Financial Sector Development and Economic Growth in SADC

A Research Paper to be submitted to the Committee of Central Bank Governors in SADC

Prepared by

South African Reserve Bank

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1 SADC member states are the following 15 countries: Angola, Botswana, Democratic Republic of Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia Seychelles, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe.

2 The views expressed in this paper are those of the author and not necessarily of the South African Reserve Bank.
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Executive Summary

1. Motivation and background

This study examines empirically the nature of the relationship between financial sector development and economic growth with specific reference to the Southern African Development Community (SADC).

2. Methodology

The study followed qualitative and quantitative approaches. The former involved a review of the theoretical literature, empirical studies done on the topic internationally, and also in some individual SADC countries. The quantitative approach followed an empirical analysis done using panel data of 14 SADC member states from 1990-2012 with gross domestic product as the dependent variable and various indicators of financial sector development and other explanatory variables.

3. Findings

The results of this empirical study show that the financial sector is important for growth. In contrast to the literature and theoretical review the econometric results shows that in SADC the variables which were used as proxies for financial sector development (money supply and credit extension) were negatively related to economic growth. However, mixed results are revealed in individual SADC countries, whereby in half of the countries, financial sector development contributes positively to growth, whereas in the other seven countries financial sector development does not support growth. Therefore, we can conclude that probably the financial sector in SADC economies is not yet integrated and that the region would benefit from increased integration.

4. Conclusion

Based on the literature and empirical studies which were reviewed, we can conclude that FSD matters for growth although the results for SADC show the contrary.
5. **Policy recommendations**

- SADC countries need to strengthen their financial systems, resolve the institutional and structural problems in their economies, and make use of cross-border financial institutions where appropriate.

- For countries which want to enter a monetary union, the development of financial systems and addressing other institutional and structural problems will be a necessary precondition for deriving optimal gains from such integration.

- In terms of credit extension the authorities or banking institutions should promote access to credit to the private sector in order to enable the sector to finance investments in expanding their productive capacity for future production and growth.

- Since the results showed that persistently high inflation has had an adverse impact on growth, SADC governments should continue to curb inflation and attempt to bring it down to sustainable levels where it would be conducive for growth to take place.

- It is recommended that pro-growth policies should be intensified in order to boost investment and financial development.

- SADC countries should strive to develop financial institutions such as banks in order to improve to financial services and products, particularly in rural areas, where there may be few financial institutions.

- Financial inclusion could also be identified as an important driver for economic growth in SADC. Furthermore, SADC countries should improve access to banking and financial services.

- Policymakers in SADC economies could also explore the promotion of non-conventional ways of providing financial services, such as mobile banking, which is growing.

- SADC countries should encourage intra-SADC trade as this would be beneficial for domestic growth and also growth of the region.

- SADC countries should promote investment in key sectors that would contribute positively to economic growth in the region.
Keywords: financial sector development, economic growth, causality, financial inclusion

Disclaimer

The views expressed in this research paper are those of the author and do not necessarily represent those of the members of the Committee of Central Bank Governors (CCBG) in the Southern African Development Community (SADC). While every precaution is taken to ensure accuracy of information, the CCBG shall not be liable to any person or entity for inaccurate information or conclusions contained herein. For any information concerning this paper please contact:

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### List of abbreviations

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<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ATMs</td>
<td>Automated teller machines</td>
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<tr>
<td>CCBG</td>
<td>Committee of Central Bank Governors in SADC</td>
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<td>CGAP</td>
<td>Consultative Group to Assist the Poor</td>
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<td>CMA</td>
<td>Common Money Area</td>
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<td>DFID</td>
<td>Department for International Development</td>
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<td>FIP</td>
<td>Finance and Investment Protocol</td>
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<tr>
<td>GDP</td>
<td>Gross domestic product</td>
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<td>GMM</td>
<td>Generalised Methods of Moments</td>
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<td>GSMA</td>
<td>Global System for Mobile Communications Association</td>
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<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
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<tr>
<td>MDGs</td>
<td>Millennium Development Goals</td>
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<td>SADC</td>
<td>Southern African Development Community</td>
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<td>SMS</td>
<td>Short message service</td>
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<td>SURE</td>
<td>Seemingly Unrelated Regression Estimators</td>
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<td>UNCTAD</td>
<td>United Nations Conference on Trade and Development</td>
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1. Introduction

‘Financial sector development’ or ‘financial development’ is defined as the process of strengthening and diversifying the provision of financial services to meet the requirements of economic agents in an effective and efficient manner and thereby support, as well as stimulate, economic growth.

Economic growth has been identified as a key to eradicating poverty in SADC and achieving prosperity in the region. The SADC Finance and Investment Protocol (FIP) seeks to foster harmonisation of the financial and investment policies of the SADC Member States in order to make them consistent with the objectives of SADC and ensure that any changes to financial and investment policies in one Member State do not necessitate undesirable adjustments in others. This objective would be achieved through the facilitation of regional integration, cooperation and coordination within the finance and investment sectors with the aim of diversifying and expanding the productive sectors of the economy and enhancing trade in the region to achieve sustainable economic development and growth as well as the eradication of poverty (SADC, 2006).

It has also been recognised that rapid and sustained economic growth is required for the achievement of the Millennium Development Goals (MDGs) in developing countries. Since the private sector is expected to be the main driver of growth, government must create an enabling environment for private sector development. The financial sector is a crucial building block for private sector development by facilitating transactions and access to credit and other financial products (Department for International Development (DFID), 2004).

According to DFID, the financial sector is important for achieving and stimulating pro-poor growth. Firstly, through the mobilisation of savings for productive investment and facilitating
capital inflows and remittances from abroad, the financial sector can stimulate investment in both physical and human capital. Secondly, the financial sector can promote technological progress and thus increase productivity and improve resource allocation by reducing transaction costs, facilitating inward investment and making capital available for investment in better technologies. Again, through the workings of the financial sector, economic agents with accumulated savings are enabled to use these savings and some borrowed funds to start micro-enterprises that generate employment, increase incomes and thus reduce poverty.

Although the exact parameters of the link between financial development and economic growth are unclear and probably differ from case to case, most economists seem to support the argument that financial sector development is an important prerequisite for economic growth.

In a study by Demetriades and Hussein (1996) in which they conducted a variety of causality tests between financial intermediary development and real GDP for 16 developing countries, they found considerable evidence of bidirectional causation.

King and Levine (1993) used four different financial development indicators based on data for a number of different countries for the period 1960-1989. They found that higher levels of financial development are significantly and robustly correlated with faster current and future rates of economic growth, along with physical capital accumulation and economic efficiency improvements.

The SADC Finance and Investment Protocol (FIP) seeks to achieve macroeconomic convergence, promote cooperation among member states in the areas of payments, clearing and settlement systems, and foster cooperation in developing regional capital and financial markets in order to attain the goals of sustainable economic development, growth and eradication of poverty. This
paper empirically examines the extent to which the development of the financial sector supports economic growth in SADC economies.

The paper is organised as follows. Section 2 provides a justification for the study and presents a statement of the problem to be addressed in the study. Section 3 gives an overview of the literature, reviewing the theoretical literature in 3.1. The empirical review is done in section 4, with an outline of the international empirical evidence in subsection 4.1; the empirical evidence in SADC countries is outlined in subsection 4.2. The SADC situation is discussed by looking at the structure of financial markets in SADC economies (4.2.1), and financial inclusion is discussed briefly in 4.2.2. In subsection 4.2.3, we review access to banking services in SADC. Subsection 4.2.4 is an outline of the growing practice of mobile phone banking for facilitating payments. Section 5 of the study is an outline of the methodology followed in the study. In section 6, the research findings are discussed, followed by conclusions in section 7. Finally, section 8 ends the study with policy recommendations.

2. Justification for the study

The study addresses the following question: to what extent does financial sector development matter for economic growth in the SADC region?

Although similar studies have been conducted in the area of financial sector development and economic growth, so far nothing had been done specifically on SADC as a region. It is noted that similar studies were done for individual SADC countries such as Lesotho, Namibia and South Africa, and also SACU and the common monetary area (CMA) countries together. This study therefore intends to add to the already existing body of literature on the topic, filling in the gaps for SADC and, most importantly, providing policy recommendations which could be used as a basis
for developing programmes geared at advancing financial sector development for sustained economic growth in the region. A further goal of the study is to facilitate debate in this area. The main objective of the study is to determine the connection or relationship between financial sector development and economic growth in SADC. The results are expected to contribute to policy decisions aimed at enhancing economic development and cooperation among SADC member states. It is hoped that the study will highlight the areas in the financial sector that require the attention of the CCBG in SADC and other policymakers in order to promote growth and prosperity for the citizens of the region.

3. Literature review

In this section of the paper, relevant theoretical and empirical literature is reviewed, followed by a review of the structure of financial systems in SADC economies.

3.1 Theoretical literature

In terms of economic theory, generally, a robust and efficient financial system promotes economic growth by channelling resources to their most productive uses and fostering a more efficient allocation of resources. A financial system that is stronger and better can also support economic growth by boosting the aggregate savings rate and investment rate, thus accelerating physical capital accumulation. Furthermore, financial development promotes economic growth by strengthening competition and stimulating innovative activities that foster dynamic efficiency (Estrada, Park and Ramayandi, 2010).

In rising to ameliorate market frictions, financial systems naturally influence the allocation of resources across space and time. For example, the emergence of banks that improve the allocation of information about firms and managers would undoubtedly alter the allocation of credit. In the same vein, financial contracts that make investors more confident that firms would pay them back
would likely influence how people allocate savings. Finally, the development of liquid stock and bond markets means that people who are reluctant to relinquish control over their savings for extended periods can trade claims to multi-year projects on an hourly basis. This could potentially change how much and where people save.

Financial development occurs when financial instruments, markets and intermediaries ameliorate but not necessarily eliminate the effects of information, enforcement and transaction costs and thereby do a correspondingly better job at providing the following five financial functions:

i. producing *ex ante* information about possible investments;

ii. monitoring of investments and the implementation of corporate governance;

iii. trading, diversification and the management of risk;

iv. mobilisation and pooling of savings; and

v. exchange of goods and services.

According to Levine (2005), each of the financial functions may influence savings and investment decisions and hence economic growth.

Robinson (1952), cited in Levine (2005), argued that finance does not cause growth but rather that finance responds to changing demands from the real sector. Robinson (1952) advanced the explanation that financial development follows economic growth as a result of increased demand for financial services. This view was based on the observation that the ratio of broad money stock to nominal GDP, which is a standard measure of financial development used in literature, is also the inverse of the velocity of circulation of broad money. Schumpeter (1911), cited in Dritsakis and Adamopoulos (2004), looked at the theoretical relationship between financial development and economic growth, focusing on the services that are provided by financial intermediaries, and argued that these services are essential for innovation and development. The theory emphasised the positive influence of financial sector development on a country’s level and rate of growth of its per
capita income as the services provided by the financial sector are an essential catalyst of economic growth.

As noted by Rajan and Zingales (1998), these services include reallocating capital to the highest value use without substantial risk of loss through moral hazard, adverse selection or transaction costs. In theoretical work on the relationship between financial development and economic growth, economists emphasise the role of financial development in better identifying investment opportunities, reducing investment in liquid but unproductive assets, mobilising savings, boosting technological innovation and improving risk-taking.

Dritsakis and Adamapoulos (2004) further noted that the Mckinnon-Shaw school examined the impact of government intervention on the development of the financial system and made a proposition that government restrictions on the banking system, such as interest-rate ceilings and direct credit programmes, have negative effects on financial sector development and, as a consequence, reduce economic growth. Furthermore, Dritsakis and Adamapoulos (2004) asserted that the endogenous growth theory reached similar conclusions as Mckinnon and Shaw by explicitly modelling the services provided by financial intermediaries such as risk-sharing and provision of liquidity. The endogenous growth theory also suggests that financial intermediation has a positive effect on steady-state growth and that government intervention in the financial system negatively affects economic growth.
The neoclassical growth models developed by Solow (1957), also cited in Dritsakis and Adamapoulos (2004), have technological change as an exogenous variable which is unaffected by a country’s degree of openness of the economy. However, new growth theories suggest that trade policy affects long-run growth through its impact on technological change. Thus, the degree of openness of the economy provides access to imported inputs, which embody new technology. In theory, there is a positive relationship between trade and economic growth.
The link between finance and growth may run through various transmission channels. Thiel (2001) notes that there are three important connections between financial variables and economic activity, namely, financial development may reduce the loss of financial resources required to allocate capital, increase the savings ratio and raise capital productivity. Firstly, in terms of reducing the loss of financial resources, the more efficient the transformation of savings into investments, the lower the loss of resources and the more savings can be used for productive investments. Regarding the second channel, Thiel (2001), however, indicates that the effect of financial development on the savings rate is ambiguous, as higher efficiency of the financial system can be expected to yield more favourable return-risk combinations for savers. But whether prospects of higher returns on, or lower risk attached to, savings can induce an increase in savings, which would in turn stimulate higher growth, is uncertain. In fact, prospects of higher returns may actually decrease savings because the same future consumption can be accomplished with higher present consumption and thus lower savings. Lastly, an efficient financial system raises the productivity of capital.

Ndikumana (2001) recognises that the financial system plays an important role in mobilising funds and transforming them into assets that can better meet the needs of investors. While there is a large amount of historical and econometric evidence which tends to suggest that financial development facilitates economic growth, the possibility of a reverse causal relationship cannot be ruled out. It is possible that financial systems develop in response to higher economic growth or in anticipation of future prosperity. Thus, the two causal processes should not be seen as mutually exclusive and may in fact be a natural feature of the links between finance and growth.

In terms of the modern growth theory, there are two specific channels through which the financial sector might affect long-run growth: through its impact, firstly, on capital accumulation, and, secondly, through its impact on the rate of technological progress. The effects arise from the
intermediation role provided by financial sector institutions, which enable the financial sector to mobilise savings for investment, facilitate and encourage inflows of foreign capital, and optimise the allocation of capital between alternative uses, thus ensuring that capital goes to areas where it is used most productively (DFID, 2004).

Barajas, Chami and Yousefi (2013) recognise that the financial system generally performs four basic functions essential to economic development and growth. These functions include the mobilisation of savings, the allocation of resources to productive uses, facilitating transactions and risk management, and exerting corporate control. According to these authors, a country which provides an environment that is conducive for greater financial development would actually have higher growth rates, with much of the effect coming through greater productivity rather than a higher overall rate of investment. The vast majority of studies support the view that there is a strong link between financial development and growth, and most provide evidence that this relationship is positive. It should, however, be noted that such results in themselves do not necessarily imply that financial sector development leads to higher growth. It may, for instance, be that growth leads to financial sector development as it generates an increasing demand for financial services that in turn induces an expansion in the financial sector.

4. Empirical review

This part of the study will review the international evidence and studies done in certain SADC countries.

4.1 Review of international empirical evidence

There seems to be consensus on the role of financial intermediation in economic growth, but the debate on these issues is still ongoing and important elements remain unsettled. Robinson (1962)
and Stiglitz (1994) questioned the importance of the financial system in the promotion of economic growth, and proposed that it is economic growth which creates demand for financial services and products which, in turn, may bring about a more developed financial sector. But according to Mohapi and Motelle (2006), this proposition results in three conflicting hypotheses about the causal relationship between economic growth and financial intermediation. Mohapi and Motelle (2006) assert that the debate is on whether financial intermediation causes economic growth or whether economic growth causes financial intermediation, the third possibility being that the causation between the two is bidirectional.

In a study conducted by Koivu (2002), an attempt was made to answer the question as to whether financial sector development affects economic growth in transition economies, particularly as the financial systems in these economies are still undeveloped, which could be the case in some SADC countries. To measure development in the banking sector, the author used the margin between lending and deposit interest rates, and by the proportion of non-performing loans in the economy.

Furthermore, similar to other studies, Koivu (2002) used the amount of bank credit allocated to the private sector. His findings support the view that financial sector development accelerates economic growth. In this study, the interest rate margin significantly and negatively affected economic growth, which is in line with the theory that economic growth is faster when transaction costs get lower and a larger share of savings is thus channelled into investments. Also, the amount of non-performing loans was negatively related to the growth rate. Surprisingly, in the case of transition economies, the amount of credit extended to the private sector was negatively correlated to economic growth. As this was contrary to many earlier results, the author concluded that it could be reflective of a number of banking crises that transition economies had experienced.
Empirical results obtained by applying dynamic panel data models and using various GMM estimators on panel data for 65 countries (developed and developing) suggested that financial sector development contributes to economic growth although (as could be expected) the magnitude of the impact varied depending on several factors, including the level of development (Mavrotas and Son, 2004).

A study by Liang and Reichert (2012) conducted a panel analysis of developed countries to examine whether policy-related factors in terms of financial sector development have had significant impacts in countries with different levels of economic development. The results provided evidence that the influence of liquid liabilities on economic growth is enhanced when relevant policy-related factors are included. The authors also measured the impact of non-bank financial institutions on economic growth. According to the authors, the policy-related variables displayed differential impacts while increasing the explanatory power of the model. Liang and Reichert (2012) noted that the recent financial crisis and subsequent slow economic recovery experienced by the developed economies illustrate the critical importance of having a well-functioning financial sector.

Demetriades and Hussein (1996) conducted a variety of causality tests between financial development and real GDP for 16 developing countries. They found that there was considerable evidence of bidirectional causation and some evidence of reverse causation. Furthermore, in research by Akimov, Wijeweera and Dollery (2009) on financial development and economic growth in transition economies, the authors used an endogenous growth model and panel data analysis techniques. Their study found a robust positive link between financial development and economic growth in transition economies.
4.2 Review of empirical evidence in SADC countries

Mohapi and Motelle (2006), in their study on the finance and growth nexus in Lesotho, found that there was no causality between finance and growth in either direction. The findings were consistent with the conclusions of the paper by Chang (2002), Shan and Morris (2002) and Dawson (2003), cited in Mohapi and Motelle (2006). Mohapi and Motelle (2006) concluded that a slowdown or lack of growth in Lesotho could not be attributed to its underdeveloped financial sector. Thus they concluded that ‘aggressive strategies aimed at enhancing growth in Lesotho should be directed elsewhere other than to the financial sector’.

Aziakpono (2003) examined the relationship between finance and growth in SACU, which includes five SADC countries (Botswana, Lesotho, Namibia, South Africa and Swaziland) and also the CMA. The empirical evidence from the study showed that domestic financial intermediation is relevant for financially integrated markets such as in the CMA. However, the evidence is that, in the case of smaller countries in the customs union with less developed financial institutions, in order to derive optimal gains from financial intermediation, they need to strengthen the weak financial system and resolve the institutional and structural problems in their economies.

Aziakpono (2003) further asserts that for countries which undertake to form or enter economic integration, particularly a monetary union, which is a long-term goal for SADC, the development of financial systems and addressing other institutional and structural problems is a necessary precondition for deriving optimal gains from such integration.

Sunde (2011), in a study on financial sector development and economic growth in Namibia, established a relationship between financial sector indicators and economic growth. Using the Granger causality tests, the results showed that the causality between financial development and economic growth was by and large in both directions, which means that when the economy grows,
the financial sector may respond positively. Conversely, growth of the financial sector can actually drive or underlie economic growth. The author concluded that where causality runs from the financial sector to economic growth, then the development and growth of the financial sector could make the Namibian economy grow faster than it does currently. As there are few banks in the economy, this can lead to them engaging in monopolistic behaviour as they earn high profits. Thus, if the country were to improve access to banking services through increased competition or more branches, this could unlock the growth potential of the economy. Sunde (2011) also concluded that countries with a less developed financial system tend to experience demand where economic growth causes the financial sector to develop.

Sunde (2012) also investigated the nexus between financial sector development and economic growth in South Africa using cointegration and error correction modelling as well as Granger causality tests. The results of the study showed that economic growth is explained by financial sector variables and control variables such as inflation, the exchange rate and real interest rates. Furthermore, the Granger causality tests showed that, in general, there is a bidirectional relationship between economic growth and financial sector development in South Africa. This relationship implies that if the economy grows, the financial sector will also grow, and vice versa.

In another study, Odhiambo (2010) examined the dynamic causal relationship between financial development, investment and economic growth in South Africa using the ARDL-Bounds testing procedure. The results of the study showed that, generally, economic growth has a strong influence on financial sector development and that there is a unidirectional causal flow from growth to investment, which then Granger-causes financial development. The study recommended that South Africa should therefore intensify its pro-growth policies in order to bolster investment and financial development.
4.2.1 Review of the structure of financial systems in SADC economies

In this section of the paper, a review of the structure of financial systems in SADC member states is conducted, focusing on the existence and organisation of money and capital markets, the availability of instruments in these markets, the types of financial intermediaries operating in these markets, the presence of a stock exchange, exchange controls on current account transactions, and restrictions on capital account transactions. The rationale for this analysis is to establish whether there are different types of financial markets and institutions to facilitate access to and the exchange of financial instruments that are used to finance different economic activities, thereby supporting economic growth. The idea is that if the markets are not present, then access to financial products is hampered and a larger variety of financial instruments and intermediaries increases the options available for investors while at the same time facilitating competition among role players. On the issue of the existence of stock exchanges, the idea is to check whether private firms can raise investment capital by issuing shares in the domestic market.

On the existence of money and capital markets, in summary, it was found that while all SADC countries have both money and capital markets, they are at various stages of development. Furthermore, liquidity in these markets (in terms of trading volumes and activity) varies according to locations as it was noted that some markets in SADC countries are more liquid than others. The types of financial intermediaries across SADC member states include central banks, commercial banks, money lenders, unit trust companies, pension funds, non-bank deposit-taking institutions, foreign exchange dealers, mutual banks, stockbroking firms and primary dealers. Regarding restrictions on current and capital account transactions, the general picture that emerged from the analysis was that most SADC economies have liberalised these transactions, with some countries having done so earlier and others doing so recently.
4.2.2 Financial inclusion

Financial inclusion refers to ‘the delivery of financial services, including banking services and credit, at an affordable cost to the vast sections of disadvantaged and low-income groups who tend to be excluded’, according to Kelkar (2010).

According to Hanning and Jansen (2010), financial inclusion is aimed at drawing the unbanked population into the formal financial system in order for them to have the opportunity to access financial services such as savings, payments, transfers, credit and insurance. However, financial inclusion implies neither that everybody should make use of the supply nor that providers should disregard risks and other costs when deciding to offer services.

In recent years, financial inclusion, which involves access to formal financial services such as credit, insurance and secure saving opportunities, has been identified as a critical engine of economic growth. In Hariharan and Marktanner (2012), five factors that account for a lack of financial inclusion are identified. They are:

a. access exclusion due to geography and ‘risk management of the financial system’;
b. condition exclusion ‘due to conditions that are inappropriate for some people’;
c. price exclusion due to non-affordability of financial services;
d. marketing exclusion due to the non-attractiveness of conducting business with certain groups within society (lending risk); and
e. self-exclusion due to ‘fear of refusal or due to psychological barriers’.

According to Hariharan and Marktanner (2012), the factors mentioned above arise from either supply or demand side channels. Chibba, cited in Hariharan and Marktanner (2012), reported that in the case of Botswana market power was a source of lack of financial inclusion, which problem could be observed in other countries as well.
The authors assert that the lack of financial inclusion can be costly to society and to the individual. For the individual, the lack of financial inclusion forces the unbanked to go into the informal lending sector where interest rates are higher and the amount of available funds is small. Since the informal lending structure is not governed by any legislative framework, any dispute between lenders and borrowers cannot be settled legally, thus leaving borrowers at much greater risk of usury and exploitation. Furthermore, in rural areas, poverty and informal lending sectors often constitute a vicious cycle that borrowers cannot escape.

In terms of societal benefits, financial inclusion increases the amount of available savings, increases the efficiency of financial intermediation, and allows for tapping into new business opportunities (World Bank, 2012, cited in Hariharan and Marktanner, 2012).

Using a typical production function in which output depends on capital and total factor productivity, Hariharan and Marktanner (2012) also investigated how financial inclusion can affect economic growth. They concluded that there is a good reason to assume that an increase in financial inclusion could affect both capital accumulation and total factor productivity. As financial inclusion increases the amount of funds being made available and reduces borrowing costs, capital formation increases. The study also concluded that financial inclusion remains a huge untapped source of economic growth and development. Specifically, financial inclusion is a robust and significant correlate of a country’s total factor productivity and ability to form capital.

There is growing theoretical and empirical evidence which suggests that financial systems which serve low-income groups tend to promote pro-poor growth. Therefore, the lack of access to finance adversely affects growth and poverty alleviation as it makes it more difficult for the poor to accumulate savings and build assets to protect themselves against risks and to invest in income-generating projects. Consequently, the interest in financial sector development has increasingly
focused on the factors that determine not only the depth but also the breadth of access in a move towards more inclusive financial systems (Hanning and Jansen, 2010).

In broad terms, financial inclusion can be measured using the following factors in order of complexity:

a. Access refers to the ability to use available financial services and products from formal institutions. A basic proxy for access can be the number of open accounts across financial institutions as a proportion of the population.

b. Quality refers to the relevance of the financial service or product to the lifestyle needs of the consumer.

c. Usage focuses on the permanence and depth of financial service and product use.

d. Impact measures changes in the lives of consumers that can be attributed to the usage of a financial product or service.

According to Hanning and Jansen (2010), Kenya was the pioneer in developing an interesting process of financial inclusion in Africa through leapfrogging to mobile phone payment solutions. In only three years, a Kenyan telecommunications company, Safricom, had attracted almost 8 million subscribers to its short message service (SMS)-based transfer scheme, which had a significant positive impact on users.

4.2.3 Access to banking services in SADC economies

Access to basic financial services is widely considered as one possible means to achieve a better life for the poor. According to Schoombee (2011), Botswana, Mauritius, Namibia and South Africa are the most banked countries in the SADC region in terms of the criteria that measure use, and thus have the greatest access to banking services. These countries also represent four of the top five middle-income members of SADC (the other being the Seychelles) which, based on their level of development, would be expected to be the most banked. It is noted that data relating to changes in
the use of banking services were available for only three member countries, namely South Africa, Tanzania and Zambia. South Africa experienced a 33 per cent average increase in the use of banking services between 2004 and 2009, but a 45 per cent increase was recorded among the poor between 2004 and 2008. Tanzania recorded a 21 per cent increase between 2006 and 2009; in the case of Zambia the percentage of the adult population that was banked decreased by 5 per cent between 2005 and 2009, which could be attributed to the global recession in the latter year.

Among the barriers to banking access by the unbanked is lack of employment and lack of regular income, in line with the results of the analysis of 139 countries by …(CGAP) and the World Bank (2009). This analysis revealed a positive correlation between per capita income and deposit account and loan penetration respectively. Other possible barriers include low population density, inadequate branch penetration, insufficient physical infrastructure, an unsatisfactory legal environment and inadequate competition.

Despite widespread international indications that direct state intervention to promote access to banking has been a failure, Botswana, Malawi, Swaziland, Tanzania and Zambia had government-owned commercial banks in the past decade. At least four had interest rate ceilings and/or banking fee limits determined by government. Throughout the world, government-owned post offices are used extensively to provide banking services; this applies to more than 70 per cent of the 142 countries surveyed in the study by CGAP and the World Bank in 2009. This was also the case in Lesotho, Namibia and South Africa. However, Schoombee (2010) argues that governments need only to create an enabling environment and provide incentives for the financial sector to flourish. For instance, governments should ensure a stable and competitive macroeconomic environment, and give incentives for financial institutions to undertake high-cost business such as lending to the poor by providing guarantees for possible loan defaults.
Table 2: Measures of access to and use of banking services (2008, 2009)

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Access</th>
<th>Use</th>
<th>At least one banking product (% of adult population)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>ATMs* per 1000km²</td>
<td>ATM*s per 100000 adults</td>
<td>Branches per 100000 adults</td>
</tr>
<tr>
<td>Angola</td>
<td>2008</td>
<td>5.5</td>
<td>5.5</td>
<td></td>
</tr>
<tr>
<td>Botswana</td>
<td>2009</td>
<td>0.5</td>
<td>21.5</td>
<td>8.0</td>
</tr>
<tr>
<td>Democratic Republic of Congo (DRC)</td>
<td>2008</td>
<td>0.3</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Lesotho</td>
<td>2009</td>
<td>2.7</td>
<td>6.7</td>
<td>2.1</td>
</tr>
<tr>
<td>Madagascar</td>
<td>2008</td>
<td>1.0</td>
<td>34</td>
<td>21</td>
</tr>
<tr>
<td>Malawi</td>
<td>2009</td>
<td>2.2</td>
<td>2.7</td>
<td>2.2</td>
</tr>
<tr>
<td>Mauritius</td>
<td>2009</td>
<td>187.7</td>
<td>39.1</td>
<td>20.1</td>
</tr>
<tr>
<td>Mozambique</td>
<td>2009</td>
<td>0.8</td>
<td>5.1</td>
<td>2.9</td>
</tr>
<tr>
<td>Namibia</td>
<td>2009</td>
<td>0.5</td>
<td>30.5</td>
<td>7.3</td>
</tr>
<tr>
<td>South Africa</td>
<td>2009</td>
<td>14.6</td>
<td>52.4</td>
<td>8.0</td>
</tr>
<tr>
<td>Swaziland</td>
<td>2009</td>
<td>7.6</td>
<td>18.7</td>
<td>2.9</td>
</tr>
<tr>
<td>Tanzania</td>
<td>2009</td>
<td>0.9</td>
<td>3.4</td>
<td>1.8</td>
</tr>
<tr>
<td>Zambia</td>
<td>2009</td>
<td>0.6</td>
<td>6.4</td>
<td>3.6</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>2009</td>
<td>1.5</td>
<td>7.8</td>
<td>6.3</td>
</tr>
</tbody>
</table>

* ATMs: automatic teller machines

Adapted from Schoombee (2011)

4.2.4 Use of mobile banking for facilitating payments

Mobile banking can be defined as the ability to conduct bank transactions via a mobile device or, more broadly, to conduct financial transactions via a mobile terminal, or it can refer to a range of mobile phone-based financial transactions, including payments, as well as using a mobile phone to access banking services (Drexelius and Herzig, 2001, and Maimbo, Saranga and Strychacz, 2010).

Maimbo, Saranga and Strychacz (2010) assert that the use of mobile banking in Southern Africa is widely recognised as an increasingly important component of national and regional economic development. Mobile banking can benefit countries in two ways. It can allow faster and more efficient financial transfers, increasing the volume of trade and subsequent payments to workers.
and their families. This dynamic is more relevant with regard to informal trade, practised primarily by the low-income, unbanked domestic, regional and international migrants. Furthermore, mobile banking immensely increases access to finance for a large segment of the unbanked society in developing countries. The authors recognise that developing mobile banking capacity offers great potential for facilitating trade in goods and financial services. They cite several reasons why informal channels such as mobile banking are chosen over the formal financial sector to remit payments, including ease of use, familiarity, cost, risk tolerance and access.

Andrianaivo and Kpodar (2012) investigated whether mobile phone development fosters economic growth through better financial inclusion. The results confirm that mobile phone development contributes significantly to economic growth in African countries. Part of the positive effect of mobile phone penetration on economic growth comes from greater financial inclusion. The authors observed that Africa remains challenged by a financial infrastructure gap, where financial exclusion is widespread and the coverage of bank branches and ATMs is low. Estimates by the Global System for Mobile Communications Association (GSMA) indicated that there would be 1.7 billion unbanked customers with mobile phones in the world by 2012.

5. Econometric analysis

The study follows both a qualitative and a quantitative approach. Qualitatively, the study reviewed existing literature on the topic in terms of theory and work that has already been done by other authors at an international level and then in SADC. Quantitatively, the study used panel data of financial sector indicators and economic growth data for 14 SADC countries over the period 1990 to 2012.
5.1 Data and sources

The study followed previous related studies and used the same data as in those studies. The indicators used to measure financial sector development were: lending rates, the ratio of liquid assets to GDP such as money supply, and the ratio of private sector credit extension to GDP. We also used indicators to measure economic growth and investment in production capacity, namely, real GDP growth, level of real GDP per capita, and the ratio of investment to GDP. These data were sourced from central banks in SADC. Due to the serious gaps in the data collected from SADC central banks, alternative data sources were used, including UNCTAD, the International Monetary Fund (IMF) and the World Bank. Some data were interpolated by the author.

5.2 Methodology

Studies that examined the causality between financial development and economic growth used two broad economic approaches. Firstly, national cross-sectional data were used to model the relationship between financial development and economic growth, supporting the hypothesis that the causality runs from financial development to economic growth (Mohapi and Motelle, 2006).

The study followed the neoclassical growth model that was used in the research by King and Levine (1993) and Kilimani (2009) in the work on financial development and economic growth. Using data from 80 countries over the period 1960-1989, King and Levine (1993) presented cross-country evidence consistent with Schumpeter’s view that the financial system can promote economic growth. The study investigated whether higher levels of financial development are positively associated with economic development, specifically whether higher levels of financial development are significantly and robustly correlated with faster current and future rates of economic growth, physical capital accumulation and economic efficiency improvements. Per capita GDP growth, the rate of capital accumulation and improvements in economic efficiency are referred to as growth indicators. The study broke down growth into two parts, namely, the rate of
physical capital accumulation and other arguments of real per capita GDP. Taking this into account, the model becomes:

\[ GY_{it} = c_{it} + w(GK)_{it} + ET_{it} + \varepsilon_{it} \]

where:

- \( c \) is the constant;
- \( GY \) is the real per capita GDP;
- \( GK \) is the growth rate of physical capital stock;
- \( ET \) is the other determinants of real per capita GDP; and
- \( \varepsilon \) is the error term.

The study by King and Levine (1993) used the model on cross-sectional data for 80 countries, and this particular study uses data for 14 SADC countries for the period 1990-2012.

Accordingly, the following variables were used in the model: the measure of real economic growth was used as the dependent variable while the explanatory variables were broad money supply as a percentage of GDP, total credit extended to the private sector as a percentage of GDP, population growth, trade openness, the inflation rate and the real interest rate. Money supply (M3) as a percentage of GDP measures the size of the formal financial intermediary sector relative to economic activity.

In the study by Kilimani, the following equation was used to test for the causality between financial development and economic growth in Uganda:

\[ gy_{it} = \beta_0_{it} + \beta_1_{it}m2y + \beta_2_{it}irr + \beta_3_{it}tcr + \beta_4_{it}inf + \beta_5_{it}def + \beta_6_{it}exr + \beta_7_{it}mex + \beta_8_{it}pop + \beta_9_{it}tex + \beta_{10_{it}}dp + \beta_{11_{it}}de + \varepsilon_{0_{it}}; \]

where:

- \( gy_{it} \) is real GDP growth;
- \( m2y_{it} \) is M2/GDP;
- \( irr_{it} \) is the real interest rate;
 According to Akimov, Wijeweera and Dollery (2009), from the endogenous growth theory, the well-known fundamental variables affecting economic growth are physical capital, labour and human capital. Therefore, the most popularly used measure of physical capital is the ratio of domestic investment to GDP, which is included in the model. In this study, we could not follow the paper by these authors by including growth in the labour force variable to represent labour, and therefore used population growth as a proxy for labour growth, as in other studies.

In this paper, various panel data methodologies were used in the econometric analysis, namely:

a. the fixed-effects model, dealing with the problem of homogeneity (the fact that countries are different); 
b. the Generalised Method of Moments (GMM), dealing with the fact that there can be reverse causality among variables (endogeneity); and 
c. the Seemingly Unrelated Regression Estimators (SURE), dealing with cross-sectional dependence (countries that are closely related).

These models were considered and compared to find the most suitable and best performing model. The results of the analysis based on the different models are presented in this paper.
Apriori expectations

Interest rates: negative. This represents the cost of capital. As interest rates rise, less capital is taken up, which can lead to less expansion in productive capacity which, in turn, can lead to less economic growth. Even when funds are taken to fund consumption, high interest rates deter consumers from taking up new credit to finance consumption, which means that they then consume less. Thus, less would be also produced.

Gross fixed capital formation: positive. Investment in infrastructure is growth-enhancing.

Money supply and credit extension: positive, implying that firms need capital to finance expansion in productive capacity. In the regressions, only money supply was used.

Population growth: as a proxy for labour growth, it was expected to be positive.

Trade openness: positive – more trade will lead to higher growth.

Inflation was expected to be positive and turn negative beyond a certain threshold level which would show that persistently high inflation is harmful to economic growth.

6. Findings from the econometric analysis

The study aimed to answer the question whether financial sector development matters for economic growth in SADC economies by drawing on the theory and experiences of other regions, including developed and other developing countries. A review of the literature reconfirmed that financial sector development is important for economic growth.

In terms of the econometric analysis, as stated in section 5.2, several methods were applied, namely, the fixed-effects model, the GMM and SURE. The aim of testing the different methods was to find the one that would perform best and would thus be suited for this paper. The results of the different models are presented in Appendix 3.
6.1. Unit root test results

We conducted a unit root test on the data to determine whether the variables have unit roots or are stationary. The results are shown in Appendix 3.1. All the variables were stationary in their levels except for credit extension, gross fixed capital formation and money supply. This means that in all the regressions these variables were used in their first differences.

6.2. Fixed-effects and GMM models

In terms of the fixed-effects model, the following equation was used:

\[
GDP = \text{interest\_rates} \text{ capital\_formation} \text{ money\_supply} \text{ credit\_extension} \text{ pop\_growth} \text{ trade\_openness} \text{ inflation}
\]

All variables were used in their natural logarithms except for real GDP and interest rates. Furthermore, gross fixed capital formation, money supply and credit extension were also used in their first difference following the results of the unit root tests. The following variables were significant: interest rates, money supply, credit extension and trade openness. The signs of the coefficients were also as expected, with the exception of money supply, credit extension and interest rates. Trade openness was positive but the coefficient was very small, showing a very small or no impact on growth. For the full regression results, see Appendix 3.

The fixed-effects model showed that only capital formation and population growth were significant. Fixed capital had a negative coefficient, which shows that investment in fixed capital does not yield the expected positive results in the SADC region. Alternatively, it could mean that the region is not investing in the appropriate infrastructure that promotes economic growth, or that there is insufficient investment in growth-promoting infrastructure.

In the study, population growth was used as a proxy for labour force growth, and the results show that growth in the labour force in the region is positive for economic growth. Unit root test results
We conducted unit root test on the data to test whether the variables have unit root or they are stationary. The results are shown in table in the Appendix 3.1. All the variables were stationary in their levels except for credit extension, gross fixed capital formation and money supply. This means that in all the regressions these variables were used in their first differences.

In this paper, we ran the GMM without the constant so that the results could be robust. The results of the GMM are summarised in Appendix 3; they are also compared against the results from the fixed-effects model. In short, the results reveal that inflation is significant and that it has a negative impact on economic growth, which in turn shows that, in general, the region has historically high inflation rates that affect its economic growth negatively. Both measures of financial sector development (money supply and credit extension) were significant but with negative coefficients. This could be an indication that the region is not financially integrated so that financial sector development does not lead to the economic growth of the region. The results for individual countries from the SURE model are mixed, as will be shown in the next subsection.

Finally, trade openness was significant and had a positive coefficient, which implies that increasing regional trade is good for economic growth in the region.

6.3. Seemingly Unrelated Regression Estimators

The following results were observed from SURE for individual countries. The SURE model showed mixed results across countries, indicating that there is evidently heterogeneity among them. The results are summarised in Appendix 4. The Breusch-Pagan test of independence shows that there is cross-sectional or country dependence, meaning that countries in the SADC region are interdependent.
Angola
Money supply, population growth, trade openness and inflation were significant, with all variables but trade openness having positive coefficients, meaning that Angola’s economic growth does not benefit from trade.

Botswana
Gross fixed capital formation was significant but it carried a negative coefficient, showing that investment in capital does not support economic growth. Trade openness was significant and it contributes positively to economic growth.

Democratic Republic of Congo
For the DRC, interest rates, population growth and inflation were the only significant variables and the signs of the coefficients were as expected.

Lesotho
Population growth, trade openness and inflation were all significant and with the expected signs. Population growth and trade openness were positive, whereas inflation was negative.

Malawi
Interest rates, gross fixed capital formation, money supply and inflation were all significant, with the first two being negative and the last two being positive. The negative coefficient for capital formation could indicate that the country should probably invest in the key sectors that would contribute positively to future economic growth. The positive inflation coefficient could mean that inflation has not reached the threshold level beyond which it would hamper economic growth.

Mauritius
Only trade openness and inflation were significant, and the coefficients had the expected signs, which implies that Mauritius benefits from trade and had low inflation, which is still positive for economic growth as inflation has not yet reached the threshold.

Mozambique
Capital formation, money supply and inflation were all significant and negative.
Namibia

Only trade openness was significant and positive, according to expectations.

Seychelles

Only population growth, a proxy for labour force growth, was significant and negative, showing that labour in the country is probably not very productive.

South Africa

Interest rates were negative; population growth was positive; trade openness was positive; inflation was negative – all as expected.

Swaziland

Interest rates were positive, capital formation was negative, trade openness was negative, and inflation was positive.

Tanzania

The variable ‘interest rates’ was significant and negative, as expected. Trade openness was positive and inflation was negative.

Zambia

Interest rates (positive), money supply (positive) and inflation (negative) were all significant.

Zimbabwe

Interest rates (positive), capital formation (negative), money supply (negative), population growth (negative) and inflation (negative) were all significant.

7. Conclusion

The study aimed to examine the relationship between financial sector development and economic growth in SADC. The objective of the study was to determine if financial sector development matters for economic growth. The study followed a qualitative and quantitative approach.

In terms of the qualitative analysis, a review was conducted of the theoretical literature pertaining to financial sector development and economic growth, followed by empirical evidence from an
international perspective. This review showed that financial sector development is positive for economic growth, except for one study which showed that credit extension was negatively related to economic growth. Lastly, we did a review of the empirical studies done on SADC countries individually and in SACU and the CMA. The theory on financial sector development asserts that, generally, a robust and efficient financial system promotes economic growth by channelling resources to their most productive uses and fostering a more efficient allocation of resources. It was noted financial sector development promotes economic development by strengthening competition and stimulating innovation activities that foster dynamic efficiency.

Schumpeter focused on services provided by financial intermediaries and argued that these services are essential for innovation and development. Financial sector development positively influences a country’s level and rate of growth in per capita income. Economists also emphasise the role that financial development plays in better identifying investment opportunities, reducing investment in liquid but unproductive assets, mobilising savings, boosting technological innovation and improving risk-taking. The endogenous growth theory suggests that financial intermediation has a positive effect on steady-state growth and that government intervention in the financial system negatively affects economic growth.

The neoclassical growth models of Solow identify technological change as an exogenous variable that is not affected by a country’s degree of openness, which is in contrast with the new growth theories that suggest trade policy affects long-run growth through its impact on technological change. In short, there is a positive relationship between trade and economic growth. This assertion was also supported by the results of the empirical analysis, which showed that the variable ‘trade openness’ was always positive. The modern growth theory showed that there are two channels
through which the financial sector affects long-term economic growth, namely, through its impact on capital accumulation and on the rate of technological progress.

In terms of the direction of causality between financial sector development and economic growth, there is no common agreement as several authors advance different arguments. We conclude that the causality could be uni- or bidirectional, where financial development facilitates economic growth or financial systems develop in response to higher economic growth or in anticipation of future prosperity. The link between finance and growth may run through various transmission channels, including reducing the loss of financial resources required to allocate capital, increasing the savings ratio and raising capital productivity.

A review of international empirical evidence showed that there is generally consensus on the role of financial intermediation in economic growth although the debate still continues and some important elements remain unsettled. Several studies were conducted for developing countries, including transition economies, and concluded that financial sector development accelerated economic growth. However, the variable ‘credit extension to the private sector’ was negatively correlated to economic growth. A study conducted by applying dynamic panel data models and using various GMM estimators for 65 developed and developing countries suggested that financial sector development contributes to economic growth.

Empirical evidence from studies on some SADC countries was mixed as some concluded that slow growth could not be attributed to an underdeveloped financial sector. There was also no common conclusion in terms of the direction of the causality between finance and growth. For the financially integrated economies, such as those in the CMA, domestic financial intermediation was relevant for growth.
The study also reviewed the structure of financial systems in SADC economies, focusing on the existence and organisation of financial markets, availability of instruments, financial intermediaries that participate in these markets, and the presence or absence of controls on current and capital account transactions.

A short discussion was done on financial inclusion, in recognition that it can contribute to access to financial services and economic growth. Some authors noted that the lack of financial inclusion can be costly to both society and the individual. Financial inclusion can have societal benefits as it increases the amount of available savings and improves the efficiency of financial intermediation.

The review showed that there is growing theoretical and empirical evidence to suggest that financial systems which serve low-income groups tend to promote pro-poor growth and that the lack of access to finance adversely affects economic growth and poverty alleviation. As a measure of financial inclusion, the study looked at access to banking services in SADC economies and revealed that four countries – namely, Botswana, Mauritius, Namibia and South Africa – are the most banked in the SADC region in terms of access to banking services. Barriers to banking services include lack of employment and lack of regular income, low population density and inadequate branch penetration.

The study reviewed the growing practice of using mobile banking for facilitating payments. This practice is widely recognised in Southern Africa as an increasingly important component of national and regional economic development. Potential benefits for a country include faster and more efficient financial transfers, increasing the volume of trade and subsequent payments to
workers and their families. Furthermore, mobile banking increases access to finance for a large segment of the unbanked society and offers great potential for facilitating trade in goods and financial services. Lastly, it was demonstrated that mobile phone development can contribute to economic growth in African economies.

For the quantitative analysis, the paper used panel data of 14 SADC countries to estimate the regression of economic growth as the dependent variable and several measures of financial sector development as independent variables. Results from the fixed-effects model showed that interest rates, money supply, credit extension and trade openness were the only significant variables while the SURE model revealed mixed results, which shows that there is heterogeneity across the SADC countries. Before all the techniques were conducted, we conducted the unit root tests to determine how stationary all the variables were; they revealed that some of the variables were not stationary and could thus only be used after differencing them.

8. Policy recommendations

The study focused on gaps uncovered in research, for instance, the absence of particular types of financial institutions and processes that could facilitate robust economic growth and development. The intention is for Governors to note these gaps and initiate action to address them. It is recognised that some issues do not fall directly under specific Governors’ areas of responsibility, in which case they cannot deal with these issues directly. But it is hoped that the Governors can address them with their counterparts in their respective governments, such as the ministers responsible for national financial matters.

In order to benefit from financial intermediation, smaller countries in the SADC region with less-developed financial institutions need to strengthen their weak financial systems, resolve the
in institutional and structural problems in their economies, and make use of cross-border financial institutions where appropriate.

For countries which undertake to form or enter economic integration such as a monetary union, the development of financial systems and addressing other institutional and structural problems is a necessary precondition for deriving optimal gains from such integration.

The empirical analysis revealed that the following variables were significant: credit extension and money supply, inflation, capital formation, population and trade openness. Thus, the following recommendations are proposed.

In terms of credit extension and money supply, the authorities or banking institutions should promote access to credit to the private sector in order to enable this sector to finance investments in expanding its productive capacity for future production and growth. In fact, a possible explanation for the negative coefficient of this variable in the econometric analysis could be attributed to the fact that credit extension to the private sector has been low, probably crowded out by credit to the household sector, which normally goes towards financing final consumption.

Inflation came out negative, as expected, showing that persistently high inflation has had an adverse impact on economic growth in the SADC region. The recommendation is that SADC governments should continue to curb inflation and attempt to bring it down to sustainable levels where it would be conducive for economic growth to take place.

Based on the study by Odhiambo (2010), it is recommended that pro-growth policies should be intensified in order to boost investment and financial development.
SADC countries should strive to develop financial institutions (such as banks) in order to improve their financial services and products, particularly in rural areas where few financial institutions exist. This would improve access to funding and credit by small-scale business enterprises.

Financial inclusion should be explored as an important driver of economic growth in the SADC region.

SADC countries should improve access to banking and financial services. Access should not only be in the form of a physical presence of banks in all areas, mainly rural areas, but should also include the types of financial instruments that can easily be accessed by the less sophisticated consumers in rural areas. These financial instruments should be tailored to meet the needs of the rural consumer. In urban areas, there is a need for institutions such as banks and stock exchanges to meet the financial needs of the more sophisticated urban consumer and businesses. The financial products and services required by urban consumers are more advanced than in rural areas. Stock exchanges are important because businesses can raise the capital required for expanding their operations as the economy grows and they develop.

The mobilisation of resources by means of pooling involves the agglomeration of capital from disparate savers for investment. It involves the creation of small denomination instruments which provide households with opportunities to hold diversified investment portfolios, invest in efficient scale firms, and increase their asset liquidity.

Policymakers in SADC economies should explore the promotion of non-conventional ways of providing financial services, such as mobile banking, again particularly in rural areas. From the empirical analysis, trade openness was significant and positive; SADC countries should therefore encourage intra-SADC trade as this would be beneficial for domestic growth and growth of the region.

In terms of capital formation, SADC countries should invest in key sectors that would contribute positively to economic growth in the region.
References


# Appendix 1: Types of financial intermediaries in SADC economies

<table>
<thead>
<tr>
<th>Country</th>
<th>Money and capital markets</th>
<th>Instruments</th>
<th>Financial intermediaries</th>
<th>Stock market/ exchange</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>Yes</td>
<td>Treasury bills, central bank TBC bills, Treasury bonds</td>
<td>22 banks, including 4 state banks and micro-credit banks</td>
<td>No</td>
</tr>
<tr>
<td>Botswana</td>
<td>Capital market not broad based. Bond market; money markets</td>
<td>Bank of Botswana Certificates; bonds and shares</td>
<td>7 Banking institutions</td>
<td>Small stock market</td>
</tr>
<tr>
<td>DRC</td>
<td>Money market comprising banker’s and interbank markets</td>
<td>Short-terms loans; permanent facility; commercial paper</td>
<td>18 Banks of deposits, 17 private and 1 mixed capital bank</td>
<td>Yes</td>
</tr>
<tr>
<td>Lesotho</td>
<td>Money market still developing; capital market not yet active.</td>
<td>Money market instruments include various deposits, Treasury bills and central bank paper; Treasury bonds still being developed</td>
<td>8 financial intermediaries, including the Central Bank, 4 banks, money lenders, unit trusts (collective investment schemes) and insurance companies.</td>
<td>Preparations for stock market will follow the issuance of T-bonds</td>
</tr>
<tr>
<td>Malawi</td>
<td>Money and capital markets</td>
<td>MM: Treasury bills, REPOS, BA, Commercial paper, savings bond, term deposits; Capital market: shares, government local registered stocks, promissory notes</td>
<td>MM: Commercial banks, finance houses, savings and credit institutions, institutional investors and discount house. Capital market: 4 stockbrokers on the Malawi Stock Exchange, with 14 listed companies.</td>
<td>Malawi Stock Exchange</td>
</tr>
<tr>
<td>Mauritius</td>
<td>Money and capital markets exist</td>
<td>MM: Treasury bills/Bank of Mauritius Bills/Notes and other Government Securities; CM: Shares, Treasury Notes, Inflation-linked bonds, benchmark bonds</td>
<td>CB, banks, non-bank deposit taking institutions, money changers, foreign exchange dealers, etc.</td>
<td>Stock Exchange of Mauritius</td>
</tr>
<tr>
<td>Mozambique</td>
<td>Interbank money market; capital stock market</td>
<td>TBs, Central bank bills, standing facilities, reserve requirements, repo and reverse repo, Treasury Bonds (T-bonds); corporate bonds and equities.</td>
<td>Central bank and Commercial banks</td>
<td></td>
</tr>
<tr>
<td>Namibia</td>
<td>Interbank money market; stock exchange</td>
<td>MM: demand and savings deposits, notice and fixed deposits, NCDs; Capital market: shares, government stock, bills, debentures and bonds of SOEs</td>
<td>Central banks, 4 commercial banks, other banking institutions, non-bank financial institutions, NSX</td>
<td>Namibian Stock Exchange</td>
</tr>
<tr>
<td>Seychelles</td>
<td>Money market and capital market</td>
<td>Money market driven by TBs, Reverse repurchase agreements, Deposit Auction Arrangements;</td>
<td>Banks, non-bank deposit taking institutions, foreign exchange dealers, Development Bank, insurance companies, pension funds, investment</td>
<td>No stock exchange currently. Govt. bonds are issued by the central bank as the agent</td>
</tr>
<tr>
<td>Country</td>
<td>Money and capital markets</td>
<td>Instruments</td>
<td>Financial intermediaries</td>
<td>Stock market/ exchange</td>
</tr>
<tr>
<td>------------</td>
<td>---------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
<td>-----------------------------------------</td>
</tr>
<tr>
<td>South Africa</td>
<td>Money and capital markets</td>
<td>MM: TBs and govt. bonds with less than 12 months, BA, promissory notes, commercial paper of banks, corporates, and public corporations, NCDs; Capital market – government bonds, bonds of public corporations and public entities, corporate bonds and shares</td>
<td>Registered banks, mutual banks, local branches of foreign banks, bond exchange trading members, bond exchange broking members, primary dealers</td>
<td>JSE Limited</td>
</tr>
<tr>
<td>Swaziland</td>
<td>Money and capital markets</td>
<td>Treasury bills, central bank bills, Bas, NCDs; debentures and bonds, equities, unit trusts</td>
<td>Commercial banks and the central bank; Swaziland Stock Brokers, African Alliance of Swaziland Securities, Interneuron Swaziland</td>
<td>Swaziland Stock Exchange</td>
</tr>
<tr>
<td>Tanzania</td>
<td>Money market since 1993;</td>
<td>Treasury bills, Treasury bonds, MM : Deposit money banks, insurance companies, pension funds, non-bank fin institutions, dealers and brokers, investment advisors, individuals</td>
<td>MM : Deposit money banks, insurance companies, pension funds, non-bank fin institutions, dealers and brokers, investment advisors, individuals</td>
<td>Dar es Salaam Stock Exchange in operation since 1998</td>
</tr>
<tr>
<td>Zambia</td>
<td>Money and capital markets</td>
<td>Treasury bills, commercial paper, term deposits and repos; govt. bonds</td>
<td>Commercial banks, non-bank fin. Institutions and non-bank public, authorised dealers</td>
<td>Lusaka Stock Exchange since 1994</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>Money and capital markets</td>
<td>TBs, central bank paper, parastatal paper guaranteed by government, NCDs, bills of exchange; shares, debentures, government bonds, public enterprises bonds, local government bonds</td>
<td>Deposit money banks, other banking institutions, non-bank financial institutions, stock-broking firms, insurance companies, pension funds</td>
<td>Zimbabwe Stock Exchange</td>
</tr>
</tbody>
</table>

### Appendix 2: Restrictions on current and capital account transactions in the SADC region

<table>
<thead>
<tr>
<th>Country</th>
<th>Exchange control on current account (CA) transactions</th>
<th>Restrictions on capital account transactions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Angola</td>
<td>Almost all CA transactions have been liberalised</td>
<td>Restrictions on investment in sectors such as defence and security</td>
</tr>
<tr>
<td>Botswana</td>
<td>Exchange controls abolished in February 1999.</td>
<td>Full capital account convertibility</td>
</tr>
<tr>
<td></td>
<td>Guidelines for monitoring and controlling foreign exchange exposure limits for commercial banks.</td>
<td></td>
</tr>
<tr>
<td>DRC</td>
<td>No restrictions on current account transactions.</td>
<td>No restrictions on capital account transactions, but reasons must be provided for transactions more than US$ 10 million.</td>
</tr>
<tr>
<td></td>
<td>Forms are required only for record purposes.</td>
<td></td>
</tr>
<tr>
<td>Lesotho</td>
<td>No controls on current account transactions</td>
<td>Limited reforms on capital account transactions from June 2003.</td>
</tr>
<tr>
<td>Malawi</td>
<td>No exchange control on the current account.</td>
<td>Both inward and outward direct and portfolio investments require prior approval.</td>
</tr>
<tr>
<td>Mauritius</td>
<td>Current account is fully convertible</td>
<td>No restrictions on capital account transactions.</td>
</tr>
<tr>
<td>Mozambique</td>
<td>No restrictions on exports of goods. Registration required with Customs,</td>
<td>Capital transactions are subject to approval of the central bank.</td>
</tr>
<tr>
<td>Namibia</td>
<td>No restrictions on the current account</td>
<td>No restriction on capital from non-residents for investments; corporate entities are allowed to invest offshore</td>
</tr>
<tr>
<td>Seychelles</td>
<td>All restrictions on current account transactions were removed</td>
<td>There are no restrictions on capital account transactions</td>
</tr>
<tr>
<td>South Africa</td>
<td>No restrictions on current account transactions</td>
<td>There are no restrictions on inward investment and dis-investment by non-residents</td>
</tr>
<tr>
<td>Swaziland</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tanzania</td>
<td>No restrictions</td>
<td>Limited movement to and from the country</td>
</tr>
<tr>
<td>Zambia</td>
<td>Liberalised since 1992</td>
<td>Repeal of the Exchange Control Act in 1994</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>Fully liberalised</td>
<td>Partially liberalised</td>
</tr>
</tbody>
</table>

## Appendix 3: Regression results for the fixed-effects and GMM models

Dependent variable: growth

<table>
<thead>
<tr>
<th></th>
<th>Fixed-effects model</th>
<th>GMM</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>With MS</td>
<td>With CE</td>
</tr>
<tr>
<td>$c$</td>
<td>6.4433764</td>
<td>6.551203</td>
</tr>
<tr>
<td>Capital formation</td>
<td>-0.295146*</td>
<td>-0.014713*</td>
</tr>
<tr>
<td>Inflation</td>
<td>-1.989097</td>
<td>-2.78308</td>
</tr>
<tr>
<td>Money supply</td>
<td>0.300102</td>
<td>-1.144563**</td>
</tr>
<tr>
<td>Trade openness</td>
<td>0.409798</td>
<td>0.438403</td>
</tr>
<tr>
<td>Population growth</td>
<td>1.269675*</td>
<td>1.301491*</td>
</tr>
<tr>
<td>Interest rates</td>
<td>0.006757</td>
<td>0.007755</td>
</tr>
<tr>
<td>Credit extension</td>
<td>-1.441780</td>
<td>-3.23268**</td>
</tr>
</tbody>
</table>

* Significant at 1%  
** Significant at 5%  
*** Significant at 10%
## Appendix 3.1: Unit root test results

<table>
<thead>
<tr>
<th>Variables</th>
<th>Levin, Lin &amp; Chu</th>
<th>Im, Persaran and Shin W-state</th>
<th>ADF-Fisher Chi-Square</th>
<th>PP-Fisher Chi-Square</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real GDP</td>
<td>0.0009</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>Interest rates</td>
<td>0.0023</td>
<td>0.0024</td>
<td>0.0051</td>
<td>0.0000</td>
</tr>
<tr>
<td>Capital formation*</td>
<td>0.0912</td>
<td>0.5086</td>
<td>0.2755</td>
<td>0.0078</td>
</tr>
<tr>
<td></td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>Money supply*</td>
<td>0.0056</td>
<td>0.4214</td>
<td>0.3337</td>
<td>0.0000</td>
</tr>
<tr>
<td></td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>Credit extension*</td>
<td>0.8836</td>
<td>0.8073</td>
<td>0.4310</td>
<td>0.0780</td>
</tr>
<tr>
<td></td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
</tr>
<tr>
<td>Population growth</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0000</td>
<td>0.0288</td>
</tr>
<tr>
<td>Trade openness</td>
<td>0.0054</td>
<td>0.0674</td>
<td>0.0743</td>
<td>0.0739</td>
</tr>
<tr>
<td>Inflation</td>
<td>0.0164</td>
<td>0.0245</td>
<td>0.0052</td>
<td>0.002</td>
</tr>
</tbody>
</table>

*Stationary after first difference
Appendix 4: Seemingly unrelated regression results with the dependent variable real GDP

<table>
<thead>
<tr>
<th>Country</th>
<th>Interest rate</th>
<th>Capital formation</th>
<th>Money supply</th>
<th>Population growth</th>
<th>Trade openness</th>
<th>Inflation</th>
<th>$R^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>ANG</td>
<td>-0.045005</td>
<td>1.444647</td>
<td>49.3806*</td>
<td>44.77669*</td>
<td>-10.962**</td>
<td>4.13162***</td>
<td>0.7639</td>
</tr>
<tr>
<td>BW</td>
<td>-0.769822</td>
<td>-16.5836**</td>
<td>-3.876436</td>
<td>-6.516378</td>
<td>6.1600***</td>
<td>-7.033911</td>
<td>0.69464</td>
</tr>
<tr>
<td>DRC</td>
<td>-0.02171*</td>
<td>-1.31577</td>
<td>-0.6720164</td>
<td>22.16244*</td>
<td>-1.043627</td>
<td>-3.422144*</td>
<td>0.9118</td>
</tr>
<tr>
<td>LES</td>
<td>-0.153876</td>
<td>-2.124736</td>
<td>3.58756</td>
<td>3.74042**</td>
<td>1.66112*</td>
<td>-1.3220***</td>
<td>0.8584</td>
</tr>
<tr>
<td>MAL</td>
<td>-0.1923**</td>
<td>-24.73589*</td>
<td>20.002*</td>
<td>1.514257</td>
<td>0.126338</td>
<td>3.480546**</td>
<td>0.8254</td>
</tr>
<tr>
<td>MAUR</td>
<td>-0.025714</td>
<td>2.381836</td>
<td>-6.178667</td>
<td>1.502946</td>
<td>1.644085*</td>
<td>-1.3041***</td>
<td>0.8651</td>
</tr>
<tr>
<td>MOZ</td>
<td>-0.036498</td>
<td>-3.45318**</td>
<td>-13.02216*</td>
<td>6.064218</td>
<td>-1.450297*</td>
<td>0.7921</td>
<td></td>
</tr>
<tr>
<td>NAM</td>
<td>-0.232031</td>
<td>1.002178</td>
<td>-2.403731</td>
<td>0.3934055</td>
<td>1.555747*</td>
<td>-0.8506515</td>
<td>0.4274</td>
</tr>
<tr>
<td>SEY</td>
<td>0.370888</td>
<td>-0.2419428</td>
<td>-2.657207</td>
<td>-10.75417*</td>
<td>0.9376145</td>
<td>-0.9641021</td>
<td>0.4274</td>
</tr>
<tr>
<td>RSA</td>
<td>-0.21792*</td>
<td>5.428299</td>
<td>4.005913</td>
<td>4.27309*</td>
<td>1.181104*</td>
<td>-1.24781**</td>
<td>0.8975</td>
</tr>
<tr>
<td>SWZ</td>
<td>0.25833*</td>
<td>-7.894117*</td>
<td>-1.030794</td>
<td>0.7876034</td>
<td>-0.863663**</td>
<td>2.179235**</td>
<td>0.9195</td>
</tr>
<tr>
<td>TZA</td>
<td>-0.09077***</td>
<td>-3.442888</td>
<td>1.662953</td>
<td>1.043683</td>
<td>2.194107*</td>
<td>-1.018164**</td>
<td>0.9965</td>
</tr>
<tr>
<td>ZAM</td>
<td>0.2302471**</td>
<td>0.1589419</td>
<td>15.97533*</td>
<td>2.16861</td>
<td>1.734031</td>
<td>-3.453137*</td>
<td>0.9560</td>
</tr>
<tr>
<td>ZIM</td>
<td>0.08159593*</td>
<td>-7.919295*</td>
<td>18.41502*</td>
<td>-6.53041*</td>
<td>0.9514033</td>
<td>-2.600541*</td>
<td>0.9631</td>
</tr>
</tbody>
</table>

* Significant at 1%
** Significant at 5%
*** Significant at 10%

The Breusch-Pagan test of independence: chi2(45) = 65.464, Pr = 0.0247. This result shows that there is cross-sectional or country dependence, indicating that countries in the SADC region are interdependent.