UNIVERSITY OF CAPE TOWN

The Macro-Economic Determinants of Remittances: The Case of Malawi

A Dissertation

presented to

The **Development Finance Centre (DEFIC)**
Graduate School of Business
University of Cape Town

In partial fulfilment
of the requirements for the Degree of
Master of Commerce in Development Finance

by

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July 2022

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Declaration

I, Eremia Great Muhoni, hereby declare that the work on which this thesis is based is my original work (except where acknowledgements indicate otherwise) and that neither the whole work nor any part of it has been, is being, or is to be submitted for another degree in this or any other university. I authorise the University to reproduce for the purpose of research either the whole or any portion of the contents in any manner whatsoever.

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DEDICATION

I dedicate this dissertation to my mother, Rebecca Manda Mhone, and my father, Robert Chande Mhone, with a heart full of sincere gratitude, thanks, and warmest regards for the discipline, never-give-up attitude, and most importantly, their never-ending words of wisdom and inspiration on the importance of striving to give our best in whatever path we choose to pursue in life. Last but not least, I want to thank my wife, Thokozani Chirwa Muhoni, for agreeing to shoulder additional duties in caring for our two adorable children, Likondwa and Lwana, as I invested a lot of time and money into this study.

ACKNOWLEDGEMENTS

Glory and honour be to God the Almighty because of His never-ending providence and gift of life, that has seen me through this challenging part of a two-year study, during one of the most difficult times of human existence, as the world is grappling with the Covid-19 pandemic. Further to that, I would like to convey my profound appreciation and gratitude to my dissertation supervisor, Ass. Prof. Abdul Latif Alhassan. I am extensively indebted to my supervisor for his efficiency and unwavering professional support and guidance during both the Research Methods class and my dissertation work. I also extend my gratitude to all my siblings, relatives, and friends for being considerate and supportive to me throughout this journey. Special mention to my friend Lusayo Mwambembe who personally marketed and convinced me to enrol in this Master of Commerce Degree in Development Finance program. I am forever grateful for all the moral support and encouragement that I received throughout my period of study. Finally, I would like to thank my Master of Commerce in Development Finance 2021 classmates specifically Carmen, Vimbai, Noluthando, Zack and Charles, for their consistent support to me during my entire period of study.

ABSTRACT

In recent years, foreign remittances have increasingly played a crucial role in the balance of payments (BOP) of the majority of emerging nations. The remittances have surpassed various forms of capital inflows for several nations. At least in Malawi, however, very little has been done to comprehend this amazing expansion, despite the fact that the country is experiencing a considerable rise in remittances and a surge in interest in the potential of international transfers on a global scale. In order to better understand the macroeconomic factors that influence remittances to Malawi, the study looked at annual time series data from 1994 to 2020 for real gross domestic product, inflation rate, interest rate difference, and real effective exchange rate. The time series data was studied using Autoregressive Distributed Lag (ARDL) estimation techniques to explore the long run and short run effects

The findings of the ARDL bounds show that the dependent and independent variables have a long-term relationship. According to the test results for short-run correlations between variables, there is no statistically significant correlation between remittances and the independent variables real gross domestic product, inflation rate, interest rate difference, and real effective exchange rate. In contrast to the inflation rate, which is strongly negatively correlated with remittances over the long term, real gross domestic product, interest rate difference, and real effective exchange rate are all significantly positively correlated with remittances.

Finally, this study takes into account the relative significance of the long-term link found between remittances and the examined macro-economic variables, in addition to remittances as a reliable source of foreign exchange for development financing. The study recommends that the originating country's government, Malawi, needs to implement urgent and significant strategic macro-economic interventions and formulate appropriate policies to encourage its diaspora citizens to remit funds back home.

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LIST OF ACRONYMS AND ABBREVIATIONS

ADF	Augmented Dickey-Fuller
ARDL	Auto-Regressive Distributed Lag
BOP	Balance of Payment
ECM	Error Correction Model
IMF	International Monetary Fund
MTA	Money Transfers Agents
MWK	Malawi Kwacha
NSO	National Statistics Office
ODA	Overseas Development Assistance
OLS	Ordinary Least Square
RBM	Reserve Bank of Malawi
SADC	Southern Africa Development Community
USD	United States Dollar

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Chapter 1

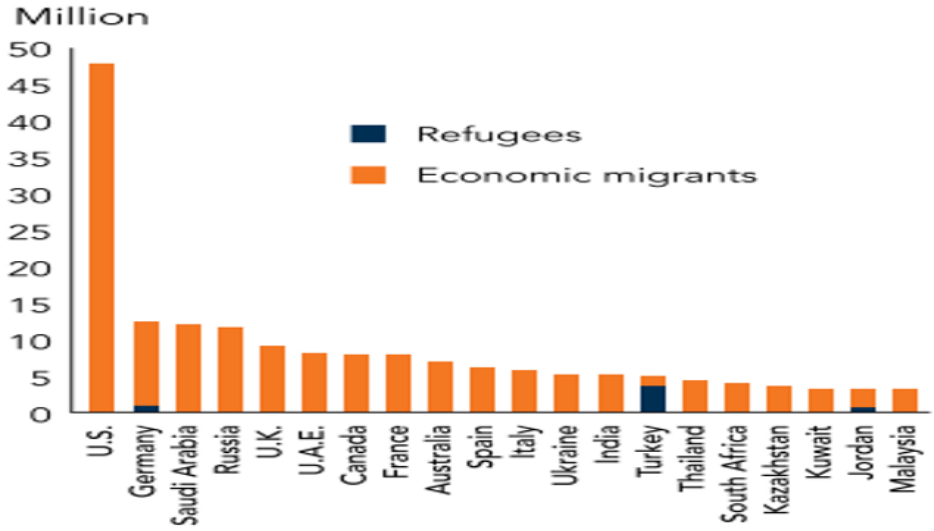
Introduction

1.1 Background of the study

Remittances are a direct effect of the international migration of people from one country to another, a topic that has not been extensively covered by theoretical and empirical literature about migration. It is tempting to think that the study of remittances is neglected in favour of the research of migration because of this direct correlation between the two (Lianos, 1997). This study reveals that remittances are also broader and more complicated than they are considered, and that diverse factors impact remittances.

World Bank (2019) estimated that there were 266 million migrants worldwide, a 3.5% increase from 2000. Of these, 240 million (90%) were driven by economic factors, with the United States of America being the most popular destination, with an estimated 50 million migrants (**figure 1)**. The causes of international migration are too numerous to list here. Examples are demographic imbalances, disparities in employment, and poverty in different nations (Gupta, 2006). Other push and pull variables include marriage opportunities, social isolation and discrimination, corruption, inadequate health care, education, and social security. There also exist additional pull factors for movement such as connections among migrants (Kapindu, 2011). Government policy changes made on purpose in the countries of origin and hosts may facilitate migrant worker decisions and encourage migration. Experts expect the trend of increasing remittances and migrant flows to continue in the near future (Ratha & Silwal, 2012).

FIGURE 1. Top 20 destination economies by number of international migrants and refugees, 2018



Sources: World Bank staff estimates based on UNDESA (2017), UNHCR

Figure 1's figures on migrants omit irregular or unauthorized immigrants. According to some studies, practically all countries that are popular destinations for migrants face the difficulty of undocumented or illegal migration (Sangala, 2016). For instance, it is estimated that there are more than 10.5 million undocumented immigrants living in the United States. According to (Passel & Cohn, 2019), in 2008, there were between 1.9 million and 3.8 million unauthorized immigrants in Europe. Similarly, according to Statistics South Africa, in 2015 6.2 million immigrants and 1.2 to 1.5 million illegal migrants were estimated to be living in South Africa.

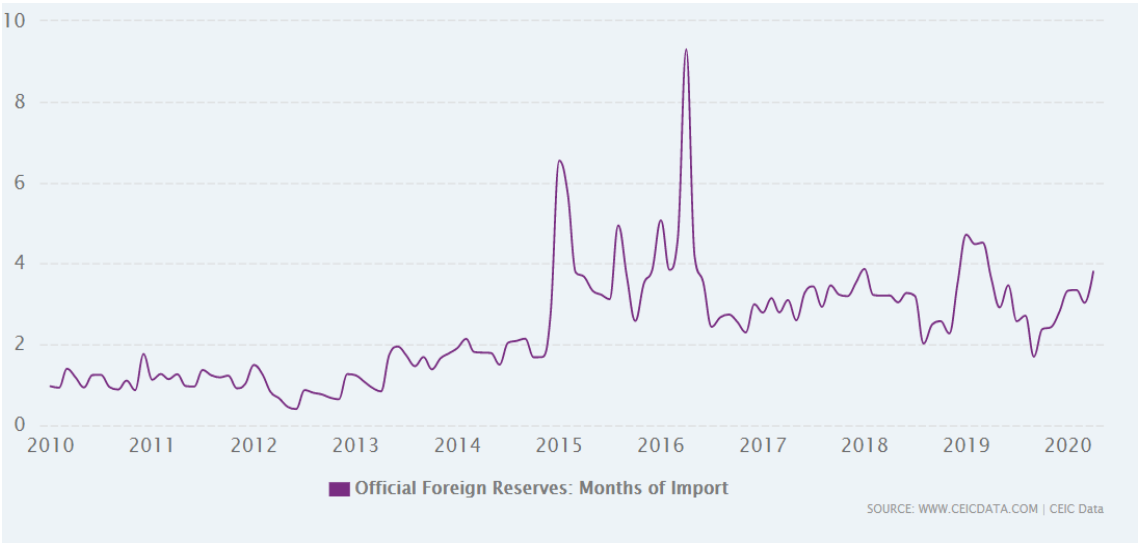
It is not unexpected, given the swelling immigrant population, that global foreign exchange receipts now rank among the top international financial resources and are expected to surpass flows of foreign direct investment (FDI) in the near future (Meyer & Shera, 2017). In particular, the emerging countries that export labour greatly profit from remittances. International migration patterns have the potential to drastically change the economies of both countries when they are well managed, economically prudent, and documented (Abdel-Rahman, 2003) (Every et al., 2021). Remittances to emerging nations were officially recorded at $530 billion in 2018 (World Bank, 2019), which is three times greater than the amount of official overseas assistance and FDI flows (United Nations, 2012). Several researchers point out that the amount of money transferred through the illicit market may be over 50% higher than what is shown in the official bank records (Hagen-Zanker & Siegel, 2011) (Ratha & Shaw, 2021) (World Bank, 2019).

More than 30 million Africans are thought to live abroad, and they send their home countries roughly $40 billion each year (IFAD, 2011). International remittances are recognized for their positive effects on the economies of the majority of African countries, particularly during times of economic crisis. Remittances to Africa surpass international development funds (Mutume, 2005), and they even surpass FDI for several other nations (El-Sakka & Mcnabb, 1999) (World Bank, 2019). Remittances have defied the odds and are a vital lifeline for the majority of African economies, despite the fact that international financing flows are typically too scarce due to financial and economic pressures in the traditional donor countries and the recent COVID-19 pandemic. The quantities of remittances to most African countries, with the exception of Nigeria, has not yet reached the full predicted levels despite the surge in foreign receipts through remittances (Mutume, 2005).

Malawi has an estimated population of 18 million people, 255,000 of whom have emigrated in the last decade. However, migration and remittances are rarely on the agenda of Malawians, and they are rarely linked to the development of their country (Sangala, 2016). According to the 2018 national census, tobacco, dubbed "green gold" in Malawi, is the lifeblood of the country's economy. Tobacco is the dominant foreign currency source, obscuring all other foreign currency sources such as remittances, accounting for more than 80% of Malawi's export earnings. In addition, it is estimated that the sector employs nearly 2 million people out of a labour force of 5 million (National Statistical Office, 2019). The entire economy of Malawi is negatively affected when the tobacco sector underperforms.

Malawi's over-reliance on tobacco revenue poses significant economic and financial risk, as well as uncertainty for importers who rely on foreign currency payments. In 2012, Malawi's gross official reserves stood at USD242 million (Sangala, 2016). This amounts to less than one month's cover for imports of goods and services (see **Table 1)**. The IMF describes Malawi as a country that has had one of the worst foreign exchange positions over the past ten years. Most international analysts concur that an economy should have enough reserves to cover imports for at least three months. Furthermore, the analysts concur that Malawi should expand its foreign exchange holdings to provide a safety net against shocks such as the breakdown of trade agreements brought on by a decline in tobacco exports.

Figure 2: Malawi's Foreign Exchange Reserves



Malawi's economy is in much more danger given the existing lobby by anti-smoking advocacy organizations. There is urgent need for Malawi's economic leaders to diversify the nation's foreign exchange sources and stop relying on unstable commodity-based industries such as the tobacco industry. The government of Malawi has already started putting plans into action to boost foreign exchange reserves. A plan to boost remittances from diaspora citizens in order to improve foreign currency inflows is among them. The establishment of the Non-Resident Foreign Currency Denominated Account (FCDA) in 2006, the passage of the dual citizenship act in 2018 (Sangala, 2016) (MoF Malawi, 2017) , the diaspora engagement policy of 2017 , and the role of the diaspora community being explicitly outlined in Malawi's Vision 2063 economic blueprint are just a few of the initiatives that the Malawian government has designed and is currently putting into action to encourage Malawians in the diaspora to invest and keep their savings back home (Nation Planning Commission, 2021). Despite the inadequacy of studies on the subject in Malawi, all these measures testify that the country's strong belief that remittances may boost the economy.

Remittances increased from a meagre USD 14 million in 2003 to USD 217 million in 2019, accounting for about 4% of the nation's GDP, demonstrating that Malawi's government's measures have already started to have notable positive outcomes (World Bank, 2019). One may successfully deduce that remittances to Malawi may be double the officially reported amounts after taking into account the World Bank research, which claims that more than half of worldwide remittances are thought to be delivered through illegal routes (Sangala, 2016) (Mutume, 2005). The fact that there has been a large increase in

remittances to Malawi despite the fact that so little is known about this extraordinary growth motivated the present author to add to the body of knowledge with this work.

1.2 Research Problem and Questions

The number of Africans living abroad and moving, particularly outside of Africa or their country of birth, continues to rise (Wahba, 1991) (World Bank, 2019), as a result, money-transfer offices are becoming busier, with migrants queuing to send home the odd dollar they can save (Mutume, 2005). Some of the internationally wired funds make their way into the world's most remote rural areas from well-developed economies that are, typically, sources of remittances to the least developed economies in Asia, the Middle East, and Africa. The funds may pay school fees, provide housing, or provide a meal there. Ironically, the majority of remittances are unaccounted for and thus do not appear in recipient countries' official national statistics (Mutume, 2005) (Sungsoo et al., 2017). Following this, most governments in developing countries, including Malawi, are emphasizing the importance of systematically tracking foreign currency receipts from their citizens in the diaspora, with support from their development counterparts. This will almost certainly help governments that are determined to increase remittances as a critical source of development finance and strategically channel them into productive economic sectors.

1.2.1 Identifying the Knowledge Gap

The literature about the determinants of foreign remittances clearly utilises two techniques to explain the concept: microeconomic and macroeconomic. Microeconomic technique pioneers, Lucas and Stark (1985), created a model to analyse the stimulus to remit. (Lucas & Stark, 1985) They concluded that foreign remittance transfers are made for a variety of reasons, ranging from pure altruism to solid self-interest. According to them, the diaspora can be classified as altruistic if an inverse correlation exists between foreign remittances and family income in the country of origin while self-interest intentions would take precedence if remittances were directly related to the economic performance of the country of origin. Some empirical studies, particularly, Lucas & Stark (1985) and Agrawal & Horowitz (1999) attempted to test the altruistic theory against the self-interest hypothesis using microeconomic variables.

It is less clear, however, whether diaspora remittance flows are influenced by macroeconomic variables. Some researchers have examined macroeconomic variables to determine sources of diaspora receipts. For purposes of including the destination country's economic climate, her income in the form of gross domestic product (GDP) is commonly used as an illustrative variable, as it assesses the economic well-

being of the diaspora community. (Lianos, 1997) (El-Sakka & Mcnabb, 1999) (Elbadawi & Rocha, 1992) and (Heffernan, 2018) came to the conclusion that there is a direct relationship between host-country income and remittances. Furthermore, some early researchers looked at the unemployment rate in the host country, which mirrored the economic situation in the destination country. Higgins et al. (2004), for example, discovered strong evidence of a direct relationship between the level of employment in the host country and diaspora receipts. In contrast, Lianos (1997) concluded that the host country's employment level has an ambiguous impact on remittances. Although various researchers have investigated whether key macroeconomic factors such as exchange rate and interest rate differentials, drive foreign remittance flows the evidence on their impact is inconclusive.

Considering that the disparity in the findings of different researchers on macroeconomic variables, the present study sought to contribute to the body of knowledge by investigating time series data for Malawi. To the best of this researcher’s knowledge, Malawi’s macroeconomic remittance drivers have never been studied hence this study’s utilisation of a different set of economic variables.

Remittances are, by definition, personal transactions intended to benefit a migrant's relationships in their home countries (Lasbrey et al., 2020). Despite their nature, remittances are gradually but steadily becoming a popular source of foreign exchange receipts in most developing countries, including Malawi (Sungsoo et al., 2017) (IMF 2009). In contrast to official aid, which can only be obtained through registered financial institutions, remittances are sent directly to intended recipients (D. Ratha & Silwal, 2012) (Lasbrey et al., 2020). And, unlike international capital flows, which are highly cyclical, remittances, due to their stable nature, typically go against the economic tide and often cashflow-smoothing, taking the role of insurance during economic downturn or after natural calamities (Sangala, 2016) (Sutradhar, 2020) (Truen et al., 2016).

Foreign remittances have recently become a critical component of most developing countries' balances of payments (BOP). They have, actually, exceeded various types of capital flow for some countries. (Meyer & Shera, 2017) (Arun & Ulku, 2011) (Lasbrey et al., 2020) . Remittances to Malawi have increased significantly in the last decade, rising from USD14 million (2003) to USD217 million (2019) (World Bank, 2019). Though this amount appears to be insignificant in comparison to those of other African countries such as Nigeria (USD24 billion) and Zimbabwe (USD2 billion) (World Bank, 2020), this increase to USD217 million accounts for approximately 4% of Malawi's GDP (World Bank, 2019) and it also covers about one month's worth of her import foreign currency demand (Chitsulo, 2016). Globally, a great deal of research effort has gone into studying the impact of remittances on national economies and

as a mechanism to combat poverty (Denoon-stevens, 2013) (Deborah & Meyers, 1998) (Elbadawi & Rocha, 1992) (El-Sakka & Mcnabb, 1999).

Without any doubt, diaspora receipts are an essential component of Malawi's balance of payment (BOP) statistics. Furthermore, given the magnitude of the money involved and the weight of contributions in foreign currency receipts, it is not sufficient to simply examine and comprehend the impact of diaspora remittances on Malawi's economic development. Rather, understanding the drivers of remittances on Malawi's economic growth is critical to mainstreaming remittances as a critical component of the country's economic revival in the light of declining tobacco revenue.

Despite a significant increase in remittances and a worldwide surge in interest in the potential of foreign transfers, little has been done to comprehend this phenomenal growth, at least in Malawi. 'The fact that the Malawi government cannot track Malawians in the diaspora,' (Sangala, 2016) summarizes this academic shortcoming. In view of this situation, the present study reviewed the literature on evidence on macroeconomic determinants of remittances to Malawi. Thus, the purpose of this study was to gain a better understanding of diaspora cash inflows thereby extending frontiers of knowledge concerning this phenomenon. It examines a few key macroeconomic determinants that may be driving changes in remittance inflows. As a result, we used time series data on remittances for Malawi from 1994 to 2020.

1.2.3 Research Questions

The following research question was developed to guide the study:

i. What is the relationship between macroeconomic variables and remittances in Malawi?

1.3 Research objectives and hypotheses

The study's research objective was to:

a) Examine the relationship between key macroeconomic variables and official foreign remittances to Malawi.

The hypotheses we tested are listed below:

Ho: Remittances to Malawi are unaffected by macroeconomic factors.

H1: Remittances to Malawi are influenced by macroeconomic factors.

1.4 Scope and Justification of the study

In most cases, emigration has been viewed either as negative by labour-sending countries, particularly African countries, or as a combination of benefits and costs in a few instances. Sending countries, for example, consider a huge cost the loss of well-trained professionals in whom substantial amounts of government funds have been invested (Kapindu, 2011) (S. Gupta et al., 2009) (Sungsoo et al., 2017). On the positive side, the reduction of social unrest caused by unemployment and/or underemployment; the acquisition of skills in foreign countries by returning migrants, and funds transfers from migrants to their relatives back home are among the benefits listed (Lianos, 1997).

This debate on the impact of migration on national economies has been going on in Malawi since the 1960s, when Malawi used to officially export labour to South Africa's mining industry, and later, when Malawi briefly joined the Federation of Rhodesia and Nyasaland, and a significant number of her population migrated to Northern Rhodesia and Southern Rhodesia, now Zambia and Zimbabwe, respectively. The issues are currently being debated among Malawi policymakers, politicians, analysts, and academics to the point where they have been incorporated into the Malawi Vision 2063 development strategy.

In more recent literature, emphasis has been placed on the magnitude of remittances and their use as being central to the benefits of migration (Davies, 2008) (Sungsoo et al., 2017) (Truen et al., 2016) (Bodomo, 2013). There is no doubt about the importance of remittances to receiving countries; in some cases, official figures account for an impressive percentage of the gross domestic product (GDP); for example, the World Bank's 2020 figures show that remittances account for 4% of Malawi's GDP.

Another important area of research is the theory and factors that influence the magnitude of remittances. What is surprising is the small number of published studies on this topic, most of which are from developing economies. To the best of this author's knowledge, no work has yet been published that explains the macroeconomic determinants of remittances to Malawi. Literature gap explains why the

present researcher decided to embark on the present study to examine existing literature for evidence for macroeconomic determinants of remittances to Malawi from 1994 to 2020.

According to the Reserve Bank of Malawi's annual balance of payments report for 2020, the tobacco industry accounts for 80 percent of Malawi's export earnings, with the decline in tobacco revenue resulting in dwindling foreign exchange cover and persistent foreign exchange shortages in the economy. The value of foreign remittances to Malawi cannot be overstated. According to the World Bank 2020 report, remittances are an important component of Malawi's foreign exchange, which has increased significantly in the ten years under review, from USD17 million (2008) to USD217 million (2019). Ironically, there is no literature to explain this impressive growth (Kapindu, 2011) (Chitsulo, 2016). The present researcher's goal was to empirically analyse what is driving this significant increase in remittances to Malawi. This study specifically sought to answer one research question, namely how macroeconomic variables affect remittances in Malawi? Using data from five major labour-exporting countries in North Africa and Europe: Morocco, Portugal, Tunisia, Turkey, and the former Yugoslavia, (Elbadawi & Rocha, 1992) the study concluded that remittances are significantly affected by economic policies in the home countries. Similarly, the studies claimed that special incentive schemes could not be a substitute for stable, credible macroeconomic policy.

1.5 Organization of the study

This research report has five chapters. The first chapter provides an introduction and background while the second is a literature review of both theoretical and empirical literature on remittances and how they relate to various macroeconomic variables in Malawi. The research methodology for testing the hypotheses statements is presented in Chapter 3. The fourth chapter contains discussions of the research findings. Finally, Chapter 5 concludes the study and presents recommendations for future research, and policy implications specific to Malawi and other developing countries.

Chapter 2

Literature Review

2.1 Introduction

Many theories have been proposed to explain what motivates cross-border immigrants to remit, and the majority of them have their origins in the "Motivation to Remit" theory proposed by (Lucas & Stark, 1985). Although the literature covers a wide range of microeconomic theories to remit, this review focused on a topic that has received little attention: macroeconomic determinant theories. The present study began this review by defining the concept of remittances as it applies to this study, followed by an overview of the Malawian remittance market, a general review of remittance theory, and concluded with insights into some of the critical empirical literature that is fundamental in the study of international remittances. The chapter is structured as follows: Section 2.2 defines the term "remittances"; Section 2.3 provides an overview of remittances and Malawi's macroeconomic environment; Section 2.4 delves into the theoretical underpinnings of remittances; Section 2.5 examines the empirical literature pertinent to this study while Section 2.6 concludes the chapter.

2.2 Definition of concept: Remittance

The term "remittances" refers to cash or in-kind transfers from a migrant to household residents in the country of origin (Meyer & Shera, 2017). There is agreement in the current literature on this basic definition of remittances, with minor variations attributed to semantics. Due to the inherent difficulties in quantifying or obtaining data on remittances in kind, the present study used this basic definition of remittances to mean official bank cash transfers or other transfers through authorized money transfer institutions sent by the diaspora community back to relatives, friends, and, in some cases, business partners in their countries of origin. The same meaning is ably expressed by (Alleyne et al., 2008) (Lasbrey et al., 2020) who describe remittances are individual-to-individual fund flows, tailored to the needs of the beneficiaries, with these goods and/or cash not usually suffering from the bureaucratic international money transfer laws commonly associated with official international development funds.

2.3 Overview of context:

2.3.1 Remittances in Malawi

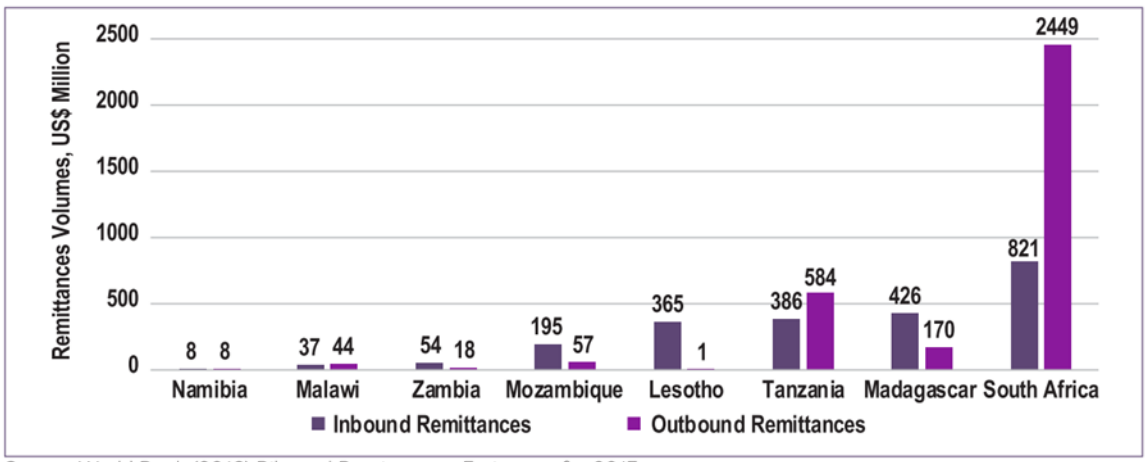
Despite the fact that migrant remittances have been practised in Malawi and the SADC region for over a century, they have neither been thoroughly investigated nor accurately recorded (Hughes & Kajee, 2007).

Remittances to Malawi are primarily received from SADC region countries (50%) with South Africa accounting for 30% (World Bank Group, 2021)

Malawi is considered one of the more difficult destination countries for remittances **figure 3**. The country has fewer money-transfer service providers than most of her regional neighbours, owing to the country's less favourable conditions for foreign receipts in comparison to other countries. However, its diaspora community has a reasonable number of options for making remittances. The most common methods of remitting funds to Malawi are commercial banks and international wire transfers (Money Transfer Agents-MTAs). The MTAs listed below are collaborating with four commercial banks in Malawi.

- Hello Paisa
- RIA
- Money Gram
- Xpress Money
- Sigue
- Western Union
- World remit.

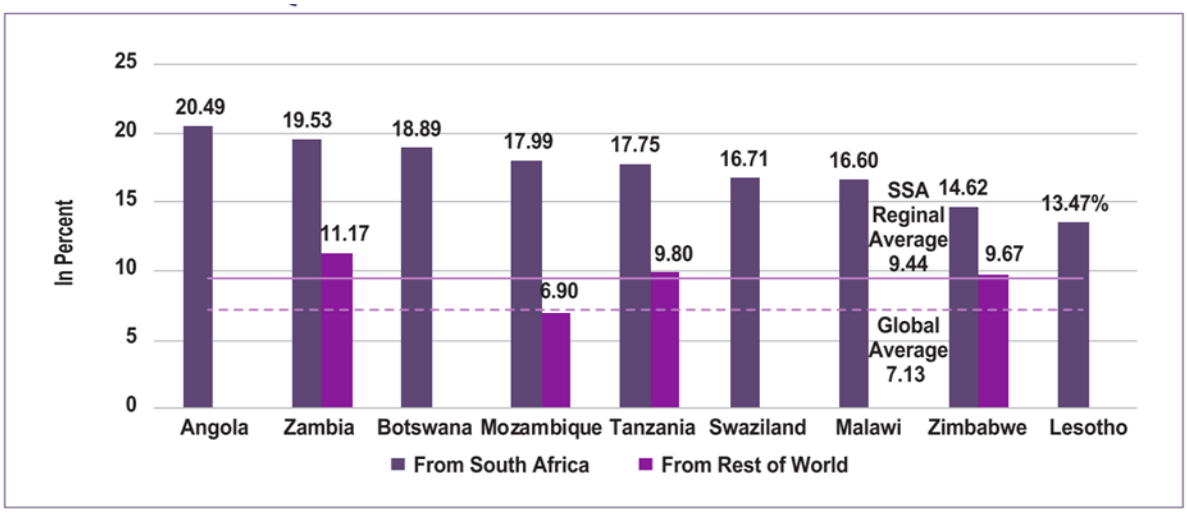
Figure 3. Volume of Inbound and Outbound Remittance Flows in Selected SADC countries



Source: World Bank (2016) Bilateral Remittances Estimates for 2015.
Note: Data are included for SADC countries where a World Bank assessment was performed. Data for Zimbabwe were not available, although the Reserve Bank of Zimbabwe estimates indicate that in 2015 remittance inflows amounted to US$939 million.

Despite significant increases in both the volume and value of remittances since the advent of multi-party politics in Malawi in 1994 (USD0.8 million) and in 2020 (USD215 million), as well as subsequent liberalisation of the financial services sector, the transactional cost of remitting money to Malawi is significantly higher than in other regions of the world (**Figure 4**). In contrast to the global average (7.13 percent), the average cost of remitting USD200 to Malawi is 16.6 percent, which is also higher than that of SADC countries (12.64 percent).

Figure 4. Average Cost of Sending US$200 from South Africa to Selected SADC Countries, Q1:2018



Source: World Bank, Remittances Prices Worldwide (RPW), 2018.
Note: Countries included are those with data collected by RPW for the South Africa corridor. Of these countries, Mozambique, Tanzania, Zambia, and Zimbabwe have data on remittances prices for corridors other than South Africa, allowing a comparison with remittance prices from "rest of the world." SSA = Sub-Saharan Africa.

According to Kapindu (2011), most Malawian migrants settle within the SADC region, specifically South Africa, and mostly for low-wage jobs in farms and mines, which causes high remittance processing fees to be prohibitive. As a result, remittances to Malawi and within SADC in general are increasingly happening through an unregulated or informal channel (black market), such as using road transport companies or being carried physically by friends and relatives (World Bank Group, 2018).

2.3.2 Macroeconomic environment in Malawi

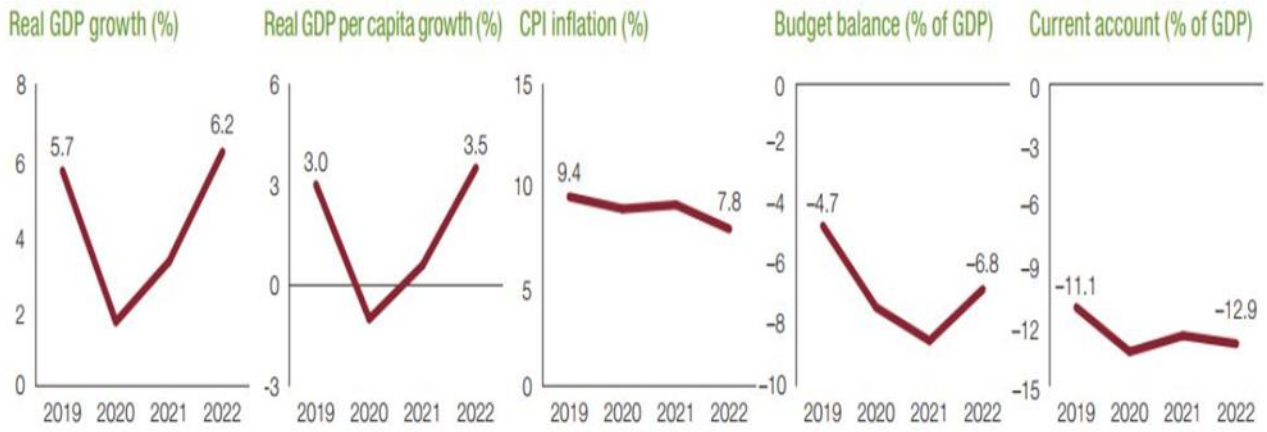
Malawi is a country in Southern Africa, densely populated and one of the least developed nations in the world. Her GDP per capita in 2009 was USD344 (IMF 2009). Malawi's GDP growth rate fluctuated around 7 percent per annum for the years 2005 to 2009. Although that periodic economic miracle performance is exceptional by any standards, Malawi's growth, has a history of volatility. Poverty is rampant, in Malawi; in 2018 it was estimated that approximately 40 per cent of Malawi's population lived below the poverty data line, namely less than USD1 per day (National Statistical Office, 2019).

Malawi's population is predominantly rural, with approximately 75% of its 18 million people estimated to live in rural areas (National Statistical Office, 2019). Small-scale and rain-fed subsistence agricultural production, dominated by tobacco, sustains approximately 85 percent of Malawians' livelihoods. This lack of export diversification is a major economic weakness of the country. This industry is also the primary source of foreign receipts from exports. The country is also heavily dependent on foreign aid. In 2008/2009, international aid accounted for 44% of the country's budget (Kaluwa, 2011). In order to

diversify its foreign currency receipts, the government is looking into a variety of options, one of which is tapping into its diaspora citizens, hence this researcher's belief that it is equally important to investigate the macroeconomic factors influencing diaspora remittances to Malawi.

Malawi's inflation rate has persistently been over 20 percent on average since 2012 (Wu, 2016), which is comparatively above her regional SADC peers, only to attain single digits after 2019 (**Figure 5)**. This slowing down of inflation is partly explained by the dramatic policy reforms in the economic governance framework and climate-related economic stress (Wu, 2016).

Figure 5



Source: Data are as of December 2020 and are from domestic authorities; figures for 2020 are estimates and figures for 2021 and 2022 are projections by the African Economic Outlook team. Data on the budget balance correspond to Malawi's fiscal year, which runs from July 1 to June 30.

Before 2012, Malawi had a de facto soft pegged exchange rate policy regime (Reserve Bank of Malawi, 2000). The official Reserve Bank of Malawi exchange rate was greatly overvalued and prone to periodic devaluations. Between 2004 and 2011, the kwacha depreciated by about 13%, 12%, 7%, and 10%, respectively. Consequently, there were foreign exchange shortages, which led to rationing of the few dollars on the official market. The black market for foreign exchange was, on the other hand, flourishing. In May 2012, Malawi shifted from a fixed exchange rate arrangement to a floating one. This did not help either; it coincided with an instantaneous stop in international budget support following the large-scale plunder of state coffers called the "cash-gate scandal." In a desperate move to close the fiscal gap after the cash-gate heist, the state responded by printing money and floating government securities to the corporate world.

The macro-economic indicators for Malawi are not ambiguous; they all very clearly show that Malawi needs to expand its revenue base and explore new ways of funding its 2063 development agenda.

2.4 Theoretical Framework: Motives to remit

The literature about foreign remittances is divided into two categories: microeconomic studies and macroeconomic studies (Rapoport, 2006). The theoretical debate over the determinants of remittances was pioneered by Lucas & Stark (1985) with their pioneering study, "Motivations to Remit: Evidence from Botswana". Lucas & Stark (1985) investigated remittances on a microeconomic level and found the main determinants to be "pure altruism," "pure self-interest," and "tempered altruism or enlightened self-interest." It has also been observed that the long-term impact of remittances on receiving countries is largely determined by the remitter's intention, whether to consume or invest (Mallick, 2008).The macroeconomic studies literature, which is the focus of this study, is also based on these motivations for hypothesizing relationships explaining remittances. However, the published work on the macroeconomic impact of remittances is still in its early stages.

Keynes (1929) first advanced the argument that remittances may have a significant impact on the remitter's home economy in his study 'The German Transfer Problem,' later dubbed 'The Remittance Problem'. The variants of this topical debate are that the theoretical financial support that stimulates remittances is not a straightforward issue, but rather varies greatly depending on different characteristics of the host and origin countries (Djajic et al., 1998). Because of the ambiguity and uniqueness of each country's economy, it was equally important for this researcher to investigate the case of Malawi's remittances.

The study was guided by (Pozo, 2004) when considering the impact of remittances on the macroeconomy. Pozo contends that international remittances to a country harm its exports in global markets by reducing the variety of goods or services exported. This decrease in export receipts is a direct result of remittances raising the country's real exchange rate. El-Sakka & Mcnabb (1999) agrees with these findings and goes on to explain that government policies in receiving economies, such as foreign exchange rate regimes and black-market gains, frequently have a negative impact on remittances and may also drive remitters away from the formal channels and into the informal sector, also known as the black market.

There are numerous theories in the literature that argue that remittances are influenced by a variety of factors, such as inflation, interest rate, exchange rate, political and financial risk, economic environment, education, volume of migrants, etc. (Singh et al., 2011), (Wahba, 1991), (Rapoport, 2006), (Perez-Saiz et al., 2019) and (Narayan et al., 2011).

2.5 Empirical Literature

Many scholars (Alleyne et al., 2008)(Durand et al., 2008) (Djajic et al., 1998) argue that while remittances can have a strong positive impact on a host country's balance of payments, they can also have a negative economic impact. For example, Alleyne et al., (2008) discovered a negative relationship between remittances and GDP in Morocco, which they attributed to altruism as the remittance motive. On the plus side, remittances boost national income by increasing foreign exchange inflows, consequently, improving the pool of national savings.

Remittances are larger than overseas development assistance (ODA) for many small developing countries, mostly in Africa. These inflows contribute to the reduction of balance-of-payments deficits in many remittance-receiving countries. The effect of remittances on economic growth in four South Asian emerging economies was investigated using data from 1977 to 2016 (Sutradhar, 2020). Their findings concluded that foreign remittances from the Middle East help to reduce not only balance of payments deficits but also debt burdens.

The majority of empirical research on macroeconomic effects focuses solely on the number of migrants, their income and economic environment in both their country of residence and of origin, exchange rates and differential interest rates between two countries, political stability, and existing financial institutions to facilitate the movement of funds. The migrant population in a host country is regarded as an undeniable determinant of remittances (Hagen-Zanker & Siegel, 2011): The greater the number of migrant workers, the greater the volume of foreign receipts expected. According to Freund (2014), doubling the number of migrants would result in a 75% increase in official foreign receipts. In addition to their findings, Hagen-Zanker & Siegel (2011) state that a perceived higher potential gain or profit from investments in the host country (as opposed to the country of origin) may tempt migrants to invest in their current residence and, as a result, reduce remittances to their home country for investment purposes only.

Hagen-Zanker & Siegel (2011) also contend that it is critical to examine remittance flows from a public policy standpoint because they have a significant impact on the economies of many countries worldwide. They concluded that the economic environment in migrants' home countries is critical in the study of international remittances because negative economic shocks in the home country may be positively related to remittances to be sent, which may motivate migrants to remit funds or may function as initial stimuli of migration. In agreement, Alleyne et al. (2008) suggest that public policy should be used to increase these flows. Lin (2011) offers a slightly different perspective, stating that most economic shocks in

developing countries are a direct result of social unrest or anarchy, which may scare away potential remitters because such an environment is not conducive to investment. As a result, the existing literature on the relationships between remittances and macroeconomic variables contains contradictory findings.

Each of the macroeconomic factors, which are referred to as variables in this study, has its own possible or expected hypothetical behavior with regard to remittance inflow, as discussed briefly below.

2.4.1 Inflation

In the published literature, the effect of inflation on remittances is currently hazy. Inflation is directly related to remittances because volatile macroeconomic environments frequently drive out residents, thereby increasing migration (Narayan et al., 2011). However, some studies found that general price increases are inversely related to remittances. High inflation may indicate that the receiving economy's economic policies lack credibility (Alleyne et al., 2008). Remittances may suffer as a result of a volatile macroeconomic environment, such as one with an unstable real exchange rate and an inflationary environment.

2.4.2 Exchange rate

According to the published literature, currency depreciation in the recipient country has a direct relationship with remittances. Lianos (1997) observed that depreciation of the home currency increased remittances in the short term but decreased migrants' confidence in their home economy in the long term. Tight foreign exchange rate regimes and informal foreign currency exchange gains in the home country may have a negative impact on remittances and may cause remittances to shift from the formal to the black-market economy (McLeod et al., 2003). On the other hand, an analysis by Lin (2011) finds no significance of Dutch disease in their work, noting that the real exchange rate is not significantly related to foreign remittances.

2.4.3 Interest rate

Financial sector development that makes remittances faster, easier, and less expensive should increase remittances (Abbas et al., 2017). Interest rate differentials are inversely related to remittances, with remittances decreasing when interest rates rise due to perceived risky investment while McLeod et al. (2003) concluded that a rise in interest rates is associated with an increase in remittances. It's worth noting that (Lianos, 1997) discovered two opposing interest rate coefficients in Greece and Germany. Interest

rates in Germany were inversely related to remittances, whereas in Greece the opposite was true, and the two countries also had different statistical significance.

2.4.4 Gross domestic product (GDP)

Gross domestic product (GDP) is inversely related to remittances, implying altruistic motives of remitters, while it indicates investment intent when it is directly related to remittances (Hagen-Zanker & Siegel, 2011). Abbas et al. (2017) discovered a positive relationship between remittances and financial development in the receiving country when the remitter's motivation is to invest. Financial liberalization reduces information asymmetry and finance charges in countries with an efficient financial system, stimulating credit usage (Heffernan, 2018) (Lin, 2011)(McLeod et al., 2003). (Mallick, 2008) concluded that the rate of growth in remittance inflows has no significant impact on economic growth, which is quite strange.

2.4.5 Corruption index

According to existing literature, politically stable countries are, usually, associated with high remittances (Heffernan, 2018). When their home country has vibrant democratic institutions, international migrants are more likely to remit investment funds through official channels. Perceived variation in corruption levels is risky for international remittances because it reduces the efficiency of government institutions and private businesses by entrusting people who lack necessary technical skills and capacity. This, in turn, encourages the use of unofficial channels for remitting funds, such as Hawala and Hundi, because corruption is rampant in societies (P. Gupta, 2006).

The expected relationship between remittances and other macroeconomic variables described above confirms the importance of the economic environment in the migrant's country as an important tool for understanding the growth of remittances, which explains why the present author is interested in researching this topic further.

2.6 Conclusion

The literature reviewed in this chapter has provided an overview of Malawi's foreign remittances and macroeconomic environment. In addition, the chapter has discussed theoretical and empirical reviews of the widely agreed-upon macroeconomic drivers of foreign remittances. The empirical literature review reveals that the macroeconomic determinants of remittances vary greatly across economic environments, and in some cases, the conclusions are contradictory, highlighting the importance of a country-specific

examination of the same. The literature review has also revealed lack of research concerning Malawi's international remittances, a gap filled by this current study.

Chapter 3

Methodology

3.1 Introduction

The current study's research methodology is a systematic approach to finding a solution and, in turn filling the research gap. It can also be defined as the science of systematically examining how research is conducted (Kothari, 2005). The chapter explains scientific methods which were used to collect and analyse its data in order to achieve its research objectives. The chapter specifically outlines the research design and philosophy, followed by the sources and scope of data collected for the study of macroeconomic variables. The chapter also explains the estimation models developed, adopted, or modified to analyse data in accordance with the research objectives, as well as the logic for employing a selected set of methods in answering the research objectives. The goal of the research was to investigate the remittances of Malawi's diaspora community using existing time series data.

3.2 Research Approach

The study used a post-positivistic philosophical approach, which assumes that there is a probable cause-and-effect relationship between concepts, that the various 'truths' of the relationship between concepts are measurable and can be tested given existing theories, and that existing theories can be refined through a series of hypothesis testing (Muijs, 2004).

The choice of the post-positivist approach is based on the assumptions that we cannot examine the world we live in as completely independent outside observers; that the natural sciences are incapable of providing a model for all social research; and that research can never be certain. The researcher, however, perceive the possibility of objective reality (Muijs, 2004). In other words, the present study did not seek to discover truth, but rather to represent reality as accurately as possible.

The goal of this study was to look at the macroeconomic determinants of remittances in Malawi from 1994 to 2020. Given this goal and the policy implications of the study's findings, it was critical to follow a post-positivist hypothesis, which entailed the use of consistently logical scientific approaches. By basing data analysis on observable facts, the positivist hypothesis allows for the reduction of bias and the attainment of maximum potential objectivity.

3.3 Research Design

3.3.1 Data period and source

The study used an explanatory quantitative research design to investigate the macroeconomic determinants of remittances in Malawi, which entailed data collection and quantitative analysis. For this study, secondary official online databases from the World Bank, the International Monetary Fund (IMF), the Reserve Bank of Malawi (RBM), and the National Statistics Office (NSO) of Malawi was used. The period from 1994 to 2020 was carefully chosen due to the lack of data for the main variable of remittances prior to 1994. To minimize inconsistencies that may result from the unbalanced series of data, the study was limited to the period for all variables being investigated beginning with 1994, as suggested by (Alhassan & Biekpe, 2016). The data sources mentioned above were deemed reliable because they come from credible institutional databases that are regularly updated. Some of the data collected locally can be easily cross-checked with databases from other international multilateral institutions as a data quality control mechanism.

All variables were examined for the same amount of time. The availability of data guides the determination of the timeframe covered by this study. The advantage of using secondary data is that it is readily available and, especially, useful data collection is limited in terms of cost and practicality. The statistical data used for the estimated regression models, with the exception of remittances, were obtained from various published official sources. All monetary values were expressed in current US Dollar values (USD).

3.3.2 Empirical Model

The following is a modified multiple regression model specification from (Hagen-Zanker & Siegel, 2011) (Abbas et al., 2017) that includes the variables discussed above, and takes into account the economic structure of Malawi's economy:

$$REMR_t = \beta_0 + \beta_1 GDPR_t + \beta_2 INFL_t + \beta_3 IRDF_t + \beta_5 REER_t + \varepsilon_t \quad (1)$$

t denotes the time period and the country's time varying effects where REMR stands for real remittances in USD, GDPR stands for real gross domestic product, INFL stands for inflation as measured by the consumer price index, IRDF stands for interest rate differential, MIGR stands for migrant worker population, and REER stands for real effective exchange rate (USD/MWK).

3.3.3 Description of Regression Model Variables

3.3.3.1 Dependent variables: Migrant Remittances

Individual transfers and payments of international employees are referred to as remittances in this paper. Personal transfers include all current cash or kind disbursements made or received by the country of origin from its diaspora citizens. All current transfers between the diaspora community and their respective communities back home are, thus, included in remittances to private residences. Payments to workers refer to the remuneration of international staff contracted in a country where they do not reside, as well as local staff employed by non-resident organizations. The data on migrant remittances is in US dollars and comes from the sixth edition of the IMF's Balance of Payments Manual.

3.3.3.2 Independent variables:

The conventional macroeconomic variables such as migrant-destination country income, migrant-original country income, inflation rate, exchange rate, and interest rate are the key illustrative independent variables.

a) Real Gross Domestic Product (GDPR)

In this study, we used US dollar gross domestic product (GDP) per capita to measure Malawi's level of income. In this case, the real GDP was used to assess the economic state of Malawi as the country of interest. This level of income (real GDP) is expected to be positively and significantly related to foreign remittance inflows, which is consistent with previous research (Abbas et al., 2017).

b) The Rate of Interest (IRDF)

The amount of remittances may be affected by the differential interest rate (the difference between the interest rates in the origin and destination countries). In general, a relatively high interest rate in the country of origin is directly related to the amount of funds remitted because it is more rewarding, thereby enticing immigrants to remit savings to their country of origin. A higher interest rate increases the desire to invest at all income levels and, in turn, increases the volume of funds available to be sent. Thus, a higher interest rate in the migrant's home country induces both a desire to save and a desire to remit more.

c) The Rate of Inflation (INFL)

On the one hand, if the immigrant's original home economy experiences high inflation, the recipients' real income is reduced, which may result in increased remittances. On the other hand, inflation reduces the real purchasing power of remitted funds and may discourage immigrants from sending money back home

in some cases, depending on the nature and motivation of remittances. Finally, the effect of inflation can be seen in the exchange rate in economic regimes where the exchange rate is determined by differential price levels in both countries.

d) Exchange Rate (REER)

The foreign currency exchange rate has a direct impact on the amount of goods and services that can be purchased with a given amount of remittances, and the impact can be positive or negative. For example, if the Malawi Kwacha loses value, it means less foreign currency and, in turn, a lower volume of remittances for the same amount of goods or services. Purchases in Malawi Kwacha, on the other hand, are now preferred, and as a result, remittances (to be converted into Malawi Kwacha) may increase. The exchange rate can fluctuate due to internal or external economic forces, or it can be devalued instantly by government policy. Foreign exchange rate fluctuations are public knowledge and, as previously stated, can have a positive or negative impact on remittances. Recent studies (Davies, 2008) (Sangala, 2016)(Mutume, 2005) discovered that unofficial foreign exchange rates have a significant impact on remittances, however, there is no evidence of widespread illegal or other undocumented transactions in the Malawi market.

3.4 Econometric Methodology

The purpose of this study was to investigate the relationships between remittances and selected macroeconomic variables in Malawi from 1994 to 2020 . The study employed time series models to establish and understand the nature of the relationship between remittances and selected macroeconomic variables. Time series models were chosen for this study because of their ability to incorporate expectational variables into the modelling process. A cointegration procedure was used to counteract the possibility of multiple cointegrating vectors in the model at different orders (Drake, 1993). Following that, the study used an Error Correction Model (ECM) developed by Banerjee et al. (2008) and the Ordinary Least Squares (OLS) for time series problems and macroeconomic variable expectations.

Because most macroeconomic variables are non-stationary time series, the predictable technique of autoregressive distributed lags (ARDL) allows for spurious regression or variable co-movement. (Jalil, 2010) contends that differencing time series variables can eliminate variable non-stationarity. This study, used two different estimation tools to get better estimates; the ECM cointegration procedure and the ARDL procedure. Jalil (2010) demonstrates that when the explanatory variables are weakly exogenous

for the parameters of interest, the ECM procedure provides a more reliable test of co-integration as well as an unbiased estimate of the long-run relationship. Furthermore, even in the presence of endogenous regressors, the ARDL estimates have been shown to be unbiased and asymptotically efficient estimates of the long-run relationship (Novrizal; et al., 2021)

The study utilised annual time series secondary data from the World Bank database and the Reserve Bank of Malawi website spanning the years 1994 to 2020. The ECM and the ARDL procedures were used to analyse five macroeconomic variables. For data processing, EViews software and Microsoft Excel were used. The multi-phase data analysis is described further below:

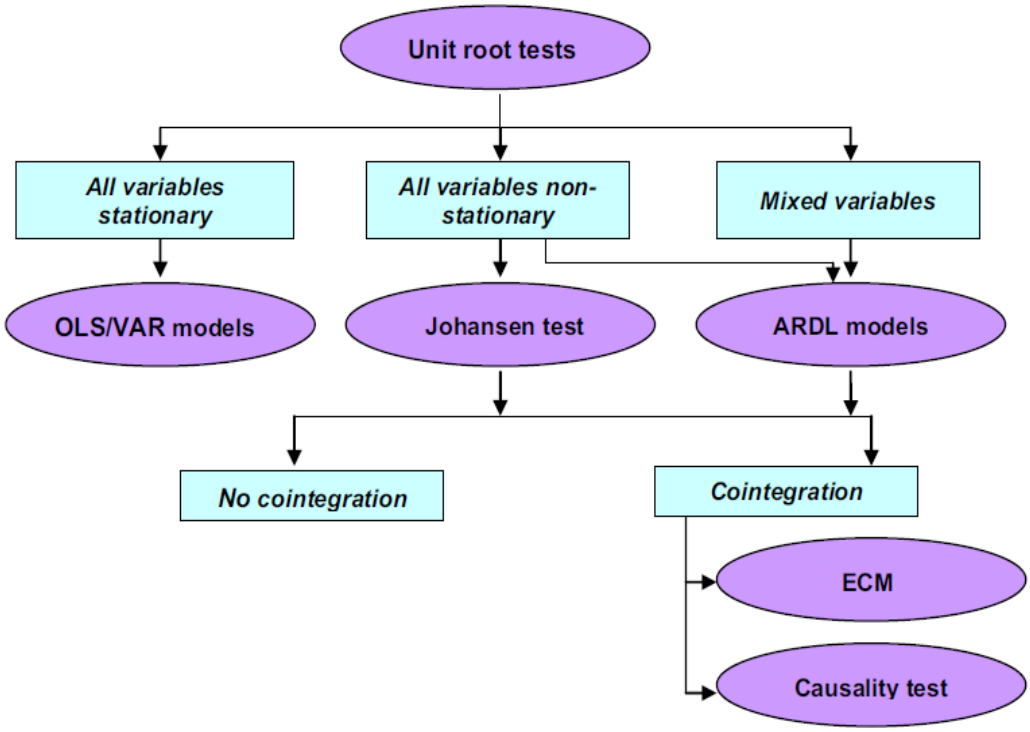


Figure 6. Time series data model selection (Shrestha & Bhatta, 2018).

3.4.1 Unit Root Test

The first step in estimating a time series data usage model is to perform a stationarity test on the data, also known as the unit root test (Shrestha & Bhatta, 2018) (Novrizal; et al., 2021). All of the variables in the time series for this study were statistically tested to investigate their univariate properties, as time-series data is considered unstable by nature and may result in unnecessarily high variability in the final prediction or estimation (Zou & Yang, 2004). Following that, the unit root test was used to look for stationarity in the macroeconomic variables included in the study (Shrestha & Bhatta, 2018) (Novrizal; et al., 2021).

Shrestha & Bhatta (2018) concluded that time-series data with unit roots is non-stationary, whereas their absence confirms the stationarity of the time series data.

The unit root test is an important step in multiphase data analysis **(figure 6)** because it helps us avoid getting spurious results. We can distinguish stationary from non-stationary time series data using the unit root test (Granger & Newbold, 1974). Non-stationary series data has a varying mean over time, whereas stationary series data has a constant mean over time. Non-stationary time series data can be trend stationary (deterministic) or difference stationary (integrated). Trend stationary time series data is also known as deterministic data because it is predictable. Therefore, any deviations from the mean are usually random and tend to fade away. In contrast, difference stationary time series are unpredictable, and long-term deviations from the mean are visible.

3.4.2 Augmented Dickey-Fuller (ADF)

Novrizal; et al. (2021) and Shrestha & Bhatta, (2018) discovered that data in the form of time series has a non-stationary trend, implying the existence of a unit root. Graphs are regarded as the most preliminary device for gaining an idea of the time series' stationarity. However, statistical techniques take precedence for final determination. Unit root tests provide a statistical conclusion about the stationarity of a time series (Shrestha & Bhatta, 2018). Following that, the data stationarity test, also known as the unit root test, was performed as described above in our data analysis.

The study used the Augmented Dickey-Fuller (ADF) at the same (or different) level to investigate time series data stationarity. The most common method for testing unit root is the Augmented Dickey-Fuller (ADF) test. (Shrestha & Bhatta, 2018). The following equation is used in the Augmented Dickey-Fuller test:

$$\Delta P_t = a_0 + \gamma \mathrm{P}_{t-1} \sum_{i=1}^{j} a_1 \, \Delta P_{t-i+1} + \varepsilon_t \qquad (2)$$

ΔP_t in equation (2) is the first difference component investigated (Y_t -Y_{t-1}), t denotes the time period, j represents the length of the lag used, and ε is the error term.

The statistical hypothesis subjected to test is H_0: γ = 0 which means that if the unit root is detected in the time series data, the data is not stationary. If H_1: γ ≠ 0, this means the data are stationary. If H_0: is accepted, (the data are not stationary), a differentiation procedure will be launched from the first-

difference level going upwards, until the data are stationary at the same level. The expected output from this process is in the form of statistical values and critical values of 1%, 5% and 10%.

The formula used to find statistical values is shown below:

$$t = \frac{\gamma\hat{} - \gamma H_0}{\mathrm{SE}\gamma} \qquad (3)$$

If the t-stat value is higher than t-critical, the null hypothesis is rejected while if the t-stat is less than t-critical, the null hypothesis is not rejected, and this outcome confirms the non-stationarity characteristic of the time series data. The data that is not stationary ought to be differentiated to attain the stationarity requirements.

3.4.3 Cointegration test

When more than two variables are involved in the analysis, as in this study, the likelihood of multiple cointegrating vectors increases. Considering that a static cointegrating regression model produces a linear combination of all valid cointegrating vectors, the popular Engle-Granger estimation procedure is not an ideal model choice in this case (Bagliano, 2017). Following that, the cointegration test was used after the data stationary test confirmed non-stationarity at the same level. The cointegration test was designed to look for the presence of a long-term correlation between the variables used in the model.

When the variables are stationary at the same degree and move at the same wavelength, it is an indication that they either they have a long-term relationship or are cointegrated. The study used the EViews application to run the Johansen cointegration test developed by Johansen (1995). This method used the trace test (TS), equation (4) to determine the existence of a long-term correlation (Shrestha & Bhatta, 2018) (Bagliano, 2017):

$$\lambda\,\mathrm{trace} \;=\; \mathrm{T} \sum_{i=k+1}^{n} (1 - \lambda 1) \qquad (4)$$

Where:

k = 0, 1, ... , n-1

T = number of observations used

λi = estimated value of the order of the eigenvalue of the matrix Π

r = the number of vectors of cointegration vectors in H_0

The hypothesis used in the trace test (TS) was:

H_0: r ≤ 0 = No cointegration relationship

H_0: r ≤ 1 = At most one cointegrated equation

H_0: r ≤ n-1 = At most n-1 cointegrated equations

If the statistical test is more that the critical value in the Johansen table, H_0 is rejected, meaning that there is a cointegration correlation.

3.4.4 Specification of Error Correction Method (ECM) and Autoregressive Distributed Lag (ARDL)

When a set of variables is tested, the detection of cointegration implies that the variables have a long-term correlation. However, it is implicit that if there is a long-term equilibrium, there is a greater chance that in the short run it will not strike the same equilibrium, necessitating change only if there is a difference between what is projected and the actual outcome. Consequently, we used the Error Correction Model (ECM) to make the changes necessary to correct the short-run imbalances and achieve long-term balance. The following is the ECM model of the correlation between remittances, GDP, inflation rate, interest rate, and real effective exchange rate:

$$\Delta \mathrm{REMR_t} = a_0 + \sum_{i=1}^{P-1} \mathrm{r_{REMR}}\ \Delta \mathrm{REMR_{t-1}} + \sum_{i=1}^{P-1} \mathrm{r_{GDPR}}\ \Delta \mathrm{GDPR_{t-1}}\ + \sum_{i=1}^{P-1} \mathrm{r_{INFL}}\ \Delta \mathrm{INFL_{t-1}}\ + \sum_{i=1}^{P-1} \mathrm{r_{IRDF}}\ \Delta \mathrm{IRDF_{t-1}} + \sum_{i=1}^{P-1} \mathrm{r_{REER}}\ \Delta \mathrm{REER_{t-1}} + \varphi \mathrm{ECT_t} + v_t \quad (5)$$

Where:

$\mathrm{REMR_t}$ = real remittances in USD in the t-period

$\mathrm{REMR_{t-1}}$ = real remittances in USD in the previous period

$\mathrm{GDPR_{t-1}}$= Real gross domestic product in the previous period

$\mathrm{INFL_{t-1}}$ = Rate of inflation in the previous period

$\mathrm{IRDF_{t-1}}$ = Interest rate differential in the previous period

$\mathrm{REER_{t-1}}$ = Real exchange rate in the previous period

α, β, r, ν = Coefficient

φECT_t = Error correction term

t = Trend time

The cointegration econometric theory was developed to investigate the presence of a long run correlation of variables in the model (Pesaran & Shin, 2006). Engle and Granger (1987) proposed that a time series of order d, I(d), is integrated if it has been differenced d times to achieve stationarity. Furthermore, if time-series data is integrated to order 0, 1 (0), it is assumed to be stationary. The goal of differencing time series data is to achieve stationarity. Additionally, it has the benefit of restoring long-run equilibrium by integrating short-run dynamics with long-run equilibrium. However, it has the unintended consequence of losing some long-run data properties. (Shrestha & Bhatta, 2018).

This study used the Autoregressive Distributed Lag (ARDL) cointegration technique to examine the long-run relationships for all of the non-stationary time series variables. As a result, the study adopted the ARDL (Pesaran & Shin, 2006) for the independent macroeconomic variables with the goal of examining their presence and significance in the long-run effects on remittances to Malawi.

The ARDL has the following advantage above other techniques to cointegration:

- An ARDL model is derived from an OLS model and is appropriate for both non-stationary and time series variables with mixed order of integration, which is not applicable to the Johansen cointegration test, which requires that all variables be of order I (1).

- In the data processing modelling structure, this model employs an appropriate number of lags.

- We created a dynamic ECM from ARDL by manipulating a simple linear equation.

To illustrate the ARDL modelling approach, the following simple model can be considered:

$$\Delta\, lnREMR_t = \beta_0 + \sum_{i=1}^{p} \beta_0 \Delta \ln REMR_{t-i} + \sum_{i=1}^{p} \beta_1 \Delta \ln GDPR_{t-i} + \sum_{i=1}^{p} \beta_2 \Delta \ln INFL_{t-i} + \sum_{i=1}^{p} \beta_3 \Delta \ln IRDF_{t-1} + \beta_4 lnREMR_{t-i} + \beta_5 lnGDPR_{t-i} + \beta_6 lnINFL_{t-i} + \beta_3 \Delta \ln IRDF_{t-1} + \varphi ECT_t + \varepsilon_t \quad (\mathbf{6})$$

The ECM version of the manipulated ARDL model is expressed as follows:

$$\Delta REMR_t = \beta_0 + \sum_{i=1}^{p} \beta_0 \Delta REMR_{t-i} + \sum_{i=1}^{p} \beta_1 \Delta GDPR_{t-i} + \sum_{i=1}^{p} \beta_2 \Delta INFL_{t-i} +$$

$$\sum_{i=1}^{p} \beta_3 \Delta IRDF_{t-1} + \sum_{i=1}^{p} \beta_4 \Delta MIGR_{t-i} + \sum_{i=1}^{p} \beta_5 \Delta REER_{t-i} + \lambda_0 REMR_{t-1} +$$

$$\lambda_1 GDPR_{t-1} + \lambda_2 INFL_{t-1} + \lambda_3 IRDF_{t-1} + \lambda_5 REER_{t-1} + \varphi ECT_t + \varepsilon_t \quad (7)$$

The first portion of the model equation with coefficients $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ represents short run dynamics of the model. The second part with $\lambda_0, \lambda_1, \lambda_2, \lambda_3, \lambda_4, \lambda_5$ represents long run relationship.

The null hypothesis (H_0) in the model equation is $\lambda_0 + \lambda_1 + \lambda_2 + \lambda_3 + \lambda_4 + \lambda_5 = 0$ which means long-term relationship does not exist.

Chapter 4

Discussion of Findings

4.1 Introduction

This chapter presents and analyses the empirical findings of tests conducted to investigate the macroeconomic determinants of remittances in Malawi. The chapter is divided into the following sections, in that order: The second section discusses descriptive statistics, the third section correlation analysis, the fourth section stationarity tests, while the fifth section cointegration test results. Section six presents results of the model diagnostics tests after cointegration. Finally, in section 7 summarizes all the empirical findings discussed in this chapter.

4.2 Descriptive Statistics

The descriptive statistics section provides a summary of the time series data statistics for the five variables studied in this study: real remittances (REMR), real GDP (GDPR), inflation rate (INFL), interest rate differential (IRDF), and real effective exchange rate (REER). The average remittances, the dependent variable in this study, were approximately USD 42 million for the period studied, with the highest and lowest remittances being approximately USD 0.52 million and USD 263 million, respectively. The dependent variables' ranges were GDPR (1.0), INFL (1.1), IRDF (1.8), and REER (2.2).

With standard deviation test results of 0.88 and 0.28, respectively, results of the analysis show that REMR and INFL are the most and least volatile. **Table 2** confirms that, with the exception of INFL, all variables are negatively skewed in terms of skewness, which assesses the presence or absence of symmetry around the mean in each time series data distribution. Because REMR and GDPR are so close to zero, they are almost perfectly symmetrical; symmetric distributions, such as the normal distribution, have a skewness of zero. Except for INFL, which has a right tail, the examined variables' negative coefficients represent a distribution that is more inclined to the left of the normal distribution table.

Table 1: Descriptive Statistics

Variables	*REMR*	*GDPR*	*INFL*	*IRDF*	*REER*
Mean	6.9939	9.6131	1.2181	0.9498	2.0672
Standard Error	0.1700	0.0555	0.0535	0.0759	0.1201
Median	7.2629	9.6467	1.1686	1.0521	2.1341
Standard Deviation	0.8833	0.2883	0.2779	0.3943	0.6240
Sample Variance	0.7802	0.0831	0.0773	0.1555	0.3893
Kurtosis	-1.2640	-0.9422	-0.2279	3.6257	-0.0818
Skewness	-0.2465	-0.2543	0.6286	-1.7037	-0.6204
Range	2.7096	1.0132	1.0509	1.7768	2.2160
Minimum	5.7189	9.0725	0.8699	-0.3469	0.6486
Maximum	8.4285	10.0857	1.9208	1.4299	2.8646
Sum	188.8364	259.5537	32.8881	25.6457	55.8134
Count	27	27	27	27	27

Note: real remittances= (REMR), real gross domestic product =(GDPR), inflation rate=(INFL), interest rate differentia=l (IRDF) and real effective exchange rate= (REER). Data was converted to log10

Source: Author's compilation from Microsoft Excel

In the study's descriptive statistics summary **Table 1**, kurtosis is a statistic related to skewness that estimates the "tailedness" or sharpness of the probability distribution, with higher figures indicating a peak distribution and lower figures indicating a flat distribution. Kurtosis is 3 in a standard normal distribution (Kallner, 2018). These are the study's descriptive statistics. With the exception of IRDF, all of the tested variables have a kurtosis less than the normal standard distribution value of 3.

4.3 Correlation Analysis

Table 2 summarizes the correlation analysis test results for the variables investigated in this study. The correlation outcome matrix shows that the correlation coefficient of all independent variables is less than 0.7, with the exception of GDPR and REER, which is 0.8445, indicating the presence of multicollinearity complexities. A stepwise estimated approach was used to avoid multicollinearity based on the correlation between GDPR and REER. The first estimation (Model A) is carried out with GDPR while excluding REER. In Model B, the estimation includes REER but excludes GDPR. The results show a mix of positive and negative correlations, with the highest being 0.8445 and the lowest being -0.5310. The dependent variable REMR is strongly positively correlated with the independent variables GDPR and REER, as expected.

Table 2: Correlation Matrix

	REMR	GDPR	INFL	IRDF	REER
REMR	1				
GDPR	0.838985	1			
INFL	-0.31004	-0.53102	1		
IRDF	0.104037	0.101562	-0.24046	1	
REER	0.811168	0.844472	-0.31128	0.216498	1

Note: real remittances= (REMR), real gross domestic product =(GDPR), inflation rate=(INFL), interest rate differentia=(IRDF) and real effective exchange rate= (REER). Data was converted to log10. Source: Author's compilation

4.4 Stationarity test results

Secondary time series data, such as the one used in this study, is generally regarded as non-stationary, with a high likelihood of producing erroneous regression results. To address this, this study used the Augmented Dickey Fuller data stationarity test (ADF Test) to ensure consistency of time series data movement. The dependent variable and all independent variables were subjected to the data stationarity test. The test results are displayed in **Table 3**.

Table 3: ADF Results

Variables	Level		Differentiation		Information
	ADF Test		ADF Test		ADF Test
	C	C&T	C	C&T	
REMR	-0.483	-2.366	-4.69	-4.548	Stationary in order 1
5% Test CV	-2.981	-3.595	-2.986	-3.603	
GDPR	-1.158	-2.991	-5.28	-5.168	Stationary in order 1
5% Test CV	-2.981	-3.595	-2.986	-3.603	
INFL	-2.395	-2.689	-5.431	-4.152	Stationary in order 1
5% Test CV	-2.981	-3.595	-2.986	-3.658	
IRDF	-3.946	-4.018	-7.48	-7.289	Stationary
5% Test CV	-2.981	-3.595	-2.986	-3.603	
REER	-3.273	-3.666	-4.255	-5.163	Stationary
5% Test CV	-2.981	-3.622	-2.986	-3.603	

Note: real remittances (REMR), real gross domestic product (GDPR), inflation rate (INFL), interest rate differential (IRDF) and real effective exchange rate (REER). **Source: Author's own compilation from research data**. Data was converted to log10

The EViews software data stationarity test results showed that the variables remittances, real GDP, and inflation rate (INFL) are not stationary at the same level (zero order), as indicated by statistical values on

the ADF test of -0.483, -1.158, and -2.395, respectively, which were greater than 1%, 5%, and 10% critical values.

This result necessitated differentiation at level I (order I) with t-stat values of -4.690, -5.280, and -5.431 for the same variables, which are less than 1%, 5%, and 10% critical values, respectively. In this case, it is possible to conclude that the variables remittances, real GDP, and inflation time series data are stationary in order 1.

Furthermore, the stationarity test revealed that the real effective exchange rate and interest rate differential (IRDF) were stationary at zero order, as indicated by ADF t-statistic values of -3.946 and -3.273, which were less than the 1%, 5%, and 10% critical values. As a result, the differentiation process was no longer required, hence conclusion that the variables, inflation rate (INFL) and interest rate differential (IRDF), are stationary at the same time.

According to our ADF stationarity test results, the five variables (independent and dependent) have stationary time series data. Because the time series data stationarity test demonstrated stationarity at various levels, a further test, the Johansen cointegration test, was performed.

4.5 Cointegration Tests

4.5.1 Johansen cointegration test

The Johansen test results (**Table 4)** describes the cointegration test for Models A and B. When it is determined that all variables are integrated or stationary in the same order, the cointegration test is required. In the light of the high correlation between GDPR and REER (0.8445) in **Table 2**, as well as the complexities that come with multicollinearity, the model was divided into two parts: Model A with GDP, INFL, and IRDF as independent variables, and Model B with INFL, IRDF, and REER as independent variables. Variable cointegration validates the assertion that the variables have a long-term relationship.

As shown in **table 4**, the results of the Johansen Cointegration tests on real remittances (REMR), real GDP (GDPR), inflation rate (INFL), interest rate differential (IRDF), and real effective exchange rate (REER) lead to the decision to reject the null hypothesis (H 0) and to the conclusion that cointegration exists at a 95% confidence level. The test results show that the trace statistic value for models A and B is 133.863 and 122.937, respectively, far exceeding the critical value of 63.876. Following this result, the

researcher decided to reject the null hypothesis (H 0) that there is no cointegration in favour of the alternative hypothesis that there is cointegration.

This Johansen Cointegration test result confirms that the dependent variable remittances (REMR) and the independent variables real gross domestic product (GDPR), inflation rate (INFL), interest rate differential (IRDF), and real effective exchange rate (REER) have a long-term cointegration relationship. This means that in Malawi, the amounts of REMR and GDPR, INFL, IRDF, and REER have a significant long-term stable relationship and similar movements towards equilibrium.

Table 4. Results of the Johansen Cointegration Test

Rank	Trace Statistic		5% Critical Value	
	Model A	Model B	(Trace)	(Eigenvalue)
r=0	133.863	122.937	63.876	32.118
r=1	74.887	74.731	42.915	25.823
r=2	41.454	34.294	25.872	19.387
r=3	12.095	9.422	12.518	12.518

Source: Author's compilation from EViews

4.5.2 Autoregressive Distributed Lag Approach to Cointegration (ARDL)

As shown in **figure 6**, another important test that was carried out after the unit root tests was carrying out cointegration tests to establish the existence of long-term relationships among the time series data variables. The ARDL bounds test was performed on the model, with REMR as the dependent variable and GDPR, INFL, IRDF, and REER as the independent variables. We also used two models, A and B, for this test, as previously explained. **Table 5** summarizes the results of the ARDL bounds test for these models.

Table 5: ARDL Bounds Test

		1%		5%		10%	
		I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
Model A	8.5044	3.65	4.66	2.79	3.67	2.37	3.2
Model B	6.2663	3.65	4.66	2.79	3.67	2.37	3.2

Source: Author's compilation from EViews

The null hypothesis is rejected when the F-statistic value is greater than the upper bound critical values of the I (1) series, according to the ARDL bounds test for cointegration. **Table 5** summarizes the test results and shows that the computed F-statistics for both models A (8.5044) and B (6.2663) are above the upper bound critical values at the 1%, 5%, and 10% significance levels. Consequently, the null hypothesis of no

cointegration is rejected, which implies that the dependent and independent variables in the models have a long-run relationship.

4.5.3 Long-run estimates

Table 6 summarizes the results of the long run effect of macroeconomic variables on remittances. In Model A, a significant positive coefficient for economic growth (GDPR = 2.5569) is observed with a significance level of 1%, indicating that a 1% increase in economic growth results in a 2.6 percent increase in remittances to Malawi. This finding is consistent with expectation that, as the economy of the country of origin grows, so does the standard of living, necessitating an increase in the amounts remitted by emigrants so that their families back home can maintain a relatively high level of consumption. This result contradicts the widely held belief that foreign remittances are countercyclical and altruistic. As a result, our findings indicate that Malawi's foreign remittances are not motivated solely by altruism. This conclusion is supported by (Ball et al., 2013) (Alok & Mishra, 2022). However, it contradicts the finding of (Lianos, 1997), who discovered that the relationship between GDPR and REMR is insignificant when he examined time series data for Greece.

The coefficient of interest rate (IRDF) is found to be positive in Models A and B but only significant at 5% in Model A, implying that a 1 percent increase in interest rates results in a 1.1 percent increase in remittances. (Hassan & Holmes, 2019). Castillo-ponce et al. (2010) validate our findings by concluding that the diaspora community is motivated to remit when the interest rate in their country of origin is higher than the interest rate in the host country; otherwise, discretionary foreign remittances will fall sharply as diasporas prefer to save in their host countries.

The real exchange rate has a significant positive relationship with remittances, with a coefficient of 1.4812 from Model B at 1%. In the long run, a 1% depreciation of the Malawian kwacha pushes foreign remittances upwards by a corresponding 1.5%. This finding points to the depreciation of the Malawian kwacha in terms of the USD. This result is consistent with the conclusion reached by (Ball et al., 2013) (Wahba, 1991) (Lianos, 1997), in contrast to the outcome presented in (Singh et al., 2011). This result resonates well with the dilemma faced by the diaspora. When the REER exchange rate is low on the official means of sending funds, the remitter is not motivated to send money, in contrast to when there is a high rate. In the wake of that, REMR and REER are expected to be positively related. Therefore, the present study’s findings confirm the wealth effect; namely that the Malawian diaspora seizes the opportunity by taking advantage of depreciation by remitting more funds back home.

In contrast to the other three independent variables examined in this study, inflation is the only independent variable employed under Model B in this study that has a significant negative coefficient of -2.7019 against REMR in the long run. At a 1% significant level, this means that a 1% increase in REMR will consequently result in a decrease of 2.7% in INFL. Ball et al. (2013) concur with this result. They concluded that increases in REMR ease INFL under a flexible exchange rate regime and that REMR flows are inflationary only under a fixed exchange rate. Elbadawi & Rocha (1992) also concluded that a high INFL or an inflationary economy is a prohibitive indicator for foreign investment funds, as such, it slows down the volume of accumulated REMR into the country of origin for labor-exporting countries like Malawi.

Table 6: The ARDL Long-run Coefficients

Variable	Model A I(0)			Model B I(0)		
	Coefficient	Std, Err.	Probability	Coefficient	Std, Err.	Probability
GDPR	2.5569***	0.2147	0.0001			
INFL	1.0646	0.7926	0.2370	-2.7019**	0.7884	0.0140
IRDF	1.0625**	0.3306	0.0236	0.3852	0.2480	0.1714
REER				1.4812***	0.0967	0.0000
Constant	-19.9811***	2.0444	0.0002	6.2343***	0.6263	0.0001

Note: real remittances= (REMR), real gross domestic product =(GDPR), inflation rate=(INFL), interest rate differentia=(IRDF) and real effective exchange rate= (REER). *** & ** denote significance at 1% and 5% respectively. **Source: Author's compilation from EViews**

4.5.4 The ECM Short run Error results

The results of the Johansen Cointegration and ARDL bounds in **Tables 4 and 5** confirm the existence of a long run cointegration relationship in Malawi between the remittances and the independent variables, real GDP, inflation rate, interest rate differential, and real effective exchange rate. In addition to Johansen Cointegration, the co-integrated variables were subjected to another test, the ECM test. Through the ECM model, the short-term imbalances are rectified by including adjustments for the short-term imbalance correction towards the long-term equilibrium. The ECM estimates on the dependent and independent macro-economic variables in Malawi are provided in **Table 7**.

The ECM short-run results signal weak but positive coefficients for GDPR and IRDF, whilst INFL signals an insignificant negative relationship in all models A. In the short run, a 1% increase in REMR leads to a 0.0791% jump in GDPR, INFL (-0.1743%) and IRDF (0.0066%) in our model A. For model B, INFL and IRDF exhibit a negative weak relationship to REMR in the short run, in contrast to an insignificant positive coefficient for REER in the same model B. A 1% increase in REMR under model B has a corresponding movement of -0.2284% INFL, IRDF (-0.0320%), and REER (0.1676%) in the short run.

Table 7– Short-run Coefficients with Error Correction Term

Variable	Model A			Model B		
	Coefficient	S.E.	Probability	Coefficient	S.E.	Probability
Constant	0.08658*	0.0493	0.0936	0.0723	0.0656	0.2823
D(GDPR)	0.0791	0.6257	0.9006			
D(INFL)	-0.1743	0.2488	0.4913	-0.2284	0.2081	0.2848
D(IRDF)	0.0067	0.1022	0.9847	-0.0320	0.1079	0.7695
D(REER)				0.1676	0.5142	0.7477
ECT (-1)	-0.4400***	0.1541	0.0095	-0.3415**	0.1322	0.0173
R-squared	0.3638			0.2911		
Adj R-squared	0.2426			0.1561		
F-Statistic	3.0018			2.1561		
Observations	26			26		

Note: real remittances = (REMR), real gross domestic product = (GDPR), inflation rate = (INFL), interest rate differentia =l (IRDF) and real effective exchange rate = (REER). *** & ** denote significance at 1% and 5% respectively. **Source: Author's compilation from EViews**

For the four selected independent variables examined in this study, the p-values are greater than 0.05 in **Table 7**, which signifies an insignificant statistical relationship exists in the short-term between REMR and the independent variables GDPR, INFL, IRDF, and REER.

Further to the above test results, the ECM test outcome also exhibits negative error correction terms of -0.4400 and -0.3415 for models A and B, respectively, which means that 44% of model A and 34.15% of model B of the expected disequilibrium is adjusted for each period (Brooks, 2014). The negative sign is consistent with the expected outcome. The insignificant coefficient is less than 0.05, which shows that the velocity of the adjustment is significant (Brooks, 2014).

4.6 Model Diagnostics Test after Cointegration

To earn the status of being trustworthy, the model must be uncompromisingly robust (Menegaki, 2019). In our quest to validate the assertion of robustness of the models used in this study, various diagnostic tests were carried out. The purpose of the diagnostic tests was primarily to examine the study's models for their appropriateness, stability, functionality, and general goodness.

4.6.1 Residual Diagnostic Results

The diagnostic tests were applied to the ARDL models A and B, which investigated the presence of heteroskedasticity, serial correlation, normality, and omitted variables. The four tests were conducted separately, investigating the following null hypotheses respectively:

H_0 = There is no presence of heteroscedasticity.

H_0 = Serial correlation does not exist.

H_0 = Residuals are normally distributed.

H_0 = Model contains no omitted variables.

The outcomes of diagnostic tests for ARDL Model A and Model B are summarised in **Table 8**. At a 5% significance level, all diagnostic test results are found to be acceptable, implying that they support the validity of the estimates. Based on the test results in **Table 8**, we do not reject all four H_0 at the 95 percent confidence level because all of the p-values are greater than the 5% threshold.

Table 8: Model Diagnostic Test Estimates:

	Diagnostic Test	Test statistic	Prob.	Conclusion
	Model A			
Serial Correlation Test	Breusch-Godfrey LM test for autocorrelation	0.5336	0.5176	Residuals are free from serial correlation
Normality Test	Jarque-Bera	2.5741	0.2761	Residuals are normally distributed
Heteroskedasticity Test	Breusch Pagan-Godfrey decomposition of IM-test	1.1415	0.3543	There is no heteroskedasticity
Omitted Variables Test	Ramsey Reset Test	0.1614	0.8733	The model is correctly specified
	Model B			
Serial Correlation Test	Breusch-Godfrey LM test for autocorrelation	0.0721	0.9111	Residuals are free from serial correlation
Normality Test	Jarque-Bera	1.0633	0.5876	Residuals are normally distributed
Heteroskedasticity Test	Breusch Pagan-Godfrey decomposition of IM-test	0.2151	0.8848	There is no heteroskedasticity
Omitted Variables Test	Ramsey Reset Test	0.4408	0.6639	The model is correctly specified

Source: Author's compilation from EViews

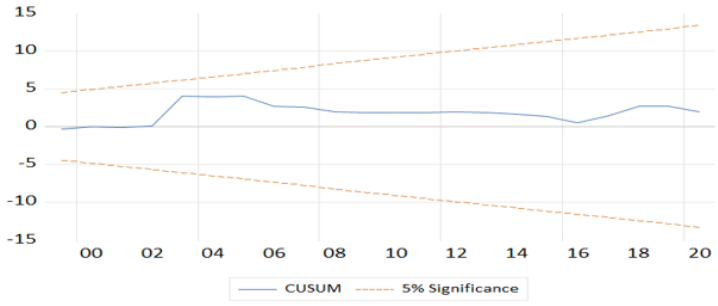
4.6.2 Cusum and Cumulative sum of squares test of stability

Testing for stability in all regression models is essential so that we validate an implicit assumption in all econometric models, which assumes that their coefficients are persistently constant over all observations (Mills, Terrence, 2014). The stability of the error correlation model in this study was investigated and confirmed through the cumulative sum (CUSUM) and cumulative sum of squares (CUSUMSQ) plots in **Figure 7**. The CUSUM and CUSUMSQ plots for Model A and Model B remained within the 5% critical lower and upper bands, with some exceptions on CUSUMQ plots, where some portions of the plots fell

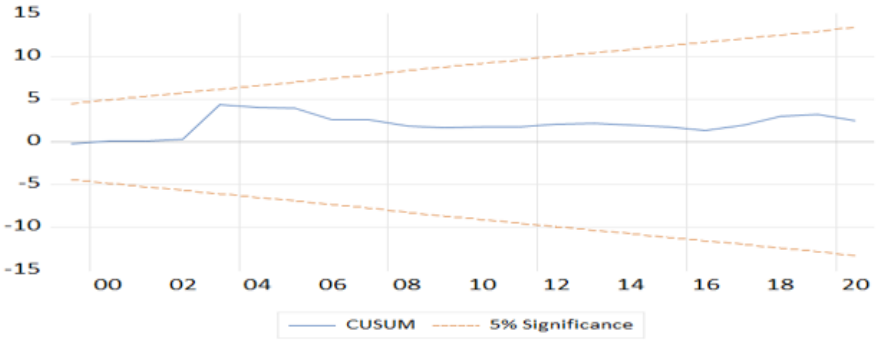
outside the 5% critical boundaries, indicating some form of instability in both models A and B. The test results of CUSUM and CUSUMSQ are, therefore, found reasonably acceptable, and the stability of both models A and B is, thereby, confirmed through these plot tests.

Figure 7. CUSUM and CUSUMSQ Plots:

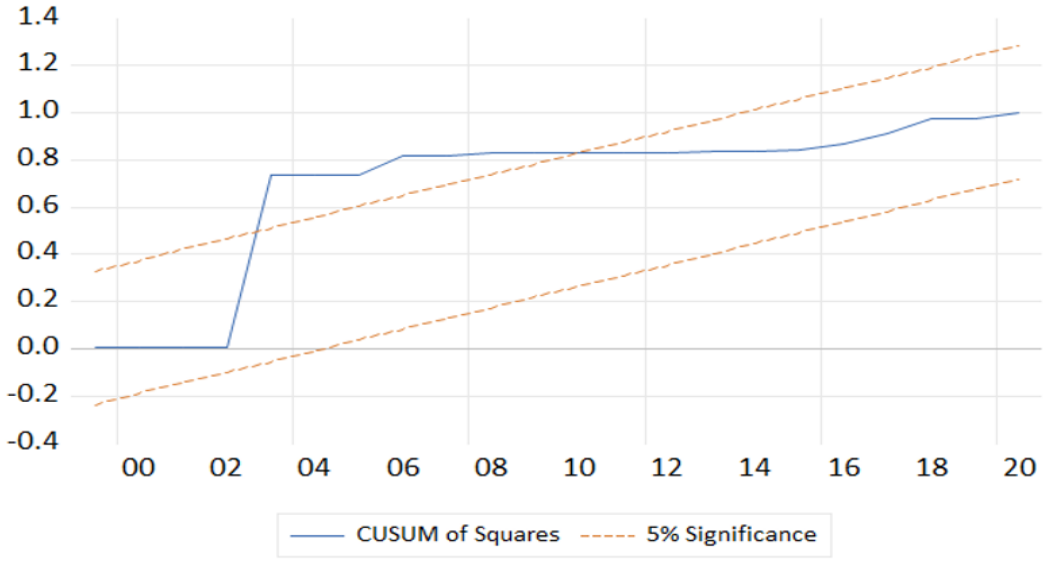
CUSUM: Model A



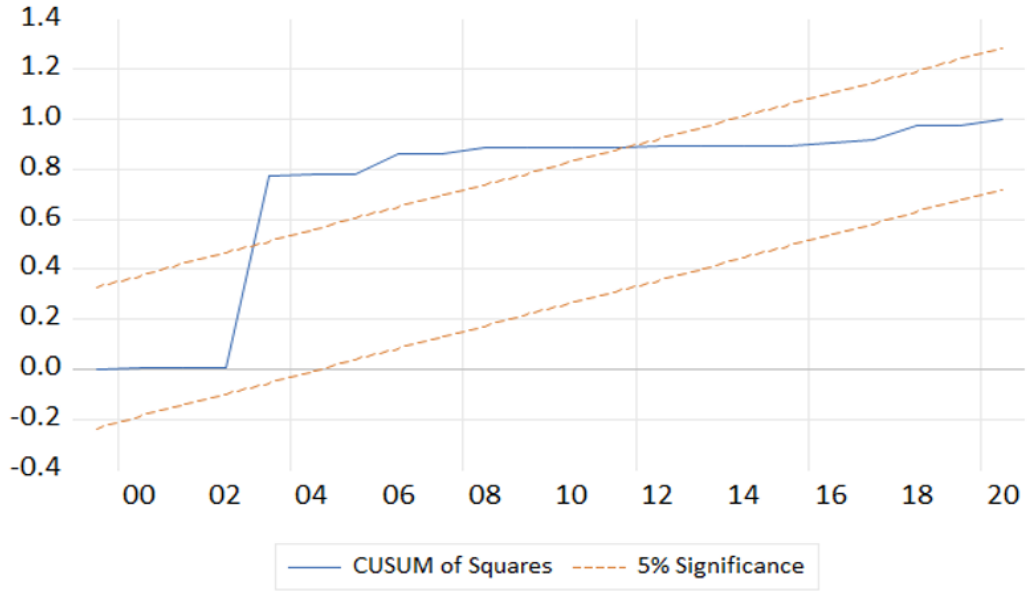
CUSUM: Model B



CUSOMQ: Model A



CUSOM: Model B



4.7 Conclusion

In this chapter, we demonstrated, accentuated, and elucidated the results or outcomes of a plethora of econometric tools engaged in the study. To test for stationarity or non-stationarity of time series data, we conducted the ADF unit root test, which revealed that the variables remittances, real gross domestic

product, and inflation time series data were stationary in order 1, whilst that the real effective exchange rate and interest rate differential (IRDF) were stationary at the same level (zero order).

Both the dependent and independent macro-economic variables were subjected to the ARDL bounds tests, whose results signaled the presence of long-term relationships among the variables, thus affirming cointegration. We used the ECM test for short-run relationships of variables. The ECM showed that in the short-term, an insignificant statistical relationship exists between REMR and the independent variables GDPR, INFL, IRDF, and REER.

In the following chapter, we summarize the major findings of our investigation and provide our conclusions. In addition, we also provide possible recommendations on policies to multiple stakeholders, drawn from the empirical research on the macro-economic determinants of remittances in Malawi.

Chapter 5

Conclusions and Recommendations

5.1 Introduction

This final chapter of this study is an encapsulation of findings, conclusions, policy recommendations, and areas for further study drawn from the empirical exploration of the macro-economic determinants of remittances in Malawi. This research centered on the relationships between remittances as a dependent variable and real gross domestic product, inflation rate, interest rate differential, and real effective exchange rate as independent variables in Malawi.

By utilising different econometric and statistical models to detect the behaviour of remittances under selected macro-economic variables, the study intends to extend the boundary of existing knowledge. With this intent, the study endeavoured to illustrate practical, evidence-based conclusions that could be adopted for future policy or law crafting in Malawi or other emerging economies in general, depending on their unique circumstances.

5.2 Summary and conclusions

This study, using the econometric and statistical tools of Augmented Dickey-Fuller, Error Correction Model, and Auto-Regressive Distributed Lag, analysed the selected macroeconomic determinants of foreign remittances to Malawi, using time series data from 1994 to 2020. The Augmented Dickey-Fuller unit root test was applied to all variables to examine and affirm the data stationarity of all the variables selected for this study. The existence of long-run relationships amongst the variables investigated in this study was affirmed using the Auto-Regressive Distributed Lag approach to cointegration. Additionally, the Error Correction Model was used to investigate the presence of short-run relationships. The outcome from the error correction model revealed an insignificant relationship between all the macro-economic variables and remittances.

The findings of this study point to the substantial long-run relationships of the independent variables real gross domestic product, inflation rate, interest rate differential and real effective exchange rate to the independent variable remittances. Each of these independent variables has a unique, long-term, and significant impact on the foreign remittance inflow to Malawi. These empirical results review that in the long-run the remittances have a positive significant relationship to the economic growth, real exchange

rate and interest rate prevailing in Malawi, whilst inflation is the only independent variable with a significant negative relationship to remittances.This study's results are a timely revelation to the economic policy thinktanks and many other stakeholders that foreign remittances are, to a large extent, driven by the macro-economic policies prevailing in Malawi. In as much as, target or special incentives schemes are important in luring diaspora money, they can neither be a substitute for a sound, credible macroeconomic environment nor can they work in isolation.

5.3 Policy recommendations

Remittances to Malawi significantly increased during the period covered by this study. However, the present study's salient findings point to the fact that Malawi's diaspora community is motivated by a stable micro-economic environment to remit back home. As a result, the study recommends that the government of Malawi prioritize macroeconomic policies targeting inflation, the exchange rate, and interest rates if it is to successfully harness remittances from its diaspora community.

Based on my findings, the decision by Malawians in the diaspora to remit funds back home, is to a large extent dependent on the interest rate in Malawi compared with interest rates in global capital markets. Considering that remittances are to are large extend private in nature, a more attractive way for Malawi government to boost remittance inflows is through amending some of her incentive schemes. For instance, Non-Resident Foreign Currency Denominated Account (FCDA), to make them even more appealing to the diaspora, perhaps the government of Malawi can revise part of this policy to allow diasporas to deposit funds in repatriable foreign currency accounts with local financial institutions. These bank accounts can come with the flexibility of allowing the diasporas to deposit foreign denominated funds with banks in Malawi with the guarantee that they will be able to withdraw the funds at their discretion.

The remittance data used in this work is entirely from formal transfers. Consequently, the study strongly advocates for a policy of strict monitoring of the movement of physical foreign currencies into and inside Malawi. This policy initiative is intended to encourage or motivate a greater number of Malawians domiciled outside the country to transfer funds back home using formal means. However, this can only be feasible in a financially inclusive environment plus an excellent local financial market i.e., a network of remittance service providers and banks, especially in the rural areas.

The findings of this study have far-reaching policy implications. Policymakers should adopt emigrant-favourable policies that boost the Malawian diaspora's remittances. The policies should be all-

encompassing while primarily aimed at incentivizing capital or investment-financial bound transfers instead of consumption-financial remittances only. In brief, policies on foreign remittances should be crafted not for the sole intention of luring more financial transfers or foreign receipts but also to strengthen the growth-enhancing potential of remittances i.e., by escalating the elasticity between foreign remittance inflows and GDP growth.

5.4 Avenues for future research

One of the challenges encountered by this study is data unavailability for some variables. To be specific, remittance data for Malawi is only available for the period starting in 1994. To counter that, this study had to use a shorter time series of data so that all the macro-economic variables are analysed over the same period to curb data analysis results inconsistencies. In the light of this, future research endeavors should consider doing the same analysis over a longer period.

For better policy recommendations, future research may need to add a new dimension to the data variables. For instance, the remittance data we analysed in this study was consolidated data. However, to broaden and add a new dimension to the analysis, future research may need to study unconsolidated data, i.e., remittances per source of remitting country and, finally, to include social-demographic variables of the Malawi diaspora community.

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