



Nexus between Financial Market Development and Economic Growth in the SADC Region

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Abstract: This study examined how financial market development (FMD), specifically measured by domestic credit to private sector and stock market capitalisation, impacts economic growth in the SADC region. The panel estimation method of Generalized Method of Moments (GMM) was used to empirically analyse the data collected for the period 2010 to 2024. The analysis revealed that domestic credit to the private sector negatively affects economic growth, whereas stock market capitalisation positively affects economic growth. The findings highlight that domestic credit to private sector and stock market capitalisation are crucial drivers of economic growth in the SADC region. The study recommends policy reforms to improve the efficiency of the financial sectors, including allocating more credit to productive sectors than to consumption, strengthening regulatory frameworks, and promoting regional integration to boost the stock markets of the individual SADC countries.

Keywords: Financial Market Development; Stock Market Capitalisation; Domestic Credit to Private Sector; Economic Growth; SADC

JEL Classification: G10, G20, O10, F43

1. Introduction

Financial market development is widely acknowledged to play a pivotal role in economic growth in both developing and developed countries (Guru & Yadav, 2019; Asterious & Spanos, 2019; Matei, 2020; Farooq, Saleem, Yousuf & Hussain, 2024). Various scholars who have explored financial market development and economic growth have mainly focused on aggregating all the dimensions of financial market development into a single proxy (Osei & Kim, 2020; An et al., 2021; Asante et al., 2023). The specific roles of the banking sector and stock markets in the Southern Africa region are not well explored. Most studies investigated domestic credit, stock market capitalisation and growth in West Africa, particularly in Nigeria (Amoo et al., 2017; Osakwe et al., 2020; Michael et al., 2021;

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Yakubu, 2023; Adewole et al., 2023; Magaji & Musa, 2023) and a few selected southern African countries (Bonga & Sithole, 2019; Ayadi & Williams, 2023; Mabeba, 2024; Udoeye et al., 2024). This study disaggregated financial market development and examined the roles of the banking sector and stock market using domestic credit to the private sector and stock market capitalisation, respectively, in advancing the critical macroeconomic objective of economic growth.

The private sector is an important stakeholder group in driving economic development. The SADC Regional Indicative Strategic Development Plan (RISDP) highlights the critical role of the private sector in “wealth creation, employment generation, and poverty alleviation” (SADC, 2022a). Hence, the SADC Business Council has been established and recognised to coordinate the private sector’s economic activity in the region. For instance, the South African government, through the Department of Labour (2023), reported that more than 73% of employees in the country work in the private sector, and that it is important for the government to provide the sector with the necessary tools and support. In Angola, oil is the major economic driver, contributing to 25% of GDP and 60% of fiscal revenues. However, since 2022, oil revenues have declined, as reported by Zedginidge and Avila-Yiptong (2025) through an International Monetary Fund (IMF) report. The government of Angola, through the National Development Plan (NDP) 2023-2027, committed to private-sector-led economic diversification in key sectors such as agriculture, livestock and manufacturing industries as a measure to promote economic stability and sustainable growth (Ministry of Finance of Angola, 2022). Also, Botswana, as an economy that has traditionally depended more on its lucrative diamond mining, has seen reduced revenue from the diamond and tourism sectors since the COVID-19-induced economic disruptions, as reported in a World Bank Group (2022) press release. This has therefore called upon the government of Botswana to increase “private sector participation and investment in its energy, water and sanitation, and tourism sectors” for improved economic growth in the country (World Bank Group, 2022). Smaller countries like Lesotho, for example, face the challenge that public-sector dominance in economic activities has not generated the desired outcomes; hence, a call by the government for the country to switch to more private-sector-led job creation (International Monetary Fund, African Dept. 2025). The International Finance Corporation (IFC) (2022) reported that limited private-sector growth in southern African countries such as Namibia and Eswatini underscores the need to strengthen and support public-private partnerships. These examples show that the private sector is pivotal to employment creation, which in turn alleviates poverty and boosts economic growth. Recently, the growth statistics for the SADC region have not been pleasing. The African Private Capital Association (2024) reports that the region contributed 22% of Africa’s GDP in 2022, with South Africa accounting for 61% and Angola for 16%.

The stock market in southern Africa is unevenly developed. According to the Organisation for Economic Co-operation and Development (OECD) (2025) capital markets series, South Africa has the region’s largest stock exchange market, with a market capitalisation of 84% of GDP at the end of 2024, followed by Mauritius with 63% and Botswana with 20%. Other member states either lack formal stock exchanges, such as Angola and the Democratic Republic of Congo (DRC) or have limited listings, such as Eswatini, Malawi, Mozambique, and Zambia (Sovereign Africa ratings, 2025). In terms of ownership, Botswana’s stock exchange is government-owned; South Africa and Tanzania are publicly owned; Mauritius, Namibia, and Zambia are privately owned; and Zimbabwe’s stock exchange market is both privately and publicly owned (OECD, 2025). The SADC Protocol on Finance and Investment seeks to facilitate the creation and expansion of existing capital markets in the region, as they are deemed key in raising funding for investments and other economic activities (SADC, 2022b). Harmonised stock markets have the potential to make the SADC region globally competitive.

In light of this background, the objective of this study is to empirically examine the effects of domestic credit to the private sector and stock market capitalisation on economic growth in the SADC region. The other objective of the study is to examine the causal relationship between domestic credit to private sector, stock market capitalisation and economic growth in the SADC region. The financial systems within the SADC region vary. For instance, countries like Malawi, Lesotho, and Mozambique have bank-dominated financial markets, whereas others, such as South Africa and Mauritius, have market-developed financial markets (Mathumo, 2021). The use of these two variables, therefore, captures both the banking system and capital markets as components of financial sector development. The study's empirical findings are expected to inform policy, improve financial practices across the SADC region, and ultimately promote inclusive economic growth. As highlighted by Begum, Aziz and Sototo (2018), a strong and viable banking sector has the potential to promote investment and entrepreneurship activities that lead to employment creation, poverty alleviation and sustainable economic performance.

The remainder of this paper is as follows: Section 2 presents the literature review. Section 3 considers the methodology applied to address the research objectives. Thereafter, Section 4 presents and discusses the empirical results. Lastly, Section 5 presents conclusions and recommendations for future research in financial sector development and economic growth in the SADC and other regional blocs.

2. Literature Review

The theories by Goldsmith (1969), McKinnon (1973) and Shaw (1973) guided the study's assessment of financial development and economic growth. Goldsmith (1969) examined the impact of financial development on economic growth and sought to determine the influence of a country's financial structure on economic growth. Goldsmith (1969) couldn't clearly establish a nexus between financial development and economic growth, but found that economic growth and development lead to better financial systems. Conversely, McKinnon-Shaw (1973), who advocated for the liberalisation of financial systems, emphasised that a well-developed financial sector promotes economic growth. McKinnon-Shaw (1973) claimed that a viable and liberalised financial sector promotes financial deepening, increases financial savings by raising interest rates, and improves allocation of capital to the most productive investments, thereby promoting economic growth.

Following these early theoretical propositions on financial development and economic growth (Goldsmith, 1969; McKinnon-Shaw, 1973), numerous recent empirical studies on this nexus have yielded mixed findings and conclusions. For instance, Guru and Yadav (2019) applied a System GMM using panel data from 1993 to 2014 for Brazil, Russia, India, China, and South Africa (BRICS). The study found that financial development stimulates economic growth. Also, Manu, Xuezhou, Paintsil, Gyedu and Ntarmah (2020) further used Vector Autoregressive (VAR) and panel quantile regressions on a dataset of 33 African countries for the period 1980 to 2017. Their findings confirmed the significant positive influence of financial sector development on economic growth, particularly in Africa. Similarly, Farooq, Saleem, Yousuf and Hussain (2024) recently investigated the nexus between financial development and economic growth in Pakistan, utilising the Autoregressive Distributed Lag (ARDL) model. The study used annual data from 1995 to 2023. Farooq et al. (2024) found positive and substantial effects of financial development on economic growth in the long run through foreign direct investment and market capitalisation.

On the other hand, there are also studies whose findings contradict the conceptual arguments of McKinnon-Shaw (1973). For instance, Arcand, Berkes and Panizza (2015), using data from 1970 to 2010, used Ordinary Least Squares (OLS) regressions to test what they called the “too much finance” hypothesis on a large panel dataset of 133 countries. Their findings revealed that when credit to the private sector exceeds 100% of GDP, it begins to negatively impact economic growth; hence, too much finance hampers growth. The authors followed up on these findings in their most recent work (Arcand & Berkes, 2026) and found that financial depth is only growth-enhancing at low to moderate levels; at high levels, it exhibits diminishing returns. A study by Zhao (2017), focusing on China and examining whether financial development leads to economic growth for the period between 2007 and 2014, revealed a significant negative impact of financial development on economic growth. Also, Isiaka et al. (2021) empirically assessed the impact of financial depth on economic growth within middle-income countries. The study applied Least Squares Dummy Variables (LSDV) on a sample of 14 middle-income countries. Their findings revealed a negative impact of financial depth on the real GDP growth of the countries under study.

2.1. Domestic Credit to Private Sector and Economic Growth

Focusing solely on domestic credit, Bui (2020) utilised a Generalized Method of Moments (GMM) to investigate the nonlinear impact it has on economic growth in six ASEAN countries for the period from 2004 to 2017. The study revealed that an increase in domestic credit boosts economic growth only to a certain level. If domestic credit exceeds an optimum threshold, it therefore negatively affects economic growth. However, the empirical investigation by Bui (2020) included only a few control variables, a weakness that Nwonuma (2025) sought to address by similarly investigating domestic credit to private sector and economic growth in 15 West African countries, incorporating more control variables. Nwonuma et al. (2025) utilised quarterly data and a broader time frame spanning 1990-2023. Using panel autoregressive distributed lag (ARDL) and Pooled Mean Group (PMG) methods, they found that extending credit to the private sector promotes positive growth effects on both the formal and informal economies in West Africa. Confirming the same findings is the study of Ahemen, Akiri and Ternege (2024) who examined bank credit to private sector and economic growth in Sub-Saharan Africa using system GMM within a dynamic panel data model with annual data for the period 1995 to 2021. Both Ahemen et al. (2024) and Nwonuma et al. (2025) recommend formalising the informal sector, enabling firms to access formal credit for productive activities that impact the economy. Bui (2020) further recommends that policymakers must closely monitor private credit-to-GDP ratios to assess and mitigate the negative effect of credit on GDP.

An empirical analysis of the relationship between domestic credit to the private sector and economic growth was also carried out by Udoeye, Adigwe and Okaro (2024) using a panel of Nigeria, South Africa, Kenya and Ghana. The selected Sub-Saharan African countries were meant to represent the regions of West Africa, East Africa and Southern Africa. Using the POLS regression technique, Udoeye et al. (2024) found that domestic credit to the private sector has a significant positive impact on the real GDP of the four countries studied. The study recommended the expansion of financial services to enable more businesses to participate in the formal economy and access credit for productive ventures, as also advocated by Ahemen et al. (2024) and Nwonuma et al. (2025).

On the other hand, Begum et al. (2018) employed a Vector Autoregressive (VAR) time-series analysis on Bangladesh, investigating the impact of domestic credit to private sector on the country’s GDP for

the period 1983-2017. The authors found a short-run negative relationship and unidirectional relationship from credit to GDP and recommended improving the efficiency of the country's banking sector in order to significantly influence growth and development. The negative short-run relationship, which appears to contradict conventional finance-led growth theory, raises the possibility of inefficient and misallocation of financial resources, as highlighted by Nwonuma et al. (2025). This implies a need for committed structural reforms to improve the efficiency of the banking sector in influencing economic growth and development. Magaji and Musa (2023) also support structural and infrastructural reforms, arguing that they play a pivotal role in improving the absorptive capacity of the developing economies. Magaji and Musa (2023) came to this conclusion and recommendation after analysing the impact of banking sector credit on the real sector in Nigeria using an ARDL econometric analysis of annual data from 1996 to 2019.

Koirala (2025) analysed efficiency of private sector credit on the economy of Nepal, based on a time series data from 1975 to 2022. After employing the Engle-Granger two-step procedure, the study found that domestic credit to the private sector is significantly instrumental in influencing economic growth both in the short and long term. Focusing on a single country is also the study of Amoo, Eboime, Adamu and Belonwu (2017), who similarly investigated the impact of domestic credit on growth in Nigeria. The authors used quarterly data from 1993 to 2013 and employed a Fully Modified Ordinary Least Squares (FMOLS) econometric technique. Similar to Bui (2020), Amoo et al. (2017) found that domestic credit has growth-enhancing effects only up to a certain point, which is crucial in providing policymakers with actionable targets of credit. The authors further state that growth through credit is achievable only if policy and infrastructure conditions are favourable, which is consistent with the recommendations of Nwonuma et al. (2025) and Magaji and Musa (2023).

The study tested the following hypotheses:

Hypothesis 1: Domestic credit to private sector and economic growth

H₀: Domestic credit to private sector does not impact economic growth in SADC.

H₁: Domestic credit to private sector impacts on economic growth in SADC.

Hypothesis 2

H₀: There is no causal relationship between domestic credit to private sector and economic growth.

H₁: There exists a causal relationship between domestic credit to private sector and economic growth.

2.2. Stock Market Capitalisation and Economic Growth

Specifically focusing on stock market capitalisation, Osakwe, Stanley and Ogochukwu (2020) investigated its impact on economic growth in Nigeria and South Africa. Using time-series OLS regression with annual data for 2000 to 2018, the authors found a positive correlation between growth and size of capital markets, which was, however, significant for South Africa and insignificant for Nigeria. The positive relationship was also confirmed by Bonga and Sithole (2019) using the ARIMA technique applied to Zimbabwean monthly data for the period 2010 to 2019. Their use of monthly data is commendable as it captures more volatility than annual data, but their focus on only one country makes it hard to generalise the findings to the rest of the southern Africa region. Yakubu (2023) used annual time series data to empirically examine the nexus between capital market capitalisation and economic growth in Nigeria. The period of focus was 1990 to 2021. Similar to Osakwe (2020), the

author applied OLS regression and found that market capitalisation positively influences economic growth in the country. The study by Yakubu (2023) recommended that policy-makers should focus on implementing both short-term and long-term policies to develop the market, thereby boosting economic growth in Nigeria.

Focusing solely on Nigeria as well, Adewole, Omotayo, Adewale and Kadiri (2023) employed OLS regression on an annual dataset from 1991 to 2021 to examine the relationship between stock market capitalisation and economic growth. Their study revealed a negative correlation between the key variables, which contradicts conventional finance-led growth theory. Similarly, Evan (2022) examined the effect of stock market capitalisation on economic growth in Kenya for the period 1990 to 2022. Guided by the neoclassical endogenous growth theory and Vector Error Correction Model (VECM) estimation technique, the study found that stock market capitalisation exerted a negative and significant impact on economic growth. Evan (2022) attributed this negative effect to the stringent requirements for firms to be listed on the national securities exchange. This therefore calls for the government to make it easier for firms to be listed to expand the magnitude of stock market capitalisation, ultimately spurring economic growth.

However, Michael et al. (2021) found a unidirectional causality from economic growth to stock market capitalisation for Eswatini, while a bidirectional causality was observed for Namibia. Their study used annual data for the period 1996 to 2019 and employed Granger causality tests and a dynamic ARDL model, which has the strength of capturing long-run dynamic effects compared with the use of OLS regression by Osakwe et al. (2020) and Yakubu (2023). The authors sought to have a comparative analysis by broadening the scope of study to eight countries. For the other countries, which are Algeria, Kenya, Mauritius, Namibia and Nigeria, the findings revealed a unidirectional causality from stock market capitalisation to growth, which is also consistent with Bonga and Sithole (2019) and Osakwe et al. (2020). However, their panel-wide analysis revealed an insignificant effect of stock market capitalisation on economic growth, contradicting the country-specific findings. Mabeba (2024) examined the effect of financial market depth, measured by stock market capitalisation, on economic growth in six developing countries with relatively large financial sectors. Using annual data from 1996 to 2022, the author employed random effects (RE) and panel-data econometric models. The findings revealed that financial market depth has a significant positive impact on economic growth, which is consistent with Osakwe et al. (2020). Mabeba (2024), however, ignored developing countries with smaller financial sectors in the empirical analysis.

These studies on stock market capitalisation and growth show remarkable inconsistencies in their findings across the different regions and time frames. Despite the different findings, the studies generally agree on the need for structural reforms in the stock market. The policy reforms should generally strive to boost liquidity and increase market efficiency (Bonga & Sithole, 2019; Mabeba, 2024), increase the number of participants in the stock markets (Evan, 2022), promote the integration of regional financial markets as a way of attaining economies of scale (Ayadi & Williams, 2023, Bonga & Sithole, 2019), and implement transparent and enhanced supervisory measures on financial markets to prevent unethical practices.

Due to the apparent lack of conclusive evidence on the effect of stock market capitalisation on growth from the literature, there is therefore a need to empirically analyse the effects of banking sector development in conjunction with the stock markets to determine which avenue is more paramount for the SADC economic growth, which this study sought to achieve. Moreover, pertaining to domestic credit to private sector, the review of literature has discovered that most of the studies on Sub-Saharan

Africa focused on one country, Nigeria and the West African region (Amoo et al., 2017; Magaji & Musa, 2023; Udoeye et al., 2024; Nwonuma et al., 2025). Thus, such heavy reliance on Nigeria and West Africa does not reflect the structural features of SADC countries, underscoring the need to investigate SADC and acknowledge the region's structural uniqueness.

The following hypotheses were tested in this paper:

Hypothesis 3: Stock market capitalisation and economic growth

H₀: Stock market capitalisation does not impact economic growth in SADC.

H₁: Stock market capitalisation impacts on economic growth in SADC.

Hypothesis 4

H₀: There is no causal relationship between stock market capitalisation and economic growth.

H₁: There exists a causal relationship between stock market capitalisation and economic growth.

3. Methodology

This study used annual data from 2010 to 2024 for all 16 SADC countries. The sample period is after the global financial crisis, which therefore provides a more homogenous policy environment across the world, despite the COVID-19 induced structural break. Moreover, sufficient data is available for SADC countries in the chosen sample period. The SADC countries differ in financial depth and structure despite the region's common industrialisation and financial integration agenda. The data were sourced from the World Development Indicators (WDI) of the World Bank.

3.1. Definition of Variables and a priori Expectations

Domestic credit to the private sector (DCP) and Stock market capitalisation (SCM) were the major financial market development variables used to capture both banking depth and financial market depth. Since SADC countries are at different levels in terms of economic size, DCP is measured as a percentage of GDP. This measure reflects the scale of credit relative to the size of the economy as supported by Lamah, Yanto and Setyadharma (2021). DCP is expected to impact economic growth positively. SMC refers to the total value of all listed shares in a stock market as a percentage of GDP (World Bank Databank, 2026). SMC is expected to affect GDP growth positively.

The following control variables were used in the study: Inflation rate percentage (INF), real interest rate (IR), FDI inflows as a percentage of GDP (FDI), regulatory quality (RQ), and political stability (PS). These variables captured both the macroeconomic and institutional environment.

3.2. Generalized Method of Moments

The study estimated the following GMM model in examining the impact of financial market development through domestic credit to private sector and stock market capitalisation on economic growth, given as Equation 1:

$$GDPGR_{it} = \alpha + \omega GDPGR_{it-1} + \beta_1 FD_{it} + \gamma_i Z_{it} + U_{it} \quad [\text{Equation 1}]$$

Where α , ω , and γ_i are parameters estimated by the study, GDPGR represents economic growth and $GDPGR_{it-1}$ is the lagged dependent variable for GDPGR. FD are the financial market development variables used in the study, which are domestic credit to private sector and stock market capitalisation; Z_{it} represents the control variables of economic growth; and U_{it} represents the error term.

There is likely going to be reverse causality between economic growth and financial market development variables. Financial market development is likely to be affected by the error term; hence, Baum, Schaffer and Stillman (2003) emphasise the importance of an instrumental variable (IV) model, which can address endogeneity problems and control for unobserved variables. GMM diagnostics tests for instrument validity and autocorrelation of the error term, the Hansen (1982) and Sargan (1985) tests respectively, are considered in the empirical examination. To improve the robustness of the empirical analysis, the study analysed the impact of DCP and SMC with different models.

Specifically, the study utilised the following customised multivariate regression equation:

$$GDPGR_{it} = \alpha + \omega GDPGR_{it-1} + \beta_1 DCP + \beta_2 SMC + \beta_3 FDI + \beta_4 INF + \beta_5 IR + \beta_6 PS + \beta_7 RQ + n_{it} + v_{it}$$

[Equation 2]

3.3. Panel Granger Causality Tests

Literature on financial market development and economic growth revealed that causal relationship between the variables can be two ways (Manu et al., 2020; Matei, 2020; Michael et al, 2021). This suggests that DCP and SMC as financial market development measures can influence GDPGR while at the same GDPGR have an impact on DCP and SMC. This therefore necessitated the need to empirically test for the causal relationships of the variables in the study.

The test for causality between financial market development variables (FD) and economic growth was done using the following model:

$$GDPGR_t = \alpha_1 + \sum_{i=1}^n \beta_i FD_{t-1} + \sum_{j=1}^m \gamma_j GDPGR_{t-j} + \varepsilon_{1t}$$

[Equation 3]

Where $GDPGR_t$ is the dependent variable which depends on all the lagged values of FD_t and i is the number of lags that used. Alternatively, when GDPGR predicts FD variables, the following model was tested:

$$FD_t = \alpha_1 + \sum_{i=1}^n \delta_i FD_{t-1} + \sum_{j=1}^m \vartheta_j GDPGR_{t-j} + \varepsilon_{2t}$$

[Equation 4]

4. Presentation and Discussion of Empirical Results

Firstly, a summary of descriptive statistics for all key variables used in the study is presented in Table 1 below:

Table 1. Summary Statistics

Variables	Mean	Standard deviation	Minimum	Maximum
GDPGR	3.497	4.616	-17.669	19.675
DCP	25.969	32.929	0	142.422
SMC	18.777	58.712	0	322.711
FDI	4.577	7.070	-8.766	56.288
INF	10.603	39.836	-16.859	557.201

IR	6.703	17.048	-8.583	52.436
PS	-0.114	0.785	-2.339	1.201
RQ	-0.469	0.716	-2.080	1.196
Number of observations = 240				
GDPGR, gross domestic product growth rate; DCP, domestic credit to private sector; SMC, stock market capitalisation; FDI, foreign direct investment; INF, inflation; IR, real interest rate; PS, political stability; RQ, regulatory quality				

Source: Author's computations using Stata 15

The mean for GDPGR is 3.497 with a standard deviation of 4.616, which indicates some substantial heterogeneity regarding economic growth in the SADC region. Looking at the indicators of financial market development, DCP has a mean of 25.969 and a relatively high standard deviation of 32.929, which suggests greater variability. Stock market capitalisation has a mean of 18.777 and an even higher standard deviation of 58.712, which affirms the heterogeneity of the SADC financial sector.

Table 2 shows a correlation matrix for all key variables used in the study.

Table 2. Correlation matrix

	GDPGR	DCP	SMC	FDI	INF	IR	PS	RQ
GDPGR	1.00							
DCP	-0.20 (0.00)	1.00						
SMC	-0.14 (0.02)	0.85 (0.00)	1.00					
FDI	0.12 (0.05)	-0.07 (0.28)	-0.12 (0.06)	1.00				
INF	-0.16 (0.01)	-0.09 (0.13)	-0.05 (0.41)	-0.07 (0.27)	1.00			
IR	-0.03 (0.58)	0.09 (0.12)	-0.06 (0.30)	0.38 (0.00)	-0.10 (0.09)	1.00		
PS	-0.03 (0.59)	0.30 (0.00)	0.09 (0.14)	0.04 (0.45)	-0.15 (0.01)	0.38 (0.00)	1.00	
RQ	-0.09 (0.14)	0.61 (0.00)	0.38 (0.00)	0.07 (0.26)	-0.19 (0.00)	0.37 (0.00)	0.77 (0.00)	1.00

Note: Figures in brackets are the p-values.

GDPGR, GDP growth rate; DCP, domestic credit to private sector; SMC, stock market capitalisation; FDI, foreign direct investment; IR, real interest rate; PS, political stability; RQ, regulatory quality.

Source: Author's computation using Stata 15

From Table 2 above, the financial market development variables, DCP and SMC, show a significant negative correlation with the dependent variable GDPGR. This negative association raises concerns about the efficiency of the financial sector in the SADC and possible reverse causality, as noted by Bui (2020) and Nwonuma et al. (2025).

After establishing the correlation among the variables presented above, the regressions were run to assess the statistical impact of DCP and SMC on economic growth (GDPGR). Multiple models are estimated to analyse the individual financial market development variables on economic growth.

The empirical findings are presented in Table 3 below:

Table 3. Effects of Financial Development on Economic Growth

	Model 1	Model 2	Model 3
Dependant variable	GDPGR	GDPGR	GDPGR

GDPGR(-1)	0.1105 (0.557)	0.2174 (0.177)	0.1121* (0.051)
DCP	-0.07010*** (0.000)		-0.21435*** (0.000)
SMC		0.0981 (0.335)	0.10767*** (0.009)
FDI	0.0416** (0.025)	0.0262 (0.187)	0.0364 (0.279)
INF	-0.1013 (0.471)	-0.0228*** (0.000)	-0.2514** (0.021)
IR	-0.1376 (0.453)	-0.0415 (0.370)	-0.1835 (0.994)
PS	-0.2395* (0.079)	-2.9951 (0.309)	0.1781 (0.811)
RQ	1.8332 (0.356)	5.9202 (0.232)	0.7026 (0.698)
Constant	6.3583 (0.002)	9.3455 (0.113)	10.7946 (0.000)
AR(1)	-2.09 (0.036)	-2.13 (0.033)	-2.48 (0.013)
AR(2)	-0.65 (0.518)	-1.08 (0.281)	-1.56 (0.119)
Sargan	9.24 (0.055)	6.52 (0.163)	3.18 (0.365)
Hansen	6.28 (0.179)	6.96 (0.138)	1.99 (0.575)

Note: Figures in brackets are the p-values.

GDPGR, GDP growth rate; DCP, domestic credit to private sector; SMC, stock market capitalisation; FDI, foreign direct investment; IR, real interest rate; PS, political stability; RQ, regulatory quality.

Source: Author's computation using Stata 15

The first model focused solely on DCP and its impact on GDP growth, while the second focused solely on SMC and its impact on GDP growth. The third model considered the individual impact of both DCP and SMC on GDP growth. All the control variables used in the study were included in all three models.

The results presented in Table 3 above show that financial market development variables, DCP and SMC, affect economic growth differently. DCP had a negative, statistically significant impact on financial development across all three models. This finding is contrary to a priori expectations. However, as argued by Nwonuma et al. (2025) in their study of West Africa, developing economies, as is the case with SADC countries, mainly have inefficient financial systems that result in misallocation of resources. As also revealed by Bui (2020), a significant proportion of credit tends to be channelled towards consumption rather than towards industrial sectors such as manufacturing and technological advancement. Rousseau and Wachtel (2011) caution against giving excessive credit, as it may lead to financial losses that negatively affect growth. In this regard, extending credit to less productive sectors does not promote economic growth.

Stock market capitalisation (SMC) showed a weak positive impact in model two, and in models three and four, the positive impact was significant at 1% and 5% levels, respectively. The finding is consistent with a priori expectations and the findings of Michael et al. (2021) and Ayadi and Williams

(2023). This indicates that, despite a shallow stock market in the SADC region, it can, if well developed, serve as a crucial avenue for achieving economic growth.

With regards to the control variables, inflation (INF) and trade openness (TR) have consistently shown a negative and significant impact on the countries' economic growth. Foreign direct investment (FDI) consistently showed a positive impact on economic growth, but this effect was statistically significant only in model 1. Institutional factors proved to be pivotal in enhancing economic growth. Regulatory quality consistently showed a positive impact, albeit insignificant, whereas political stability had a negative coefficient in two models and a positive coefficient in the other two. The Sargan and Hansen test results confirm the validity of the instruments used, as they are above 0.05 in all three models, and the null hypothesis is not rejected. Arellano-Bond tests for AR(1) and AR(2) confirm the absence of second-order correlation in all models.

4.1. Panel Granger Causality Results

The panel Granger causality tests conducted at the panel level are presented in Table 4 below:

Table 4. Granger Causality Test Results

Region	Causality from DCP to GDPGR	Causality from GDPGR to DCP	Causality from SMC to GDPGR	Causality from GDPGR to SMC
SADC	3.01** (0.03)	22.01*** (0.00)	0.88 (0.31)	21.26** (0.01)
<i>Note: Figures in brackets are the p-values. SADC, Southern African Development Community; DCP, domestic credit to private sector; SMC, stock market capitalisation; GDPGR, Gross Domestic Product growth rate</i>				
***Reject H_0 at 1% level; **Reject H_0 at 5% level; *Reject H_0 at 10% level				

Source: Author's computations using Stata 15

The test of the null hypothesis that there is no causal relationship between financial market development variables and economic growth, against the alternative hypothesis that there is causality at the panel level, yielded the results presented in Table 4. Firstly, regarding causality running from DCP to GDPGR, the p-value is less than 5%; therefore, the null hypothesis is rejected. It can be concluded that there is a causal relationship running from DCP to GDPGR, which is consistent with Udoeye et al. (2024). With regards to causality from GDPGR to DCP, a p-value of 0% implies that the null hypothesis is rejected at 1% level. These findings therefore indicate a bi-directional relationship between DCP and GDPGR in the SADC region.

With regards to causality from SMC to GDPGR, the p-value is greater than 5%, there is therefore a failure to reject the null hypothesis. It can be concluded that there is no causality from SMC to GDPGR at the panel level. Conversely, from GDPGR to SMC, the findings give a p-value below 5%; therefore, the null hypothesis is rejected. It can be concluded that there is a unidirectional causal relationship from GDPGR to SMC in the SADC region, as was also found by Michael et al. (2021). However, given the heterogeneity in the economic circumstances of SADC countries, it was also important to conduct country-specific estimations that would better explain causal relationships at the country level.

4.2. Granger Causality Test Results at Country Level

Table 5. Country-Specific Wald Tests Granger Causality Test Results

	Country	DCP to GDPGR	GDPGR to DCP	SMC to GDPGR	GDPGR to SMC
1	Angola	13.04*** (0.001)	0.49 (0.780)	4.71 (0.095)	1.64 (0.115)
2	Botswana	1.24 (0.531)	4.75* (0.091)	6.09** (0.047)	7.10** (0.034)
3	Comoros	9.45 *** (0.009)	16.7*** (0.000)	3.78 ** (0.015)	2.33 (0.197)
4	Congo, Dem, Rep	1.91 (0.383)	15.4*** (0.000)	0.80 (0.670)	3.57 (0.881)
5	Eswatini	1.53 (0.464)	13.44*** (0.001)	12.27** (0.002)	12.92** (0.022)
6	Lesotho	1.57 (0.456)	12.07*** (0.002)	1.80 (0.406)	4.10 (0.127)
7	Madagascar	2.19 (0.334)	13.6*** (0.001)	2.24 (0.326)	5.18 (0.131)
8	Malawi	0.01 (0.991)	11.67*** (0.003)	1.91 (0.384)	2.12 (0.490)
9	Mauritius	4.83 (0.089)	79.89*** (0.000)	1.00 (0.605)	233.1*** (0.000)
10	Mozambique	1.70 (0.425)	31.69*** (0.000)	18.63*** (0.000)	2.24 (0.326)
11	Namibia	13.48*** (0.001)	14.09*** (0.001)	11.53*** (0.003)	4.67 (0.097)
12	Seychelles	1.54 (0.461)	9.21*** (0.010)	69.92*** (0.000)	0.25 (0.880)
13	South Africa	0.55 (0.756)	16.06*** (0.000)	1.19 (0.551)	10.25*** (0.006)
14	Tanzania	0.02 (0.992)	41.95*** (0.000)	0.53 (0.463)	1.92 (0.382)
15	Zambia	4.24 (0.120)	19.12*** (0.000)	0.01 (0.994)	5.14 (0.076)
16	Zimbabwe	124.6*** (0.000)	1.11 (0.48)	3.05 (0.217)	6.81 (0.319)

Note: Figures in brackets are the p-values.
SADC, Southern African Development Community; DCP, domestic credit to private sector; SMC, stock market capitalisation; GDPGR, Gross Domestic Product growth rate
 ***Reject H_0 at 1% level; **Reject H_0 at 5% level; *Reject H_0 at 10% level

Source: Author's computation using Stata 15

Table 5 shows that at the country level, there is evidence of unidirectional causality from DCP to GDPGR, but only for four countries. This suggests that DCP determines GDPGR in Angola, Comoros, Namibia, and Zimbabwe, consistent with the findings of Begum et al. (2018). However, overwhelming evidence of causality from GDPGR to DCP was found for 14 countries, except for Angola and Zimbabwe. The finding is consistent with Goldsmith (1969) and Ho and Saadaoui (2022). This suggests that in the SADC region, economic growth determines the level of domestic credit to the private sector. A bidirectional causal relationship was found for Comoros and Namibia. This means that increases in DCP influence GDPGR, while GDPGR also influences DCP in these two countries.

Regarding SMC, the findings revealed unidirectional causality from SMC to GDPGR in Botswana, Comoros, Eswatini, Mozambique, Namibia and Seychelles. This suggests that SMC influences GDPGR in these countries, consistent with Yakubu (2023) and Matei (2020), who found that this

causal relationship is only observed in developing countries. Causality from GDPGR to SMC was revealed for Botswana, Eswatini, Mauritius and South Africa. However, bidirectional causality between SMC and GDPGR was found for Botswana and Eswatini. This finding is consistent with the findings of Michael et al. (2021).

5. Conclusions and Recommendations

The study has explored financial market development indicators, domestic credit to private sector and stock market capitalisation, which affect economic growth in the 16 SADC countries. The study's general findings suggested that financial market development is crucial for the growth of developing countries. However, when extending credit to the private sector, it is important to ensure that the funds are channelled to productive sectors such as renewable energy, agriculture, and mining, which are major drivers of economic growth in southern Africa. For instance, renewable energy projects such as the Redstone CSP Tower, the Scatec Kenhardt Projects in the Northern Cape, South Africa, and the Hyphen Hydrogen Project in Namibia, when adequately supported financially, can address energy shortages and spur economic growth. Increasing financing for consumption and for some speculative investments, such as cryptocurrency, tends to harm and impede economic growth prospects. Furthermore, it has also been revealed that foreign direct investment (FDI) and regulatory quality (RQ) of the institutional environment are key determinants of economic growth in the SADC region. There is therefore a need to improve political and regulatory reforms and to adopt policies such as the Capital Projects Feasibility Programme (CPFF) in South Africa, the Special Economic Zones Authority (SEZA) initiative in Botswana and the Business Regulatory Review Agency (BRRA) in Zambia, which seek to attract more foreign direct investment.

The mixed findings regarding the causal relationships among DCP, SMC and GDPGR imply different economic dynamics across SADC countries with respect to financial sector development, economic growth levels and policy regimes. This, therefore, calls for regional integration to mitigate country-specific challenges and synchronise policy frameworks, which will ultimately lead to shared economic growth. Given the prevailing fourth industrial revolution era, the SADC region should significantly promote digital financial services to improve resource allocation. Lastly, as stock markets were found to be significant in economic growth, and most of the countries in the SADC region have smaller stock exchange markets, except for South Africa, the governing authorities should shift from the traditional reliance on the banking sector to creating, developing and sustaining more efficient and well-capitalised stock markets.

The study focused on the SADC region at the panel level, despite some country-specific causality testing of the variables. The SADC countries have a heterogeneous economic landscape; thus, the impact of domestic credit on the private sector and stock market capitalisation on economic growth will vary across the individual countries in the region. In that regard, it may be prudent to conduct time-series analysis for each country. The study was also affected by the unavailability of full stock market capitalisation for countries such as Angola, Comoros and the DRC. Future research can compare the SADC region with other regional blocs, such as COMESA and ECOWAS, to examine financial sector performance and draw lessons for other blocs.

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