



University of Fort Hare

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**FINANCIAL SECTOR DEVELOPMENT AND SOURCES OF ECONOMIC GROWTH  
IN THE SOUTHERN AFRICAN DEVELOPMENT COMMUNITY REGION**

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## **ABSTRACT**

The importance of financial sector development to the economy cannot be underestimated. However, the majority of the countries in the Southern African Development Community (SADC) region have low levels of financial sector development. It is against this background that the study sought to investigate the effect of financial sector development on sources of growth in the region, utilising the Generalised Method of Moments (GMM) technique for the period from 2011 to 2021.

Based on the available literature, which indicates that the major sources of growth in which financial sector development influences economic growth are total factor productivity and domestic investment, two models were estimated. The first model looked at the effect of financial sector development on total factor productivity. The empirical results revealed that when the financial sector is measured by domestic credit to the private sector, it has a positive effect on growth. However, when it is measured by the Z-score, representing stability, it was found to have a negative effect on growth. The same result was also obtained on the second model in which the source of growth was measured by domestic investment.

The results from the study do highlight that there is a conflict between the growth of the financial sector and stability. This therefore suggests that authorities in their pursuit of growing the sector should also be cognisant of the importance of the stability of the sector.

**Keywords:** Domestic investment; Economic growth; Financial sector development; Generalised Methods of Moments; Southern African Development Community; Total factor productivity.

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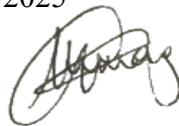


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## **DEDICATION**

This research is dedicated to the loving memory of my beloved mother, Magadla Buzani, whose spirit continues to encourage me every day. Though she departed this world years ago, I am still inspired by her love and the sacrifices she made, which motivates me to push for what I believe in and my goals and constantly reminds me of the magnitude of perseverance.

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## LIST OF ACRONYMS

|        |                                                       |
|--------|-------------------------------------------------------|
| ADB    | African Development Bank                              |
| ARDL   | Auto-Regressive Distributed Lag                       |
| ASEAN  | Association of Southeast Asian Nations                |
| DCP    | Domestic Credit to Private Sector                     |
| DEA    | Data Envelopment Analysis                             |
| DGMM   | Difference Generalised Method of Moments              |
| DI     | Domestic Investment                                   |
| EAC    | East African Community                                |
| ECOWAS | Economic Community of West African States             |
| FDI    | Financial Development Index                           |
| GCF    | Gross Capital Formation                               |
| GDP    | Gross Domestic Product                                |
| GFDD   | Global Financial Development Data                     |
| GMM    | Generalized Method of Moments                         |
| GMM-IV | Generalized Method of Moments- Instrumental Variables |
| GOVEXP | Government Final Consumption Expenditure              |
| IFREC  | Inter-Faculty Research Ethics Committee               |
| IMF    | International Monetary Fund                           |
| MLE    | Maximum Likelihood Estimation                         |
| OLS    | Ordinal Least Squares                                 |

|       |                                                                        |
|-------|------------------------------------------------------------------------|
| PCD   | Private Credit by Deposit Money Banks and Other Financial Institutions |
| PPE   | Property, Plant and Equipment                                          |
| PWT   | Penn World Table                                                       |
| R&D   | Research and Development                                               |
| SADC  | Southern African Development Community                                 |
| SADCC | Southern African Development Coordination Conference                   |
| SGMM  | System Generalized Method of Moments                                   |
| TFP   | Total Factor Productivity                                              |
| UREC  | University of Fort Hare Research Ethics Committee                      |
| VAR   | Vector Autoregression                                                  |
| VECM  | Vector Error Correction Model                                          |

# CHAPTER ONE

## Introduction and background of the study

### 1.1 Introduction

The effect of financial sector development on economic growth has become an area of interest globally as evidenced by several studies (Biplob & Halder, 2018; Sobiech, 2019; Okaro, Ogbonna, Uzundu, & Adoms, 2019; Pradhan, Arvin, & Hall, 2019; Guru & Yadav, 2019; Taddese & Abebaw, 2021). Generally, these studies indicate that a well-developed and functioning financial sector is a backbone for stable economic growth as it mobilises and allocates capital to the productive sectors of the economy. Acquah and Ibrahim (2020) define financial sector development as a growth process, evolution, and improvements of the financial system, institutions, and services that promote financial support and stimulate growth. It comprises components such as financial institutions, financial markets, banks, and stock exchanges, as well as regulatory frameworks that support the mobility of finance to boost economic growth. Financial sector development includes various dimensions of finance, such as depth, efficiency, stability, openness, and accessibility.

Chirwa and Odhiambo (2017) highlight that financial sector development influences economic growth by facilitating the mobilisation of savings and better resource allocation to boost investment, production, and competitiveness. This has been supported by a number of studies (Muyambiri & Odhiambo, 2018; Iheonu, Asongu, Odo & Ojiem, 2020; Li & Liao, 2020; Munusamy & Rajamoorthy, 2020; Hong Vo, Tran, & Nguyen, 2021; Zoaka & Güngör, 2023). These studies suggest that financial sector development impacts growth through total factor productivity and domestic investment.

The seminal work of Greenwood and Javanovic (1990) highlights that a well-developed financial sector may promote total factor productivity as it overcomes the challenges of adverse selection and moral hazard problems emanating from asymmetric information. In this regard, funds can be efficiently allocated to the productive sectors of the economy to enhance production, thus boosting economic growth. Similarly, Buera, Kaboski, and Shin (2011) discussed that financial sector development reduces economic friction, promoting productivity through efficient improvement

and technological innovations. Levine et al. (2000) also discuss the crucial role of the financial sector in the growth process through its ability to raise savings rates and attract foreign capital. According to this view, financial sector development contributes to capital accumulation within the domestic economy. Saleem and Zaheer (2018) define domestic investment as total spending on new projects in the country's economic activities, such as infrastructure development and construction projects, that stimulate economic development. Domestic investment is an important factor explaining how the country's economy performs. According to Ben Yedder, El Weriemmi, and Bakari (2023), domestic investment contributes to the economy by generating employment opportunities, stimulating household living conditions and capital stock, and allowing for new technological innovations to increase the production process in the manufacturing sector. This leads to sustained growth over time.

Studies, such as Odhiambo (2010) and Jalilian, Kirkpatrick, and Parker (2007) have indicated the importance of developing financial system on investment, highlighting that it promotes investment by providing financial resources to domestic enterprises, allowing them to acquire new equipment and utilise the most innovative technologies for production and easing credit constraints. Moreover, a developed financial sector can attract foreign direct investment to a country, creating a backward linkage within the economy. This argument is also supported by various theories, such as the endogenous growth theory, the Schumpeterian (1911), and the McKinnon-Shaw model (1973).

It is also important to note that studies such as Cecchetti and Karroubi (2012), Beck, Büyükkarabacak, and Valev (2012), and Naceur, Blotevogel, Fischer, and Shi (2017) highlight that financial sector development should not be viewed as a 'magic bullet' which can result to high levels of growth by itself. These studies highlight that the influence of finance on economic growth is up to a point, between 90% and 100% of GDP. When it exceeds that, the effect becomes negative. This has come to be known as the “vanishing effect of financial development” on economic growth. Beck et al. (2012) also argue that the vanishing effect could be attributed to the increase in the share of household loans to the detriment of loanable funds allocated to firms. In defining total factor productivity, Aswathy (2017) refers to total factor productivity as the measure of efficient resource allocation, such as inputs used to produce outputs. According to Levine, Loayza, and Beck (2000), total factor productivity and domestic investment are the major sources of

economic growth. Since these authors have indicated that financial sector development alters the path for economic growth to take place, this means that the mobility and allocation of funds to the productive sectors of the economy is a major determinant of economic growth.

The country's level of development has also emerged as a very important aspect in determining the extent to which the financial sector promotes the growth process within the domestic economy. Rioja and Valev (2004) indicate that a well-developed and efficient financial sector contributes to economic development and growth in less-developed economies through its effect on capital accumulation and through productivity growth in middle to high-income economies. This is particularly important to the Southern African Development region, composed of countries at different levels of development. Despite huge differences, the region has been pushing towards developing the financial sector, even though the majority of the countries have shallow and illiquid systems. Therefore, the study examines the extent to which the developed financial sector impacts productivity and investment, which are considered to be the sources of growth in the Southern African Development Community (SADC) region.

## **1.2 Problem Statement**

Financial sector development is one of the most critical areas of discussion at the macroeconomic level. Its effect on growth and development cannot be overlooked as it facilitates savings and capital inflow and promotes productivity and investment. The level at which the financial sector influences economic growth has been largely discussed in the literature (Sekakela, 2018; Biplob & Halder, 2018; Guru & Yadav, 2019; Acquah & Ibrahim, 2020; Ararso, 2021). However, only a few empirical studies have focused on how financial sector development affects the sources of economic growth, which are total factor productivity and domestic investment in this case. Ben Yedder et al. (2023) indicate that domestic investment is a central factor of economic development. It allows for infrastructure development and new projects that require labor, thus creating jobs, improving living standards, and increasing firm productivity, stimulating economic growth. According to Erken, Donselaar, and Thurik (2018), total factor productivity has much to do with efficient use of scarce resources to promote economic growth.

However, looking at the two sources of growth which the study is focusing on in the SADC region, Gona, Gona, Ballout, Rao, Kimokoti, Mapoma, and Mokdad (2020) observed that countries in the

SADC region are at different levels of development, where there are some countries growing faster than others. Generally, a high level of total productivity factor indicates the efficient use of resources within the economy, which may suggest that production costs have decreased. Looking at total factor productivity in the region, countries like South Africa had a TFP of 1.339 in the 1980s; however, it has been on a downward trend. As of 2019, it stood at 0.9658, indicating a substantial decrease in productivity (SADC report, 2021).

The same trend can be observed for Botswana, which had a maximum value of 1.8351 in 1990 and continuously decreased to 0.9753 as of 2019. The same trends can also be observed in other countries in the region, indicating a similar trend among the members. Overall, Mufandaedza (2021) highlights that total factor productivity in the region has been very low. It has been trending below one (1) and mostly goes above one on a 0.05% average as per Mufandaedza (2021). Other productive sectors, such as agriculture in the region, have declined by over 30% in recent years, indicating high production costs in the region (Lipper & Benton, 2020). This points to a concerning pattern of declining productivity, which has negative implications to economic growth.

The SADC report (2021) highlights that domestic investment as a percentage of GDP stood at 21.8% as of 2011, reaching its peak of 23.9% in 2015. As of 2020, it stood at 18.5%. This illustrates that the region experienced a boom between 2011 and 2015. However, this moment was lost as the domestic investment levels began to fall. In terms of foreign investment as a percentage of GDP, in 2011, it stood at 2.4, reaching its maximum of 3.0 in 2014, and has been on a downward trend, averaging 1.0% (SADC report, 2021). The same trend was also observed in terms of portfolio investment, which was -2.2%, reaching its maximum value of 0.8% in 2017. Other investments, on the other hand, ranged between 0.5 and 0.6 from 2011 to 2020. This, in essence, suggests a significant investment deficit in the region, which has implications for the region's growth and exacerbates various socioeconomic factors such as inequality, in the region.

The financial sector has emerged as a very important component for growth, and the SADC region has been trying to develop this component for the benefit of the region's economy. Measures and proposals have been put in place to develop both the banking and the non-banking sectors and financial markets, aiming to create the whole financial sector in the region. These measures included the Protocol on Finance and Investment in 2006, whose focus is on expanding capital markets through rationalizing the regulation of the stock exchanges in the region (Manko & Feris,

2022). The region also formed a committee of SADC stock exchanges in 1997 to ensure that stock exchanges develop among members. A committee of insurance, securities, and non-banking financial authorities, which focused on developing the non-banking financial sector, aimed to promote financial development and ensure regional integration.

However, despite all these measures, the extent of development within the financial sector remains shallow, with huge disparities between countries. The region is still facing challenges in its financial system, with constrained access to credit and insufficient financial resources. As of 2011, domestic credit to the private sector, as one of the essential measures of development in the financial sector, stood at 49.1%, with region members like South Africa (66.6%), Namibia (51.3%), and Mauritius (94.1). The same trend has continued, with countries such as Angola (11.5), Malawi (13.6), and Zimbabwe (5.9) becoming worse off than they were in 1990 (SADC, 2021). Low levels of financial sector development have implications for capital accumulation within the domestic economy and total factor productivity. It is also important to note that the majority of the available studies on growth have largely looked at finance and growth, not taking into account the channels through which finance may promote economic growth. Given that the region is not doing well in all these factors, this study examined the extent to which the financial sector affects total factor productivity as well as domestic investment in the SADC region.

### **1.3 Research objectives**

The main objective of this study is to examine the effect of financial sector development on sources of growth, which have been identified as total factor productivity and domestic investment in the SADC region. In quest of this, further sub-objectives developed include:

- Providing an overview of financial sector development and the two sources of economic growth, which are total factor productivity and investment (capital stock) in the SADC region.
- Empirically examine the impact of financial sector development on total factor productivity in the SADC region.
- Empirically examine the impact of financial sector development on domestic investment in the SADC region.
- Generate recommended policies based on the empirical results of the study.

## **1.4 Hypothesis Testing**

The study formulates the following two hypotheses:

### **1.4.1 Hypothesis one:**

- $H_0$ : Financial sector development does not have a significant impact on total factor productivity in the SADC region.
- $H_1$ : Financial sector development does have a significant impact on total factor productivity in the SADC region.

### **1.4.2 Hypothesis two:**

- $H_0$ : Financial sector development does not have a significant impact on domestic investment in the SADC region.
- $H_1$ : Financial sector development does have a significant impact on domestic investment in the SADC region.

## **1.5 Justification of the study**

The previous studies on finance and growth have mainly focused on how finance affects economic growth, particularly looking at GDP and the different dimensions of financial sector development (Puatwoe & Piabuo, 2017; Sekakela, 2018; Moyo & Le Roux, 2021; Musakwa & Odhiambo, 2022). The study differs in that it examines how financial sector development affects growth through focusing on the sources of growth, which are total factor productivity and domestic investment in the SADC region. This makes the study distinct, as previous studies have primarily focused on either investment or total factor productivity or have looked at the finance-growth nexus. Additionally, many studies have focused more on individual countries in the SADC, and so far, few studies have covered the SADC region. Therefore, this study seeks to bridge this gap by contributing to the growing body of literature through demonstrating the direct effect of financial sector development on the sources of economic growth in the region.

Moreover, it will also provide policy recommendations that could be used as a basis for developing programs to significantly enhance the development of the region's financial sector for sustainable development. Lastly, the econometric analysis that will be conducted will highlight specific areas

of improvement in terms of the financial sector development in the SADC region to accelerate the influence on domestic investment and productivity for significant growth.

## **1.6 Organisation of the study**

- Chapter One: Introduction and Background of the Study
- Chapter Two: Overview Chapter (Trends)
- Chapter Three: Literature Review
- Chapter Four: Research Methodology
- Chapter Five: Empirical Results and Analysis
- Chapter Six – Summary, Conclusions, and Policy Recommendations.

## **CHAPTER TWO**

### **An overview of financial sector development and sources of economic growth in the SADC region**

#### **2.1 Introduction**

Financial sector development has a significant role in promoting economic growth through channeling financial resources towards productive industries and enhancing the efficient allocation of these resources (Zoaka & Güngör, 2023). Thus, understanding the extent to which financial sector development affects economic growth, through total factor productivity and investment, is of utmost importance, especially in the case of the SADC region, faced with financial uncertainties. Tembo and Makina (2020) point out that the member countries of the SADC region are at different growth levels due to diverse economic landscape. Hence, this chapter aims to fulfill one of the study's objectives: to provide an overview of financial sector development and the sources of economic growth in the SADC region. This chapter will shed light on trends and analyses about financial sector development and specific dynamics of economic growth and its key sources to provide an economic landscape and factors contributing to the region's economy.

This chapter is organised into different sections as follows: Section 2.2 discusses a brief overview of how the SADC community was formed and its objectives; section 2.3 provides an overview of the financial sector development in the SADC region including its structure, measures, and institutions, section 2.4 provides an overview of the economic growth in the SADC region, including the factors and the two essential sources which are total factor productivity and domestic investment in the region.

#### **2.2 Brief history of the formation of the SADC region**

The roots of SADC can be traced back to the Southern African Development Coordination Conference (SADCC), established in 1980 by nine countries, namely, Angola, Botswana, Lesotho, Malawi, Mozambique, Eswatini, Tanzania, Zambia, and Zimbabwe, in reaction to the economic challenges brought by apartheid in South Africa. The motive for this establishment was to promote

economic trade integration, considering shared challenges like political instability, economic inequalities, and the effects of political colonialism (Aeby, 2019). The organisation was developed into Southern African Development Community Region (which has been referred to as SADC in the study) in 1992, extending its membership to 16 Southern African countries, which include Angola, Botswana, Comoros, DR Congo, Lesotho, Eswatini, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Tanzania, Zambia, and Zimbabwe (Aeby, 2019). The formation of the SADC region was driven by the desire to address shared challenges faced by the member economies and control the collective potential for economic growth and social development.

Aeby (2019) further indicates that the organisation also aimed to promote economic cooperation, regional integration, improve the quality of life, and sustainable economic development after all Southern African countries gained independence. To achieve this, the organisation implemented various programs and initiatives such as tariff eliminations and infrastructure development programs, which aimed at improving trade openness, infrastructure development, industrialisation, investment, production, and social factors such as health and education. The organisation has also aimed to monitor trade liberalisation, formulate policies and regulations to stimulate the financial system, and facilitate the movement of goods, services, and people across borders.

According to Shumba (2022), the region has over 345 million people, which is nearly half of what the European Union has. The SADC region is facing challenges in escaping economic challenges of poverty in low-income countries. Shumba (2022) also asserts that in 2018, the region's GDP amounted to USD 721 billion. The service sector has been a significant contributor to this, accounting for over 59% of the region's GDP growth, followed by the manufacturing and agricultural sectors, which accumulated 20.3% and 20.2%, respectively. Out of the value of 100%, about 75% of the SADC's GDP growth is attributed to South Africa (Shumba, 2022). Agricultural practices are the foundation of the regional economy. The region is rich in industrial minerals, valuable stones, essential and precious metals, and precious stones. The SADC organisation remains relevant even today despite encountering several economic challenges.

## **2.3 Overview of the financial sector development in the SADC region**

### **2.3.1 The financial system in the SADC region**

Financial sector development is one of the key components that provide economic growth opportunities for countries across the SADC region. A study by Mbuyi and Mulumba (2022) highlights that developing a financial system can create a conducive environment for economic growth. Over the years, the region has strived to work towards this goal through financial liberalisation to stimulate the effectiveness of the financial sector. The SADC financial system comprises various components such as banks, capital markets, insurance companies, and other financial intermediaries whose role is to channel funds from savers to borrowers (Tembo & Makina, 2020). The financial system plays a critical role, especially in developing regions such as African economies, by mobilising funds and promoting economic growth. The SADC financial system is dominated by the banking sector, which includes financial services such as deposits and lending. For instance, South Africa's financial system is dominated by the banking sector, which provides the component of financial accessibility, as shown in Table 2.1.

A statistical report by Finmark Trust (2015) stipulates that the insurance industry has the most extensive development opportunity since 94.5% of the population lacks formal insurance. Evidence from scholars such as Bara, Mugano, and Roux (2017), Chu (2020), and Monareng (2022) shows that the structure of the financial system within the SADC members varies due to diverse levels of economic development, financial markets, and regulatory frameworks. SADC members such as South Africa, Botswana, and Mauritius have more developed financial sectors than other members in the region. According to Monareng (2022), South Africa has the largest stock exchange among any other SADC member states, showing convincing evidence of the country's highly integrated financial system.

### **2.3.2 Financial depth and access in the SADC region**

The financial depth and access are interrelated indicators of the banking industry, especially in the SADC region. According to Nyamazunzu (2019), financial depth facilitates access to finance, thus increasing private-sector credit, while the availability of credit increases broad money. This cycle strengthens financial development, which can be measured by the availability of funds and the

effectiveness of the banking sector in providing financial services to borrowers. However, the availability of private sector credit and broad money used as measures of the banking system in the SADC region varies over time. The table below shows the banking sector across the SADC members.

*Table 2. 1: The average private sector credit and broad money percentage of GDP from 1999 – 2020.*

| <b>SADC country</b>     | <b>Private sector credit Percent of GDP Average (1999 – 2020)</b> | <b>Broad Money Percent of GDP Average (1999 – 2020)</b> |
|-------------------------|-------------------------------------------------------------------|---------------------------------------------------------|
| <b>Angola</b>           | 17.89                                                             | 28.11397                                                |
| <b>Botswana</b>         | 26.96743                                                          | 44.57696                                                |
| <b>Congo, Dem. Rep.</b> | 3.897543                                                          | 8.356237                                                |
| <b>Lesotho</b>          | 14.39849                                                          | 32.84874                                                |
| <b>Madagascar</b>       | 10.2116                                                           | 21.40626                                                |
| <b>Malawi</b>           | 6.041418                                                          | 13.45766                                                |
| <b>Mauritius</b>        | 79.86794                                                          | 99.26528                                                |
| <b>Mozambique</b>       | 17.94139                                                          | 33.38635                                                |
| <b>Namibia</b>          | 68.14045                                                          | 50.69248                                                |
| <b>Seychelles</b>       | 21.93516                                                          | 77.8804                                                 |
| <b>South Africa</b>     | 121.2373                                                          | 63.1348                                                 |
| <b>Comoros</b>          | 9.672145                                                          | 20.00147                                                |
| <b>Eswatini</b>         | 18.10189                                                          | 23.4343                                                 |
| <b>Tanzania</b>         | 10.13945                                                          | 20.30706                                                |
| <b>Zambia</b>           | 15.83562                                                          | 20.26128                                                |
| <b>Zimbabwe</b>         | 21.15612                                                          | 33.79375                                                |

Source: Author's computation using data from Global Financial Development Data and World Bank Data (2024)

Table 2.1 shows the private sector credit as a percentage of GDP and broad money as a percentage of GDP in the SADC region from 1999 to 2020. According to the table, South Africa has the highest private sector credit as a percentage of GDP of 121.24%, which suggests that the country has a sustained financial system. Mauritius and Namibia follow this with 79.86% and 68.14%, respectively. This demonstrates the extent of development of the financial intermediaries in these

countries in supplying credit to the private sector. This also means that these countries can attract more investment opportunities. Research conducted by Leve and Kapingura (2019) shows that the higher the credit value to the private sector, the deeper the financial institutions are, since the country has more significant opportunities to extend its credit. However, Berkes, Panizza, and Arcand (2012) argued that countries with high private sector credit exceeding 100%, such as that of South Africa, could cause output volatility, which may lead to suboptimal allocation of the endowment. Therefore, the level to which credit to the private sector is accessible must be monitored. The remaining 13 countries have relatively low credit to the private sector, which does not even reach the 50% average, thus limiting their contribution to the region's overall growth. These countries attract fewer investment prospects than South Africa, Mauritius, and Namibia.

Conversely, Mauritius has the highest broad money to GDP percentage average of 99.27%, indicating that the country has a more liquid financial system. This is followed by Seychelles and South Africa with 77.88% and 63.13%, respectively. Other SADC members have relatively low average broad money, which displays a highly illiquid financial system. The extent to which financial depth and access are effective in the SADC region can also be linked with the components of financial deepening, which refers to the quality and availability of financial services and products to all societal strata through financial inclusion (Nwosu, Itodo & Ogbonnaya-Orji, 2021). Financial deepening involves financial markets and financial institutions, and the different measures associated with them. Table 2.2 shows the summary of financial deepening components.

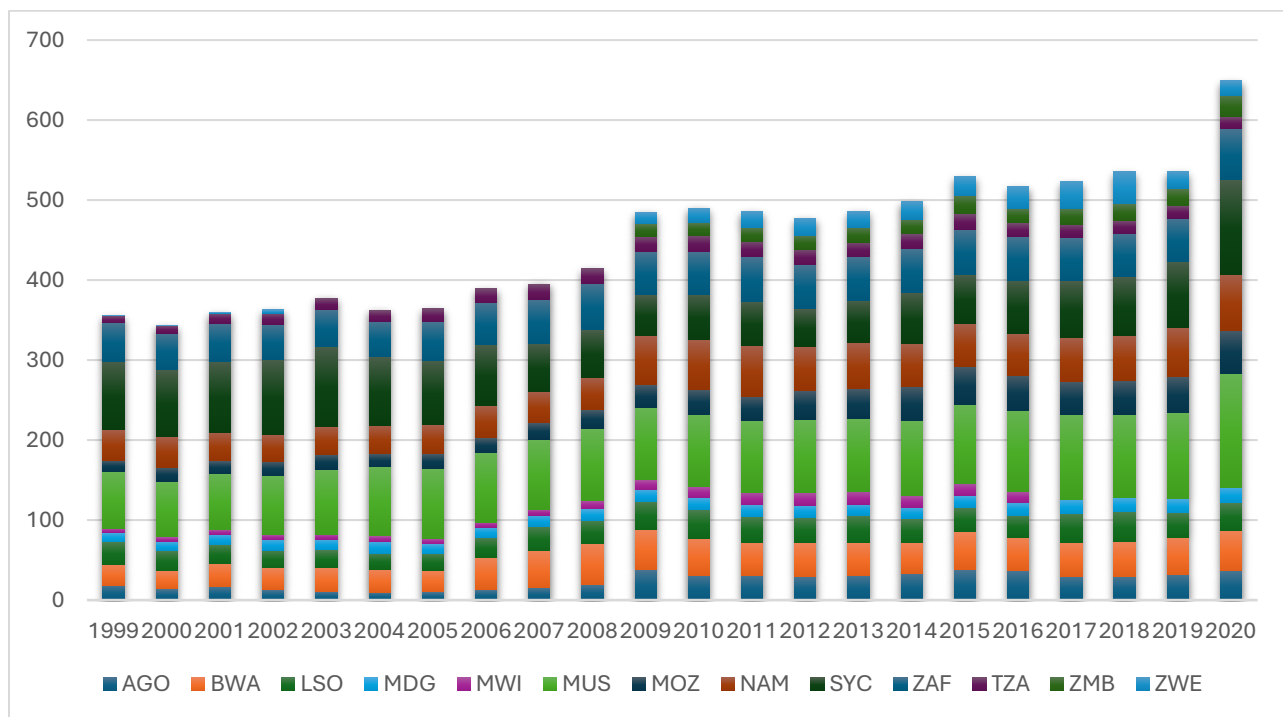
*Table 2. 2: The components of financial deepening*

| Financial Institution                                                                                                                                                                                                                | Financial Markets                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>- Private-sector credit (% of GDP)</li> <li>- Pension fund assets (% of GDP)</li> <li>- Mutual fund assets (% of GDP)</li> <li>- Insurance premiums, life, and non-life (% of GDP)</li> </ul> | <ul style="list-style-type: none"> <li>- Stock market capitalization to GDP.</li> <li>- Stocks traded to GDP.</li> <li>- International debt securities government (% of GDP)</li> <li>- Total debt securities of nonfinancial corporations (% of GDP)</li> </ul> |

Source: Nyamazunzu (2019) on banking cost efficiency, banking sector development, and economic growth of SADC countries.

According to Nyamazunzu (2019), financial deepening is an area of interest and one of the most popular concepts in literature. It can be used to capture the role played by financial intermediaries in mobilising funds from surplus units and allocating them to the deficit units. It is generally accepted that financial systems that are deeper are likely to stimulate economic growth. Furthermore, financial deepening records the demands made by deposit-taking financial institutions in the private sector in relation to economic activity. Therefore, to measure the financial deepening over the years in the SADC region, the study utilised deposits as a percentage of GDP, as shown in Figure 2.1 below.

*Figure 2. 1: Deposit as a percentage of GDP in the SADC region (1999- 2020)*



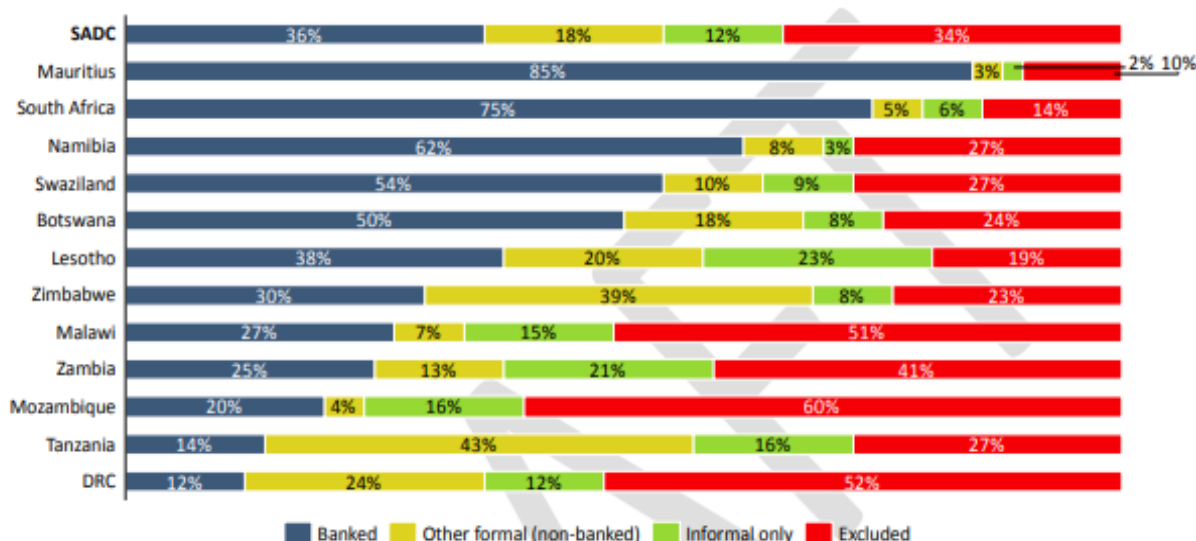
Source: Authors' own works using Global Financial Development Data (GFDD), World Bank (2024)

Figure 2.1 above shows the financial deepening measured by deposits as a percentage of GDP in 13 selected SADC countries from 1999 to 2020. The figure shows that countries such as Angola and Zambia experienced shallow financial systems up to 2008, which deepened slowly. Countries such as Lesotho, Tanzania, and Namibia had different trends; however, their financial system started recovering in 2005, which subsequently dropped till 2020. Moreover, other countries such

as Botswana, Madagascar, and South Africa experienced slight fluctuations in their financial deepening. Conversely, countries such as Mauritius and Mozambique had a deepened financial system, as shown by steady growth and an increase over time. Seychelles was fluctuating in its financial system. The rationale for this variation in the financial deepening for these countries could be extracted from the study of Bara et al. (2017), who indicate that the region is relatively underdeveloped with factors such as different levels of economic development, policies, regulations, and access to finance that affects depth of the financial system.

Given the variations in the broader measures of financial development and financial inclusion have been a significant challenge for most countries in the SADC region, focusing on individual levels. Figure 2.2 shows a statistical analysis from Finmark (2015) of the percentage of the population with access to financial products. The report indicates that about 36% of the SADC population had access to financial products, of which 34% were financially excluded.

*Figure 2. 2: Financial inclusion in the SADC region*

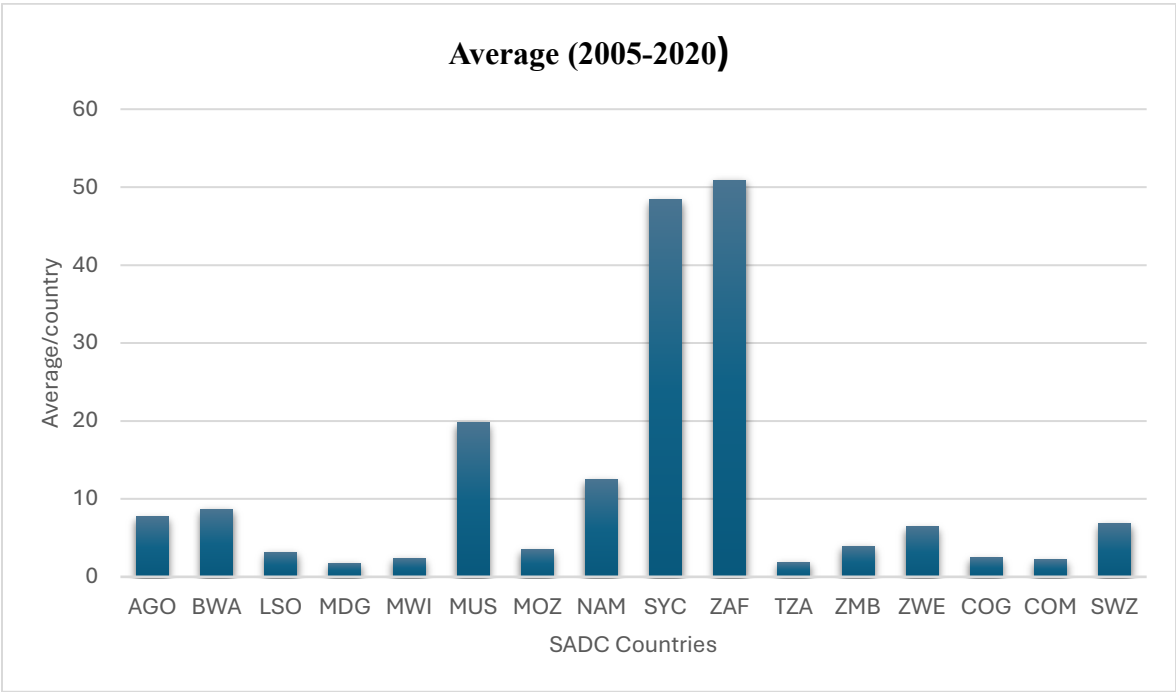


Source: FinMark Trust (2015) on financial inclusion in the SADC region

As per the report from FinMark Trust (2015), Mauritius was the leading country, with over 85% of the population being financially included. This was followed by South Africa (over 76%) and Namibia (62%). In contrast, countries such as the democratic republic of Congo, Tanzania, Mozambique, Zambia, Malawi, Zimbabwe, and Lesotho have been subject to limited access to financial inclusion, with more than 50% of the population not having access to financial products. However, there is an enormous transformation in the financial sector as most countries have

embarked on developing their financial system. Measuring financial inclusion using bank branches has shown that some countries have dominated in bank branches. This is shown in Figure 2.3 below.

Figure 2. 3: Average bank branches (2005-2020)



Source: Author’s computation using data from Global Financial Development Data (GFDD), World Bank (2024)

Figure 2.3 above shows the average number of bank branches per 100 00 adults. According to the figure above, South Africa has the highest level of financial inclusion as compared to the other countries in the region, with an average above 50%. The following country is Seychelles, which has an average bank branch of about 48%. Countries such as Angola, Botswana, Lesotho, Madagascar, Malawi, Mozambique, Tanzania, Zambia, Zimbabwe, the Democratic R of Congo, the Comoros, and Eswatini have continued to encounter limited access to financial inclusion.

### 2.3.3 Financial stability and efficiency in the SADC region

The stability and efficiency of a financial system play a vital role in stabilising economic growth. Schinasi (2010) defines financial stability as the ability of financial systems and institutions to survive risks and shocks that might affect them. This leads to resiliency and efficiency, as economic

resources are efficiently allocated to improve economic processes such as economic growth and capital accumulation. Moreover, financial stability is demonstrated through banks withstanding failures, price volatility, and an illiquid market, which creates a disturbance and an inefficient financial system. Therefore, analysing trends in stability and efficiency is essential, especially in the SADC region, facing fluctuations and uncertainties in its financial systems. In the case of the SADC region, there has been a concern regarding financial stability, characterised by price instability and interest rate hikes, which reduce the region's economic growth. In the region, there has been an effort to enhance the financial system through financial stability by strengthening banking regulations and improving nonperforming loans.

Nyamazunzu (2019) highlights that despite financial deepening being significant for economic growth, it does not determine financial stability in the SADC region. This is also supported by Kapingura, Mkosana, and Kusairi (2022), who indicate that even economies with developed financial systems may still encounter instabilities evolving from external shocks. To understand the trends in financial stability in the SADC region, the study uses a z-score, as shown in Table 2.3 below. The z-score is used to measure the risk levels of financial stability. If the z-score value is high, it indicates a stable financial sector.

*Table 2. 3: Z-Score for SADC countries*

| Year        | Z-SCORE |      |        |       |       |       |      |       |       |       |       |       |      |
|-------------|---------|------|--------|-------|-------|-------|------|-------|-------|-------|-------|-------|------|
|             | AGO     | BWA  | LSO    | MDG   | MWI   | MUS   | MOZ  | NAM   | SYC   | ZAF   | TZA   | ZMB   | ZWE  |
| <b>2012</b> | 9.04    | 8.97 | 18.78  | 13.13 | 16.93 | 17.53 | 5.61 | 25.26 | 16.38 | 15.86 | 15.54 | 10.19 | 5.44 |
| <b>2013</b> | 9.46    | 9.69 | 17.15  | 15.21 | 18.55 | 17.24 | 5.23 | 21.62 | 13.63 | 14.82 | 18.02 | 11.86 | 5.30 |
| <b>2014</b> | 8.56    | 9.37 | 18.023 | 16.86 | 21.39 | 15.98 | 5.42 | 21.86 | ..    | 14.73 | 18.89 | 12.88 | 5.06 |
| <b>2015</b> | 8.27    | 8.13 | 17.67  | 18.54 | 17.33 | 17.03 | 5.31 | 25.38 | 16.14 | 14.86 | 19.11 | 10.27 | 5.5  |
| <b>2016</b> | 8.23    | 8.44 | 21.73  | 16.61 | 16.39 | 16.75 | 5.30 | 25.55 | 15.67 | 16.07 | 20.64 | 10.32 | 5.27 |
| <b>2017</b> | 8.98    | 8.35 | 20.05  | 16.46 | 15.37 | 17.02 | 7.12 | 26.94 | 15.04 | 17.26 | 19.82 | 11.93 | 5.13 |
| <b>2018</b> | 12.04   | 8.37 | 19.59  | 16.66 | 15.45 | 17.69 | 6.79 | 25.31 | 14.34 | 15.94 | 19.08 | 8.96  | 5.26 |
| <b>2019</b> | 15.28   | 8.50 | 22.38  | 15.93 | 16.12 | 16.02 | 6.98 | 24.37 | 13.49 | 15.88 | 19.88 | 9.18  | 7.48 |
| <b>2020</b> | 8.44    | 8.28 | 20.19  | 14.06 | 16.99 | 14.39 | 5.94 | 25.26 | 10.41 | 13.43 | 20.59 | 6.46  | 7.08 |

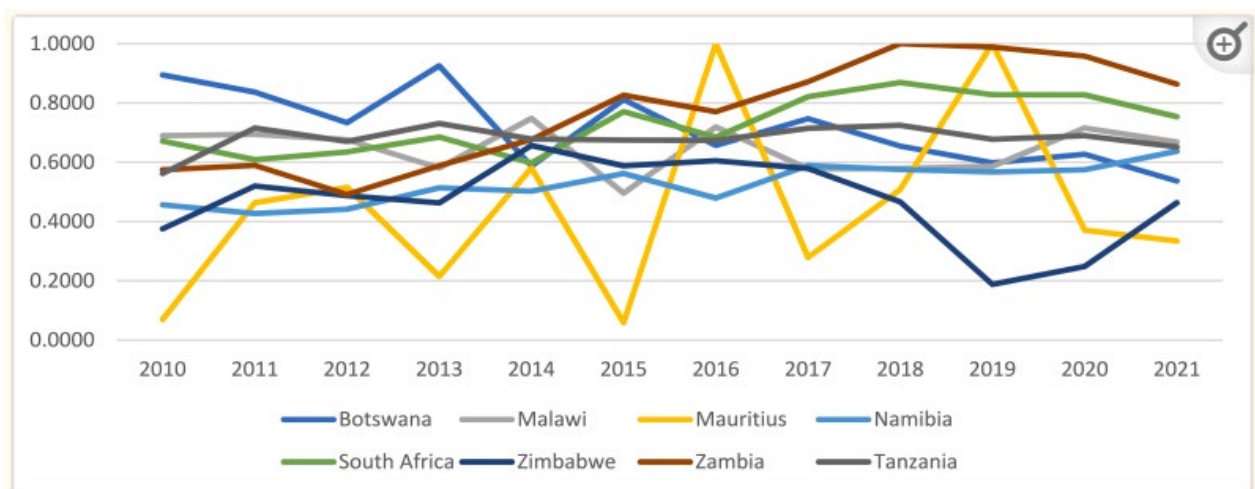
Source: Author's own works using Global Financial Development Data (GFDD), World Bank (2024)

Table 2.3 shows that the level of stability of the financial system in the SADC region across the countries differs. Countries such as Lesotho, Malawi, Mauritius, Namibia, and Tanzania have

higher z-scores, which indicates lower financial stability risk. On the other hand, countries such as Mozambique and Zambia have low financial stability, marked by their low z-score of 5.94 and 6.4, respectively. However, Nyamazunzu (2019) articulates that the z-score is better suited for individual firms or banks than the aggregated data for the whole industry; therefore, integrating the z-score for the entire industry can lead to a loss of valuable information on individual firms' financial stability.

On the other hand, efficiency is one of the areas of interest in the SADC financial system. Generally, there is a bidirectional relationship between stability and efficiency. The region has been struggling to keep up with the two variables. Abel, Mukarati, Manenge, and Le Roux (2024) observed that the region has experienced an inconsistent financial system over the years, with an inefficient financial system. Their study shows the efficiency trends using technical efficiency to measure how effectively the banking system can provide credit and other financial services to the economy. The trend in the SADC countries is shown below.

*Figure 2. 4: Trends in technical efficiency in the case of the SADC region*



Source: Abel, Mukarati, Manenge and Le Roux (2024).

Figure 2.4 above shows the evolution of the technical efficiency of the banking system in SADC countries from 2011 to 2021. Countries such as Mauritius show a more significant movement throughout the period. Abel et al. (2024) indicate that the level of operational efficiency for most countries is around 60%, with a few countries continuously performing better than this average.

Given that the level of efficiency is 100%, the level of inefficiency in the banking system has been around 40%, implying that the region still needs to improve its banking structure.

### 2.3.4 Stock Market

According to Asalatha (2019), the stock market is a financial market in which economic transactions for shares occur. This involves buyers and sellers of stock, typically institutions like banks, hedge funds, and pension funds. This is an essential component of financial markets that must be addressed in the SADC region. The region has consistently faced a wide range of stock market performance. However, countries such as South Africa, Mauritius, and Zimbabwe have proven to be regaining their stock market performance. Most regional countries' SADC stock market performance presents the same traits. According to Tembo (2018), the SADC stock markets have been defined by small sizes, little liquidity, large concentrations, and a lack of adequate market infrastructure, which has hindered progress towards significant performance of the stock market. Moreover, Tembo (2018) highlights that, out of 15 countries, 5 do not have an existing stock market, as shown in Table 2.4.

*Table 2. 4: Stock market performance in the listed SADC countries*

|                   | Listed Firms      | Market Capitalization<br>(Percent of GDP) | Stock Turnover Ratio (Percent) |
|-------------------|-------------------|-------------------------------------------|--------------------------------|
| <b>Angola</b>     | No stock exchange |                                           |                                |
| <b>Botswana</b>   | 35                | 2.29                                      | 6.21                           |
| <b>DRC</b>        | No stock exchange |                                           |                                |
| <b>Lesotho</b>    | No Listing        |                                           |                                |
| <b>Madagascar</b> | No stock exchange |                                           |                                |
| <b>Malawi</b>     | 13                | 28.45                                     | 7.81                           |
| <b>Mauritius</b>  | 75                | 61.96                                     | 8                              |
| <b>Mozambique</b> | 6                 | 6                                         | 27                             |
| <b>Namibia</b>    | 8                 | 19.91                                     | 1.49                           |
| <b>Seychelles</b> | 8                 | 3.22                                      | 0.07                           |

|                     |     |        |       |
|---------------------|-----|--------|-------|
| <b>South Africa</b> | 303 | 233.95 | 31.79 |
| <b>Swaziland</b>    | 6   | 31.56  | 1     |
| <b>Tanzania</b>     | 28  | 1.86   | 6     |
| <b>Zambia</b>       | 25  | 9.29   | 0.76  |
| <b>Zimbabwe</b>     | 63  | 154    | 7.44  |

Source: Tembo (2018)

According to Table 2.4, South Africa has the highest number of listed firms, 303. Compared to other regions, it has the highest market capitalization of 233.95% and a stock turnover ratio of 31.79%, which indicates a highly liquid stock market (Tembo, 2018). The following countries, namely, Mauritius and Zimbabwe, have 75 and 63 listed firms, respectively. Mauritius has 61.96%, while Zimbabwe has 154% of market capitalization and 8% and 7.44 % of stock turnover ratios, respectively. The remaining countries have a low percentage of market capitalization and stock turnover ratio, failing to reach even 50%, which indicates these countries have an illiquid stock market. Therefore, there is a need for the integration of the financial sector in the SADC region.

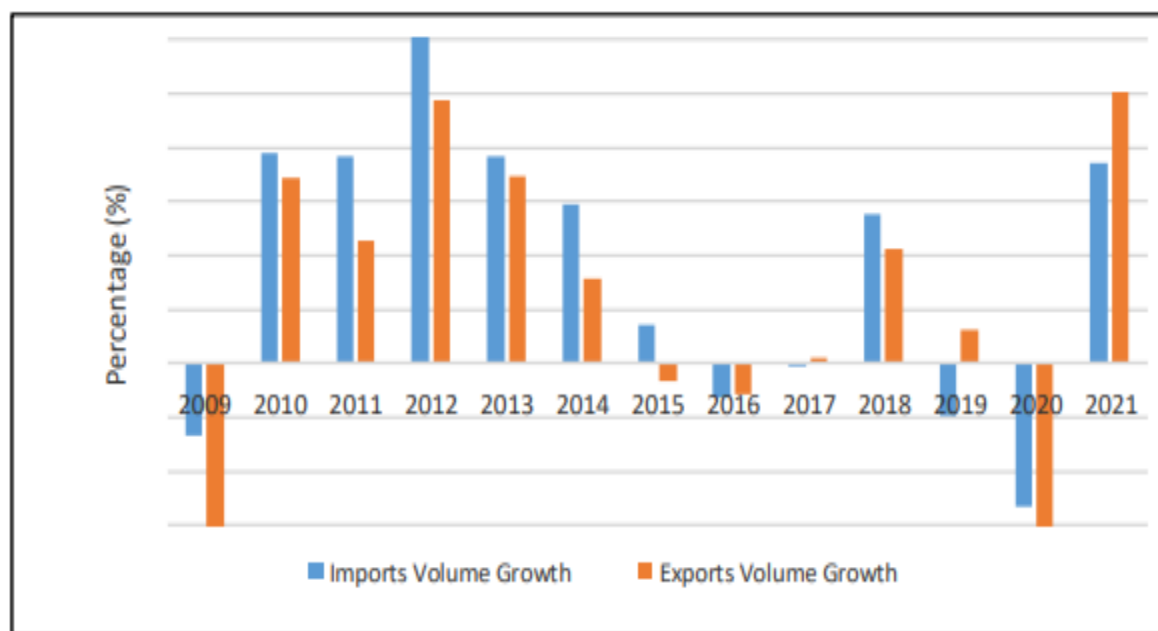
## 2.4 Overview of economic growth in the SADC

Over the years, the SADC region has witnessed an uneven economic growth trajectory driven by structural disparities and diverse socio-economic factors, with some members showing a sustained growth rate above others. Studies by Seleteng and Motelle (2016) and Enaifoghe (2023) suggest that this stems from challenges of post-independence transitions, political instability, and economic diversification, which impede the region's development levels. Additionally, António (2022) indicates that some of these challenges comprise disrupted and undeveloped production systems, inadequate economic output, issues related to macroeconomic management, and an adverse global economic climate. So far, South Africa has been the country with the biggest economy, making up more than 60% of the SADC growth over the past years (António, 2022).

Other developing countries such as Swaziland and Lesotho, located within South Africa, have mainly depended on the country's economic levels and response to external factors (António, 2022). For most countries, economic growth has been increasing at a decreasing rate. As of 2021, most SADC countries failed to meet the region's real gross domestic product growth rate target.

According to the report from the African Development Bank (ADB) (2019), the region has experienced different economic trends for the past few years, for instance, a period where economic growth was declining due to the global financial crisis of 2008 and before that, the region recorded 6.5% increase in its economic growth that was 0.5% short of 7%. The decline in economic growth since 2008 was also accompanied by a decline in the region's exports, as shown in Figure 2.5 below.

*Figure 2. 5: Exports and imports in the SADC region*



Source: Member States, April 2021, and IMF WEO April 2021, cited from SADC report 2021

According to Figure 2.5 above, since 2009, the level of imports has surpassed the exports in the SADC region, indicating a negative trade balance, which has substantiated the economic issues within the region. António (2022) states that countries such as Mozambique constantly import more than they can export. This impedes the region's average economic growth.

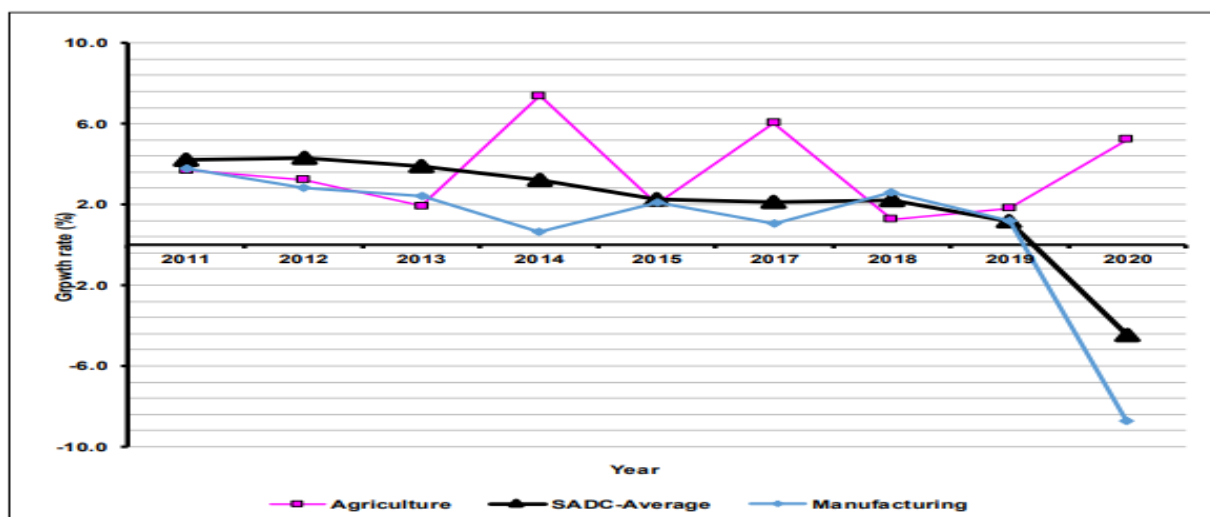
### **2.4.1 Sectors contributing to the region's economic growth**

Three main sectors contribute to economic growth: agriculture, services, and manufacturing. The agricultural sector characterises the SADC region. According to Lipper and Benton (2020), the service sector contributes 50% more to the SADC economic growth. Most members have depended on the agricultural sector as their key driver to economic development, except

Madagascar, Malawi, and Mozambique, which were considered prevalent in the industrial sectors. Lipper and Benton (2020) reiterated that countries such as South Africa, Angola, and Botswana have primarily enhanced the region's economic growth. A report from the African Development Bank (2018), cited from Magombedze (2019), emphasises that other countries, such as Zambia and Zimbabwe, constantly face climate change issues and inadequate resources, which disadvantage their contribution to the region's economic growth.

On the other hand, manufacturing sectors have also continued to be necessary, especially in large projects such as energy manufacturing and investment in substantial infrastructure projects, though making less contribution to the region's economic growth. A recent report from the SADC bulletin (2021) specifies that the outbreak of COVID-19 has contracted economic growth. The region's economic growth rate was negatively recorded at 4.5% compared to the 1.2% growth in 2019. The region's growth rate shrank by 2.1% in 2020 after increasing by 3.3% in 2019. Figure 2.6 shows the average growth in the SADC region's manufacturing and agricultural sectors.

*Figure 2. 6: Trends on regions' average growth, manufacturing, and agricultural sector*



Source: SADC bulletin (2021).

According to the graph above, the region's average growth rate and manufacturing sector have been downward trending from 2011 to 2020 to a growth rate of more than – 2.%. On the other hand, the agricultural sector has been vital for the SADC region, growing by over 5% in 2020.

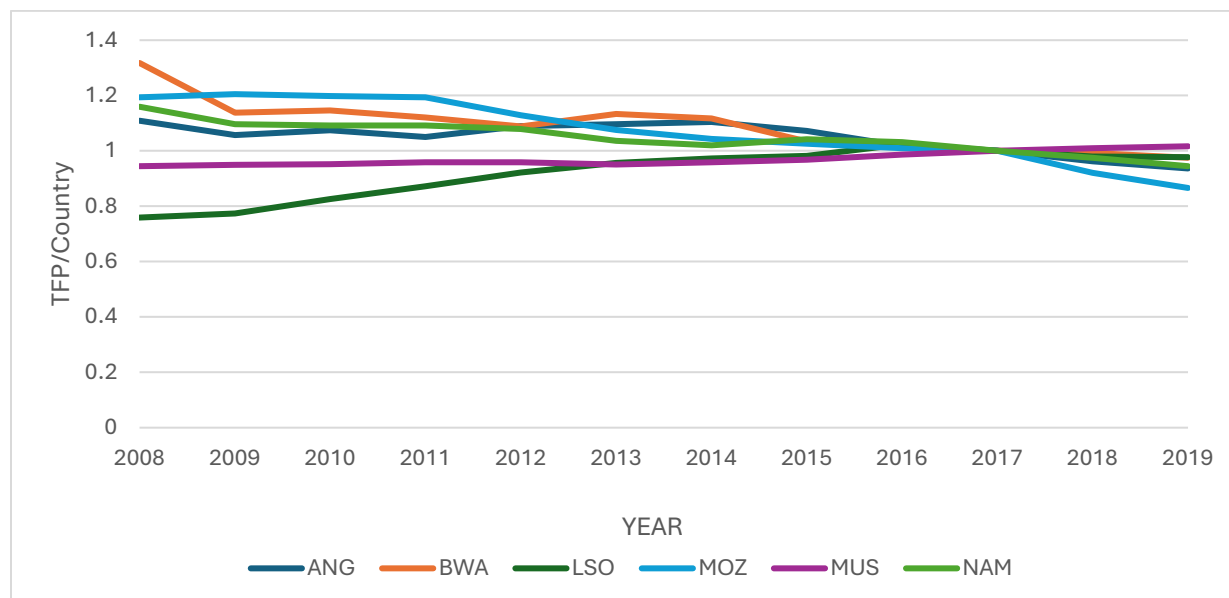
## **2.4.2 Sources of economic growth, which is the focus of the study in the SADC region.**

### **2.4.2.1 Total factor productivity in the SADC region**

Despite the region having a diverse foundation of natural resources, its total factor productivity has not shown any significant development over the last decades. This is due to the constrained diffusion of technological progress and inadequate institutional frameworks and human capital (education), regarded as the prominent drivers of productivity in the SADC region (Asaleye & Strydom, 2022). These factors have hindered productivity growth and constrained economic development across the member countries. Nonetheless, the region exhibited minor improvements in its total factor productivity, particularly in members that focused on the agricultural and manufacturing sectors. This has contributed to the region's productivity and efficiency in the production process. Investments in education, training, and skill development have also increased total factor productivity. By equipping the labor force with relevant knowledge and competencies, countries within the SADC region have enhanced productivity levels and promoted sustainable economic growth. The productivity in the SADC region has been achieved through agricultural productivity (Chirwa & Odhiambo, 2017).

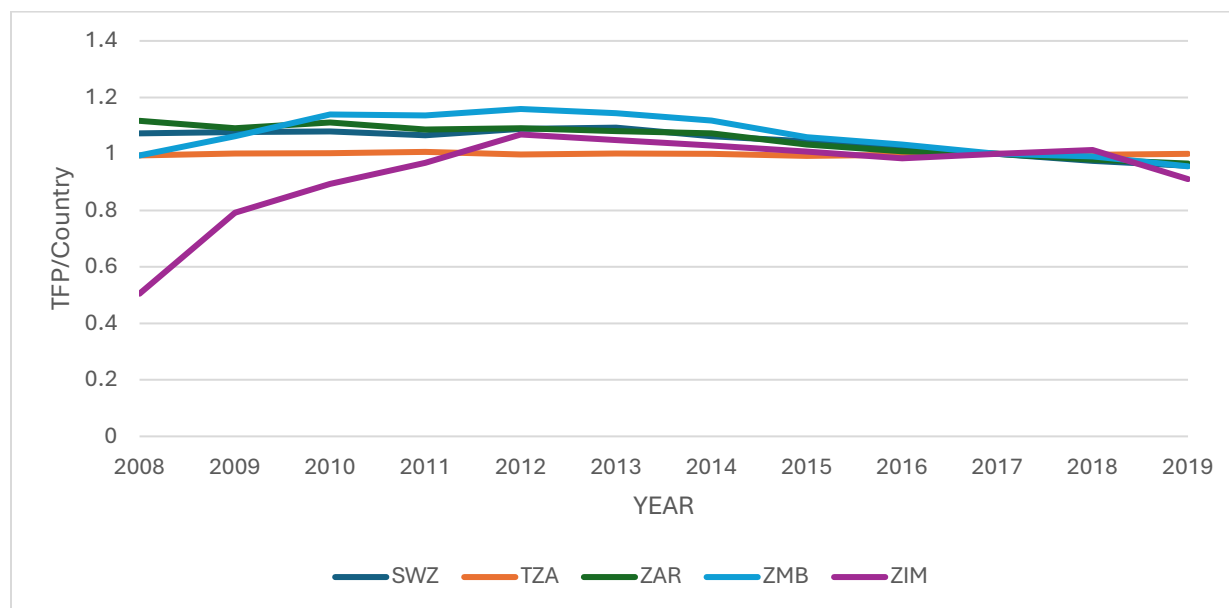
The agricultural productivity growth in the region is essentialized by negative growth. Most of this growth is attained through expanding agrarian land rather than through the more effective use of agricultural inputs. According to Lipper and Bantor (2020), middle-income countries such as South Africa and Mauritius outperformed low-income countries in terms of productivity levels, fueled by technological factors and efficient allocation of resources. This is the outcome of the heterogeneity across nations, which exhibits varying degrees of economic structures, policies, and development. Moreover, this variance has been influenced by improved business settings, effective resource allocation, and technological innovation in countries like South Africa, Mauritius, and Zambia, as shown in Figures 2.7 and 2.8 below.

Figure 2. 7: Total factor productivity in the first group of the SADC members



Source: Author's own works using data from Penn World Tables (2024)

Figure 2. 8: Total factor productivity in the second group of the SADC members

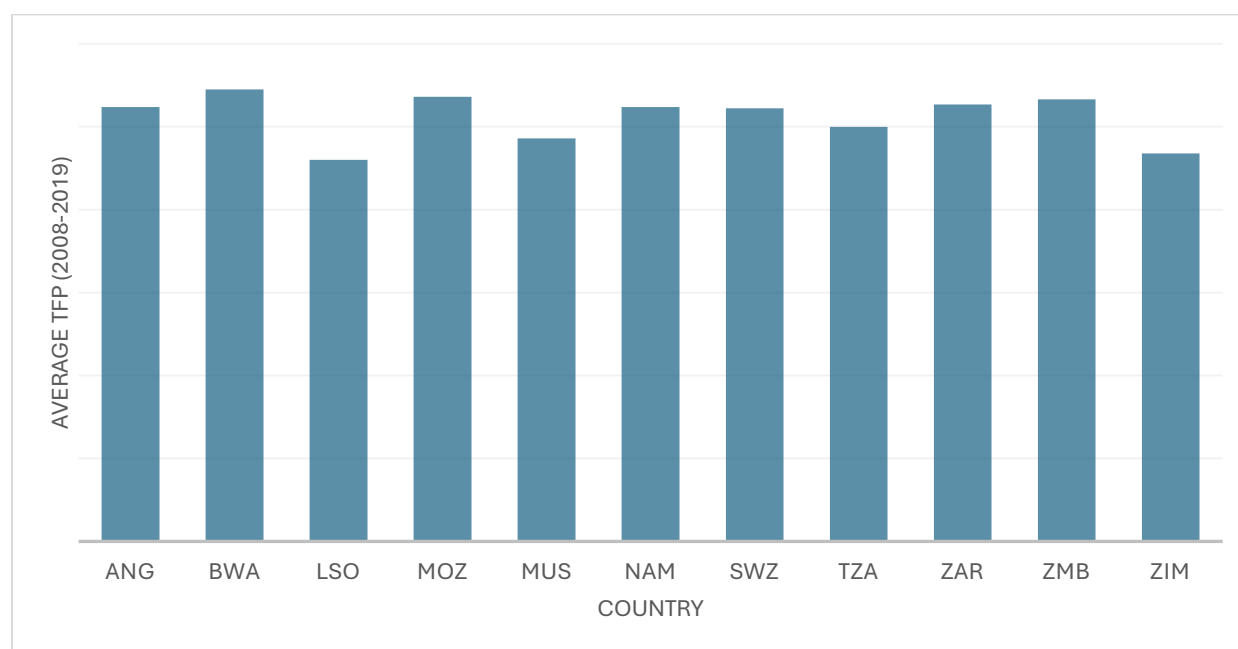


Source: Author's own works using data from Penn World Tables (2024)

In Figures 2.7 and 2.8, the level of total factor productivity has not been constant for most SADC members. Countries like Mozambique, Namibia, and Botswana experienced a decline in their total

factor productivity from 2008 to 2019. Conversely, Angola, Zambia, and South Africa faced inconsistency in their aggregate production level. Over the years, Zambia has had greater total factor productivity driven by agricultural productivity, making up over 70% of the labor force and contributing between 13% to 20% of the overall economic growth, as Mumba and Edriss (2018) indicated. However, on average, Botswana had the most outstanding value between 2008 and 2019, followed by Mozambique and Zambia, as shown in Figure 2.9 below.

*Figure 2. 9: Average TFP in the SADC members*

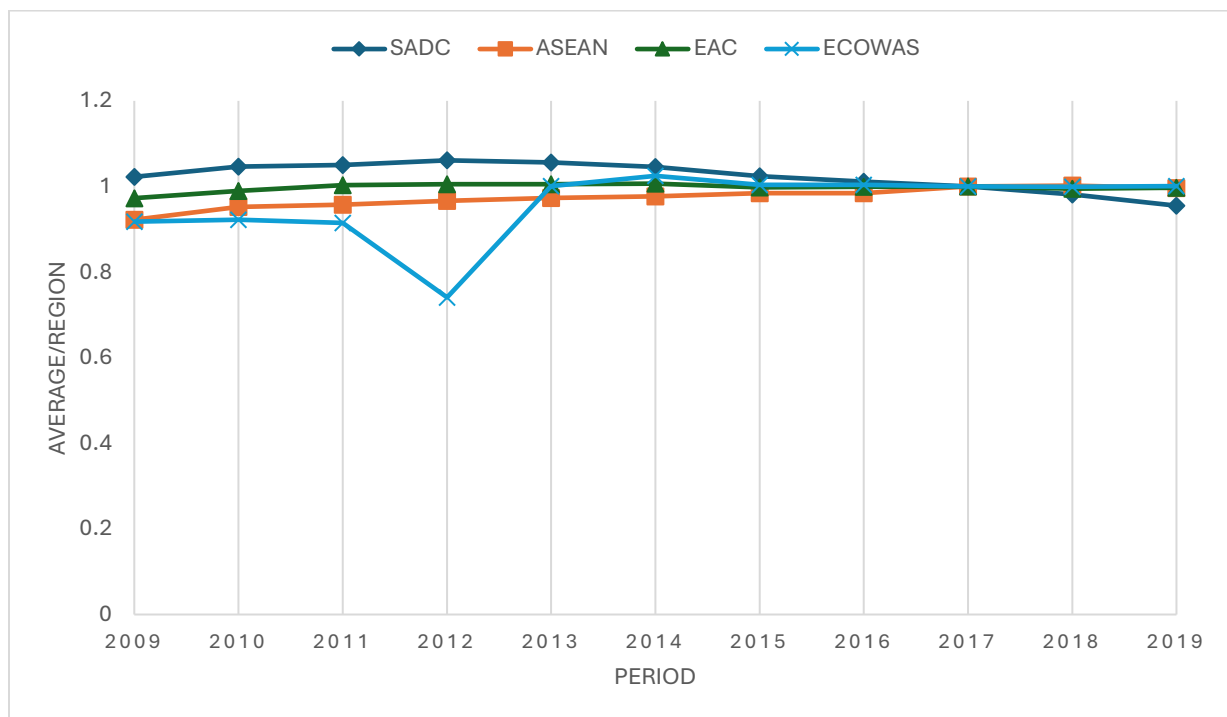


Source: Author's own works using data from Penn World Tables (2024)

Figure 2.9 shows that Botswana had the highest average (1.09) from 2008 to 2019, followed by Mozambique and Zambia, which had 1.07. South Africa and Angola stood at 1.05. Other countries have an average of less than 1.05, with Lesotho having the lowest average of 0.92, which could be triggered by inadequate economic structures and industries, limited technological innovation as well as infrastructure deficiencies such as lack of provision of transport networks, energy supply, and geographical factors (African Development Bank, 2019). Moreover, Lipper and Benton (2020) indicate that countries like Angola, Mauritius, South Africa, and Eswatini witnessed significant increases in labor productivity during the 2000–2010 period. In contrast, Malawi, Tanzania, and Zambia witnessed a decrease during the same period. A thorough examination of the factors

contributing to productivity growth indicated that the expansion of agricultural land played a significant role in the SADC region. The aggregated production for most SADC countries is mainly achieved through agricultural value. The inputs used in the production process include labor, capital, and land, and their productions lead to gross agricultural value added from the livestock, horticulture, and crop industries. A statistical report from the African Development Bank (2019) indicates that the agricultural sector has contributed little to SADC's total factor productivity, especially in countries such as Lesotho and Namibia, which rely heavily on specific industries. However, the agricultural sector has made an overall positive contribution in countries such as Malawi, Mozambique, and Madagascar. Despite facing challenges such as new technologies and inadequate infrastructure, its average production over the past years has been high compared to other regions such as ASEAN, EAC, and ECOWAS, as shown in Figure 2.10 below.

*Figure 2. 10: Average production for different regions (2009-2019)*



Source: Author's own works using data from Penn World Tables (2024)

Figure 2.10 above shows the average production for SADC, ASEAN, EAC, and ECOWAS regions from 2009 to 2019. The graph shows that SADC had the most excellent production average

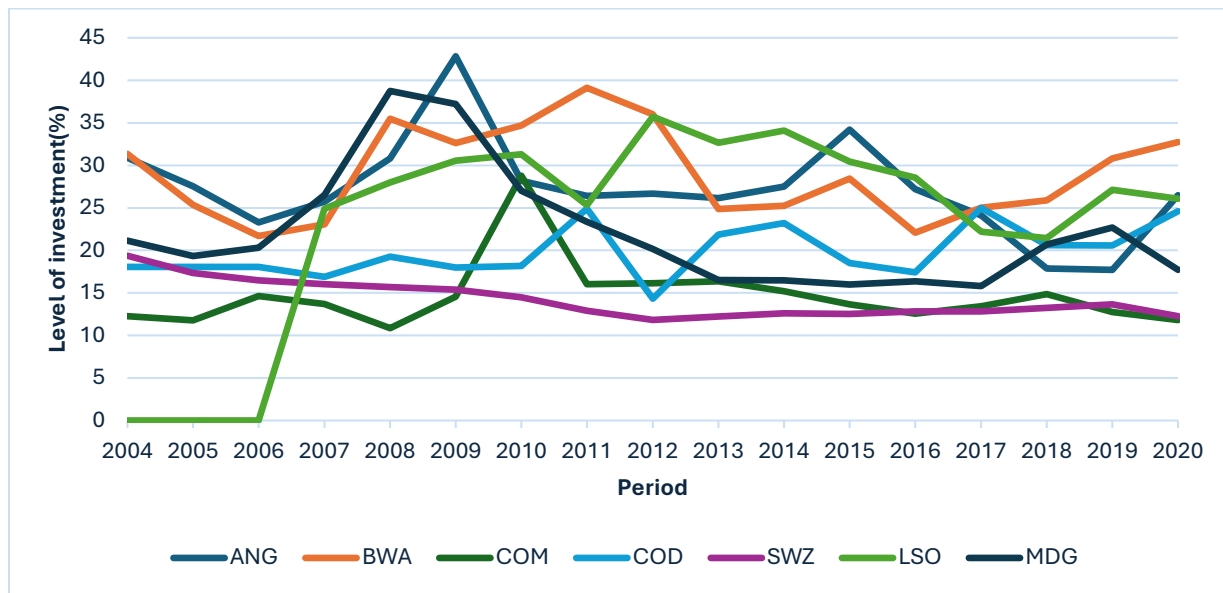
between 2009 and 2017. EAC, ASEAN, and ECOWAS regions followed this region. As per the graph, the average production for the ECOWAS region drastically declined since 2009 and started to improve in 2012, surpassing the average of EAC and ASEAN in 2013. Between 2017 and 2019, SADC had a declining average total production, while the other three regions showed some improvements. According to Danska-Borsiak (2018), the level of development in total productivity depends on different factors, such as industrialization, investment in human capital, and the adoption of new technologies, and various regions respond differently to these factors.

#### **2.4.2.2 Domestic investment in the SADC region**

It is important to note that domestic investment is an important component of the growth process. The extent to which domestic investment influences economic growth varies across countries, depending on the uniqueness of factors such as political stability and social trends that affect investment patterns. This is one aspect to be discussed in the SADC region, with a downward investment-level trend. Over the years, the SADC region has been affected by political and security issues that have impeded positive investment patterns, leading to a sluggish growth rate. Phiri and Ngeendepi (2021) highlight that the SADC region took some initiatives to attract investment by introducing the finance and investment policy protocol in 2006. This policy framework aimed at fostering investment in the region by implementing tactics to attract investors and encourage people to start their businesses through laws that promote investment and lessen the financial burden for companies looking to invest in the region.

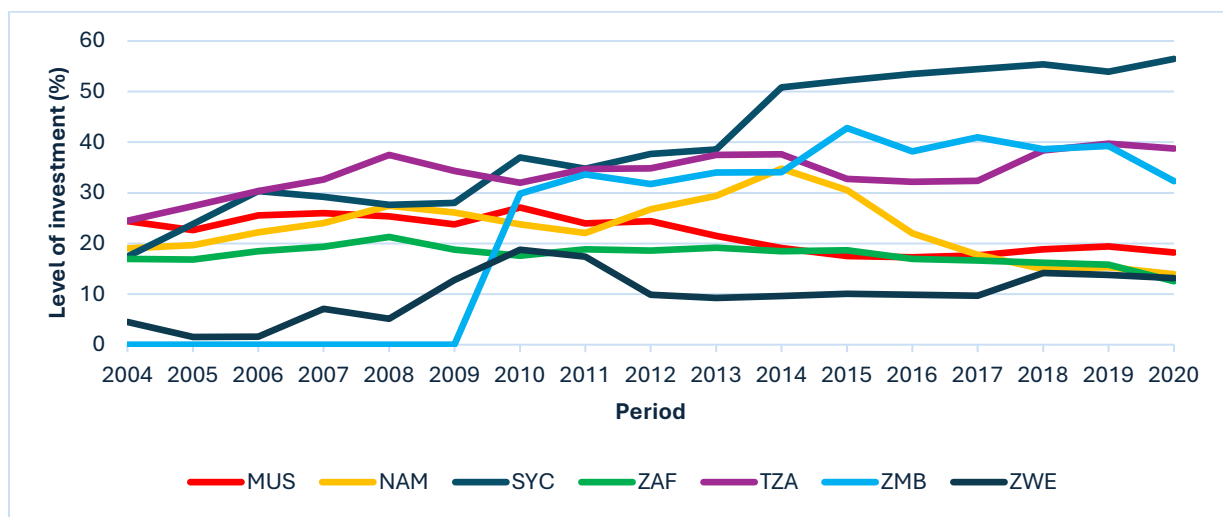
Moreover, this policy was implemented to mitigate the political and security issues facing the SADC region, thus strengthening the region's domestic investment and attracting foreign direct investment. However, the level of domestic investment has remained stagnant in the region, with countries implementing diverse methods to Financial and Investment policy reflecting changing economic regulatory frameworks and priorities (Phiri & Ngeendepi, 2021). The issues facing the region have lessened in some countries, and these countries have started to improve their economic levels. Countries such as Angola and Botswana have particularly drawn funding into the region, which then fosters the levels of domestic investment. Figures 2.11 and 2.12 below show the SADC members' investment level.

Figure 2. 11: Trends in domestic investment on the first group of SADC members



Source: Author's computation using data from World Bank (2024)

Figure 2. 12: Trends in domestic investment in the second group of the SADC members

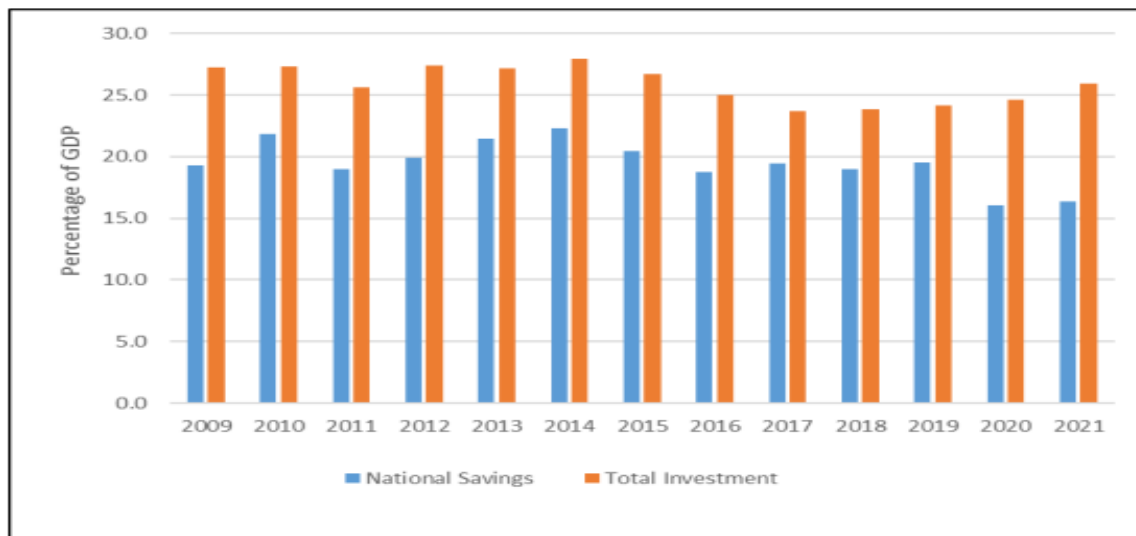


Source: Author's computation using data from World Bank (2024)

In Figures 2.11 and 2.12, there is clear evidence that countries such as Angola, Botswana, Lesotho, Seychelles, Zambia, and Tanzania have exhibited a potential trajectory of domestic investment, mainly because they have extensive resources. Seleteng and Motelle (2016) indicate that the level of investment in most countries is determined by the availability of factors such as natural resources, which is supported by Adika (2021), who emphasised that these countries were regarded as resource nations. Adika (2021) highlighted that the resource-rich countries have an average yearly GDP growth of 3.8%. In contrast, poor resource countries witnessed an average GDP growth of 3.5%. Adika (2021) also puts forward that South Africa has been regarded as a resource-rich economy, which is arguable based on the evidence from Figure 2.12. Other countries, such as Eswatini, Comoros, Zimbabwe, and Mauritius, have yet to show convincing trends in their domestic investment. Countries such as Namibia have experienced high levels of fluctuation in their domestic investment. This affects the overall region's domestic investment and hampers the level of economic growth in the SADC region. It is also important to note that no available data exists on countries such as Malawi and Mozambique to provide a clear direction on their levels of investment.

Studies such as Seleteng and Motelle (2016), Kapingura (2018), and Hungwe and Odhiambo (2019) have examined the role of national savings, as it plays a crucial role in providing a comprehensive structure of overall economic growth and development. This is a subject of interest, especially in the SADC region, where investment has fluctuated over the years. In general economics, National Savings provides the necessary funds for domestic investment, which drives economic growth and development. A strong relationship between National Savings and domestic investment is crucial for a stable and growing economy. In the case of the SADC region, recent statistics stipulated that domestic savings and investment have remained suppressed, with most of its members failing to reach 50% of the GDP (SADC, 2021). The trends in investment and national savings in the SADC region are displayed in Figure 2.13 below.

Figure 2. 13: Trends in domestic savings and investment in the region



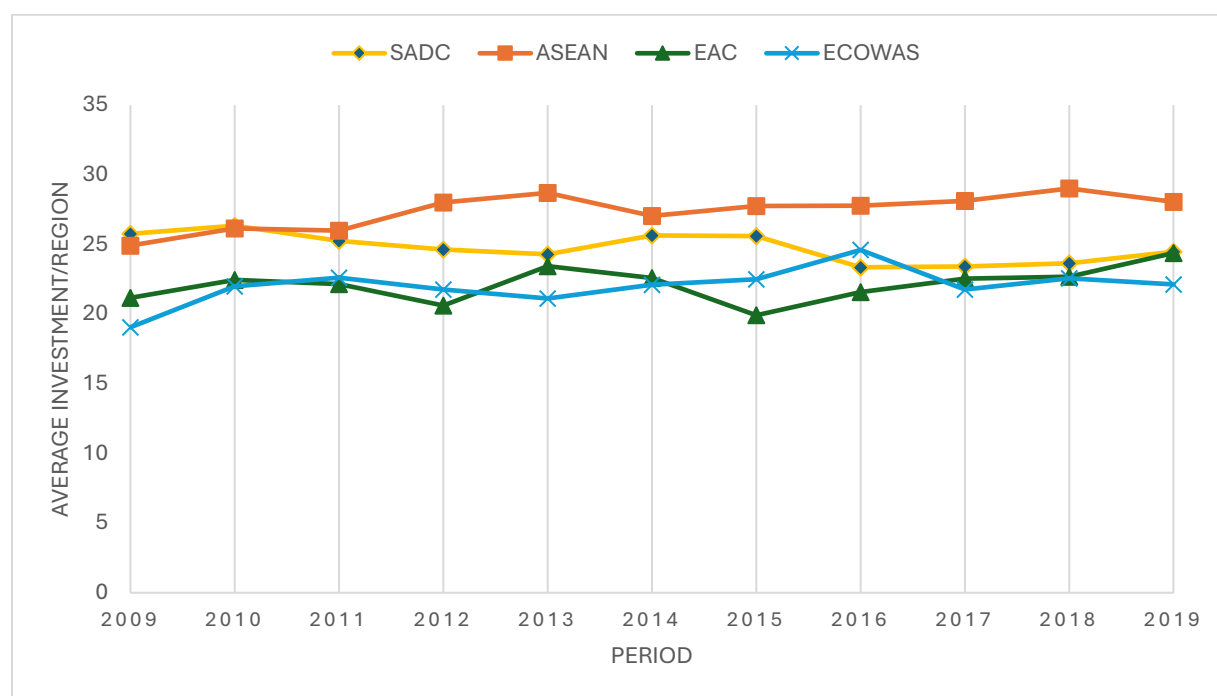
Source: Member States, April 2021, and IMF WEO April 2021, cited from SADC report 2021

Figure 2.13 shows that investment and savings fluctuate in the region. Following a decrease in 2011, investment and domestic savings increased in 2012 by over 25% and 20%, respectively, in the region. A downward trend was then seen in 2015 in the SADC region. Following a decline in real GDP from 26.2% to 23.5% in 2016, total investment has steadily increased in 2020. The region's total investment increased slightly from 23.7% to 24.9% of the GDP in 2020. The SADC (2021) report indicates that only five member states, namely, Zambia, Tanzania, Botswana, Seychelles, and Mozambique, have registered investments exceeding the regional objective by at least 30% of GDP. Conversely, domestic savings have dropped from 16.3% to 15% in 2020, with Zambia being the only country to record a total domestic savings of over 35% of the GDP in the region (SADC, 2021).

Despite the region not doing exceptionally well on its domestic levels, it has surpassed the average levels compared to other regions, such as the Economic Community of Western African States (ECOWAS), with 15 members, and the East African Community (EAC), with 7 countries, except for the ASEAN region. This is shown in Figure 2.12 below. Research statistics indicate that the ASEAN region was driven by factors such as mineral resources and market size, with some members improving their economic activities and contributing to domestic investment in the region (Kapingura, 2018; Markowitz, 2020). Additionally, the level of domestic investment in the

ASEAN community has primarily been influenced by factors such as consumer behaviors, conducive environments for investment, and competition from their industries, which significantly contribute to their capital accumulation (The Association of Southeast Asian Nations, 2021). This resulted in higher average domestic investment for the ASEAN region than other regions. Regions such as EAC and ECOWAS have encountered challenges of limited resources, political instabilities, inadequate regulatory frameworks, and limited access to finance, which affect the overall average domestic investment in these regions (Mose, Keino, Yoganandan, Olaniyan & Nyoni, 2021; Organisation for Economic Co-operation & Development, 2024).

*Figure 2. 14: Trends on average domestic investment per region*



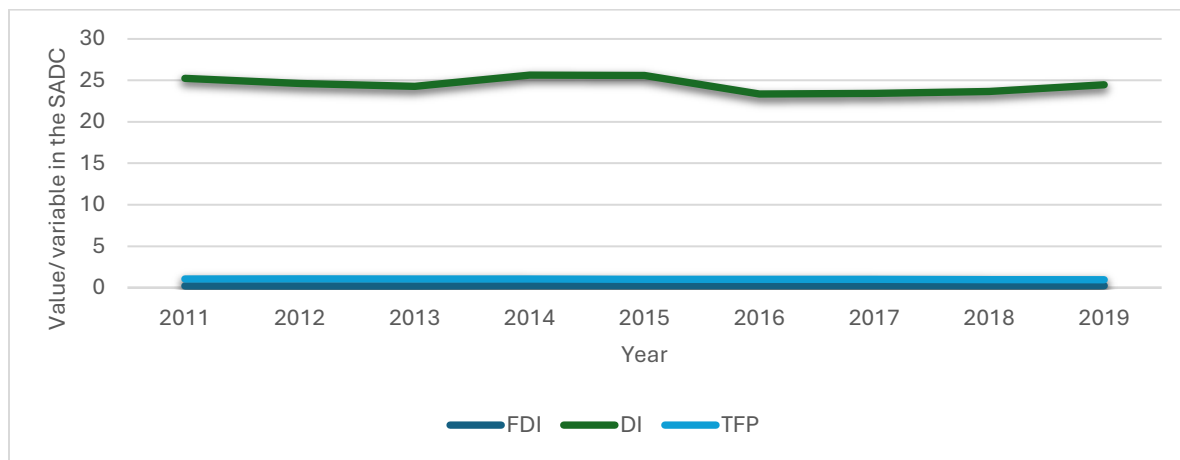
Source: Author's own works using Global Financial Development Data (GFDD), World Bank (2024)

Figure 2.14 shows that the ASEAN region had the highest level of domestic investment from 2009 to 2019, recording a maximum average value of over 28% in 2013. This is followed by the SADC region, which had an average of 27% in 2014. Other regions have been experiencing a massive stagnation in their average investment, with ECOWAS recording a maximum of 24% in 2016 and EAC with a 24% maximum average in 2019.

### 2.4.3 Measuring the relationship between financial sector development, domestic investment, and total factor productivity in the SADC region.

Chirwa and Odhiambo (2017) highlight that financial sector development plays a critical role in channeling funds to productive sectors that contribute to the economy. Having indicated that financial sector development drives economic growth, it is important to understand the level of relationship between the financial sector development, total factor productivity, and domestic investment in the SADC region. To illustrate this graphically, the study uses the financial development index to measure the development in the financial sector, plotting this against domestic investment and total factor productivity from 2011 to 2019 in the SADC region. For comprehensive results, the author calculates averages per year for each variable to make a prediction and typically provides the value in the dataset, assisting in creating a clear inference.

*Figure 2. 15: Relationship between financial sector development, domestic investment, and total factor productivity in the SADC region*



Source: Author's own works using data from Global Financial Development Data (GFDD), Penn World Tables, IMF and World Bank (2024)

The above figure shows that the relationship between the financial development index, domestic investment, and total factor productivity is unclear. The movement of the financial development index shows little influence on total factor productivity and domestic investment. Therefore, no clear evidence supports the existence of a relationship between financial sector development (measured by FDI), domestic investment, and total factor productivity in the SADC region.

## 2.5 Conclusion

The chapter has provided an overview of the SADC region, with a focus on the financial sector development, domestic investment, and total factor productivity in the SADC region. It fulfilled the secondary objective of providing an overview of the movement and past trends of the variables of interest. The chapter began with a review of the formation of the SADC. This was followed by an analysis of the different variables that are of importance in the study. In reviewing the financial sector, it was found that the countries are at different levels of development, with countries such as South Africa being most dominant. On the other hand, there are countries that are underdeveloped, with some without a functioning stock market. The review of growth has also shown that the countries are at different levels of growth. The review of TFP and domestic investment has also shown that there is heterogeneity across countries. The insights from this chapter provide a foundation for further research and policy analysis to address the complex issues facing the SADC region.

## **CHAPTER THREE**

### **Literature review**

#### **3.1 Introduction**

This chapter presents the literature underpinning the study. It provides a discussion of theoretical literature and empirical works on the subject of financial development, total productivity, and investment. Literature indicates that an efficient financial system should positively influence economic growth by directing resources to productive sectors of the economy (South African Reserve Bank, 2014). Several theoretical models and empirical works have examined the link between financial development and economic growth, as well as finance and the sources of economic growth, as indicated in the study. The section is divided into 5 sections. Following the introduction, section 3.2 provides a discussion on theoretical literature, followed by empirical evidence in section 3.3, and a review of the literature is discussed in section 3.4. Lastly, the chapter provides a conclusion in section 3.5.

#### **3.2 Theoretical Literature**

##### **3.2.1 The Schumpeterian Theory**

The economist Joseph Schumpeter pioneered one of the theories that explain the function of the financial sector in raising investment and total productivity in the 1910s and 1920s. This theory was named after Joseph Schumpeter as the Schumpeterian theory of economic growth centered around technological innovation and entrepreneurship as engines of economic growth. This theory has played a major role in delivering a valuable framework for understanding how the fundamental sources of economic growth are affected by financial sector development, especially in the SADC region. It clearly states that innovations often result in new products, procedures, and new firms, and the existence of successful entrepreneurs builds new and disrupts established markets (Mee, 2015).

According to Vishnuchandradas (2012), the theory was built under the following assumptions:

- (i) There exists an intense competition that spurs continuous innovations.
- (ii) Entrepreneurs are willing and able to take chances and carry out novel concepts.
- (iii) Financial accessibility was important to starting and implementing a business.

Additionally, the assumptions of intense competition were based on the notion that no profits, interest rates, savings, investment, or involuntary unemployment are in equilibrium. The theory was notably important, especially in describing how a developed financial system accelerates investment through capital accumulation and technological advancement and promotes economic growth by several scholars (Mehmood, Alzoubi, Alshurideh, Al-Gasaymeh & Ahmed, 2019). This is particularly relevant, given the SADC region's initiatives to develop a stable financial system.

The theory points out that economic flow creates a constant circular flow in which development processes do not occupy an interval in this flow. This means that the circular flow repeats every year, producing the same products. This model highlights that the circular flow of income and expenditure amongst families and businesses has been explored, especially in macroeconomic studies and academic literature. According to Bazhal (2016), the Schumpeterian model explains the theory's methodological basis of fundamental macroeconomic identities, which includes the circular flow of aggregate income and spending and the relationship between the amount of money in circulation in an economy and its GDP.

The theory stipulates the claim that development is impossible within the restrictions of stagnant circular flow. This argument has drawn the attention of Bazhal (2016), who highlighted that real economic growth occurs when there are new innovations or so-called new combinations. This brings about the development of variables such as savings and technological progress, and the distribution of financial resources, which provides a valuable perspective through which the effect of financial sector development can be extracted in the SADC region's economic growth (Moyo & Le Roux, 2021). Additionally, Moyo and Le Roux (2021) suggest that financial services are necessary for innovation and development in this theory. They stipulate the importance of innovation, which arises from the financial system's ability to facilitate investment in new ventures.

Schumpeter (1911), cited from Ndlovu (2013), further adds that a stable financial system is critical for economic growth due to its function in improving the allocation of savings and the fostering of modernisation, as well as financing of productive sectors of the economy. Schumpeter (1911)

emphasises that developing the financial system positively impacts investment levels in different economies. This is particularly important, especially in the SADC region, as the allocation of savings and capital accumulations to major producers has been narrow in the region. Moreover, capita income was viewed as services that a well-functioning financial sector must deliver to foster sustainable economic growth (South African Reserve Bank, 2014). In Schumpeter's view, the capital market provides credit to finance economic development. In this essence, the capital market was viewed as a market for potential future income streams brought by structural changes. Several economists have supported this view (Goldsmith, 1969; Bencivenga & Smith, 1991; Levine, 2005).

The theory provides evidence that the development of the financial sector is important for economic growth. Seminal works such as Bencivenga and Smith (1991) have argued that entities involved in finance, such as the banking sector, should increase the flow of funds by channeling savings towards productive investment to enhance capital accumulation, which forms part of the engines of economic growth. Levine (2005) also supports Schumpeter's idea, asserting that financial sector influences savings and decision-making concerning investment, productivity, and economic growth.

Schumpeter (1911), cited from King and Levine (1993), emphasises the significance of financial intermediaries in stimulating growth by providing funds, controlling transactions, risks, and the mobility of savings to influence productive investment, which encourages stability in the financial system, resulting in positive economic growth. King and Levine (1993) add that the state or quality of the financial sector plays a significant part in promoting productivity within the economy. The assertions above align with the work of Kumbhakar and Mavrotas (2008), who argued that the state of institutions determines the level of the invention within an economy, as it determines the number of resources that can be mobilised to support investment projects, and the evaluation of prospective entrepreneurs, diversification of risks, given the uncertain environment.

The model breaks down the circular flow with innovation in the form of a new product by an entrepreneur to earn a profit. It puts forward the importance of bank credit growth as a source of funding for entrepreneurs. Given entrepreneurs' continual commitment to reforming their tendency to be followed by others, investment is more likely to increase with an increase in new capital (Metcalf, 2012; Vishnuchandradas, 2012). This hypothesis is crucial because it highlights how

technological innovation and general entrepreneurial creativity boost economic growth. It emphasises the importance of the financial sector in supporting and creating a business environment that encourages a conducive environment for risk-taking and investment in the financial sector. This is important, especially in the SADC region, given inadequate financial interventions to support entrepreneurship and innovations.

However, the theory partially supports the idea that circular flow captures development based on the rationale of macroeconomic disturbances, which affect the circular flow due to changes in inputs such as labor, capital, and national wealth. It supports the idea that revolutionary changes in technological progress can promote economic development (Bazhal, 2016). Evidence from Aghion, Akcigit, and Howitt (2014) highlights that this is the only way through which economies' macroeconomic productivity develops. The model highlights innovation and entrepreneurial investments driven by monopoly rent, and replacing outdated technologies (Aghion et al., 2014). Bazhal (2016) put forward that the theory does not guarantee long-term economic growth concerning social welfare, meaning a rise in domestic wealth as opposed to personal success gained at the expense of impoverished others.

Moreover, despite the support of several scholars of the Schumpeterian theory, Upadhyay and Rawal (2018) also criticised this model, stipulating that it only focuses on a few dimensions of productivity and only centers around innovation. It does not consider other principal factors, such as the managerial and organizational proficiency of the entrepreneur, which may affect levels of productivity and wealth, which in turn affect capital. According to Vishnuchandradas (2012), the theory assumes economic development results from cyclical processes. Lastly, it ignores the classical factors that are significant in stimulating production levels, as per Upadhyay and Rawal (2018). Despite these shortcomings, the theory provides valuable insights into how finance influences productivity and economic growth.

### **3.2.2 The Accelerator Theory of Investment**

The accelerator theory of investment is an economic theory that explains the relationship between investment and the level of output. In the 1930s, John Maynard Keynes and associates created the accelerator theory, often called the investment accelerator, after making observations on changes in the amount of investment, which were based on changes in output or income. This theory has long been linked with the Keynesian Model due to similar characteristics of fixed prices shared by

these theories. The theory was first proposed by Clarke in 1971, as cited by Eklund (2013). Samuelson (1939) was credited with applying it to business cycles. The theory focuses on how investment responds to output and income changes and provides insights into how financial sector development can impact economic growth through investment in the SADC region. According to this theory, when the demand for goods and services rises, more capital investment is required to keep up with the market, and the amount of investment and output in an economy are positively correlated, which could be important to the SADC region's economic growth (Parker, 2010). Additionally, businesses will raise their capital investments to meet demand when output or income rises and lower their investments when output or income falls. This indicates that the flow of capital and access to credit by businesses can increase the SADC region's economic growth, which aligns with the accelerator theory.

Moreover, in this theory, innovation is treated as a derived demand, which indicates that the growing demand for products and services is the reason it is demanded rather than for its own purpose (Parker, 2010). Investment rises in response to higher output, which is important for increasing economic growth in the context of the SADC region. The theory has the presumption that businesses want a relatively constant capital-to-output ratio. It further assumed that investment was a function of changes in output, and the changes in demand for goods and services led to changes in investment.

Parker (2010) formulated equation 3.1 to explain the link between investment and output. Equation 3.1 indicates that at any point in time  $t$ , the intended capital stock equals the proportional production levels at time  $t$ .

$$K_t^* = \sigma Y_t, \dots \dots \dots (3.1)$$

Where  $\sigma$  - shows the intended output in capital.

If a business invests time,  $t$ , to increase the capital stock to the target amount,  $K_{t+1}$ , at a time  $t+1$ , and given that it has a depreciation value of zero, the new equation may be written as follows:

$$I_t = K_{t+1}^* - K_t \dots \dots \dots (3.2)$$

Having discussed that  $K_t = K_t^*$ , therefore, a new accelerator equation may be expressed as follows:

$$I_t = \sigma (Y_t + 1 - Y_t) \dots \dots \dots (3.3)$$

This suggests that the model projects a direct proportion between investment and output growth. This means that investment will follow the direction of production growth for the coming period. The theory is important as it suggests that changes in output will drive investment, implying that output-boosting strategies benefit investment in the SADC region's economic landscape.

However, the theory has been criticised on a number of fronts. Kaldor (1957) highlighted that it is fictitious that production and revenue lead to an increase in investment; in fact, it cannot be assumed that production is constant, as there may be times when production is not constant. Kaldor (1957) also adds that if entrepreneurs expect an increase in demand due to income or production being only transitory, they will attempt to satisfy the increase in demand by overworking the current production equipment rather than building a new facility. The theory also does not consider capabilities present in the consumer product sectors. Moreover, Kaldor (1957) indicates that the theory makes two assumptions that might only sometimes hold in practice: a constant depreciation rate and a fixed capital-output ratio. Lastly, the theory ignores other significant factors that influence investment, especially in the long run, including government policies, uncertainties, and the cost of capital, and instead focuses only on the link between output and investment.

### **3.2.3 The Solow Residual Theory of Total Factor Productivity (TFP)**

The Solow Residual Theory of Total Factor Productivity was developed by Robert Solow in 1956, under which total factor productivity is viewed as a measure of the efficiency with which inputs are employed. This theory explains the portion of economic growth that was not explained by capital and labor inputs, which substantially marks the total factor productivity. According to Comin (2006), the theory measures total factor productivity given that the production function is neoclassical, factor markets have perfect competition, and the input growth rates are measured precisely.

The theory was built on the idea that factor productivity was the fraction of economic growth that changes due to labor and capital inputs. According to Barro (1999), the theory represents the residual components that raise production. McCombie (2000) highlights that total factor productivity accounts for the effect of efficiency improvements and technological development that may affect productivity. This theory suggests that the growth of inputs like labor and capital

is insufficient to fully explain economic growth. Instead, there is a residual component that should reflect how efficiently these resources are used. As per the study of McCombie (2000), technological innovations, efficiency gains, and structural adjustments to the economy are the main forces behind economic growth, which can be facilitated by financial sector development to boost productive activities in the SADC region (Comin, 2006).

This theory emphasised the importance of resource allocation and the spread and uptake of innovative technologies in which financial sector development can contribute to the growth of total factor productivity, in which, according to Solow residual growth, is a major engine of economic growth (McCombie, 2000). The theory provides a framework for understanding total factor productivity as a source of economic growth other than capital and labor inputs, making it important, particularly in this research area. The Solow residual emphasises how crucial total factor productivity is to economic growth by providing useful insights through which financial sector development impacts economic growth in the SADC region. It stipulates the significance of enhancing total factor productivity and technological innovations necessary for the SADC region to achieve sustainable economic growth.

Nevertheless, the theory has some notable areas it did not cover; for instance, it may not have fully represented all the variables influencing productivity development (Saïdi, 2019; Ikonomou, 2023). Additionally, differences in labor and capital input might not be sufficiently considered, which would cause a bias in total productivity as the factor driving economic growth. Furthermore, it can be challenging to measure total productivity precisely, and different estimation techniques may produce different results.

### **3.2.4 The McKinnon-Shaw model**

The McKinnon-Shaw model is a framework that provides a crucial roadmap for finance and a sustainable economy. It was developed in the early 1970s by two famous economists, Ronald McKinnon, and Edward Shaw, to challenge the economic suppressing effects of 1973 (Odhiambo, 2010). The model was built on the fundamental ideas of both Shaw and McKinnon regarding financial liberalization. According to McKinnon's observations, the willingness to hold cash reduces the opportunities for internal savings on capital goods. In this quest, McKinnon (1973), cited by Levine (1997), indicates that the availability of money influences investment decisions. Therefore, according to this view, the investment ratio will increase with an increase in real

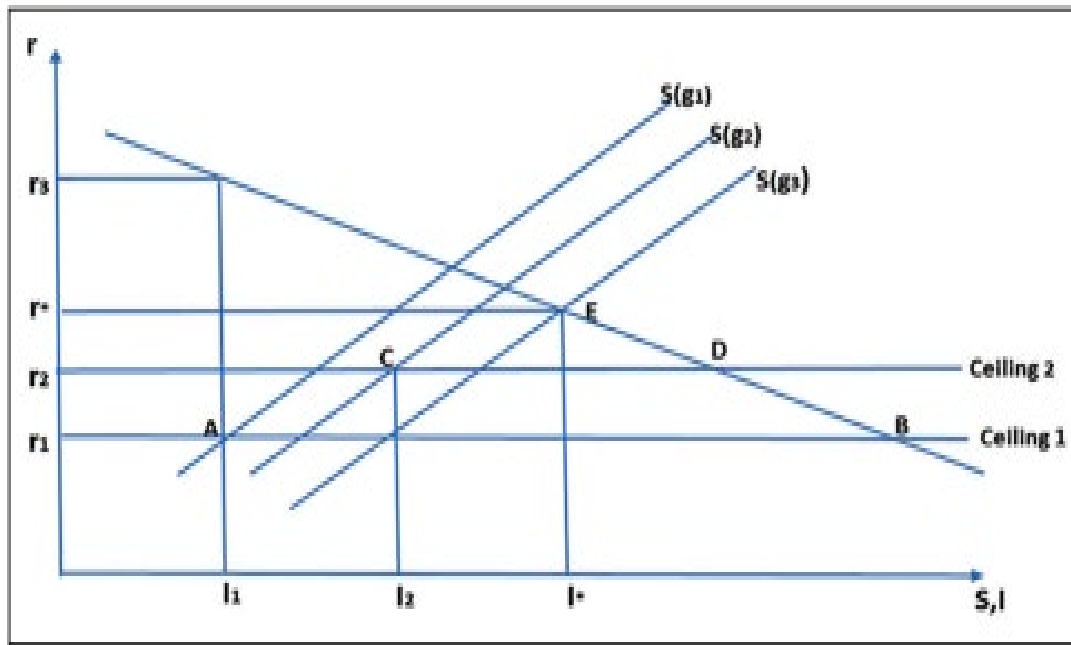
deposits, positively affecting financial intermediation, which is important to effectively influence the economic growth of the SADC region. On the other hand, Shaw (1973), cited by Levine (1997), postulates that the flexibility of financial institutions should promote opportunities for output growth through financial accessibility, that is, borrowing and lending. The views of these economists became the center of attention, and their collaboration delivered the McKinnon-Shaw hypothesis. The model was based on three key ideas: (i) financial development leads to economic growth, (ii) financial repression hinders economic growth, and (iii) financial liberalisation promotes economic growth.

However, the assumption that financial liberalisation leads to economic growth may not always be valid, considering the challenges of external shocks such as financial crises, which may impose potential risks and instability in the financial system. This model focused primarily on financial repression as a system that impedes opportunities for the efficient allocation of resources, savings, and investment, especially for emerging economies. The theoretical viewpoint of McKinnon-Shaw hypothesis (1973) advocates that boundaries that are implemented by the state, which include interest rate ceilings, policies, and practices on credit markets, negatively affect the availability of funds, which negatively affect the savings volume and capital accumulation and deepening and hereafter reduces economic growth (De Gregorio & Guidotti, 1995). These financial restrictions lessen savings, resulting in reduced investment levels, which, in the context of the SADC region, may underscore how the financial sector has to strengthen its economic growth.

Moreover, McKinnon (1973) and Shaw (1973), as cited by Levine (1997), stipulate that interest rate liberalisation, particularly in developing economies, increases the real interest rate, which eventually encourages savings and investment, and ultimately promotes economic growth. It is important to note that the original frameworks of McKinnon (1973) and Shaw (1973) concentrated on the issue of financial repression and the necessity of liberalising it through measures such as removing credit control and letting the market set real interest rates. This is important for the SADC region as the model highlights the importance of financial repression and the necessity of liberalising to allow credit mobility and effective resource allocation in productive industries. Additionally, this model predicted that repression would result in low savings, high consumption, and suppressed economic growth. Savanhu, Chinzara, and Ezeoha (2011) indicate that the central

point of the McKinnon-Shaw paradigm was the market distortions brought about by financial restrictions, as shown in Figure 3.1.

*Figure 3. 1: The financial liberty and constraints*



Source from: Savanhu, Chinzara and Ezeoha (2011)

According to Figure 3.1, when interest rates rise, investment efficiency increases, and higher investment leads to higher economic growth. Ceiling 1 shows a high repression of the interest rate, the yield invested amount at point  $I_1$ , where the A economy is at  $S(g_1)$ . According to Savanhu et al. (2011), credit rationing will result from the interest rate ceiling since it will reduce available funds and credit in the market or the distance between A and B. Banks benefit from the difference between  $r_1$  and  $r_2$  if deposit rates are capped. Lastly, financial liberalization changes the interest rate to  $r_2$ , where savings and investment rise to  $I_2$ , indicated by C, which results in an increase in economic growth. There is a small magnitude due to a fall in credit supply at  $r_2$  compared to  $r_1$ . Thus, equilibrium is realised at point  $r^*$ , where the savings and investment amount are at point E, indicated by  $I^*$ , which leads to a rise in economic growth shown at  $S(g_3)$ .

The McKinnon-Shaw hypothesis (1973) indicated that where there are fewer government constraints in the financial sector, there will be higher capital productivity. From an economic perspective, financial liberalisation enhances efficiency and creates a more robust financial sector

that will mobilise financial resources and channel them to investment. Studies such as Anthony, Ogbuabor, and Anthony-Orji (2015) substantiated that this model was fundamental, especially in economies with a desire to increase capital accumulation through private savings, resulting in a surge in finance, which was utilised for investment purposes. This model has remained relevant in providing a clear theoretical framework for understanding the relationship between finance and economic growth, making it pertinent to the interest of this study (Egbetunde, Ayinde & Balogun, 2017).

Lastly, the discussion from the McKinnon-Shaw hypothesis (1973) also validates the interest of the study by providing insights into how finance drives economic growth, which can be aligned with the SADC region. Using this model, encouraging the development of the financial sector is important in developing regional economic growth. This model has been crucial in this field. Prominent studies have relied on this model to explain the importance of financial development. Kapur (1976), Mathieson (1980), and Fry (1989) emphasise that the model must flourish to reach total potential economic growth in any region. Finally, the McKinnon-Shaw model (1973) remains a fundamental framework for understanding the relationship between finance and economic growth.

### **3.2.5 Endogenous Growth Theory**

The endogenous growth model is one of the most recent economic theories that explain long-term economic growth. The theory explains how the financial sector and economic growth are related. This model was developed to take into account the shortcomings of theories such as the neoclassical growth model in the 1980s (Romer, 1994). Romer (1986) noticed that classical and neoclassical theories oversimplified a complex process of economic growth; hence, the endogenous growth model was developed. Based on the works of Romer (1986), Lucas (1988), and Grossman and Helpman (1991), the theory was built under the idea that government policies have the power to accelerate economic growth if they increase market competition and encourage the development of novel products and innovative processes. Secondly, capital investment yields rising returns to scale, particularly in infrastructure and education, health, and telecommunications investments. Thirdly, one of the main drivers of technological advancement is private sector investment in research and development. According to Sarwar, Khan, Sarwar, and Khan (2020), the fundamental tenet of the endogenous growth theory is that when the capital stock (that is, all

these human and physical resources) grows, positive externalities are generated to improve productivity. Decreasing returns on investment will be discouraged if the spillovers are substantial. This model, unlike the work of neoclassical growth, manages the economy's growth rate as being determined by the exogenous speed of technological progress and exogenous labor force growth rate, views the growth of the economy as an endogenous result of the economic system, not the outcomes of the forces arising externally (Molochny, 2009). Put differently, the theory states that developing new technologies and productive, efficient means of production will result in economic growth when a country's human capital is improved.

The theory contends that endogenous forces are primarily responsible for economic growth and that substantial contributions come from investments in human capital, innovation, and information important for the SADC economic growth. According to Ogujiuba and Adeniyi (2005), this model improves the works of the neoclassical and Harrod-Domar growth models, which had limitations in explaining productivity. Muyambiri and Odhiambo (2018) indicate that the endogenous growth model accentuates the idea that liberalization in the financial markets influences domestic investment. The model stipulates that financial sector development affects the total factor productivity through efficient allocation of resources, mobilizing savings, and facilitating innovation to achieve higher levels of growth.

The model also stressed three main growth drivers: investment efficiency, enhanced human capital formation, and robust technological innovation. Regarding the efficiency of investment, the financial sector plays a critical role in mobilising savings and channeling them towards investments with high returns. This involves the interventions of the intermediaries to enhance the mobility of funds from the surplus side to the deficit units (Bencivenga & Smith, 1991). The second channel is human capital formation, which defines the knowledge, skills, and abilities individuals possess and use to produce goods and services. The endogenous growth theory is relevant in the SADC region as it provides frameworks and proposals that financial sector development should enhance human capital formation, creating opportunities for individuals to invest in education and training, increasing productivity, promoting innovations and entrepreneurial opportunities, which will stimulate growth.

The last channel is technological innovation, an important driver of economic growth. Most importantly, financial development promotes innovation by encouraging research and

development (R&D), creating an environment that fosters innovation, and facilitating the diffusion of knowledge, as Romer (1990) suggested, which are critical in attaining higher levels of total factor productivity. Lastly, the model emphasises that a knowledge-based economy's beneficial spillover consequences and positive externalities can result in economic growth. The model can be expressed as follows:

$$Y = A (R)f (R_j K_j L_j) \dots \dots \dots (3.4)$$

Where;

Y- represents productivity/output.

K<sub>j</sub>- represents physical stock and human capital.

R- represents the total stock knowledge,

L- represents labor.

R<sub>j</sub>- indicates the research stock and expenditure on development.

Then, the higher the value of K, the more growth in human capital is realized, which increases capital income. Lastly, the type of capital an economic institution invests in determines its growth rate.

Overall, the endogenous growth model provides a valuable framework for understanding the role of financial sector development in driving long-term economic growth. The empirical perspective around the theory fundamentally confirmed the endogenous growth model's predictions, especially concerning the contribution of the financial sector's development to economic growth (Ribeiro, 2003; Maré, 2004). The theory remains important, especially in the context of the SADC region, as it highlights the significance of endogenous elements within an economy as the main forces behind long-term economic growth, including technical innovations, human capital, and financial development.

However, Fine (2000) and Chirwa and Odhiambo (2018) argue that the theory needs to precisely identify the channels of development for the financial sector used to influence economic growth. Additionally, the endogenous growth model allegedly ignores other significant long-term growth

determinants like institutional quality, political stability, and the role of government policies in favor of concentrating on elements like technological advancement and human capital.

### **3.3 Empirical literature**

This section presents evidence from studies that have reviewed the influence of financial sector development on total factor productivity and domestic investment, particularly studies conducted in developing countries. This empirical literature discusses whether a correlation exists between financial sector development, productivity, and investment using evidence from studies conducted at different country levels. The discussion of empirical literature will be based on various countries and regions to gain different perspectives concerning the variables of interest.

It is important to note that studies have used specific methodologies in their reviews based on the nature of the data of variables used to make this evaluation (Muyambiri & Odhiambo, 2018). Given that the financial sector development has various components, such as financial markets and financial institutions, authors have frequently relied on financial development indicators derived from economy-wide collective data when analysing the influence of financial sector development on a general economy. Following this approach, this study extracts empirical evidence on financial development and its impact on the main channels of economic growth, namely total factor productivity and domestic investment. The empirical evidence will be extracted using a two-set category or approach, that is, (i) financial sector development and total factor productivity and (ii) financial sector development and domestic investment. Some studies have focused on two of these variables and have partially covered other economic variables.

Using this category to conduct the empirical review will assist in producing a comprehensive synthesis of the literature and provide precise results at various countries and regional levels, allowing the study to identify gaps in the literature. Studies conducted under these levels make it easier to identify gaps in the existing literature and provide clear insight into the number of factors around the finance productivity and investment field. Empirical literature starts by discussing the study of King and Levine (1993), which served as a foundation and the first well-known study in the field of financial sector and economic growth.

According to Aziakpono (2011), the study of King and Levine (1993) is described as novel in the field that uses four comprehensive sets of financial development indicators. These are M1 to GDP,

the ratio of domestic credit to GDP, liquid liabilities of the financial system to GDP, and the ratio of quasi-liquid liabilities of the financial system to GDP. These indicators have been used to empirically examine the nexus between long-term economic growth and the development of the financial sector, using data extracted from 119 developed and developing economies from 1960 to 1989. The study used a cross-country regression supporting pooled cross-country time-series regressions. Results have indicated that an advanced financial sector boosts growth, physical accumulation, and technological innovations that drive firms' productivity (King & Levine, 1993). The study found that financial intermediaries are positively correlated with innovation, gross capital formation, and productivity.

However, this study was exposed to some boundaries, such as control variables that are limited in their influence on the analysis, homogeneity of treatment of the slope coefficient, and methods that are grounded in sustained growth paths but are not (Arestis & Demetriades, 1997). Additionally, Arestis and Demetriades (1997) extended that the cross-country variation makes it challenging to generate distinct results. This study has profoundly influenced this field and is considered to make a significant contribution. The review is discussed, paying attention to the study of King and Levine (1993), and evaluating if there have been any new developments in this field.

### **3.3.1 Financial sector development and total factor productivity**

Empirical literature has explored the nexus between the financial sector and total factor productivity (TFP). The efficiency with which inputs such as labor and capital are converted into outputs is measured by total factor productivity. In the prominent study of King and Levine (1993), the developed financial sector is strongly correlated with overall productivity. They contended that resource allocation made easier by a robust financial sector boosts productivity growth in all areas of the economy. Recent studies around this field have also been discussed. The discussion of the empirical evidence from different studies was extracted from studies conducted at both panel and time series levels, including studies conducted within the SADC countries.

Several studies have interestingly discussed the relationship between the two variables, financial development, and total factor productivity. One of the studies is that of Naceur et al. (2017), who examined the nexus between financial development, productivity, and investment in 145 countries. Their study employed various econometric tools to analyse the data from 1960 to 2011, using variables that capture financial development. They highlighted that financial development should

not be viewed as a “magic bullet” for economic growth. Furthermore, they highlighted that the relationship between the three variables was more complex since various financial development characteristics have multiple effects on growth sources according to regions and income levels. This indicated that the relationship among the variables was complex.

For instance, the study of Ezzahid and Elouaourti (2017) conducted in low-income and upper-middle-income economies focused on 40 African economies, employing the Breusch LM test and the Hausman test. In this study, domestic credit by banks was used to measure financial development and automated teller machines. At the same time, control variables include inflation, openness, population growth, public expenditure, and the level of human capital and how this affects total productivity. Results indicated that the financial sector development does not significantly impact total factor productivity in low- and upper-middle-income economies. However, at the individual level, financial development was a primary driver of total factor productivity in low to middle economies. This study was evidence of an unclear relationship between the variables.

In another study, Munusamy and Rajamoorthy (2020) found that capital accumulation was the only variable affecting total productivity in the eight ASEAN countries. These results, however, in literature need to be tested as total productivity is affected by several economic factors, such as innovations in production methods, human capital, infrastructure capital, regulator policies such as trade, and economies of scale and scope. The results from the study of Munusamy and Rajamoorthy (2020) were generated through the data from 1990 to 2018, and the Mean Group (MG) estimator was used to arrive at these results.

Some market-based studies have partially agreed with the results of King and Levine (1993). These include a study by Li and Liao (2020) conducted at a cross-sectional level to evaluate the link between financial sector development and green total factor productivity. The study used data envelopment analysis (DEA) and the Malmquist-Luenberger index method to analyse data from 1991 to 2015 in 40 countries. Financial development, bank development, securities development, and insurance development were used as indicators, and green total factor productivity was used as a dependent variable. The results revealed that bank and insurance development were found to have a negative effect on productivity. On the other hand, securities development was found to have a positive and significant contribution to total factor productivity.

A study conducted by Lau, Mahalik, Pal, and Gozgor (2023) discovered similar results to the study of Li and Liao (2020). In this study, Lau et al. (2023) examined the relationship between total factor productivity and several factors, including the development of the financial sector, technical development, and foreign direct investment, with an emphasis on the African setting. Results have indicated that total factor productivity responds negatively to the development of technology in the long run. Similar to the work of Li and Liao (2020), this study also indicated that development in the financial sector reduces total factor productivity. On the other hand, foreign direct investment was found to have an inconclusive effect on productivity.

The study of Cakic (2024) also examined the nature of the relationship between finance and productivity in the Latin American nations between 1996 and 2019. In this study, productivity was viewed as the main driver of economic growth. The results indicated that countries with higher levels of total factor productivity also have higher levels of financial development. This finding can be interpreted as the outcome that there are macroeconomic and financial factors determining or similarly influencing both total factor productivity and financial development.

There are also some country-specific and time-series studies that were conducted to analyse the effect of financial sector development on total factor productivity (Ahad, Dar & Imran, 2019; Eita & Pedro, 2020; Ararso, 2021; Kamal & AboElsoud, 2023). The methodology and results from these studies differ from King and Levine's study (1993). For instance, a study conducted by Ahad et al. (2019) in Pakistan from 1972 to 2014 highlighted that financial sector development and savings positively influence long-term and short-term productivity in their sectors. Financial sector development was deemed a leading contributor to productivity in Pakistan.

Eita and Pedro (2020) also empirically assessed the financial sector's influence on total factor productivity in Angola, using the Autoregressive Distributive Lag (ARDL) estimation to analyse the data from 1995 to 2017. This study used the inflation rate, openness of the economy, exchange rate, total inflow of foreign direct investment, and the official development assistance received per capita. Findings show that foreign direct investment was the critical factor that stimulated total factor productivity. The total factor productivity was also positively influenced by the openness of the economy and the exchange rate in the manufacturing sector. At the same time, this relationship was perceived as unfavorable in the primary and service sectors.

Another study was conducted in Ireland by Ararso (2021), using the Vector Autoregressive (VAR) and other Johansen tests to analyse the relationship between financial sector development and productivity. The dependent variable also included foreign reserves, corporate tax, and export performance. The study argued that financial sector development positively influences export performance and does not significantly impact productivity, foreign reserves, and corporate tax in the short term. However, results from the Granger causality test indicated that the corporate tax rate does influence financial development in the short term, and other variables were observed to have little or no influence. The inconsistent results in Ireland indicated that financial sector development is a weak predictor of productivity movement, foreign reserves, and corporate tax.

As part of financial sector development, Lai, Zhu, Feng, and Yao (2021) discussed the effect of stock market price movement on China's productivity rate. The study used indicators such as the daily return of individual stocks, market return, and industry return on the day of the data from 2007 to 2017. The results were generated from panel data analysis and stipulated that stock price informativeness in the Chinese region positively affected productivity.

In addition to these studies, the study of Kamal and AboElsoud (2023) used data from 1991 to 2019. Their study employed quantile regression and adopted the augmented Solow technique to examine factors contributing to economic growth in Egypt. Variables included human capital and physical capital, which constitute total factor productivity. Other variables included gross domestic product and employment. There was an increase in quantile ranges, indicating that the total factor productivity significantly leads to higher economic growth in Egypt.

However, the signs between capital and human capital oppose each other, which causes a deficiency in the savings rate and a higher population. Kamal and AboElsoud (2023) also highlight that Egypt had disguised unemployment. Hence, total productivity and human capital were used as the main sources of economic growth. The discussed empirical literature has provided unambiguous evidence that the relationship between the variables varies across regions and countries. For this reason, this provides the gap in the literature that this study seeks to bridge by delivering accurate results and relevant policies that can be used to boost the effectiveness of financial sector development on economic growth.

### **3.3.2 Financial sector development and domestic investment**

The empirical literature on financial sector development and domestic investment presents different views concerning the nature of the relationship between domestic investment and total factor productivity. Despite being highlighted in the prominent study of King and Levine (1993) that the financial sector is essential for encouraging domestic investment, the nature of the relationship between the variables still needs to be clarified. While some studies may have indicated that the relationship is positive, some have identified that the relationship was either negative or non-existent.

Using a panel system approach, this study first introduced the work of Iheonu et al. (2020), which was conducted on finance and investment in the West African States. This study analysed the relationship between these variables from 1985 to 2017 using the Augmented Mean Group technique. This estimation was conducted with domestic credit to the private sector, bank credit to bank deposit banking intermediation efficiency, and broad money growth used as financial development indicators. This study showed that the nature and type of indicators explained the financial sector's influence on domestic investment.

Therefore, the extent to which the financial sector affects investment in the region was complex unless a specific type of indicator was used in the region. However, the availability of domestic credit to the private sector indicators does have a positive and relevant effect on domestic capital formation. This means that the lower effectiveness of domestic credit to the private sector has negative implications for the region's economic growth. It was observed that liquid deposits into credit by banks and aggregate money supply had adverse and significant effects on regional capital formation. Therefore, the relationship between the variables in this region was unclear.

On the other hand, Tyson (2021) conducted a comprehensive study using inclusive growth to understand the relationship between finance and growth in the Sub-Saharan African region since 2000. To measure financial development, Tyson (2021) utilised the banking system, which captured the element of financial accessibility. Statistical results indicated that financial development has remained weak for the last decades, and therefore, it has had a low effect on domestic savings and investment. As a result, the region experienced stagnant economic growth, which led to inadequate lending to vital industries and underdeveloped capital markets for inclusive growth. The results of this study and those of Iheonu et al. (2020) are similar in nature.

Contrary to the results of Tyson (2021), Hong Vo et al. (2021) found that financial sector development does influence capital accumulation positively in Southeast Asia. The specific measures of financial sector development employed in the study included bank credit and private sector credit, with control variables such as aggregate money. This analysis was based on the data collected from 1990 to 2018 using a panel cointegration test. The results were significant. This was evidence that using different methodologies, approaches, and indicators can lead to variation in results. Additionally, the country's response to economic growth depends on the nature and the type of factors influencing it.

Zoaka and Güngör (2023) also conducted a study focusing on how advance in the financial sector affects economic growth, focusing on 49 countries in the Sub-Saharan region. Given the intricacy of determining the exact relationship between variables, Zoaka and Güngör (2023) broadened their discussion by incorporating the behavior of financial markets. Their study included investment productivity and analysed how it was impacted by financial progress and financial markets. The outcomes indicated that financial progress and financial markets significantly affect capital accumulation and promote productivity. These results were generated using the common correlated effects estimator-mean group and cross-section autoregressive distributed lag as relevant econometric methods from 1990 to 2018.

However, the study of Zoaka and Güngör (2023) can be criticised in the real world since it does not consider the variation among the countries in the sub-Saharan African region. Furthermore, limited use of the control variables does not account for variation in institutional quality across countries. Hence, comparing these results thoroughly with other studies and King and Levine's (1993) study may be difficult. In the case of West African nations, a study conducted by Sanou (2023) shows that the banking system had a positive and significant impact on investment, while access to credit had an insignificant impact on investment. These results were generated using the fixed effect and random intercept model between 1996 and 2012, indicating that the relationship between private sector credit and credit accessibility in the West African economies was complex.

Having highlighted that some results depend on the nature and type of the econometric tool used, other studies have utilised more comprehensive control variables and modernised econometric techniques to address economic issues. These studies aligned their findings with theoretical work underpinning the positive effect of financial sector development on investment. For instance, Ayadi

and Williams (2023) concentrated on the African economies using panel data from 1991 to 2017. This study used fixed-effect and random-effect econometric models. This study additionally employed the Durbin and Hausman test to arrive at conclusive results. Indicators used included turnover, total value of stocks, and market capitalization. Results proved that financial sector development through these indicators positively contributes to investment in African countries. This confirms the study of King and Levine (1993), where financial development was viewed as a key factor that drives economic growth.

Another interesting study was conducted by Yang, Vitenu-Sackey, Hao, and Tao (2023) on 72 countries with underdeveloped financial systems. Unlike most studies, this study introduced the concepts of economic freedom, tax burden, investment freedom, and capital stock and discussed the impact on financial development from 2009 to 2017. The study used a linear dynamic panel GMM-IV technique and panel-corrected standard errors, which are the relevant methods for this analysis. They discovered that economic freedom was driven by capital stock, inclusive growth, and economic liberty. Furthermore, the entire financial system was positively affected by inclusive growth, and the tax burden and investment freedom had an adverse effect on financial development. In this approach, the dependent variable was financial development, and all other variables were used as independent variables. This also suggests that at an academic level, researchers often use different approaches to arrive at their conclusions.

Salakpi, Nasse, and Nangpiire (2024) also conducted a study exploring the relationship between investment and financial innovation in Africa for the period of 1996 to 2020. The study used the panel unit root and the cointegration test. Additionally, this study adopted the ARDL model to generate robust results. The results have shown that there is a long-run positive correlation between financial development and domestic investment. Moreover, this study indicated that the developed financial system's effect on investment relied on proxies, private loans, and domestic credit.

However, given several issues, such as data quality, contextual differences, variation in data mask measurement errors, and problems of omitted variable bias, it is challenging to extract concise ideas from cross-country studies. Under this, the study incorporates studies at the time series level. It begins by presenting the studies of Muyambiri and Odhiambo (2018) and Tadesse (2019) conducted using a time series approach. These studies have used different methodological approaches, such as autoregressive distributive lag, Granger-type causality, VECM, and bound

testing techniques, to evaluate how the developed financial system influences investment and total factor productivity at a country level. Moreover, the degree of criticism on some of the cross-sectional studies provides a rationale for the time series approach studies, and the studies' conclusions vary.

The study of Muyambiri and Odhiambo (2018) was conducted in South Africa from 1976 to 2014, using the Generalised Least Squares technique to generate results for market and bank-based variables. The study introduced the real per capita GDP rate, gross domestic savings, and real interest rate as control variables. Empirical findings indicated that bank and market-based financial development significantly stimulated domestic investment; hence, economic growth was realised.

However, Lanjawi (2019) contradicts the results of Muyambiri and Odhiambo (2018) regarding the level of significance of domestic investment, indicating that financial development could have been more statistically significant in his case. Lanjawi's study was conducted in 2019 and primarily focused on the United Arab Emirates, where the data was collected from 1980 to 2013. The study focused on providing a detailed analysis of the critical finance drivers, especially those that drive financial sector development to influence economic growth. Additionally, this study captured the relationship between savings and economic growth. The econometric tools applied include the cointegration test and ARDL, and the results highlighted that financial development was less effective in stimulating domestic investment, which resulted in little or no significant impact on economic growth.

Moreover, all the independent variables were cointegrated, including capita income, domestic credit to the private sector, and monetisation ratio. It was found that domestic investment was statistically insignificant in stimulating economic growth. In contrast, domestic credit to the private sector was the only variable statistically impacting economic development patterns, especially in the long run. Conversely, Muyambiri and Odhiambo (2018) indicated that domestic investment was affected positively by the market-based financial system in the long run, while a negative long-run influence of bank-based financial development was observed.

Another study was conducted by Mhango (2019), which also focused on the South African context. The study focused on how financial sector development affects economic growth, using an ARDL bound test. Variables employed in the study included economic growth, market and bank-based financial systems, and a country's investment and savings levels. The author

discovered a positive and insignificant link between economic growth and financial development. However, the relationship between economic growth, savings, and investment was statistically significant in the long run. The Granger Causality results from the study indicated that bank and market-based financial development, investment, and savings have a long-run impact on economic growth. At the same time, bank-based financial development is ultimately caused by economic expansion, market-based financial development, savings, and investment growth. As a result, there is a long-term feedback link between bank-based financial development and economic growth. It was evident in the short term that bank-based financial development contributes to economic growth. The causality analysis results indicate a short-term feedback relationship between bank-based financial development and economic growth in South Africa.

Another study that applied a time series approach was Tadesse (2019), conducted in Ethiopia from 1981 to 2016, using deposit mobilisation and credit expansion indicators. The control variables included national savings, government expenditure, and inflation. The results were generated using Cointegration, ARDL methods, Granger non-causality, and VECM and indicated a short-run and significant impact of deposit mobilisation on capital accumulation and growth. Moreover, credit was found to affect capital accumulation. Bank deposits and credit expansions did not significantly impact capital accumulation and progress in the long run. Hence, the variation in these results makes it difficult to determine the exact relationship between the variables of the study.

### **3.4 Analysis of Literature**

The section on literature has reviewed both the theoretical framework and empirical evidence on studies that have discussed the importance of financial sector development on total factor productivity and domestic investment. Variation in theoretical and empirical findings shows that different models could be used to analyse the influence of financial sector development on sources of economic growth, total factor productivity, and domestic investment. Different theories underpinning this discussion include the Schumpeterian model, the accelerator theory, the Solow Residuals theory of total productivity, the McKinnon-Shaw model, and the endogenous growth model, and these theories have used different theoretical approaches.

The Schumpeterian model (1911) highlights that financial innovation is more significant in stimulating growth through innovations that enhance capital accumulation. The accelerator theory

highlights factors that drive investment, while the Solow residual model addresses total factor productivity. The McKinnon-Shaw model (1973) emphasizes that a stable and well-functioning financial system should positively influence growth.

The endogenous growth model stipulates that economic growth is not solely encouraged by exogenous factors but also by endogenous factors such as innovations, knowledge, and technological progress (Bencivenga & Smith, 1991). Key findings from this model also indicated that investment, research and development, and innovation play a substantial role in encouraging economic growth. These theories contribute to understanding the complex dynamics driving economic growth and development, but they have limitations and challenges that must be addressed.

Overall, the theoretical literature on this topic highlights the multidimensional nature of economic growth and the numerous factors that can contribute to it. While these theories have highlighted the importance of financial sector development on economic growth, there is a lack of empirical studies that have integrated multiple theories to provide a solid understanding of the sources of economic growth.

Empirical evidence has been extracted from studies at diverse levels, with studies such as Naceur et al. (2017), Ezzahid and Elouaourti (2017), Ahad, Dar and Imran (2019), Munusamy and Rajamoorthy (2020), Eita and Pedro (2020), and Ararso (2021), which have focused on financial sector development and total factor productivity. Other studies, such as Muyambiri and Odhiambo (2018), Iheonu et al. (2020), Tyson (2021), Zoaka and Güngör (2023), and Yang, Vitenu-Sackey, Hao, and Tao (2023), focused on financial sector development and domestic investment. Evidence from these studies varies, with other studies indicating that there is a relationship between the variables of interest. In contrast, other studies have indicated that there is no clear relationship between these variables. Some studies agreed with the findings of a prominent study by King and Levine (1993), in which the financial sector was deemed the primary driver of investment and total factor production.

As a result of this variation, this study needs to extensively explore the relationship between total factor productivity and domestic investment. The lack of consensus makes formulating policies that align with the problem difficult. Mazzucca, Tabak, Pilar, Ramsey, Baumann, Kryzer, and Brownson (2018) indicate that this variation is driven by factors such as the nature of data used,

different methodologies, and research approaches of these studies. Heterogeneity in implementing the measures of financial sector development in these studies makes it difficult to reach conclusive results.

Therefore, there is a need for this research to provide a comprehensive understanding of appropriate measures of financial sector development and to understand the mechanism by which financial sector development impacts growth. Even in studies conducted within the SADC members, there is a mixture of results, with gaps and inconsistent findings concerning the influence of financial sector development on sources of economic growth; this is the gap the study seeks to bridge in existing literature.

### **3.5 Conclusion**

This chapter has reviewed the literature, focusing on financial sector development and sources of economic growth. This chapter discusses various theories and extracts empirical evidence from studies at diverse levels to examine the nature of this relationship. Based on the extensive literature reviewed, it is clear that financial sector development is a catalyst for economic growth, as most theories confirm. However, there is an extensive debate at the empirical level, as many studies have produced different conclusions on the significance of financial sector development on sources of economic growth. It is important to note that the relationship may not be linear, and the impact of financial sector development on economic growth may vary across countries, regions, and periods due to the unique financial market and financial institution characteristics or the approach used to address this theme. Analysis of the literature shows inconsistency in empirical results, and it shows that the extent to which factors affecting the sources of economic growth vary across the region. Literature analysis also proves a gap in literature in which the study seeks to bridge.

## **CHAPTER FOUR**

### **Research methodology**

#### **4.1 Introduction**

This chapter presents the approach and techniques that were utilised to examine how financial sector development affects the sources of economic growth, which are total factor productivity and domestic investment in the SADC region, after reviewing various models and empirical works in chapter three. This includes empirical approaches, modeling techniques, and all econometric tools used to produce empirical results in Chapter 5 of the study. This chapter is divided into several sections to present a comprehensive methodology used in the study. Section 4.2 presents and discusses the research design; Section 4.3 is the model specification; Section 4.4 covers the definition and prior expectations of variables; Section 4.5 discusses the data source; Section 4.6 discusses data analysis; Section 4.7 estimation techniques, including the diagnostic test to verify the validity of the model, section 4.8 discusses the ethical considerations and lastly, the conclusion in section 4.9.

#### **4.2 Research design**

Research designed following Khanday and Khanam (2023) is the procedure for collecting and analysing data in the study. It has three approaches: quantitative, qualitative, and mixed-method design, which may be used in a study. The selection of the appropriate research design depends mainly on the research objectives and the nature of the data to be used. This section discusses the three research designs and the selection of the proper research design for the study.

##### **4.2.1 Quantitative Research Design**

According to Xiong (2022), quantitative research design is a study design that depends on numerical data collection and analysis to explain trends and patterns or predict the movements of the variables of interest. In most cases, secondary data is required to test hypotheses and examine causal relationships between phenomena of interest. Quantitative design is mainly preferred in natural and social sciences such as biology, chemistry, economics, and other science disciplines.

Baker (2017) indicates that it is a valuable technique, especially when analysing large samples. However, this type of design is limited to other factors; for instance, it fails to convey the nuances and complexity of some occurrences, especially in the humanities and social sciences, where human experiences and behaviors are frequently complicated.

#### **4.2.2 Qualitative Research Design**

Qualitative research design is utilised when the end goal is to obtain a comprehensive understanding of people's insights, experiences, and behaviors (Creswell, Hanson, Clark Plano & Morales, 2007). Unlike the quantitative design, this design is non-numeric and commonly includes grounded theory, narrative research, and action research. It is widely known for its straightforward approach to exploring new phenomena and generating hypotheses. The nature of the data includes interviews, focus groups, observations, and case studies. Its advantage is flexibility as the researcher can attain new insights and develop new hypotheses, leading to nuanced data collection (Creswell et al., 2007). However, its disadvantages include subjectivity, and it cannot be generalised as it involves small sample sizes. It may be challenging to interpret results due to poor standardisation and time constraints.

#### **4.2.3 Mixed Method Research Design**

This is a study design that incorporates both qualitative and quantitative research elements. It is most appropriate when the research questions require quantitative and qualitative data and enable the triangulation of results and a more thorough comprehension (Dawadi, Shrestha & Giri, 2021). It entails gathering and analysing quantitative and qualitative data sequentially or concurrently. However, Dawadi et al. (2021) indicates that this method is recognised for its inconsistency and high resource requirements, which may impact on the sample size and result in inconsistent outcomes. Therefore, its selection is according to the type of research goals and the problem to be studied.

#### **4.2.4 The main research design for this study**

This study focuses on how the growing prominence of the financial sector alters the sources of economic growth in the SADC region. Therefore, it follows a quantitative research design. This design allows the study to employ econometric models to predict future trends and examine how financial sector development affects domestic and total factor productivity. With the support of

Khanday and Khanam (2023), this design allows for the analysis of numerical and statistical analysis of data from various data sources for the variables to empirically determine the relationship between financial sector development and the sources of economic growth in the SADC region. This design is also appropriate given that the data is extracted from different data sources from 2011 to 2021.

### 4.3 Model specification

This study is underpinned by the works of the Schumpeterian model, which was previously described and illustrated the role of financial sector development on sources of economic expansion, namely, total productivity and domestic investment. The study follows the approach of Naceur et al. (2017), in which growth is decomposed into total factor productivity and domestic investment based on standard growth accounting practices. In this regard, the same variables will explain domestic investment and total factor productivity as sources of economic growth. This also complies with the work of Beck, Levine, and Loayza (2000). Therefore, the sources of economic growth are the dependent variables and financial sector development will be used as an independent variable. The following models have been estimated:

$$GDP_{it} = \beta_0 + \beta_1 (FINSDEV)_{it} + \beta_2 X_{it} + \varepsilon_{it} \dots\dots\dots (4.1)$$

It is essential to note that several factors can exert a force on total factor productivity and domestic investment; hence, the models must have an error term ( $\varepsilon$ ). To guarantee that independent factors have a distinct impact on dependent variables, Hunermund and Louw (2020) indicate that control variables must be considered in the study and should be just as significant as the independent factors. Additionally, the control variables indicated by X in the model result in a more trustworthy model, which helps the researcher draw accurate inferences about the correlations between the explanatory and explained factors. They also enhance the validity of the model. This study used domestic credit to the private sector, private credit by deposit money banks and other financial institutions, and bank z-score as proxies for financial development, given difficulties in extracting data for the overall financial sector development as a variable. This has made examining each variable's impact on economic growth sources easier. The effect of financial sector development on sources of economic growth is linked with the work of Naceur et al. (2017) and Beck et al. (2000). Hence, the model is expressed as follows:

$$TFP/DI = f(LDPC_{it} + \beta_2 PCD_{it} + \beta_3 ZSCORE_{it} + \beta_4 LDGP_{it} + \beta_5 LGOVEXP_{it} + \beta_6 LTRADE_{it}) \dots \dots \dots (4.2)$$

Since the study uses two sources of economic growth, the transformed models may be expressed, econometrically as follows:

$$TFP_{it} = \beta_0 + \beta_1 LDPC_{it} + \beta_2 PCD_{it} + \beta_3 ZSCORE_{it} + \beta_4 LDGP_{it} + \beta_5 LGOVEXP_{it} + \beta_6 LTRADE_{it} + \varepsilon_{it} \dots \dots \dots (4.3)$$

$$DI/GCF_{it} = \beta_0 + \beta_1 LDPC_{it} + \beta_2 PCD_{it} + \beta_3 ZSCORE_{it} + \beta_4 LDGP_{it} + \beta_5 LGOVEXP_{it} + \beta_6 LTRADE_{it} + \varepsilon_{it} \dots \dots \dots (4.3)$$

Where:

TFP measures the total factor productivity; DI/GCF =Domestic investment (Gross capital formation); LDPC= Domestic credit to private sector; PCD= Private credit by deposit money banks and other financial institutions; ZSCORE= Bank ZSCORE; LGDP= GDP per capita; LGOVEXP= Government final consumption expenditure; LTRADE= Trade to GDP;  $\varepsilon$ = Error term;  $it$ = is the subscript, indicating a variable specific to each country  $i$  at time  $t$ .

$\beta_0$  is the constant;  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$ ,  $\beta_5$ , and  $\beta_6$  indicate coefficients of independent variables.

## **4.4 Definition and prior expectations of the variables**

### **4.4.1 Dependent factors**

Total factor productivity (TFP): Is defined as the efficient use and allocation of inputs by firms to generate outputs (Saliola & Seker, 2011). It is used as a measure of the aggregate output to aggregate input. Literature indicates sources of inputs for production, such as labor and capital, and any increase in productivity means positive growth.

Domestic investment (DI): Pasara and Garidzirai (2020) define domestic investment and relate it to the addition of fixed assets and aggregate changes in inventory levels in the economy. This includes property, plant, and equipment (PPE), investment in the construction of public infrastructures, and long-term assets.

### **4.4.2 Independent factors**

This study employs multiple financial sector development measures to produce robust results. These include domestic credit to private, private sector credit by deposit money banks and other financial institutions, and bank z-score. These variables are discussed below in conjunction with control variables:

Domestic credit to the private sector (DCP): This is the overall amount of credit extended by financial institutions, including banks, to individuals and companies operating within an economy. Sekakela (2018) posits that the accessibility of credits to the private sector results in more productivity and quality of investments, which are significant sources of growth as per the literature. This includes mortgages, credit lines, and loans that fall under this category. Higher domestic credit to the private sector levels often means that more funds are accessible, which boosts the economy. Therefore, an increase in this measure will boost the economy.

Private credit by deposit money banks and other financial institutions (PCD): This refers to the credit extended to the private sector by deposit-taking banks and other financial institutions (Sulaiman & Ebike, 2020). It measures the availability of financial resources to companies and households through official banking institutions. An increase in private credit is typically linked to better growth and development. Higher levels of private credit boost spending and yield more significant capital accumulation. Therefore, the expected sign for this variable is positive.

Bank Z-score (Z-SCORE): According to Alvarez-Botas and González (2021), the Z-score, sometimes referred to as the Z-index or bankruptcy Z-score, is a statistical measure of financial stability to check the likelihood of banks and financial institutions failing. Additionally, it evaluates the level of risks and assists regulators in analysing problems in the financial system. A higher level of Z-score means fewer chances of financial instability, and a lower Z-score means the financial system is exposed to bankruptcy, risk, and instability. The study expects that the z-score will stabilize the economy if it increases, while it increases default risks if it is negative.

GDP per capita (GDP): Ndlovu (2013) defines this variable as an essential economic measure determining household disposable income. An intensification in GDP per capita is expected to strengthen investment and development; therefore, it will influence growth positively.

Government final consumption expenditure (GOVEXP): This variable measures the overall expenditure by the government incurred in the provision of products and services to the general public, including salaries for employees and public services (Ceesay, Biagie & Bittaye, 2022). It excludes capital accumulation and expenditure on infrastructure. Government final consumption expenditure supports the public and increases demand, particularly during economic downturns. Conversely, low government spending could result in inefficiency, which drives away capital accumulation and lowers productivity due to reduced demand. Therefore, a positive effect is anticipated.

Trade as a percentage of GDP (Trade): This variable calculates the country's overall import and export value as a percentage of GDP (gross domestic product). It indicates how open an economy is to globalisation and cross-border trade (Bleaney & Tian, 2023). The prognosis for the trade-to-GDP ratio is positive, given that it opens up an economy, which can result in increased specialisation, efficiency gains, and access to more significant markets. This promotes investment and innovation, which all support economic growth.

Most importantly, the log transformation of a variable depends on the specific context and characteristics of the data being analysed. Because of this, the majority of these variables have been transformed. Log transformation can be beneficial in many situations as it enforces normal distribution and improves the overall model reliability and interpretability, as per Feng, Wang, Lu, Chen, He, Lu, and Tu (2014).

## 4.5 Data source

This study is quantitative in nature, and secondary data was used for empirical analysis. The data extraction for all the variables follows two approaches: country-based and time series. The combination of these two approaches is called panel data analysis. The study will use annual panel data for 16 SADC countries that range from 2011 and 2021. The region was chosen due to its substantial economic significance, which is key in the African economic bloc and provides an appropriate dataset for making analyses and deriving meaningful conclusions. The choice of the period of the study was made considering factors such as missing observations and the availability of consistent and reliable data for the SADC region. This period makes it possible to analyse the changes and dynamics of financial sector development and the sources of economic growth. The findings of the study will provide adequate data and comparability with other studies. Furthermore, this period will assist in producing results that are parsimonious and unbiased.

The data was extracted from World Development Indicators, Global Financial Development Data, SADC central banks, International Monetary Fund, and Penn World Tables (PWT). This study uses these prominent organisations since they possess the most significant financial data. Upon doing data screening, the study removed some observations with missing values, which effectively dealt with the data gap so as to maintain data integrity. This guarantees a solid dataset for analysis, and the data selection criteria comprise SADC countries with comprehensive data on important variables.

## 4.6 Data Analysis

It is important to understand the analysis method after indicating that the data will be extracted from various sources from 2011 to 2021. This study utilises EViews software to investigate how a developed financial system affects the sources of growth in the SADC region. According to Kiviet (2012), this type of software allows easy and fast data management, and it is easy to conduct statistical and econometric analysis, creating model simulations and forecasting. It produces clear and concise graphs and tables for statistical analysis. The study utilises an unbalanced panel data extracted from different data sources from 2011 to 2021 for 16 SADC members chosen deliberately based on the data availability. This type of data, according to Gujarati and Porter (2009), is gathered over time from a (usually significant) number of cross-sectional units, such as

people, households, businesses, or governments, using a (often small) number of observations, thus, allowing the analysis of important economic issues that are not possible to handle when using cross-sectional or time-series data sets. Therefore, this study uses the panel data model. It will specifically use the Generalised Method of Moments (GMM), as the static panel does not explain the endogeneity issue. According to Roodman (2009), this model effectively deals with endogeneity problems between variables. Additionally, this technique is effective, especially in estimating parameters in statistical models. Moreover, this model insists that the number of cross-sectional (N) units should be larger than the number of observations (T). It also captures the orthogonality conditions, thus making an effective estimate when unknown types of heteroscedasticities are present.

## **4.7 The Generalised Method of Moments (GMM)**

This is an econometric tool to analyse data using economic and population information to generate unspecified complex model parameters (Blundell & Bond, 1998). It was developed and popularised in the late 1970s and the 1980s. Lars Peter Hansen made a significant contribution to this estimator in 1982 when he published his seminal work titled “Large Sample Properties of Generalised Method of Moments Estimators,” which served as the theoretical basis for the method and established the groundwork for the GMM frameworks. Of late, this technique has been used in most literature. Johnston and Dinardo (1997) suggest that the spike in using the GMM was mainly motivated by two primary factors:

1. “GMM nests many common estimators and provides a useful framework for their comparison and evaluation.
2. GMM provides a ‘simple’ alternative to other estimators, especially when it is difficult to write down the maximum likelihood estimator.”

Roodman (2009) indicates that the GMM estimator is highly effective in capturing the issues of the dynamic nature of the panel models, where the sources of economic growth may be influenced by their past values. The model, when compared to other estimation techniques, such as Maximum Likelihood Estimation (MLE), is known for its flexibility, robustness, and consistency, especially in the presence of conventional pooled or fixed effects estimations, commonly referred to as within group (WG) and ordinary least squares (OLS) estimations (Nickell, 1981; Blundell, Bond &

Windmeijer, 2001; Roodman, 2009). The estimator has its superiority as it is important in dealing with endogeneity, that is, where the regressors are correlated with the error term in the presence of autocorrelation within the panels, heteroscedasticity, and issues of omitted variables, and eliminates the problem of biases and strengthens the precision of coefficients. Additionally, it effectively addresses the concerns of endogeneity emanating from unobserved heterogeneity and simultaneity between financial sector development and the sources of economic growth. The GMM technique can follow either a different GMM or a system GMM estimator.

#### **4.7.1 The difference GMM estimator (DGMM)**

This estimator originated from Holtz-Eakin, Newey, and Rosen (1988) and Arellano and Bond (1991). This type of estimator, also called the Arellano-Bond estimator, was created with dynamic panel data models in mind, where the explained variable is a function of its own lagged values. The difference GMM estimator mainly uses the first difference to remove the unobserved individual-specific effects, which usually correlate with the lagged dependent variable (Arellano & Bover, 1995). Also, the lagged terms of the dependent variable may be used as instruments for the first differenced lagged dependent variables, given that they are correlated with the latter but not with the first differenced error term.

Furthermore, the model deals with endogeneity by transforming all regressors through differencing. Arellano and Bond (1991) also indicate that the estimator used lag terms of predefined variables selected before the current period as the instruments for the first difference equations. This estimator is said to be consistent, especially when there is no autocorrelation in the error term beyond the first order and in the assumption of valid instruments. Blundell and Bond (2023) also highlight that this estimator eliminates the need for additional instruments by allowing the endogeneity of the explanatory variables, including the lagged dependent variable. However, it has the disadvantage of making gaps in an unbalanced panel because the first difference transformation subtracts the previous observations from the current one.

#### **4.7.2 System GMM Estimator (SGMM)**

The System GMM estimator was developed by Arellano and Bover (1995) and Blundell and Bond (1998) to correct the endogeneity issue. It is known as the Blundell-Bond estimator, which helps to overcome some of the shortcomings of the difference GMM estimators by combining new

moment conditions, including level equations orthogonality limitations, with those existing in first-differenced equations. The first-differenced model and the original model in levels are integrated to create a system of equations in the system GMM. The instruments for the endogenous variables in the system GMM are the lagged levels and the lagged first differences of the regressors. When the regressor is substantially continuous, the system GMM estimator outperforms the difference GMM estimator in efficiency since it can offer more relevant and valid instruments (Blundell & Bond, 1998). The transformation of these instruments makes them exogenous with fixed effects. Unlike the difference GMM, instead of deducting the prior observations from the latest one, it deducts the average of all upcoming observations of a variable that are accessible. It minimises data loss as it is computational for all observations, except for the last, for each individual, regardless of the number of missing observations (Arellano & Bover, 1995; Blundell & Bond, 1998).

#### **4.7.3 The selection of the appropriate GMM estimator by the study**

The study selects the system GMM estimator. Bond, Hoeffler, and Temple (2001), cited from Sebki (2021), highlight that the system GMM estimator is known for its efficiency as it utilizes both lagged levels and lagged first difference of the dependent variables as instruments, unlike the difference GMM, which uses lagged levels of the dependent variable as instruments. The estimator appropriately deals with the problem of endogeneity, where the independent variables are correlated with the error term (Blundell & Bond, 1998). It also produces more precise parameter estimates, addresses the issue of unobserved heterogeneity, and is highly effective, especially when dealing with unbalanced data. Additionally, Nurnaddia and Nurhaiza (2016) indicate that the estimator produces more accurate and efficient outcomes than GMM since it uses an additional set of moment conditions. Lastly, this estimator is important, especially in cases where the sample size is narrow and in the presence of weak instruments.

#### **4.7.4 The choice of weighting matrix**

The moment conditions in the GMM objective function are weighed using the weighting matrix, represented by the letter  $W$ . The selection of the weighting matrix can significantly impact the effectiveness of the GMM estimator. Therefore, choosing the weighting matrix is essential to defining the GMM model; it makes sense that moment conditions that are more precisely measured should assign less weight. According to Hansen (1982) and Zivot and Wang (2006), properly

constructed weighting matrix ensures that accurate parametric estimates and uniqueness will be successfully determined by the GMM.

#### **4.7.5 The selection of instruments**

In a GMM model, selecting instruments is essential since they establish the applicability and validity of the moment conditions employed for estimation. While high asymptotic efficiency can be achieved through multiple instruments, limited sample sizes may result in high bias and variation. Therefore, selecting the appropriate instrument variables when evaluating conditional moment restriction models is important. Instrumentation boosts asymptotic efficiency and increases volatility and slight sample bias (Donald & Newey, 2001). Concerns about overfitting and poor finite-sample features of the GMM estimator might also arise from the number of instruments utilised. To define the GMM model clearly, restrictions must be identified, meaning that a minimum number of instruments selected must match each set of parameters in the model (EViews, 2015).

The validity and relevance of the selected instrumental variables about the prior orthogonality of instruments constitute an alternative essential requirement for measuring adeptness (Gujarati & Porter, 2009; EViews, 2015). According to Wooldridge (2001) and Baum, Schaffer, and Stillman (2003), reliability requires valid instruments to be exogenous with the error term and correlated with the endogenous variables (relevance). It is important to consider aspects like the number of endogenous variables, the accessibility of suitable instruments, and the identification assumptions. The model's over-identifying requirements indicate that, for the GMM to detect modified coefficient estimates, "the number of instrumental variables (K) modeled must be greater than or equal to the number of explanatory variables (L)." Therefore, where the value of K is the same as the value of L, the model is considered just identified; if  $K > L$ , it is considered over-identified; for any value of  $K < L$ , the model is considered unidentified (Baum et al., 2003).

Literature highlights that the endogeneity problem arises because of time-series variation in the data, which permits the presence of lagged dependent variables as regressors and accounts for unobserved individual-specific effects (Varnamkhasti & Mehregan, 2014; Bowe, Kolokolova, & Yu, 2020). Instrumental variables must be used to account for endogeneity when endogeneity is present. Therefore, this study selected instruments considering lagged values of the dependent endogenous factors, which are relevant as they depict the developmental dynamics of the financial

sector. Economic shocks and other variables have no effect on these instruments since they are predetermined. Furthermore, the Hansen J-test, which does not reject the null hypothesis of valid instruments, supports the study's use of lagged values and is supported in the literature (Wooldridge, 2001; Varnamkhasti & Mehregan, 2014; Bowe, Kolokolova, & Yu, 2020).

#### **4.7.6 GMM diagnostics**

##### **4.7.6.1 Two tests for instrument validity**

Roodman (2009) states that the exogenous nature of the instruments is determined by one essential presumption that upholds the authenticity of a GMM model. He further adds that when a dynamic panel-data instrumental variable approaches a model that is over-identified, the static test for the combined validity of the moment conditions can only be utilised to verify that the missing instruments are, in fact, appropriately autonomous of the residual process. This uses the Sargan/Hansen test for over-identifying limitations and is the appropriate test to ascertain the joint validity of the instruments included in the system-GMM estimation model, according to Arellano and Bond (1991) and Rodman (2009). Assuming conditional homoskedasticity, Sagan's test is a specific instance of Hansen's *J*. The two tests for instrument validation include the *J* test proposed by Hansen (1982) and Sargan (1958), cited from Baum et al. (2003), which is a test for over-identifying restrictions. These are used to check the null hypothesis of the validity of all the instruments used. The selection of instruments is supported if this null hypothesis is not rejected.

##### **4.7.6.2 Test for autocorrelation of the error term**

According to Roodman (2009), it is also important to perform an additional test to confirm the presence of autocorrelation in the unique disturbance term, a characteristic that would invalidate some lags as instruments. Baum and Schaffer (2013) indicate that this test is undertaken along with Sargan statistics by Arellano and Bond to precisely identify the second-order serial correlation AR (2) in the unique disturbance term within a GMM structure. The Arellano-Bond test can be used to test for correlation, even on other models, such as OLS and 2SLS, if no regressor is "post-determined" and relies on future disturbances. This tests the null hypothesis that the differenced error term is first and second-order serial correlated. Failing to reject the null hypothesis of no second-order cereal correlation implies that the original error term is serially uncorrelated, and the moment conditions are correctly specified, that is, the value of  $AR(2) > 0.05$ . Moreover, Roodman

(2009) also indicates that Arellano and Bond found that their test was more effective than the Sargan and Hansen test at detecting the autocorrelation that renders lag-time instruments invalid. However, the test does not function well as the correlation approaches 0.2, at which point it only rejects the null hypothesis of no serial correlation 50% of the time.

## **4.8 Ethical consideration**

Ethical consideration involves crucial principles and rules that guide and control the researcher's conduct from the inception to the study's epilogue, as Oliver (2010) discussed. This study will adhere to all the ethical principles, and relevant ethical issues will be deliberately considered to accomplish the study's objective. The study will adhere to ethics and plagiarism, and the data collected will not be manipulated. The information and data collected from different sources will be referenced using APA style, and the study will comply with the conditions set by the data producer. An application for ethics approval will be made through IFREC and UREC before data collection and analysis.

## **4.9 Conclusion**

The focus of this chapter was to discuss the relevant methodology followed in the study to examine the impact of financial sector development on sources of economic growth in the SADC region. This chapter discussed research design, model specification, definition, and prior expectations of variables. It also discussed the data sources and the relevant estimation technique, GMM. The other aspect discussed in the study is the diagnostic test to verify the validity and reliability of the model. Lastly, ethical considerations were also explained in the study. The next chapter will provide empirical results and an analysis.

## **CHAPTER FIVE**

### **Empirical results and discussion**

#### **5.1 Introduction**

This chapter presents the findings of the models estimated in the previous chapter on financial sector development and its effect on sources of economic growth. This chapter fulfills the second objective of the first chapter, which was to empirically examine the influence of an advanced financial sector on total factor productivity as well as domestic investment in the context of the SADC region. In this chapter, two models are introduced: firstly, the influence of financial sector development on total factor productivity, and secondly, the influence of financial sector development on domestic investment. The results are discussed below.

#### **5.2 Descriptive statistics**

This section displays a summary of statistics for each variable employed in the current study, provided in Table 5.1. These variables exhibit both maximum and minimum values, enabling one to determine if the observed values descend below or are outliers of the expected range. As shown below, total factor productivity (LTFP) has a mean value of 0.0185, a median value of 0.0077, and a maximum value of 0.177. The value of the minimum is -0.1438 with a standard deviation of 0.0594. These values indicate that there are some countries with low productivity growth in the region. The standard deviation value indicates moderate variation in productivity growth in the region, with fewer countries showing high productivity. The domestic investment (LGCF) has a mean value of 3.0751, a median value of 3.0935, and a maximum value of 3.7567. The minimum value is 2.2202, with a standard deviation of 0.4459. This advocates that some nations in the SADC region have minimal domestic investment. The standard deviation value indicates moderate variation in investment since this value is less than the mean value.

On the other hand, domestic credit to the private sector (LDCP) and private credit by deposit money banks and other financial institutions (PCD) have the mean value of 3.2682 and 38.3640, with median values of 2.9959 and 20.0088, and a maximum value of 4.8586 and 129.1683,

respectively. These variables have minimum values of 1.6559 and 6.5759 and a standard deviation of 0.8402 and 35.9, suggesting that these variables positively impact total factor productivity and investment. The z-score has a mean value of 2.6298 with a median value of 2.7645. The maximum value for this variable is 3.2965. The minimum value on the z-score is positive (1.6111) with a standard deviation of 0.4547. Based on these results, domestic credit to the private sector and z-score are relatively low, indicating a moderate financial sector, with measures such as private credit by deposit money banks and other financial institutions showing potential for improvement in the region's financial sector. On the other hand, total factor productivity and domestic investment in the region appeared to be low, indicating a lack of innovation and investment activities in the region. Therefore, there is a need to examine whether financial sector development significantly impacts both total factor productivity and domestic investment.

*Table 5. 1: Descriptive statistics*

|                         | <b>LTFP</b> | <b>LDCP</b> | <b>PCD</b> | <b>LGCF</b>  | <b>LGDP</b> | <b>LGOVEX<br/>P</b> | <b>LTRADE</b> | <b>LZ-SCORE</b> |
|-------------------------|-------------|-------------|------------|--------------|-------------|---------------------|---------------|-----------------|
| <b>Mean</b>             | 0.0185      | 3.2682      | 38.3640    | 3.0751       | 0.7370      | 2.8969              | 4.3191        | 2.6298          |
| <b>Median</b>           | 0.0077      | 2.9959      | 20.0088    | 3.0935       | 0.8825      | 2.9105              | 4.3737        | 2.7645          |
| <b>Maximum</b>          | 0.1770      | 4.8586      | 129.1683   | 3.7567       | 2.6141      | 3.7026              | 5.0120        | 3.2965          |
| <b>Minimum</b>          | -0.1438     | 1.6559      | 6.5759     | 2.2202       | -1.4319     | 1.9932              | 3.3309        | 1.6111          |
| <b>Std. Dev.</b>        | 0.0594      | 0.8402      | 35.90      | 0.4003       | 0.8819      | 0.4366              | 0.3674        | 0.4547          |
| <b>Skewness</b>         | 0.12        | 0.5891      | 1.3604     | -0.1948      | -0.4459     | -0.0796             | -0.2830       | -0.5559         |
| <b>Kurtosis</b>         | 3.2033      | 2.2338      | 3.4389     | 2.0215       | 3.024       | 2.3784              | 2.8250        | 2.3575          |
| <b>J-Bera</b>           | 0.4076      | 9.3011      | 37.9748    | 5.5927       | 2.7191      | 2.0756              | 1.7701        | 8.1061          |
| <b>Probability</b>      | 0.8156      | 0.0096      | 0.0000     | 0.0610       | 0.2568      | 0.3542              | 0.4127        | 0.0174          |
| <b>Sum</b>              | 1.8367      | 369.3013    | 4603.677   | 372.089<br>7 | 60.4305     | 350.5217            | 522.6068      | 310.3152        |
| <b>Sum Sq.<br/>Dev.</b> | 0.3461      | 79.1829     | 153367.6   | 19.2245      | 62.9945     | 22.8782             | 16.1958       | 24.1879         |
| <b>Obs</b>              | 121         | 121         | 121        | 121          | 121         | 121                 | 121           | 121             |

Source: Author's own work

### 5.2.1 Addressing the problem of a mix and non-normal distributions

The descriptive statistical table 5.1 shows that the variables have the problem of a mix of normal and non-normal distributions. While variables such as LDCP, PCD, LGFC, and z-score deviate from normality, since their p-value is less than the 10% (p-value < 10%) level of significance, variables such as LTFP, LGDP, LGOVEX, and LTRADE exhibit normality as their p-value is greater than the 10% (p-value > 10%) level of significance. Given the negative implications of a mixed normality distribution, the study utilised the GMM estimator to better handle such issues of non-normality and to appropriately deal with dynamic panel data. The main results displayed in Tables 5.6 and 5.7 provide a reliable understanding of how financial sector development affects total factor productivity and domestic investment in the SADC region.

### 5.3 Correlation matrix between variables

*Table 5. 2: Total factor productivity and financial sector development*

| <b>Probability</b> | <b>LTFP</b> | <b>LDCP</b> | <b>PCD</b> | <b>LGDP</b> | <b>LGOVE<br/>XP</b> | <b>LTRAD<br/>E</b> | <b>LZSCO<br/>RE</b> |
|--------------------|-------------|-------------|------------|-------------|---------------------|--------------------|---------------------|
| <b>LTFP</b>        | 1           |             |            |             |                     |                    |                     |
| <b>LDCP</b>        | -0.4389     | 1           |            |             |                     |                    |                     |
|                    | (0.1022)    | -----       |            |             |                     |                    |                     |
| <b>PCD</b>         | -0.2509     | 0.9565      | 1          |             |                     |                    |                     |
|                    | (0.3668)    | 0.0000      | -----      |             |                     |                    |                     |
| <b>LGDP</b>        | -0.3137     | -0.2076     | -0.4096    | 1           |                     |                    |                     |
|                    | (0.2547)    | (0.4577)    | (0.1294)   | -----       |                     |                    |                     |
| <b>LGOVEXP</b>     | 0.0838      | 0.7814      | 0.8812     | -0.6904     | 1                   |                    |                     |
|                    | (0.7663)    | (0.0005)    | (0.0000)   | (0.0043)    | -----               |                    |                     |
| <b>LTRADE</b>      | -0.6441     | -0.1504     | -0.3795    | 0.8675      | -0.71793            | 1                  |                     |

|                |          |          |          |          |          |          |       |
|----------------|----------|----------|----------|----------|----------|----------|-------|
|                | (0.0095) | (0.5925) | (0.1629) | (0.0000) | (0.0025) | -----    |       |
| <b>LZSCORE</b> | -0.7454  | 0.8394   | 0.6728   | 0.1681   | 0.4073   | 0.3020   | 1     |
|                | (0.0014) | (0.0000) | (0.0059) | (0.5493) | (0.1318) | (0.2739) | ----- |

Source: Authors' own work

Table 5.2 demonstrates the correlation level existing between the total factor productivity and the various metrics for the development of the finance sector and other variables. As illustrated, the correlation between total factor productivity, trade to GDP, and z-score, which measures stability, is negative and statistically significant, indicating that these variables reduce the total factor productivity in the SADC region. These results contradict the general economic perception that financial stability and trade openness positively correlate with total factor productivity. From a financial perspective, this shows that over-regulation may be associated with decreasing productivity.

*Table 5. 3: Domestic investment and financial sector development*

| <b>Probability</b> | <b>LGCF</b> | <b>LDCP</b> | <b>PCD</b> | <b>LGDP</b> | <b>LGOVE<br/>XP</b> | <b>LTRAD<br/>E</b> | <b>LZSCO<br/>RE</b> |
|--------------------|-------------|-------------|------------|-------------|---------------------|--------------------|---------------------|
| <b>LGCF</b>        | 1           |             |            |             |                     |                    |                     |
|                    | -----       |             |            |             |                     |                    |                     |
| <b>LDCP</b>        | -0.7993     | 1           |            |             |                     |                    |                     |
|                    | (0.0003)    | -----       |            |             |                     |                    |                     |
| <b>PCD</b>         | -0.7740     | 0.9581      | 1          |             |                     |                    |                     |
|                    | (0.0007)    | 0.0000      | -----      |             |                     |                    |                     |
| <b>LGDP</b>        | 0.2940      | -0.2076     | -0.4093    | 1           |                     |                    |                     |
|                    | (0.2874)    | (0.4577)    | (0.1294)   | -----       |                     |                    |                     |
| <b>LGOVEXP</b>     | -0.7676     | 0.7814      | 0.8812     | -0.6904     | 1                   |                    |                     |
|                    | (0.0008)    | (0.0005)    | (0.0000)   | (0.0043)    | -----               |                    |                     |
| <b>LTRADE</b>      | 0.2803      | -0.1504     | -0.3798    | 0.8675      | -0.7179             | 1                  |                     |
|                    | (0.3114)    | (0.5925)    | (0.1629)   | (.0000)     | (0.0025)            | -----              |                     |
| <b>LZSCORE</b>     | -0.6618     | 0.8394      | 0.6728     | 0.1680      | 0.4073              | 0.3020             | 1                   |

|  |          |          |          |          |          |          |       |
|--|----------|----------|----------|----------|----------|----------|-------|
|  | (0.0071) | (0.0000) | (0.0059) | (0.5493) | (0.1318) | (0.2739) | ----- |
|--|----------|----------|----------|----------|----------|----------|-------|

Source: Author's own work

As shown in table 5.3, the correlation between domestic investment (measured by GCF), domestic credit to the private sector, private credit by deposit money banks and other financial institutions, government final consumption expenditure, and z-score is negative, and it is statistically significant, indicating that these variables reduce the domestic investment in the SADC region. Moreover, domestic investment, GDP per capita, and trade to GDP have a positive but insignificant correlation. Generally, domestic and private credit by deposit money banks and other financial institutions is linked with a positive association with economic growth, as suggested by Olowofeso, Adeleke, and Udoji (2015).

## 5.4 Unit root test (stationarity)

Table 5. 4: Unit root test at level series

| Variable | IM Pesaran and Shin |                     | Fisher ADF |                     | Fisher PP  |                     |
|----------|---------------------|---------------------|------------|---------------------|------------|---------------------|
|          | Intercept           | Intercept and trend | Intercept  | Intercept and trend | intercept  | Intercept and trend |
| LTFP     | 2.3426              | -0.5671             | 17.5790    | 31.8675*            | 30.2441    | 67.7900***          |
| LGCF     | -0.5084             | -0.6112             | 22.7733    | 26.8550             | 24.0165    | 42.8172***          |
| LDCP     | -0.4151             | -1.0492             | 36.6190**  | 39.1150**           | 35.3469**  | 51.0304***          |
| PCD      | 0.7262              | -0.3318             | 31.6319*   | 32.1712*            | 35.9132**  | 52.9182***          |
| LGDP     | -1.6954**           | -0.0097             | 28.2982    | 17.2224             | 28.9741*   | 18.3372             |
| LGOVEXP  | -0.1521             | -0.3129             | 24.2678    | 22.7535             | 26.5271    | 40.4348***          |
| LTRADE   | -0.8352             | -0.6652             | 24.1609    | 26.9482             | 40.8534*** | 43.0794***          |
| LZSCORE  | -0.4418             | 0.8047              | 28.4771    | 17.7674             | 38.6670**  | 23.0188             |

Source: Author's own work

Table 5.4 shows that under the Im, Pesaran, and Shin test, variables are nonstationary except GDP per capita (LGDP), which was found stationary at the intercept level. There is a mix of results on

all the variables under the Fisher ADF and Fisher PP, as some variables appeared to be stationary and non-stationary. The first level of differencing is shown in Table 5.5.

*Table 5. 5: Unit root test at first difference*

| Variable | IM Pesaran and Shin |                     | Fisher ADF |                     | Fisher PP  |                     |
|----------|---------------------|---------------------|------------|---------------------|------------|---------------------|
|          | Intercept           | Intercept and trend | Intercept  | Intercept and trend | intercept  | Intercept and trend |
| LTFP     | -2.19711**          | 0.1203              | 41.0316*** | 20.2608             | 65.4716*** | 36.4564**           |
| LGCF     | -4.4595***          | -1.9967**           | 61.1875*** | 49.2811***          | 79.8382*** | 90.9320***          |
| LDCP     | -4.4157***          | -1.1658             | 64.4927*** | 42.1978***          | 75.0623*** | 64.2357***          |
| PCD      | -4.6393***          | -1.6730**           | 66.3440*** | 44.6318***          | 94.5052*** | 80.7655***          |
| LGDP     | -4.0089***          | -1.0632             | 32.4942*** | 21.5254**           | 33.8092*** | 41.7971***          |
| LGOVEXP  | -3.7963***          | -1.0083             | 54.1841*** | 33.5827*            | 61.9494*** | 52.0767***          |
| LTRADE   | -4.6285***          | -1.5896*            | 61.9510*** | 41.8037***          | 72.6620*** | 72.7815***          |
| LZSCORE  | -3.5741***          | -1.2303             | 54.7850*** | 39.5543**           | 57.7301*** | 72.7937***          |

Source: Author's own work

The first order differencing indicates mixed results under the IM, Pesaran, and Shin tests. However, in the IM Pesaran and Shin and Fisher ADF test, total factor productivity was the only variable that was not stationary. All the variables are stationary at the Fisher PP test. Given that the variables have been integrated of different orders, this motivates the study to utilise the GMM technique to account for the possibilities of spurious results. This technique is known for its ability to deal with different orders of integration and control issues of endogeneity.

## 5.5 Results presentation and discussion from the GMM technique

Two models were estimated to analyse the effect of financial sector development on the two sources of economic growth, which are TFP and domestic investment. The results are presented in Table 5.6. The first set of results is on the effect of financial sector development on TFP, while the second set of results is based on the effect of financial sector development on domestic investment in the SADC region.

*Table 5. 6: Results using GMM technique on financial sector development total factor productivity*

| <b>Variable</b>               | <b>Model 1</b>        | <b>Model 2</b>            |
|-------------------------------|-----------------------|---------------------------|
| LDCP                          | 0.4324*<br>(0.0531)   | 0.073883<br>(0.067989)    |
| PCD                           | 0.0068***<br>(0.0018) | -0.021476**<br>(0.009198) |
| ZSCORE                        | -0.0215**<br>(0.0478) | 0.006828***<br>(0.001804) |
| LGDP                          | 0.0137<br>(0.1903)    |                           |
| LGOVEXP                       | 0.4958*<br>(0.0808)   |                           |
| LTRADE                        | 0.101472<br>(0.6913)  |                           |
| J-statistic                   | 4.991552              | 1.472606                  |
| Prob(J-statistic)             | 0.172417              | 0.831483                  |
| Arellano-Bond test for AR (1) | -0.1921               | -0.7337                   |
| Arellano-Bond test for AR (2) | -1.6195               | 0.9401                    |
| Observation                   | 115                   | 115                       |
| Countries                     | 9                     | 9                         |

Notes: Standard errors reported in parentheses (). \*, \*\*, \*\*\* indicates the significance of the coefficients at 10 %/5 % and 1 % level of significance, respectively.

Source: Author's own work

Table 5.6 presents two models. The first is the base model, capturing the effect of all the variables. The second model captures the direct influence of financial sector development measures on overall productivity. As shown in model one, both measures of financial depth, domestic credit to the private and private credit by deposit money banks and other financial institutions, are significant at 10% and 1%, respectively. These variables have a positive sign and display the

appropriate sign as per prior expectations. The empirical results show that the correlation between domestic credit to the private sector and total factor productivity is positive, suggesting that a 1% growth in domestic credit that is extended to the private sector raises total factor productivity by 43.24%, *holding other factors constant*. These results support the Degu and Bekele (2019) study of the macroeconomic determinants of total factor productivity. This study hypothesized that domestic credit to the private sector positively impacts total factor productivity. This implies that simplified access to credit for enterprises stimulates investment in R&D and technology, which elevates total productivity and boosts economic growth.

Private credit by deposit money banks and other financial institutions has a positive sign, indicating again that a 1% growth in this variable, *ceteris paribus*, increases total factor productivity by 0.68%. However, this impact is minimal, although it is 1% statistically significant. The results correspond with the work of Zhang, Li, Ding, and Zhang (2019), which discovered a positive influence of private credit by deposit money banks and other financial institutions on total factor productivity. These results contrast with the work of Arif-Ur-Rahman and Inaba (2020), who discovered that a high level of private credit by deposit money banks and other financial institutions does not benefit the country's total factor productivity. This suggests that financial accessibility strengthens business efficiency and innovation, which leads to higher output and growth.

The z-score, which is used to measure stability, has a negative coefficient that is 5% significant. This means that the z-score has a low value, meaning it affects growth negatively, as previously anticipated in Chapter 4. This implies that holding other factors constant, a 1% increase in financial stability reduces total factor productivity by 2.15%. A study by Law and Singh (2014), cited from Arif-Ur-Rahman and Inaba (2020), contradicts these results, indicating that, in practice, most of the drastic decline in economic output stems from the imbalanced financial system. In fact, this study highlights the need for policymakers to stabilise the financial system for sustainable economic development. The negative results show that there may be issues of uncertainty and inefficiency in resource allocation, which impede growth opportunities.

GDP per capita and trade as a proportion of GDP have a positive sign. However, the variables are statistically insignificant. Therefore, analysing their effect would be less significant, indicating they do not have a significant impact on total factor productivity. This challenges the previously

discussed expectations, as GDP per capita and trade as a percentage of GDP were expected to positively influence the dependent variables. Evidence from studies such as Ramzan, Sheng, Shahbaz, Song, and Jiao (2019) and Amirkhalkhali and Dar (2019) suggests that higher levels of trade boost total factor productivity and encourage economic development.

Government final consumption expenditure as a control variable positively impacts total factor productivity in the region. The coefficient with a positive sign supports this and is significant at 10%. These results confirm the prior expectations of the study in which this variable was anticipated to have a positive influence on growth. This means that a 1% increase in Government final consumption expenditure increases total factor productivity by 49.58%, holding other things constant. This means that public spending by the government increases efficiency, leading to higher outputs and overall economic growth. On the contrary, Marire (2022), in his study on analysing the influence of government expenditure on total factor productivity, discovered that there is a tradeoff between the two variables. That is, when government expenditure increases, total factor productivity decreases.

The second model (model 2) explicitly measures the impact of financial sector development on total factor productivity. As expected, there is a relationship between the variables domestic credit to private sector, private credit by deposit money banks and other financial institutions, z-score, and the total factor. Both domestic credit to private sector and z-score used as measures of depth and stability are positive and significant. The same results were obtained as in the first model, which confirmed prior expectations. In contrast, private credit by deposit money banks and other financial institutions has a negative sign, which confirms the results from Arif-Ur-Rahman and Inaba (2020), who indicated that total factor productivity does not benefit from private credit by deposit money banks and other financial institutions.

However, such findings challenged the prior expectations discussed regarding this variable. This means that other things remain constant, an increase in domestic credit to the private sector and score values by 1% increases total factor productivity by 7.34% and 0.68%, respectively. Similar results were obtained by the study of Degu and Bekele (2019) and Arif-Ur-Rahman and Inaba (2020). In comparison, private credit by deposit money banks and other financial institutions reduces total factor productivity by 2.15%, which contradicts the findings of Ozili (2024), who

indicates private credit is necessary for productivity and growth. However, the seminal work of Cecchetti and Kharroubi (2012) emphasizes that too much access to finance can drag down growth.

*Table 5. 7: Results using the GMM technique on financial sector development and domestic investment*

| <b>Variable</b>               | <b>Model 1</b>            | <b>Model 2</b>        |
|-------------------------------|---------------------------|-----------------------|
| LDCP                          | 0.9045***<br>(0. 0021)    | 0.4275***<br>(0.0000) |
| PCD                           | 0.3764***<br>(0. 0000)    | 0.0021<br>(0.2226)    |
| Z-SCORE                       | -0. 022855***<br>(0.0000) | -0.0127**<br>(0.0261) |
| LGDP                          | 0.0242**<br>(0.0134)      |                       |
| LGOVEXP                       | 0.8409*<br>(0.0740)       |                       |
| LTRADE                        | 0.1737<br>(0.7123)        |                       |
| J-statistic                   | 1.7872                    | 8.8502                |
| Prob(J-statistic)             | 0.6177                    | 0.1822                |
| Arellano-Bond test for AR (1) | 0.6238                    | 0.1611                |
| Arellano-Bond test for AR (2) | -0.9110                   | -0.4005               |
| Observation                   | 114                       | 114                   |
| Countries                     | 9                         | 9                     |

Notes: Standard errors reported in parentheses (). \*, \*\*, \*\*\* indicates the significance of the coefficients at 10 %/5 % and 1 % level of significance, respectively.

Source: Author's own work.

Table 5.7 shows two estimated models. The first model acts as a base model for financial sector development, the explanatory variables, and how they impact domestic investment. The second model focuses on the direct influence of developing financial sector on domestic investment.

Model one, as shown below, shows that the relationship between domestic investment, measures of financial sector development, GDP per capita, and government consumption expenditure is statistically significant and positive, except for the z-score, which was negative. These results align with prior expectations, as the study anticipated a relationship of this nature between the variables of interest. The stability measured by z-score displayed low results, which means that the financial sector in the region is not stable. This means that if domestic credit to private and private credit by deposit money banks and other financial institutions as measures for financial sector development increases by 1%, the level of domestic investment will increase by 90.45% and 37.64%, respectively, holding other factors constant. Similar results were observed in the study of Obeng-Amponsah, Sun, Havidz, and Dey (2019) and Olannye, Maku, and Adelowokan (2023), who suggested a long-run and positive correlation between the variables and gross capital formation.

However, financial stability measured by z-score was found to have a negative influence on domestic investment, such that, holding other factors constant, if the z-score value increases by 1%, domestic investment is reduced by 2.29%. On the contrary, He and Yoo (2024) discussed that financial stability boosts capital accumulation. On the other hand, GDP per capita and government spending increase domestic investment by 2.42% and 84.09%, respectively, while other factors are constant. The positive influence of these variables was previously discussed in Chapter 4, and this relationship confirms the prior expectations discussed in this study. These results confirm the findings of Oladele, Mah, and Mongale (2017).

Moreover, Albur (2019) indicated that increased GDP per capita and government spending positively affect investment. Trade as a percentage of GDP has an insignificant impact on domestic investment, given its p-value of 71.37%, which contradicts the study of Nyinawumuntu, Makala, and Han (2022), which observed a positive correlation between trade openness and domestic investment, especially in Sub-Saharan countries. The insignificant result from trade as a percentage of GDP challenges the prior expectations.

The second model, which shows the direct influence of a developed financial sector on domestic investment, highlights that domestic credit to the private sector was the only variable with a positive impact on domestic investment. This means that, when other factors are kept constant, an increase in domestic credit to the private sector by 1% increases domestic investment by 42.75%,

which further confirms the results from the study of Obeng-Amponsah et al. (2019) and the prior expectations.

Private credit by deposit money banks and other financial institutions was statistically insignificant, contradicting the earlier finding between these variables and challenging the prior expectations. Therefore, this supports the claim proposed by Cecchetti and Kharroubi (2012), that too much access to finance can potentially reduce growth. On the other hand, this model shows that financial stability (measured by Z-score) has a negative impact on domestic investment, such that a 1% increase in its value reduces domestic investment by 1.27% when other factors are kept constant; thus, giving a substate argument of the result of He and Yoo (2024). These results confirm the prior expectation, as financial instability (indicated by low z-score levels) negatively affects growth levels. The study of Njang, Omini, Bekun, and Adedoyin (2020) found similar results to the study, indicating that financial stability may lead to underutilisation of financial resources, which impedes growth.

## **5.6 Diagnostic Test**

This study uses the Hansen J-test to verify the validity of the models. This test examines the null hypothesis, which indicates that the instruments are valid and can be proven by a J- -probability that must exceed 10%. This study's results observed that the J-probability exceeds 10%, where models one and two had 17.24% and 83.14%, respectively, between the advanced financial sector and total productivity. Conversely, models one and two had 61.77% and 18.22%, respectively, on financial sector development and domestic investment. Therefore, these results indicate that the instruments are accurate.

The findings from the Arellano-Bond test used to verify the presence of the second-order serial correlation show no evidence of second-order autocorrelation in all modes since their coefficients are negative except for model 2 on total factor productivity. According to Taylor (1993), testing the model's diagnostics is crucial to assessing its suitability for interpretation. In other words, diagnostic tests steer clear of false regression interpretation. This means that models are adequate and robust.

## 5.7 Conclusion

The principal aim of this chapter was to present empirical results and discussion on the impact imposed by a developed financial sector on sources of economic growth, namely total factor productivity and domestic investment in the context of the SADC region. Doing so fulfilled the study's secondary objectives, which were discussed in chapter one. The study used the GMM model due to potential endogeneity problems which may be present in the model. Based on the results, domestic credit to the private sector had a positive sign in most models, followed by private credit by deposit money banks and other financial institutions. The findings imply that financial sector development does influence economic growth in the SADC region through total factor productivity and domestic investment.

Moreover, results from the z-score indicated that poor financial stability has negative implications for the region's economic growth. These results provide empirical evidence that supports the idea that financial sector development influences total factor productivity and domestic investment in the SADC region. This fills the literature gap and contributes to a greater understanding of the importance of the financial sector and the sources of economic growth.

## **CHAPTER SIX**

### **Summary of conclusions and policy recommendations**

#### **6.1 Introduction**

This is the last chapter of the study, which presents a conclusion regarding the research question that was posed in Chapter 1. This chapter also provides recommended policies derived from the results of the earlier chapters, along with recommendations and areas for further research on the effect of financial sector development on the main sources of economic growth in the SADC region. Having introduced the chapter in section 6.1, section 6.2 summarises the study and provides a conclusion, followed by section 6.3, which will provide the study's policy implications and recommendations. Section 6.4 discusses the major contribution in terms of theoretical and practical perspectives of the study, and Section 6.5 provides limitations and areas of possible research.

#### **6.2 Summary of the study and conclusion**

The introduction and background of the study was presented in the first chapter, along with the problem statement and objectives of the study. This study aimed to examine the effect of financial sector development on sources of economic growth, namely, total factor productivity and domestic investment, in the SADC region. Further objectives included:

- i. Provide an overview of financial sector development and sources of economic growth, which is the focus of the study on total factor productivity and domestic investment (capital stock) in the SADC region.
- ii. Empirically examine the impact of financial sector development on total factor productivity in the SADC region
- iii. Empirically examine the impact of financial sector development on domestic investment in the SADC region.
- iv. Generate policies based on empirical results.

This chapter also included a list of testable hypotheses and the study's justification, highlighting why the study is important. This study has indicated that previously conducted studies have mainly focused on finance and growth, particularly GDP, creating a gap in literature as the current study examines the extent to which financial sector development affects growth through total factor productivity and domestic investment.

The second chapter of the study deliberated trends in financial sector development, total factor productivity, and domestic investment in the SADC region, emphasising the importance of developing the financial sector to influence the region's economic landscape. Upon this review, it was evident that various countries have different levels of financial development. South Africa demonstrates a resilient financial structure and a large population being exposed to financial products and services.

Additionally, there are concerns with the financial stability of the regions since few countries have low financial risks. When the level of efficiency was measured in the region, it was found that the financial system was 60% efficient, with a few countries continuously performing better than this average (Abel et al., 2024). South Africa was found to have a better stock market capitalisation. Despite the significant improvements in the economy in the region, the link between financial sector development and the sources of economic growth was found to be unclear.

Chapter three of this research reviewed the literature around financial sector development and the key drivers of economic growth. This chapter provided literature based on theoretical perspectives and empirical perspectives. Theories discussed in the study included the Schumpeterian theory, the McKinnon-Shaw model, and endogenous growth models, which focused on the importance of developing a financial system to drive growth in the overall economy. Additional theories, such as the Accelerator theory of investment and the Solow Residual Theory of Total Factor Productivity (TFP), discussed the concept of domestic investment and total factor productivity, respectively. Different empirical findings from various sources were extracted in the study. The results from empirical literature substantiate the rationale for the existence of this study, given that evidence has mixed results. Studies conducted at a grouped and individual level show that financial sector development can have either positive or negative relationships or no relationship between the variables.

Chapter four discussed the study's methodological approach. This chapter explained the relevant econometric technique employed to accomplish the secondary objective highlighted in the first chapter of this study. The study followed a quantitative approach, and it is underpinned by the Schumpeterian model of the financial system. Chapter 4 provided two models, drawing from the research of Naceur et al. (2017) and Levine et al. (2000), in which economic growth was decomposed into total factor productivity and domestic investment. To gauge the influence of financial sector development, this variable was assigned to proxies that include domestic credit to private sector, private credit by deposit bank money and other financial institutions, and bank z-score.

Control variables included government final consumption expenditure, GDP per capita, and total trade as a percentage of GDP. Given that the sources of economic growth are not only affected by the mentioned variables, this chapter also introduced an error term to capture the effects of other factors. Both domestic investment and total factor productivity were used as dependent variables. Since the study focused on the overall SADC members, panel data was collected and analysed, applying the Generalized Method of Moments to produce statistical inferences. This technique was significant in dealing with endogeneity problems, biases, and issues around omitted variables.

Moreover, it effectively deals with other challenges, such as autocorrelation and individual-specific heteroscedasticity. The study also employed autocorrelation and the Sargan-Hansen and Arellano-Bond tests to confirm the validity of the models. Chapter 5 provided empirical analysis and results using EViews. These results were analyzed and interpreted.

The study can conclude that financial sector development plays a significant role in promoting growth through total factor productivity and domestic investment in the SADC region. The findings emphasise the significance of a strong financial sector and provide insightful information on the economic dynamics of the SADC region. Policies that can promote the effectiveness of financial sector development and its effect on economic growth are discussed in Section 6.3 of the study.

### **6.3 Policy implications of the study and recommendations**

The empirical outcomes of this research have led to several policies that can be recommended in the SADC region's financial sector development to strengthen and boost its effect on investment

and total factor productivity used as measures of economic growth. The models presented in Chapter Five displayed the presence of a correlation between the advanced financial sector and the measures of economic growth in the SADC region. While private credit by deposit money banks and other financial institutions yields inconsistent results, the first two models, which look at the effects on total factor productivity (TFP), highlight that domestic credit increases productivity. Productivity is positively impacted by private and domestic credit in Model 1, but the negative z-score suggests that credit distribution may have risks or inefficiencies. While private credit may have a negative impact due to issues like risk aversion or resource misallocation, Model 2 supports the view that domestic credit is significant for TFP. These results were supported by studies such as Degu and Bekele (2019) and Arif-Ur-Rahman and Inaba (2020).

The second set of models focused on financial sector advancement influences domestic investment. The signs indicated that private and domestic credit positively affect domestic investment in the region, even though the z-score is negative. This was supported by studies such as Obeng-Amponsah, Sun, Havidz, and Dey (2019) and He and Yoo (2024). The constant positive effect shown in these models indicates that increasing domestic credit availability is essential for promoting both productivity and investment. These findings necessitate strengthening financial institutions in the SADC region to ensure adequate credit distribution and reduce the unstable financial system.

Therefore, based on these results, the study recommends policies aiming at fostering financial development, as highlighted by Rahming (2021). This includes measures such as credit growth expansion, promoting financial depth, and creating a stable banking system, resulting in a well-functioning financial sector that will stimulate total factor productivity and domestic investment in the SADC region. Additionally, policymakers should advance financial sector development by creating programs that enhance financial inclusion and financial infrastructure. Moreover, relevant legal frameworks must be implemented to safeguard productive investment and ensure private credit efficiency (Carstens, 2019). Policymakers should address issues of inefficiency to unlock productivity and enhance investment. The implementation of legal frameworks would ensure stability and reduce risks in the financial sector.

## **6.4 Contribution of the study to knowledge**

This study focused on examining the impact of financial sector development on sources of economic growth in the SADC region. Through using the GMM technique, the results have drawn attention to the significance of variables such as domestic credit to the private sector, private credit by deposit money banks and other financial institutions, and z-score, which are the proxies for financial sector development, promote economic growth through total factor productivity and domestic investment. These findings add to the growing body of knowledge on financial sector development and economic growth. Lastly, these findings imply that policymakers should prioritize the improvement of the developing financial sector, such as improving access to credit by the private sector.

## **6.5 Limitations and areas of possible research**

The study's main goal was to determine how various aspects of the financial sector development affected the sources of economic growth, namely, total factor productivity and investment in the SADC nations. One notable challenge was the lack of comprehensive and reliable data on financial indicators in the SADC region, which constrained the depth and accuracy of the analysis and potentially affected the robustness of the conclusions drawn. The study concentrated on the period from 2011 to 2021, which suggests that the study did not account for any influences beyond the period under evaluation. One of the reasons for the choice of period was the lack of data for the variables.

It is crucial to note that economic dynamics are subject to changes over time, and the study's timeframe may not capture long-term trends or account for potential shifts in economic policies, global economic conditions, or other external factors that could impact relationships under investigation. Lastly, the study used the GMM technique to evaluate the impact of financial sector development on sources of economic growth in the SADC region. Although the technique provided reliable results, future researchers can perform fixed effects and random effects tests to validate the reliability and robustness of the results.

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