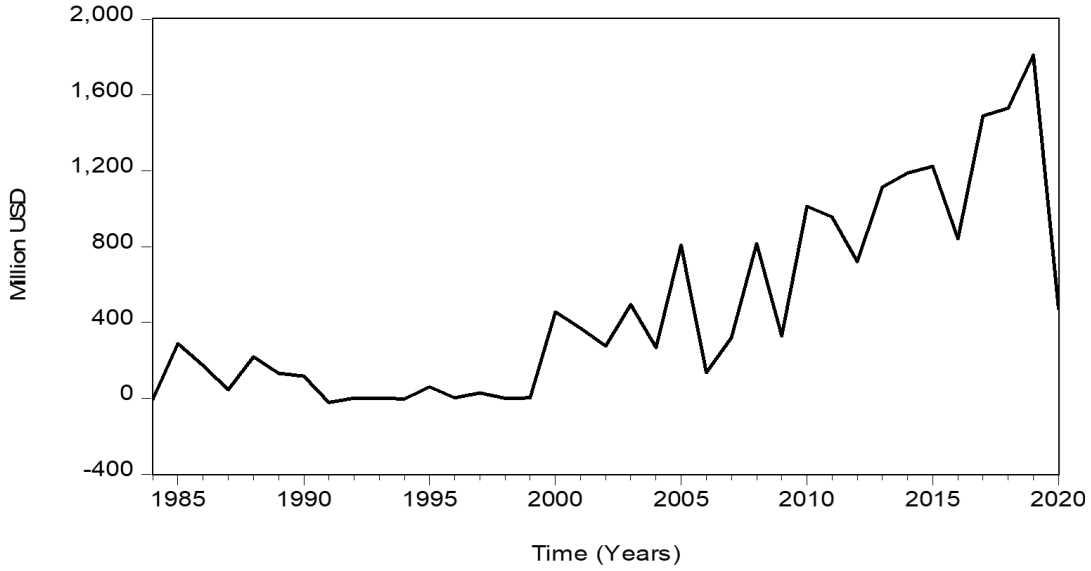

Figure 2. 5 Real trade misinvoicing from Malawi (Constant 2018 US$)

Source: compiled by the author

Malawi's exports are mainly destined for the United Kingdom, Germany, Belgium, the United States of America, South Africa, and Zimbabwe. On the other hand, the imports are mainly from the United Arab Emirates, China, India, South Africa, and Zambia. While most of the exports are from private traders, a large share of the imports is procured under government contracts. Research has revealed that most African illicit financial transfers go to East Asia, Europe, and North America. When aggregated by countries, China, the United States of America, the United Kingdom, the United Arab Emirates, and Belgium are havens for illicit financial flows (Signé et al., 2020).

Surprisingly, most of the countries mentioned by Signe et al. (2020) are the top trading partners for Malawi. Therefore, this signals a possibility that private traders take advantage

of Malawi's weak institutional and regulatory frameworks to engage in trade misinvoicing and illicit financial flows. Additionally, within the argument of Hussein (2005), the private sector could thus take advantage of the corrupt government system to further defraud the government of its resources or be used as a conduit for stolen finances, allegedly through inflated prices in procurement contracts.

2.4.2 Smuggling

In a few selected cases, the media reported some attempted or accomplished foreign exchange externalization and natural resources smuggling practices by residents and non-residents. In all these reported cases, residents and non-residents were apprehended for their involvement in the illegal practice. Figure 2.6 below provides a chronicle of those sampled cases, aggregating to $8.89 million between 2015 and 2019 (Chimjeka, 2022; Kamakanda, 2017; Makhiringa, 2017; Mchazime, 2016; Nkawihe, 2015, 2017).

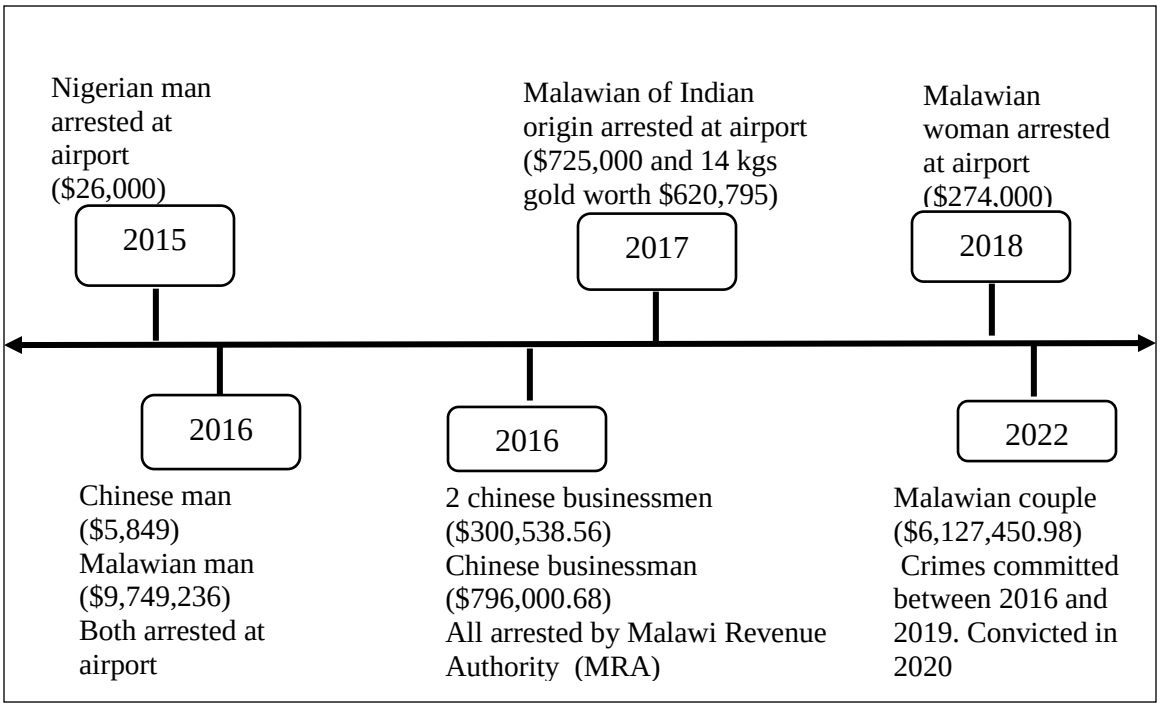

Figure 2. 6 Timeline of some revealed cases of currency smuggling in Malawi

Source: Author's compilation from Chimjeka (2022), Kamakanda (2017), Makhiringa (2017), Mchazime (2016), Nkawihe (2015; 2017)

From the information, it can be noted that capital flight in Malawi is practised by domestic residents and even foreign direct investors. Additionally, it can be noted that capital flight does involve not only the externalization of hard foreign currency but also valuable minerals, like in the case of a Malawian of Indian origin who was apprehended while attempting to smuggle out 14 kilograms of gold worth US$620,000.

2.4.3 The bank channel

Munthali (2003) reported that the frequent devaluations in the 1980s to 1990s led to a proliferation of parallel exchange rate markets in Malawi. While figure 8 above provides what could easily be observed as illegal externalization of foreign currency, there is the possibility that many go unnoticed since the country's other borders are more porous than the airports. Other forms of capital externalization are much more difficult to observe because they are fraudulently formalized or even disguised through legal channels. For instance, it was reported in 2012 that syndicates within the Banking system illegally issued receipts and bank stamps to black market forex operators, aiding in the illicit externalization of the much-needed foreign currency (Kasalika, 2012). This hypothesis is in line with Heggstad & Fjeldstad (2010), who established that most banks found it difficult to resist facilitating illicit transfers, especially from politically exposed persons in the SSA region.

2.5 Summary of the overview chapter

In conclusion, this chapter has given an abstraction of the structure and performance of the economy of Malawi concerning capital flight. It has also provided an overview of Malawi's corruption and political dynamics, therefore projecting a picture of the data used concerning the two variables of interest for this study. Lastly, the chapter closes by giving a synopsis of the mechanisms of capital flight to give a picture of the prevalence of illegal foreign currency externalization and trade misinvoicing in Malawi

CHAPTER THREE

LITERATURE REVIEW

3.1 Introduction

This chapter reviews relevant literature and empirical studies, focusing on theory and empirical evidence on capital flight and its determinants. The theoretical section is presented first in section 3.2, which discusses the definition, estimation methods, and applied theories of capital flight. Next, the empirical literature is reviewed in section 3.3, highlighting key arguments and findings from various empirics in the SSA regional and country-specific studies. The intentions of this chapter are two-fold: to discuss key arguments and evidence from related studies. Secondly, to highlight empirical gaps that this study intends to fill.

3.2 Theoretical literature review

3.2.1 The definition of capital flight

The diversity in defining and estimating capital flight has hinged on whether it is possible to conceptually and practically separate normal capital flows from what is purported by the name "capital flight." Authors have variedly distinguished normal capital outflows from abnormal capital outflows (capital flight) based on the volume and motive of flows.

The first definition is by the World Bank (1985), also known as the residual definition, which considers capital flight as the unexplained difference between sources of funds and uses of those funds as reported in the country's BOP accounting. The second definition is the broad definition by Dooley (1986), which regards capital flight as the unremitted earnings on stocks of capital held in foreign economies by residents of the domestic economy. Cuddington (1986) provided the third definition, also known as the narrow or hot money definition, which regards capital flight as speculative short-term capital outflows (hot money) responding to changes in economic policy and political instability risks.

The fourth definition is the asset stock mirror definition by the Bank of International Settlements (BIS), which defines capital flight as an increase in claims on deposits in foreign-held bank accounts by residents of the source country (BIS,1984). Fifthly, the trade misinvoicing definition by Bhagwati (1974) considers capital flight as the value of funds that are not repatriated back to the domestic economy from export funds, export receipts, imports over-declaration, and imports under-declaration.

The World Bank's definition focuses on the volume of flows as it provides broad estimates of what could be external claims, regardless of whether the motive is ill-intentioned or purely rational portfolio investment behaviour (World Bank, 1985). A major flaw in this definition is that it does not distinguish between normal capital flows and illegal or illicitly motivated flows. Therefore, Dooley's definition attempted to close this gap by defining capital flight in terms of the illegal motives of wealth holders (Dooley, 1986). Similarly trade misinvoicing is also defined in terms of illegal motives by the trade agents.

However, the Cuddington (1986) definition is based on the volume and maturity of flows (short-term), of which the intention of flows is largely in response to macroeconomic policy distortions. Finally, the BIS definition accounts for both the volume and the motive of flows. By volume, the BIS definition tries to be more precise in capturing what could be capital flight, motivated by intentions to keep wealth in foreign accounts, of which the earnings are not remitted to their home countries (Ajayi, 1992; Beja, 2005; Schneider, 2003; Yalta, 2009).

3.2.2 Mechanisms for capital flight

According to Erbe (1985) and Nolling (1986) capital, flight agents use different channels and mechanisms to externalize capital. The first and most commonly known mechanism is smuggling, whereby foreign currency precious minerals are hidden in mediums such as suitcases, handbags, or containers of other commodities. This follows an illegal channel and thus relies on weaknesses in the country's border control systems. The second mechanism is a misrepresentation of trade figures, known as trade faking or trade misinvoicing. In this channel, importers tend to overinvoice purchases from a foreign country to keep the difference away from the domestic authorities. Conversely, they may underinvoice imports if the purpose is mainly to evade customs tax.

Similarly, Bhagwati (1974) posited that exporters tend to under-declare their export earnings if the intention is to externalize capital or evade domestic remittances, or they may over-invoice exports if the intention is to access more forex that may be required to support the export process in the case of strict capital and exchange controls. Thirdly, capital flight agents may use the legal bank channel to send capital abroad. Heggstad and Fjeldstad (2010) concluded that the banks in the SSA region find it difficult to resist handling questionable flows of funds, especially from politically exposed persons. This is, however, supported by the bank secrecy laws that exist in both the SSA region and the recipient countries of the flight capital. According to Schneider (2001), the bank channel has been considered the most commonly used medium of capital flight from the SSA region since the 1980s debt crisis.

Lastly, according to Beja (2006), high-ranking government officials, politically exposed persons, and private investors sometimes smuggle public external debt inflows. Government officials and politically exposed persons tend to sign external public debts from foreign lenders. In some instances, these funds do not flow into the economy's accounts but are channeled into the respective authorities' and politicians' domestic or foreign-held accounts. In that case, only accounting figures are made in the domestic accounts but with no corresponding inflows. In addition, private traders tend to access publicly guaranteed loans for domestic investments. Nevertheless, instead, they end up externalizing the funds to foreign accounts for investments beyond the control of domestic authorities or safekeeping.

3.2.3 Estimation methods for capital flight

The variations in definitions of capital flight have consequently led to different capital flight estimation methods. These capital flight measures can be classified into two main categories; trade and asset statistic-based approaches and the BOP statistics-based approaches and approaches.

3.2.3.1 The asset and trade statistic-based approaches

The asset and trade statistic-based approaches are those capital flight estimation methods that rely on trade data and data on bank deposits by non-residents. The BIS and trade misinvoicing methods are the two measures in this category.

a) The BIS measure

The BIS defines capital flight as the difference in accumulated assets by non-bank residents in foreign bank accounts between two periods. By this, capital flight is measured through the stock of private assets belonging to non-bank economic agents held as deposits in accounts at foreign banks. Considered the most accurate and direct measure of capital flight, the BIS method or Asset method uses information on bank deposits for foreign assets, particularly for BIS reporting countries. The BIS mirror static estimates can also be regarded as lower-bound estimates of capital flight involving assets that can be easily tracked (Beja, 2005).

b) The trade misinvoicing measure

Developments in the trade misinvoicing concept were advanced by Bhagwati (1974), who proposed that trade misinvoicing could be measured using the partner-country trade statistics approach. Ndikumana and Boyce (2021a) updated the trade misinvoicing method following foundations from Bhagwati (1974), as follows;

First, net export misinvoicing is calculated

$$X_{mis,t} = M_{f,h,t} - cif * \left(X_{h,f,t} + X^{U}_{h,f,t}\right) \quad 3.1$$

Where X_{mis} is net export misinvoicing, $M_{f,h}$ are net imports from industrialized countries to the home country, $X_{h,f}$ is net exports from home country to industrialized countries, and $X^{U}_{h,f}$ are exports recorded under unspecified areas but allocated to industrialized countries based on the proportion of exports to the industrialized countries in the home country's aggregate exports. Secondly, net import misinvoicing is calculated as follows;

$$M_{mis,t} = \left(M_{h,f,t} + M^{U}_{h,f,t}\right) - cif * \left(X_{f,h,t}\right) \quad 3.2$$

Where M_{mis} is net import misinvoicing, $M_{h,f}$ are imports from the home country by industrialized countries, $M^{U}_{h,f}$ are imports from the home country recorded under unspecified areas but allocated to industrialized countries based on the proportion of imports from the home country in the industrialized countries' aggregate imports. $X_{f,h}$ are

exports by the industrialized countries to the home country, cif is the rate at which the CIF is converted to FOB values. Therefore, the net trade misinvoicing ($MISINV_t$) is given by;

$$MISINV_t = \frac{X_{mis,t}}{\alpha_t} + \frac{M_{mis,t}}{\beta_t} \quad 3.3$$

Where α is the proportion of exports destined to industrialized countries in the home country's aggregate exports to advanced economies and emerging and developing countries. β represents a proportion of imports from industrialized countries in the home country's aggregated imports from advanced emerging and developing countries.

3.2.3.2 BOP statistics-based approaches

The BOP statistics-based approaches to estimating capital flight are all those measures that derive capital flight estimates from the BOP entries. The BOP is an international financial accounting system intended to record all financial inflows into a country and outflows to the rest of the world over a defined period (Krugman et al., 2017).

Since most of the BOP statistics-based approaches were developed in the 1980s and 1990s while countries reported to the IMF using the BPM4 system of recording transactions, then summarily, the BOP account can be presented using the table below, which is adapted from Ajayi (1992) and Cumby and Levich (1989) to aid explanation of the baseline methods and their variants.

Table 3.1 Summary of a Balance of Payment account

	BOP Entry line	Short-form
A	Current Account Surplus	*CA*
	1. Border Travel (credit)	*A1*
	2. Reinvested Foreign Direct Investment Income	*A2*
	3. Other Investment Income	*OI*
B	Net Foreign Direct Investment	*NFDI*
C1	Nonbank Private Short-term Capital Outflow	*NONBNKFA*
D	Portfolio Investment Abroad: Bonds and Corporate equities	*PI*
E	Banking System's Foreign Assets	*BNKFA*
F	Change in Reserves	ΔRES
G	Net Errors and Omissions	*EO*
H	Change in External Debt	$\Delta DEBT$

Source: Adapted from Ajayi (1992) and Cumby and Levich (1989)

a) The World Bank Residual Method

Based on the BOP computation, all recorded financial inflows and uses are supposed to be net zero. The World Bank (1985) and Erbe (1985) regarded the difference between recorded sources of foreign-sourced finance and recorded uses of such finance in the BOP to represent capital flight. The following equation was therefore used,

$$CF_{World\ Bank} = \Delta DEBT + PI + CA + \Delta RES \qquad 3.4$$

Where $CF_{World\ Bank}$ represents capital flight measured by the world bank method $\Delta DEBT+PI$ represents sources of funds, and $CA+\Delta RES$ represents uses of funds.

Morgan and Guaranty (1986) did not regard bank asset outflows as part of capital flight. Therefore, they deducted all the reported banking and monetary authorities' short-term foreign-held assets from the World Bank estimates. Another variant to this method was proposed by Cline (1989), who excluded foreign-held assets owned by statutory corporations and government asset transfers. Ajayi (1992) proposed the inclusion of FDI, OI, and trade misinvoicing in the baseline residual method and then adjusting the baseline method to interest earnings. The method was adopted and adjusted by Boyce &

Ndikumana (2001) and has since been updated in subsequent series by Boyce and Ndikumana (2012) and Ndikumana and Boyce (2008; 2018; 2021a). Following these adjustments, capital flight is estimated by the following equation

$$CF_{N\&B} = \Delta(\varphi DEBT) + FDI + PI + OI - (CA + \Delta RES) + MISINV \qquad 3.5$$

Where $CF_{N\&B}$ is capital flight following Ndikumana and Boyce(2021a) methodology, adjusted for inflation, φ is the adjustment parameter for change in the external debt stock, which includes exchange rate fluctuations, debt forgiveness, and change in interest arrears, FDI is net Foreign Direct Investment, PI is net Portfolio Investment, OI is Other Investments, CA is the Current Account balance, ΔRES is net additions to foreign exchange reserves, *MISINV* is net trade misinvoicing.

b) Dooley method

The Dooley method attempts to capture private wealth held abroad that does not yield returns to the domestic economy. The method uses a derived approach to reflect the flight of capital to capture this intuition from the BOP. First, aggregate cumulative capital outflows are computed as a sum of claims on external assets and cumulated flows of errors and omissions. The aggregated cumulative capital is adjusted for debt data statistics discrepancies. Secondly, aggregate recorded external assets (*EA*) are calculated using returns from interest on foreign assets reported in the BOP. Finally, the adjusted External Assets are subtracted from aggregate cumulative capital outflows (*TKO*) to find the total capital outflow (Schneider, 2003). In short, the Dooley estimate is given by

$$CF_{Dooley} = TKO - EA \qquad 3.6$$

Instead of the change in the total stock of capital outflow considered in the Dooley measure, Khan & Haque (1985) considered only the short-term private capital outflows of nonbanking sectors in calculating capital flight.

c) Hot money method

Cuddington (1986) regards capital flight as hot money flows responding to speculative policy or political shocks and prospective unfavourable financial or economic outcomes. Thus in measuring capital flight, the hot money method considers the Errors and Omissions

(EO) entry in the BOP statistics and short-term capital flows. It attempts to capture speculative private capital flows and hidden capital flight using the following equation

$$CF_{Hot\ Money} = (-EO - NONBNKFA) \quad 3.7$$

The Hot Money method is thus considered the narrowest measure of the BOP-based approaches.

3.2.3.4 Conclusion on the estimation of capital flight methods

Claessens and Naude (1992) found that the capital flight estimates from the baseline residual measure by the World Bank mirrored estimates from the Dooley method. In agreement, Schneider (2003) demonstrated the similarity in the two measures by alternatively using equation identities from the BOP entries. This leads to the conclusion that both measures capture similar magnitudes of capital flight. Empirically, Lensink *et al*. (2000) also established that estimates from the two measures produced very close results compared to results when the other measures were employed. However, Schneider (1991) established that the Dooley estimates were highly sensitive to the quality of data for external claims, interest rates, and investment income receipts. Furthermore, despite its direct and more accurate approach, four major difficulties were observed concerning the practical use of the BIS or mirror asset method. Firstly, it is considered to restrict capital flight to private asset deposits held by domestic residents in foreign financial accounts. Secondly, it disregards that some externalized capital is held as assets in other forms other than deposits in foreign banks. Thirdly, it disregards that in many Western Countries, bank secrecy laws may not allow disclosure of account owners' names, leading to a massive understatement of capital flight. Fourthly, data on private assets for this method is only limited to BIS reporting countries.

Failure to include long-term capital flows is a major weakness in the Hot money method. In addition, the Hot money method is at higher risk regarding the inclusion of normal flows responding to investment opportunities as capital flight. In terms of using data from the BOP tables, the IMF changed the reporting system from which data for the Hot money method was easily extracted. The BPM4 separated capital flows by maturity period as short-term private capital outflows and long-term private capital outflows. The BPM5 and

the current BPM6 no longer separate such capital outflows by maturity; rather, reports are compiled on the type of instrument. This renders the computation of capital flight by the Hot money method more complex (Yalta, 2009).

Lastly, the trade misinvoicing method is considered an understatement of capital flight as it restricts the magnitude of capital flight to the trade channel and trade agents only. However, capital flight goes beyond trade as it is also practised by government officials, politicians, and individuals who are not engaged in trade. Therefore, Ajayi (1992) suggested that trade misinvoicing estimates should be added to any baseline measures to get more accurate figures for capital flight. According to Boyrie (2010), variables that explain capital flight do not always tend to be exact as those that explain trade misinvoicing, thus rendering support to the postulation by Ajayi (1992).

3.2.4 Applied theories of capital flight

Definitions of capital flight discussed in section 3.2.1 above are enveloped in several theories that may closely relate to and perhaps jointly explain capital flight, mostly appropriated from theories of international capital flows. Applicable theories guiding this study are discussed in this section to provide the foundation for the factors that this study intends to investigate.

3.2.4.1 The Portfolio choice theory of investment and capital flight

Huang and Litzenberger (1988) argued within the confines of the standard portfolio choice model that the level of domestic wealth externalized and held outside the domestic economy depends on wealth-holders perceptions of relative variations in the risk of holding the wealth between the home country and the foreign country. Therefore, wealth will flow in the direction where the wealth holder anticipates lower utility which can be consumed from the returns of a given level of wealth held in the domestic economy.

Therefore Huang and Litzenberger (1988) presented foundations for the theory of capital flight in the context of the portfolio choice model by using the Von-Neumann-Morgenstern expected utility function as follows;

$$Max_{ct} E \sum_{t=0}^{\infty} \varphi^t U(c_t) \qquad 3.8$$

Where $U(c)$ is a utility function that is strictly increasing, continuous and concave. In maximizing the above problem, the representative agent is faced with the following constraint;

$$c_t = (1 + r_t)\omega_t + (1 + r^f)\omega_t^f - \omega_{t+1} - \omega_{t+1}^f \quad 3.9$$

Where;

c_t refers to consumption on yield at time t; ω_t refers to the wealth held in the domestic economy at time t; and ω_t^f is the portion of wealth held abroad by a representative agent. The return on wealth invested in the foreign market earns yield at a rate that is not time-dependent, r^f. At the optimum level, a representative agent in the domestic economy will allocate

$$\omega_{t+1}^* = \frac{E(r_{t+1} - r^f)}{\xi\sigma^2} \quad 3.10$$

Where σ^2 equates to the variance of yield on domestically held wealth, and ξ is a constant depicting the level of risk aversion by the wealth holder. At this optimal allocation level, the amount of capital that is exported abroad would be denoted as ω_{t+1}^{f*}. Assuming in simultaneity, another agent from the foreign country invests ϑ_{t+1}^* Into the domestic economy from the foreign market, then the net capital flight from the domestic market would be

$$CF_{t+1} = \omega_{t+1}^{f*} - \vartheta_{t+1}^* \ 3.11 \quad 3.11$$

And net capital invested in the economy between two subsequent periods will be given as

$$K_{t+1} = \omega_{t+1}^* + CF_{t+1} \quad 3.12$$

Such that the net capital flight would be denoted as

$$CF_{t+1} = K_{t+1} - \omega_{t+1}^* \quad 3.13$$

$$= K_{t+1} - \frac{E(r_{t+1} - r^f)}{\xi\sigma^2} \quad 3.14$$

Considering that capital K is a factor of production, therefore in a linear production given as follows

$$Y_t = \alpha K_t \qquad 3.15$$

where α is any non-negative number, then equation 3.13 can be transformed through natural logarithmic function as follows;

$$\ln\left(\frac{KF_t}{Y_t}\right) \cong \ln(d) - \ln\left(E(r_t - r^f)\right) + ln(Y_t) + \ln(\sigma_t^2) \qquad 3.16$$

where KF/Y is capital flight to GDP ratio, $E(r_t - r^f)$ is the interest rate differential $RIRD$ and Y_t is Gross Domestic Product GDP.

Thus in equilibrium, firstly, net capital flight is expected to rise if the level of the domestic interest rate lowers relative to the foreign interest rate. Secondly, capital flight will also increase when the risk variance increases. Thirdly, capital flight would also be high when risk aversion is very high. Lastly, the ratio of capital flight increases with a decrease in economic activities.

3.2.4.2 The investment diversion thesis

Ajayi (1992) postulated that public or guaranteed private debt provides a source of financing capital flight. However, public debt inflows become abused and swindled by the elite politicians and public officers who turn this public finance into private assets. To do this, the elite politicians and public officers either directly siphon the funds from public accounts or use private agents through bogus transactions like price-inflated contracts. After that, the illicitly acquired finances are either smuggled out as hard foreign currency stacked in suitcases or legally through connections of equally corruptible public officers, lawyers, and private agents. In some cases, the stolen finances are legally formalized by cartels of legal personnel, security agents, and government institutions before being sent to safe havens abroad.

In another scenario, according to Beja (2005), private investors may acquire loans from external lending institutions guaranteed by the government. Once they acquire the funds, the private agents move these assets and invest them in foreign markets, of which the returns may, at times, not get reported back to their domestic authorities.

3.3 Empirical literature on determinants of capital flight

In line with the applicable theories of capital flight discussed above, literature has generally identified innumerable determinants of capital flight. This section reviews relevant empirical evidence concentrating on studies of determinants of capital flight in the SSA region. First, the review focuses on the 1990s and early 2000s studies that shaped the foundations of capital flight studies in the SSA region. Secondly, the focus is shifted to more recent publications from 2010 onwards to understand the developments in the empirical research on the subject. Finally, across all the studies, the review aims to draw key arguments, findings, and econometric methodologies and thus explore relevant gaps to this present research study.

3.3.1 Early empirical evidence from SSA (1990 to 2010)

Initially, studies concentrated on analyzing capital flight from Latin American countries. Hermes and Lensink (1992) disputed the obsession with focus on Latin American studies as a scope for understanding capital flight and its determinants, arguing that the SSA countries also faced similar debt and capital flight problems and thus deserved equal attention. Using the OLS approach on cross-section pooled data, they analyzed six SSA countries (Ivory Coast, Nigeria, Sudan, Tanzania, Uganda, and Zaire). They found that external debt and exchange rate misalignment were the most important determinants of capital flight in the SSA region, regardless of whichever capital flight estimates were employed. However, other factors, such as domestic GDP growth rates, foreign aid, interest rate, inflation, government deficits, USA interest rates, and taxes, were all insignificant.

Ajayi (1992) highlighted the need to analyze country-specific determinants of capital flight in the SSA region. He investigated macroeconomic factors and employed time-series data from 1972 to 1989. By the OLS method, the study established that the exchange rate was an important determinant of capital flight in Nigeria. In addition, interest rates, budget deficits, and macroeconomic instability were other significant determinants of capital flight in the west African country. Except for the exchange rate, the results contradicted Hermes and Lensink (1992) and Pastor (1990), who had established, in the case of Nigeria, that interest rate, budget deficit, and macroeconomic instability did not influence variations in capital flight. This result highlighted the need for more country-specific studies than cross-

country studies, as the determinants of capital flight from Nigeria tended to differ from those in cross-country studies.

Drawing lessons from earlier studies on determinants of capital flight, Murinde et al. (1996) noted that using the OLS procedure on country-specific analyses posed challenges due to limited degrees of freedom. Therefore, they employed the Zellner method based on seemingly unrelated regression equations (SURE) estimated as one large equation to analyze macroeconomic factors hypothesized to determine capital flight in cross-country empirical determinations. This study made two important establishments in the literature on determinants of capital flight in the SSA region. Firstly, by analyzing data from Ivory Coast, Nigeria, Sudan, Tanzania, Uganda, and Zaire in country-specific spirit, for the period 1976 to 1991, they established that there were no determinants of capital flight which tended to be homogenous across all the six countries. Despite that, many common cross-country studies almost unanimously established that external debt and exchange rate were key determinants of capital flight. Secondly, by using an econometric approach that accounted for both actual and lagged values of economic growth rate, they established that, indeed, for some countries such as Zaire, Cote d'Ivoire, and Uganda, the lagged values of economic growth rate were significant in explaining capital flight. This finding entailed that when analyzing determinants of capital flight, at least in the SSA region, empirics needed to consider possible effects that both the lagged and contemporaneous processes for a particular variable of interest would play in determining variations in the dependent variable, capital flight.

Nyoni (2000) incorporated institutional and political factors in his study on Tanzania, starting from 1971 to 1993, based on historical political turbulent events in the country. Such events included widespread expropriation of private enterprises and government crackdowns on some private business people between the late 1960s and 1980s and the Kagera war between Uganda and Tanzania, fought between 1978 and 1979. Dummy variables for political and external shocks were used alongside differenced economic variables such as a premium on parallel exchange rate market, domestic inflation, capital inflows, interest rate, and economic growth rate differentials between Tanzania and the United Kingdom to capture these events for purposes of econometric analysis. Three key

issues are learned from this study; First, the use of dummy variables to capture political influences on capital flight in regressions. Second, cointegration approaches are limited due to the shorter sample period (22 years) and low-frequency annual data. Third, the recognition that previous capital flight may explain the future trends of capital flight is evidenced by the use of lagged capital flight variable as an explanatory variable alongside other regressors in a similar fashion as in Murinde et al. (1996), where they used lagged values of economic growth rate. From OLS regression, capital flight in Tanzania was jointly explained by real growth differential, lagged capital flight, external and internal political events, exchange rate overvaluation, macroeconomic instability, capital inflows through debt, and financial incentives. However, at individual-level analyses, the only significant variables were the economic growth rate differential and the lagged values of capital flight.

Hermes and Lensink (2000) looked at a larger dataset of 84 developing countries, including Malawi, in a cross-country analysis of the influence of six political risk variables on capital flight. Guided by the fact that no model was available to determine variables that needed to be held constant in capital flight analytical framework models, they first estimated a basic model of capital flight and capital inflow variables since literature had established strong linkages between capital flight and capital inflows. Secondly, they singly added the political variables to a basic model with capital inflow variables that were significant in the basic model regression estimations. Thirdly, for robustness check, they added to the models in step two above varying combinations of four variables from a set of twenty-two domestic and international economic factors that literature had established to be determinants of capital flight. Indeed, the study confirmed that political factors cause capital flight alongside macroeconomic factors. From this analysis, two key things were highlighted. First is the lack of consensus on analytical frameworks in the capital flight studies, which would guide which variables needed to be held constant or controlled. Secondly, the lack of robust empirical tests may have led to inconclusive results on the role played by political variables that would easily produce comparable results. Thirdly, since the political variables were all dummy variables, with minimal variations across time, caution must be taken when employing the political dummy variables as multicollinearity tends to be relatively very high between them.

Le and Zak (2006), in another cross-country panel study of 45 developing countries, tested an international asset allocation model derived from the standard portfolio choice and a production function to examine the influence of political risk on capital flight. In the model, Le and Zak (2006) hypothesized that empirics ought to control for interest rate differentials when estimating the effect of political risk on capital flight as they form the basis of a standard portfolio choice investment decision for almost all wealth holders. In addition to the interest rate differentials, the model further suggests that a combination of other economic factors on domestic economic risk and economic policy uncertainty can be added to the model as controls. Empirically testing this model, they followed the procedure by Lensink et al. (2000) and found that political instability was the primary cause of capital flight, followed by economic risk and policy uncertainty. Nevertheless, the control variables, GDP and interest rate differential, retained their anticipated significance in determining capital flight. The results from this study closely mirrored evidence from Collier et al. (2001), who took advantage of the availability of the survey-based subjective ICRG indices for political risk variables.

With cointegration approaches gaining prominence in economic research at the dawn of the millennium, Makochekanwa (2007) estimated the determinants of capital flight in Zimbabwe between 1980 and 2005 using the Engle and Granger (1987) approach. By employing the baseline residual capital flight estimates, the study analyzed both economic and political variables and found that, in the long run, variations in external debt and foreign direct inflows were significant in influencing the increase in capital flight in Zimbabwe. On the other hand, the study established that external debt inflows and increase in foreign exchange reserves in the short run escalate capital flight, while economic growth reduces capital flight. Furthermore, all political variables, such as political instability and public policy uncertainty, were insignificant in this study, with macroeconomic stability, exchange rate overvaluation, rate of return differentials, and lagged values of capital flight.

Lawanson (2007) employed an Auto Regressive Distributed Lag (ARDL) model in the analysis of capital flight from Nigeria, but in a seemingly similar fashion to the approach in the cross-country study by Hermes and Lensink (2000). Regressions were run on four versions of the residual estimates of capital flight; the baseline estimate adjusted for trade

misinvoicing, the baseline estimate unadjusted for trade misinvoicing, the Morgan and Guaranty Trust residual adjusted for trade misinvoicing, and the Morgan and Guaranty residual unadjusted for trade misinvoicing. This study used data spanning 32 years from 1970 to 2001. The robustness-checked results established that the real GDP growth rate was significant in the unadjusted residual baseline estimates regressions but not in the trade misinvoicing adjusted regressions when a lagged dependent variable is included. In addition, external debt, domestic debt, exchange rate overvaluation, and budget deficit were all significant within their hypothesized directions of influence. Similarly, real interest rate differentials, changes in the inflation rate, and political instability dummy were all significant and with the expected signs on the coefficients. However, the influence of the political variable on capital flight was very weak, contrary to the establishments by Le and Zak (2006).

The weak influence of political variables in the study by Lawanson (2007) almost resembles Moeva (2009), who could not establish that linkage in the case of Kenya. Political uncertainty and corruption dummies were both insignificant in this study. However, external debt stocks, currency overvaluation, high economic growth rates and corporate taxes were all significant and carried their hypothesized signs. Surprisingly, low inflation rates and low-interest rates were associated with declining levels of capital flight. Nevertheless, the author conceded to the lack of a guiding expectations model within the theoretical framework of capital flight, where wealth holders make wealth allocation decisions on foreign markets (capital flight) and domestic markets based on the perceived risk on returns. The limitation may have already been addressed by Le and Zak (2006), who modelled the capital flight equation determinants that link wealth holders' decision-making within the portfolio choice model to expectations in differences of perceived risk between different asset markets.

The only country-specific econometric analysis of capital flight from Malawi by Nyirenda (2000) focused on investigating macroeconomic factors using data from 1970 to 1997. He estimated capital flight by the baseline residual method to have totaled $2.83 billion within the study period. Furthermore, through a Two-Stage Least Squares regression, the study found that in the case of Malawi, real exchange rate overvaluation, lower economic growth

rates in Malawi relative to USA growth rates, changes in inflation, and tight fiscal policy lead to more capital flight from Malawi. Financial incentives on assets invested abroad proxied by interest rate differentials were insignificant in determining capital flight. The result on the influence posed by the exchange rate overvaluation was in line with a few other earlier country-specific studies from the SSA region, including Ajayi (1992) in the case of Nigeria, Nyoni (2000) in the case of Tanzania, and Ngeno (2000) in the case of Kenya. However, there were variations in the results on the significance of the influence of economic growth on capital flight. While Nyirenda (2000) found supporting evidence from Murinde *et al*. (1996) in the case of Zaire, the result differed from the case of Nigeria in the same study and Olopeaniea (2000) in the case of Uganda.

3.3.2 Recent empirical literature on capital flight in the SSA (2016 – 2022)

The exploding trends of capital flight at the beginning of this recent decade in the SSA region revived interest in the subject among various authors. Compared to the early empirical studies that mostly focused on cross-country analyses, recent research on the determinants of capital flight has increased focus on country-specific studies. For instance, Geda and Yimmer (2016) investigated the causes of capital flight from Ethiopia between 1970 and 2012. Using capital flight estimates from Ndikumana and Boyce (2012) and some updated series, the study employed qualitative and quantitative methods to analyze capital flight determinants. The study suggested that debt inflows amid political instability and corruption were key determinants of capital flight, in addition to macroeconomic instability and interest rate differentials. Moreover, a surprising result showed that capital flight was high before violent regime changes started compared to periods after such changes occurred.

Gankou *et al*.(2016) tested Cameroon's “revolving door” thesis between 1970 and 2010. Capital flight data estimates were obtained from Ndikumana and Boyce (2012). A unique highlight of this study was the use of simultaneous equations to test the revolving door hypothesis. The short-term VAR modelling results revealed a statistically significant relationship between capital flight and external debt inflows, but not ODA and FDI. However, the ARDL framework estimates showed that the revolving door thesis did not hold for the case of Cameroon.

Forson et al. (2017) investigated determinants of capital flight in Ghana within the portfolio choice framework, following Le and Zak (2006). The study analyzed time series data from 1986 to 2015, focusing on external debt, real GDP growth, real interest rate differential, external debt stock, financial development, governance and property rights. Since data on capital flight estimates from Ndikumana and Boyce (2012) were only available from 1986 to 2010, estimates from 2011 to 2015 were extrapolated from the available data by the authors. Employing the ARDL approach, the study found that all the variables of interest were significant and carried their hypothesized signs.

Oluwaseyi (2017) investigated the relationship between capital flight and economic growth, interest rate differentials, and political instability in Nigeria within the portfolio choice theory. The study used baseline capital flight estimates based on the World Bank (1985) and the VECM framework to find that interest rate differentials and external debt stock positively influenced capital flight. Political instability in the context of Nigeria's political situation and terrorism were, however, insignificant. Therefore, the study implied that reducing the debt-to-GDP ratio would help reduce capital flight.

Assibey et al. (2018) investigated the role of corruption and institutions on capital flight in 32 SSA countries within a portfolio choice model. Employing the GMM and fixed effects panel data analysis on data from 2000 to 2012, they argued that democratic environments and good governance practices would reduce capital flight through the reduction of corruption. They also argued that capital flight tends to be higher with frequent regime changes. Similarly, Kosselle and Mbai Akem (2018), while analyzing capital flight from the least corrupt African countries, argued that controlling corruption ensures good governance, reducing capital flight. They employed capital flight data from Ndikumana and Boyce (2012) for Botswana, Rwanda, Ghana, Swaziland, Cape Verde, Burkina Faso and Lesotho. The analysis used FDI, natural resources rents, inflation, real exchange rate, and real GDP growth as control variables.

Frantz (2018) investigated capital flight from 36 African countries between 1971 and 2009. He argued through the portfolio choice framework that the rise in the uncertainty of the next political government, especially during election periods, stimulates massive capital flight. This analysis used capital flight estimates from Ndikumana and Boyce (2012) and,

comparatively, from the GFI (2013) database. Goldsmith (2019) argued against the proposition by Frantz (2018) through an econometric panel data analysis for the same countries but using GFI (2013), and Ndikumana and Boyce (2018) estimates. The study also used a different data set for the main variable of interest, elections and thus found that the relationship between capital flight and elections was, in most cases, negligible. In some cases, it motivated inward capital flight.

Anetor (2019) aggregated data from SSA countries to run ARDL regression on capital flight and its determinants between 1981 to 2015. By employing the baseline estimates of capital flight, the study found that external debt stock only carried a positive and significant coefficient in the short run. Furthermore, this study found that interest rate spreads, macroeconomic instability, and capital controls are not significantly related to capital flight. However, it is worth noting that the study falls short in not including non-economic factors in the analysis.

In the case of Namibia, Tjaondo (2019) investigated determinants of capital flight from Namibia by analyzing annual data from 1990 to 2016 in a thesis study. Employing capital flight estimated using Dooley (1986), Morgan Guaranty (1986), and the World Bank (1985) approaches, the study found that FDI, current account deficits, change in reserves, and external debt stock were important determinants of capital flight. In this case study, corruption and political instability were both insignificant. Undji and Kaulihowa (2019) assessed the effects of fiscal policy on capital flight. They employed baseline capital flight estimates based on the World Bank (1985) method and found that lagged capital flight, taxation regime, high inflation rates, and increasing debt stock financed capital flight. Furthermore, they also found that financial deepening and current debt stock fueled capital flight. Most notably, both studies did not assess the roles of political variables in perpetuating capital flight.

Bosupeng et al. (2019) investigated the relationship between exchange rate and capital flight in Botswana, a small open economy. However, the study focused on exchange rate misalignment, using a cointegration approach with risk thresholds. Estimating capital flight using the baseline of the World Bank (1985) measure while also employing the ARDL and Granger causality approaches on annual data between 1980 and 2015, the study

concluded that exchange rate misalignment triggered the flight of capital. However, using baseline estimates unadjusted for trade misinvoicing created problems in the interpretation of findings, forcing the authors to assume trade misinvoicing was at play.

Otienno et al. (2022a) and Otienno et al. (2022b) investigated the role of external debt and exchange rates on capital flight in the East African Community countries; Burundi, Kenya, Rwanda, Tanzania and Uganda. Using a sum of identified capital outflows as capital flight, they employed the investment creation theorem for analyzing the role of exchange rate and the debt overhang thesis for analyzing the role of external debt stock on capital flight.

3.4. Conclusion of literature review

This review has provided a comprehensive synopsis of capital flight, focusing on the key arguments various authorities have contributed. Out of the five definitions and estimation methods available in the literature on capital flight, the World Bank's definition and residual estimation approach stand out as the best way to measure capital flight. The capital data estimates by Ndikumana and Boyce (2012) have been the most commonly used of the residual variant in recent SSA studies owing to the adjustments in external debt and trade misinvoicing. Regarding theoretical models, some theories have been proposed in the literature, such as the portfolio choice theory, debt theories, and risk differential thesis. However, the Portfolio choice model can be explained alongside the debt-driven theory. Finally, it has been noted that there are huge variations in terms of the analytical methodologies used. However, the cointegration approach has commonly been used to find long-run and short-run determinants of capital flight. Table 3.2 below presents a summary of the determinants from the literature reviewed.

Table 3.2 Determinants of capital flight from literature

Government revenue	**Macroeconomic instability**	**Politics**
• External debt stocks	• Domestic inflation	• Political instability
• External debt flows	• Inflation differentials	• Political connectedness
• Domestic debt	• Real GDP	• War
• Budget deficit	• Real GDP growth rate	

• Government expenditure • Corporate taxes • Domestic revenue • Development aid	• GDP growth rate differential	• Risk of contract repudiation • Policy variability • Regime change • Corruption perception • Corruption control
Investment	**Exchange rate**	**Other inflows**
• Interest rate • Interest rate differential • Financial deepening • Capital controls Demand deposits	• Nominal exchange rate • Real effective exchange rate • Parallel market premium • Foreign exchange reserves	• FDI • Remittances

Source: Compiled by author

CHAPTER FOUR

METHODOLOGY

4.1 Introduction

This chapter outlines the methodology by which the objectives of this study are accomplished. It builds upon the foundation laid out in the previous three chapters. Mainly, the chapter outlines the conceptual framework and the empirical model framework. The chapter also describes the data used and the data sources.

4.2 Conceptual framework for determinants of capital flight

According to the reviewed literature, numerous factors have been analyzed to constitute determinants of capital flight. Among these factors, the first category comprises economic factors. Such economic factors can be categorized further into sources of capital, economic policy, or macroeconomic outcomes. For capital flight to take place, it must first be financed from capital sources such as external debt, domestic borrowing, foreign direct investment, or aid or precious stones. Within the economic factors, the economic policy impacts capital flight through variability in fiscal or monetary policy instruments and the predictability of implementing such policies. Finally, the economic outcomes, either due to endogenous or exogenous shocks, determine whether it is risky to hold wealth in the home economy or to take it to foreign markets.

On the other hand, the second category of determinants of capital flight comprises non-economic factors that can be classified as political or institutional quality factors. For example, wars, volatile political environments, or low government credibility increase the risk of holding wealth in an economy, causing capital flight. Similarly, weak institutions signify a lack of authority to enforce property rights or incentivize people to accumulate Illegitimate wealth, circumvent regulatory controls and externalize it to offshore accounts or markets. This conceptual framework is therefore presented in figure 4.1 below.

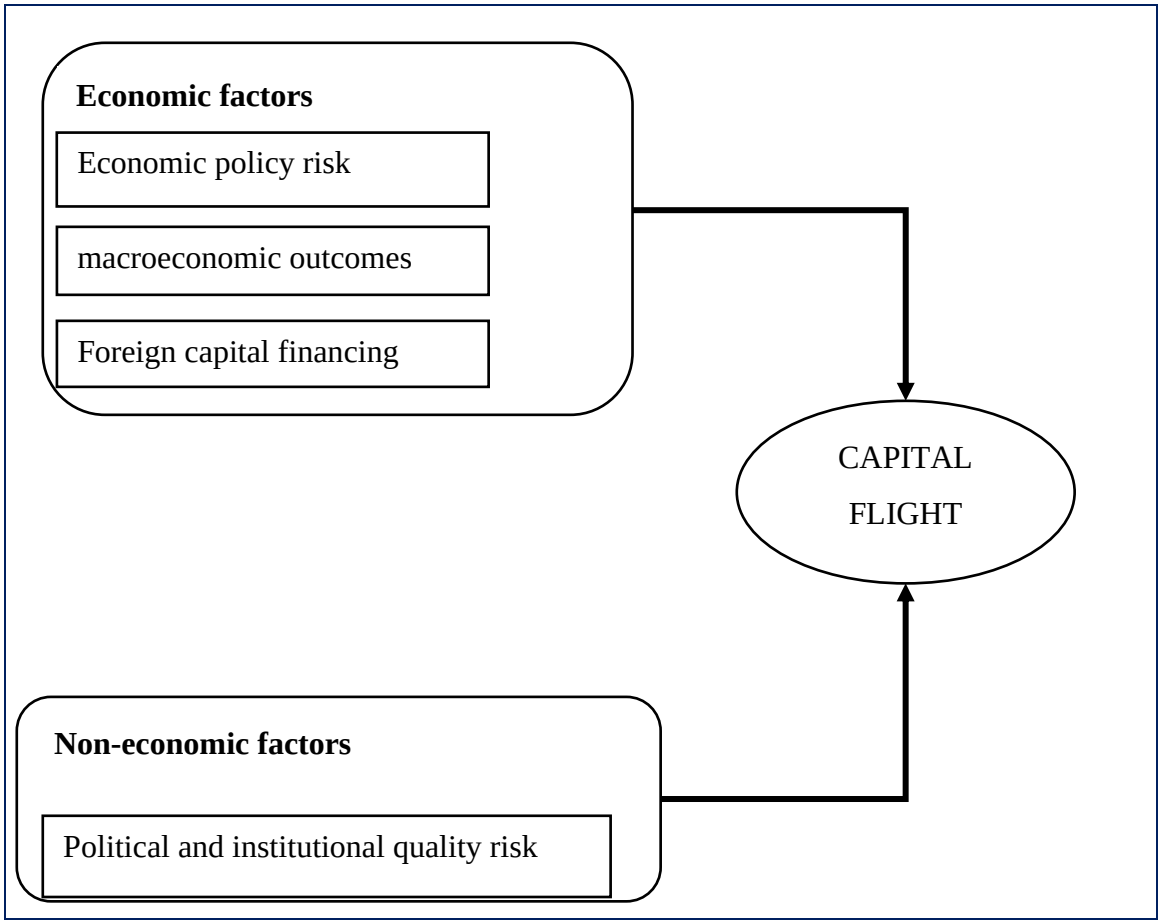

Figure 4. 1 Conceptual framework

Source: Author's compilation based on the literature reviewed

This study investigates foreign debt, foreign aid inflows as sources of foreign capital, and the role of elections and transitions in executive power on capital flight. Foreign aid and foreign debt inflows are selected since they are the two main sources of foreign capital inflows in Malawi. Elections and changes in executive power are chosen as a source of political risk as it is considered that the political elites and politically exposed persons and firms engaged in capturing public resources face their highest level of uncertainty during such periods. The real effective exchange rate, real interest rate differential and GDP are considered proxies for economic policy factors that have a huge bearing on wealthholder portifolio diversion decisions, as Le and Zak (2006) proposed in equation 3.16. However, the capital inflows are added to this model to be analyzed alongside economic risk factors and political risk factors, which in its general form can be presented as follows;

$$CF_t = f(LRGDP_t, LRIRD_t, LREER_t, ODA_t, DEBT_t, POL_t,) \quad 4.1$$

Where

CF	=	Capital flight as a percentage of GDP
$LRIRD$	=	log of real interest rate differential between USA and Malawi,
$LRGDP$	=	log of real GDP
$DEBT$	=	Real external debt inflows as a percentage of GDP
ODA	=	Real aid received as a percentage of GDP
POL	=	Elections or change in government leadership
$LREER$	=	log of real effective exchange rate
t	=	time

4.3 Variable definition, measurement and expected effect

This section provides the definitions of the study's variables and highlights how they are measured. Furthermore, it highlights the expected direction of influence on capital flight.

4.3.1 The dependent variable

4.3.1.1 Capital Flight to GDP ratio

The capital flight to GDP ratio is the annual unrecorded capital outflows relative to the gross domestically produced goods and services. Capital flight is measured by the adjusted residual method proposed by Ndikumana and Boyce (2021), as stated in equation 3.5. This method is chosen for this study for four reasons. Firstly, it captures a broader picture of capital flight by measuring the difference between the recorded sources of funds and their uses. In so doing, the method captures both long-term and short-term capital flight. Furthermore, since some capital flight from Malawi is aided through legal channels, it also captures capital flight disguised as legal. Secondly, the residual method proposed by Ndikumana and Boyce (2021a) also captures trade misinvoicing capital flight, which, based on the discussion in section 2.3, is significant for Malawi.

Thirdly, this method will enable the study's results to be easily compared to other SSA panel and country studies that used the same method or its variants. Finally, the measure's recent adjustments increase the accuracy level in capital flight estimates. Capital flight estimates from 1980 to 2018 were obtained (Ndikumana & Boyce, 2021). However, the author estimated data for 2019 and 2020 using equation 3.5 and adjusted for changes in prices using a GDP deflator, with 2018 as the base year. However, some discrepancies may have arisen from differences in some sources of data and scaling. A graphical comparison of the original series by Ndikumana and Boyce (2021a) and the estimated series has been presented in Appendix A, which shows a negligible average margin of error of 0% for the years from 2005 up to 2018.

4.3.2 The independent variables

4.3.2.1 Real effective exchange rate

The real effective exchange rate measures the trade competitiveness of the Malawi Kwacha relative to a weighted average of a basket of currencies. The basket usually comprises currencies from Malawi's major trading partners divided by a price deflator. Economic agents often make decisions based on real exchange rates (Waheed & Jimoh, 2014). As the real effective exchange rate increases, the economy's currency appreciates faster than the weighted average basket of the selected currencies against which it is measured. Since the appreciation of the currency makes the domestic products relatively expensive on the foreign market, the central bank devalues the currency to keep it within its equilibrium value and make domestic commodities cheaper. A depreciation of the real effective exchange rate which likely erodes the relative value of their wealth, therefore induces capital flight. Thus, in the results, the real effective exchange rate coefficient is anticipated to have a negative sign. Data for this variable was obtained from the IFS database. The variable was transformed to its natural logarithm form and is denoted by LREER.

4.3.2.2 Elections and executive power transition

This study used a dummy variable of one, representing periods when presidential and parliamentary elections took place in Malawi or when there was a change in the executive power proxied by change in the presidency, and zero if otherwise. The political landscape of a country has a bearing on capital flight as its associated with violence, contract

repudiations, or property expropriation (Collier et al., 2004; Davies, 2008; Asongu and Nwachukwu, 2017). In this spirit, wealth holders face uncertainty over the security of their wealth due to a change in government and thus export capital to capital-haven countries (Makochekanwa, 2007; Lensik et al., 2001). However, in peaceful democratic transitions, as is the case for Malawi, we anticipate that capital flight ought to increase as the political elites face a rise in risk of loss of power, and therefore risk losing their stolen assets. Therefore, in this study, the democratic political administration changes are expected to have a positive sign in the case of a significant link between the political elites capture and externalization of capital.

4.3.2.3 Real external debt inflows as a percentage of GDP

Real external debt inflows as a percentage of GDP in this study are measured by a sum of public, publicly guaranteed, and nonguaranteed private, long-term, and short-term debt flows in a particular year falling between 1980 and 2020, divided by GDP of the same year. The increase in external debt is anticipated to be viewed as an opportunity to the political elites or politically exposed persons and firms, who divert the funds to their foreign based financial accounts(Gankou and Bendouma, 2016). As such, the coefficient of external debt inflows as a percentage of GDP is expected to have a positive sign. Data for this variable is sourced from the IMF's IDS *database*.

4.3.2.4 Real foreign aid inflows as a percentage of GDP

Real foreign aid is defined as official development assistance (ODA) in the form of money, equipment, or other technical support from developed economies to developing economies. The increase in ODA in an economy leads to an increase in the availability of foreign exchange. Since capital flight needs to be financed, just in the same way as in the case of external debt, it is anticipated that capital flight will also increase as foreign aid increases. As such, the coefficient of ODA is expected to have a positive sign (Andersen et al., 2021). Data on ODA has been sourced from the WDI database

4.3.2.5 Real Interest Rate differential

The real interest rate differential is measured as the difference between the USA's real interest rate and the real interest for Malawi within the same year. As the real interest rate differential increases, capital flight is also expected to increase as wealth holders expect

better returns in the foreign asset markets than at home (Forson et al.,2017). Therefore, the real interest rate differential coefficient is expected to have a positive sign. Data on the real interest rates for both USA and Malawi has been sourced from the WDI database. In the time series analysis, the variable was transformed to natural logarithmic form by adding a constant across all observations to obtain positive values for each observation. The log transformed variable is denoted by LRIRD.

4.3.2.5 Real GDP

The real GDP is the level of production output from economic activities within an economy. The real GDP is obtained by deflating the series by a GDP deflator. Data on the nominal GDP for Malawi has been obtained from the WDI database. It is expected that capital flight ought to reduce as the economic activities in an economy increase. Therefore, a negative coefficient is expected on the real GDP variable (Egbolonu and Bhattarai, 2020). The variable was transformed to its natural logarithm form and is denoted by LRGDP

4.4 Period of study

The period of analysis for the study ranges from 1980 to 2020. This period has been selected firstly because of data availability and consistency for all the variables. For instance, data on the real effective exchange rate in the WDI database starts from 1980, while data on external debt and ODA is only available up to 2020. In addition, the period of external debt data has implications on capital flight estimates, which eventually have been estimated only up to 2020.

Secondly, the period has been chosen to encompass both the one-party era and the democratic era to reflect one of our variables of interest, which is democratic political regime changes, and it also captures the period for implementation of the SAPs, when Malawi Kwacha has gone through several exchange policy regime changes. Lastly, the period covers an entire period when capital flight was first considered a debt-driven problem (1980s), then when a period of capital reversals was observed (1990s), and lastly, the period when capital flight regenerated (2000s).

4.5 Analytical framework

The study opted to analyze the conceptual framework within the ARDL modelling framework to investigate the determinants of capital flight from Malawi. In the first place,

the ARDL is appropriate in circumstances where the variables are either purely I(0) or purely I(1) and exclusively appropriate when the order of integration in the system is mixed with I(1) and I(0). In this vein, the ARDL model is superior to the VAR model since the latter requires all variables to be stationary. Otherwise, if nonstationary, the first difference is taken to make it stationary. However, in taking the first difference of the series, the long-run properties of the series tend to be lost (Shrestha & Bhatta, 2018).

Owing to theoretical and empirical establishments that there is a possibility of feedback effects or reverse causality among capital flight and some of its dependent variables, the ARDL framework is advantageous in that regard as the lags mitigate such feedback effects, thus establishing the relevant equilibrium and long-run parameters (Catão & Terrones, 2003).In addition, the ARDL bounds test produces robust results in finite series, even in the presence of breaks and regime shifts, and can conclude if cointegration exists among the variables, including dummies, which is superior to the Johansen cointegration test (Narayan, 2004; Fuinhas & Marques, 2012). The model also reduces the possibility of having spurious regressions in case some series are not stationary (Ahmed et al., 2018).

Determining if indeed the ARDL framework is appropriate in a given sample is done through the following pre-estimation process. Firstly, the series is inspected for descriptive statistical properties such as the mean, the maximum, the minimum, skewness, kurtosis, the number of observations, and correlations. Descriptive statistics help to identify, before regression analysis, such characteristics that may impact the behaviour of the variable in the system. Thus, a determination is made as to whether to transform the variables or remove some. Secondly, stationarity tests are done to identify the order of integration of the series and to ascertain that none of the series is integrated of order two, $I(2)$. The presence of the $I(2)$ series in the ARDL framework causes the model to crash, thus rendering it irrelevant for forecasting or making empirical conclusions. Therefore, identifying the appropriate order of integration requires robust unit root testing procedures to ascertain that the order of integration is either purely $I(0)$, purely $I(1)$, or a mix of $I(0)$ and $I(1)$ but not $I(2)$ is of paramount importance in ARDL modelling framework.

4.6. Unit root testing

Upon inspection of the statistical properties of the variables and considering the shortcomings in the various unit root tests as discussed under each type of test below, this study opted to conduct four conventional unit root tests and two structural break unit root tests. Accordingly, the conventional unit root tests were carried out in the following sequence; Augmented Dickey-Fuller (ADF) test, Elliot-Rothenberg Stock (ERS) test, Phillips-Perron (PP) test, Kwiatkowski Phillips Schmidt and Shin (KPSS) test. Although the Akaike Information Criteria (AIC) and Schwarz's Bayesian Information Criteria (SIC) are the commonly used information criteria in unit root tests, Cavaliere et al.(2015) proposed the use of Modified AIC in finite samples following Ng & Perron (2001), as it has better size and power properties than the AIC and SIC. Therefore, the lag length selection criteria for the ADF and ERS was based on the MAIC, while the optimal lag for the PP and KPSS was adopted from the ERS' chosen optimal lag.

The structural break unit root tests were the Zivot and Andrews (ZA) unit root test and the Clemente-Montanes-Reyes (CMR) unit root test.

4.6.1 The ADF test

The Dickey-Fuller test proposed by (Dickey & Fuller, 1979) is estimated to determine the stationarity of a series under three forms based on the assumption that there is no correlation among the errors.

$$\Delta Y_t = \delta Y_{t-1} + \mu_t \quad 4.2$$

$$\Delta Y_t = \beta_1 + \delta Y_{t-1} + \mu_t \quad 4.3$$

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \mu_t \quad 4.4$$

The null hypothesis for all three scenarios of the Dickey-Fuller test is that δ=0. However, in the case that the residuals are correlated, the ADF test developed by Dickey and Fuller (1981) takes care of the correlation by augmenting with lagged values of ΔY_t. The null hypothesis for the test is also that δ=0, according to the following equation.

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \mu_t + \sum_{i=1}^{m} \alpha_i \Delta Y_{t-i} + \varepsilon_t \quad 4.5$$

In this study, the ADF tests were carried out following the procedure outlined by (Halim et al., 2007). First, stationarity was checked in level, with both constant and trend, then with constant, then with none, before repeating the sequence in the first difference, stopping at whichever stage stationarity is confirmed.

4.6.2 ERS test

The ERS test, also known as the ADF-GLS test, is a unit root test by Elliot, Rothenberg, and Stock (1996), which modifies the ADF by detrending the time series prior to unit root testing. The test is done under two possible alternative hypotheses. Firstly, the series is stationary around a linear trend, and secondly, the series is stationary without a trend.

4.6.3 PP test

The PP was proposed by Phillips and Perron (1988) purportedly to deal with lag selection challenges observed in ADF and ERS. The test employs a non-parametrically modified tau-statistic on the DF test. However, the linear trend in equation 5 is substituted for a centred time variable. By employing non-parametrically modified test statistics, the PP test corrects for any serial correlation and heteroscedasticity in the errors of the test regression. Thus, the PP does not require specification of the number of lags which tends to be a challenge in the DF tests. As much as the PP is considered powerful compared to the ADF and ERS, it, however, just as the ADF and ERS perform better in asymptotic samples but poorly in finite samples (Afriyie et al., 2020).

4.6.4 KPSS test

The KPSS test is, however, considered to perform better in finite samples (Afriyie et al., 2020). The KPSS assumes a deterministic trend stationarity calculated as the sum of a deterministic trend, random walk, and stationary random error (Arltová & Darina Fedorová, 2016). Under the null hypothesis that the series is stationary, as contrasted to all the above-stated tests, the KPSS is also advantageous over the other tests as it can detect "long memory" or fractional integration, where $I(d)$ is between 0 and 1 (Baum, 2005).

4.6.5 ZA test

The ZA test addresses the problem of wrong unit root test conclusions in the presence of structural breaks. It incorporates cases where the break consists of a level shift, trend break, or both shift and break. In addition, this test does not necessarily require specification of

the break date and can be applied regardless of trending or non-trending data series. Generally, the ZA tests prevent unit root results from gravitating to biased unit root conclusions. In addition, structural break unit root tests can also identify the period when the break in the series occurred (Baum, 2005). However, such power in the test comes at a cost as it limits the amount of information included in the test concerning the choice of break. Furthermore, it only captures the single most significant test, which by endogenous search technique, the results are less conclusive than the PP test (Ling et al., 2013).

4.6.6 CMR test

The presence of innovative or additive outliers in the series disrepute the validity of results from the conventional unit root tests. According to Baum (2005), the CMR test allows for the detection of either additive outliers (AO) for quick breaks or innovative outliers (IO) for gradual change in the series' mean. Therefore, considering the period of the study and the possibility of the presence of AO and IO, it is necessary to confirm the stationarity of the series in the presence of the AO and IO.

The diverse strengths and weaknesses of each of the tests are thus an important justification for the need to carry out a robust unit root check. Once the order of integration is known and confirmed that there are no *I*(2) series, the appropriateness of employing the ARDL model is confirmed.

4.7 ARDL Model

A basic ARDL (q, p) model can be presented as follows

$$\Delta y_t = \alpha + \beta t + \gamma x_{t-1} + \sum_{j=0}^{q} \delta_j \Delta y_{t-j} + \sum_{j=0}^{p} \theta \Delta x_{t-j} + \Phi z_t + \mu_t \qquad 4.6$$

Where Δ is the difference sign, α is the constant, β is the coefficient for trend term t. The maximum lag length for the dependent variable is denoted as q, while for the regressors, it is given as p. x is the regressor, while z is for any fixed regressors. γ, δ, θ and Φ are coefficients for each respective regressor. The residual term is denoted by μ, and t is the period.

Determining the optimal lag orders for the ARDL equation is crucial in estimating a reliable model that can be used for forecasting. Either AIC or SIC selects the optimal lag orders in the ARDL. The selection by AIC selects the maximum relevant lag length. It thus often tends to overparameterize models. On the other hand, the SIC selects the optimal lag length based on the least possible lag length, which tends to be parsimonious, but also, on the other hand, very restrictive. Regardless, the AIC and SIC tend to have different explanatory powers with smaller sample sizes of 25 and below. However, such explanatory power tends to be almost similar as the sample size increases beyond 25 (Badshah & Bulut, 2020). The basic VAR model is used in selecting the maximum number of lags that would give an optimal order of lags for the dependent variable and the regressors for the ARDL model.

According to Pesaran et al. (2001), the ARDL model, and in the case of the existence of cointegration, its subsequent error correction model can take any of the following five specific deterministic component cases:

Case 1: No intercept and no trend

Case 2: Restricted intercept and no trend

Case 3: Unrestricted intercept and no trend

Case 4: Unrestricted intercept and no trend

Case 5: Unrestricted intercept and unrestricted trend

Kripfganz & Schneider (2016) stated that deciding which case to use depends on the trend examination of the dependent and independent variables and the research question being addressed. Furthermore, they stated that practically, case 1 and case 2 are, in most macroeconomic empirical work, considered of little relevance since most variables are integrated of order $I(1)$. That is the case because the dependent variable does not possess the trend owing to the exclusion of the intercept. Therefore, cases 3,4 and 5 are the most ideal in practice, although case 5 is rare.

The estimated ARDL model is tested for the absence of heteroskedasticity, serial autocorrelation, non-normality in the residuals, model misspecification error, and

instability in the mean and variance of the errors over time to ascertain its reliability (Pesaran et al., 2001). First, the Breusch-Godfrey Lagrange Multiplier (BG-LM) test is used for serial autocorrelation. Second, heteroscedasticity is checked by conducting a Breusch-Pagan-Godfrey test, the ARCH test, the Glesjer test and the White test. Third, the normality in the residuals of the model is checked using the Jarque-Bera test. Fourth, the ECM is checked for parameter stability using the recursive cumulative sum and cumulative sum of squares tests. Finally, correctness in the model specification is tested using the Ramsey RESET test.

The next step involves testing the ARDL model for the existence of a long-run relationship using the bounds-testing procedure proposed by Pesaran et al. (2001). The rejection of, or failure to reject, the null hypothesis of no long-run relationship between the dependent and independent variables depends on the comparison between the F-statistic and the critical values of the I(0) and I(1) bounds. The null hypothesis is rejected when the computed F-statistic is below the I(1) bound. If the F-Statistic falls between the I(0) and I(1) bound, then the test is inconclusive. However, if the F-statistic is above the I(1) bound, the null hypothesis cannot be rejected, thus concluding that the series are cointegrated. Pesaran et al.(2001) provided critical values for the I(0) and I(1) bounds which are ideal for asymptotic samples. Alternatively, Narayan (2005) developed critical I(0) and I(1) bounds, which can be applied to relatively small samples, as is the case in this study.

The ARDL model for testing the determinants of capital flight can therefore be specified as follows;

$$\begin{aligned}\Delta CF_t = {} & \beta_0 + \beta_1 t + \lambda_1 CF_{t-1} + \lambda_2 LRGDP_{t-1} + \lambda_3 LRIRD_{t-1} + \lambda_4 LREER_{t-1} \\ & + \lambda_5 ODA_{t-1} + \lambda_6 DEBT_{t-i} + \lambda_7 POL_{t-i} + \Sigma_{i=0}^{q} \Delta\varphi_i CF_{t-i} \\ & + \Sigma_{i=0}^{p} \phi_i \Delta \mathrm{L} RGDP_{t-i} + \Sigma_{i=0}^{p} \psi_i \Delta \mathrm{L} RIRD_{t-i} + \Sigma_{i=0}^{p} \pi_i \Delta \mathrm{L} REER_{t-i} \\ & + \Sigma_{i=0}^{p} \omega_i \Delta ODA_{t-i} + \Sigma_{i=0}^{p} \theta_i \Delta DEBT_{t-i} + \Phi POL_t + \varepsilon_t \end{aligned} \quad 4.7$$

And following Narayan & Smyth (2006), if the null hypothesis of no cointegration is rejected, the ARDL model can be reparameterized to an error correction model with an error correction term. In this study, this can be presented as follows;

$$\Delta CF_t = \beta_0 + \beta_1 t + \lambda_1 CF_{t-1} + \lambda_2 LRGDP_{t-1} + \lambda_3 LRIRD_{t-1} + \lambda_4 LREER_{t-1} + \lambda_5 ODA_{t-1} + \lambda_6 DEBT_{t-i} + \lambda_7 POL_{t-i} + \Sigma_{i=0}^{q} \Delta\varphi_i CF_{t-i} + \Sigma_{i=0}^{p} \phi_i \Delta \mathrm{L}RGDP_{t-i} + \Sigma_{i=0}^{p} \psi_i \Delta \mathrm{L}RIRD_{t-i} + \Sigma_{i=0}^{p} \pi_i \Delta \mathrm{L}REER_{t-i} + \Sigma_{i=0}^{p} \omega_i \Delta ODA_{t-i} + \Sigma_{i=0}^{p} \theta_i \Delta DEBT_{t-i} + \Phi POL_t + \eta ECT_{t-1} + \varepsilon_t \quad 4.8$$

Where Δ is the difference operator, β_o is the constant term, β_1 is the coefficient of the trend term t. The λ_j , where $j = 1,2 \ldots 7$ are coefficients of the long-run terms. $\varphi_i, \phi_i, \psi_i, \pi_i, \omega_i$ and θ_i are the coefficients of the respective short-run dynamic regressors, while Φ is the coefficient of the fixed regressor POL. η is the coefficient for the error correction term (ECT), and ε is the residuals term in the model. The current period is denoted by t while the lagged period of the short-run model is denoted by $t - i$ where $i = 1,2 \ldots q$ for CF and $i = 1,2 \ldots p$ for $LRGDP, LRIRD, LREER, ODA$ and $DEBT$.

The estimated error correction model in step four above sometimes tends to become overparameterized by at least one of the following cases; (1) too many lags of a variable, (2) too many regressors and (3) too many regressors and their lags. Very likely, such a model would result in many insignificant regressors. In such a scenario, a Wald test can be used to test for joint significance of the lagged-level terms of a variable in the model.

After the diagnostic tests confirm that the model is reliable, it is important to report the normalized long-run parameters and the joint significance of the short-run results. The generosity in the inclusion of more lagged variables in the general ARDL model tends to create redundancy in terms of the significance of the variables, particularly their lagged values. The Wald test confirms the joint significance of the lagged variables.

The *ECT* is interpreted to indicate the speed of adjustment from the short-run disequilibria in the model. Normally, the speed of adjustment needs to be between 0 and -1 to mean convergence to the long-run equilibrium. A positive value of the *ECT* indicates that the variables drift apart and away from each other after a disequilibrating shock.

4.8 Conclusion on methodology

In summary, this chapter has outlined the empirical analysis framework employed in this study to estimate the recent magnitude of capital flight and identify determinants of capital flight in Malawi. It has also discussed relevant theories to robust time series analysis

procedure and the variables' definition. Finally, the chapter closes with an outline of the tests on the estimated model to attest to its robustness**.**

CHAPTER FIVE

EMPIRICAL RESULTS AND DISCUSSION

5.1 Introduction

This chapter presents results from the analysis in line with the methodological framework outlined in the preceding chapter. This chapter presents results from the analysis and a discussion of the results.

5.2 Analysis of determinants of capital flight

5.2.1 Descriptive statistics

The descriptive statistics for the data used in the time series analysis are presented in table 5.1 below.

Table 5.1: Descriptive statistics

	RCF	**RGDP**	**RIRD**	**REER**	**ODA**	**DEBT**	**POL**
Mean	11.07	4.70	-4.40	135.80	27.91	6.76	
Median	9.93	3.70	-3.82	129.75	22.23	5.11	
Maximum	48.76	11.83	32.29	214.59	62.52	32.55	1
Minimum	-67.79	1.85	-32.85	65.31	10.40	-0.17	0
Std. Dev.	18.01	2.62	12.79	48.44	13.12	6.06	
Skewness	-1.73	1.10	0.54	0.13	0.77	2.11	
Kurtosis	10.39	3.30	3.63	1.51	2.68	9.32	
Jarque-Bera	113.63	8.48	2.64	3.88	4.21	98.69	
Probability	0.00	0.01	0.26	0.14	0.12	0.00	

Source: Estimation by author

This study has seven total variables, each with 41 observations. The political variable, POL, is a dummy variable with "1" denoting the year when Malawi had elections or transition of executive power and "0" for years when there were no elections or transition of executive power. CF, DEBT, and ODA are real variables expressed as a percentage of GDP. RGDP is expressed in billions of constant 2018 USA dollar prices, while REER is expressed as an index, with 100 referring to the base year point. Over the sample period, capital flight averaged 11.07% of GDP, with a maximum observed capital flight as a percent of GDP reaching 48.76%, while the minimum observed capital flight as a percent of GDP was -67.79%. In this case, a standard deviation of 18.01 means that the observations are not spread far away from the mean of 11.07 %. CF is skewed to the left since the skewness value is -1.73. The skewness value of 10.39 indicates that CF has more observations above its mean. GDP averaged $4.7 billion, reaching a maximum of $11.83 billion and a minimum of $1.85 billion. The middle observed GDP value was $3.7 billion. With a standard deviation of 2.62, the coefficient of variation is around 56.17 %, meaning the observations in the variable GDP are spread out over a wide range. GDP is right-tailed since its skewness value is positive and far from zero.

The maximum observed real interest rate differential was 32.29 percentage points, while the minimum was -32.85 percentage points. On average, the Malawi's real interest rate was 4.4 percentage points higher than USA's. A standard deviation of 12.79 percentage points entails that GDP is highly variable, confirmed by a very high coefficient of variation of 291%. Nevertheless, a kurtosis variable of 3.63, which is close to 3, indicates that the RIRD is normally distributed, and a skewness value close to zero means the sample distribution is symmetric. The Malawi Kwacha real effective exchange rate averaged 135.8 index points with a maximum of 214.59 and a minimum of 65.31. A relatively low standard deviation of 48.44 entails relatively low fluctuations in the real effective exchange rate. However, the skewness measure entails a relatively symmetric distribution, while a kurtosis of 1.51, which is less than 3, indicates the data is situated more in the tails than around the mean. On average, foreign aid inflows to Malawi represented 27.91 %t of GDP during the sample period. These foreign aid inflows reached a maximum value of 62.52 % of GDP and a minimum value of 10.4 % of GDP. In addition, the values of aid inflows to GDP tend to deviate away from the average of 27.91% by 13.12%. A skewness value of

0.77 suggests that the variable has a symmetrical plot. A kurtosis of 2.68 suggests that the observations are spread away from the mean. Lastly, the mean of external debt inflows is 6.76 % of GDP, with a maximum of 32.55 % of GDP and a minimum of -0.17 % which could be due to a significant payment for debt servicing that was more than debt inflows in the year. Therefore, the observations are dispersed around the mean value of 6.76% by 6.06%. Figure 5.1 below shows the kernel distribution of the variables.

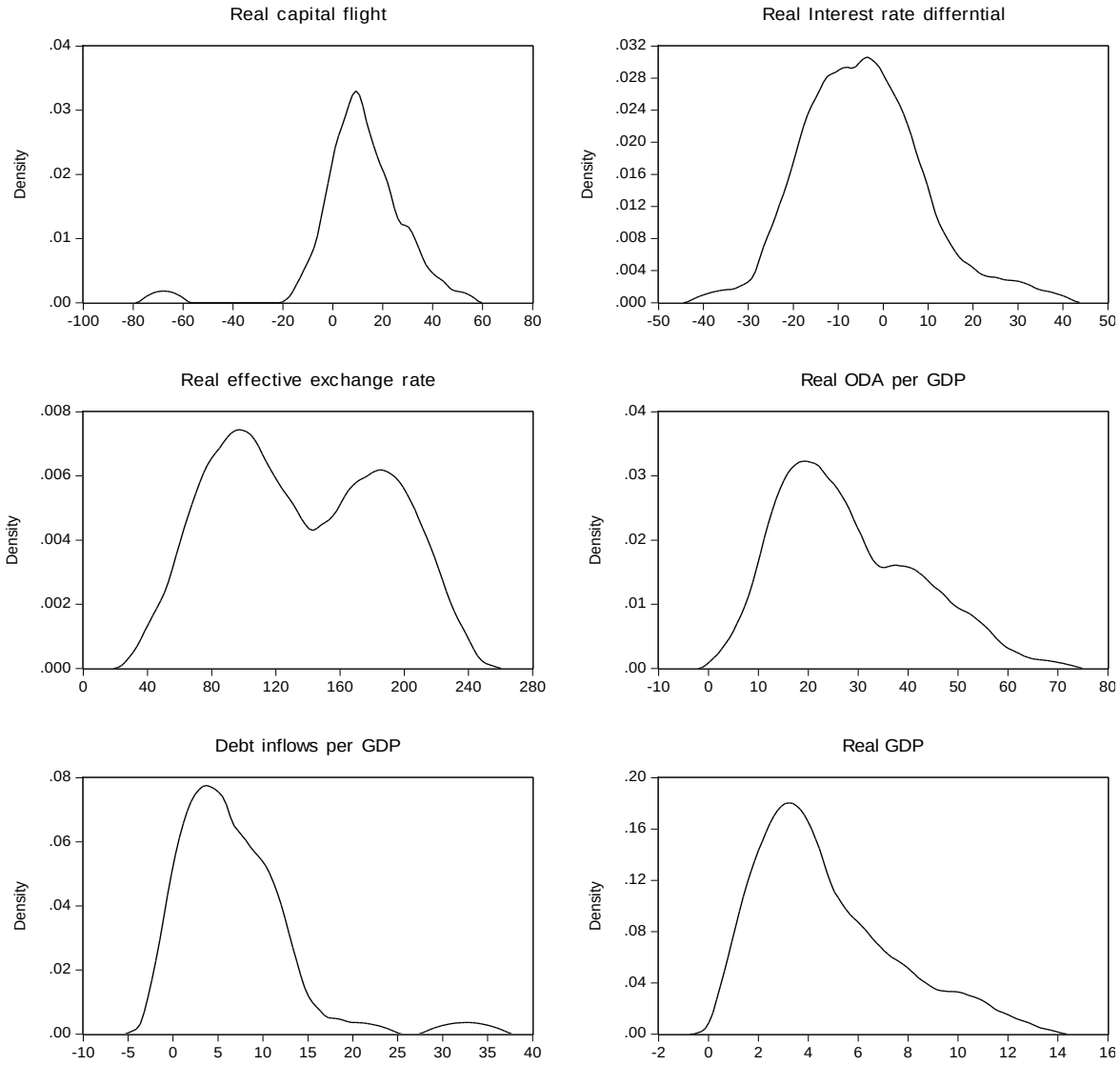

Figure 5. 1 Kernel density distribution plots of the variables

Source: Estimation by author

The kernel density plots reveal that CF and DEBT distributions are nearly symmetrical but have outliers. The plot for RIRD confirms the results from the descriptive statistics table that the variable is nearly symmetrical and normally distributed. RGDP, REER and ODA are all right-tailed.

According to preliminary assessments of the relationship between CF and its hypothesized determinants as shown in Table 5 below, CF has weak positive correlations with LREER, and AID, which are significant at the 10% and 5 % levels respectively. The correlation is weak negative with LGDP and significant at 1% level. CF is positively correlated with LREER and negatively correlated with LRIRD, although the relationship is not statistically significant. On the other hand, the correlation with ED is moderate positive and significant at a 5% level. Among the regressors, there are no perfect correlations although the correlations between LGDP and LREER, and LGDP and AID are the highest significant but negative.

Table 5.2 correlation matrix

	CF	LRIRD	LGDP	LREER	AID	ED
CF	1					
	(-)					
LRIRD	-0.007	1				
	(0.967)	(-)				
LGDP	-0.376***	-0.223	1			
	(0.016)	(0.160)	(-)			
LREER	0.178	0.331**	-0.757***	1		
	(0.266)	(0.034)	(0.000)	(-)		
AID	0.272*	0.261*	-0.761***	0.523***	1	
	(0.086)	(0.100)	(0.000)	(0.000)	(-)	
ED	0.316**	0.405***	-0.599***	0.578***	0.478***	1
	(0.044)	(0.009)	(0.000)	(0.000)	(0.002)	(-)

*p<0.1, **p<0.05, ***p<0.01 Source: Estimation by author

5.2.2 Stationarity tests

A summary of the stationarity test results from ADF, ERS, PP, KPSS, ZA and CMR is presented in table 5.3 below. Detailed results for conventional tests and structural break tests are presented in Appendix B. In addition, the variables GDP, RIRD and REER were transformed to their natural logarithmic form.

Table 5.3 Unit-root test results summary

	UNIT ROOT TEST					
VARIABLE	**ADF**	**ERS**	**PP**	**KPSS**	**ZA**	**CMR**
CF	I(0)	I(0)	I(0)	(0)	I(0)	I(0)
LRGDP	I(1)	I(1)	I(1)	I(1)	I(1)	I(0)
LRIRD	I(1)	I(0)	I(0)	I(0)	I(0)	I(0)
LREER	I(0)	I(1)	I(0)	I(0)	I(0)	I(0)
ODA	I(1)	I(1)	I(1)	I(0)	I(0)	I(0)
DEBT	I(1)	Inconclusive	I(1)	I(1)	I(0)	I(0)

Source: Estimated by author

The ADF, PP, KPSS and ZA tests results were a mixed combination of I(0) and I(1) variables. The ERS result was inconclusive since DEBT was not stationary in level, at the first difference and even the second difference. On the other hand, both the CMR (IO) model and CMR(AO) model results revealed that all variables were stationary in levels. Overall, since most of the results from the other tests were conclusive, the study concluded that there is no evidence of I(2) variables but a mix of I(0) and I(1) variables. As such, the ARDL model was appropriate for the time series analysis.

5.2.3 ARDL model selection

The selection process for the ARDL model, which best fits the data, was carried out using lag lengths suggested by the AIC and SIC. The AIC chose a maximum of 4 lags, while the SIC chose a lag of 1 for the model. Then, through permutations, various models were estimated based on the five cases discussed in section 4.6.3 and compared in their characteristics, such as standard error, the joint significance of the model, adjusted R-squared, Durbin-Watson statistic and normality in residuals at a 5% significance level. The models of case 3, which is unrestricted constant performed better for both the AIC and SIC than models of other deterministic forms, especially when estimated at a maximum lag length of 4 as selected by AIC.

However, the model selected using the AIC was chosen as it had superior comparable characteristics of data fitting to the model suggested by SIC. However, even the SIC's

suggested model at a lag of 1 was unsatisfactory as it had a high standard error, low adjusted R-squared, exhibited non-normality in residuals and, based on the joint F-Statistic, was insignificant. As such, the study settled for the ARDL (1,3,3,3,4,1) model, selected using the AIC criteria with an unrestricted constant term. Table 5.4 presents the results of the lag length selection for unrestricted constant.

Table 5.4 Lag length selection

Model case 3: Unrestricted constant and no trend						
Lag	**AIC statistic**	**Prob. (*F*-statistic)**	**SE**	$\bar{R}^2$	**DW-statistic**	**Normality (P-value)**
1	22.49	0.16	17.22	0.10	2.01	0.00
2	22.68	0.16	17.22	0.10	2.01	0.00
3	22.00	0.00	8.3	0.80	2.27	0.93
4	21.91*	0.00	7.32	0.84	2.04	0.85
Lag	**SIC statistic**	**Prob. (*F*-statistic)**	**SE**	$\bar{R}^2$	**DW-statistic**	**Normality (P-value)**
1	24.01*	0.16	17.22	0.10	2.01	0.00
2	25.29	0.16	17.22	0.10	2.01	0.00
3	25.70	0.00	9.19	0.75	2.21	0.45
4	26.70	0.00	7.54	0.84	1.76	0.07

*lag length chosen by information criteria Source: Estimation by author

5.2.4 Diagnostic tests

This section presents various diagnostic test results to determine the reliability of the ARDL and the error correction model. First, the model is confirmed reliable if it exhibits robust goodness of fit measure and the absence of first-order autocorrelation. Second, the model is reliable if it is stable and free from autocorrelation and heteroscedasticity. In addition, the model must exhibit normality in residuals and be stable within the bounds of the 5 % significance level.

5.2.4.1 Goodness of fit

The R-squared of the model is 0.93, while the adjusted R-squared is 0.84. As noted, the R-squared indicates that the regressors included in the model together explain 84% of the variations in the dependent variable, capital flight. The small difference between the R squared and the adjusted R-squared indicates that the number of regressors in the model does not significantly reduce the degrees of freedom and that they adequately explain the capital flight equation in Malawi.

5.2.4.2 Test for serial autocorrelation

A B-G LM test was carried out against a null hypothesis that no autocorrelation exists. Serial autocorrelation was tested at a lag of 1 and a lag of 4. The results are displayed in Table 5.5 below.

Table 5.5 B-G LM test results for autocorrelation

Lag	**Observed R^2**	**p-value χ^2**
1	0.10	0.75
4	7.20	0.13

Lag	**F-Statistic**	**p-value**
1	0.66	0.63
4	7.20	0.13

Source: Estimation by author

From the results table, the p-values were far more than the 5% significance level. Therefore, the results meant the null could not be rejected since the P-Value was greater than the 5 % significance level, and the model was declared autocorrelation free.

5.2.4.3 Test for Heteroskedasticity

For robustness check, the heteroscedasticity test, the study employed the Breusch-Pagan Godfrey test, the Glesjer test, the test for ARCH effects and the White test.

Table 5.6 Heteroskedasticity tests

	Observed R^2	Probability χ^2
Breusch-Pagan-Godfrey	17.34	0.69
Glesjer	19.8	0.53
ARCH	0.22	0.63
White	26.84	0.17

Source: Estimation by author

The results in table 5.6 revealed that the p-values in all the tests were higher than the 5% significance level. Therefore, the null hypothesis that the model was homoscedastic could not be rejected. As such, it was confirmed that the model is homoscedastic.

5.2.4.4 Test for Normality

The normality test is done against the null hypothesis that the residuals in the model follow a normal distribution. As shown in figure 5.2, the Jarque-Bera statistic is 0.30 while the P-value is 0.85. A smaller Jarque-Bera statistic indicates that the residuals in the model follow a normal distribution. This is reaffirmed by the *p*-value of 0.86, which is greater than the 5% significance level. Therefore, the results mean that the null hypothesis that the residuals in this model follow a normal distribution could not be rejected.

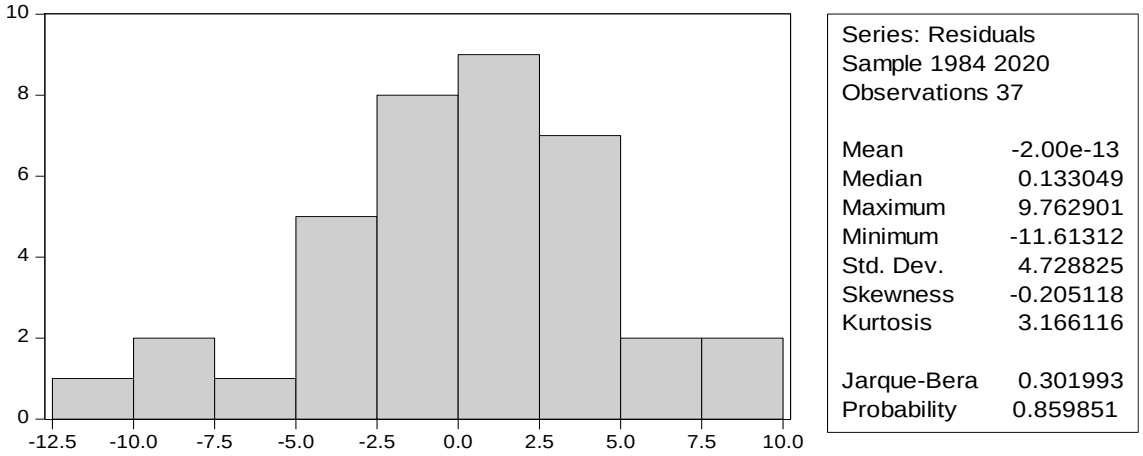

Figure 5. 2 Jarque-Bera results for normality in residuals

Source: Estimation by author

5.2.5 Long-run ARDL model

Table 5.7 below presents the results of the normalized long-run equation of the ARDL (1, 3,3,3,4,1) model. From the table, LRGDP, LRIRD, LREER and ODA were all significant at a 1% level. DEBT was insignificant at all significance levels

Table 5.7 Normalized long-run results

Variable	Coefficient	Std. Error	t-statistic	Prob.
LRGDP	-48.21***	9.77	-4.93	0.00
LRIRD	22.40***	5.74	3.90	0.00
LREER	-45.91***	12.10	-3.80	0.00
ODA	-0.84***	0.26	-3.23	0.00
DEBT	0.28	1.12	0.25	0.80

****p<0.01* Source: Estimations by the author

5.2.6 ARDL bounds test to cointegration

The bounds test to cointegration was carried out against the null hypothesis that there is no level relationship among the variables. Considering a relatively finite sample size in this study, the $I(0)$ and $I(1)$ bounds critical values were extracted from (Narayan, 2005) for case 3, with $k = 6$ and $n = 45$, where k is the number of regressors in the model and n is the maximum sample size. The result of the bounds test is presented in table 5.8 below.

Table 5.8 bounds testing to cointegration results

Null hypothesis: No level relationship

Test statistic	Value	Significance	Lower Bound	Upper Bound
F-Statistic	27.94	10%	2.33	3.54
		5%	2.76	4.12
		1%	3.79	5.41

Source: Estimation by author

The results of the Bounds Test to cointegration have shown that the computed F-statistic is greater than the critical values of the $I(0)$ upper bound at all three significance levels.

Therefore, the null hypothesis of no level relationship was rejected, concluding that cointegration exists among the variables in the model. The ARDL (1, 3,3,4,1) model was then reparametrized to an ECM.

5.2.7 Error correction model results

The error correction model was estimated, and the detailed results have been presented in Appendix C. The model was also tested for parameter stability using CUSUM and CUSUM squares the results of which are depicted in Figures 5.3 and 5.4 below.

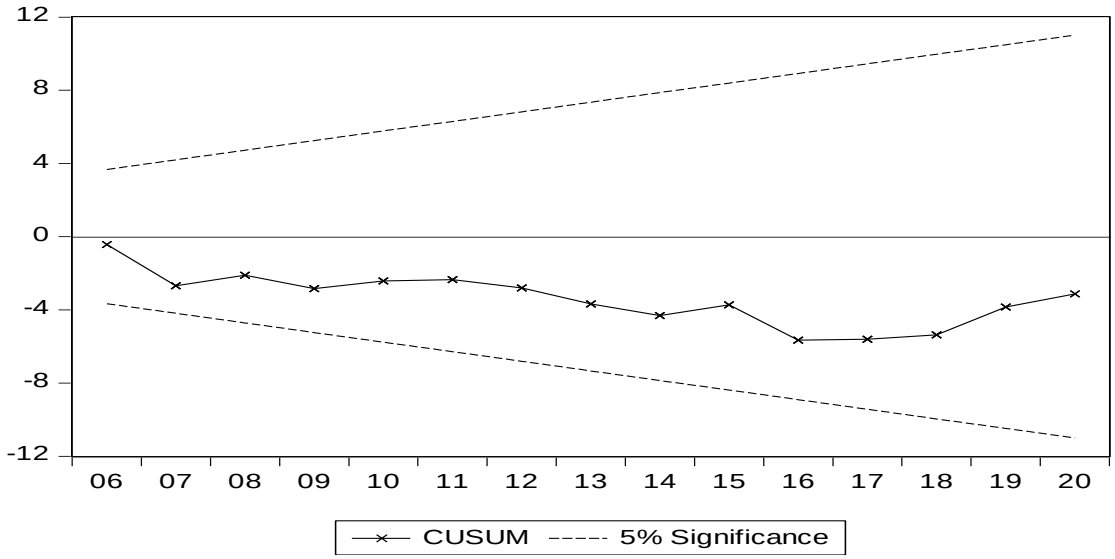

Figure 5. 3 CUSUM test results

Source: Compiled by author from own calculations

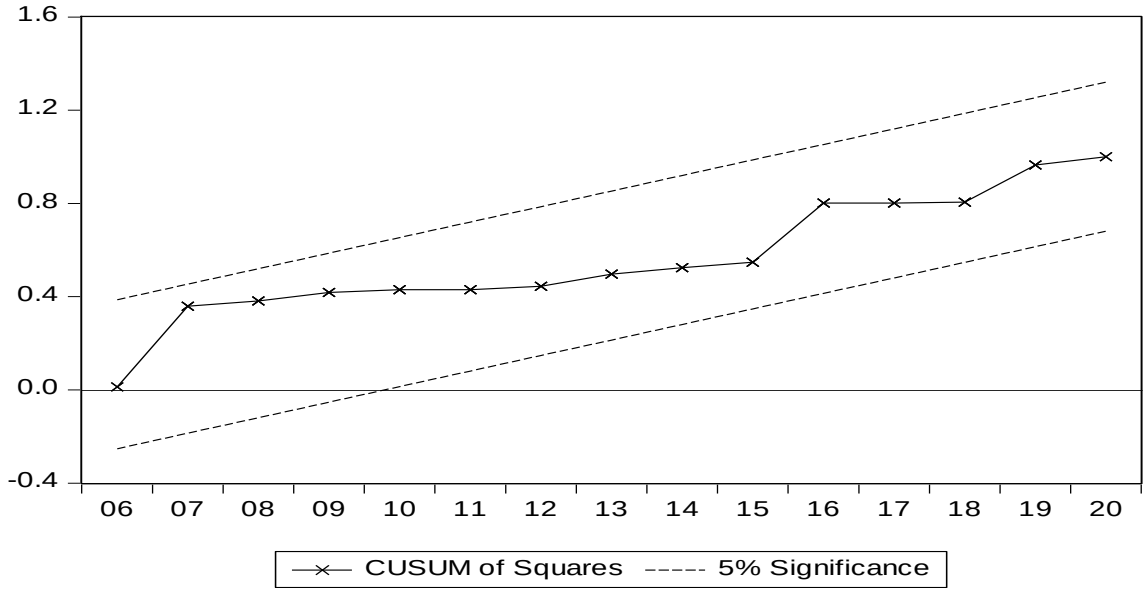

Figure 5. 4 CUSUM of squares results

Source: Compiled by author from own calculations

The roots of the CUSUM remained within the 5 % significance level, thus confirming that the mean of the process was stable over time. Similarly, the CUSUM squares result also revealed that the variance of the process in the model remained constant over time. This outcome confirmed that the model was stable in parameters.

From the Ramsey RESET test, the null hypothesis that the model is correctly specified and that there were no omitted variables could not be rejected since the P-value of the Likelihood ratio, which was 0.88, was not significant at the 5% level. These results confirmed that the model could be used for making inferences or predictions on capital flight in Malawi.

5.2.8 Joint significance short-run results

The results of the ARDL error-correction model revealed that LRGDP, RIRD, LREER and ODA entered the model with three to four lagged values, of which for each, some were individually significant while others were individually insignificant. DEBT entered the model with the current value only and no lagged values, but it was insignificant. The dummy variable POL was also insignificant. Table 5.9 below presents the joint significance short-run results according to the Wald F-test.

Table 5.9 Wald joint significance test results

Variable	Null hypothesis	F-stat	χ^2
LRGDP	$\phi_1 = \phi_2 = \phi_3 = \phi_4 = \phi_5 = 0$	8.09***	32.36***
LRIRD	$\psi_1 = \psi_2 = \psi_3 = \psi_4 = \psi_5 = 0$	26.20***	104.8***
LREER	$\pi_1 = \pi_2 = \pi_3 = \pi_4 = \pi_5 = 0$	5.61***	22.5***
ODA	$\omega_1 = \omega_2 = \omega_3 = \omega_4 = 0$	4.25**	21.23***

Source: Author's compilation. *p<0.1, **p<0.05, ***p<0.01

From the results, the null hypothesis that the short-run coefficients for each variable and their lagged terms were jointly not different from zero was rejected. Each of the four variables had significant joint effects on capital flight and their lagged terms in the short run.

5.3 Discussion of results

5.3.1 The Error Correction Term (ECT)

The ECT of -0.93 was statistically significant at 1% level and within the expected range of zero and a negative one. Thus, it qualifies that when a shock occurs to the factors that determine capital flight in the short run, the disequilibria is corrected by 93% every year. This implies that the steady state equilibrium in the capital flight equation for Malawi can be attained within 13 months.

5.3.2 External debt inflows

The coefficient of external debt inflows as a percentage of GDP (DEBT) is not significant in the long run. However, it is statistically significant at a 1% significance level in the short run. In the short run, when DEBT increases by 1% of GDP, the flight of capital also increases by 1.9%, holding all other things constant. This result is consistent with the investment diversion thesis and empirical evidence by Geda and Yimer (2016) and Gankou and Bendoma (2016). One may speculate based on this finding that external debt received by the Malawi government is instantaneously stolen and externalized by fraudulent or corrupt individuals, or its availability facilitates financing capital flight through other channels, such as trade misinvoicing. This result is possible since, in most cases, the acquisition and utilisation of external debt are determined by politicians and top

government officials, while the transparency of and accountability on utilisation is usually unsatisfactory.

5.3.3 Foreign aid inflows

Foreign aid inflows significantly lead to the reduction of capital flight both in the long-run and short run. A long-run coefficient of ODA, -0.84, entails holding everything else equal; when aid inflows increase by 1% of GDP, a corresponding decrease in capital flight by 0.84% of GDP follows. Moreover, the effect triggered by a 1% of GDP increase in ODA leads to a reduction in capital flight in the short run by 0.7 % of GDP. This finding contradicts the investment diversion theory and empirical evidence by Andersen et al. (2020) and Geda and Yimer, (2016).

The finding is of economic significance in the sense that the reduction or withdrawal of foreign aid for a country that is heavily reliant on donors creates panic among investors of possible loss of value on their assets due to possibly heavy taxes on domestically held assets or anticipated shortage of foreign exchange which enables the investors to import other assets such as necessary machinery and inputs. Moreover, since donors have often pulled out support from Malawi amidst claims of macroeconomic mismanagement by the government, perhaps withdrawing foreign aid becomes a disincentive to investors and wealth holders. Furthermore, since the ODA includes technical assistance, the withdrawal may weaken the regulatory and control bodies, mostly supported through donor projects.

In addition, the result that foreign aid inflows do not significantly finance capital flight but rather reduce it could be attributed to the conditions tied to the external aid. More often, donors specify conditions upon which the foreign aid can be used, and in some cases, they exercise direct control on utilising the funds. This control gives little to no room for siphoning the foreign aid inflows and thus deters capital flight.

5.3.4 Elections and transition of executive power

The dummy variable for elections and transition of executive power (POL) employed as a proxy used to capture the effect of politics on capital flight in Malawi was insignificant. Consequently, there is no sufficient statistical evidence to confirm that capital flight in Malawi is perpetrated by the political elite and politically exposed persons and firms, who see elections and transitions of executive power as a potential risk towards property

expropriation. This result is inconsistent with both findings by Frantz (2018) and Goldsmith (2019). It also does not provide supporting evidence for the postulation made by Hussein (2005) in the case of Malawi. Of course, by implication, if the political elite and politically exposed persons had stolen public funds and externalized them, they would probably repatriate the funds during elections to finance political campaigns, and POL would have a negative coefficient. However, this is also not the case, according to the result of this study.

5.3.5 Exchange rate risk

The proxy used to measure exchange rate risk, the real effective exchange rate (REER), was significant and had the expected negative sign in the long-run and short run. In the long run, when the real effective exchange rate of the Malawi Kwacha depreciates by 1%, there would be a corresponding increase in capital flight by 0.46 % of GDP, holding all other things constant. In the short run, the coefficient of the contemporaneous variable of REER carries the expected negative sign, but is insignificant. However, the coefficient for the REER term lagged at period one is significant and with the expected negative sign. However, the contemporaneous and lagged values of REER are jointly significant in the short run. This finding implies that a depreciation or accelerated devaluation of the Malawi Kwacha does not only cause capital flight in the short run, but the impact persists into the long run. The confirmation that the exchange rate risk influences capital flight is similar to the findings by Nyirenda (2000) in the case of Malawi, Mwangi et al. (2019) in the case of Kenya, and Tarawalie & Jalloh (2021) in the case of Sierra Leone. However, these empirics measured the exchange rate risk in the sense of exchange rate overvaluation. Thus implied, overvaluation of the domestic currency leads to more capital flight.

5.3.6 Real GDP

The coefficients of the real GDP variable carry the expected negative sign both in the long run and short run. In the short run, the study finds that only the contemporaneous term and lagged term at period three of real GDP are significant. However, all the short run terms for Real GDP were jointly significant. That is, all other things equal, an increase in real GDP reduces capital flight in the short run and this effect strengthens in the long run as a 1% rise in the real GDP decreases capital flight by 0.48% of GDP. The result is consistent

with the portfolio choice theory of capital flight according to Le and Zak (2006), which hypothesizes that wealth holders will allocate more assets into the domestic economy when investment opportunities rise due to a rise in economic activities. Indeed, Makuyana and Odhiambo (2019) found a strong positive link between private investment and economic growth in Malawi. Thus, a decrease in economic output corresponds to a decrease in private investment opportunities, thereby encouraging capital flight from Malawi. The result is also similar to findings by Nyirenda (2000), who instead used the growth rate differentials between the USA and Malawi.

5.3.7 Real interest rate differential

In the long run, the coefficient of interest rate differential had the expected positive sign and is statistically significant at 1%. As the real interest rate differential increases by 1%, capital flight also increases by approximately 0.22%, holding all other things constant. It indicates that keeping higher domestic real interest rates than foreign real interest rates reduces capital flight significantly. However, other factors, such as inflation rates, also influence real interest rates, which eventually may lead to high-interest rate differentials, especially when it is well known that the variations in the interest rate differential between Malawi and the USA are predominantly from the variations in Malawi's real interest rates. Therefore, the result confirms the postulation of the portfolio choice theory of capital flight proposed by Le & Zak (2006). It is also consistent with the result from Forson et al. (2017) in the case of Ghana. However, the result is different from the findings by Nyirenda (2000), who established that interest rate differentials had no significant effect on capital flight in Malawi, and Anetor (2019), who did not establish any significant effect of interest spread in SSA, using aggregated SSA data within the ARDL framework.

However, another possibility would be that in the case of Malawi, it would not necessarily be an issue of the nominal interest rates but rather inflation affecting capital flight indirectly through real interest rates. Such is the case because mostly, the variations in the real interest rates in Malawi are predominantly due to variations in inflation. As Malawi's inflation rate increases, the real interest rates decrease, and the real interest rate differentials between Malawi and the USA widen if the USA's real interest rates remain relatively unchanged.

This explanation is consistent with Nyirenda (2000), who found that inflation differentials between Malawi and UK significantly influenced capital flight in Malawi.

5.4 Summary of empirical findings and discussion of results

This chapter first presented the data's descriptive and unit root characteristics. Secondly, it presented results on ARDL model selection and model diagnostics. Thirdly, it presented empirical results of the long-run and error correction models. Lastly, the empirical findings on estimates of capital flight and determinants of capital flight between 1980 – 2020 were discussed.

CHAPTER SIX

CONCLUSION AND POLICY IMPLICATIONS

6.1 Introduction

Chapter six summarizes the study, presents conclusions, and offers policy direction concerning capital flight in Malawi. Finally, the chapter closes with suggestions for further research based on limitations and establishments from this study.

6.2 Summary of findings

This study's main aim was to investigate the determinants of capital flight from Malawi between 1980 and 2020. The study was motivated to contribute to the limited country-specific literature on determinants of capital flight in the SSA region in a small, peaceful, resource-constrained economy that relies on foreign financial assistance. Specifically, the interest of the study rested on establishing if the investment diversion thesis and political risks have significant independent effects on capital flight in Malawi, alongside macroeconomic risk factors such as real GDP, real interest rate differentials, and real effective exchange rate. The presence of $I(2)$ was ruled out through robust unit root tests using the ADF, ERS, PP, KPSS, ZA, and CMR tests. A bounds test to cointegration confirmed the existence of a long-run relationship, and an ARDL error correction model was estimated. The diagnostic tests on the models confirmed that the model was autocorrelation free, homoscedastic, normal in residuals, correctly specified and stable. The ARDL model was preferred owing to its superior capabilities over other models. For instance, the ability to provide robust and stable results that, to some extent, control for feedback effects in the model.

Firstly, the study findings have confirmed the investment diversion thesis in Malawi, but only for external debt inflows and not foreign aid. This development means that debt inflows indeed finance capital flight in Malawi through other channels like trade misinvoicing or by being captured by fraudulent and corrupt individuals whom one may

speculate to be politically exposed or government officials. On the other hand, aid inflows have shown that they do not finance capital flight but rather decrease the effects on capital flight. In a context, it entails that when donors withdraw foreign assistance to Malawi, the effect is the externalization of resources from Malawi. One reason could probably be the loss of investors' confidence in the macroeconomic management framework. Another reason could be that watchdog institutions become weaker without donor funds; thus, the capital flight gets motivated. Depreciations or accelerated devaluations of the Malawi Kwacha have short-term and long-lasting capital flight-increasing effects in Malawi. Similarly, the rising real interest rate differential entails that as real interest rates get lower in Malawi, capital flight rises compared to foreign real interest rates. Generally, the effect arising from external debt inflows has the strongest triggering effect of capital flight than the macroeconomic risk variables, while the decrease in donor aid inflows comes second.

6.3 Policy Implications

The empirical results established by this study have revealed the determinants of capital flight in Malawi. Therefore, in line with evidence from the literature on the magnitude and consequences of capital flight, leaving the established trends of capital flight unchecked is destructive to the economy of Malawi. Consequently, the MW2063 and any other economic development agenda would be jeopardized as the country is unlikely to register any substantial output based on the set goals at the current trending levels of capital flight. It is against this background, coupled with the knowledge established on the behaviour of determinants of capital flight in Malawi, that the following policy directions are presented to counter the prevalence of different forms of capital flight in Malawi.

a. Strengthen transparency and accountability mechanisms in the government

The fact that external debt inflows are the major determinant of capital flight in Malawi suggests that the plans to source capital through external debt to achieve the Malawi 2063 is a course for concern. Foreign debt is important for augmenting domestic capital, especially for a resource-constrained economy like Malawi. Nevertheless, this study recommends strengthening the government's transparency and accountability mechanisms. More specifically, considering that siphoning of such funds is perpetrated by the political elite and politically exposed firms, the promotion of transparency and accountability needs

to begin from the legislature, where members of parliament pass authorization to borrow. In the same vein, the parliament also needs to provide checks and balances on the utilization of the funds.

Since donors have mostly pulled out support due to macroeconomic framework mismanagement, and plunder of public resources, in addition to the recommendation made above, this study recommends that the government's safeguarding of prudent macroeconomic management be strictly followed to avoid misuse of public resources. In addition, the financial regulatory and control bodies such as the Anti-Corruption Bureau, the Financial Intelligence Agency, the MRA and the RBM need to be strengthened with adequate funding should donor funding decrease. Nevertheless, there is a need to lobby for more donor support towards these statutory institutions as it would boost investor confidence and thus prevent capital flight from Malawi. In the same vein, the donor community needs to increase support towards the regulatory and control bodies to augment their fight against capital flight.

b. Pursue long-term economic growth and sound monetary and fiscal policies

Other than the investment capital diversion problem, the other factors perpetuating capital flight from Malawi are macroeconomic policy issues that affect investor confidence. For instance, devaluation of the Malawi Kwacha and depreciation erode the value of the domestic assets, thus prompting wealth holders to externalize their assets whenever devaluations become an option or depreciation of the Malawi Kwacha becomes the order of the day. In this regard, the RBM must play a critical role that ensures that the Malawi Kwacha is stabilized.

Of course, it is also very important to boost the efforts of the RBM with pro-growth economic policies that would necessitate either an increase in exports or import substitution. The inflows from exports would help to build the forex reserves and thus stabilize the exchange rate, thus eliminating the exchange rate risk faced by investors. The pro-growth economic policies are also important because the results from this study suggested that an increase in economic growth would reduce capital flight. These policies could include increasing infrastructure spending and reducing interest rates to give more investors access to investment finance.

However, reducing nominal interest rates must be done with caution, considering that as the interest rates decrease, real interest rate differentials may increase. In addition, this adjustment would entail a further rise in the interest rate differential between Malawi's real interest rates, and foreign countries' real interest rates, if the foreign real interest rates remain almost unchanged and attractive to investors. This conflicts with the findings of this study that a rise in interest rate differential would cause capital flight. However, reducing and controlling inflation could be an indirect solution considering that the variations in the real interest rates in Malawi are predominantly from inflation. Thus, there is a need to manage and control inflation as well.

6.4 Direction for further research

As a measure to give room for comparability among research outcomes, this study suggests that country-specific studies in the SSA must be done using capital flight data from the residual method, which has been adjusted for trade misinvoicing as trade misinvoicing has become a predominant channel of capital flight in most SSA countries. Since this study assumed that external debt inflows' impact could be linked to weak institutions and regulatory frameworks, other empirical studies in Malawi should explore the role of institutional quality alongside external capital inflows on capital flight. Secondly, future studies should investigate the channels of capital flight in Malawi, more especially, the specific determinants of trade misinvoicing and ascertain the consequences of capital flight on economic and social factors in Malawi

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APPENDICES

Appendix A: Data used in the study

A1: Data used for analysis

	CF	RGDP	RIRD	REER	DEBT	ODA	POL
1980	17.6	3232.0	5.0	200.3	32.5	29.8	0
1981	-0.7	2952.7	6.8	205.1	9.3	26.3	0
1982	2.5	2651.5	0.1	197.9	14.5	22.9	0
1983	30.0	2644.8	0.2	202.2	9.5	20.4	0
1984	7.5	2521.0	4.8	214.6	10.1	31.3	0
1985	23.5	2288.6	-2.1	204.0	11.6	20.1	0
1986	26.7	2347.2	1.4	182.5	8.8	32.6	0
1987	15.9	2289.4	3.2	164.8	7.6	45.1	0
1988	9.1	2579.3	12.3	180.2	4.5	50.9	0
1989	32.0	2860.3	6.3	187.7	10.7	47.2	0
1990	22.4	3260.8	-3.3	186.9	8.1	46.1	0
1991	-5.9	3695.4	-3.5	198.0	7.3	41.8	0
1992	-7.4	2950.6	-3.8	181.6	9.6	52.7	0
1993	7.2	3316.6	2.5	185.2	8.3	38.5	0
1994	18.2	1853.4	1.1	131.4	12.1	62.5	1
1995	38.0	2146.5	23.5	115.3	20.2	47.8	0
1996	15.2	3440.7	10.9	166.3	12.0	32.6	0
1997	-10.0	3949.1	0.5	173.2	2.7	19.2	0
1998	48.8	2566.9	-8.0	129.1	9.2	36.4	1
1999	25.6	2567.9	-3.5	129.7	10.1	36.4	0
2000	27.0	2465.2	-10.5	134.3	6.5	36.3	0
2001	36.6	2373.5	-19.7	145.1	5.1	33.1	0
2002	13.4	4759.6	32.3	158.3	6.0	14.8	0
2003	16.5	4284.4	-32.8	110.7	-0.2	21.6	0
2004	8.0	4520.0	-17.5	98.7	1.4	19.0	1
2005	3.6	4609.2	-17.2	100.6	1.5	19.8	0
2006	-67.8	4889.6	-5.5	97.2	3.7	22.1	0
2007	0.9	5278.9	-17.5	95.1	1.4	20.6	0
2008	12.6	6217.2	-8.8	98.0	3.7	20.3	0
2009	3.7	7187.8	-13.5	107.2	1.3	14.5	1
2010	-3.3	7984.1	-9.1	100.0	1.1	16.8	0
2011	9.4	8995.2	-7.3	96.8	2.6	11.2	0
2012	2.8	6650.7	-11.1	78.5	2.1	21.4	1
2013	15.3	5983.7	-13.2	65.3	4.4	22.2	0
2014	14.9	6436.8	-18.0	70.6	3.2	16.4	1
2015	14.1	6715.9	-17.6	79.6	2.2	17.4	0
2016	4.3	5668.4	-18.1	68.3	3.5	23.8	0
2017	4.1	9157.2	16.1	71.3	2.5	17.4	0

2018	6.6	9880.7	-22.2	76.8	1.6	12.9	0
2019	9.9	10831.6	-13.2	86.3	1.6	10.4	1
2020	5.3	11825.7	-10.4	92.9	3.3	11.6	1

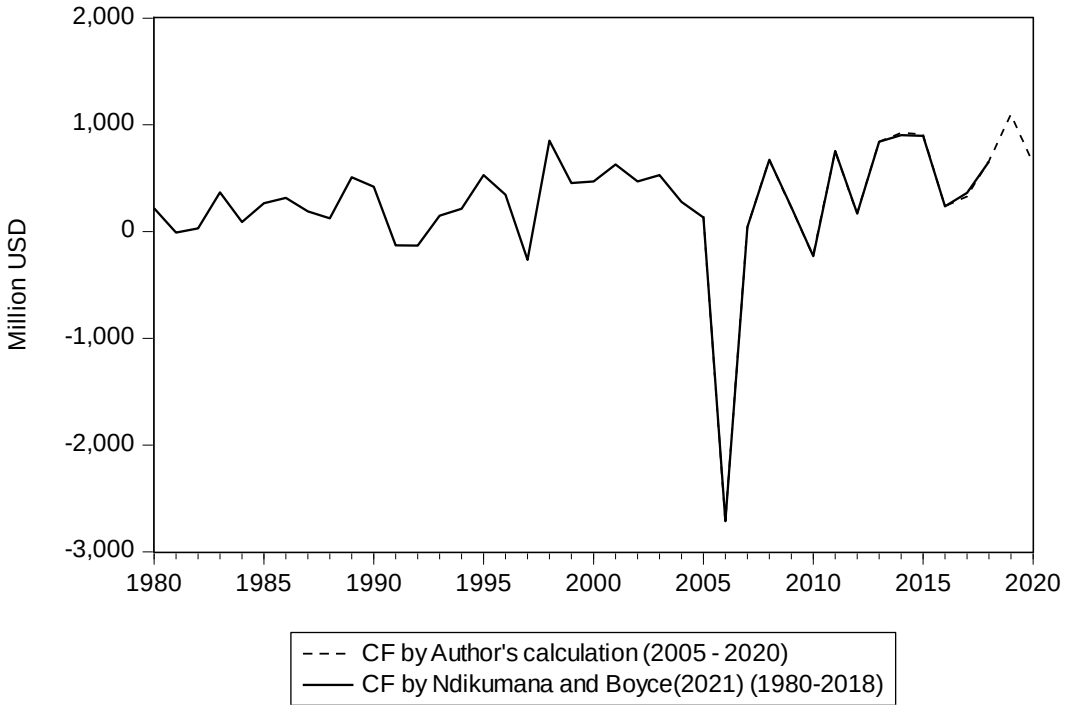
A2: elections and political transitions dummy variable

Years	Dummy
1980-1993, 1995-1998, 2000 – 2003, 2005 -2008, 2010-2013, 2015-2018	0
1994, 1999, 2004, 2009, 2014, 2019, 2020	1

1 = Year of elections or transition of executive power

0 = Year with no elections and no transition of executive power

A3: Graphical comparison of real capital flight data estimates (2005 -2020)



A4: Data sources

Data	Source	Publisher
Real Capital flight	Ndikumana and Boyce (2021a), Supplemented by author (2019 - 2020)	
Exports and Imports data	DOTS	IMF
CIF: FOB conversion factor	DOT Introductory Notes October 2018	IMF
External Debt data	IDS	World Bank
Nominal GDP	WDI	World Bank
Real GDP	WDI	World Bank
Real effective exchange rate	WDI	World Bank
Political changes (dummy)	Author	
Consumer Price index	WDI	World Bank
Net Foreign Direct Investment	IFS	IMF
Portfolio Investment	IFS	IMF
Current account balance	WDI	World Bank
Change in reserves	WDI	World Bank
Other Investments	IFS	IMF
GDP deflator	St. Louis Fed	St. Louis Fed
Official Development Assistance	WDI	World Bank

Source: Compiled by author

Appendix B: Unit root tests

B1: Conventional unit root test results

Test	Trend/Intercept	CF	LRGDP	LRIRD	LREER	ODA	DEBT
ADF	At level						
	Intercept and trend	-5.14***	-3.09	-3.05	-3.32*	-2.48	-3.16
	Intercept		-0.58	-2.22	0.10	-0.90	-2.39
	At first difference						
	Intercept and trend		-6.90***	-12.48***		-8.18***	-11.26***
ERS	At level						
	Intercept and trend	-5.27***	-2.71	-3.13*	-0.83	-1.90	-1.43
	Intercept		-0.59		-0.29	-0.95	-0.05
	At first difference						
	Intercept and trend		-7.05***		-5.89**	-8.26***	-1.41
	Intercept						0.08
	At second difference						
	Intercept and trend						-0.96
	Intercept						0.13
PP	At level						
	Intercept and trend	-5.13***	-3.09	-6.86***	-2.68	-2.82	-7.34***
	Intercept		-0.58		-1.08	-1.87	
	None		0.89		-1.71*	-0.98	
	At first difference						
	Intercept and trend		-6.89***		-6.60***	-8.83***	
KPSS	At level						
	Intercept and trend	0.07***	0.42	0.09***	0.13***	0.15*	0.09***
	Intercept		3.23				
	At first difference						
	Intercept and trend		0.02***				

***$p<0.01$, ** $p<0.05$, * $p<0.1$

B2: Structural break unit-root tests

Clemente-Montañés-Reyes unit-root test with single mean shift

AO Model	**CF**	**LGDP**	**LRIRD**	**LREER**	**ODA**	**DEBT**
du1	-14.42**	0.89***	-0.62**	-0.70***	-11.76***	-7.07***
	(-2.687)	(10.86)	(-9.54)	(-2.66)	(-2.91)	(-5.18)
Rho-1	-1.08	-0.54	-1.59	-1.02	-0.36	-1.02
	(-6.62)	(-3.48)	(-3.38)	(-1.70)	(-3.35)	(-2.74)
Optimal breakpoint	2004	2003	2000	2001	2001	1997
IO Model						
du1	-7.83*	0.40***	-0.52***	-0.21***	-7.07**	-4.38***
	(-1.70)	(3.85)	(-4.33)	(-2.73)	(-2.67)	(-4.66)
Rho-1	-0.92	-0.39	-0.98	-0.31	-0.38	-0.50
	(-7.62)	(-3.58)	(-14.92)	(-2.89)	(-3.89)	(-4.66)
Optimal breakpoint	2005	2000	2002	2001	1993	1994

***p<0.01, **p<0.05, *p<0.1 Parentheses indicate t statistics

Zivot and Andrews unit-root tests

	Level		**First difference**	
	Min. t-statistic	**Breaks**	**t-statistics**	**Breaks**
CF	-6.23***	2005		
LGDP	-4.75	2002	-7.33***	2012
LRIRD	-9.11***	2003		
LREER	-5.31**	2012		
AID	-5.89***	1996		
ED	-9.05***	2003		

***p<0.01, ** p<0.05, * p<0.1

Appendix C ARDL Error correction model

Included observations: 37 after adjustments
Maximum dependent lags: 4 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (4 lags, automatic): LRGDP LRIRD LREER ODA DEBT
Fixed regressors: POL C
Number of models evalulated: 12500
Selected Model: ARDL(1, 3, 3, 3, 4, 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
ΔCF(-1)	0.069897	0.086977	0.803631	0.4342
ΔLRGDP	-32.06619	15.01666	-2.135375	0.0496
ΔLRGDP(-1)	4.404327	22.83574	0.192870	0.8496
ΔLRGDP(-2)	9.683843	20.86188	0.464189	0.6492
ΔLRGDP(-3)	-26.86208	15.28004	-1.757985	0.0991
ΔLRIRD	-2.830309	2.512225	-1.126614	0.2776
ΔLRIRD(-1)	3.814590	2.601289	1.466423	0.1632
ΔLRIRD(-2)	3.849325	2.175829	1.769130	0.0972
ΔLRIRD(-3)	16.00399	1.609166	9.945515	0.0000
ΔLREER	-8.833824	18.33667	-0.481757	0.6369
ΔLREER(-1)	-54.17999	29.87561	-1.813519	0.0898
ΔLREER(-2)	62.60252	33.77597	1.853463	0.0836
ΔLREER(-3)	-42.29281	22.35650	-1.891746	0.0780
ΔODA	-0.709853	0.303609	-2.338049	0.0337
ΔODA(-1)	0.055446	0.355689	0.155883	0.8782
ΔODA(-2)	1.010166	0.331916	3.043437	0.0082
ΔODA(-3)	-0.749556	0.296628	-2.526918	0.0232
ΔODA(-4)	-0.384285	0.204459	-1.879521	0.0797
ΔDEBT	1.916153	0.715514	2.678011	0.0172
ΔDEBT(-1)	-1.653108	0.812337	-2.035003	0.0599
POL	2.310450	4.368551	0.528882	0.6046
C	543.7824	106.8532	5.089063	0.0001

R-squared	0.934888	Mean dependent var	10.93621
Adjusted R-squared	0.843731	S.D. dependent var	18.53199
S.E. of regression	7.325864	Akaike info criterion	7.107021
Sum squared resid	805.0242	Schwarz criterion	8.064864
Log likelihood	-109.4799	Hannan-Quinn criter.	7.444705
F-statistic	10.25579	Durbin-Watson stat	2.048327
Prob(F-statistic)	0.000016		