

The Impact of Foreign Direct Investment (FDI) and Remittances on Economic Growth in the SADC Region

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ABSTRACT

Emerging economies across the globe are faced with a gap between savings and investment needed to grow their economies. Thus, in recent years, Foreign Direct Investment (FDI) and Remittances have been identified as key sources of financing to bridge this gap. The study investigates the impact of Foreign Direct Investment (FDI) and remittances on economic growth in 16 Southern African Development Community (SADC) member states between 2010 and 2022. Using the Generalised Method of Moments (GMM) analysis, the study finds that the effect of FDI on economic growth in the region is statistically insignificant, whereas remittances have a negative impact on economic growth in both the short- and long-run. The findings also suggest that FDI and remittances have a weak substitutive relationship, rather than being complementary to each other interactively. These findings thus indicate that FDI and remittances do not promote economic growth in the SADC region.

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ACRONYMS AND ABBREVIATIONS

2 SLS:	Two-Stage Least Squares.
AR (2):	Second-Order Autocorrelation.
ARDL:	Autoregressive Distributed Lag.
COMESA:	Common Market for Eastern and Southern Africa.
CPI:	Consumer Price Index.
CRPTN:	Control of Corruption
DRC:	Democratic Republic of Congo.
ECOWAS:	Economic Community of West African States
EDU:	Human Capital Stock
FDI:	Foreign Direct Investment
GDP:	Gross Domestic Product (GDPC: Per Capita GDP)
GMM:	Generalised Method of Moments
INVEST:	Gross Fixed Capital Formation.
MNCs:	Multinational Companies.
ODA:	Official Development Assistance
OLS:	Ordinary Least Squares.
OPEN:	Trade Openness.
PPGR:	Population Growth Rate
REMIT:	Remittances
SADC:	Southern African Development Community.
SSA:	Sub-Saharan Africa
UNCTAD:	United Nations Conference on Trade and Development.
UNDP:	United Nations Development Program
UNESCO:	United Nations Educational, Scientific and Cultural Organisation

Key Words: Foreign Direct Investment, Remittances, Economic Growth, and Generalised Method of Moments.

DEFINITION OF KEY TERMS

This section defines the study's key terms: foreign direct investment (FDI) and remittances. Determining these terms is important because it provides a precise understanding of FDI and remittances. Thus, these definitions help ensure clarity and avoid ambiguity in communication.

Foreign Direct Investment (FDI)

De Mello (2000) defines Foreign Direct Investment (FDI) as “an international inter-firm partnership including a large equity share and effective management decision power in, or ownership control over, foreign firms”. Jaiblai and Shenai (2019) define FDI as investments made by individuals or firms with business interests in countries other than the country they are identified as citizens. This type of investment often involves setting up business ventures or obtaining business assets overseas by acquiring a controlling interest or total ownership of an international firm to create a multinational company (MNC) (Jaiblai and Shenai, 2019). Lund (2010) notes that a form of ownership or control over an overseas subsidiary, usually of about 10%, is required for an investment to qualify as FDI. This is important for distinguishing FDI from portfolio investments. However, there are three main forms of FDI, namely equity-based FDI, greenfield FDI, and brownfield FDI (Bayar, 2017), and these are discussed in Chapter 1.

Demir and Sayek (2008) note that FDI can be classified as vertical or horizontal FDI, whereby vertical FDI occurs by separating production processes geographically due to different input costs in various locations, thus reducing input costs. Conversely, horizontal FDI occurs when MNCs establish a subsidiary or branch to serve a foreign market instead of exporting due to high export costs (Demir and Sayek, 2008). Al-Khoury and Khalik (2003) also note that a country may act as a host for FDI projects or participate as an investor in investment projects located in other countries.

Remittances

According to Maphosa (2007), there is no general agreement on the definition of remittances. However, many definitions by scholars, economists, policymakers, etc., confine remittances to cash or money transfers to households back home in countries of

origin by people working in countries other than their home country (Driffield and Jones, 2013). Mbiba and Mupfumira (2022) indicate that migrants can also send non-financial remittances to their home nations via information, goods, and services essential for livelihoods. Additionally, Driffield and Jones (2013) characterize remittance inflows via official channels as aiding the growth of the financial sector and boosting foreign exchange reserves.

CHAPTER 1: INTRODUCTION

1.1. Background

Economic growth and development in the Southern African Development Community (SADC) countries¹ are important for poverty reduction and improved quality of life. However, the sources of economic growth are an area of ongoing debate. The factors commonly cited include technological change, investment in human capital, foreign aid, physical capital investment (Borensztein *et al.*, 1998), and the institutional factors of political instability, political freedom, and accountability (Al-Khouri and Khalik, 2013; Owens, 1987). However, studies have shown that FDI and Remittances are significant drivers of growth in developing countries.

FDI can take three forms, namely equity-based FDI, greenfield investment, and brownfield investment. The World Bank (1996) defines equity-based FDI as an investment to acquire a significant and lasting management interest, typically constituting at least 10% of the voting rights, in a firm operating within a foreign jurisdiction, as determined by the investor's residency. In different circumstances, Bayar (2017) and Bonciu (2012) note that brownfield FDI occurs when a transnational merger or acquisition takes place, i.e., when a company buys or merges with an existing one, whereas greenfield FDI involves building a new facility that did not previously exist in a country. The soaring of greenfield and brownfield FDI in recent decades has resulted in rapid globalization (Bayar, 2017). Thus, many developing countries have benefited from this trend through skills, technological transfers, and infrastructure development.

In addition to FDI, remittances constitute goods, financial resources, information, and services sent back to countries of origin from the countries of employment by migrant workers (Van Doorn, 2002; Bracking and Sachikonye, 2008). Remittances are typically used to support education, agricultural investments, healthcare, and domestic consumption (*ibid*; Mbulawa, 2017). According to Ratha (2003), remittances are more anti-cyclical compared to other private external capital flows. Thus, compared to other sources of capital flows such as FDI and Official Development Assistance (ODA),

¹ The 16 SADC countries are: Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, United Republic of Tanzania, Zambia and Zimbabwe.

remittances are less likely to be affected by changes in the economy, such as economic booms and downturns (Quarterly and Blankson, 2004). This helps remittance-receiving countries buffer negative economic shocks. This study, therefore, investigates the impact of FDI and remittances on economic growth in 16 SADC member states using econometric panel data analysis.

1.2. Research Problem

According to Ayanwale (2007), countries across the globe seek to attract FDI due to its acknowledged economic developmental ability. Economic development requires investment rates that exceed the corresponding savings rate, and foreign savings and capital in the form of FDI have been cited as a means to cover the investment-savings gap (Hammouda and Osakwe, 2008). Thus, many countries, especially developing countries, compete for FDI to advance economic growth and development. However, despite the need for FDI in Africa, most efforts to attract this capital have been unsuccessful, and the relatively small amount of FDI inflows to Africa has typically been directed to the extractive industries (Morriset, 2000) or to a limited range of countries that have growing local markets (Ayanwale, 2007).

Among the reasons cited for Africa's limited success in attracting FDI are incomplete liberalization of trade and economic reforms (partial reform syndrome) (Gammoudi and Cherif, 2016; Asirvathan *et al.*, 2017), poor governance and weak democratic institutions (Agbloyor *et al.*, 2016; Owens, 1987), and endemic corruption (Mlambo, 2005). In the case of SADC countries, Mlambo (2005) further identifies the small size of the SADC regional economy, weak financial systems, inadequate infrastructure, and persistent macroeconomic uncertainties. The effect of FDI and remittances on economic growth in SADC thus remains an ongoing topic of research and debate.

1.3. Research Questions

This study examines the effect of FDI and remittances on economic growth in the 16 SADC countries from 2010 to 2022. The primary research question that this study aims to address is:

Does FDI and/or remittances positively affect economic growth in SADC countries?

In addition to this primary question, the following sub-questions are also explored:

1. Does FDI and remittances jointly influence economic growth in the SADC region?
2. Does the interaction between FDI and economic growth outweigh the interactive effect of remittances?

1.4. Research Objective

The study's objective aligns with the research questions, i.e., investigating the influence of FDI and remittances on economic growth in SADC member countries using a panel data econometric model.

1.5. Significance of the Study

All 16 member states in the SADC region are considered emerging economies, thus implying that they are still underdeveloped or are falling behind other economies in terms of GDP and GDP growth. This remains the case despite their wealth of natural resources, such as oil, rich soils, favourable climates, and valuable minerals that could be utilized to advance their economies and improve the quality of life for their citizens. Nonetheless, to use these resources effectively, SADC member states require a blend of capital, technology, and expertise. These elements are viewed as lacking in many SADC member states. However, it is believed that FDI could fill that gap as MNCs, and other multilateral organizations and Development Finance Institutions (DFIs) could provide capital, technical expertise, and technology to the SADC region.

Remittances have increasingly turned into a vital income source for various developing economies worldwide. To illustrate the significance of remittances, the World Bank projected in 2019 that developing countries received an impressive US\$554 billion during the period preceding the COVID-19 pandemic. Migration has been a significant factor contributing to remittances. The growth in the number of migrants worldwide, along with other factors, has resulted in an increase in remittance flows to migrants' home countries. The rise in remittances in the recent past has prompted numerous researchers to conduct more studies to explore and determine methods for boosting remittance flows to enhance their effect on economic growth in various developing countries.

This, therefore, supports the need for a thorough scientific examination of the effects of FDI and remittances in the SADC region. This analysis can help policymakers and politicians craft FDI and remittance policies to maximize their effect on economic expansion and advancement in their respective countries.

1.6. Organization of the study

This study is split into six chapters. After having introduced the study in this chapter (Chapter 1), Chapter 2 follows, and under this chapter, the study discusses the stylized facts of FDI and remittance trends in the SADC region. Chapter 3 presents the theoretical and empirical studies regarding the effects of FDI and remittances on growth globally and in the SADC region. Chapter 4 outlines the research methods and model specifications, while Chapter 5 discusses the findings, and Chapter 6 wraps up the study with an overview and policy suggestions.

CHAPTER 2: FACTS STYLIZED

2.1 Introduction

This chapter explores a selection of stylized facts about FDI and remittances' impact on growth in SADC member countries. According to Hirschman (2016), stylized facts are empirical patterns in quest of theoretical and generalized explanations. Stylized facts serve as positive statements describing what exists in the world and normative claims showing what deserves scholarly focus.

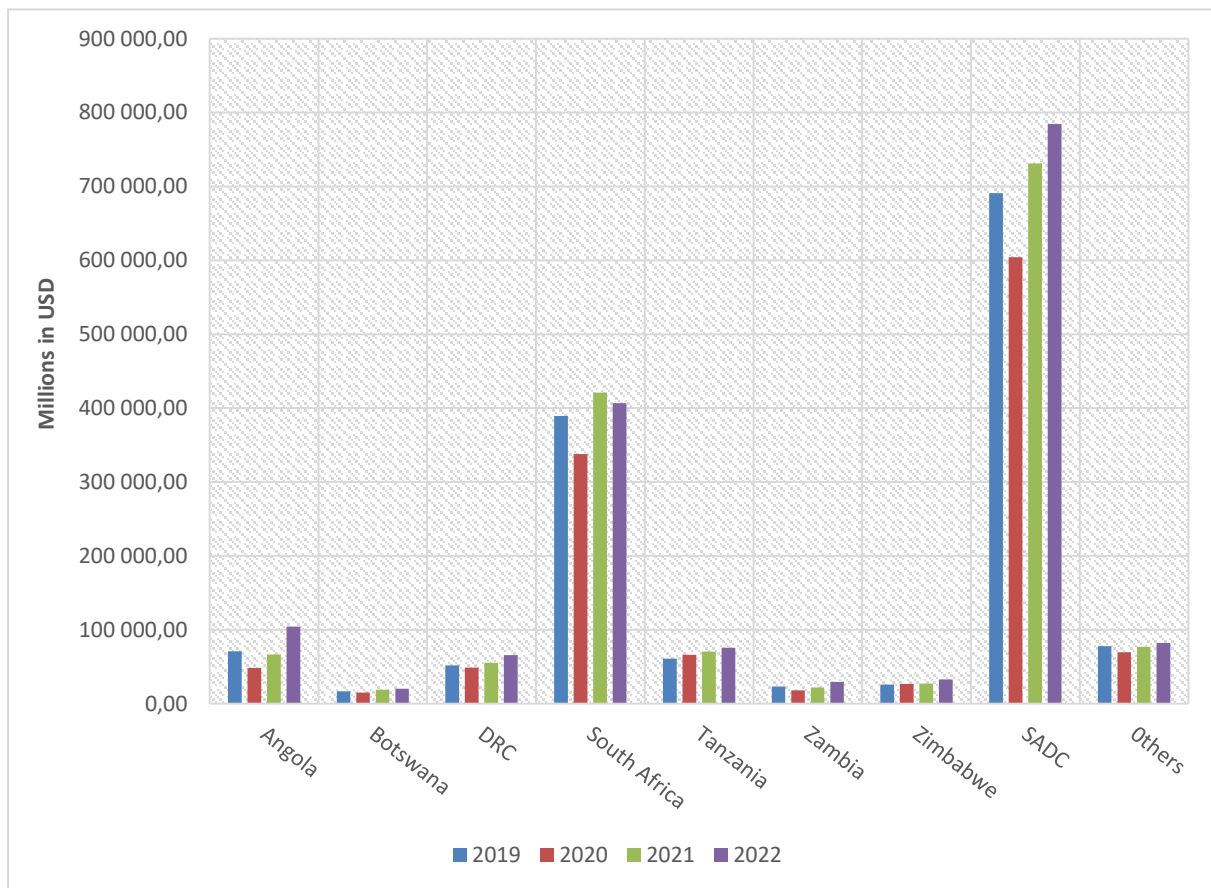
2.2 Overview of the SADC Economy

The Southern African Development Community (SADC) comprises 16 countries: Angola, Botswana, Comoros, Democratic Republic of Congo, Eswatini, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia, and Zimbabwe.

According to the World Bank (2022) world development indicators dataset, the aggregate GDP of the SADC region stood at approximately US\$ 784 billion in 2022. South Africa has the largest regional economic share at 48.1%, followed by Angola at 13.7% and the DRC at 10.2% (SADC, 2022), and these three are natural resource-endowed countries. (Angola relies on oil and gas, while the DRC depends on minerals such as diamonds and gold.) However, the South African economy is more diversified than any other economy in the region, making it less dependent on natural resources. In contrast, most of the other countries in SADC rely on mining, agriculture, and, to some extent, manufacturing as key economic drivers (UNCTAD, 2023).

Figure 2.1 below clearly shows that South Africa is by far SADC's biggest economy. It also indicates an economic activity recovery in the region from the lingering effects of COVID-19, reflected by an increase in GDP, rising from approximately US\$ 604 billion in 2020 to US\$ 784 billion in 2022. The region also recorded a growth rate of 3.4% in 2022; however, this is a decline from the 4.5% recorded in 2021. The SADC's GDP increased despite facing challenges from global uncertainties, including wars (e.g., the Russia-Ukraine war), adverse climate conditions, and tightening global financial conditions. However, as shown in Figure 2.1 below, it is evident that all the major economies in the region have recovered from the peak negative effects of COVID-19 experienced in 2020.

Figure 2.1: GDP at Market Purchase Prices in Millions of US\$, Year (2019-2022)



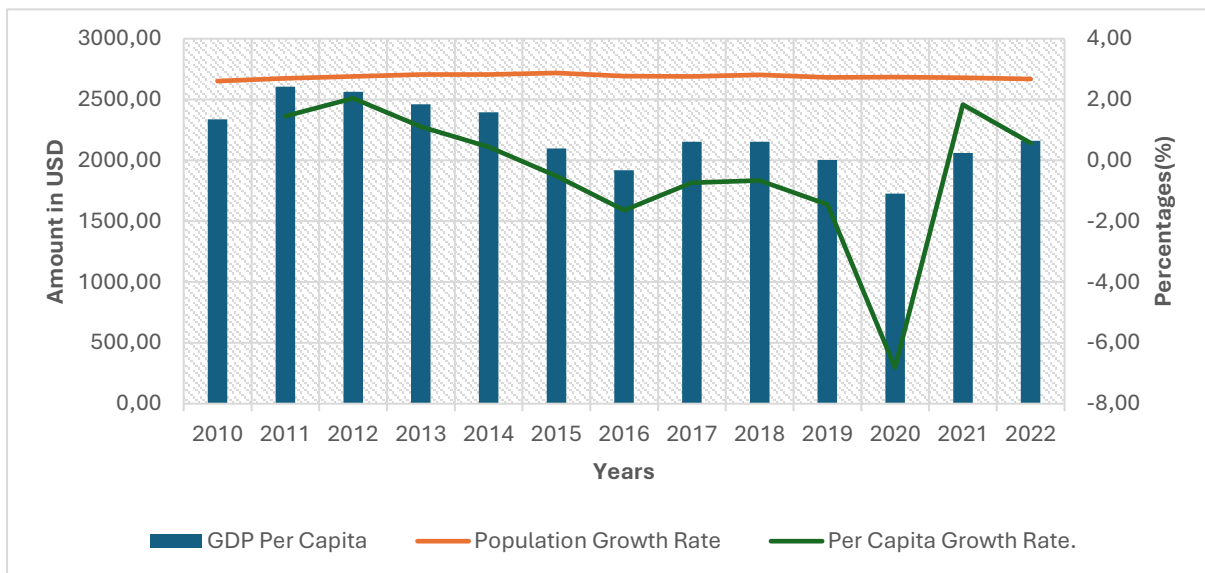
Source: Author's computations with data from World Bank (2024)

To advance economic growth in the SADC region, member states have identified the manufacturing sector as a key growth catalyst. The manufacturing sector's contribution to the regional GDP stood at 11.2% in 2022, while agriculture and mining contributed 8.4% and 16.3% respectively (SADC, 2022). These three economic sectors are capital-intensive; thus, FDI and remittances have been touted to bridge the financing gap. However, many MNCs in SADC are mainly focused on investing in the mining sector, and thus, less FDI is directed towards the manufacturing and agricultural sectors.

According to UNCTAD (2021), between 2014 and 2021, 12 out of 16 countries (75%) in SADC had slower growth rates than the rest of the global south. This is evidenced by the drop in GDP per capita in the regional bloc, which dropped from US\$ 2606 in 2011 to US\$ 2160 in 2022, representing a 12.65% decrease (see Figure 2.2 below). The poor economic growth in the region can be attributed to the fall in commodity prices, the COVID-19 pandemic, and recurring droughts in recent years (UNCTAD,2021).

Between 2010 and 2022, the regional population growth rate averaged 2.1% annually, while the economic growth per capita growth rate averaged 1.3%, suggesting that the region is experiencing a fast-growing population compared to income per capita. In actual figures, SADC’s population surged from approximately 270 million in 2010 to 361 million in 2019, translating into a 33.7% rise (SADC, 2020). Barlow (1994) notes that a greater population growth rate than income per capita causes a strain on resources, unemployment, and lowers living standards, leading to poverty. Given this situation, the region needs external sources of financing to stimulate economic growth and achieve key Sustainable Development Goals (SDGs).

Figure 2.2: GDP Per Capita, Per Capita Growth Rate, and Population Growth Rate in SADC (2010-2022)

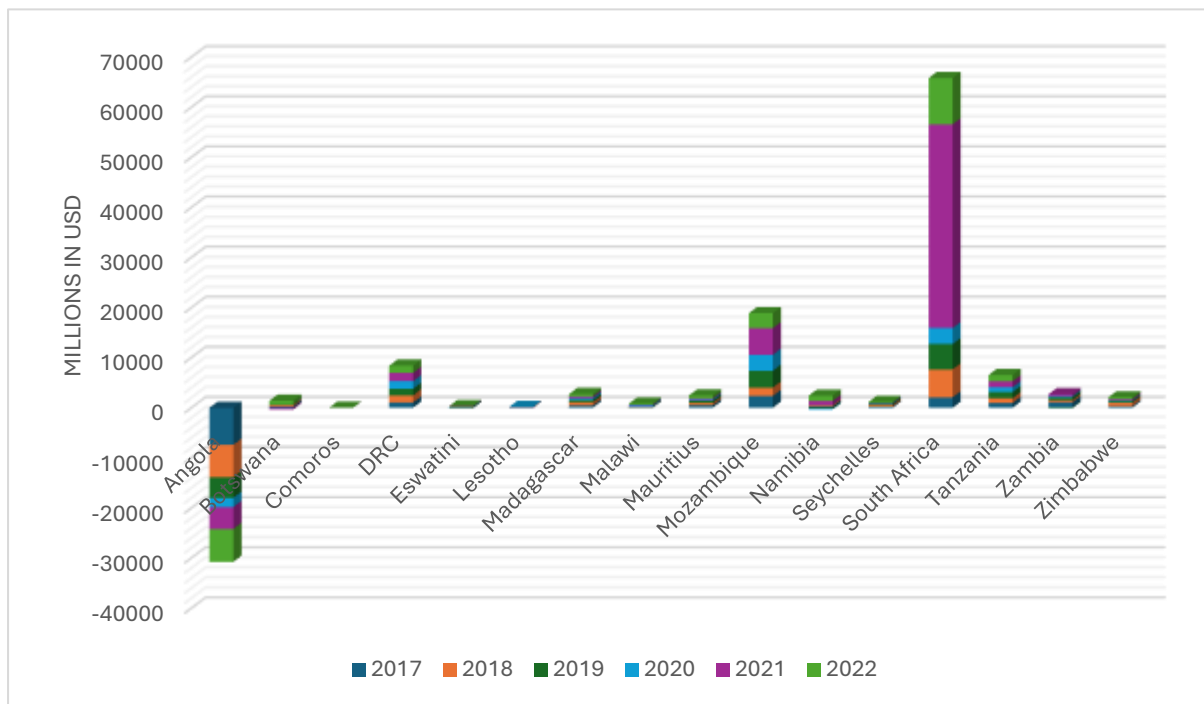


Source: Author's computations using SADC (2022) macroeconomic indicators data.

2.3 FDI Trends in Africa and the SADC Region

According to the World Bank’s World Development Indicators (2023), FDI to Sub-Saharan Africa (SSA) rose from US\$ 250 million in 1980 to US\$ 30 billion in 2022. In the five years from 2017 to 2022, FDI inflows increased in all of Africa's regional groupings, but most notably, to the Common Market for Eastern and Southern Africa (COMESA), which increased by 14% to US \$22 billion in 2022 (UNCTAD, 2023). Over the same period, FDI to SADC quadrupled to US \$10 billion in 2022.

Figure 2.3. FDI Flows to SADC Member States (2017-2022)

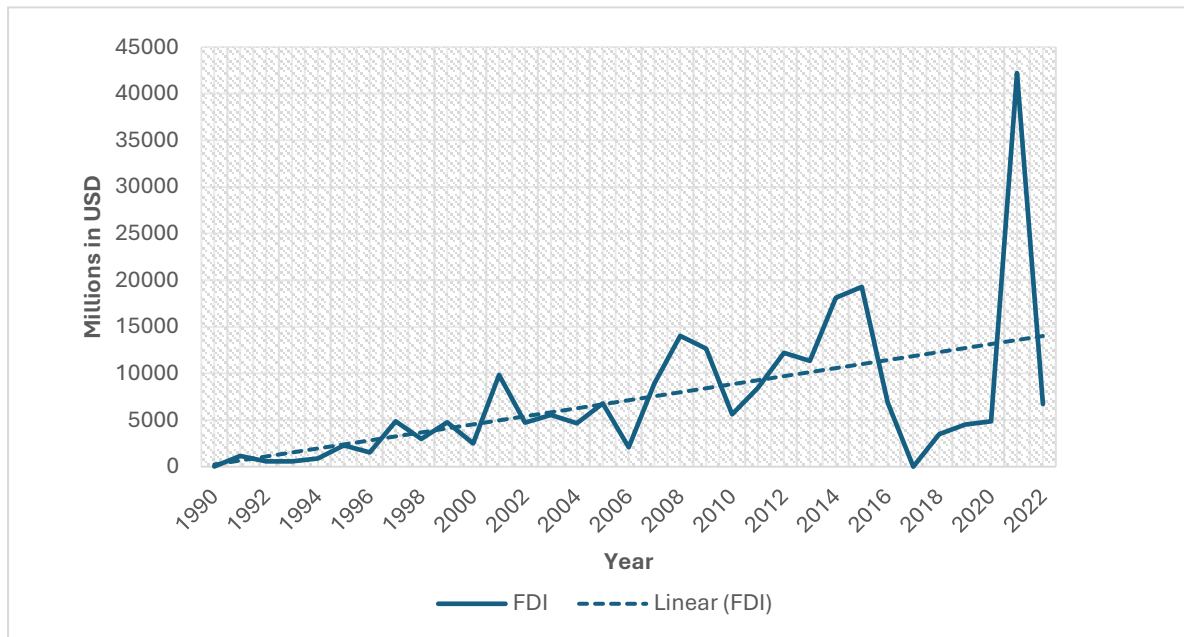


Source: Author's computations with data from UNCTAD, (2023)

However, despite this rise in FDI, inflows to SADC are not evenly distributed. South Africa and Angola account for most of the flows (UNCTAD, 2023). According to Sy and Sow (2016), South Africa and Angola, on average, receive an average share of 21% and 9%, respectively, of the total FDI inflows to Sub-Saharan Africa. From Figure 2.3 above, it can be noted that Mozambique and South Africa are the only countries that received a total FDI inflow above US \$1 billion between 2017 and 2022 in the region. The anomaly in Angola is caused by foreign oil companies that make substantial intra-company transfers to their home countries, resulting in negative net FDI (Markowitz, 2020).

Figure 2.4 below shows that over the last thirty years, FDI flows to SADC have followed an upward trend. The region received 27.9% (US \$970.57 billion) of the total FDI inflows to Sub-Saharan Africa (Gibogwe *et al.*, 2022). Yet, compared to global FDI over the same period, net FDI inflows to Africa were just 0.8% of net global FDI inflows. Among the reasons for this small share of FDI to Africa and the SADC region are corruption, inadequate infrastructure, and policy uncertainty (Mlambo, 2005; Agbloyor *et al.*, 2016). These factors also negatively affect healthcare, education, human capital formation, and economic growth, thus deterring the conditions for further FDI.

Figure 2.4: Total FDI Inflows to SADC Countries From 1990 to 2022



Source: Author's computations with data from UNCTAD, (2023)

2.4 Global and SADC Trends in Remittances

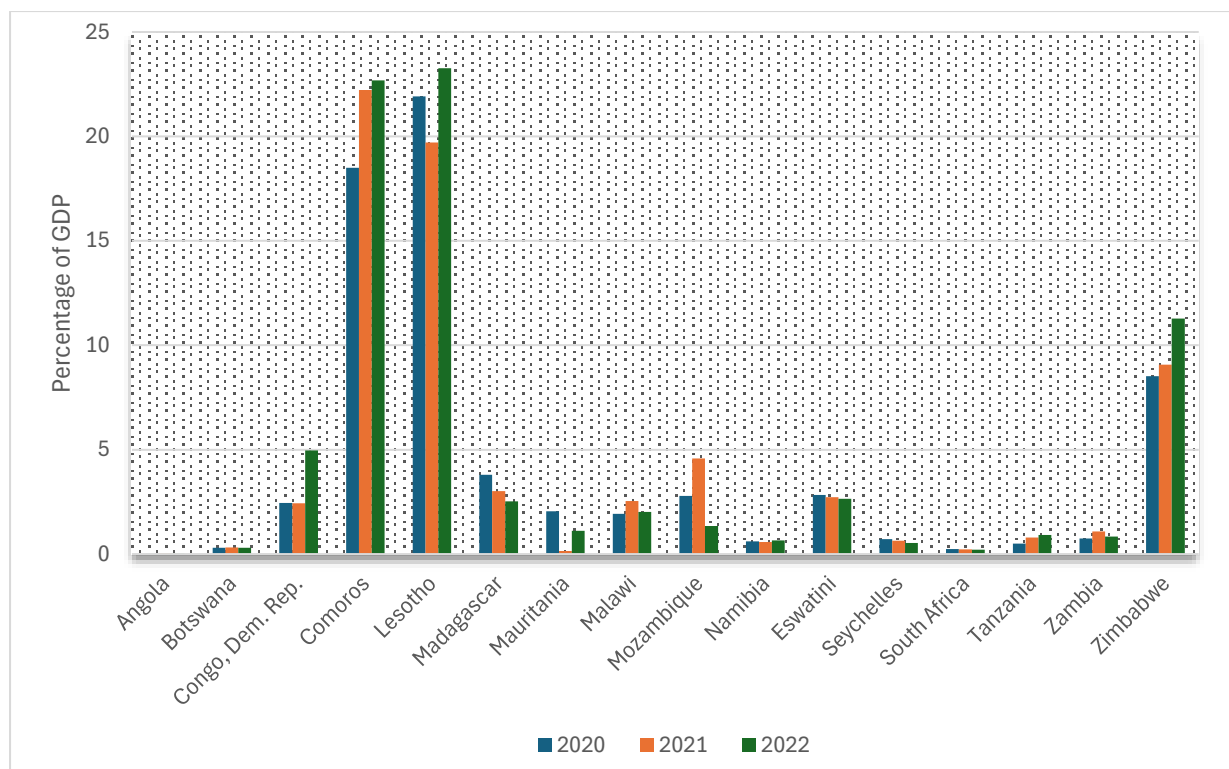
Migrant remittances assist in alleviating poverty in developing countries by increasing the income of households. Matuzeviciute and Butkus (2016) state that global migration has resulted in a variety of social, cultural, and economic impacts. They also note that remittances signify a migration route that promotes economic development. According to Ekanayake and Moslares (2020), the increase in migrants' remittances, which has persisted over the past several decades, has been significant for many emerging economies. Migrant remittances are primarily channeled to developing economies from the developed world, serving as a crucial financial lifeline for families and contributing significantly to the economies of these developing regions. Remittances are thus becoming the most significant source of external financing to emerging economies (Ratha, 2013) and are expected to surpass the impact of Official Development Assistance (ODA) and FDI (Ratha, 2013).

Vasconcelos *et al.*, (2017) estimate that between 2015 and 2030, approximately US\$ 6.5 trillion in remittances will be channeled to low and middle-income countries. According to Mbiba and Mupfumira (2022), the resilience of remittances to the developing world in

comparison to other financial sources during the COVID-19 pandemic underscores their importance during periods of economic uncertainty. Ratha *et al.*, (2020) note that the World Bank had predicted a 7.2% decline to US\$ 508 billion and a further 7.5% decline to US\$ 470 billion in remittances to the developing world in 2020 and 2021, respectively. However, by May 2021, it was evident that the decrease in global remittances in 2020 was only a modest 1.6% lower than the amounts sent in 2019 (Mbiba and Mupfumira, 2022). During the same period, remittances to Europe and Asia dwindled by 9.7%. In contrast, SSA experienced an increase of 12.5%, followed by Southeast Asia with an increase of 7.7% (Mbiba and Mupfumira, 2022).

As shown in Figure 2.5 below, SADC countries have experienced increasing transfer inflows in recent years. According to the World Bank (2024), the highest earners of remittances as a percentage of GDP in the SADC region by 2022 are Lesotho (23,8%), Comoros (22,68%), Zimbabwe (11,3%), Eswatini (2,6%), DRC (2,1%) and Mauritius (2,1%). In contrast, Angola (0%), South Africa (0,2%), and Botswana (0,3%) received the lowest remittances as a ratio of GDP.

Figure 2.5: Remittance Transfers to SADC Member States (2020-2022)



Source: Author's computations with data from World Bank, (2024)

According to Bara *et al.*, (2016), South Africa is a major source of remittances for its neighboring countries, and thus, South Africa receives fewer remittances compared to outflows, making it a remittance net outflow country. The Comoros and Lesotho are also heavily reliant on remittance inflows, constituting 22.7% and 23.3% of GDP in 2022, respectively. Zimbabwe received the largest amount of remittance inflows in the SADC region, reaching 11.3% of GDP in 2022 and amounting to over US \$3 billion in the same year. Despite the optimistic view that remittances can stimulate economic growth, critics counter that remittances have no impact on economic growth because they are mainly used for consumption rather than productive investments (Chami *et al.*, 2003).

2.5 Conclusion

Thus, in summary, this chapter indicates that the aggregate GDP of the SADC region has been growing in recent years, but the regional economy has been growing less than the population growth rate. The chapter also reveals that FDI flows to the SADC region have been on a volatile upward trend from 1990 to 2022, but only a few countries in the region have attracted significant FDI inflows (particularly South Africa). Remittance flows have also been on the rise, but once again, most of these flows are directed to specific countries (particularly Comoros, Lesotho, and Zimbabwe).

CHAPTER 3: LITERATURE REVIEW

3.1. Introduction

This literature review is structured in three sub-sections. The first discusses the factors that have been found to drive FDI and remittances, the second explores the theories associated with FDI and remittances, and the third examines the empirical literature. The literature review ultimately ends with a summary of the main emerging themes.

3.2. Motives for FDI and Remittances

This section discusses the theoretical motives behind FDI and remittances, such as the production cycle theory, industrial-organizational theory, internationalization theory, etc. Also, it delves into the theories of self-interest, altruism, and enlightened self-interest.

3.2.1. *Motives for FDI*

According to Hymer's (1960) industrial-organizational theory, the existence of MNCs is based on market imperfections. This suggests that MNCs can succeed by capitalizing on market imperfections, thus enabling them to gain competitive advantages that would not be achievable in a completely competitive homogeneous market. Hymer (1976) notes that transactional costs and structural imperfections are the two main imperfections relevant to the theory. Transactional cost imperfections are mainly due to uncertain market conditions, lack of perfect information, opportunistic behaviors, etc., thus making it difficult to measure or predict them accurately (Williamson, 2010). Structural imperfections are advantages that a multinational firm possesses and prefers not to transfer to foreign competitors, such as technology, marketing, access to lower financing costs, economies of scale, and management capabilities (Hymer, 1976). These structural factors become imperfect because they do not always occur in a competitive market due to information asymmetry, geographical and regulatory factors, etc. Conversely, transaction costs can motivate MNCs to establish an internal "market" rather than depend on external transactions (Dunning, 1981). This is because internalization allows MNCs to control transaction costs better, reduce risks, and exploit their firm-specific advantages. Dunning (1981) further notes that market imperfections, such as information asymmetry, opportunism, and high transaction costs, make internalization efficient. In this way, the

firms control the production and thus become more efficient and further export competitiveness.

According to Vernon's (1960) product cycle theory, companies invest and expand abroad if there is an opportunity for a monopolistic advantage. Without a clear benefit, firms are reluctant to incur the unique costs and uncertainties related to operating abroad (Vernon, 1960). Thus, MNCs tend to invest where there is a reduced risk of failure and a huge opportunity for the potential market and growth. According to Myers and Marquis (1969), the product cycle theory starts with the assumption that an opportunity or threat in the market drives innovation. Vernon (1960) further posits that the development of innovation, due to the availability of requisite skills in the home market, is a precursor before a firm considers investing abroad because these skills may not be available in other markets where the firm intends to invest, especially in developing economies. However, Vernon (1979) posits that a product can be launched abroad by leveraging technological advancements during its maturity stage to optimize production costs due to lower production costs in foreign markets.

The basic premise behind Buckley and Casson's (1976) internalization theory is that multinational companies will substitute market transactions with internal transactions to circumvent flows in the market for intermediate inputs. Since modern businesses go beyond the traditional production cycle by carrying out activities such as marketing, workforce training, research and development, etc., they are exposed to market imperfections for intermediate inputs (Saul Lizondo, 1990). Thus, market imperfections complicate the pricing of certain intermediate products, incentivizing firms to bypass the market and retain technology usage internally, thus fostering the creation of intra-firm markets (Williamson, 1975).

Calvert (1981), however, argues that international capital will be stimulated by the differential rates of return, whereby capital will flow from countries with low returns to those with higher returns. This argument is based on the notion that firms assess their investment choices by balancing expected marginal returns with the marginal cost of capital. Thus, if expected marginal returns are greater abroad than domestically, and assuming the marginal cost of capital remains consistent for both investments, firms are

incentivized to invest in the foreign country instead of investing in their home country (Calvert,1981).

The most comprehensive theory of FDI motives is Dunning's (1980, 1993) Eclectic Paradigm (or OLI), which contends that FDI is influenced by three elements which are ownership, location, and internalization. Ownership advantages refer to firm-specific advantages, such as superior technologies or brand names, that give a competitive edge to firms in many international markets. Location advantages refer to the advantages of a certain region, e.g., accessibility and closeness to the market, while Internalisation advantages refer to a firm's ability to lower transaction costs and safeguard sensitive information. The OLI model thus solves the three crucial questions of why firms operate in a foreign country rather than simply exporting or licensing their products, how firms conduct their business globally, and what drives the firm abroad (Verbeke *et al*, 2008). Arising from OLI, there are four principal FDI motives: resource-seeking, efficiency-seeking, market-seeking, and strategic asset-seeking.

Resource-seeking FDI is when investors invest abroad to acquire resources that are not available in their country or that may exist in their country but are expensive (Franco *et al*, 2008). These resources range from natural physical resources (such as oil, gas, and other mineral resources) to human capital and technological and managerial efficiencies. Market-seeking FDI is when investors invest in foreign countries to offer new goods and services or to expand existing markets (Franco *et al*, 2008). Efficiency-seeking FDI capitalises on differences in the availability and costs of traditional factor endowments across different countries (Dunning, 1993). Franco *et al*. (2008) and Dunning (1993) suggest that efficiency-seeking FDI can leverage economies of scale and scope, along with differences in the preferences of consumers and supply capabilities. Finally, Strategic asset-seeking FDI focuses on obtaining new technological foundations instead of utilizing current assets (Dunning, 1993).

3.2.2. Motives for Remittances

The theory of self-interest claims that migrants send money back to their families in their homeland intending to seek personal benefits (Henry *et al*, 2005) that include retirement planning (Black *et al*, 2006), for a future return to their home country (Vargas-Silver and Huang, 2006), to preserve their social connections, including their relationships with

family and friends (Lucas and Stark, 1985), for inheritance (Henry *et al.*, 2009; Rapoport and Docquier, 2005), and for investment (Mbulawa, 2017).

The theory of altruism, however, adds that remittances may also be sent for charitable and philanthropic reasons (Tchouassi and Sikod, 2010; Orozco *et al.*, 2017). Hence, remittances reflect a strong sense of social responsibility for migrants, who see themselves as part of a broader community (Rapoport and Docquier, 2005).

According to the enlightened self-interest or tempered altruism theory, migrants are not solely altruistic individuals; they also consider their own interests when they transfer funds to their homeland (Lucas and Stark, 1985). Migration can be seen as a household approach for spreading risk or risk diversification (Henry *et al.*, 2009; Van Dalen *et al.*, 2005). Migrants and other members of the household essentially establish a contract, whereby the migrant supplies financial support to the household, and in exchange, the other household members assist the migrant during times of unemployment or retirement (Lucas and Stark, 1985; Henry *et al.*, 2009).

3.2.3. Motives for FDI and Remittances Summary

The literature discussed above suggests that investors are influenced by different factors when carrying out FDI activities, arising from domestic corporate decisions and benefits, or international opportunities. In contrast, migrants tend to repatriate capital to their home countries for personal benefits, familial needs, philanthropy, or insurance.

3.3. Theoretical Frameworks

This section reviews the theories that consider the relationships between FDI, remittances, and economic growth.

3.3.1 FDI and Economic Growth

Neoclassical growth theory, also known as the exogenous growth theory, argues that FDI only advances economic growth in the short run, not the long run, due to the role of capital accumulation and diminishing returns (Neusser, 1991). The exogenous growth theory pioneered by Solow (1956) and Swan (1958) suggests that the accumulation of factors of production, such as stock of capital and labor, generates economic growth. Using the

aggregate production function or the Cobb-Douglas production function, empirical research has shown that the accumulation of capital precisely impacts economic expansion, particularly in terms of the share of capital in national output (Odhiambo and Mahembe, 2014). In addition to capital accumulation, De Jagger (2004) notes that labor force enhancements and technological advancements are key to economic growth. De Jagger (2004) further explains that FDI improves capital stock and brings in new technology, leading to labor efficiency and productivity in host countries, thus impacting economic growth positively. Ikiara (2003) adds that FDI advances economic growth by facilitating the advancement of capital and improving research and development through technological transfer, improved productivity, enhanced cooperation, and higher human capital. Lund (2010) argues that in the long run however, FDI increases the level of output rather than the growth rate because economic growth in the host country is assumed to originate from exogenous effects of technological progress and labor.

Conversely, endogenous growth theory (Romer, 1986; Lucas, 1988) argues that FDI positively affects long-run economic growth via positive externalities and technological and human capital spillover effects (Romer, 1986; De Jagger, 2004). Seyoum *et al.*, (2015) posit that physical assets, research and development, human capital and skill, and expenses make up capital formation in the model. The endogenous growth model assumes that technology is endogenously determined and thus domestic and foreign capital sources for financing growth are treated differently (Mehic *et al.*, 2015). According to Baldwin *et al.*, (2005), there are technological advancement disparities between domestic and foreign companies and as a result, their contribution towards economic growth suggests that foreign investments play a significant role in augmenting the available capital equipment and knowledge in the host country. Nair-Reichert and Weinhold (2000) also posit that contemporary endogenous growth models account for long-term growth affected by technological advancement. Consequently, they establish a framework that enables FDI to perpetually enhance the economic growth rate of the host nation via technology transfer, diffusion, and spillover impacts. According to Herzer *et al.*, (2008), FDI increases investable capital and facilitates technical spillovers, thereby contributing to the economic expansion of the host country. They further argue that FDI can stimulate economic growth in the host country through capital accumulation, the

introduction of new products, services, and technologies (neoclassical), alongside the transfer of skills (endogenous).

3.3.2. Remittances and Economic Growth

According to Development Optimism, remittances have indirect growth effects via human capital investment, increased savings, fixed and capital investments, and consumption (Balde, 2011). Barajas *et al.*, (2009) argue that remittances positively affect human capital investment through the beneficial effects on healthcare and education. In addition to the effects of capital repatriation, Adenutsi (2010) posits that migrants act as catalysts for the development in their home countries by bringing back skills, new knowledge and ideas, and entrepreneurial attitudes, thus promoting community development.

Critics counter, however, that remittances have little impact on economic growth because most of the capital is used for consumption, not for productive investment (De Haas, 2007). Remittance Development Pessimists further posit that remittances negatively affect economic growth due to inflationary pressures (Amuedo-Dorantes and Pozzo, 2014) and reduced human capital investments (Chami *et al.*, 2003). Chami *et al.*, (2003) further point out that Development Pessimists argue that disincentives can reduce investments in human capital, particularly in education, among households that receive remittances. This occurs because family members in the receiving country may become overly dependent on these remittances. In agreement with Development Pessimists, De Haas (2007) proposes a remittances decay hypothesis, suggesting that international migration and remittances create an artificial and short-term enhancement in the quality of life of recipients, ultimately leading to a dependency on foreign income.

Adenutsi (2010) thus argues that international migration and remittances escalate the problems of underdevelopment rather than promoting sustainable development due to removing economically active human capital from the economy. In addition, international migration and remittances create moral hazard problems in home countries due to an escalation in the number of economically unproductive people who are instead dependent on remittances (Chami *et al.*, 2003). Furthermore, if the inflationary pressure caused by international money transfers is sustained for a long period, Amuedo-Dorantes and Pozzo, (2014) suggest that this may cause a long-term negative impact on the level of employment in the remittance-receiving country.

3.3.3. Summary of Economic Growth Theories

Thus, in summary, the neo-classical and endogenous growth theories propose that FDI promotes economic growth. However, the neo-classical growth theory argues that FDI only stimulates short-term economic growth, whereas the endogenous growth theory suggests that FDI advances long-term economic growth.

Additionally, two schools of thought are used to discuss the link between economic growth and remittances. Development Optimists suggest that remittances promote economic growth since transfers to the home country are used for education, healthcare, savings, investments, etc., whereas Development Pessimists suggest that remittances do not promote economic growth but rather cause inflationary pressures since they are mainly used for consumption rather than investment.

3.4. Empirical Literature

This section reviews the studies that have empirically explored the theoretical relationships between FDI, remittances, and economic growth.

3.4.1. FDI and Economic Growth Empirical Literature

This section reviews a selection of cross-country and country-specific studies regarding the effect of FDI on economic growth. The literature review is conducted on both SSA and non-SSA countries (mostly developing countries).

With regards to cross-country studies, Balasubramanyam *et al.*, (1996) examine the influence of FDI on economic growth in 46 export-promoting and import-substituting developing countries from 1970 to 1985 using cross-sectional panel estimators. The results show that FDI promotes economic development in export-promoting countries but hinders growth in import-substitution countries. Borensztein *et al.*, (1998) similarly assess the role of FDI in advancing economic growth in 69 developing countries using cross-section regression analysis covering the period of 1970 to 1985. The results show that FDI contributes more to economic growth than domestic investment since FDI involves technology spillover, resulting in increased productivity. Borensztein *et al.*, note that the technological spillover effect only applies to countries with a basic level of human capital.

Durman (2004) investigates the effects of foreign portfolio investments and FDI on economic growth in 80 countries using Extreme Band Analysis encompassing the duration from 1979 to 1998. The empirical results indicate that FDI positively influences economic growth, contingent upon the absorptive capacity of the country receiving the FDI. However, in common with Borensztein *et al.*, (1998), Durman similarly finds that the positive association between FDI and economic growth is dependent on the host country's basic level of human capital.

Zhang (2001) explores the FDI-economic growth nexus in 11 East Asian and Latin American countries using cointegration and Error Correction Methods (ECM). The results suggest that in 5 of the 11 countries, FDI promotes economic growth, whereas the other six countries experience growth-led FDI. Li and Liu's (2005) cross-country study examines the effects of FDI on economic growth in 84 countries, including 21 developed and 63 developing countries from 1970 to 1999. Panel data analysis reveals that FDI influences growth both directly and indirectly, interacting with human capital. However, a notable technological disparity between the source and host countries hinders the host country's ability to capitalize on FDI.

Herzer *et al.*, (2008) cross-country study investigates the FDI-led growth theory in 28 emerging economies between 1970 and 2003 using panel data analysis. In contrast to studies that support FDI-led growth, the results indicate that FDI does not significantly drive economic growth in most of the countries included in their sample. Their research also shows no significant connection between FDI and income per capita levels. Pegkas (2015) investigates the association between FDI and economic growth in the Eurozone countries from 2002 to 2012. The results reveal that the GDP elasticity of FDI is 0.054% on a global scale, whereas it is 0.147% in the Eurozone countries. This suggests that FDI significantly influences economic growth in Eurozone countries more compared to the worldwide average.

With regards to studies devoted to SSA, Adams (2009) investigates the effect of FDI on economic growth in SSA using OLS and Fixed Effects for data covering 1990 and 2003. The study's results indicate that FDI positively impacts economic growth in SSA using both OLS and Fixed Effect estimates, but only the OLS estimates are statistically significant.

Agbloyor *et al.*, (2016) examine the association between FDI, institutions, and economic growth in SSA countries using a two-step generalized method of moments (GMM) from 1996 to 2010. Overall, the results do not provide statistically significant support for the notion that FDI fosters economic growth in SSA. However, in a sub-sample excluding countries with weak financial institutions, there is statistically significant evidence of FDI impacting economic growth positively. Agbloyor *et al.*, (2016) thus conclude that the level of institutional quality influences the connection between FDI and economic growth, whereby countries with higher-quality institutions generally see a beneficial effect of FDI on economic growth.

More recently, Meniago and Lartey (2021) examine the direct and indirect influence of FDI on overall total factor productivity and economic growth using panel data analysis on 25 SSA countries between 1980 and 2019. The empirical investigation reveals that FDI is predominantly harmful to productivity and economic growth and that human capital accumulation and financial development have a minimal influence on FDI and economic growth. Kwablah and Amoah (2022) investigate the role played by economic freedom and financial fragility in influencing the impact of FDI on economic growth in 36 SSA countries using an OLS econometric method from 1998 to 2016. Their findings indicate that well-developed financial markets and economic freedom are complementary in advancing a positive FDI impact on economic growth. Kwablah and Amoah thus conclude that strengthening financial systems and promoting economic freedom are important for FDI to contribute positively towards economic growth.

On a country-specific basis, Fedderke and Romm (2006) examine the causal relationship between FDI and economic growth in South Africa using the vector autoregressive estimation method between 1960 and 2002. The results suggest that FDI positively impacts economic growth in South Africa, and this in turn attracts more FDI to the country. In contrast, Gossel and Biekpe (2014) explore the causal relationship between capital inflows, trade, and growth in South Africa after attaining its independence between 1995 and 2011, employing the Vector Autoregression (VAR) method. Gossel and Biekpe's findings indicate that the South African economy supports the growth-driven FDI notion rather than the FDI-driven growth notion.

In another country-specific study, Ayanwale (2007) examines the link between FDI and Nigeria's economic growth using OLS and 2SLS econometric techniques from 1980 to 2008. The research's findings indicate that the correlation between FDI and economic growth in Nigeria is positive, suggesting that FDI improves the Nigerian economy.

3.4.2. Empirical Literature: Remittances and Economic Growth

Zardoub and Sboui (2021) examine the impact of FDI, remittances, and ODA in 41 developing countries between 1990 and 2016 using system GMM panel data analysis. The results indicate that the association between remittances and economic growth is ambiguous in developing countries. However, their results further suggest that migrant money transfers have a negative impact on economic growth in low-income countries but a positive effect in lower-middle-income countries.

With regards to SSA, Balde (2011) explores the relationship between economic performance and remittances in 34 SSA countries from 1980 to 2004 using Ordinary Least Squares (OLS) and instrumental variables (2SLS) with country-fixed effects. The results show that remittances and foreign aid affect savings and investments and positively impact economic growth. Thus, Balde concludes that remittances better serve the interests of households and are more effective in promoting economic development than foreign aid.

Matuzeviciute and Butkus (2016) investigate the influence of international money transfers on long-term economic growth in 116 developing countries from 1990 to 2014 using OLS with first-difference transformation and fixed effects. The findings indicate that remittances positively impact economic growth in relatively developed emerging countries. In addition, it is found that the effect of remittances on long-term growth becomes negative once the remittance-to-GDP ratio reaches around 11%, mainly because labor market participation is discouraged at this level.

Kadzoi (2019) investigates the association between remittances and economic growth in 45 SSA countries and Rwanda using a cross-sectional analysis from 1980 to 2014. The results reveal that the effect of remittances on economic growth in the region is not statistically significant. However, the results for Rwanda indicate that the impact of remittances on growth is positively and statistically significantly influenced by a country's

level of development, financial development, and education. Thus, the positive impact of remittances in Rwanda primarily results from the interplay between the institutional environment and development factors. The study further notes that structural reforms concerning economic development, human capital development, and governance are essential in improving mechanisms that facilitate the positive influence of remittances on economic growth.

Bandura *et al.*, (2019) explore the relationship between remittances, economic development, and financial development in 14 SADC countries using a dynamic GMM estimation approach for the period 2006 to 2016. Their study's results indicate that remittances positively affect economic growth, whereas remittances' impact on financial development is negative. Bandura *et al.*, however, posit that investment in SADC is primarily funded through remittances because access to bank financing in the SADC region is still too limited.

Mlambo and Kapingura (2020) examine remittances' influence or effect on economic growth and development in five SADC countries (DRC, Zimbabwe, Lesotho, Mozambique, and Eswatini) using fixed and random effects, and GMM between 2005 and 2015. The results find that remittances positively impact economic growth and development in the five SADC member countries. Bucevska (2022) analyses remittances' impact on economic growth in six Southeast European countries using fixed effects from 2008 to 2022. The results suggest that remittances significantly impact economic growth. Jusaj *et al.*, (2024) investigate the impact of remittances in 11 Central and Eastern European countries using ordinary least squares, fixed-effects model, random-effects model, and dynamic GMM between 2010 and 2022. In common with Bucevska (2022), the results reveal that remittances play an important role in driving the economic growth of Central and Eastern European countries.

On a country-specific basis, Sibindi (2014) explores the link between remittances, financial development, and economic growth in Lesotho using the Vector Error Correction Model (VECM). The findings indicate that there is unidirectional causality flowing from remittances to GDP. Nyasha and Odhiambo (2022) investigate the economic impact of remittances on economic growth in South Africa from 1970 to 2019 using Autoregressive

Distributed Lag (ARDL) estimation. The results reveal that remittances harm economic growth in South Africa in both the short term and the long term.

Maune and Matanda (2022) examine the remittances economic growth nexus in Zimbabwe using the ARDL method between 1960 and 2020. The ARDL analysis estimates reveal a unidirectional and bidirectional causal relationship between money transfers and economic growth. Their study further notes that remittances hurt the Zimbabwean economy before dollarisation and had a positive impact after the country dollarized. Maune and Matanda, therefore, conclude that dollarisation enabled Zimbabwe to draw in more remittances, thereby enhancing the nation's economic growth potential.

3.5. Conclusion

The chapter highlights the factors influencing FDI and remittances globally and in the SADC region and further discusses theoretical frameworks and literature underpinning the motivation behind FDI and remittances. Various theories relevant to the FDI, remittances, and economic growth nexus are also discussed. The theoretical framework assists in outlining key theories and concepts used in the study to understand these theories and ideas.

The empirical studies reviewed in this chapter cover numerous countries and regions, and at different times indicate that FDI and remittances influence economic growth either positively, negatively, or with no effect at all. The findings in the literature of some studies reflect various inconclusive outcomes, reflecting a non-consistent pattern on the effect of FDI and remittances on economic growth. Some studies on this topic observe a positive effect of FDI and remittances on economic growth and development. Conversely, other studies find negative or no impact at all. The absence of clear, uniform outcomes makes the study more compelling, offering an opportunity to explore the impact of FDI and remittances in the SADC region with a flexible approach.

In conclusion, the need to explore the influence of FDI and remittances on economic growth in the SADC region arises from the complex and vital role these factors play in the region's economic progress. The SADC region grapples with key challenges such as sluggish economic growth, as indicated in Chapter 2, 75% of SADC's member states had the slowest growth rates than the rest of the global south between 2014 and 2021. This

is the case despite the region being endowed with a variety of natural and mineral resources. The African Development Bank outlook for 2019 also indicates that the SADC region has lower levels of savings on the continent; the average savings in SADC between 2010 and 2018 stood at 16.5%, notably lower than in regions like North Africa (23.5%) and East Africa (17.5%). The region is also facing challenges of widespread poverty, poor infrastructure, corruption, and pronounced inequality. These persistent issues not only impede domestic development initiatives but also diminish the region's appeal to foreign investors. The report also indicates that gross domestic savings exceed national savings, implying that net foreign savings are negative across much of the region. Therefore, understanding the distinct effects of FDI and remittances and their interactions is essential for policymakers to enhance their potential roles in fostering sustainable and inclusive economic growth.

CHAPTER 4: RESEARCH METHODOLOGY

4.1. Introduction

This section presents the methodology and data used to answer the research questions outlined in Section 1.3 of Chapter 1. Additionally, it provides a detailed explanation of the estimation approach and discusses the empirical model, including variables and their measurements used to analyse the study's results. The chapter further discusses the diagnostic test used to validate the model's applicability.

4.2. Research Design

A research design's main purpose is to ensure that the evidence collected clearly and unambiguously addresses the research problem. Research design outlines the procedures and methods for collecting and analysing data and how these approaches address the research questions (Almaki, 2016). Research designs can vary widely, including using approaches like deductive and inductive techniques, as well as qualitative and quantitative methods.

Thus, quantitative research mainly focuses on measuring phenomena in numerical terms and thus uses numerical data and statistical analysis (Patel and Patel, 2019). Furthermore, quantitative research makes use of sample sizes that are generally large and standardized tools. Qualitative research, in contrast, consists of all forms of inquiry that yield results that cannot be secured through statistical measures (Strauss and Corbin, 1998). Qualitative research is thus used in multiple disciplines and includes many methodologies, such as participant observation, ethnography, life history, oral history, case study, and field research (Amis, 2011). Furthermore, qualitative methods focus on in-depth interviews, observations, and smaller, context-specific samples (Yilmaz, 2013). According to Woiceshyn and Daellenbach (2018), the primary difference between deductive and inductive reasoning is that deductive reasoning focuses on testing existing theories using hypothesis testing, while inductive reasoning focuses on developing theories.

Since the quantitative research design entails a move from general to specific, prioritizing deductive reasoning, this study employs the quantitative research method using deductive reasoning techniques. Additionally, using quantitative methods allows for

examining relationships between variables and aids in predicting their future behaviours. The reliance on numerical data in quantitative research allows for statistical methods to be employed, thus, revealing patterns and trends that may not be hidden if qualitative approaches are employed. Considering these advantages and how they correspond with the study's objectives, the quantitative research design and the deductive reasoning technique are employed in the study.

4.3. Econometric Methodology

This study employs panel data analysis. Panel data are observations in a time series made up of different individual units and thus combine both cross-sectional and time series dimensions (Hsiao, 2007). According to Wooldridge (2002), empirical analysis using panel data allows for the investigation of dynamic relationships and helps manage unobserved explanatory variables.

4.3.1. Endogeneity Bias

According to Wooldridge (2002), macroeconomic variables may be subject to endogeneity, which is common in panel data regression models and thus must be accounted for. Wooldridge (2002) further points out that a variable that correlates with the error term in a regression model is referred to as endogenous. Bun and Sarafidis (2013), and Wooldridge (2010) posit that a reverse causality problem may arise in a multiple regression model if the error term correlates with an independent variable, leading to endogeneity. The issue of endogeneity bias caused by reverse causality and the problem of omitted variables can be tackled using the instrument variables (IVs) technique (Wooldridge, 2002; Bun and Sarafidis, 2013). Furthermore, the inclusion of a lagged dependent variable as an independent variable helps in reducing omitted variable bias (Arellano & Bover, 1995; Blundell & Bond, 1998).

The empirical literature analysis based on previous studies in Chapter 3 indicates that various estimation techniques such as the GMM approach, Random Effects and Fixed Effects, cointegration and error correction methods, pooled OLS, etc, are used to overcome endogeneity bias (Balasubramanyam *et al.*, 1996; Zhang, 2001; Adams, 2009; Agbloyor *et al.*, 2016; Ayanwale, 2007).

4.3.2. The GMM Estimation Technique

The econometric analysis for this study is conducted using the Generalized Method of Moments (GMM) estimator approach, which was first developed and introduced by Holtz-Eakin *et al.*, (1990) and then improved by Arellano and Bond (1991), and Arellano and Bover (1995). According to Roodman (2005), GMM is superior to other panel data methods in its design and ability to address endogeneity problems using Instrument Variables, its suitability for linear models featuring a dynamic dependent variable, and its ability to incorporate control variables with fixed effects. Levine *et al.*, (2000) also note that the GMM dynamic estimators are designed to tackle the econometric challenges that emerge from unobserved country-specific factors and the simultaneous endogeneity of independent variables in models featuring lagged dependent variables, such as in growth regressions. GMM panel estimators rely on lagged values of explanatory variables as instruments, commonly referred to as internal instruments, to avoid the endogeneity problem (Levine *et al.*, 2000).

In this study, the regressand is the Gross Domestic Product per Capita (GDPC) growth rate, while the independent variables of interest are FDI and remittances, along with a set of control factors. Thus, the dynamic GMM analysis used to investigate the impact of both FDI and remittances on economic growth (GDPC) is formulated as follows:

$$Y_{it} = \alpha Y_{i,t-1} + \beta X'_{it} + \delta Z'_{it} + \varepsilon_i \quad i = 1.., N; t = 1, \dots, T \quad (1)$$

Where: Y_{it} is the dependent variable (GDP Per Capita)

$Y_{i,t-1}$ is the lagged dependent variable (lagged GDP Per Capita)

X'_{it} is the vector of key variables of interest comprising FDI and remittances.

Z'_{it} is a range of variables that act as control factors.

$\varepsilon_i = \mu_i + \omega_{it}$, where μ_i presents the individual-specific effects and ω_{it} is the error term. ε_i is also known as the stochastic disturbance or error term.

According to Wooldridge (2010), in equation (1) above, the lagged dependent variable $Y_{i,t-1}$ is correlated to μ_i due to specific effects influencing historical values, which would violate the compatibility of the panel data techniques. Thus, this correlation makes other panel data estimators, such as Random Effects (RE) and Fixed Effects (FE), biased and unreliable. To eliminate the unobserved effects, Anderson and Hsiao (1982) propose the first differencing technique, i.e., taking the differences across various periods. To eliminate the specific effects, equation (1) becomes:

$$Y_{i,t} - Y_{i(t-1)} = \alpha(Y_{i(t-1)} - Y_{i(t-2)}) + \beta'(X_{i,t} - X_{i(t-1)}) + \delta'(Z_{i,t} - Z_{i(t-1)}) + (\varepsilon_{i,t} - \varepsilon_{i(t-1)}) \quad (2)$$

Levine *et al.*, (2000) note that the usage of instruments is necessary to address the potential endogeneity of independent variables and the issue of correlation between the new error term $\varepsilon_{i,t} - \varepsilon_{i(t-1)}$ and the lagged regressor variable $Y_{i(t-1)} - Y_{i(t-2)}$. If the vector of key variables of interest (X') and control factors (Z') are exogenous i.e., explanatory variables are assumed to be uncorrelated with the error term of the future values and the error term $\varepsilon_{i,t}$ is not autocorrelated, then according to Levine *et al.*, (2000) and Blundell and Bond (1998), the following moment conditions are applicable:

$$E[Y_{i,t-s}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ for } s \geq 2; t - 3 \dots, T, \quad (3)$$

$$E[X_{i,t-s}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ for } s \geq 2; t - 3 \dots, T, \quad (4)$$

$$E[Z_{i,t-s}(\varepsilon_{i,t} - \varepsilon_{i,t-1})] = 0 \text{ for } s \geq 2; t - 3 \dots, T \quad (5)$$

Although the difference GMM model by Arellano and Bond (1991) removes fixed effects and addresses the issue of endogeneity using moment conditions in equations 3, 4, and 5, the model, however, has a weakness in eliminating previous observations and erasing time constant variables (Arellano and Bover, 1995). In addition, difference GMM generates estimates that are biased and inefficient when the series is persistent and the period is short, i.e., $Y_{i,t}$ is persistent with $\alpha \rightarrow 1$, and t is short. Another weakness issue with the difference estimator is related to measurement error since differencing can amplify the bias caused by errors in the variables by reducing the signal-to-noise ratio (Roodman, 2009). Thus, Arellano and Bover (1995) and Blundell and Bond (1998)

introduced the systems GMM approach, which includes additional instruments to enhance the model's efficiency and reduce bias significantly. The new estimator integrates both the regression in differences and the regression in levels within a new system estimator. The additional instruments for the regression in levels are as follows:

$$E[(Y_{i,t-s} - Y_{i,t-s-1})(\mu_{i,t} + \varepsilon_{i,t})] = 0 \text{ for } s = 1 \quad (6)$$

$$E[(X_{i,t-s} - Y_{i,t-s-1})(\mu_{i,t} + \varepsilon_{i,t})] = 0 \text{ for } s = 1 \quad (7)$$

$$E[(Z_{i,t-s} - Y_{i,t-s-1})(\mu_{i,t} + \varepsilon_{i,t})] = 0 \text{ for } s = 1 \quad (8)$$

However, the instruments above are valid under an additional assumption that levels of the Right-Hand Side (RHS) variables may be correlated with the country-specific effects in Eq. (1) and that the differences in these variables are uncorrelated with the country-specific effects. The moment conditions equations, i.e., equations 3 - 8 above, use a GMM estimator procedure to obtain parameter estimates that are efficient and consistent. Roodman (2009) asserts that the system GMM is more robust when dealing with missing data and unbalanced panels than difference GMM. Berk *et al.*, (2020) note that the system GMM has advantages over Pooled Mean Groups (PMG) and Mean Groups (MG) estimators in that it is more suitable for empirical growth models with limited periods and a relatively larger number of countries. Their research further notes that system GMM is superior in addressing issues relating to the endogeneity of control variables, overcoming fixed effects, and providing more consistent and efficient parameter estimates compared to other panel data estimators. However, Levine *et al.*, (2000) note that the validity of the instruments promotes the system GMM estimators' consistency. Thus, Arellano and Bover (1995) suggest using the Sargan test to check for the instruments' validity.

In conclusion, the GMM estimation method is used in the study because of its valuable approach for examining endogenous panel macroeconomic data (Wooldridge, 2002), as it tackles essential problems like endogeneity, simultaneity, heterogeneity, autocorrelation (Levine, 2001), and its application of instrumental variables (Wooldridge, 2002). The GMM technique also offers adaptability, effectiveness, and strength, rendering it particularly appropriate for intricate macroeconomic models where conventional Ordinary Least Squares (OLS) or Fixed Effects models would struggle to produce dependable outcomes.

4.4. Empirical Specification

Based on equation (1) specified above, the relationships between FDI and remittances on economic growth can be specified as follows:

$$GDPC_{i,t} = \alpha_0 + \beta_1 GDPC_{i,(t-1)} + \beta_2 FDI_{i,t} + \beta_3 X_{i,t} + \mu_i + \varepsilon_{i,t} \quad (9)$$

$$GDPC_{i,t} = \alpha_0 + \beta_1 GDPC_{i,(t-1)} + \beta_2 REMIT_{i,t} + \beta_3 X_{i,t} + \mu_i + \varepsilon_{i,t} \quad (10)$$

$$GDPC_{i,t} = \alpha_0 + \beta_1 GDPC_{i,(t-1)} + \beta_2 FDI_{i,t} + \beta_3 REMIT_{i,t} + \beta_4 X_{i,t} + \mu_i + \varepsilon_{i,t} \quad (11)$$

$$GDPC_{i,t} = \alpha_0 + \beta_1 GDPC_{i,(t-1)} + \beta_2 (FDI * REMIT)_{i,t} + \beta_3 X_{i,t} + \mu_i + \varepsilon_{i,t} \quad (12)$$

Where $GDPC_{i,t}$ represents the annual growth rate of per capita GDP, where each country is represented by the variable i , and t denotes the year. The lagged real GDP per capita growth rate is denoted by $GDPC_{i,(t-1)}$ where the previous year is denoted by $t - 1$. The explanatory variables' coefficients are measured by β_i . α_0 represents the constant coefficient. $FDI_{i,t}$ measures the single Foreign Direct Investment (FDI) indicator, whereas $REMIT_{i,t}$ represents remittances. The interactive effects between FDI and remittances are represented by $(FDI * REMIT)_{i,t}$ and $X_{i,t}$ represents a matrix of six independent variables. The five variables represented by $X_{i,t}$ are abbreviated as follows: INVEST for Gross Fixed Capital Formation, CPI for Consumer Price Index or Inflation, CRPTN for Control of Corruption, OPEN for Trade Openness, PPGR for population growth rate, and EDU represents Human Capital Stock.

Equation 13 below calculates the long-term multiplier effects of each Right-Hand Side (RHS) variable based on its short-run effects in equations 9 to 12, accounting for the total system dynamics represented in the models (Kripfganz, 2016). The mathematical computation of the long-term effects is as follows:

$$\gamma_i = \frac{\widehat{\beta}_i}{1 - \widehat{\beta}_1} \quad (13)$$

γ_i represents the long-term multiplier effect of the i th RHS variable. $\widehat{\beta}_i$ is the estimated coefficient for the i th RHS variable from the model (i.e., the short-run effect of the i th variable). Finally, $\widehat{\beta}_1$ represents the estimated coefficient for the lagged dependent

variable (often the intercept or a baseline variable in the model). However, only statistically significant short-term RHS variables are considered

4.5. Diagnostic Tests

Diagnostic tests must be run on the model to ensure that it is usable and reliable. Thus, the system GMM estimators must be inspected for econometric problems such as multicollinearity, autocorrelation, instrument overestimation, etc. For this study, the following diagnostic tests are performed.

4.5.1. Multicollinearity

The existence of a correlation between two or more explanatory variables can cause the problem of multicollinearity, particularly when using time series data. Multicollinearity is characterized by a correlation among the independent variables (Gujarati, 2021). Therefore, for this study, a pairwise correlation is used to assess the degree and possibility of having multicollinearity in the model. If the pairwise correlation coefficients are greater than 0.8, then it suggests the potential presence of multicollinearity (Gujarati, 2001).

4.5.2. Autocorrelation

According to Baltagi and Kao (2012), autocorrelation is a persistent challenge in dynamic panel data regression analysis, and if not addressed, may lead to variable invalidity. The problem of serial correlation in dynamic panel analysis is primarily due to the presence of the lagged dependent variable. The difference regression and the system difference-level regression both examine second-order serial correlation in the differenced error term (Levine *et al.*, 2000). In system GMM, autocorrelation is deemed to exist if the second-order autocorrelation (AR 2) statistic is significantly greater than a 5% significance level.

4.5.3. Sargan and Hansen tests

According to Hansen (1982), one of the main challenges in GMM analysis is ensuring the validity of the instrument subsets and addressing potential over-identification. Arellano and Bover (1995) thus propose using the Sargan or Hansen (1982) tests. Since the Hansen test offers greater robustness than the Sargan test, this study will use the Hansen test, where a p-value greater than 5% suggests that the model is correctly specified.

4.6. Data

This study examines the effect of FDI and remittances on economic growth in the 16 SADC countries from 2010 to 2022. SADC is a regional economic bloc of countries located on the southern end of Africa. The study utilises annual secondary data publicly available at the World Bank's World Development Indicator Database and the United Nations Development Program (UNDP), which uses the UNESCO Institute for statistics and data collection. The empirical models include one dependent factor, two factors of interest, and six control factors.

4.6.1. Dependent Factor

This study's dependent variable is the GDP per capita growth rate (*GDPC*), measured as the annual percentage change in real GDP per capita. The data are sourced from the World Bank's (2024) World Development Indicators database.

4.6.2. Factors of Interest

This study uses two factors of interest. The first factor is net FDI inflows (*FDI*) as a proportion of real GDP, while the second is remittances (*REMIT*), which captures the ratio of diaspora or workers' remittance inflows compared to the country's GDP. These two factors are expected to have a positive impact on economic growth in the SADC region since FDI is expected to cover the investment-savings gap (Hammouda and Osakwe, 2008) while remittances are typically used to support education, agricultural investments, healthcare, and domestic consumption (Bracking and Sachikonye, 2008). Both the FDI and remittances data are sourced from the World Development Indicators database.

4.6.3. Control Factors

In addition to the factors mentioned above, the analysis also includes six control factors selected based on the applicable studies of Balasubramanian *et al.* (1996), Borensztein *et al.* (1998), Chami *et al.* (2003), and Pekgas (2015).

The first control factor is gross fixed capital formation (*INVEST*), which is measured as a proportion of GDP and is used to capture investment levels in the country. Ongo and Vukenkeng (2014) note that investing in capital goods is generally expected to lead to improved productivity, which in turn boosts production levels of goods and services in

the economy, ultimately fostering increased growth rates. The second factor is the consumer price index or inflation (*CPI*), which reflects price movements in the market and is used in macroeconomics to gauge the prevailing business environment, the effectiveness of monetary policies by central banks, and overall economic stability. According to Akerlof *et al.*, (2013), a low inflation rate signals the stability of policies within an economy. Thus, low and stable inflation rates encourage FDI inflows and economic growth.

The third control factor is trade openness (*OPEN*), measured as the total of imports and exports relative to GDP. According to the World Trade Organization (WTO) (2018), countries that have expanded their markets and engage more actively in the global economy enjoy higher economic growth and welfare than more closed economies. The fourth control factor is human capital stock (*EDU*), which is captured by the average enrolment ratios in secondary education. Human capital is expected to enhance productivity and foster innovation, which can amplify the growth effects of FDI and remittances (Borensztein *et al.*, 1998).

The fifth control factor is the population growth rate (*POPGR*), measured as the annual change in the population. Population growth can stimulate productivity and economic growth by providing a bigger workforce and higher consumer demand. According to Chinn and Dennison (2013), the expansion of the domestic market may also occur due to a growing population, resulting in heightened consumer demand for goods and services, thus fostering economic growth. Conversely, population growth can negatively impact economic growth, particularly when infrastructure and available resources can no longer match the rate of demographic growth.

Control of corruption (CRPTN) is the final control factor. According to Kaufmann (2010), control of corruption indicates how public authority is viewed regarding its use for personal benefit and includes both minor and major corruption as well as “capturing” of the state by the elites. The control of corruption estimate gives the value of that composite indicator for the country, expressed in standard deviation units, going from around -2.5 to 2.5, and 2.5 reflecting the least corrupt (Kaufmann, 2010). High-level corruption deters international investments and FDI, impacting the economy negatively. According to Gossel (2018), the prevalence of corruption is a key factor preventing most SSA

economies, including countries from the SADC region, from reaching their long-term development targets set in the Sustainable Development Goals. Thus, managing corruption is essential to attract FDI and encourage economic growth.

The data for control factors were obtained from the World Bank's (2024) World Development Indicators database, except for data for human capital stock, which is sourced from SADC's macro-indicators and UNDP, which uses the UNESCO Institute for Statistics and data collection.

4.7. Data Analysis

Descriptive statistics are first applied to the data, after which the difference-GMM and system GMM panel data regression models are employed for further analysis. Before running the panel data regression models, the data are evaluated for the linear regression assumptions of normality of multicollinearity using the pairwise correlation test. The variables in the models are not logged because all the variables are ratios or percentages, except for the "control of corruption" variable. Using percentages helps when working with a panel of countries because percentages overcome differences in the scale of variables, thus allowing for fairer comparisons. Lag limits are used in the model to avoid a proliferation of instruments, given the relatively small panel size of the SADC countries.

4.8. Limitations of the Study

The study encountered two primary limitations in evaluating the effect of FDI and remittances on economic growth within the SADC region. Firstly, the study period is shortened because of insufficient data availability in certain SADC countries. Additionally, the remittances may be underreported, especially in countries with significant informal financial channels (e.g., money carried by travelers across borders). Thus, this could lead to inaccurate estimations of their true economic impact.

Chapter 5: Discussion of Findings

5.1 Introduction

This chapter presents the findings of the empirical analysis, starting with pre-diagnostic checks, such as descriptive statistics and correlation matrices, before delving into the post-estimation diagnostic checks. Thereafter, the difference and system GMM results are evaluated and discussed in relation to the relevant literature.

5.2 Descriptive Statistics

Table 5.1 summarises each variable's mean, standard deviation, maximum, and minimum measures, showing each variable's central tendency, dispersion, and range. The real GDP per capita growth rate averaged 1.302% with a standard deviation of 4.183% between 2013 and 2022 in the SADC region. According to the World Bank's (2024) development indicators, other regional groupings in SSA, such as ECOWAS and the East African Community, experienced higher GDP per capita growth rates of 2% and 1.521%, respectively, during the same period. The GDP per capita growth rate also indicates a substantial level of variation in the economic performance of member states, ranging from -14.549% for Mauritius in 2020 to 19.508% for Zimbabwe in 2010. On average, the region receives 4.134% of its GDP from foreign direct investment (FDI), with a variation of 7.503%, fluctuating between - 10.038% of GDP for Angola in 2017 and 56.288% for Seychelles in 2012. Between 2010 and 2022, on average, Mozambique received 23.691% of its GDP in FDI, the highest among SADC countries, with Seychelles following at 13.472%. In contrast, Comoros received the lowest, at just 0.7% of its GDP. However, South Africa accounted for the largest portion of total FDI inflows in the region over the period.

The region also receives, on average, 3.757% of its GDP as remittances, with a standard deviation of 6.064%. Remittance (REMIT) values range from 0.0 for Comoros in 2013 to 27.302% for Lesotho in 2010 relative to the region's GDP. The lower volatility and range for remittances compared to the region's FDI may be because a significant portion of remittances originates mainly in more stable developed countries.

The descriptive statistics of some control variables indicate that the region could be on a development path, with trade (OPEN) accounting for an average value of 85.659% of GDP and gross fixed capital formation (INVEST) at 22.298% relative to GDP. However, signs of

political and economic policy instability in the region are noticeable, as indicated by a high average inflation rate of 11.866%, which is well outside the regional target range of 3% to 7% (SADC, 2021), with a maximum value of 557.202% for Zimbabwe. In addition, the average for control of corruption is -0.385, indicating a prevalence of corruption in the SADC region.

Table 5.1: Descriptive Statistics

<i>Variable</i>	<i>Obs</i>	<i>Mean</i>	<i>Std. dev.</i>	<i>Min</i>	<i>Max</i>
<i>GDPC</i>	208	1.302	4.183	-14.549	19.508
<i>CRPT</i>	208	-0.385	0.723	-1.593	1.699
<i>EDU</i>	208	46.097	23.646	3.032	99.4
<i>FDI</i>	208	4.134	7.503	-10.038	56.288
<i>CPI</i>	208	11.866	43.176	-4.826	557.202
<i>INVST</i>	201	22.298	8.219	3.327	42.820
<i>OPEN</i>	205	85.659	39.433	17.225	222.178
<i>REMIT</i>	208	3.757	6.065	0	27.302
<i>PPGR</i>	208	2.091	1.067	-2.629	3.888

GDPC = Per Capita GDP growth rate, CRPT = Control of Corruption, EDU = Human Capital Stock, FDI = Foreign Direct Investment, INVST = Gross Fixed Capital Formation, CPI = Inflation, REMIT = Remittance, OPEN = Openness of Trade, PPGR = Population Growth Rate.
Source: Authors' compilation using STATA 18.5.

5.3 Correlation Results

A pair-wise correlation matrix is employed to check for multicollinearity among variables. Table 5.2 below indicates that none of the pairwise correlation coefficients exceed 0.8, and thus, there is no significant evidence of multicollinearity. The pairwise correlation value of FDI and remittances (key independent variables in the study) is -0.125. Although FDI and remittances do not show any significant correlation, the GMM analysis takes a cautious approach by modelling these two factors first separately and then jointly.

Table 5.2 Pairwise Correlation Matrix Results

<i>Variable</i>	<i>GDPC</i>	<i>CRPT</i>	<i>EDU</i>	<i>FDI</i>	<i>CPI</i>	<i>INVST</i>	<i>OPEN</i>	<i>REMIT</i>	<i>PPGR</i>
<i>GDPC</i>	1.000								
<i>CRPT</i>	0.028	1.000							
<i>EDU</i>	-0.040	0.503	1.000						
<i>FDI</i>	0.174	0.114	0	1.000					
<i>CPI</i>	-0.219	-0.188	0.165	-0.066	1.000				
<i>INVST</i>	0.111	0.195	-0.186	0.298	-0.156	1.000			
<i>OPEN</i>	0.156	0.612	0.452	0.382	-0.117	0.283	1.000		
<i>REMIT</i>	0.002	-0.154	-0.163	-0.125	0.030	-0.117	0.122	1.000	
<i>PPGR</i>	-0.136	-0.546	-0.526	0.064	0.016	0.289	-0.417	-0.257	1.000

GDPC = Per Capita GDP growth rate, CRPT = Control of Corruption, EDU = Human Capital Stock, FDI = Foreign Direct Investment, INVST = Gross Fixed Capital Formation, CPI = Inflation, REMIT = Remittance, OPEN = Openness of Trade, PPGR = Population Growth Rate.

Source: Authors' compilation using STATA 18.5.

5.4 Serial Correlation and the Hansen Test Results

The Arellano and Bond AR (2) is used to check for serial correlation of the GMM estimates, and the Hansen test is used to evaluate for over-identification and instrument validity. Table 5.3 below indicates that the empirical models used in the study are not affected by serial correlation and over-identification. Thus, the instruments are valid, and the models are appropriately identified.

According to Arellano and Bover (1995), a p-value of greater than 5%, when using the Hansen test, suggests that the model is correctly specified, while second-order autocorrelation AR (2) values higher than the 5% significance level indicate that the model does not suffer from serial correlation. As can be seen from Table 5.3 below, both these conditions have been met.

Table 5.3: Results of Diagnostic Tests

	<i>Difference GMM</i>			<i>System GMM</i>		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
<i>AR (2)</i>	0.417	0.456	0.454	0.864	0.896	0.887
<i>Hansen Test</i>	0.977	0.986	0.989	0.645	0.462	0.483

Source: Author's calculations using Stata 18.5.

5.5 Estimation of Results

Table 5.4 below presents the findings of the one-step system GMM and one-step difference GMM dynamic panel data estimations, which investigated the extent to which FDI and remittances impact GDP per capita growth (*GDPC*). The findings indicate that remittances (*REMIT*) are statistically significant in all models but with negative coefficients, thus suggesting that remittances have a negative impact on GDP per capita growth. Using the system GMM, which is more robust, the lone effects of remittances indicate that, holding other variables constant, a 1% increase in remittances reduces the region's GDP per capita by 0.251%. This could arise if the remittance flows to the SADC region are used mainly for consumption purposes rather than for investment in productive activities (De Haas, 2007). Hence, this result suggests that remittances to SADC align with the remittance development pessimists (such as Chami *et al.*, 2003). However, the study's results contradict Mbulawa's (2017) study, which identifies a positive correlation between GDPC and remittances in 12 SADC countries. The difference could be attributed to variations in the variables used, sample size, and the timeline considered.

Conversely, Foreign Direct Investment (*FDI*) is statistically insignificant in explaining the variation of GDP per capita growth using both estimation approaches. Thus, FDI inflows to the region do not have a noteworthy impact on SADC's GDP per capita growth. This accords with Odhiambo and Mahembe (2016), who report unidirectional causality running from GDP to FDI in the region's middle-income countries but no causality in the region's low-income countries, suggesting that the FDI-led growth hypothesis does not apply to the countries in the SADC region. Possible reasons for this include poor infrastructure development, high levels of corruption, weak financial systems, and political instability (Mlambo, 2005; Agbloyor, 2016; Gossel, 2018).

Regarding the control variables, inflation (*CPI*) and population growth rate (*PPGR*) are both highly statistically significant but have negative coefficients across all models and estimation techniques. These negative coefficients are not unexpected as they reflect SADC's periodic economic instability and youthful population. However, the population growth rate (*PPGR*) shows that, *ceteris paribus*, a 1% increase in population growth reduces GDP per capita by 2.13%, thus suggesting that SADC will not reap the benefits of the youth bulge and may face heightened instability instead (Al-Jabri *et al.*, 2022).

Human capital (*EDU*) is statistically insignificant in the difference GMM estimations but weakly significant and negative in the system GMM estimations. According to Arellano and Bover (1995), system GMM is more robust than difference GMM, and thus, *EDU* is deemed to be statistically significant. However, these weak coefficients may be because the beneficial effects of human capital on economic growth are dependent on the quality of education (Casselli *et al.*, 1996; Pritchett, 1996) and skills matches (Sutherland and Hoeller, 2012), both of which are problematic in SADC. In contrast, trade openness (*OPEN*) is statistically significant with positive coefficients in models 2 and 3, which suggests that SADC adheres to the export-led growth hypothesis following Gossel and Biekpe's (2014) findings. Their results indicate that South Africa, the largest economy in the SADC region, is more correlated with export-led growth rather than import-led growth.

The lag of GDP per capita (*GDPC L1*) is statistically insignificant across the estimations, indicating that the previous year's GDP per capita does not influence per capita growth. This aligns with Solow's (1956) original economic growth model, which argues that poorer countries with lower initial GDP levels should benefit from capital deepening and technological adoption, leading to faster contemporaneous growth.

The finding that the gross fixed capital formation (*INVST*) coefficients are statistically insignificant across the estimations suggests that SADC's fixed investment has not yet reached a level sufficient to boost GDP per capita growth. According to Barro (1991), this may be an outcome of the region's weak institutions, corruption, political instability, and inefficient bureaucracies, which hinder fixed investment.

However, the finding that control of corruption (*CRPT*) is statistically insignificant across all estimations suggests that corruption is either pervasive or inadequately managed.

According to Gossel (2018), corruption in SSA has been recognized as a key factor preventing many countries in the region from achieving their goals, exacerbating ethnic violence, hindering poverty reduction and economic growth, and intensifying political instability.

Table 5.4: Generalised Method of Moments Results

<i>Variable</i>	<i>Difference GMM</i>			<i>System GMM</i>		
	<i>Model 1</i>	<i>Model 2</i>	<i>Model 3</i>	<i>Model1</i>	<i>Model2</i>	<i>Model3</i>
<i>GDPC L.1</i>	0.049 (0.0990)	0.051 (0.107)	0.055 (0.103)	0.130 (0.110)	0.128 (0.114)	0.135 (0.113)
<i>CRPT</i>	2.961 (4.59)	3.150 (4.569)	3.122 (4.549)	-0.106 (1.788)	-1.434 (1.326)	-1.458 (1.330)
<i>EDU</i>	-0.034 (0.103)	-0.04 (0.092)	0.036 (0.102)	-0.157** (0.073)	-0.133* (0.072)	-0.135* (0.073)
<i>CPI</i>	-0.027*** (.001)	-0.027*** (0.001)	-0.027*** (0.001)	-0.013** (0.006)	-0.015*** (0.005)	-0.015** (0.005)
<i>INVST</i>	0.002 (0.13)	0.001 (0.123)	0.0002 -0.128	-0.028 (0.071)	-0.011 (0.065)	-0.01 (0.065)
<i>OPEN</i>	0.145** (0.015)	0.150*** (0.045)	0.152*** (0.05)	0.043 (0.034)	0.049* (0.023)	0.051* (0.280)
<i>PPGR</i>	-2.445*** (0.539)	-2.561*** (0.535)	-2.476*** (0.547)	-1.670*** (0.548)	-2.135*** (0.532)	-2.133*** (0.513)
<i>FDI</i>	-0.012 (0.054)		-0.016 -0.054	-0.001 (0.063)		-0.019 (0.058)
<i>REMIT</i>		-0.222* (0.101)	-0.225** (0.103)		-0.245* (0.134)	-0.251* (0.140)
<i>AR (2)</i>	0.417	0.456	0.454	0.864	0.896	0.887
<i>Hansen Test</i>	0.977	0.986	0.989	0.645	0.642	0.483
<i>Instruments</i>	10	10	11	13	13	14
<i>F-Statistics</i>	418.6***	477***	205***	127.31***	137.5***	205***
<i>Observations</i>	170	170	170	186	186	186

Source: Author's calculations using Stata 18.5. ***Significant at 1%, **significant at 5%, and* significant at 10%. Standard errors are shown in parentheses.

Table 5.5 below summarises the results of incorporating an interaction ($FDI*REMIT$) between FDI and remittances ($REMIT$) in the GMM analyses. The interactive term ($FDI*REMIT$) is statistically significant and has a negative coefficient, coupled with an insignificant coefficient of FDI in model 4 using system GMM estimates. This suggests that the impact of FDI on GDP per capita in the SADC region becomes more negative and insignificant when remittance flows to the region are high. Amuedo-Dorantes and Pozzo (2014) note that remittance inflows often generate inflationary pressures and lead to real exchange rate appreciation by increasing domestic demand for non-tradable goods and services. Thus, this undermines competitiveness in export-oriented sectors where FDI typically invests. In SADC, such currency appreciation could offset FDI's productivity boost, making FDI less effective when remittances are high.

Thus, the positive effect of FDI on growth is weakened when remittances rise, suggesting a substitution effect. This aligns with Chami *et al.* (2003), who argue that remittances may crowd out FDI by providing an alternative source of capital for both consumption and investment. Ratha (2003) further posits that countries that receive high remittance inflows may have a diminishing need for external foreign investment since remittances offer a stable source of financing.

Table 5.5 Interaction Results

<i>Variable</i>	<i>Difference GMM</i>			<i>System GMM</i>		
	<i>Model 4</i>	<i>Model 5</i>	<i>Model 6</i>	<i>Model 4</i>	<i>Model 5</i>	<i>Model 6</i>
<i>DDPC</i>	0.050	0.053	0.051	0.130	0.135	0.135
<i>L.1</i>	(0.100)	(0.107)	(0.103)	(0.112)	(0.113)	(0.114)
<i>CRPT</i>	2.953	3.128	3.127	-0.673	-1.150	-1.510
	(4.617)	(4.547)	(4.558)	(1.655)	(1.342)	(1.346)
<i>EDU</i>	0.027	0.035	0.036	0.156**	-0.135*	-0.135*
	(0.101)	(0.102)	(0.100)	(0.073)	(0.073)	(0.073)
<i>CPI</i>	-0.027***	-0.027***	-0.027***	-0.014**	-0.015***	-0.015**
	(0.001)	(0.001)	(0.001)	(0.006)	(0.005)	(0.005)
<i>INVST</i>	-0.002	-0.0004	-0.0002	-0.022	-0.09	-0.009
	(0.125)	(0.126)	(0.124)	(0.069)	(0.066)	(0.065)
<i>OPEN</i>	0.145**	0.150***	0.152***	0.051	0.053*	0.053*
	(0.051)	(0.046)	(0.051)	(0.031)	(0.025)	(0.027)
<i>FDI</i>	0.008		-0.013	0.072		0.004
	(0.086)		(0.101)	(0.081)		(0.006)
<i>REMIT</i>		-0.215**	-0.225*		-0.229	-0.227
		(0.101)	(0.108)		(0.133)	(0.148)
<i>PPGR</i>	-2.451***	-2.523***	-2.477***	-1.865***	-2.130***	-2.136***
	(0.553)	(0.504)	(0.554)	(0.535)	(0.527)	(0.520)
<i>FDIREMIT</i>	-0.013	-0.005	-0.00001	-0.060*	-0.016	-0.017
	(0.030)	(0.017)	(0.030)	(0.031)	(0.015)	(0.140)
<i>AR (2)</i>	0.434	0.463	0.453	0.951	0.917	0.915
<i>Hansen Test</i>	0.976	0.989	0.988	0.684	0.505	0.501
<i>Instruments</i>	11	11	12	14	14	15
<i>F-statistic</i>	407.76***	406.4***	426.83***	181.34***	163.71***	185.92***
<i>Observations</i>	170	170	170	186	186	186

Source: Author's calculations using Stata 18.5. ***Significant at 1%, **significant at 5%, and* significant at 10%. Standard errors are shown in parentheses.

Table 5.6 below presents the long-term multiplier effects using system GMM based on the post-estimation ratios shown in Chapter 3. Only statistically significant variables in models 1 to 6 using system GMM are considered. The insignificant short-term independent variables are excluded since they demonstrate no significant relationships with the dependent variable, and including insignificant short-term variables to estimate long-term relationships may potentially bias the results.

Table 5.6 indicates that the interactive term (FDI*REMIT) is only significant in one model (Model 4), and only at the 10% level. However, the negative coefficient of the interactive term suggests that remittances and FDI act as substitutes rather than complementary in the long run, which is similar to the short-term effects presented in Table 5.5. Regarding the control factors, the coefficients of inflation (CPI) and human capital stock (Edu) remain statistically significant and negative in the long term. However, the coefficients of human capital stock slightly worsen in the long run compared to the short run as indicated in models 1 to 3 (for example, the short-run coefficient in Model 3 is -0.135 while the long-run coefficient is -0.156), which suggests that human capital stock's negative effect on GDP per capita growth increases in the long run. In contrast, the results of the population growth rate (PPGR) and trade openness are relatively unchanged. This indicates that the SADC region will persist in encountering the issue of not incorporating the increasing human capital into the regional economy over the long term; nonetheless, the region will keep gaining benefits from trade openness in the long term, similar to what it experiences in the short term.

Table 5.6: Long-run Estimates

System GMM long-term estimates.						
Variable	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
EDU	-0.81** (0.08)	-0.152** (0.075)	-0.156** (0.079)	-0.179** (0.080)	-0.156** (0.079)	-0.156** (0.079)
CPI	-0.015* (0.008)	-0.017** (0.007)	-0.173** (0.007)	-0.016** (0.008)	-0.017** (0.007)	-0.017** (0.007)
OPEN		0.056** (0.025)	0.059* (0.031)		0.061** (0.028)	0.061** (0.031)
PPGR	-1.939*** (0.753)	-2.44*** (0.736)	-2.133*** (0.513)	-2.145*** (0.774)	-2.463*** (0.756)	-2.469*** (0.758)
REMIT		-0.281* (0.145)	-0.251* (0.140)			
FDI*REMIT				-0.069* (0.036)		

Source: Author's calculations using Stata 18.5. ***Significant at 1%, **significant at 5%, and * significant at 10%. Standard errors are shown in parentheses.

CHAPTER 6: CONCLUSION & RECOMMENDATIONS

6.1 Introduction

This chapter presents the study's summary and conclusions. It also delves into policy recommendations supported by the study's results. Finally, a brief discussion of potential future research areas is included.

6.2 Summary and Conclusions

This study employs GMM estimation techniques to investigate the association between foreign direct investment (FDI), remittances, and GDP per capita growth. It also assesses the complementarity or substitutivity between FDI and remittances as sources of financing for per capita economic growth in the SADC region between 2010 and 2022. The long-term effects of FDI and remittances on growth are also assessed.

The empirical analyses provide the following insights into the three research questions discussed in Chapter 1:

i. Does FDI and/or remittances positively affect economic growth in SADC countries?

The results show that the impact of FDI on GDP per capita growth in the SADC region is insignificant, while remittances hinder GDP per capita growth in the region. Further analysis to specifically estimate the lone impact of remittances on GDP per capita growth suggests that, in accordance with the literature, remittances reduce long-run GDP per capita. The results further indicate that remittances have similar effects on SADC's per capita GDP growth in the short and long run. Hence, FDI does not impact GDP per capita growth in a significant manner, while remittances continue to harm growth in the long term.

ii. Does FDI and remittances jointly influence economic growth in the SADC region?

The empirical analysis finds that the coefficient of FDI is not statistically significant, while remittances are significant but have a negative coefficient, suggesting that money transfers are a more relevant driver of GDP per capita growth than FDI in the region. However, the negative coefficient of remittances indicates that these flows harm economic development, which may be because SADC is more reliant on remittances than on FDI, and this could create inflationary pressures (Amuedo-Dorantes and Pozzo, 2014) or contribute to a dependence on external sources rather than fostering sustainable growth (De Haas, 2007).

iii. *Does the interaction between FDI and economic growth outweigh the interactive effect of remittances?*

The inclusion of an interactive term finds that when FDI and remittances are both considered together, the positive effect of FDI is weakened or reversed by remittances (Ratha, 2003), and the negative coefficient may also indicate a substitutionary rather than complementary effect in accordance with Chami *et al.*, (2003).

6.3 Policy Recommendations

The SADC region requires comprehensive and concise solutions to advance the growth of the regional economy. Given the study's results, it can be recommended that special attention should be given to all sources of foreign currency, such as remittances, foreign portfolio investments, and international private capital in the form of FDI and ODA. These foreign currency sources play a significant role in boosting the performance of industries within the region, household income, and consumption patterns, thus impacting the regional economy positively.

However, the results of this study indicate that FDI has not had a significant impact on the regional economy between 2010 and 2022. Thus, policymakers in the region need to consider implementing measures that will mitigate the impediments of FDI to SADC countries, such as wider infrastructural development, deeper institutional reforms, addressing macroeconomic policy uncertainties, and improving political stability. As for remittances, member countries need to reduce transactional costs (especially in remittance net outflow countries such as South Africa, as this would improve the volumes of formal money transfers to South Africa's neighbouring countries that rely on remittances). The use of formal transfers will also allow remittance-receiving countries to have clear records of money received, enabling policymakers to create a strong institutional framework to direct remittances toward more productive uses.

6.4 Research Area for Future Studies

This study mainly focused on the effects of FDI and remittances on GDP per capita growth in the SADC region. However, to get an in-depth understanding of how FDI and remittances have impacted the economies of specific countries within the SADC region, further research on individual countries can be conducted to assess the impact of these two factors. This is because FDI and remittances may hurt the regional economy in the study, but their impact on a country-specific basis could be different. The study also

recommends further investigation through a comparative analysis of FDI or remittances and other external sources of financing, such as official development assistance (ODA), and foreign portfolio investment, in driving GDP per capita growth. The research could similarly be conducted on a country-specific basis or for a panel of countries.

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