CHAPTER 2
Regional Financial Integration and Financial Sector Development in the Southern African Development Community: Implications on Diaspora Remittance Inflows

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Abstract
The chapter investigates the effect of regional financial integration on financial development and its interaction with Diaspora remittance inflows in the Southern African Development Community (SADC) region from 2006 to 2018. The study employed *de jure* and *de facto* indicators of financial integration, whilst financial development is measured using credit to the private sector as a percentage of GDP. The econometric analysis utilises the Generalized Method of Moments (GMM). Results show that the *de facto* measure of financial integration has a significant positive impact on financial development, whilst *de jure* indicators give mixed and insignificant results. However, given that literature shows that *de facto* indicators are robust compared to *de jure* indicators, it is concluded that the impact of financial integration on financial development is positive and linear. The authors of this chapter also analyse the interaction between financial sector development and Diaspora remittance flows by employing panel Granger Causality Tests, which show a bi-directional causality between financial sector development and Diaspora remittance flows

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in the SADC region. These findings suggest that innovations in the financial sector influence Diaspora remittance inflows and vice-versa. Thus, the authors of this chapter recommend that governments of member states in the SADC region formulate and implement policies that enhance financial integration. This action may involve financial institutions opening branches in any country within the region, allowing remitters to remit at lower transaction costs and have implications for economic growth and poverty alleviation.

Keywords: financial sector development, financial integration, migration, remittances, Southern African Development Community, Generalized Method of Moments.

1 Introduction

The financial integration – financial sector development nexus has received much attention in recent years. On the one hand, evidence shows that financial integration stimulates financial development. This perspective's main argument is primarily based on the premise that financial integration improves financial system efficiency and depth, thereby eliminating distortions in the financial system. This stance implies that financial integration reduces transaction costs, stimulating the use of financial services and thus allowing many participants to partake in the formal financial system. The evidence further shows that countries characterised by developed and integrated financial markets have greater levels of investment, a more vibrant business environment, and higher living standards (Alotaibi 2014). It is also argued that financial markets provide, amongst others, a channel through which funds are transferred from surplus to deficit units effectively. In other words, as financial markets develop, users and suppliers of capital connect at lower costs, thus increasing the level of investment in an economy (Levine 1997; Mishkin 2006; Pathak 2010).

Eyraud, Singh, and Sutton (2017) highlight that numerous benefits come with financial integration. These authors argue that financial integration allows savers and borrowers to invest and borrow domestically and abroad. The benefits of financial integration manifest in many ways, including greater access to a pool of funds (Nokaneng 2009). In addition, Ntlemeza and Kapingura (2019) postulate that regional financial integration enhances access to efficient and liquid financial sectors. This stance promotes investment and stimulates growth (Bong & Pramaratne 2019; Eyraud *et al.* 2017).

Theoretically, two contrasting views exist on the link between financial integration and financial development. These are the complementarity and the substitutability view. The complementarity view is based on the notion that financial integration augments domestic financial development. On the other hand, the substitutability view argues that financial integration may provide an alternative to financial development (Aziakpono, Burger & Plessis 2009; Jeanne and Gourinchas 2004).

In addition, the literature also shows that financial integration deters financial development. In inefficient markets, economic agents bypass the local financial sector and utilise more efficient foreign financial systems to satisfy their needs. This process can then mop up liquidity from the domestic financial system (Shahbaz, Mallick, Mahalik & Hammoudeh 2018). The empirical literature also shows that the interaction between financial integration and financial development hinges on institutional quality and the legal environment (Chinn & Ito 2006; Elkhuizen, Hermes, Jacobs & Meesters 2018). These diverging views show that there is generally a lack of consensus on the interaction between financial integration and financial development.

Literature also indicates that the financial sector has increasingly become recognised or acknowledged as one of the most important determinants of Diaspora finance (Bangake & Eggoh 2020; Fromentin 2017). Financial sector development is argued to be an essential determinant of remittance prices (Freund & Spatafora 2008; Uddin, Ichihashi & Barua 2022). The financial development of home countries influences migrants' decision to remit or to send money home through formal channels (Bang, Mitra & Wunnava 2015; Pandikasala, Vyas and Mani 2020). Financial sector development will likely improve immigrants' confidence in their home countries, resulting in lower transaction costs and thus increasing the frequency and magnitude of remittances (Nsiah, Fayissa & Wu 2019).

Literature contends that adverse financial conditions in countries of origin may lead migrants to remit funds to assist their families in compensating for their lack of access to financial markets and institutions (Giuliano & Ruiz-Arranz 2009; Issahaku 2019). This form of assistance implies that remittances may play a substitution role for the financial intermediation role. In line with this, Diaspora remittances are a crucial source of household income in some countries in the SADC region. However, the cost of remitting to and within the SADC region is significantly higher than in other regions worldwide (World Bank 2018). Historically, remittances to Africa are accompanied by high transactional costs.

Strengthening the role of financial institutions and lowering transaction costs in cross-border transactions can encourage migrants to remit through formal channels (Aggarwal, Demirgüç-Kunt & Pería 2011). Currently, formal channels of remitting are characterised by high transaction costs. They are not easily accessible to undocumented migrants in countries like South Africa and are unaffordable to low-income migrants who desire to send money to their home countries. As a result, these migrants always prefer the informal route as it does not have as many obstacles as the formal route. However, as much as informal channels are convenient and affordable, they are risky. Hence, formal remittance channels must be encouraged (World Bank 2018). One way to do this is through developing financial sectors in receiving countries.

1.1 Background

Understanding the importance of the relationship between regional financial integration and financial sector development, as well as its link with Diaspora remittances, is an area of importance for the SADC region, which has been pursuing different financial reforms aimed at enhancing financial development in member countries and, consequently, regional economic growth (SADC 2022). However, the region's financial development level remains low (Moyo and Le Roux 2020; Sulemana & Dramani 2020). Le Roux, Mutonhori, Nyamutowa and Abel (2019) also explain that the financial system in SADC remains unstable, so growth is likely to be adversely affected. The SADC region's average credit remains low compared to other regions, such as Latin America, East Asia, and the Caribbean (Mahawiya 2015; Sulamana & Dramani 2020). The level of financial development in the SADC region, as measured by domestic credit to the private sector (% of GDP), remains low for most SADC member states except South Africa, Mauritius, and Namibia. As of 2018, South Africa, Mauritius, and Namibia's domestic credit to the private sector (% of GDP) was 138.79, 78.25, and 66.96, respectively. Furthermore, countries such as Angola, DRC, Malawi, Zambia, and Tanzania have levels of financial development that remained significantly below 50% (World Bank 2022). This figure indicates that the region's financial sector is still underdeveloped.

The need to use formal channels arises because such can promote economic development in the recipient country by supplying earnings to the domestic financial sector, thus making more resources available in the form of loanable funds (Demirgüç-Kunt, Córdova, Pería & Woodruff 2011). In addition, using formal channels may lead individuals to utilise other formal financial services, such as savings, which can accelerate financial development. In a way, it suggests that mechanisms to develop the financial sector will go a long way in encouraging the use of formal channels when remitting (Demirgüç-Kunt *et al.* 2011).

As already highlighted, the literature indicates that financial integration contributes toward financial development, lowering transaction costs and increasing volumes of remittances. Based on this, the study investigated the impact of financial integration on financial development in the SADC region. The analysis further examined the interaction between financial sector development and remittance inflows in SADC.

This study adds to the literature by analysing the impact of regional financial integration on the development of the financial sector in the SADC region. Moreover, the causal relationship between Diaspora remittance inflows and regional financial sector development is examined. The study employed the GMM technique, given the endogeneity problem with the variables at hand. The findings from the study show that financial integration has a positive impact on domestic financial development. The panel Granger Causality Test results also revealed a bi-directional causality between Diaspora remittance inflows and financial sector development in the SADC region. These results have implications for remittance inflows, given that the development of the financial sector will likely reduce the costs of Diaspora remittances and increase their volume to countries of origin. In addition, remittance inflows are likely to enhance the development of the financial sector. Thus, increasing the volume of remittances in SADC member states will likely improve economic growth and development, alleviate poverty, and reduce financial exclusion.

The study comprises the following sections: Following the first section, which covers the introduction, background, and stylised facts on Diaspora remittances and migration, the second section provides a review of relevant literature. The third section presents the study's methodology, whilst the fourth section presents and describes the results. Finally, the fifth section provides the conclusion and policy recommendations of the study.

1.2 Diaspora Remittances and Migration: Stylised Facts

Migration is defined as the movement of people across the boundaries of their countries of origin (Ratha, Kim, Plalooked, Seshan, Shaw & Yameogo 2019). In other words, migrants are people who move from their countries to other countries for employment purposes or political reasons, amongst other reasons. Remittances refer to money or goods migrants send to their countries of origin (Gelb, Kalantaryan, McMahon & Perez-Fernandez 2021). Diaspora remittances are important for poverty alleviation and economic growth and development.

Diaspora remittances have become indispensable to growth and development for most developing economies. They appear to be a stable source of income compared to foreign direct investment (FDI) (De, Islamaj & Yousefi 2015; Ratha 2019). Diaspora remittances have increasingly become a significant component of international capital inflows to Africa. According to the World Bank (2021), regardless of COVID-19 in 2020, remittance flows to low- and middle-income countries remained resilient. The World Bank further explained that Diaspora remittances flowing to sub-Saharan Africa fell during the 2020 period, although this decline was mostly due to a decrease in remittances to Nigeria. When Nigeria was excluded, Diaspora remittance flows to sub-Saharan Africa rose 2.3% (World Bank 2021). During this period, Diaspora remittance inflows were expected to decrease because most African migrants often work within the service and hospitality sectors, which were affected by lockdown restrictions in host countries. In addition, mobility shutdowns and restrictions in host countries were expected to result in a decline in remittance flows.

The observed increase in Diaspora remittance flows during COVID-19 could be due to the rising use of formal channels by migrants, given that they could not continue using informal channels. For example, in Zimbabwe, remittances have become an integral source of foreign currency. Remittances transferred formally from the Diaspora to Zimbabwe rose from USD 636 million (2019) to USD one billion (2020) (Economist Intelligence Unit 2021). Formal channels in Zimbabwe remained operational during the COVID-19 pandemic, whilst informal channels were largely closed to the Diaspora, like sending money home via bus drivers, as almost all countries shut their borders (Economist Intelligence Unit 2021).

In addition, the United Nations Department of Economic and Social Affairs (UN DESA) (2020) shows that in respect of emigrants from Southern Africa, about 64% are within Africa, 22% are in Europe, and 7% are in Northern America, and 6% in Oceania. The portal went further to show that the top five destinations for emigrants from Southern Africa are South Africa (23%), the UK (9%), Uganda (6%), the USA (5%), and France (5%). In SADC, South Africa is recognised as an economic hub with large volumes of Diaspora remittances flowing from South Africa to various counterparts. Many of these Diaspora remittances are sent informally through cross-border buses and mini-buses (Finmark 2016). Total remittances from South Africa to SADC counterparts were approximately R 21.87 billion by 2018 (Finmark 2020). Of these Diaspora remittances, 52% are estimated to be remitted informally, showing the need for developed financial institutions and lower transaction costs to encourage increased use of formal channels. It is also interesting to note that at a global level, as of 2019, Southern African countries received around seven billion USD in Diaspora remittance inflows (UN DESA 2020). These statistics indicate that remittance inflows are indeed one of the main sources of foreign capital, contributing greatly to income for households in developing countries.

2 Literature Review

2.1 Theoretical Literature

The McKinnon and Shaw Model was the framework used to analyse how financial integration impacts financial sector development, which aligns with studies such as (Tembo 2018). The model suggests that the financial sector will stagnate under financial repression. However, financial liberalisation will develop the financial sector as economic agents shift investments from real to financial assets. In addition, financial liberalisation removes capital controls, leading to increased capital inflows and easier access to foreign markets. Also, financial liberalisation encourages foreign banks to enter the domestic market, which may increase competition (Jappelli & Pagano 2008). Through this competition, households and firms of countries characterised by under-developed financial sectors will benefit from access to financial services at lower costs, improving financial deepening. Literature suggests that financial integration is another form of financial liberalisation. Tembo (2018) indicates that financial integration will likely increase investment inflows as local firms have access to international markets, and foreign firms invest in domestic markets, expanding domestic financial sectors.

2.2 Empirical Literature

The available literature on financial integration suggests that it has the potential to boost economic growth both directly and indirectly. One such indirect channel is the financial sector development channel (Mahajan & Verma 2015; Aziakpono 2013). Allegret and Azzabi (2014) indicate that financial openness, which can be achieved through financial integration, improves the efficiency and depth of the financial sectors. However, several authors contend that financial development is a precondition for financial integration (Fetai 2015; Chen & Quang 2014; Kose, Prasad & Taylor 2011). Two contrasting views regarding the relationship between financial integration and financial development exist. More specifically, these views are on the matter as to whether financial integration is an alternative to domestic financial development or complements it (Aziakpono *et al.* 2009; Jeanne and Gourinchas 2004).

2.2.1 Financial Openness as a Complement for Financial Sector Development

Financial openness may stimulate domestic financial sector development through competitive pressures on the domestic financial sector. The openness of financial markets affects financial development through its ability to increase competition (Jappelli & Pagano 2008; Baltagi Demetriades & Law 2009; Tovar-Garcia 2012). As a result of this competition, households and firms from countries with less developed financial sectors will gain access to low-cost financial services, thus stimulating financial depth. Harmonisation of national regulation is another channel through which financial integration will influence the development of financial systems (Jappelli & Pagano 2008; Stavárek, Řepková & Gajdošová 2012). Also, the entry of foreign banks into the domestic economy helps stabilise financial systems and facilitates technology transfer. It will boost financial sector efficiency and, in doing so, stimulate the development of domestic financial sectors.

Furthermore, Lee and Chou (2018) have shown that improved financial integration stimulates financial development in emerging economies compared to advanced economies. The authors emphasise the importance of strict bank regulation, supervision, and institutional quality. Elkhuizen *et al.* (2018) further highlight that institutional quality is a vital precondition for financial integration to yield positive benefits. This precondition implies that poor institutional-quality countries may not benefit from financial openness (Chinn & Ito 2006; Rajan & Zangales 2003).

2.2.2 Financial Integration as a Substitute for Financial Development

Literature also indicates that financial integration can weaken the domestic financial sector. It normally happens when economic agents bypass an inefficient local financial sector to access foreign markets, which are, in most cases, more efficient in satisfying their financial needs (Aziakpono *et al.* 2009). Moreover, financial integration may lead to an outflow of savings from economies with weak financial institutions to foreign markets with strong financial systems. Consequently, this increases the cost of acquiring financial services, particularly for small businesses, thus depressing the domestic financial market (Jeanne & Gourinchas 2004).

2.2.3 Financial Development and Diaspora Remittances

Theoretically, variations in wage rates and prevailing economic circumstances in the home nation and the host determine Diaspora remittance inflows (El-Sakka & McNabb 1999; Ahmad, Hussan, Sial, Hussain & Akram 2008). Financial development is among the variables identified in the literature as a determinant of Diaspora remittance inflows (Adenutsi & Ahortor 2021). Two views emerge from the literature about the financial development-remittance nexus. First, the substitutability view argues that Diaspora remittances create a substitute for credit markets, especially if the receiving country's financial sector is underdeveloped. Studies like Opperman and Adjasi (2019) and Uddin and Sjo (2013) confirm this view. In contrast, there is the complementary hypothesis, which postulates that Diaspora remittance inflows may stimulate the financial development of the receiving country (Aggarwal *et al.* 2011; Bangake and Eggoh 2020; Fromentin 2017; Kakhkharovoc & Rohde 2020).

The empirical literature on the impact of financial development on Diaspora remittance inflows suggests that developed financial systems attract such inflows. Tabit and Moussir (2016) investigated factors determining Diaspora remittances in the case of developing countries and found that financial development significantly influenced Diaspora remittance inflows for the countries concerned. This finding aligns with Adenutsi, Aziakpono, and Ocran (2012), who indicate that financial sector development encourages Diaspora remittance inflows through formal channels like banks in countries characterised by well-developed and sophisticated financial sectors.

The literature review indicates no consensus regarding the relationship between financial integration and financial development. Also, there are divergent views on the relationship between financial development and Diaspora remittances. It is worth noting that the greater population benefits from Diaspora remittances in the SADC region, just like in other parts of the African community, are generally excluded from the formal financial sector and cannot borrow from the formal banking sector. Thus, the study adds to the ongoing discussion on the financial integration-financial development nexus and how it influences Diaspora remittance inflows.

3 Methodology

This section describes the approach utilised in investigating the effect of financial integration on financial development and the interaction between financial development and remittance inflows.

3.1 Data and Sample

The panel data set employed in this chapter included 14 SADC countries (Angola, Botswana, the Democratic Republic of Congo, Lesotho, Eswatini, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, Tanzania, South Africa, and Zambia). This panel data spans from 2006 to 2018. Data on financial development, trade openness, GDP per capita, inflation, and institutional quality was collected from the World Bank, whilst data on financial integration was obtained from Chinn and Ito (2006) (updated in 2019) and Lane and Milesi-Ferretti (2017) websites.

3.2 Model Specification and Variable Description

The study followed the works of Ayadi, Arbak, Naceur, and De Groen (2015) to investigate the determinants of financial development in the SADC region. A wide range of independent variables was examined, as shown in Equation 1, to accomplish the study's objective. The baseline economic model for financial development is specified in Equation 1 below:

$$FD_{it} = \beta_0 + \beta_1 FD_{it-1} + \beta_2 LGDPPK_{it} + \beta_4 IQ_{it} + \beta_5 INF_{it} + +\beta_6 TOP_{it} + \varepsilon_{it} \ldots(1)$$

Financial integration variables were introduced into the model, as proxied by *de* *jure* (KAOPEN index) and *de facto* (LFI) indicators. The model takes the following form:

$$FD_{it} = \beta_0 + \beta_1 FD_{it-1} + \beta_2 FI_{it} + \beta_3 LGDPPK_{it} + \beta_4 IQ_{it} + \beta_5 INF_{it} + +\beta_6 TOP_{it} + \varepsilon_{it} \quad (2)$$

Where FD is financial sector development, FI is financial integration (which is shown as either KAOPEN or LFI). TOP represents trade openness, whilst LGDPPK is the natural logarithm of GDP per capita. IQ is institutional quality measured by the political stability index, while INF is inflation. The study further evaluated if the influence of financial integration on financial development was linear or non-linear by adding a quadratic term of financial integration:

$$FD_{it} = \beta_0 + \beta_1 FD_{it-1} + \beta_2 FI2_{it} + \beta_3 Z_{it}^2 + \beta_4 LGDPPK_{it} + \beta_5 IQ_{it} + \beta_6 INF_{it} + \beta_7 TOP_{it} + \varepsilon_{it} \quad (3)$$

Where $FI2_{it}$ represents the quadratic term of financial integration.

3.3 Variable Definitions and A Priori Expectations

Financial development is the dependent variable. Literature has shown that financial sectors in Africa are dominated by the banking sector (Andrianavo & Yartey 2010; Tembo 2018). As a result, this study measures financial sector development using credit to the private sector (% of GDP).

Financial Integration: There are three different proxies for financial integration, *de facto, de jure,* and hybrid (blended) measures. The study employed both the *de facto* and *de jure* measures. The most used *de facto* measure is the total foreign financial assets and liabilities as a percentage of GDP (Lane and Milesi-Ferretti 2003, 2007). Specifically, the study adopted the Lane and Milesi-Ferretti measure and the KAOPEN index to proxy financial openness. The KAOPEN index was introduced by Chinn and Ito (2006). The KAOPEN index has been widely used in literature (Arif-Ur-Rahman & Inaba 2020; Fan, Mohtadi, and Neumann 2014). Mahajan and Vermar (2015) note that the Lane and Milesi-Ferretti *de facto* measure is consistent when compared to *de jure* measures (the rule base measures). The Lane and Milesi-Ferretti indicator is the stock of a country's foreign assets plus liabilities as a share of GDP. The study employed two different proxies of financial integration and their quadratic term for robust results.

Other control variables employed in the study were the log of GDP per capita, institutional quality as measured by the political stability index, trade openness, and inflation.

3.4 Estimation Techniques

The analysis began with investigating the impact of financial integration on financial development using GMM. Based on these findings, the second analysis stage focused on establishing the relationship between financial sector development and Diaspora remittance inflows in the SADC region. Literature has highlighted that financial development encourages the Diaspora to remit formally rather than informally. Thus, if financial integration improves financial development, that would imply an increase in Diaspora remittance inflows.

3.4.1 General Method of Moments (GMM)

The study employed panel GMM developed by Arellano and Bond (1991) in investigating the impact of financial integration on financial development. This technique was employed due to its ability to control for endogeneity problems. Roodman (2006) states that 'the Arellano-Bond (1991) generalised method of moments (GMM) estimator was designed for panels with 'small T and large N''. In this study, N was greater than T, thus making GMM an appropriate technique. The Arellano and Bond estimator takes the first difference to eliminate the individual effects and then uses information y_{it} as an instrument; hence it is known as a difference GMM. According to Baum (2013), 'the difference GMM approach deals with endogeneity by transforming the data to remove the fixed effects'. This approach is consistent in the absence of second-order serial correlation. The Arellano-Bond test was utilised to check that there was no second-order serial correlation, whilst Sargan's test was employed to test for over-identification.

3.4.2 Granger Causality Test

A panel Granger Causality Test was also conducted to analyse the possible causal link between financial sector development and Diaspora remittance inflows. This model took the following form:

$$REM_{it} = \sum_{k=1}^{p} \delta_{ij} REM_{it-k} + \sum_{k=1}^{p} \delta_{2k} FD_{it-k} \Delta u_{1it} \dots\dots\dots\dots \quad (4)$$

$$FD_{it} = \sum_{k=1}^{p} \gamma_{ij} FD_{it-k} + \sum_{k=1}^{p} \gamma_{2k} REM_{it-k} \Delta u_{2it} \dots\dots\dots\dots \quad (5)$$

Equation 4 tests the hypothesis that Diaspora remittance inflows (REM) granger causes financial sector development (FD) if $\delta_{2k} \neq 0 \forall i$. Alternatively, Equation 5 tests the view that financial sector development (FD) granger causes Diaspora remittance inflows (REM) if $\gamma_{2k} \neq 0 \forall i$. Due to missing observations, broad money supply (BM) was utilised to measure financial sector development. It was not possible to estimate both Equations 4 and 5 with credit to the private sector.

4 Presentation and Analysis of Empirical Results

Table 1 presents the GMM results obtained when credit to the private sector as a percentage of GDP is employed as a proxy for financial sector development.

The empirical results confirmed that current levels of financial development depend on their immediate past value or previous lags. The baseline regression results have shown that the lagged dependent variables, economic development (LGDPPK), institutional quality (IQ), and trade openness (TOP), are significant factors determining the level of financial sector development. Trade openness has a positive and statistically significant impact on financial development. These findings concurred with Asongu and De Moor (2017). Institutional quality displayed mixed results, which were, however, mostly insignificant. The insignificance of the variable could be attributed to the overall low levels of institutional quality in SADC member states.

As explained in the methodology section, two proxies of financial integration have been employed in this study. Looking at the *de facto* measure (LFI), financial integration positively and significantly impacts financial development. It implies that financial sectors in the SADC region will benefit from removing and lowering barriers in the movement of financial flows within and outside the region.

Table 1: GMM Results

	BASELINE	LFI	LFI 2	KAOPEN	KAOPEN 2
FD (-1)	0.541185*	0.053548	0.047637	0.348566*	0.021996***
LGDPPK	0.949711**	0.749583*	0.865176**	0.612135*	0.988692**
INF	-0.337734	-0.371582	-0.363108	-1.024158	-0.583729
TOP	0.556083*	0.599919**	0.604561**	0.288986*	0.214915
IQ	4.220922*	4.255384	4.304457	-4.264458	-3.464878
LFI		0.671875**	0.976858**		
LFI2			0.893135**		
KAOPEN				-0.73325	0.167849
KAOPEN 2					1.962901
JSTATS (P-VALUE)	0.281423	0.750897	0.449100	0.477327	0.317102
AR (2)	0.5239	0.5183	0.8052	0.0318	

The findings also imply that financial openness could improve the supply of finance in underdeveloped markets, thus enhancing financial depth. This finding contradicts the substitution hypothesis, as Aziakpono (2013) and Jeane and Gourinchas (2004) indicated that financial integration could substitute for financial development. These results also confirmed the findings by Ahmed (2016), who suggested that financial integration positively affects financial development by enhancing technological diffusion and stimulating financial innovation. When the non-linear impact of financial integration on financial development was investigated, LFA2 displayed a significant positive coefficient. These results show a linear relationship between the two variables concerned.

Meanwhile, the *de jure* (KAOPEN) measure employed in the study had an insignificant influence on financial development. Because *de jure* indicators are rule-based, this result might mean that formulated policies are not always implemented. In other words, *de jure* (KAOPEN) measures are less reflective because the SADC countries fail to enforce set capital controls. The quadratic term (KAOPEN2) displayed insignificant mixed results. As previously mentioned, *de jure* measures are not as robust (Mahajan & Vermar 2015); hence the authors have concluded based on the results from the *de facto* indicator.

4.1 Robustness Checks

Broad money (BM) as a share of GDP was employed as a measure of financial sector development for the robust test, which is in line with Tembo (2018). The results are presented in Table 2 below.

Table 2: GMM Results: Broad Money Supply as a Percentage of GDP as a Measure of Financial Sector Development

	BASELINE	LFI	LFI 2	KAOPEN	KAOPEN 2
BM (-1)	0.651592**	0.444944**	0.115539*	0.185962*	0.343215***
LGDPPK	0.999210**	0.648285*	0.745495*	0.916581*	0.544313**
INF	-0.139274	0.432179	0.425854	0.088567	0.797262
TOP	0.235620*	0.677939**	0.682321**	0.244167*	0.519918**
IQ	-1.592003	-4.100733	-4.162311	-0.873008	0.933534
LFI		0.562458*	0.652387**		
LFI2			0.237810*		
KAOPEN				7.049825	15.41725
KAOPEN 2					11,57361
JSTATS (PVALUE)	0.246682	0.987027	0.877510	0.233568	
AR (2)	0.7976	0.1453	0.2134	0.8970	

The findings in Table 2 support the earlier results presented in Table 1 in that the *de facto* financial integration measure positively affects financial sector development. However, the *de jure* measure (KAOPEN) and its quadratic term still show an insignificant effect on financial development. The results above show that financial integration positively affects financial development in the SADC region. The development of the financial sector will thus have implications on remittance inflows. This implication will be described further under the Granger Causality Test results.

Both Tables 1 and 2 indicate that the models did not suffer from second-order serial correlation and that the instruments used were valid.

Table 3 indicates that the null hypothesis that Diaspora remittances do not granger cause financial sector development is rejected. The same also applies to the null hypothesis that financial sector development does not granger cause Diaspora remittances. This indication implies a bi-directional causality between Diaspora remittance inflow and financial sector development. In other words, past values of Diaspora remittance inflow contribute to financial sector development. At the same time, financial sector development promotes Diaspora remittance inflows.

Table 3: Panel Granger Causality Results

Pairwise Dumitrescu Hurlin Panel Causality Tests			
Null Hypothesis:	W-Stat.	Zbar-Stat.	Prob.
REM does not homogeneously cause FD	3.61660	3.79198	0.0001
FD does not homogeneously cause REM	3.26017	3.21212	0.0013

This result specifically agrees with Bolarinwa and Akinbobola (2021) concerning Nigeria and Kenya. These authors indicated that as the financial sector develops, it will reduce transaction costs, enabling more economic agents to utilise formal channels for sending Diaspora remittances. At the same time, family members in recipient countries can also access banking services such as savings, boosting the financial sector's development.

4.2 The Implication of Financial Integration and Financial Sector Development on Diaspora Remittances

This research identified financial integration as a crucial determinant of financial development and economic growth. Financial integration entails cooperation at regional levels and can affect financial sector development. Financial cooperation across the border can affect the volume of Diaspora remittance flows transferred formally through the financial sector. Improving financial development through financial integration can lower transaction costs across borders, boosting migrants' confidence in the financial sectors of their countries of origin. In other words, migrants may have confidence in the financial sectors of their home countries and be encouraged to remit formally instead of informally.

In addition, due to increased financial integration, home countries' financial institutions can open branches in any country in the region, allowing remitters to remit at lower transaction costs. Also, a regional corporation can enhance labour mobility. Labour mobility will enhance the allocation of the migrants' labour force in more productive markets in foreign countries, allowing home countries to capture gains they could not access if they were in autarky.

5 Conclusions and Policy Recommendations

5.1 Conclusions

The study's objective was to analyse the impact of financial integration on financial sector development in the SADC region and to further derive the implications this has on diaspora remittances inflow. The study employed the first difference GMM given its ability to deal with potential endogeneity. Credit to the private sector (% GDP) was utilised to proxy financial development. Two proxies for financial integration, the Lane and Milesi-Ferretti measure (LFI) and the KAOPEN index were employed, respectively. Results indicated that the immediate lag of the dependent variable, financial integration, the log of GDP per capita, and trade openness significantly affected financial development in the SADC region. The *de facto* indicator of financial openness positively impacted financial development, whilst the *de jure* measure had mixed results. The study ensured the robustness of the findings by employing broad money as a proxy for financial development, which similarly concluded that the *de facto* financial integration positively affected financial development. Key findings thus reveal that *de facto* financial integration is particularly important for regional financial development. These findings suggest that financial integration complements domestic financial development in the SADC region.

The study also examined the interaction between financial development and Diaspora remittance inflows employing the Granger Causality Test. Findings indicated that the relationship between these two variables was bidirectional, meaning that financial development stimulates remittance inflows and *vice versa*. The positive impact that financial integration had on financial develop-ment implied that financial openness encourages remittance through its impact on financial development. In other words, as financial integration in the region improves and financial sectors develop, it should be easy and affordable for Africans in the Diaspora to formally send money to their home countries, which is a safer method and can contribute to the development of the banking sector. Lower transaction costs encourage the use of formal channels in place of in-formal channels when sending remittances to the country of origin. It implies that financial development can have positive gains for both the African Diasporas and their home countries.

5.2 Policy Recommendations

Based on the findings obtained, the authors of this study suggest that SADC countries should continue with financial sector reforms as this might ameliorate the depth, efficiency, and access to financial markets and institutions of member countries given that high financial transaction costs and low access to financial services characterise most countries in the region. These reforms will increase the number of people using formal financial services. It also has implications for savings, a critical component of economic growth.

It is further recommended that governments of member states in the SADC region should again continue pursuing financial integration as this stimulates financial development and Diaspora remittance inflows. Also, financial openness may result in financial institutions opening branches in any country within the region. That can increase the volume of remittances which are sent to member countries. As per the findings, this also has implications for financial sector development.

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