European Journal of Accounting Auditing and Finance Research

Vol.3, No.6, pp.39-62, June 2015

Published by European Centre for Research Training and Development UK (www.eajournals.org)

DETERMINANTS OF FINANCIAL DEVELOPMENT IN SOUTHERN AFRICA DEVELOPMENT COMMUNITY (SADC): DO INSTITUTIONS MATTER?

Strike Mbulawa[1]

ABSTRACT: *The study used annual panel data (1996-2010) for 11 SADC countries to establish the determinants of credit to private sector and financial development. The contribution made by institutional quality is investigated using both the fixed effects and dynamic model based on GMM estimations. Financial development was significantly and positively influenced by credit to the public sector, per capita gross domestic product, gross fixed capital formation, financial openness, interest rates and institutional factors while savings and government debt have a negative influence. Financial development is enhanced by keeping corruption at low levels, increasing government accountability, improving regulation quality, maintaining rule of law and low levels of political violence. Thus institutional quality should be enhanced to complement the levels of financial development which in turn boosts economic growth. More private-public sector partnerships are preferable to enhance financial development and monetary policy initiatives like favorable credit rationing policies play a key role in developing financial markets*.

KEYWORDS: Financial development, SADC, Institutions

INTRODUCTION AND BACKGROUND

The importance of financial development in fostering economic growth cannot be underestimated and debate is still ongoing with no consensus on the drivers of financial development within regional blocs like the Southern Africa Development Community (SADC). Financial markets bring together those who are in a financial deficit and those with a surplus in a cost effective manner. Financial development greatly impacts on poverty, makes available more finances and deposit opportunities and avoids inequality. A developed financial system increases access to capital and subsequently enhances economic growth. The allocation of resources becomes efficient as information is given to investors. An organized financial system have the ability to draw financial resources from offshore and this should be supported by the quality of the legal and regulatory environment, risk management initiatives and the effective regulation of firms. The banking sector dominates the markets in Sub Saharan Africa (SSA) and the level of maturity of financial instruments as well as activity is still low. Regional groupings assist in

[1] Faculty of Business and Accountancy, Botho University, Gaborone, Botswana
Email: smint50000@gmail.com or smbulawa2004@myway.com
Cell: 0026774052456

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

overcoming these barriers imposed by the size of the country's economy and the financial market, Standley (2010). The most developed market in SADC is that of South Africa while others exhibit small and illiquid capital markets coupled with small bonds and derivatives markets. Developing financial markets at country is still a challenge hence the need to tackle it from a regional bloc level.

Evidence shows that the end result of financial sector reforms is economic growth, Hassan et al (2011). This idea of having a well developed financial market contributing to long term economic growth has been established, (Beck et al (2000); Hassan et al (2011); Christopoulos & Tsionas (2004); Abu-Bader and Abu-Qarn (2008)). SADC states have very interesting economies considering the noticeable differences in their levels of economic development. In Table A1 explains development indicators for three countries South Africa (the biggest economy in SADC), Botswana (small but fast growing economy) and Zimbabwe (going through economic turbulences). More funding was provided by the banking sector in South Africa and Zimbabwe, though passing through economic challenges, was able to extend more credit ahead of Botswana which had negative credit flows suggesting that the banking sector was a net borrower. It received more deposits than loans that it extended to various sectors on a gross basis. The liquid assets were still high and low in South Africa and Botswana respectively. Differences in the sizes of stock markets among the three countries can explain the differences in stocks traded. Evidence shows that more resources still need to be extended by the banking sector in SADC member states and supporting the equities market to enhance economic growth. The capacity of the stock market to enhance financial resource utilization is still questionable considering the low volumes of stock traded in countries like Botswana and Zimbabwe. Financial development indicators were erratic, in the table A1, thus it is difficult to have an enhanced understanding of the direction and magnitude of financial development. Growth rates in the selected development measures remains unpredictable and growth efforts become difficult to channel.

An overview of Southern Africa Development Community (SADC)

SADC, an intergovernmental organization, promotes sustainable and equitable economic growth and socioeconomic development using competent productive systems. It also seeks to promote good governance, lasting peace and cooperation among the 15 member states[2] who are classified as middle income countries (South Africa, Namibia, Botswana, Mauritius and Swaziland); low income countries (Madagascar, Malawi, Mozambique, Tanzania and Zambia), fragile economies (Democratic Republic of Congo (DRC) and Zimbabwe) and Angola an oil exporter. Table 1 shows that the rate of growth of GDP was not stable during the period 2000 to 2011 as slowed down during the first four years and picked up slightly in 2004 reaching its peak in 2007 (6.74%)

[2] Angola, Botswana, Democratic Republic of Congo (DRC), Lesotho, Madagascar, Mauritius, Malawi, Mozambique, Namibia, Seychelles, South Africa, Swaziland, United republic of Tanzania, Zambia and Zimbabwe.

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

before slowing down thereafter. On average the rate of growth was 4.25% per annum during the period. Growth was mainly driven by services sector which accounted for at least 50% of GDP. The rate of inflation had declined during the period despite the high inflationary pressures from countries like Zimbabwe and Mozambique. Collectively the levels of inflation and government debt were low which can boost regional growth. Trade among the member states is still as low as 10% of GDP when compared with trade to Asian nations and the European Union (EU) which account for 45% and 27% respectively. Intra trade is still very low as a percentage of SADC trade which was between 15.7% and 18.5% during the period 2000-2009, SADC (2011).

Table 1: Summary of Economic indicators for SADC

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
GDP rate	3.46	2.69	2.68	2.98	4.89	4.80	6.16	6.74	4.00	2.20	5.23	5.14
Inflation rate	--	23.1	29.1	42.3	28	29.3	8.7	8.9	13.2	12.3	7.3	7.7
Debt	--	--	--	--	79.4	70.4	51.4	46.7	47.8	49	36.7	40.4
Trade	15.7	16.5	17.2	18.2	18.5	17.5	16.2	16.1	16.4	18.5	--	--

Source: www.sadc.int

Economic indicators are represented by: Annual growth rate in GDP (GDP rate); Inflation rate, Debt as a percentage of GDP (Debt) and Trade among members as a percentage of GDP (Trade).

The ultimate objective within the SADC regional indicative strategic development plan (RISDP), covering the 15 year period up to 2020, is to deepen integration among members to eliminate poverty and reach economic and non economic development goals. This is still outstanding with 5 years remaining leaving more room for action on the areas of growth and financial development. For example one of the major pillars in RISDP focuses on trade, industry, finance and investments. It seeks to facilitate trade and financial liberalization, competitive and diversified industrial development and increased investment for deeper integration using: integration of goods and services market; development and strengthening of financial and capital markets; increasing levels of intra SADC investment and foreign direct investment (FDI). Up to now less than a third of the member states have liberalized exchange controls, inflation levels were above the agreed threshold of single digit for more than two thirds of the members by 2008 and member states are still slow in joining the Free trade Area. The committee of SADC stock exchanges was established in 1997 to facilitate and regulate the development of capital markets in member states though this has not yet paid dividends. The stock markets are not yet connected due to manual trading platforms, limited securities, no cross border trade flows within the bloc and less reliance on stock markets to raise money by companies, Benimadhu (2012). The other important issues still outstanding in SADC include: the Development of a public private sector partnership is still outstanding which is critical for both financial development, SADC (2011). The targets set for inflation (single digit), growth in output (7%), fiscal deficit of 3% of GDP, external current account of 9% of GDP and public debt of 60% of GDP are achievable but

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

challenging considering the differences in economic indicators in member states. It is still a challenge for the bloc to try to indentify an optimal inflation rate, Burgess (2009).

Financially development market helps attain these SADC goals but previous trends have shown that this is still low as such the drivers of financial development need to be established. This paper aims to fill a gap in literature where there is little work on regional blocs. The study develops policy initiatives on increasing financial development which will subsequently boost economic growth and reduce borrowing constraints among member states, Dorrucci et al (2009). The study contributes to economic growth initiatives and helps to lay a foundation for the formation of the much waited monetary union, Burgess (2009). The study is unique as it includes a measure of country risk and captures the marginal effects of country risk on drivers of financial development. The role of institutional quality factors in financial development is still not clear in a regional bloc and this forms the thrust of this paper as it addresses the following key issues in the context of SADC as a regional bloc:

- What are the key drivers of financial development within SADC region?
- How are the drivers of financial development influenced by a certain level of country risk factors? Is the level for country risk a prerequisite for financial development?

The rest of the paper is organized as follows: Section 2 provides a detailed review of literature on financial development, section 3 explains the data and methodology employed in the study, section 4 presents and discusses the findings and section 5 provides the conclusions and some vital policy implications.

LITERATURE REVIEW

Economists support the idea of developing the financial systems, which includes capital and money markets, to increase the rate of growth. The stock market attracts new technologies vital for growth by creating a base upon which resources are mobilized, Feldstein (1998). Stock market led growth receives provides a basis upon which the developing financial sector grows and it is a source of foreign capital inflows, Singh (1993). The financial market theory of development postulates that, as long as there is proper regulation of the stock market then foreign investors can easily gain access. Theory shows that stock markets help improve governance for firms as they aim to attract investors. Policies on low inflation levels, high investment and good corporate governance systems provide a basis upon which financial development can be realized, Huang (2010). The absence of domestic capital will not hinder development as firms can still borrow or lend from or to foreign investors. Growth will, however, be dependent on the way in which the stock market will be incorporated into an institutional matrix which provides information to decision makers looking for growth opportunities. Financial development plays a key role in fostering growth but evidence shows that there is need to provide necessary

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

institutional factors. The effectiveness of monetary policy increases in a well developed financial system, (Hassan et al, 2011 and Krause and Rioja, 2006).

Determinants of financial development

Banking institutions and stock markets play a complementary role in the providing financial resources vital for economic growth. The degree at which the economy is open to foreign investors will also affect the levels of stock market liquidity. Evidence shows that as the stock market opens to international investors volatility increases in the short term which will subside later on but growth is sustained, Levine (1997). The SADC stock exchanges are still facing the problem of liquidity as there are low levels of cross border trade flows in stocks due to limited information for investors, Benimadhu (2012).

Sogut (2008) suggests that for low income countries financial development was positively related to public sector credits and inflation; in high income countries the relationship between financial development and inflation was adverse while GDP had a positive effect. In middle income countries the impact of real GDP and public sector credit was positive. The factors that promote financial development include trade openness, investment profile and population, per capita income and economic growth which has a long term relationship, (Baltagi et al (2007) and Shaheen et al (2011), Rachdi and Mensi (2012), Takyi and Obeng (2013)). Evidence shows that strong institutions, adequate implementation of financial reforms, increased savings and conducive macroeconomic policies, interest rates, financial openness, remittances, liquidity, level of income, cultural differences, geographical characteristics and low inflation collectively, have a positive impact on financial development, (Huang (2005), Ayadi et al (2013), Mandaci et al (2013) and Aduda et al (2012)). According to Dorrucci et al (2009) the level of financial development is negatively related to the level of domestic savings. The ratio of savings as percentage of GDP was very low for SSA which may be a key factor for countries in SADC in determining the level of financial development. The quality of institutions determines the depth of financial development which is critical for a regional block like SADC seeking to make collective policies on trade, inflation and growth to that effect. Luca and Spatafora (2012) argue that institutional quality, access to international exports markets and relevant macroeconomic policies explains the country differences in domestic and international finance.

Domestic financial development is positively related to gross fixed capital formation, thus investment decisions are better implemented in developed financial markets, (Dorrucci et al (2009), Lu et al (2004)).Higher level of financial openness lead to stock market development in the presence of adequate legal systems and institutions. Its effect is enhanced by the bureaucratic quality and low corruption levels, Chinn and Ito (2005). Levine and Zervos (1998) affirm that liberalization makes stock markets to become large, volatile, liquid and more integrated. The development of the stock market is mainly driven by the movements in macroeconomic variables like interest rates and exchange rates as well as the overall security of the market, Kaehler et al (2013). Security was an important determinant of stock market development in countries

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

experiencing civil unrest which can scare away investors. Political risk factors are important on the development of stock markets in emerging markets. For example the resolution of political risk was important in the development of the stock market in Kenya, Aduda et al (2012. Financial intermediary and stock market development are complementary but some studies did not accommodate institutional and regulatory factors to show their contribution to growth, (Yartey (2008), Naceur et al (2007) and Garcia and Liu (1999)). David et al (2014), using data on Sub Saharan Africa (SSA) found no connection between trade and capital account openness and financial development. Trade openness is important for financial development for countries with better institutional quality. Huang (2010) argues an efficient system of property rights, contract enforcement and the quality of accounting practices are essential for financial development. Yartey and Adjasi (2007) support regional integration through harmonization of legislation on bankruptcy, accounting and trade, improvement on legal and accounting framework and private sector evaluation capabilities which supports the endeavor of this paper.
Financial development is negatively influenced by inflation, interest rates, and reserve requirement and it portrays a cointegrating relationship with trade openness, inflation, per capita income, reserve requirements and borrowing by the government, Takyi and Obeng (2013). This is supported by Ayadi et al (2013) and Bitterncourt (2008) who argue that inflation undermines financial development as well as government debt because of its crowding out effect. This is important for SADC where some members states have inflation rates which are higher than the agreed threshold. This may have some important policy implications for the regional block as it drives towards attainment of economic growth by 2020. Thus the current effect of inflation on financial development needs further inquiry to allow for the creation of effective policies within the region.

Chapter summary and concluding remarks

There is a possibility for SADC economies to be revived by improving economic and legal institutions. A solid understanding of the drivers of financial development is vital as it will later on contribute to high economic growth. Findings were varied depending on the country or regional specific factors and the differences in the levels of income and the variables used in the regression. Therefore study is interesting as it shows the case for financial development in the SADC member states with the introduction of institutional factors in the model. This follows our understanding from literature that other determinants of financial development are sufficient but not adequate as such institutional factors have a portion to partake in our discussions.

DATA AND METHODOLOGY

The study uses panel data estimations which have been supported by studies like Baltagi (1995), Mutenheri (2003), Hassan et al (2010), and Sogut (2008). Panel data was employed because it provided more points of data, increased the efficiency of estimates, and reduced the problems of multi-collinearity. It also increases the degrees of freedom in the estimations and helps in controlling the problems caused by country and time specific effects. The analysis was done

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

using annual country data for the period 1996 – 2010 because all the 11 countries used had data for all the variables used. Zimbabwe because it was an outlier with a very unstable economy during the period and other three countries (Swaziland, Lesotho and Seychelles) had missing variables. The review period contains complete data on institutional variables and it was deemed appropriate for making an initial enquiry. Estimations were first conducted using the static model and later on the dynamic model for comparison purposes and discussions were based on a better model. Interaction terms were used to understand the marginal effects of country risk on financial development. Data on all variables and institutional factors was obtained from the World development indicators (WDI) for 2013 and International country risk guide (ICRG) 2014 respectively and definitions for all variables have been provided in table A3.

Static model

Data can be estimated using either the random or the fixed effects. Random effects model treats the individual effects as being uncorrelated with explanatory variables while the fixed effects model accepts the individuality of each country in the sample. We employed the Hausman statistic, which suggests that the explanatory variables are uncorrelated with the time invariant component of the error term (μ_i). The random effects were used where there is violation of the assumption that unobservable country effects are uncorrelated with the exogenous variable, otherwise the model would use fixed effects. The model takes the form general form:

$$Y_{it} = \beta_0 + \beta X_{it} + \varepsilon_{it} \quad (1)$$

Where:

Y_{it} is the dependent variable representing domestic credit by banks as a proxy for financial development such that subscripts *i* and *t* represents the *i-th* country and *t-th* year respectively.

β_0 is the intercept, β represents the coefficients for the explanatory variables, X_{it} are the explanatory variables employed in the model, the error term ε_{it} is composed of the time invariant component, μ_i and the stochastic term, ν_{it}.

All the variables and expected signs are as defined in table A3 below.

Dynamic modeling

The study also employed a dynamic linear model which contains lagged dependent variable together with exogenous variables. It followed the following form:

$$Y_{it} = \beta_0 + \phi Y_{i,t-1} + \beta X_{it} + \mu_i + \nu_{it} + \eta_t \quad (2)$$

Where:

The lagged dependent variable is represented by $Y_{i,t-1}$ which is correlated with error term and η_t is the time specific effects. All the other variables are as explained in equation (1) above. The coefficient for the lagged dependent variable ϕ is one less the speed of adjustment and its value is between zero and one. If the value is zero then the actual level of the dependent variable will adjust to the desired level instantaneously due to the absence of adjustment costs. The speed of

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

the adjustment factor towards the optimal level of dependent variable is given by 1-ϕ. Generalized methods of moments (GMM) by Arellano and Bond (1991) was used which eliminates the problem of biased parameter estimates which are obtained when using ordinary least squares (OLS) and within estimation techniques. The estimates using OLS are biased upwards while those found using within estimators are biased downwards. The model gets rid of endogeneity problems due to country specific effects which may be correlated with explanatory variables. Diagnostic tests were done using first and second order serial correlation in the disturbances of which one of the tests is expected to reject the null hypothesis of first order serial correlation and the second should accept the null hypothesis for absence of second order serial correlation.

Estimations for the determinants of financial development were done using the following variables: Domestic credit by banks (DCB) was used as a dependent variable and explanatory variables represented by Trade openness (TO), inflation (IF), per capita GDP, Interest rate (RIR), Institutions quality vector (INST), remittances (Rem), gross fixed capital formation (GFCF), Credit to public sector (CPUB), foreign direct investment (FDI), Savings and interaction between financial openness and voice and accountability was employed to capture the marginal effects, (Ayadi et al (2013), Baltagi et al (2007)). The study used a static model given as follows:

$$DCB_{it} = \beta_0 + \beta_1 CPUB_{it} + \beta_2 pGDP_{it} + \beta_3 GFCF_{it} + \beta_4 IF_{git} + \beta_5 FDI_{it} + \beta_6 TO_{it} + \beta_6 \mathrm{Re}m_{it} + \beta_7 SR_{it} + \beta_8 RIR_{it} + \beta_9 INST_{it} + e \quad (3)$$

The study used also the dynamic model for comparison purposes with static model as follows:

$$DCB_{it} = \beta_0 + \lambda DCB_{it-1} + \beta_1 CPUB_{it} + \beta_2 pGDP_{it} + \beta_3 GFCF_{it} + \beta_4 IF_{git} + \beta_5 FDI_{it} + \beta_6 TO_{it} + \beta_6 \mathrm{Re}m_{it} + \beta_7 SR_{it} + \beta_8 RIR_{it} + \beta_9 INST_{it} + e \quad (4)$$

In models (3) and (4) the coefficients are represented by β_1.....β_9 and the value of one less the coefficients of the lagged dependent variables measures the speed of adjustment towards the desired level of credit to private sector and financial development. If the value is greater than zero then there will be transaction costs as countries adjust to the desired level.

RESULTS AND PRESENTATION OF FINDINGS

This section presents findings obtained using stata 12 as follows: Findings are based on both the static and dynamic models and the analysis was based on the model giving the best estimates. We provide the regression estimates in the appendix section and discuss them as follows:

On average up to 162 observations were employed in our analysis and findings on the determinants of financial development are presented in table A4.1 which summarizes the behavior of variables used during the review period. The highest mean value was experienced by

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

the per capita GDP variable (1862.56) with FDI registering the lowest average (3.61%). The average rate of inflation was 30.41% in the regional bloc which was as a result of high rates in countries like Zambia, DRC and Angola during the period. Per capita GDP was the most volatile (standard deviation of 2083.39) because of different levels of growth in output and population while remittances were the least volatile. All the variables were skewed to the right with exception of CPUB and GFCF. Normal distributions were found for all variables except for per capita GDP and savings which had values for kurtosis less than 3.

Correlation analysis

Tables A4.2 presents results on the relationship among the variables and the study shows that there were both positive and negative relationships among the variables. Domestic credit by banks was negatively related with all variables except credit to the public sector, remittances and economic growth. There was no sign of multicollinearity in the variables and so we employed all of the in our estimations. The results and discussions for the regression models are presented below.

Regression analysis

Discussion of results: Determinants of Financial Development

In understanding the determinants for financial development within the SADC region the study conducts an analysis using both the static and dynamic model for comparison purposes. The results are presented tables A4.3 and A4.4 respectively in the appendix. Our discussions are based on the dynamic model but we however present the results for the static model as well. The fixed effects model shows that financial development was influenced by credit to the public sector, per capita GDP, inflation, real interest rates and institutional variables (voice and accountability, political violence and rule of law). All the variables had the expected signs except for inflation (positive effect) and political violence (positive effect) and our results show what can be taken as a specific model for financial development in SADC using the fixed effects model. All the significant parameters using the static model were also identified using the dynamic model as such we discuss results based on this model.

The dynamic model was used to estimate the key parameters useful in explaining the level of financial development in the SADC region. Findings in table A4.4 in the appendix are discussed as follows: The Wald statistic for all the regressions was significant even at 1% level. The z-tests provide evidence of negative and insignificant first and second order autocorrelation. We estimated 5 key models using GMM first step estimator and results showed that the coefficients for the lagged variable (DCB) were positive and highly significant in all models. The estimated speed of adjustment factor towards the optimal level of financial development ranged from 0.798 to 0.832 which suggests evidence of transaction costs as countries move towards the desired levels of financial development.

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

The dynamic estimation models provided that of the 10 exogenous variables used in the model seven were statistically significant and carried the expected signs from literature except for savings and inflation. The first model (table A4.2) provides evidence that credit to the public sector, per capita GDP, savings and gross fixed capital formation were important determinants of financial development while the other variables like inflation, trade openness, remittances and interest rates were not significant even though they carried the correct signs. The signs for the coefficients and levels of significance for the important determinants remained the same throughout the analysis even after introduction of institutional variables and an interactive term. The introduction of institutional variables in the model had an effect of making the role played by government debt, interest rates and inflation to be important. The level financial development in SADC is positively affected by credit to the public sector, gross fixed capital formation, inflation and interest rates while savings and government debt have a negative and significant effect. In our analysis institutional variables played a complementary role in explaining and fostering financial development in the region. This is evidenced by the fact that the z-values for the coefficients increased in importance as institutional variables were incorporated in the model. Evidence, as suggested using both static and dynamic models, show that the more credit is extended to the public sector then the more funding will be channeled towards development of the financial sector (financial markets and stock markets). The government has an obligation to channel resources to productive uses and hence the more resources are availed to the public sector then the higher the chance of the same being converted for the national good. This has proved to be a vital determining factor for financial development in SADC countries during the review period. Thus the public sector still plays an important role within SADC which can be complementary to the private sector.

The impact of per capita GDP had been positive and consistent throughout the analysis which shows that the more output expands in the economy then the more resources are supplied by domestic banks to the productive sectors which will in turn increase the level of development of the financial sector. This means the level of output per person will drive the level of financial sector development within the region as such the allocation of resources for productive purposes is vital to boost output. The more capital is accumulated within the member states then more funds will be availed by the banking institutions in form of loans. An increase in investment in capital improves the amount of domestic credit by banks which acts as a vehicle for future growth. In this regard, within SADC, outlays on additions to the fixed assets of the economies for member states and net changes in inventories are vital for financial development to take place. There can be no meaningful development without the accumulation of capital by member states. Financial development increases as the real value of money goes up which can only be possible with low inflation. This was the case within the SADC region during the review period as supported by the positive influence of inflation on domestic credit by banks. High inflation levels have adverse effects on financial development but evidence shows that within the member states low inflation levels produced beneficial effects on development.

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

There is evidence, using both the static and dynamic models, that savings have a negative influence on financial development. The dynamic model provided strong arguments in that regard by bringing out a high level of significance for savings. Thus within the SADC bloc keeping more of funds as savings and extension of more funds to the government in form of debt would mean that less funds will be available for banks to advance as credit to various sectors for development purposes. These two variables have a crowding out effect on domestic credit by banks. The more funds are advanced to the public sector then the less the amount available for use by the private sector. An increase in the savings rate in an economy diminishes the credit expansion by financial institutions in the SADC region because savings are a withdrawal from the circular flow of income. This might mean also that the more savings grow then the more funds will be diverted for other purposes and not private sector development. The coefficient of savings being negative was not consistent with results by Naceur (2007) and Aduda et al (2012). Government debt does not promote financial development within the SADC region.

The introduction of institutional factors one at a time to see their effect on financial development produced some interesting outcomes. Effect of bringing regulation quality, voice and accountability and an interaction between financial openness with voice and accountability produced new evidence that interest rates, government debt and financial openness have a significant effect on financial development within SADC member states. These variables had been considered as insignificant before introducing institutional variables. Increasing the lending rate adjusted for inflation would promote financial development. The increase in real lending rates means that financial institutions are able to extend more credit into the economy as they get a return which is higher than the inflation rate. Banks are ready to part ways with their cash for a season considering the return which outperforms the inflation rates. There is strong evidence to suggest that financial openness makes a positive contribution to financial development when supported by good levels of democratic accountability. More funds are channeled for development by banking institutions where there is evidence that the governments within SADC are accountable to their citizens and findings showed that there was minimum intervention by the military in politics which was not common in SADC during the review period which is consistent with Yartey (2008) and Chinn and Ito (2005). Financial development improves as the investment profile within SADC improves and also the assurance that law and order are maintained is vital to drive financial development. The coefficients for rule of law as well as voice and accountability were positive and significant which shows the importance of institutional factors on financial development. These results are consistent and comparable with findings by Mandaci et al (2013), Touny (2014), Ayadi et al (2013), Luca and Spatafora (2012).
Overall results show that institutional variables are important in the determination of financial development within the SADC region. The marginal effects of institutional variables remain important in stimulating financial openness to increase growth. The discussion on financial development within a regional block like SADC is incomplete without accounting for the contribution of institutional quality variables.

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CONCLUSIONS AND IMPLICATIONS

This study endeavored to establish the drivers of financial development and the role of institutional quality in the determination of financial development within the SADC region. The study used unbalanced annual panel data for the years 1996 to 2010 for 11 SADC member states. This was done by employing ten (10) exogenous variables to explain the determinants of financial development plus institutional quality variables.

Consistent with other suggestions in literature financial development was positively influenced by credit to the public sector which remained vital even after introducing institutional variables in the model. This shows that as more funds are extended to the public sector there is more effective use of funds as more is channeled for the development of financial markets. The public sector appears to be better placed than the private sector in channeling funds towards financial development. Thus more private public sector partnerships are preferable for financial development to take place in SADC. The growth of per capita GDP had a positive and significant effect which supports the proposition that growth in the economy provides a larger scope for the growth of the financial market. As the member states increase their outlays on additions to the fixed assets of the economy plus the changes in the level of inventories financial development is expected to increase. This is supported by our findings for positive and significant coefficient for gross fixed capital formation variable. Institutional factors helped to reinforce the impact of financial openness on increasing financial development which is evidenced by the positive and significant coefficient for interactive term between financial openness and voice and accountability.

This supports the fact that institutional variables are complementary on financial development within SADC. Thus an improvement in Rule of law and the response of the government to the needs of their citizens as well as economic stability is necessary for enhancing financial development in the region. More funds are channeled for development as real lending rates improve within the region. The level of savings and government debt had an effect of crowding out resources which are meant for financial development. Another explanation of the negative effect of debt is that as it increases expectations in the economy would become negative and the risk premium for the country will also rise which will subsequently reduce the amount of funds channeled to the various sectors in the economy. Thus lower government borrowing is vital for the development of financial markets and proper functioning of domestic banks in SADC member states. This is made possible as governments find other financing options like borrowing offshore. Another important observation was that inflation had a positive and significant effect on financial development. In theory high inflation have adverse effects on the operation of the financial markets as it brings in an element of high uncertainty and thus increases friction in the financial markets. This would suggest that for SADC member states' inflation levels should be kept low if an improvement in financial development is to be realized. Thus realizing single digit inflation remains a priority for SADC member states in line with vision 2020 aspirations. There

ISSN 2053-4086(Print), ISSN 2053-4094(Online)

is still need for future work to look at other regional groupings particularly in Sub Saharan Africa and see how the results would compare with this current study's findings. Future research can also make use of different measures of financial development within the SADC bloc.

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Appendix

Table A1: Indicators of Financial Development for selected countries in SADC (2000-2010)

	South Africa			**Botswana**			**Zimbabwe**		
Year	M2 (% GDP)	Domestic Credit from banking sector (% GDP)	Stock traded % of GDP	M2 (% GDP)	Domestic Credit from banking sector (% GDP)	Stock traded % of GDP	M2 (% GDP)	Domestic Credit from banking sector (% GDP)	Stock traded % of GDP
2000	52.27	152.46	58.31	25.33	-67.50	0.84	22.52	52.24	4.23
2001	53.84	184.34	58.81	28.32	-64.03	1.08	37.48	70.84	22.63
2002	55.87	159.82	70.95	36.59	-25.66	0.91	101.74	164.56	39.50
2003	59.45	163.12	61.11	41.69	-6.29	1.07	119	80.19	23.76
2004	60.53	169.62	74.32	39.77	0.32	0.50	50.31	40.30	2.39
2005	63.84	178.49	81.24	40.31	-5.30	0.44	38.52	55.33	5.94
2006	69.14	192.92	119.71	35.86	-13.42	0.64	74.70	75.52	17.23
2007	74.76	195.34	148.77	37.42	-16.30	0.44	60.65	47.57	16.19
2008	78.77	172.92	145.85	38.88	-11.13	0.89	62.89	50.64	16.02
2009	80.6	184.38	121.13	47.47	-1.00	1.07	55.57	55.63	17.23
2010	75.64	182.24	93.49	40.41	9.35	0.90	54.57	60.78	15.31

Source: Compilation by author – World Bank Development Indicators

Measures of financial development are represented by M2 (liquid liabilities); Credit to private sector and volume of shares traded as percentages of GDP. Variables related to three countries: South Africa, Botswana and Zimbabwe.

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Table A2: Summary of empirical findings and their effect on financial development

Dependent variables	**References**	
Domestic credit by banks	Ayadi et al (2013), Baltagi et al (2007)	
Independent variables – effect on financial development		
Variable	Effect on Financial development	
	Positive	Negative
Gross domestic product (GDP)	Odhiambo (2011), Sogut (2008), Takyi and Obeng (2013), Chinn and Ito (2005), Dorrucci et al (2009), David et al (2014), Yartey (2008), Garcia and Liu (1999), Naceur (2007), Aduda et al (2012), Falahaty and Hook (2011).	Odhiambo (2011), Rachdi and Mensi (2012), Falahaty and Hook (2011), Touny (2014)
Total trade as a % of GDP	Baltagi et al (2007), Rachdi and Mensi (2012), Takyi and Obeng (2013), Dorrucci et al (2009), Falahaty and Hook (2011), David et al (2014), Touny (2014).	Luca and Spatafora (2012), Chinn and Ito (2005)
Inflation	Odhiambo (2011), Sogut (2008), Yartey (2008), Rachdi and Mensi (2012), David et al (2014).	Ayadi et al (2013), Odhiambo (2011), Sogut (2008), Rachdi and Mensi (2012), Takyi and Obeng (2013), Chinn and Ito (2005), Bittencourt (2008), Garcia and Liu (1999), Naceur (2007), Aduda et al (2012).
Legal and democratic quality index (Institutional quality)	Ayadi et al (2013), Baltagi et al (2007), Rachdi and Mensi (2012), David et al (2014), Falahaty and Hook (2011), Chinn and Ito (2005), Luca and Spatafora (2012),	Rachdi and Mensi (2012), David et al (2014), Aduda et al (2012)
Remittances as %GDP	Ayadi et al (2013), Mandaci et al (2013).	
Credit to public sector	Sogut (2008)	Sogut (2008)
Interest rates	Odhiambo (2011), Touny (2014)	Takyi and Obeng (2013), Yartey (2008).
Financial openness	Chinn and Ito (2005), Dorrucci	Baltagi et al (2007)

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(FDI)	et al (2009), Garcia and Liu (1999), Mandaci et al (2013), Touny (2014)	
Financial openness*Legal institutions	Chinn and Ito (2005)	
Political risk	Yartey (2008)	Aduda et al (2012)
Law and order	Yartey (2008), Rachdi and Mensi (2012)	Aduda et al (2012)
Bureaucratic quality	Yartey (2008), Rachdi and Mensi (2012)	Aduda et al (2012)
Democratic accountability	Yartey (2008), Rachdi and Mensi (2012)	Aduda et al (2012)
Corruption	Yartey (2008), Rachdi and Mensi (2012)	Yartey (2008), Aduda et al (2012)
Savings rate	Garcia and Liu (1999), Naceur (2007), Aduda et al (2012)	
Investment rate (GFCF)	Lu et al (2004), Dorrucci et al (2009)	Naceur (2007)

Source: Author's compilation from literature

Table A3: Definition of terms

The table (5) summarizes all the variables used outlining the definitions assumed in this study according to WDI data base. A summary of the expected signs for each variable in relation to the dependent variables is given.

Variable	**Definition**	**Source**	**Expected sign**
Private sector credit	Credit to private sector as a % GDP	WDI	Dependent variables
Domestic credit by banks (proxy of financial development	Credit to all sectors as a % GDP	WDI	
Liquid liabilities	M2 as % of GDP – proxy for financial development	WDI	Positive
Economic growth	Annual % growth in GDP at market prices based on constant United States dollars	WDI	Positive
Trade openness	(Imports + exports)/GDP	WDI	Positive
Financial openness	FDI as % of GDP	WDI	Positive
Government debt	Total external debt as a % of GDP	WDI	Negative
Inflation	Inflation as % of GDP	WDI	Negative
Interest rate	This is the lending rate adjusted for inflation as measured by the GDP deflator	WDI	Ambiguous

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Credit to public sector	Credit by the banking sector minus credit to the private sector as percentage of GDP	WDI	Ambiguous
Savings ratio	Savings as % GDP	WDI	Positive
Investment rate	Gross fixed capital as a % GDP	WDI	Negative
Remittances	Worker remittances received % of GDP	WDI	Positive
FDI flows	FDI net flows % of GDP	WDI	Ambiguous
Regulatory quality/investment profile	Investor protection. Measures the risk to investments in a country being high (value of 0) and low (value closer to 1).	ICRG	Ambiguous
Law and order	Strength, impartiality and legal system as well its observance. Measured from 1(strong law and order) to 0 (weak law and order).	ICRG	Negative
Democratic accountability	Measures how responsive the government is to its citizens. The less responsive the government is the more likely that it will fail. Value ranges from 0 (less responsive) to 1 (more responsive).	ICRG	Positive
Corruption	The level of corruption ranges from 0 (high level of corruption) to 1 (low level).	ICRG	Negative
Political stability and absence of violence (PV)	A measure of government stability, level of internal and external conflicts and ethnic tensions. Measured from values ranging from 0 (high level of political instability) to 1 (low level of political instability)	ICRG	Negative

Source: World Development Indicators (2013)

Table A4.1: Summary statistics for financial development

Stats	DCB	CPUB	pGDP	GFCF	IF	TO	FDI	REM	SR	GD	RIR
Mean	35.59	4.62	1862.56	20.58	30.41	77	3.61	0.59	17.45	66.71	9.13
Max	195.34	62.58	7578.22	40.39	513.91	179	22.36	4.73	45.48	271.55	37.87
Min	-72.99	-84.21	0	0	-1.22	0	-0.73	0	-1.71	0	-72.56
Range	268.33	146.79	7598.22	40.39	515.13	179	23.09	4.73	47.19	271.55	110.42
Sd	53.57	23.15	2083.39	7.38	77.5	29.02	3.64	1.05	10.77	68.47	12.47
Skewne	1.29	-1.15	0.99	-0.11	4.57	0.67	2.02	2.41	0.52	1.05	-2.90

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ss											
Kurtosis	4.59	7.18	2.73	3.19	24.63	3.40	8.69	8.11	2.75	3.04	20.80
N	158	162	162	162	145	162	149	161	161	162	162

Summary statistics obtained from stata 12 based on all explanatory variables and DCB as the only dependent variable. Data is for 11 SADC countries, being unbalanced panels for the period 1996-2012. Variables used: Domestic credit by banks (DCB); Credit to public sector (CPUB), per capita GDP (pGDP); Gross Fixed capital formation (GFCF); Inflation (IF); trade openness (TO); Government debt (GD); Real interest rate (RIR); Foreign direct investment (FDI); Remittances (REM); Savings. Detailed variable definitions are provided in table 5.

Table A4.2: Correlation analysis using financial development

Stats	DCB	CPUB	pGDP	GFCF	IF	TO	FDI	REM	SR	GD	RIR
DCB	1										
CPUB	0.7454	1									
pGDP	0.5028	0.0195	1								
GFCF	-0.0349	-0.2323	0.4040	1							
IF	-0.1407	-0.0389	-0.2092	-0.2770	1						
TO	-0.0346	-0.1404	0.4269	0.3484	0.0455	1					
FDI	-0.2321	-0.0803	-0.1875	0.0946	-0.1429	-0.0692	1				
REM	0.214	0.0621	0.4500	0.4028	-0.1674	0.4625	-0.1625	1			
SR	-0.1517	-0.5483	0.5657	0.5034	-0.1772	0.3750	-0.0236	0.2437	1		
GD	-0.25	0.1727	-0.6171	-0.4032	0.4983	-0.3809	-0.0064	-0.2363	-0.6771	1	

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RIR	0.0139	0.1176	-0.1207	-0.0389	-0.7039	-0.3683	0.3399	0.0251	-0.1176	0.0556	1

Output from stata 12 using pairrwise correlation used to check strength of relationship between DCB, a dependent variable and 10 explanatory variables as defined in table 7.

Pairrwise correlation used to check strength of relationship between a dependent variable Domestic credit by banks (DCB) measured as credit to all sectors as a % of GDP and explanatory variables: Credit to public sector (CPUB) measured as credit by banking sector minus credit to private sector as a % of GDP, economic growth (pGDP) measured as gross domestic product divided by the population, inflation (IF) measured as the costs to an average consumer of acquiring a basket of goods and services, trade openness (TO) measured as exports plus imports as a percentage of GDP, Financial openness (FDI) measured as inflows of FDI as a percentage of GDP, Remittances (REM) measured as worker remittances received as a % of GDP, Savings rate (SR) measured as total savings as % of GDP, public debt (GD) measured as total external debt as a % of GDP, real interest rate (RIR) measured as the lending rate adjusted for inflation as measured by the GDP deflator.

Table A4.3: Results based on the static model using DCB as the dependent variable

	Fixed effects models					**Specific model**
Variables	1	2	3	4	5	6
CPUB	0.938 (32.89)*	0.907 (16.85)*	0.909 (17.73)*	0.863 (10.18)*	0.852 (9.40)*	0.887 (15.83)*
pGDP	0.006 (6.13)*	0.006 (4.43)*	0.006 (4.29)*	0.006 (4.04)*	0.006 (4.13)*	0.0061 (4.89)*
GFCF	0.143 (0.78)	0.204 (0.85)	0.210 (0.90)	0.182 (0.81)	0.171 (0.75)	
IF	0.014 (0.40)	0.028 (1.38)	0.025 (1.01)	-0.051 (2.61)*	0.051 (2.47)*	0.075 (3.23)*
FDI	0.126 (0.75)	0.121 (0.66)	0.136 (0.67)	0.089 (0.42)	0.0952 (0.45)	
TO	0.105 (1.31)	0.067 (0.61)	0.072 (0.61)	0.0260 (0.27)	0.025 (0.25)	
Rem	-3.360 (2.02)*	-2.56 (1.20)	-2.74 (1.54)	-1.52 (0.71)	-1.401 (0.64)	
SR	-0.068 (0.76)	-0.112 (0.91)	-0.112 (0.88)	-0.103 (0.68)	-0.117 (0.70)	
RIR	0.104 (1.29)	0.129 (2.04)*	0.124 (1.86)	0.164 (2.60)*	0.157 (2.33)*	0.172 (2.56)*
Constant	11.886 (1.71)	-0.650 (0.007)	-0.161 (0.02)	12.90 (1.18)	13.12 (1.16)	14.05 (1.41)
VA		20.302	20.889	27.01	27.06 (2.62)*	24.325

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		(2.47)*	(2.65)*	(2.98)*		(2.28)*
GE			-3.73 (0.24)	-6.13 (0.67)	-6.315 (0.71)	
PV				15.22 (5.10)	14.001 (3.10)*	19.39 (3.67)*
RL				-42.885 (3.51)*	-41.549 (2.75)*	-48.417 (4.64)*
RQ					2.06 (0.50)	
CC					-0.632 (0.09)	
R^2	75.76	80.67	80.41	83.71	83.60	83.67
Rho	0.98	0.98	0.98	0.98	0.98	0.98
N	123	100	100	100	100	107

Hausman test used to select the best model for the data (using random effects model and fixed effects model 1). All the other models were estimated using the fixed effects model. The figures in parenthesis are the t-statistics for the fixed model. * and ** represent significance at 5% and 10% level. Inside [ ] are the probability values. Variables are as defined in table 5 and institutional quality is represented by voice and accountability (VA) and political stability and absence of violence (PV) and rule of law (RL).

Table A4.4: Dynamic model - Domestic credit by banks

Model Variables	1	2	3	4	5
DCB_{t-1}	0.226 [0.002]	0.263 [0.002]	0.256 [0.003]	0.250 [0.001]	0.229 [0.000]
CPUB	0.792 (7.33)*	0.801 (4.72)*	0.590 (3.39)*	0.608 (3.79*	0.706 (7.23)*
pGDP	0.004 (3.84)*	0.004 (5.63)*	0.004 (2.06)*	0.004 (2.58)*	0.003 (3.52)*
GFCF	0.335 (2.51)*	0.343 (2.08)*	0.250 (1.77)**	0.311 (1.62)	0.317 (2.33)*
IF	-0.018 (0.61)	0.113 (0.91)	0.022 (1.46)	0.022 (1.79)**	-0.022 (0.96)
TO	0.051 (0.55)	-0.022 (0.34)	-0.009 (0.13)	-0.020 (0.32)	0.031 (0.53)
FDI	0.213 (0.95)	0.151 (0.69)	0.245 (1.14)	0.253 (1.08)	-
REM	-1.709 (0.85)	-1.85 (0.87)	0.317 (0.11)	-0.543 (0.24)	-1.65 (0.93)
SR	-0.19 (3.35)*	-0.396 (3.46)*	-0.247 (2.92)*	-0.187 (2.02)*	-0.223 (3.26)*
GD	-3.274 (1.50)	-5.85 (2.13)*	-5.37 (1.94)**	-4.65 (1.57)	-2.81 (1.69)**
RIR	-0.050 (0.65)	0.134 (5.16)*	0.156 (3.57)*	0.186 (3.92)*	-0.037 (0.50)
Constant	15.488 (2.56)*	-14.59 (0.85)	18.526 (2.67)*	1.20 (0.15)	16.30 (2.40)*
RL		64.04 (3.62)*			
VA				23.05 (2.19)*	
FDIVA					0.563 (1.76)**
N	107	68	68	68	107
Wald	3230.17	733.92	555.25	1753.72	7661.71

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Chi2					
p-value	0.0086	0.0000	0.0000	0.0000	0.0000
Auto correlation					
z-test 1	-1.3629 [0.1729]	1.2135 [0.0045]	-1.5658 [0.1174]	-1.521 [0.1283]	-1.3923 [0.1638]
z-test 2	1.6008 [0.1094]	-0.8934 [0.2389]	-0.5058 [0.6130]	-0.53581 [0.5921]	1.0551 [0.2914]

Notes: The figures in parenthesis are the z-statistics for the model. * and ** represent significance at 5% and 10% level. Figures in [ ] are the probability values. Robust estimator was used after one step estimator and autocorrelation tests were done.

ISSN 2053-4086(Print), ISSN 2053-4094(Online)