

**REGIONAL FINANCIAL INTEGRATION AND ITS IMPACT ON
FINANCIAL SECTOR DEVELOPMENT: THE CASE OF SOUTHERN
AFRICA**

By

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ABSTRACT

The study investigated the impact of regional financial integration on financial development with specific focus on the SADC protocols on trade and finance and investment. A total of 14 countries made up the study sample and the panel cointegration fully modified ordinary least squares model alongside the GMM were used to estimate the nature of impact. Study findings showed regional integration through the protocol on trade had a positive and significant impact on size and efficiency of the banking sector using the FMOLS estimator. GMM estimations for the same variables were largely insignificant. The results also showed a positive impact of the trade protocol on stock market capitalization but a negative and insignificant impact on stock turnover. The finance and investment protocol had a negative and insignificant relationship with broad money and a positive and significant impact on private sector credit for both estimators. The protocol was found to have had no significant effect on stock market development. The impact of the finance protocol was not significant enough to be detected in global integration measures, implying their implementation may not have significantly improved global integration for SADC countries. The study also uncovered the complimentary relationship between institutional quality and social capital in the financial development process and recommended the development of outward looking integration policies which focus on regional integration with the outside world.

Key terms: Regional financial integration, Financial development, SADC

**UKUHLANGANISWA KWERIJINI KWEZEZIMALI KANYE NOMPUMELA
WAKHO KWINTUTHUKO YE-SECTOR YEZEZIMALI ISIBONELO NGENINGIZIMU
NE-AFRIKA**

ISIFINYEZO ESISUKETHE UMONGO WOCWANINGO

Ucwaningo luphenyisise ngomphumela wokuhlanganiswa kwerijini kwezezimali kwintuthuko yezezimali ngokugxila kakhulu kuma-protocol eSADC kwezokuhweba, ezezimali kanye nezotshalomali. Isampuli yenziwe ngamazwe angu 14 kucwaningo kanti kuhlanganiswe iphaneli yezikwele ezivamile ngokuhambisana ne-GMM ukulinganisa inhlobo nomphumela. Umphumela wocwaningo ukhombise ukuthi ukuhlanganiswa kwerijini nge-protocol kwezohwebo kube nomphumela omuhle kanye nobalulekile ngosayizi kanye nokusebenza kahle kwe-sector yezamabhangi, ngokusebenzisa isilinganiso se-FMOLS estimator. Izilinganiso ze-GMM kuma-variable afanayo akubanga namphumela obalulekile. Imiphumela yocwaningo ikhombise umphumela omuhle kwi-protocol yezohwebo kuma-stock market capitalisation kodwa kube nomphumela omubi nongabalulekile kuma-stock turnover. I-protocol yezezimali notshalomali ibe nomphumela omubi nobudlelwane obungabalulekile kodwa onomphumela owenabili kwezemali kanye nomphumela obalulekile kwizikweledu zomkhakha wangasese kuwo womabili ama-estimator. I-protocol itholakale ingenomphumela obalulekile kwi-stock market development. Umphumela we-protocol yezezimali awubanga ngobaluleke ngokwanele ukuze ubonakela ezikalini zokuhlanganiswa emkhakheni wamazwe omhlaba, okusho ukuthi ukusetshenziswa kwe-protocol ngeke kwaba nokuhlanganisa okubalulekile emkhakheni wamazwe omhlaba kumazwe e-SADC. Ucwaningo luvundulule ubudlelwane bokusebenzisana phakathi kweqophelo lezikhungo kanye ne-social capital kwinqubo yezentuthuko yezezimali kanti futhi lwancoma ukuthi kube nemigomo ebonakalayo yokuhlanganisa egxila ekuhlanganisweni kwerijini namazwe angaphandle omhlaba.

AMATHEMU ABALULEKILE Ukuhlanganiswa kwerijini kwezezimali, intuthuko kwezezimali, amazwe eSADC.

FINANSIËLE STREEKSINTEGRASIE EN DIE UITWERKING DAARVAN OP ONTWIKKELINGS IN DIE FINANSIËLE SEKTOR: DIE SUIDER-AFRIKAANSE GEVAL

OPSOMMING

Die uitwerking van finansiële streeksintegrasie op finansiële ontwikkeling, met 'n spesifieke fokus op die SAOG-protokolle rakende handel, finansies en beleggings, is deur die studie ondersoek. Die steekproef vir die studie het uit altesame 14 lande bestaan en die volledig gewysigde, gewonekleinstekwadrante- (*FMOLS*) paneelkoïntegrasiemodel is tesame met die veralgemeende momentemete metode (*GMM*) gebruik om die aard van hierdie uitwerking te bepaal. Die studie het met behulp van die *FMOLS*-beramer bevind dat streeksintegrasie deur middel van die handelsprotokol 'n positiewe en beduidende uitwerking op die grootte en doeltreffendheid van die banksektor het. Die *GMM*-skattings vir dieselfde veranderlikes was in groot mate onbeduidend. Uit die resultate blyk dit dat die handelsprotokol 'n positiewe uitwerking op aandelemarkkapitalisering het, maar 'n negatiewe en onbeduidende uitwerking op aandeleomset het. Die finansiële en beleggingsprotokol het 'n negatiewe en onbeduidende verwantskap met breë geld, en albei beramers het 'n positiewe en beduidende uitwerking op privaatsektorkrediet. Daar is bevind dat hierdie protokolle geen beduidende uitwerking op aandelemarkontwikkeling het nie. Die uitwerking van die finansiële protokol was so onbeduidend dat dit nie in maatstawwe van globale integrasie opgespoor kon word nie, wat beteken dat die implementering daarvan moontlik nie globale integrasie vir die SAOG-lande beduidend verbeter het nie. Die studie het hierbenewens die aanvullende verwantskap tussen institusionele gehalte en sosiale kapitaal in die proses van finansiële ontwikkeling blootgelê en beveel aan dat integrasiebeleide met 'n uitwaartse fokus op streeksintegrasie met die buitewêreld ontwikkel moet word.

Sleuteltermes: Finansiële streeksintegrasie, finansiële ontwikkeling, SAO

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DEDICATION

I dedicate this thesis to my parents, Mr Andrew Tayero and Mrs Stella Tayero. It has been a long and winding road but you taught me well.

DECLARATION

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I declare that the above thesis is my own work and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

J Tembo

SIGNATURE

29 June 2018

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LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AfCFTA	African Continental Free Trade Area
AfDB	African Development Bank
AFMI	African Financial Markets Initiative
AIC	Akaike Information Criterion
AREAER	Annual Report on Exchange Arrangements and Exchange Restrictions
ASEAN	Association of Southeast Asian Nations
AU	African Union
BM	Broad Money
DOLS	Dynamic Ordinary Least Squares
EU	European Union
FD	Financial Development
FDI	Foreign Direct Investment
FINVPRO	SADC Finance and Investment Protocol
FMOLS	Fully Modified Ordinary Least Squares
FPE	Final Predictor Error
FTA	Free Trade Area
GDP	Gross Domestic Product
GDPC	Gross Domestic Product per Capita
GFI	Global Financial Integration
GFIQSC	Interaction of Global Interaction, Institutional Quality and Social Capital
GMM	Generalized Method of Moments
HQ	Hanann- Quinn Information Criterion
IMF	International Monetary Fund
INFL	Rate of Inflation
IQ	Institutional Quality
IQSC	Institutional Quality and Social Capital Interaction
IV	Instrumental Variables
KAOPEN	Capital Account Openness Index

MKTCAPITA	Stock Market Capitalization
NAFTA	North American Free Trade Agreement
OECD	Organization for Economic Co-operation and Development
OLS	Ordinary Least Squares
PSC	Private Sector Credit
RISDP	Regional Indicative Strategic Development Plan
SACU	Southern African Customs Union
SADC	Southern African Development Community
SADCC	Southern African Development Coordinating Conference
SC	Social Capital
TO	Trade Openness
TRADEPRO	SADC Protocol on Trade
TURNOVER	Stock Market Turnover
UNCTDA	United Nations Conference on Trade and Development
UNECA	United Nations Economic Commission for Africa
VECM	Vector Error Correction Model
WDI	World Development Indicators
WGI	World Governance Indicators
WTO	World Trade Organization

CHAPTER ONE

INTRODUCTION AND BACKGROUND

1.1 Introduction

The Inter-American Development Bank (2015, p.102) defines financial integration as “the process through which a country’s financial markets become more closely integrated with those of other countries or with those in the rest of the world”. This definition implies the elimination of barriers for foreign financial institutions from some or all countries to operate or offer cross border financial services in others (ibid). When financial links are deepened and broadened within a region comprising of two or more countries that form of integration is referred to as regional financial integration (Wakeman-Linn and Wagh, 2008, p.2). Regional financial integration has become of paramount importance to nations worldwide. The Southern African Development Community (SADC) region is no exception to this phenomenon and since its formation has always sought to promote regional integration across all spheres amongst member countries. This has seen the regional bloc signing 26 protocols as of 2015, which focus on a wide range of areas including trade, finance and investment, energy, transport and communication amongst others (SADC, 2015).

According to the African Financial Markets Initiative (AFMI, 2014), “recognizing the need for the pooling of financial resources, member states are beginning to support regional capital market initiatives to overcome the limitations of their fragmented capital markets and consolidate their markets as a vehicle for promoting economic development in the region”. However, despite ratification and implementation of these economic agreements by individual SADC countries, we still have differences in levels of economic growth, economic stability and significant differences in levels of financial development amongst SADC countries. Historically, financial integration has largely been associated with positive economic growth as demonstrated by the works of Sedik and Sun (2012), Zenasni (2015), Klein and Olive (2000), Levine (1997), and Quinn (1997). Further studies by David, Mlachila and Moheeput (2014) and Mishkin (2007a) remove ambiguity on the link between financial integration and

economic growth by reflecting financial integration as a channel of financial development which leads to economic growth. Therefore, according to these studies financial development takes place first, before economic growth occurs. On the other hand, financial development has in some cases, been observed to be dependent on other factors such as institutional quality (Law and Azman-Saini, 2012) and social capital (Guiso, Sapienza and Zingales, 2004). Institutional quality elements include a strong legal system, property rights, a sound framework for regulation and corporate governance (Mishkin, 2007b, pp.1-2), whilst social capital refers to the “networks together with shared norms, values and understandings that facilitate co-operation within or amongst groups” (OECD, 2015, p.103).

Social capital also involves civic involvement, quality of civil service and the level of confidence the public has in public institutions (Putnam et al., 1993; Sabatini, 2007; Knack and Keefer, 1997). It has been suggested that low levels of institutional quality and social capital may limit the level of financial development of a country. The present study contributes to the body of knowledge by examining the impact of institutional quality and social capital in the financial development process after regional integration has occurred.

Are the differences in levels of financial development amongst countries in a financially integrated bloc such as SADC a result of differences in institutional quality and social capital? Does regional integration result in greater global financial openness and better links with the outside world for regionally integrated countries? Such links have not been uncovered in previous studies. Therefore, this study sought to examine the links between regional financial integration and global financial openness for the integrated region and how these links impact financial sector development taking into account the institutional quality and social capital of individual countries.

1.2 An overview of regional integration amongst SADC countries

The SADC region has its origins from the Southern African Development Coordinating Conference (SADCC) established in 1980 to foster economic cooperation amongst member states (SADC, 2016). SADCC transformed into the Southern African Development Community (SADC) in 1992 to promote development, economic growth and enhance the standard and quality of life of the peoples of

Southern Africa through a legally binding arrangement rather than just cooperation (ibid, 2016). The region is at present made up of 15 countries (see figure 1.1 below) and these have sought to promote integration through the signing of protocols. The protocols represent legally binding agreements amongst member countries and once ratified, all member countries are expected to achieve the objectives and specific procedures of these protocols. The protocols are far reaching and their focus areas include education and training, energy, health, development and tourism, transport and communication amongst others. Of major interest to this study are the protocols on trade introduced in 1996 and ratified in 2003, and the finance and investments protocol introduced in 2006 and ratified in 2010. The protocol on trade intended to liberalise intra-regional trade by creating mutually beneficial trade arrangements, thereby improving investment and productivity in the region (SADC, 2016). Through this protocol, the SADC grouping were expected to eliminate barriers to intra SADC trade, eliminate import and export duties, quantitative restrictions on exports and imports and all other non-tariff barriers to trade, and remove any obstacles to the free movement of labour, goods and services.

Figure 1.1: Countries in the SADC region



Source: SADC (2016)

The trade protocol also called upon member countries to cooperate in customs matters and liberalize their service sectors to countries within the community to facilitate economic development of SADC countries. However, in his criticism of the protocol, Flatters (2001) notes that rules of origin specified in the protocol are highly restrictive and explicitly designed to protect rather than liberalize regional industries. Accordingly, this would raise production costs and reduce international competitiveness of affected industries, many of which are central to regional development (ibid, 2001). In support of these views Mudzonga (2008) notes that “despite adoption of the protocol, intra-regional liberalisation in SADC has generally been cautious”.

Member states have delayed or back-loaded their adjustment in order to protect domestic industries and maintain revenue streams from custom duties. Mudzonga (2008) also acknowledges that the protocol would not require that all conditions be met by member countries as some aspects of regional integration specified that the establishment of a Free Trade Area (FTA) could still be proclaimed irrespective of readiness by some SADC member states. Also on a positive note, Peters (2010)

states that the trade protocol set a first crucial deadline, which subsequently strongly influenced all further planning schedules for the trade-led regional integration.

Hartzenberg (2012, p.3) concurs with this view and notes that the trade protocol was central to the implementation of the SADC's economic integration agenda. Through the protocol, member countries embraced economic integration as opposed to cooperation and committed to a rule based dispensation for economic integration (ibid, p.13). The protocol on trade was further complemented by the protocol on trade in services, which called on SADC countries to progressively liberalize intra-regional trade in services. As a result of the need to promote further regional integration, accelerate economic growth, employment and investment, SADC countries went further and came up with the protocol on finance and investment in 2006.

The finance and investment protocol called for increased cooperation, coordination and management of macroeconomic, monetary and fiscal policies and establishment of macroeconomic stability as a precondition to sustainable economic growth and for the creation of a monetary union in the Region (SADC, 2016). This would be achieved through coordination amongst central banks on investments and exchange controls, harmonization of legal and operational frameworks, facilitation of regional foreign direct investments, cooperation in regional and capital markets and establishment of a regional clearing and settlement system amongst others. Latham and Watkins (2013) acknowledge that "The protocol is an important regional investment facilitation tool as it provides investors with the ability to enforce their rights and protect their investments directly against the host State through its adoption of binding international arbitration laws".

According to a study by Finmark Trust (2011), 50% of SADC Member States have achieved at least half of the protocol's country-level commitments and some of those have reached even higher levels, including reaching levels of international best practice. However, the study also urges caution on drawing conclusions that the region is fully financially integrated and notes that the protocol is only a framework for the early stages of integration, preparation, cooperation and a degree of harmonization. In this regard, progress should not be confused with complete financial integration.

Despite the region having ratified these protocols, views on the extent of regional integration amongst SADC countries show that there is concurrence that the region has not achieved complete integration but has made strides towards achieving partial integration. For instance, Aziakpono, Kleimeier and Sander (2012) investigate the state, development and drivers of banking market integration amongst SADC countries. Their findings show increasing integration in loan and deposit markets through convergence of national retail interest rates. Aziakpono, Kleimeier and Sander (2012) also note that the integration process is not developing uniformly. Their study calls for further regional integration through a selective expansion of the common monetary area.

However, Aziakpono, Kleimeier and Sander (2012) only touch on integration of banking sector variables and ignores other aspects of regional financial integration such as stock market development, as well as the extent of harmonization of regulatory frameworks. These findings agree with those of an earlier study by Rossouw (2006), which shows that between the years 1999 and 2004 SADC countries were able to meet their macro-economic targets on aspects like inflation, budget deficits, government debt and foreign reserves. From these findings, the study concludes that it is possible for the region to achieve the highest level of integration through a monetary union and a single central bank for the region. Aziakpono (2008) also examines the degree of financial and monetary autonomy and interdependence between South Africa and the other Southern African Customs, Union (SACU) countries. His results show a high level of dependence of the other SACU countries' financial systems on South Africa's financial system, which suggests that a higher level of integration through a monetary unification with a single central bank (South African Reserve Bank) and monetary policy for the union is feasible. Further studies by AfDB (2010), Wang et al. (2007 and Nielsen, Uanguta and Ikhide (2005) show that there is movement towards regional integration though there is acknowledgement that countries are at different levels in terms of moving along with the integration process.

SADC's strategic development plan (RISDP) formulated in 2001, specifies integration milestones for the region. The milestones in order include the setting up of a regional free trade area as the first step, followed by a customs union, a common market, monetary union and a single currency as the last milestone (SADC,

2016). Observation shows that the SADC region`s movement towards integration is in some way related to the theories proposed by Oxelheim (1990) and Ravenhill (2004). Oxelheim`s (1990) theory of total financial integration splits financial integration into direct and indirect integration, with direct integration coming from capital markets and indirect integration coming through the goods markets, political and cultural integration .

At the same time Ravenhill (2004) proposes a hierarchy for regional integration starting with a free trade area, followed by a customs union, common market and lastly and economic/monetary union, which represents the highest level of regional integration. Observations show that since implementation of the protocol on trade commenced, tariffs have significantly been reduced at the same time intra-SADC trade has more than doubled; there is increased trade of goods and services across borders, more regional joint ventures (SADC, 2016), giving credence to Ravenhill`s theory of a hierarchical order of regional integration .

The protocol on trade removed trade barriers for goods and services and facilitated the development of a form of free trade area. On the other hand, the finance and investment protocol achieved greater harmony in terms of taxation and exchange control policies creating a semblance of a customs union. In terms of Ravenhill`s theory, these are the two stages of integration which have been achieved by the region so far. However, the common market and economic and single currency milestones are still yet to be achieved. The only common monetary union in the region just covers four countries, namely South Africa, Namibia, Lesotho and Swaziland. Hence, the highest level of regional integration in the form of monetary union as specified by Ravenhill (2004) is yet to be achieved. Similarly, in line with Oxelheim`s theory, total financial integration is still yet to be achieved in the region. There are signs of indirect financial integration of goods markets and cultural integration through migration, at the same the same time direct integration through setting up of subsidiary banks across borders, however, rates of return on investments across borders are still significantly different, an indication that total financial integration as specified by Oxelheim is still to be achieved. From these observations we can say that the SADC region has achieved partial but not complete integration. The present study intended to show the extent to which this partial integration has affected the development of financial markets across the region.

1.3 Overview of the financial sector of SADC

The financial sector represents one of the biggest opportunities for growth across the African continent (KPMG, 2013). The successful expansion of financial services to include the lower income and 'unbanked' sectors of the continent's population has the ability to provide jobs, create safety networks, and ultimately have a hand in reducing poverty (ibid, 2013). In its quest to achieve the aforementioned, the SADC community has tried to build towards a market driven regional financial services sector through advocating for liberalized financial markets. This has gone on to shape the financial markets structure of the region.

The financial sector of SADC countries is made up of different financial intermediaries which include; central banks, commercial banks, investment banks, pension funds, insurance companies, microfinance institutions as well as bond and stock markets. The level of activity and development of these varies from one country to another. However, across the region, a study by Finmark Trust (2013) shows that the insurance sector has the greatest opportunity for growth as 94.5% of the population in the region is not formally insured. In the region, South Africa has the best developed markets which include highly sophisticated stock exchange and a significantly bonds market (Mahawiya, 2015, p.7). As a result, in some instances South Africa's financial sector dominates the region more than that of other regional countries (ibid, 2015, p.7).

Table 1.1: SADC banking sector indicators

	Private sector credit Percent of GDP Average (1995-2015)	Broad Money Percent of GDP Average (1995-2015)
Angola	9.68	25.46
Botswana	-18.85	39.3
DRC	3.42	6.75
Lesotho	-3.38	35.53
Madagascar	13.9	21.65
Malawi	18.87	21.78
Mauritius	89.22	92.04
Mozambique	14.35	29.73
Namibia	48.2	45.67
Seychelles	74.86	78.03
South Africa	162.81	64.96
Swaziland	13.51	23.12
Tanzania	12.72	21.75
Zambia	31.01	20.65
Zimbabwe	46.92	133.36

Source: Author compilation from WDI indicators

The SADC financial sector still has low levels of development and is mainly dominated by the banking sector. Table 1.1 shows the banking sector indicators for the years 1995 to 2015. As expected South Africa have the highest average private sector credit as percentage of GDP. The Seychelles and Mauritius also have high private sector credit percentages of 74% and 89 % respectively. The higher private sector credit figures in these countries are indicative of the high efficiency of financial intermediaries in these countries in allocating credit to the private sector. It is also indicative of the investment opportunities available in the countries which are perceived to be more attractive than those of other regional countries. The rest of the remaining 12 countries have lower private sector credit percentages with all of them failing to reach the 50% mark. This might be reflective of the efficiency of the financial sector in these countries with less of the credit allocation going to private

enterprise in contrast with South Africa, Seychelles and Mauritius. This might imply that the public sector dominates in terms of credit allocation; therefore most of the financial intermediation in these countries might not be for productive purposes.

The lower private sector credit in the 12 countries may also be a result of fewer attractive investment opportunities there. In terms of liquidity of the sector measured by broad money, Zimbabwe has the highest average broad money to GDP percentage though this might be spurred by the hyperinflationary period the country went through. Zimbabwe aside, Mauritius, Seychelles and South Africa again are shown to have the most liquid banking sectors as they have the highest broad money percentages. These broad money indicators again confirm the size and depth of the financial sector in these countries when compared to other regional countries. The remaining 11 countries have lower broad money to GDP percentages below 50%, implying lower levels of monetization.

The banking indicators also confirm that financial markets in the SADC region are not that well developed. When financial markets are not that well developed, institutions such as stock exchanges and capital markets will also be limited. Such a scenario may also be true of the SADC region. South Africa is the only country with recognized bond and securities exchanges. Additionally, the AFMI (2014) picks South Africa, Namibia, Botswana Tanzania and Mauritius as the only countries in the region with advanced bond markets whilst for the remaining countries, the market is said to be still developing or non-existent. This implies long term funding of both private and public sector projects in the greater part of the region is limited.

In terms of stock markets, of the 15 countries in the region, 5 countries either do not have a stock exchange or have a stock exchange which has seen not more than 5 years of trading. Table 1.2 shows stock market data for SADC countries.

Table 1.2: SADC stock market indicators

	Listed Firms	Market Capitalization (Percent of GDP)	Stock Turnover Ratio (Percent)
Angola	No stock exchange		
Botswana	35	2.29	6.21
DRC	No stock exchange		
Lesotho	No Listing		
Madagascar	No stock exchange		
Malawi	13	28.45	7.81
Mauritius	75	61.96	8
Mozambique	6	6	27
Namibia	8	19.91	1.49
Seychelles	8	3.22	0.07
South Africa	303	233.95	31.79
Swaziland	6	31.56	1
Tanzania	28	1.86	6
Zambia	25	9.29	0.76
Zimbabwe	63	154	7.44

Source: WDI and ASEA 2015 indicators

South Africa has the most developed stock market in the region with the highest number of listed companies, greatest market capitalization as a ratio of GDP as well as the highest stock turnover. Mauritius and Zimbabwe rank second and third after South Africa in terms of stock market development with Mauritius having 75 listed firms and Zimbabwe 63. The market capitalization percentages of the two countries are also quite high with Zimbabwe having the second highest market capitalization to GDP after South Africa. The remaining countries have less than 30 firms each listed on their exchanges, implying limited use of equity financing by companies operating in these countries. South Africa's stock turnover ratio of 31.79% is the highest in the region indicating a more liquid and more efficient stock market as compared to other regional countries. The next best stock turnover ratio is Malawi's 7.8%, implying that the stock markets in the region are illiquid and inactive. However, despite the low levels of stock market development, there is a general upward trend in terms of

market development with countries such as Angola preparing to open their own exchanges. Furthermore, the already existing stock exchanges continue to have more listings with Zambia and Tanzania listings growing by 100% and 400% respectively from the years 2006 to 2015. With increasing volumes traded, there is also movement towards automated trading with almost 50% of the current regional stock exchanges having their systems automated (Mahabirsingh, 2016). With automation, there is opportunity of increased stock markets integration through sharing of the same trading platform. However, could changes such as increased listings have been brought about by increased integration through the trade and finance and investment protocol? These are the aspects investigated in the present study.

1.4 Statement of the problem

Empirical studies by Frey and Volz (2011), Demartino and Grabel (2003), Ravenhill, (2004), Bhatia et al. (2009), Garcia-Herrero and Wooldridge (2007) and Frankell (1997) have shown differences in the nature of benefits accruing from regional financial integration as opposed to global financial integration. One of the arguments put forward is that regional financial integration has positive effects on financial development as it provides a platform for lowly developed financial markets to pool their savings together and at the same time increase efficiency through minimization of information asymmetry and reduction in transaction costs (Garcia-Herrero and Wooldridge, 2007; UNECA, 2008). On this backdrop, regional blocs such as SADC have signed agreements on trade and investment, which call upon member countries to liberalize their capital accounts to enable regional financial integration (SADC, 2016). The aim of these agreements was to foster regional integration by allowing the SADC region to be a free trade area by 2008, a customs union by 2010 and a common market by 2015 (SADC, 2015).

However, despite these agreements having been signed and ratified by all regional countries, one can observe that there are still notable differences in terms of economic growth, size and efficiency of financial markets amongst SADC countries. The situation is the same amongst other blocs that have gone down the same path such as Southeast Asian Nations (ASEAN) bloc. The ADB (2013, p.3) notes that despite the creation of the ASEAN bloc, standard measures of financial development

such as deposit money bank assets, stock market capitalization, and value of bonds outstanding as a proportion of GDP show considerable differences across the ASEAN. This put into question the impact that regional financial integration had on the financial development of member countries and made it imperative to investigate if regional financial integration really did result in financial development as hypothesized in previous studies.

Furthermore, previous studies have not provided adequate empirical explanation of the mechanism through which regional integration may be linked to financial development. Marszk (2014), UNCTAD (2013) and Blomstrom and Kokko (1997) argue that regional integration enhances the attractiveness of the integrated region through removal of trade barriers, enlarged markets and the possibility of protection provisions. In this way, both intraregional FDI and FDI inflows from non-member countries are expected to increase. This raises the question as to whether regional integration enhances the global links between the integrated countries and the outside world (global financial integration). It also puts into perspective the effect of capital controls on capital flows for countries in an integrated region. Would capital account openness for regional countries be expected to improve under a regional integration framework and how would such changes impact financial development of the integrated countries. Previous studies thus have not investigated the link between regional integration, global financial openness and financial development.

Again, previous studies have adopted either *de jure* or *de facto* indicators as their measure of global financial openness (see Gehringer, 2013; Bekaert et al., 2011; Lane and Milesi Ferretti, 2007). However, both indicators have their own weaknesses. *De facto* measures do not adequately indicate the intensity of controls on the capital account of a country (Chinn and Ito, 2007, p.3) at the same time, *de jure* scoring indicators might give the picture that an economy is open when it is actually closed and vice versa (Gehringer, 2013, p.7). This might lead to misleading conclusions, and at the same time financial literature has not indicated whether there are any significant differences in findings if one indicator is used in place of the other. This validated the need to apply both indicators to the same variables in a single study to determine the actual variables which could be directly linked to changes brought about by regional integration. In terms of methodology, most of the previous

studies for instance Soumia and Abderezzak (2013), Yang (2012), Maskay (2012) and Masten et al. (2010) have applied the Arellano and Bond (1991) GMM estimator when investigating the finance growth nexus because of its ability to handle endogeneity and generate efficient estimators that account for serial correlation .

However, GMM is not precise for long panel when time periods are more than cross sections (Bond et al., 2001; Pesaran and Smith, 1995). Therefore, the study had to investigate if a method with the ability to handle a longer time dimension could generate more or less similar estimates to the GMM estimates. Therefore, the study applied the cointegrated panel tests alongside the GMM estimation. On the other hand, studies by Cherif and Dreger (2014), Law and Azman-Saini (2012), Huang (2010), Sangnier (2011), and Guiso et al. (2004) have shown that good institutional quality and social capital are preconditions and significantly enhance financial development and economic growth. However, countries have different economic and social structures. Some have more formal structures as compared to others, at the same time there are also disparities in civil involvement and levels of confidence in institutions amongst countries. Given these differences, would the impact of regional integration on financial development be similar across countries? The role of institutional quality and social capital in the financial development process in the context of regional integration and its link with global financial openness represented an area of study which had not been adequately covered through empirical studies. It is these issues which justified the need to determine the extent to which regional financial integration impacted financial development taking into account its effects on global financial openness and country levels of institutional quality and social capital.

1.5 Hypotheses

The study placed focus on the following hypotheses:

Hypothesis 1: Regional financial integration improves global integration and sequentially increases the size of financial markets for regional countries.

Financial theory suggests that regional financial integration may lead to increased investment inflows as domestic firms gain greater access to foreign financial markets and foreign firms invest in domestic financial markets. The removal of barriers to trade, and the possibility of having an enlarged market create expectation for

increased FDI inflows from non-member countries outside the region (Marszk, 2014; UNCTAD, 2013). Such changes may in turn improve the regional countries integration with other countries around the globe and involuntarily raise the levels of capital account openness of regional countries. Consequently, such changes may result in an increase in the size of domestic financial markets (AfDB, 2010; Ravenhill, 2004; Giannetti et al., 2002).

The hypothesis is implying that regional financial integration improves links with other global countries for regional countries through increased FDI inflows. Allowing the entry of foreign capital investments into domestic financial markets involuntarily improves capital account openness and raises the liquidity levels and stock market capitalization of domestic markets, thus increasing size of domestic financial markets. Analysis of the changes to size of financial markets indicators in relation to global financial integration and regional financial integration indicators overtime should prove or disprove this hypothesis.

Hypothesis 2: Regional financial integration improves global integration and sequentially improves the efficiency of financial markets for regional countries.

Financial theory states that regional financial integration removes barriers to entry into domestic markets for foreign firms, and this contributes to increased competition in the domestic market, leading to improved productive efficiency effects through intermediaries achieving unit cost reduction ((AfDB, 2010; ADB, 2013; Bhatia et al., 2009; Martin, 2010; Wakemann-Linn and Wagh, 2008). Regional financial integration also allows for extensive sharing of information, reduces information asymmetry and allows for more efficient allocation of resources (Farid, 2013; Garcia-Herrero and Wooldridge, 2007; World Bank, 2007). The hypothesis implies that regional financial integration removes barriers to entry into domestic markets and allows for increased foreign investment from both member and non-member countries thus improving global integration with countries outside the region. In turn, increased foreign investment will lead to increased competition in domestic markets of regional countries as monopolies will be broken and productive efficiency improves. Additionally, sharing of information and removal of information asymmetry, availability of greater investment opportunities will allow financial intermediaries to

improve their allocation of financial resources, resulting in improved efficiency in regional financial markets. Analysis of the changes to efficiency of financial markets indicators in relation to global financial integration and regional financial integration indicators overtime should prove or disprove this hypothesis.

Hypotheses 3: The effectiveness of financial integration in improving financial development depends on levels of institutional quality and social capital.

Financial literature has always viewed institutional quality as an important element of the financial development process. La Porta et al. (1996, 1997, 2000) show that, countries with weaker investor protection rules have narrower debt and equity markets. Similarly, Cherif and Dreger (2014) and Rachdi and Mensi (2012) also note that corruption practices, poor law enforcement and lack of respect for property rights are some of the factors stifling financial development. However, there has also been the proposed view that in countries where there is no trust, general instability and poor participation by citizens in the economic process, financial development may fail even when law enforcement is high. Rose (2000), Burts (2000), Tabellini (2007) propose that social capital is also an essential element in financial development. Therefore, hypothesis 3 implies that extent to which financial integration improves the size and efficiency of financial markets depends on the combined levels of institutional quality and social capital. Analysis to changes in size and efficiency of financial markets indicators in relation to the combined indicators of financial integration, institutional quality and social capital should prove or disprove this hypothesis.

1.6 Objectives of the study

The objectives of the study were as follows:

1. To uncover the relationship between of regional financial, global integration and size of financial markets.
2. To determine the impact of regional financial integration on global integration and financial markets efficiency.
3. To investigate the role of institutional quality and social capital in financial development.

4. To determine the effectiveness of financial integration under varying levels of institutional quality and social capital.
5. To assess if different financial integration measurement approaches significantly alter its impact.

1.7 Justification of the study

This section spells out the main arguments in favour of carrying out a study of this nature. The study comes at a time when the world finds itself at a crossroads. Whilst there is debate on either continued regional integration or disintegration in the European Union, across the Atlantic, another regional integration initiative in the form of NAFTA faces collapse as disagreements over its terms and impacts persist. On the other side of the globe, the African Union is convinced that regional integration is the way to go and has launched the African Continental Free Trade Area (AfCFTA), with the potential to be the largest free trade area since formation of the World Trade Organisation (WTO) (AU, 2018). Such differences in perception of the impact of regional integration across continents highlight the need to expand the work on regional integration to encompass issues of its links with global integration and financial development so that decisions are made with holistic view of regional integration impacts. Furthermore, the fact that regional integration is a topic of debate across the globe means that the findings of this study will have implications for policymakers in both developed and developing countries. Contrary to other studies which emphasize the importance of institutional quality elements such investor protection, rule of law and respect for property rights Guiso et al. (2008) argue that trust, stability of the environment, effectiveness of policy implementation can have significant impact on financial markets even when law enforcement is weak. Such a view brings about the need to investigate the importance of social capital and forms the basis for examining role of social capital as a possible complement to institutional quality in the financial development process. Again, there is divergence on the acceptable method of measurement for global financial integration in terms of *de facto* and *de jure* measures. This raises questions as to whether the use of one measure over the other brings about any significant differences in results. Such questions necessitate the need to investigate if measurement approach of financial integration significantly alters its impact.

1.8 Structure of the thesis

The rest of the thesis is structured as follows:

Chapter two: Financial integration and financial development: Theory and evidence.

The chapter provides in-depth discussion on literature relating to financial integration and financial development. It explores the theoretical background to financial integration and financial development and examines the empirical evidence from previous studies, showing the gaps to be filled by the current study.

Chapter three: Financial development, institutional quality and social capital: Theory and evidence.

The chapter discusses theoretical and empirical literature on financial development, institutional quality and social capital. The chapter critically assesses how institutional quality and social capital are assumed to be linked to the economic development process and highlights deficiencies in existing literature.

Chapter four: Review of methodological issues.

The chapter provides a critical review of the methodologies which have been applied in previous studies with a view to setting the context for the appropriate methodology for the study. It explores the different measures for financial integration and financial development which can be used as well as the econometric approaches which can be used to examine the relationship, highlighting strengths and weaknesses of each.

Chapter five: Research methodology.

This chapter focuses on the methodological approaches adopted for the study. It explains and justifies the research design used in the study. The chapter also touches on the methods used for data collection and sources of secondary data used in the study. Cognizant of the different approaches that have been adopted to examine the relationship between financial integration and financial development, the chapter also explains the econometric approaches used to examine this relationship in this study and highlights the different techniques used in testing the study hypotheses.

Chapter six: Presentation, analysis and discussion of findings.

The chapter presents the results from the econometric approaches applied in the study. It highlights findings on trend analysis, descriptive and correlation analysis, diagnostic tests of the data. Hypotheses tests are also presented and discussed in this chapter.

Chapter seven: Discussion of findings, conclusions and recommendations.

The chapter summarizes the findings of the study and draws conclusions from these findings. Recommendations to different stakeholders are also drawn in the chapter. The chapter also acknowledges the limitations of the study and suggests areas for further study.

CHAPTER TWO

FINANCIAL INTEGRATION AND FINANCIAL DEVELOPEMNT: THEORY AND EVIDENCE

2.1 Introduction

This chapter gives in depth discussion on literature relating to financial integration and financial development. It presents theoretical background to financial integration and financial development and examines the empirical evidence on studies which attempt to explain the relationship between the two.

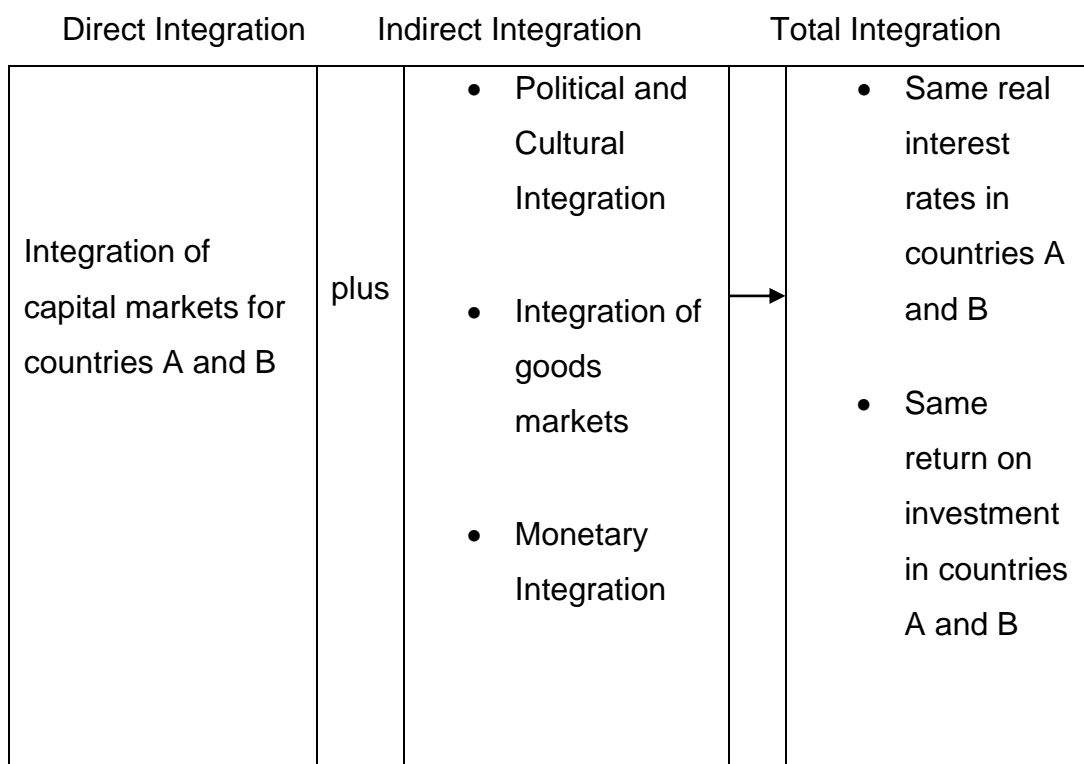
Literature on financial integration has mainly focused on its impact on economic growth (see Klein and Olivei, 2000; Bekaert et al., 2001; Wakemann-Linn and Wagh, 2008). On the other hand, De Gregorio (1998, p.1) argues that, “less attention has been paid to the role of international financial integration in promoting a deep domestic financial market and through that, fostering economic growth”. De Gregorio (1998, p.1) also notes that it is necessary to know whether developing a deep financial market can be fostered by financial integration. As a result of the need to fill in this gap, empirical studies which examine the link between the two have been done. This chapter attempts to provide a critical analysis of the literature relating to these studies. The chapter will also give a critical discourse on the forms of financial integration and the different measures of financial integration and financial development.

2.2 Forms of financial integration

Financial literature shows that financial integration can take many forms and is usually named according to the nature of integration that has occurred. Oxelheim (1990) and Guha et al. (2004) categorize financial integration into three, namely total, direct and indirect integration. They define total financial integration as a situation where real interest rates are the same across markets of financially integrated countries. Total financial integration encompasses both direct and indirect integration. It refers to integration of both the financial markets and markets outside such as the goods market. Direct financial integration is integration which occurs

across capital markets or within the financial markets. Under this form of integration, an investor can expect the same return on investments from different capital markets after adjusting for risk. Oxelheim (1990, p.36) notes that an increase in direct integration results in an increase in total financial integration. On the other hand, indirect integration represents that form of integration which occurs outside financial markets such as political and cultural integration, goods market integration as well as monetary integration. As in the case of direct integration, an increase in indirect integration will lead to a higher level of total financial integration. The relationship between direct, indirect and total integration is illustrated in figure 2.1 below.

Figure 2.1: Total financial integration outline



Source: Author's compilation

According to Oxelheim (1990, p.36) if financial integration is total and expected rates of interest are equal then international power parity and international fisher effect must hold, implying that returns on investments from countries A and B (Figure 2.1), which have achieved total financial integration, should be equal. However, proponents of the total financial integration theory disregard a host of other factors which might affect interest rates and exchange rates, meaning that their proposition

of similar real rates of interest and returns on investments might not hold in the real world. These factors include expectations and speculations, balance of payments differences amongst countries, differences on monetary policy, and differences in supply and demand of foreign exchange (Khalwaty, 2000). Differences in these factors might lead to countries having different rates of interest and investment returns despite having strong financial links.

Financial integration can also be classified from a geographical viewpoint, in the form of global financial integration and regional financial integration. Global financial integration occurs when a country opens its financial markets and institutions to foreign players as well as permitting local market participants to invest abroad (Garcia-Herrero and Wooldridge, 2007, p.58). "This can be done by removing barriers to the cross-border flow of capital and financial services, such as capital controls and withholding taxes" (ibid, 2007, p.58). Global integration can also be defined as a process by which the economies of the world become increasingly integrated leading to internationalization of production, capital flows and markets (Todaro and Smith, 2003; Wilding, 1997). Gehrig (1998) notes that global integration tends to take the form of increased financial links with major financial centres such as London and New York because network externalities give these centres an advantage in the provision of financial services.

On the other hand, regional financial integration refers to a process market driven and /or institutionalized, that broadens and deepens financial links within a region (Wakeman-Linn and Wagh, 2008, p.2). This involves eliminating barriers to cross border investments, differential treatment of foreign investors, harmonizing of national policies, laws and institutions at regional level (ibid, p.2). Hurrell (2007), Kucerova (2006) and Thompson (2007) also subscribe to the same view of regional integration as a process that draws nations together on the basis of their proximity, for economic and social interaction. Likewise, Ravenhill (2004, p.117) defines regional integration as the growth of economic interdependence within a given geographical area. Ravenhill (2004, p.118) notes regional integration arrangements are usually perceived as a hierarchy that runs from free trade areas through customs unions and common markets to economic unions. He classifies the forms of regional integration into the following:

1. A free trade area, where countries remove tariff and non-tariff barriers to the free movement of goods and services between them.
2. A customs union, which goes beyond the removal of barriers to trade within the region to adopt a common set of policies towards imports from outside the region.
3. A common market, which includes a customs union and also allows for free movement of labour and capital within the regional partnership for example the Common Market for Eastern and Southern Africa (COMESA).
4. An economic union, which includes a common market plus the adoption of a common currency and the harmonization of monetary, fiscal and social policies.

In this hierarchy, the economic union represents the highest level of integration and only the European Union has reached this level of integration (Ravenhill, 2004, p.118). Global financial integration is different from regional financial integration in the sense that, the former is not initiated by nations or states but occurs on its own through technological change, foreign investment, and formation of international links between firms and companies (OECD, 2005, p.11). From the aforementioned, one can affirm that regional integration is a process initiated by individual countries with the aim of achieving certain economic motives. An individual country's decision to adopt either of the two forms of integration hinges on the perceived benefits of each of these forms of integration.

Proponents of global integration suggest that regional financial integration is less likely than global integration to foster risk-sharing, insofar as business cycles tend to be more closely correlated among neighbouring countries than among distant ones (Garcia-Herrero and Wooldridge, 2007, p.59). In addition, it is argued that global integration increases capital flows for the less developed countries and provides economic stability to the developed ones (Fischer, 1998; Summer, 2000). Martin (2010, p.8) shows that global integration lowers transaction costs and enables rich economies to buy more assets of poor economies and vice versa. However, due to the large size of the rich economy, the net effect will be an increase in demand and price of assets of the poor economy. This allows prices of assets to move to their fundamental value (Martin, 2010). Furthermore, according to Martin (2010, p.8), the cost of capital in the poor economy will fall and investment projects increase. Another gain, this time for both the rich and poor countries, is that the fall in

transaction costs makes it less expensive to diversify risk when buying foreign assets (ibid, 2010, p.8). However, global financial integration can also have its own negative effects. For instance Mendoza et al. (2009, p.406-407) asserts that global financial integration can lead to persistent global imbalances if countries have extremely different levels of financial development. The imbalances can be in the form of accumulation of huge foreign liabilities and assets especially by countries with deeper financial markets, at the expense of emerging markets (ibid, 2009, p.407).

Global integration can also leave some markets, especially emerging ones vulnerable. For example in emerging markets, it can lead to situations where foreign portfolio investments in a country exceed direct investments, thus exposing them to the risk of capital flight shocks in the event of adverse economic and political developments (Kenen, 2007, p.182). Tess (2011) concurs with this viewpoint and notes that globalization has often been seen to be discriminatory to smaller states with less power as they have to compete at the same level with the more powerful nations whereas regional integration allows smaller nations to rely on those around them and build themselves up economically.

Therefore, to minimize some of the adverse effects of global integration, some countries have in turn adopted regional integration. Martin (2010, p.20) notes that “The creation of a financially integrated area between small and similar countries reduces the likelihood of a crash with capital flight between this group of countries and the rest of the world. Another way to say this is that small similar countries have indeed an interest to integrate to form a larger and therefore more stable financial area”. He points out that regional financial integration takes place between countries which are more similar than in the case of global integration. In this situation, the risk of capital flight and a financial crash which is evident under global financial integration is minimized. Furthermore, Garcia- Herrero and Wooldridge (2007, p.59) affirm that regional financial integration can bring additional benefits on the institutional side. According to them, “regional pressure on European and Asian countries has promoted the upgrading and harmonization of local practices in the functioning of the financial system, including accounting, tax treatment and even regulation and supervision in the European case”. Ravenhill (2004, p.124-125) also stresses the fact that countries choose regional integration over global integration for

additional benefits. These benefits include regional protectionism, deeper integration through agreements on the treatment of foreign investment, economies of scale such as savings made on borrowing in financial markets if the regional countries borrow as a block. However, the classical point of view of integration as noted by Martin (2010, p.22) shows that the more different countries are in terms of size and income, the better the integration. Accordingly, the gains of integration are larger when countries are different (Martin, 2010, p.22). From this viewpoint, regional financial integration cannot be said to be better in terms of benefits than global integration. This puts into question the perceived benefits of regional financial integration on aspects such as financial development and calls for further empirical revelation of the nature and direction of impact amongst regionally integrated countries.

2.3 Financial integration and financial development: Theoretical perspectives

Financial integration and financial development theory is hinged on the finance-growth nexus. Advocates of the finance-growth nexus have over the years argued that deep financial markets contribute positively to economic growth at the same time financial theory also has contrasting opinions to this view. These diverging theoretical perspectives are assessed in this section.

2.3.1 Early contributions on finance and economic growth

A pre-industrialization study by Bagehot (1873) attributes economic growth and industrialization to the effectiveness of the banking system in allocating funding to productive investments. Schumpeter (1911) subscribes to the same view and claims that services provided by financial intermediaries such as mobilizing savings, evaluating projects, managing risk facilitate technological innovation and economic growth. In later propositions, Schumpeter (1947, p.153) also notes that “banking may be the object of entrepreneurial activity, that is to say, the introduction of new banking practices may constitute enterprise; and bankers (or other “financiers”) may use the means at their command in order to embark upon commercial and industrial enterprise themselves”. Schumpeter thus views banking as a form of entrepreneurship and innovation which will lead to additional productivity in the economy at both commercial and industrial levels. His theory emphasizes the significance of financial markets as providers of capital as he also argues that providers of capital are the ones who bear all the risk in a business enterprise set up

and not the entrepreneurs themselves (ibid, 1947). However, Schumpeter`s theory ignores the role of savings in the funding process. Schumpeter assumes that innovations are financed by bank credit ignoring the fact that it can be from real savings such as public borrowings, and budgetary savings. Again it gives undue importance to bank credit, which can only be used in the short run. In the long run funding will have to be in the longer term sources of funding such as issuing of bonds and shares.

Fisher (1933) also brings out the importance of financial institutions and notes the weak performance of financial markets has adverse effect on economic performance. Fisher (1933) propounds that debt and deflation lead to distress selling of assets, contraction of deposit money in financial markets, and contraction in the velocity of money. This will eventually lead to a fall in prices, net worth of businesses and a reduction in output and trade in the economy (ibid, 1933). Fisher`s theory assists in showing the link between commerce and private enterprise as it spells out the interaction which occurs between financial markets and industry. However, Fisher fails to explain how the debt-deflation situation arises in the market. Hicks (1969), Nurkes (1953) and Lewis (1954), again acknowledge the existence of the relationship between finance and growth and emphasize on the role of capital provision in the economic growth process. However, the theoretical views fail to provide actual tests to establish causal links between finance and economic growth.

2.3.2 Finance and growth: Early intermediation perspective

The finance growth debate also comes out in early writings on the role of financial intermediaries. Goldsmith (1955) examines the relationship between financial structure and economic growth in advanced countries. The study notes that financial interrelations ratios (ratio of intangible national assets to wealth) have shown a tendency to rise, signifying the increasing dominance of financial intermediaries. Goldsmith also finds out that within the banking system, the share of assets held by the central bank of issue generally shows a declining trend. Both this trend and the decline in the share of the banking system in national assets mean that the same monetary base has come to support a larger financial superstructure. They also mean that money creation through the banking system has lost importance as a method of financing and might be an indicator of the increasing role of non- bank financial intermediaries in the intermediation process. The study does not out rightly

show the relationship between financial intermediation and economic growth but tries to show the importance of the financial intermediation process through the relationship of total financial assets to total national output amongst advanced countries. In turn Goldsmith tries to show that advanced countries (countries with high national output) are those that have high financial interrelations ratios. Goldsmith's study is said to be comparative but has the disadvantage that it only focuses on advanced countries and ignores the less advanced ones. In a further study, Goldsmith (1969) assesses financial structure and development of both developed and developing countries and finds that developed countries have higher financial interrelations ratios than developing countries. The study also finds out that the importance of financial institutions in the financing process is similarly linked to the development of an economy and that among banks, the share of banks falls after the earlier stages of development (ibid, 1969, p.366).

However, Goldsmith fails to put forward testable hypothesis to prove that indeed high levels of financial intermediation are associated with high levels of economic development. His views are just based on comparative analysis of financial interrelations ratios between countries. Amongst the financial intermediation contributors are Gurley and Shaw (1955) who also agree with Goldsmith's view that financial development contributes to economic growth. Their study divides final buyers of output into three groups which are deficits, surplus and balanced budgets. Spending units with balanced budgets keep their spending on consumption, investment, or government goods and services-precisely in balance with income. Surplus budgets have an excess of income over spending on goods and services. Their financial assets increase more or decrease less than their liabilities, and they are thereby suppliers of loanable funds (Gurley and Shaw, 1955, p.516). Deficit budgets permit spending to exceed income. They demand loanable funds, releasing financial assets or issuing debt, so that their financial assets decline relative to the sum of their liabilities and equity other than earned surplus. According to Gurley and Shaw, a complete set of social account should show the flow of funds between these different spending units. Their theory asserts that the primary function of intermediaries is to issue out indirect debt in soliciting loanable funds from surplus spending units, and to allocate these loanable funds among deficit units whose direct debt they absorb (Gurley and Shaw, 1955, p.518). They take exception to the

fact that commercial banks are unique in their ability to create credit and split debt into direct and indirect debt. Indirect debt being obligations of all financial intermediaries including banks while direct debt represents all debt other than that of intermediaries. They posit that the differences in the amount of direct and indirect debt determine changes in interest rates in the economy hence monetary policy should be set to control indirect debt from financial intermediaries.

Gurley and Shaw also note that economic development is commonly discussed in terms of wealth, the labor force, output, and income. Yet according to their theory, development can be associated with debt issue at some points in the economic system and corresponding accretions of financial assets elsewhere. It is accompanied, too, by the "institutionalization of savings and investment" that diversifies channels for the flow of loanable funds and multiplies varieties of financial claims (Gurley and Shaw, 1955). They conclude that economic development involves finance as well as goods. However, Culbertson (1958, p.120-121) criticizes Gurley and Shaw theory and argues that banks are unique in the credit creation process hence the need to give them a special apparatus of control. Culbertson also criticizes the concept of direct and indirect debt affecting changes in interest rates. He argues that both direct and indirect debt can be substitutes for each other for example time deposits and company shares can be close substitutes for cash balances (Culbertson, 1958, p.126). Accordingly, Culbertson argues that there is no difference between direct and indirect debt hence the concept of the difference between the two influencing changes in the levels of interest rates in the economy does not hold. Similar concerns on the theory are also raised by Marty (1961). However, despite these criticisms, Gurley and Shaw theory breaks new ground in trying to outline the role of financial intermediaries in the economic process and some of their concepts on monetary policy are still applicable in the world today. Gerschenkron (1962) tries to put into context the conditions under which the financial sector comes in to facilitate economic growth. He notes that relatively backwardness in a country creates a tension between the promise of economic development, as achieved elsewhere, and the continuity of stagnation. Such a tension takes political form and motivates institutional innovation, whose product becomes appropriate substitution for the absent preconditions for growth. Accordingly, Gerschenkron (1962) suggests the greater the degree of

backwardness, the more intervention is required in the market economy to channel capital and entrepreneurial leadership to support industries. In this case Gerschenkron proposes the setting up of institutions to channel capital and entrepreneurial leadership in the economy to offer support to industries. Cameron (1967) investigates the role of banking in the early stages of industrialization. His study tries to explain how banking facilitated the early stages of growth after industrialization. In the study, Cameron emphasizes the importance of financial services as a tool for channeling funds in the economy. The study acknowledges that finance may instigate the economic growth process at the same time economic growth may also actuate the development of financial systems. Cameron`s study concludes that banking played an important role in the early industrial development of countries like Scotland, Belgium and Germany and puts blame of retarded growth in some countries on restrictive regulations and general lack of trust of paper money.

Following Gurley and Shaw (1955), theory and observations by Goldsmith (1955) and Patrick (1966) acknowledges that there indeed is an increase in the number of financial institutions as well as a rise in the proportion of not only of money but, also of the total of all financial assets relative to GNP and to tangible wealth. Patrick sets out to fully explore that causal nature of this relationship between financial development and economic growth. Patrick (1966) suggested the demand following supply leading phenomena taking a cue from the view that the financial system somehow accommodates or, to the extent that it malfunctions, it restricts growth of real per capita output. Accordingly, Patrick agrees with Robinson`s (1952) view that where enterprise leads, finance follows. He insists that the nature of demand for financial services depends on the growth of real output and upon the commercialization and monetization of agriculture and other traditional subsistence sectors (Patrick, 1966, p.175). According to him , the more rapid the growth rate of real national income, the greater will be the demand by enterprises for external funds (the saving of others) and therefore financial inter mediation, since under most circumstances firms will be less able to finance expansion from internally generated depreciation allowances and retained profits (ibid, 1966, p.175).

He goes further to point out that for the same reason, with a given aggregate growth rate, the greater the variance in the growth rates among different sectors or industries, the greater will be the need for financial intermediation to transfer saving

to fast growing industries from slow-growing industries and from individuals. The financial system can thus support and sustain the leading sectors in the process of growth (ibid, 1966, p.175). Patrick notes “such an approach places emphasis on the demand side for financial services; as the economy grows it generates additional and new demands for these services, which bring about a supply response in the growth of the financial system. As such Patrick notes under these circumstances, financial intermediaries have an important function in providing a market mechanism for the transference of claims on real resources from savers to the most efficient investors. The more perfect are financial markets, the more nearly optimum allocation of investment is achieved. In this way, the financial system accommodates economic growth; on the other hand, to the extent that the financial system is underdeveloped and/or inefficient, it restricts growth below what optimally could be achieved .In this view, the lack of financial institutions in underdeveloped countries is simply an indication of the lack of demand for their services” (Patrick, 1966, p.174). Though it emphasizes the importance of financial development in the economic process, Patrick’s study adopts more of an argumentative approach and his viewpoints are not based on any hypothesis tests, as such it fails to give a convincing evidence based argument on the causal relationship.

2.3.3 Finance and growth: Contemporary intermediation perspective

In modern day financial literature, financial intermediation theory on finance and growth has been split into mainly two views, the institutional and functional perspectives. Ross (1989), an advocate of the institutional perspective, suggests that institutions matter. According to Ross, institutions are monitored and controlled through a complex set of implicit and explicit contractual relations. Because of these agency theoretical relations, institutional behavior in financial markets is not a simple reflection of the preference structures of individuals. Institutional preferences give rise to a demand for new financial instruments and innovations, even when the returns on these instruments are “spanned” in the sense of complete pricing. The innovations can be thought of as solving moral hazard problems.

The proper role of an institution in the financial marketplace is a function of its level of opacity (determined by the extent its activities and products reflect the preferences and control of retail participants). Ross views financial markets as largely made up of institutions and according to him these institutions are the ones

responsible for all the innovation that takes place. However, his theory stresses on the importance of financial institutions but fails to clearly outline the role that they play in the financial system and their links with the economic process. Merton (1995) tries to overcome this limitation through the functional perspective. The functional perspective emphasizes on the economic functions financial intermediaries play and assumes that functions change less over time and vary less across geopolitical boundaries (Merton, 1995, p.23). Merton claims that financial intermediaries carry out 6 resource allocation economic functions which are:

Function 1: Provide a payments system for the exchange of goods and services.

Function 2: Provide a mechanism for the pooling of funds to undertake large-scale indivisible enterprise.

Function 3: Provide a way to transfer economic resources through time and across geographic regions and industries.

Function 4: Provide a way to manage uncertainty and control risk.

Function 5: Provide price information that helps coordinate decentralized decision-making in various sectors of the economy.

Function 6: Provide a way to deal with the asymmetric-information and incentive problems when one party to a financial transaction has information that the other party does not.

Merton argues that financial intermediaries have an important role to play in the economic process as a result of these functions. Murray (1993) for example notes without the pooling function, a firm could undertake a capital decision no greater than what could be funded via its existing internal resources, thereby severely constraining business scale and efficiency. Merton (1995, p.27) adds the innovation of pooling intermediaries, such as mutual funds, greatly reduced costs, provided for almost perfect divisibility, and thereby allowed individual investors to achieve vastly better diversified portfolios. As opposed to the institutional view, the functional perspective explains the roles financial intermediaries play in the growth process.

2.3.4 Financial liberalization and growth theory: Early perspectives

McKinnon (1973) and Shaw (1973) go further in examining the relationship between financial development and economic growth and introduce the complementarity and financial deepening hypotheses. McKinnon tries to explain the effect of real interest rates on investments and economic growth. According to McKinnon, money supply has a first order impact on savings and investment. He assumes that all economic units can only self-finance expenditure on investment is lumpier than expenditure on consumption.

As a result of the lumpier expenditure on investment, the demand for money will be greater if the proportion of investments in relation to total expenditure is high. Again, as a result of economic units being self-financing, it means they have to accumulate money balances before they invest. From this, McKinnon derives the concept of complementarity between real money balances and investment. He notes the existence of a positive relationship between domestically financed investment (domestic saving) and real money balances. Accordingly, McKinnon argues that a real deposit rate is the key determinant of capital formation for financially constrained developing economies. McKinnon advocates for market determined interest rates to stimulate savings and points out that artificial ceilings on interest rates reduce savings, capital accumulation and discourage the efficient allocation of resources. He emphasizes the removal or relaxation of administered interest rates as according to his theory, it would boost capital formation, since the high deposit rates attract the accumulation of money, and stimulate investment. McKinnon also points out that financial repression can lead to dualism in which firms that have access to subsidized funding will tend to choose relatively capital-intensive technologies; whereas those not favored by the subsidization policy will only be able to implement high yield projects with short maturity. Through the complementarity hypothesis, McKinnon becomes one of the earliest contributors to the financial liberalization and economic growth debate. McKinnon's theory is further complemented by Shaw's (1973) financial deepening hypothesis. Shaw (1973) argues that as a country's financial system develops, alternative financial assets other than money balances become available as repositories for financial savings intended for eventual investment in productive resources. The increased development of the financial sector allows more investors to have access to funds for borrowing. He also adds that financial

liberalization will, remove distortions to market prices and leads to an increase in the ratios of private domestic savings to income, and reduces the need for foreign aid or inflationary deficits. In addition, financial liberalization removes barriers and leads to more inflows of capital, as well as allowing for easy access to foreign markets. In addition, the theory asserts that liberalization allows for more efficient allocation of savings through diversification of financial markets thus allowing investments to compete for savings flows.

In this respect, there is a much broader choice for savers and borrowers, financial markets are further developed in terms of maturity, size and risk, and information costs are reduced. Shaw also suggests that repression of financial markets leads to investors resorting to informal credit markets and liberalization to allow interest rates to be market determined, will lead to better integrations of formal and informal capital markets. He notes that the commonest technique of repression consists of inflation in conjunction with ceilings on nominal interest rates that result in very low, or negative, real rates on both the loans and deposits of the banking system. This leads to excess demand for loans and shifts demand away from domestic financial assets toward real assets and financial assets denominated in foreign currencies that are often obtainable at bargain prices because of an overvalued exchange rate (Shaw, 1973, cited in Cole, 1974, p.1346). Financial liberalization would consist of removing controls over interest rates and promoting competition among financial institutions. Together with appropriate control of the growth of the nominal money supply, these measures, according to Shaw, could be expected to stimulate the demand for money, thus increasing the financial resources of the banking system. Competition and elimination of price controls would bring about greater efficiency in the financial institutions, eliminating many of those specialized institutions that exist because of protection and fragmented markets (*ibid*, 1974, p.1346). Unlike McKinnon's (1973) money balances concept, the financial deepening hypothesis stresses that savings and investment can occur even without the accumulation of money balances. Shaw agrees with Mckinnon that financial liberalization has positive effects on growth rates in the economy but disputes the existence of a complementary relationship between money balances and investment since according to him, investment can occur even through accumulation of non-money assets. Furthermore, Mckinnon places emphasis on internally generated money balances to spur investment (self-

financing), whereas Shaw also considers external flows of funds from foreign capital markets. However, both Mckinnon and Shaw assumed homogenous households which had access to capital markets in the domestic market. In the real world not all households have access to capital markets and not all households have the ability to set aside income for saving and investment. In addition, both theories assume that savings are positively related to real interest rates. An increase in real interest rates is supposed to result in an increase in savings. This assumption might hold mainly for high income households, for low income households an increase in real interest rates might not necessarily be met with a corresponding increase in the level of savings. Again, both theories fail to really establish a causal relationship between finance and growth.

2.3.5 Financial liberalization and growth: Contemporary perspectives

As financial markets have become more closely integrated across countries, and financial links broadened, the theory of financial liberalization has been extended to the concept of financial integration. In this context, financial liberalization is taken as the opening of domestic financial systems, such as financial markets and institutions and banking systems, to the rest of the world (Abderzag and Hasnaoui, 2015; Mougani, 2012, p.5). From this theoretical perspective, financial liberalization has been taken in the same context as financial integration.

Consequently, a country which has opened its financial market to foreign entry in the form of insurance, banking, fund management or any other financial services is said to be financially liberalized at the same time it can be said to be financially integrated. It also follows that a country which has closed its markets to foreign entry or placed restrictions on the entry of foreign firms is said to be financially repressed. It is from this viewpoint of financial integration that the finance growth debate continues to rage. Like previous finance-growth theories, traditional literature on financial integration has mostly focused on its impact on economic growth. The Neoclassical-Solow model argues that under financial integration countries real interest rate differentials between countries with excess capital and those with capital deficits would lead to the flow of investment funds from countries with excess to those in deficit (UNECA, 2015). The flow of funds would lead to availability of funds for investment and growth. The Solow model thus advocates for financial integration, as according to the theory, it would lead to economic growth.

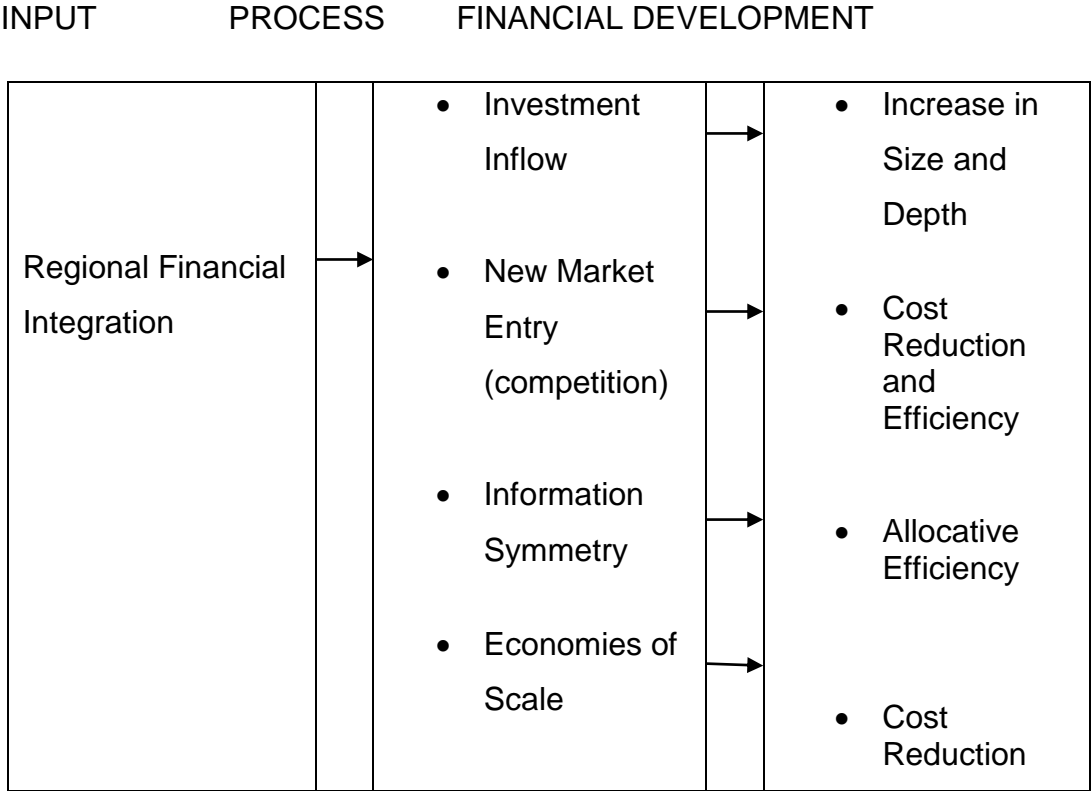
Likewise, another neoclassical model, the Ramsey model of growth supports the idea that financial integration leads to economic growth (Gourinchas and Jeanne, 2002, p.7). However, the neoclassical theories are premised on unrealistic assumptions for example they assume that there are no impediments to financial flows and capital can freely move from a country in excess to a country in deficit (ibid, 2002). In the real world this might not be the case, capital might move from a country in deficit to a country in excess. Again, the neoclassical theories mainly focus on economic growth. They do not show how increased financial integration leads to increased financial development, which is the main purpose of this study. Recent financial literature has tried to explain how financial integration indirectly impacts economic growth through financial development. For instance, Claessens and Laeven (2004), posit that the opening up of financial markets brings in more competition to the domestic financial sector and results in reduction in costs of domestic financial services. Opening up of markets also results in increased demand for new financial products in the form of trade and hedging instruments (Svaleryd and Vlachos, 2002). In addition financial integration has also been observed as the driving factor behind improved financial markets regulation amongst integrated financial markets. The entry of foreign firms into the domestic financial markets is at times associated with adoption of best practice standards in the domestic market (Mishkin, 2007b). Furthermore, financial integration also results in more liberalized domestic financial markets (Mishkin, 2007b). In support of this view, Rajan and Zingales (2000) state that financial integration can remove controls on entry into financial markets, thus breaking any monopolies in the domestic financial markets. This can in turn lead to a more competitive and efficient financial market and hence improves financial development (Rajan and Zingales, 2000).

In addition, studies have also shown differences in the nature of benefits accruing from regional financial integration as opposed to global financial integration (Frey and Volz, 2011; Demartino and Grabel, 2003; Ravenhill, 2004; Bhatia et al., 2009; Garcia-Herrero and Wooldridge, 2007; Frankell, 1997). Frey and Volz (2011) suggest that regional financial integration positively affects financial development by increasing the size of the financial sector. Demartino and Grabel (2003, p.266-270) claim that through regional integration, states gain control over capital flows,

enhance their bargaining power and their domestic companies enjoy economies of scale whilst being protected from global competition.

However, they do not explain the mechanism through which this happens. Additionally, Ravenhill (2004, p.139-141) posits that regional integration leads to increased investment inflows, increases the size of the home market, increases competition for domestic companies, thereby forcing them to become more efficient. Garcia-Herrero and Wooldridge (2007, p.68) give a more vivid transmission mechanism and argue that regional financial integration leads to greater exchange of information and this reduces information asymmetry leading to better allocation of resources. The channels, through which regional financial integration can lead to financial development as suggested by theory, can thus be summarized with the aid of the following theoretical framework:

Figure 2.2: Theoretical framework



Source: Author`s compilation

The framework shows that financial integration leads to financial development through four channels. Firstly, regional financial integration may lead to increased investment inflows as domestic firms gain greater access to foreign financial

markets and foreign firms invest in domestic financial markets thus leading to an increase in the size of domestic financial markets (AfDB, 2010; Ravenhill, 2004; Giannetti et al., 2002). Secondly, regional financial integration removes barriers to entry into domestic markets for foreign firms, and this contributes to increased competition in the domestic market, leading to improved productive efficiency effects through intermediaries achieving unit cost reduction (AfDB, 2010; ADB, 2013; Bhatia et al., 2009; Martin, 2010; Wakemann-Linn and Wagh, 2008).

Thirdly, regional financial integration allows for extensive sharing of information, reduces information asymmetry and allows for more efficient allocation of resources (Farid, 2013; Garcia-Herrero and Wooldridge, 2007; World Bank, 2007). Lastly, regional financial integration concentrates financial intermediation within a region and because of that the regional markets may enjoy economies of scale whilst being protected from global competition (Demartino and Grabel, 2003; Frey and Volz, 2011). Such protection may attract investment into the integrated region from non-regional countries. Southern Africa, through its regional bloc, (SADC), has adopted regional financial integration with the aim of enhancing economic growth and stimulating financial development in addition to other perceived benefits of financial integration, amongst member countries.

However, the perceived benefits of regional integration have not been conclusively proved empirically. Volz and Frey (2011, p.2) note “These assumed benefits are predominantly based on theoretical arguments that are habitually made both in the debate on financial globalization and financial integration”. In addition, most literature on regional financial integration tends to focus more on the benefits, whilst ignoring the negative effects it can have on individual countries (Mougani, 2012, p.5). The African Financial Markets Initiative (AFMI, 2014) notes that SADC countries still have disparities in levels of economic stability, foreign investment, depth and liquidity of stock markets. In light of this, the present study investigated how regional financial integration has impacted countries with the SADC being the unit of study. Unlike previous studies which focused on the impact of integration on economic growth, (see Gehringer, 2013; Wakemann-Linn and Wagh, 2008; Quinn and Toyoda, 2008; Klein and Olivei, 2000), the present study focused on an aspect which has an indirect impact on economic growth, which is financial development.

2.4 Financial development and economic growth: Empirical evidence

Early empirical studies on financial development mainly examined its impact on economic growth. Though theoretical perspectives strongly support the view that financial development supports growth, empirical findings have over the years given divergent views on the direction of impact. Some of the earliest empirical work on finance and growth is reported by Goldsmith (1969, cited in Demirguc-Kunt and Levine, 2001, p.3-4) through an investigation of financial structure and economic growth across different countries. Using cross country evidence from 35 countries, Goldsmith manages to draw a positive correlation between financial structure and economic growth. His evidence shows that banks tend to become larger relative to national output as countries develop (Demirguc-Kunt and Levine, 2001, p.3). However, Goldsmith fails to establish a causal relationship between finance and economic growth but only finds association between the two. Instead, his study rather emphasizes more on the importance of financial development in the economic process. Unlike Goldsmith, Galbis (1977) examines the relationship between financial development and economic growth in less developed countries. With the use of an expandable two sector model he finds that real interest rates are growth-promoting, even if total real savings is interest insensitive, because they bring about an improvement in the quality of the capital stock in a well-defined sense.

Another study by King and Levine (1993) examines the same relationship using three measures of economic growth, namely three growth measures (real per capita gross domestic product (GDP) growth, real per capita capital stock growth, and total productivity growth) and two measures of financial development namely the ratio of private sector credit to GDP and the ratio of bank credit to bank credit plus central bank domestic assets. Using cross country data from 80 countries and alternative econometrics methods, King and Levine find evidence consistent with the view that the financial system can promote economic growth. However, their findings have the weakness that they only include financial development variables from the banking sector and exclude financial development outside the banking sector, for example the stock markets. Furthermore, the measures of financial development used do not take into account financial efficiency; hence the findings do not show the extent to which efficiency in the financial markets impacts economic growth. Levine and Zervos (1998) try to overcome these weaknesses through further empirical study of

cross country data of 49 countries. Their study takes into account financial development which occurs outside the banking sector as well as efficiency of the stock market through inclusion of the stock market turnover ratio as one of the measures of financial development. Their study shows that stock market liquidity and banking development both positively, predict growth, capital accumulation, and productivity improvements when entered together in regressions, even after controlling for economic and political factors (Levine and Zervos, 1998).

A study by Beck, Levine and Loayza (1999) using cross country data from 77 countries confirm the fact that financial intermediaries exert a large, positive impact on total factor productivity growth, which feeds through to overall GDP growth. Rajan and Zingales (1998) take a different approach from previous studies and instead of using aggregated cross country data, they carry out the same study at industry level with the aim of finding out whether financial sector development has an influence on industrial growth. They conclude that industrial sectors that are relatively more in need of external finance develop disproportionately faster in countries with more developed financial markets, again giving credence to the view that there is a positive relationship between financial development and economic growth, even at industry level. By using industry level data, their study examines a direct channel through which financial development impacts growth. This methodology overcomes challenges of explanatory variables that are multi-collinear and are measured with error, which mainly arise when aggregated cross country data is used. Empirical studies carried out at the turn of the 21st century (Beck and Levine, 2004; Arestis et al., 2001; Love, 2003; Ozturk 2008) have also empirically shown that financial development exerts positive impact on economic growth. Ozturk (2008) investigates the causality between financial development and economic growth in Turkey for the period 1975-2005. The empirical investigation is carried out in a vector autoregression (VAR) framework based on the theory of cointegration and error-correction representation of cointegrated variables. His causality analysis yields evidence which shows one-way causality from economic growth to financial development. Secondly, Ozturk (2008) does not provide evidence of a long-run causal relationship between financial development and economic growth in Turkey. Ozturk's (2008) study is however based on data from a single country so findings from this study cannot be said to be applicable to other countries. Likewise, Ndlovu

(2013) examines the causal relation between financial system development and economic growth from a Zimbabwean perspective, using data over a twenty six year period. Using multivariate Granger causality test the study finds existence of unidirectional causality from economic growth to financial development. The study is however also based on single country data hence the study findings might also not be applicable elsewhere.

Beck and Levine (2004) take a different approach and rather than taking overall measures of financial development, they investigate the impact of stock markets and banks on economic growth using a panel data set for the period 1976–1998 and apply the generalized-method-of moments techniques developed for dynamic panels. Their study is based on the fact that theory provides conflicting predictions about both the impact of overall financial development on growth and about the separate effects of stock markets on growth and banks on economic growth (Beck and Levine, 2004). They assess the link between stock market and bank development and economic growth in a panel of 40 countries and 146 observations. Their findings show that the development of stock markets and of banks have both a statistically and economically large positive impact on economic growth. Using the Calderon et al. (2000) two-step alternative estimator that reduces the over-fitting problem yet obtains heteroskedasticity-consistent standard errors, Beck and Levine (2004) also find that both stock market liquidity and bank development enter all of the growth regressions significantly, indicating that stock markets provide different financial services from banks (Beck and Levine, 2004, p.440). In terms of methodology, Beck and Levine`s (2004) study has the advantage that it controls for country-specific effects and potential correlation between variables and error terms. Arestis et al. (2001) also examine the relationship between stock market development and economic growth using time series data from five developed countries. Using a vector auto regression framework, they find out that both stock markets and banks seem to have made important contributions to output growth. However, their empirical analysis also shows that while stock markets may be able to contribute to long-term output growth, their influence is, at best, a small fraction of that of the banking system (Arestis et al., 2001, p.37). Their studies also show a positive relationship between bank-based financial systems as opposed to capital markets based ones. La Porta et al. (2001) adopt a different measure of financial

development and examine financial development in the form of ownership structure. They assemble data of state owned banks across 92 countries and try to determine how government ownership of banks impacts economic growth. Their findings show that higher government ownership of banks is associated with slower development of the financial system, lower economic growth and in particular lower growth of productivity (La Porta et al., 2001, p.267). However, this study only focuses on one aspect of financial development, in the form of banking sector development.

Ergungor (2008) investigates how the structure of a financial system (whether it is bank or market oriented) affects economic growth. He finds that countries grow faster when they have flexible judicial system and in contradiction to Arestis et al. (2001), Ergungor (2008) also concludes that more market-oriented financial systems lead to higher growth than bank based systems, suggesting that the structure of financial systems might have different impacts across countries. Hung (2009) examines the nonlinear effects of financial development on economic growth. Hung develops a model able to incorporate non-productive consumption loans with productive investment loans in a standard model of asymmetric information. The study findings again attest to a positive relationship between financial development and economic growth even after having taken into account nonlinear effects. Hung acknowledges that financial development facilitates both investment loans and consumption loans. While facilitating investment loans benefits economic growth, facilitating consumption loans impedes economic growth. As a result, the effect of financial development on economic growth depends on the relative magnitudes of these two distinct channels (Hung, 2009, p.63). Hung's (2009) study again looks at financial development from a banking perspective and ignores financial development which occurs outside the banking sector.

More recent studies (see Nwosa et al., 2011; Kendall, 2012; Jalii et al., 2010) have gone on to also show that finance is important in the quest for economic growth. Kendall (2012) investigates the relationship using unique, district-level, economic growth data and banking sector development data from Indian districts. Findings of the study show districts to be financially constrained by the lack of local banking sector development. In addition, the study points to a nonlinear relationship between finance and growth. The study also shows that human capital deepening can reduce

financial constraints and increase growth. According to Kendall, districts with higher literacy levels have lower financial constraints and higher growth as opposed to districts with lower literacy levels. However, the study does not make use of cross country data, it only utilizes district level data from a single country hence the applicability of its findings are limited in that respect. In addition, its findings on human development and growth are questionable as it only uses one measure of human development in the form of literacy levels, whereas measures of human development are very broad. Nwosa et al. (2011) investigates the causal relationships among financial development, foreign direct investment and economic growth in Nigeria over the period 1970 to 2009. They use a tri-variate vector error correction model (VECM) test to establish the causal relationship. Their findings show the existence of unidirectional causality between foreign direct investment, financial development and economic growth. They also point out that foreign direct investment has a stronger causal influence on economic growth than financial development as well as the fact that stock market based variables have as much influence as bank based variables on economic growth. Nwosa et al. (2011, p.97) also argue that the neglect of the stock market variable in previous studies may have led to gross underestimation of the role of the stock market in influencing economic growth. The study makes use of the different measures of financial development from both the banking sector and the stock markets thus overcoming weaknesses of previous studies. However, the study is based on sample data from one country hence its findings might not have universal application. Aizenman et al. (2015) analyze the finance growth nexus in 41 economies, including 11 East Asian and 9 Latin American economies for a comparison between two regions which are at similar income levels. Unlike previous studies which use country data, Aizenman et al. make use of firm level data and try to establish the causal relationship between finance and growth using OLS estimations. Their findings show that bank private credit to GDP is negatively associated with the growth of the construction sector (Aizenman et al., 2015, p.11). Bank private credit growth is also negatively associated with the growth of manufacturing sector in East Asia, whereas it is positively associated with the growth of finance, insurance, and real estate sector in Latin America. For the East Asian economies, it is found that lending-deposit interest spread (financial efficiency) is positively associated with the growth of finance, insurance, and real estate sector. The growth of construction sector is negatively

associated with lending deposit interest spread in East Asia, whereas it has a positive association in Latin America. The growth of wholesale and retail trade sector is positively associated with financial efficiency in East Asia, whereas the association is negative in Latin America. They conclude that there are large differences between the two regions in terms of the impact of financial depth on sectoral growth, and validate the negative impact of financial deepening on output growth in several sectors. They also agree with the view that the impact of financial development on growth may be non-linear noting that it may promote economic growth up to a certain point.

Though a large body of literature attests to a positive relationship between financial development and economic growth, there are instances where a negative relationship between the two has been found to exist. For example, literature on studies from China shows a negative relationship between finance and growth. Boyreau-Debray (2003) examines financial intermediation and economic growth in China and comes to the conclusion that the relationship between the two is negative as most Chinese banks tend to offer financial support to loss making institutions. Boyreau-Debray's (2003) study analyzes the relationship between growth and financial intermediation at the subnational level within China using data from 26 provinces. The study attempts to answer the following questions: Does the quality of the banking sector in a province affect its rate of growth? Do state and non-state banking sectors perform differently? Does the structure of the local banking sector affect the rate of provincial economic growth? Boyreau-Debray (2003) uses banking development indicators and uses the GMM regression model to estimate the relationship between intermediation and growth. The study findings show that though China has a very high level of financial deepening, such levels are not contributing to better economic performance (Boyreau-Debray, 2003, p.20). The study also reports that banking sector's continued support of loss-making state-sector enterprises over non-state enterprises is reflected in the negative impact of state and central-bank lending on economic growth (Boyreau-Debray, 2003, p.20). In addition, the study finds that provinces with a more diversified banking sector perform better in terms of economic growth.

Boyreau-Debray (2003) throw light on the importance of diversifying ownership in the banking sector as well as allowing private entry in banking markets. Hasan, Wachtel and Zhou (2009) carry out a similar study and attempt to explain the relationship between institutional development, financial deepening and economic growth. They also make use of provincial data from China and in addition to indicators for financial deepening, they add other explanatory variables for institutional development which capture legalization of the markets and respect for property rights. In contrast to Boyreau-Debray (2003) findings of a negative relationship between financial development and growth, they find that the development of financial markets, legal environment, awareness of property rights and political pluralism are associated with stronger growth. However, empirical studies on African data have also suggested the existence of a negative relationship between financial development and economic growth. Akinboade (2000), Ram (1999) and Favara (2003) show that in Africa, the relationship is negative and significant during periods of financial liberalization and insignificant during periods of repression (Musamali, Nyamongo and Moyi, 2014, p.196). These findings are also in line with Deidda and Fattouh (2002) and Kaminsky and Reinhart, (1999) who also subscribe to the negative impact of finance on growth.

Some recent studies also attest to the negative relationship between financial development and economic growth. Samargandi et al. (2013) revisit the relationship using financial development and economic growth data of 52 middle income countries over a 28 year period. Using a panel autoregressive distributed lag model, they find that financial development does not have a linear positive long run impact on economic growth. Instead, their findings show an inverted U-shaped relationship between finance and growth in the long run, suggesting that middle income countries face a threshold point after which financial development no longer contributes to economic growth. However, Samargandi et al. (2013, p.19) also conclude that the impact of financial development varies across the countries due to the heterogeneous nature of economic structures, institutional quality, and financial markets amongst other factors (ibid, 2013, p.19). This means findings of this study may largely apply to middle income countries but might not apply to low and high income countries.

Rousseau and Wachtel (2011) explore the finance-growth relationship using cross sectional and panel data from 84 countries over a 44 year period using a standard two stage least squares model as well as the dynamic GMM system. Their study findings show that the finance-growth relationship is no longer as strong as it was between the years 1960 to 1989. According to Rousseau and Wachtel (2011) incidences of financial crises have over the years dampened the effect of financial deepening on economic growth. They point out that excessive financial deepening and too rapid growth in credit may have led to inflation and weakened banking systems which in turn resulted in growth-inhibiting financial crises. They also claim that excessive financial deepening may have been a result of widespread financial liberalizations in the late 1980s and early 1990s in countries that lacked the legal or regulatory infrastructure to exploit financial development successfully. However, Rousseau and Wachtel (2011) fail to provide evidence that financial liberalization indeed played a role in reducing the effect of finance. Arcand et al. (2012) examine whether there is a threshold above which financial development no longer has a positive effect on economic growth. Using cross country ordinary least squares regressions and panel estimations, their findings show that in countries with very large financial sectors there is no positive correlation between financial depth and economic growth (Arcand et al., 2012, p.23). However, they find a positive and robust correlation between financial depth and economic growth in countries with small and intermediate financial sectors and a threshold of around 80-100% of GDP above which finance starts having a negative effect on economic growth (ibid, 2012, p.23). In their attempt to explain the reasons behind the negative impact of finance on growth, Arcand et al. (2012) come up with three possible reasons. These include economic volatility and the increased probability of large economic crashes, potential misallocation of resources, even in good times, and whether lending is issued to finance investment in productive assets or to feed speculative bubbles (Arcand et al., 2012, p.23-24). With regards to the last point, their study shows that enterprise credit is positively associated with economic growth but that there is no correlation between growth and household credit (ibid, 2012, p.24).

Another recent contribution by Demetriades and Rousseau (2015) also expresses the existence of a negative relationship between finance and growth. Using data from 91 countries and cross sectional regressions over a 32 year period,

Demetriades and Rousseau (2015) show that financial depth is no longer a significant determinant of long-run growth. In addition, they find that certain financial reforms have sizeable growth effects, which can be positive or negative depending on how well banks are regulated and supervised (Demetriades and Rousseau, 2015, p.2). They also concur with Rousseau and Wachtel (2011) on the changing nature of the finance growth relationship over time and acknowledge that from the 1970s to the late 80s, more finance seems to have resulted in more growth unlike the period between 1990 to 2004 when more finance resulted in lower growth (Demetriades and Rousseau, 2015, p.6). The study findings also agree with the theoretical views of Mckinnon (1973) and Shaw (1973) that liberalizing credit allocation can result in substantially higher long-run growth in well regulated and supervised banking systems. In this regard, Demetriades and Rousseau (2015, p.6) point out banking regulation and supervision play a much more important role than financial depth, and indicate that what matters for growth now is how well the financial system is regulated. The contrasting empirical views on the finance growth nexus show that the verdict is not yet out on the finance growth relationship. Samargandi et al. (2013, p.19) also suggest that the impact of financial development varies across the countries due to the heterogeneous nature of economic structures, institutional quality, and financial markets amongst other factors. Therefore, the negative results might be an indicator of the fact that financial development alone cannot spur economic growth. There might be need for it to be complemented by appropriate institutional quality and other aspects such as social capital. Empirical studies have not conclusively shown the role, if any, that institutional quality and social capital can play in the finance-growth nexus.

2.5 Financial integration, economic growth and financial development: Empirical evidence

Empirical studies on financial integration have focused mainly on its impact on economic growth and financial development. Findings of these studies have shown divergent views on the direction of impact. One of the first studies by Quinn (1997) undertakes multivariate regression analysis of 64 nations to determine the associations between international financial regulation and long-run economic growth. Quinn finds out that capital account liberalization is robustly and positively

associated with economic growth. The study goes further to explain the mechanism through which capital account liberalization leads to growth. According to Quinn, (1997, p.541) firstly, economic growth is enhanced by liberalization because it increases the "efficiency" of investments in capital and labor. Second, increased returns to efficient investments imply a shifting of relative prices (and incomes) in an economy. The shift favors those who make "efficient" investments in assets or skills in high demand/low supply in international market. Quinn's study opens the gateway for new research on financial integration and growth. However, this study does not control for change in other variables that affect economic growth. Klein and Olivei (2000), Bekaert et al. (2001) and Edwards (2001) carry out further studies at the turn of the century and still find a positive relationship between the two. Klein and Olivei (2000) investigate the effect of capital account openness on financial deepening and economic growth. They make use of cross sectional regression of data from different countries over a 10 year period. The study finds that countries with open capital accounts have a significantly greater increase in financial depth than countries with continuing capital account restrictions, and they also enjoy greater economic growth. However, a subsample which excludes OECD countries fails to give a significant effect of capital account liberalization on financial depth for two out of the three measures of financial development used in the study (Klein and Olivei, 2000, p.17). This might be an indicator that capital account liberalization may only promote financial development when other institutions are in place and well-functioning (Klein and Olivei, 2000, p.17). Similarly, findings on capital account liberalization and economic growth show that capital account liberalization appears to positively affect economic growth in the subsample of highly developed countries (Klein and Olivei, 2000, p.20). Therefore, it appears as if the positive results of this study are largely driven by the inclusion of highly industrialized countries included in the study sample. This implies that results for developing countries included in the sample largely show a negative relationship between financial openness and growth. The results on developing countries from this study might provide an indication of the need to further explore the conditions under which financial integrations leads to economic growth.

Bekaert et al. (2001) take a different approach and focus their study on the implications of equity market liberalization on economic growth. Their study is carried

out over a five year period for 95 countries using a standard growth regression model. Instead of using overall GDP as a measure of economic growth, they decompose GDP into the proportions due to investment, consumption, government and the trade sector (Bekaert et al., 2001, p.3). Results of the study show that investment to GDP rises after capital market liberalizations (ibid, 2001, p.3). In addition, consumption to GDP ratio decreases and the trade balance becomes more negative (Bekaert et al., 2001, p.3). Accordingly, the study notes that the decrease in the ratio of consumption to GDP ratio might be an indicator that the capital flowing in after liberalization was not squandered and the increased investment may be due to better growth opportunities and lower cost of capital (Bekaert et al., 2001, p.3). However, the study fails to provide tangible evidence to prove these assertions. In terms of overall economic growth, the findings show that equity market liberalization, on average, leads to a one percent increase in annual real economic growth over a five year period. Bekaert et al. (2001) were able to control for other factors which affect economic growth such as macroeconomic reforms, business cycles and financial development. However, the study was carried out over a five year period which might be too short to make conclusive statements. Edwards (2001) also investigates the effects of capital mobility on economic growth. Edwards uses a new approach in determining level of openness. His study uses indexes which allow for intermediate situations, where a country's capital account is semi-open and is available for two different time periods in time. His study considers six groups of countries, Industrialized, African, Asian, and Non-industrial European, Middle East and Latin American and Caribbean countries. Findings from this study point to the fact that an open capital account positively affects growth only after a country has achieved a certain degree of economic development. Edward's study also concludes that "At very low levels of local financial development a more open capital account may have a negative effect on performance" (Edwards, 2001, p.16). The study also reports that countries can only take advantage, in the net, of a greater mobility of capital once they have developed a somewhat advanced domestic financial market (Edwards, 2001, p.16). "In that sense, then, emerging markets are essentially different from advanced nations" (ibid, 2001, p.16). This finding concurs with that of Klein and Olivei (2000) on the difference in terms of impact that financial integration has between developed and emerging markets. More recently, other studies have also maintained the view that financial integration has a positive effect on economic

growth and financial development (see Quinn and Toyoda, 2008; Delechat et al., 2009; Mahajan and Vermar, 2015; Smith et al., 2014).

Quinn and Toyoda (2008) use pooled time-series, cross-sectional OLS and system GMM estimators to examine economic growth rates and capital account liberalization. Unlike previous studies, their findings show uniformity between developed and emerging markets. They conclude that capital account liberalization has a positive association with growth in both developed and emerging market nations. The data for this study covers a five decade span hence overcomes weaknesses of previous studies being carried out in different time periods. However, it only applies *de jure* measures in determining financial openness, and ignores *de facto* measures whose use might have produced a different set of results. Delechat et al. (2009) carry out their study on 44 Sub Saharan Africa countries. Their study findings outline a fairly consistent positive association between net capital flows and growth for Sub Saharan countries. However, their data set only covers a 7 year period, which does not allow one to make conclusive inferences about a causality relationship. Mahajan and Vermar (2015) contribute to the financial integration and economic growth by investigating the relationship between the two using data from India covering a 30 year period. Their study findings show that international financial integration in the form of capital inflows and outflows significantly affect economic growth of the nation both in short as well as long run (Mahajan and Vermar, 2015, p.134). In addition the study also notes that this growth occurs through direct and indirect impact of financial integration. Mahajan and Vermar (2015) note that the indirect impact takes the form of financial development which occurs through improvements in the domestic financial system, increased size and efficiency of the financial system (Mahajan and Vermar, 2015, p.134). However, the study is based on data from a single country hence its findings cannot be said to be applicable to all countries. In addition, Mahajan and Vermar (2015) do specify the indirect mechanism which leads to economic growth but forget to explain the mechanism for the direct impact.

Though a large body of these studies has shown a positive relationship between financial integration and economic growth, in between these studies, there has also been a dissenting voice in the form of literature which has also shown a negative or

mixed relationship. Alesina, Grilli and Milesi-Ferretti (1993) and Grilli and Milesi-Ferretti (1995) carry out early studies on impact of capital controls on growth and come to the conclusion that capital controls have no impact on economic growth . Alesina et al. (1993) use a sample comprising twenty Organizations for Economic Co-operation and Development (OECD) countries to investigate the institutional and political determinants of capital controls over a forty year period. Their study suggests that capital controls are more likely to be imposed by strong governments which have a relatively free hand over monetary policy (Alesina et al., 1993, p.16). They add that by imposing capital controls, these governments raise more seigniorage revenue, and keep interest rates artificially low (ibid, 1993, p.16). As a result of these capital controls public debt may accumulate at a slower rate and government may be forced to adopt more sound fiscal policy (Alesina et al., 1993, p.16). They also conclude that capital controls have no effects on growth. However, their study findings are not based on robust hypothetical tests and do not provide a mechanism under which the major conclusions of the study were drawn. In addition, the study only considers foreign exchange restrictions as measures of capital controls and ignores other controls which cannot be easily quantified like requirements for mandatory approval, minimum stay requirements. Again, their study sample is made up of developed countries only hence no inferences can be made from the study in relation to developing countries.

Grilli and Milesi-Ferretti (1995) study the effects and determinants effects of capital controls using panel data for 61 countries. Their findings show that capital controls are more likely in countries with lower income, a large government, and a central bank with limited independence. Also, they are more likely to be imposed in poorer countries, which have a less developed tax system since they can be used as a source of seigniorage revenue and for their effects on the real return on domestic government debt (Grilli and Milesi-Ferretti, 1995, p.544). Their study fails to find any robust correlation of current and capital account restrictions with economic growth. Rodrik (1998), O'Donnell (2001), Gehringer (2013) Mougani (2006), concur with the view that liberalization does not necessarily have positive effects on economic performance. Using evidence from around 100 countries, Rodrik argues that there is no evidence in the data that countries without capital controls have grown faster, invested more, or experienced lower inflation. According to Rodrik (2008, p.9),

capital controls are essentially uncorrelated with long-term economic performance once other determinants are controlled for. Edison et al. (2002a) also contribute to the debate in their investigation of the impact of international financial integration and economic growth. Their study makes use of data from 57 countries and adopts both *de jure* and *de facto* measures of financial integration. To assess the relationship, the study makes adopts three approaches, the pure cross sectional OLS, two stage least squares and the dynamic panel model. Their study findings fail to show a robust relationship between international financial integration and economic growth. In addition the study also finds that international financial integration does not exert a positive influence on growth in countries with suitably high levels of GDP per capita or sufficiently high levels of educational attainment (Edison et al. 2002a, p.20-22). In contrast to Klein and Olivei (2000) and Edwards (2001), Edison et al. (2002b, p.20-24) also conclude that the integration-growth relationship does not depend on levels of bank or stock market development, greater institutional development, and sound macroeconomic policies .

Mougani (2014) investigates the impact of financial integration on economic activity from an African perspective. The study examines the cases of African countries that are classified as open and closed over a 33 year period. To estimate the relationship between financial integration and growth, Mougani (2014) uses cross sectional OLS and a dynamic panel estimation model. The findings of this study show considerable divergences on the impact of financial integration on economic growth (Mougani, 2014, p.17). Again, the study finds no evidence that supports the view that international financial integration accelerates economic growth, even under any particular economic and financial conditions (ibid, 2014, p.17). Mougani also argues that it is too early especially for African countries to expect any sound econometric impact of international financial integration as most African countries have only just started significant private investment flows from outside. Mougani`s (2014) study findings are relevant in the African context as most African have just adopted the concept of international financial integration. However, it is incorrect to argue that significant private investment flows to Africa only started after introduction of the international financial integration concept. Instead, the debate on capital flows to Africa spurring growth has always been there with capital flows going as far back as the 1960s (see Collier and Gunning, 1999; Easterly and Levine, 1997; Sachs and

Warner, 1997). The mixed results indicate the need to carry out further study so as to have conclusive results on the link between the two. In addition, differences obtained on results between developed and developing countries also necessitate the need to consider factors which support the financial integration- economic growth process.

Edward (2001) propounds that an open capital account positively affects growth only after a country has achieved a certain degree of economic development. On the other hand, De Gregorio (1998, p.16) notes that that a deep financial market leads to higher growth. De Gregorio (1998, p.1) also notes that it is necessary to know whether developing a deep financial market can be fostered by financial integration. Financial literature has in turn sought to explain the mechanism under which financial integration leads to economic growth. As a result of the need to address these issues, empirical studies have also been carried out with greater focus on the extent to which financial integration can influence financial development in a country (see Giannetti et al., 2002; Claessens et al., 2001; Chinn and Ito, 2006). Again, findings of these studies have also shown diverging views. Rajan and Zingales (2000) propose an “interest group” theory of financial development which examines the effects of trade openness with and without cross border capital flows for the periods 1913 to 1990. Their results suggest that financial development is positively correlated with trade openness in periods when cross border capital flows are high, but less so, or not at all, when cross-border capital flows are low. They hypothesize interested groups oppose this form of financial development because it breeds competition to the domestic markets through entrance of foreign firms. Their theory goes in some way in explaining the effect of capital account openness on financial development as well as reasons for differences in financial development across countries. However, it falls short of giving a convincing argument for the difference in levels of financial development amongst countries. It largely assumes that differences in terms of financial development after capital account openness are largely a result of the influence of interest groups and ignores other aspects like quality of institutions, and social capital, which might also facilitate the financial development process. Giannetti et al. (2002) assess the effects of financial integration on the ability of European countries to grow faster financially and economically. They carry out their study using country, industry and firm level data.

Their study findings show that the growth benefits of financial integration are considerable both at country and industry level. They note that the impact of financial integration on country and industry growth of both value added and output raises the indicator of financial development of European countries in comparison to the US standard. However, Giannetti et al. (2002, p.50) also acknowledge the non-uniformity in terms of financial development amongst European countries, even after the financial integration process. In addition, the study also shows that countries which have a comparably weak financial structure benefit most from integration while those which have a higher level of financial development benefit little. However, the study fails to explain the cause of differences in terms of benefits accruing to the financially developed and less financially developed countries. The aspect of comparably less financially developed countries benefiting more from financial integration than the more financially developed ones might be an indicator that there is a maximum threshold to which countries can benefit from the integration process.

Claessens et al. (2001) examine the extent and effect of foreign presence in domestic banking markets using observations from 80 countries. They focus on how net interest margins, overhead, taxes paid, and profitability differ between foreign and domestic banks. Using the weighted least squares regression model, they find that increased presence of foreign banks is associated with a reduction in profitability and margins for domestic banks. Furthermore, the study also finds that foreign banks have higher profits than domestic banks in developing countries whilst in developed countries; domestic banks are shown to have higher profits than foreign banks. In the long run, foreign bank entry may improve the functioning of national banking markets, with positive welfare implications for banking customer as foreign entry results in increased competition and lower costs Claessens et al. (2001, p.19). On the other hand, the fact that the entry of foreign banks results in a reduction in profitability and margins for domestic banks in developing countries might be an indicator of increased risk of failure of domestic banks because of foreign bank entry. The study by Claessens et al. (2001) is based on a much broader study sample (80 countries and 7900 observations) than previous studies of a similar nature, which enhances credibility of its findings. Nonetheless, it has the weakness that estimations on which the findings are generated are based on one econometric method, the weighted least squares; hence the data might not have been subject to

more robust tests, which could probably have yielded a different set of results. Chinn and Ito (2006) carry out further study and focus on the links between capital account liberalization, legal and institutional development, and financial development with special focus on equity markets. Their study is based on panel data from 108 countries, over a 20 year period. To examine the long-term effect of capital account openness, they use a dynamic model and use the Kaopen as a measure of financial openness. Empirical findings of this study show that a higher level of financial openness contributes to the development of equity markets only if a threshold level of general legal systems and institutions is attained. Chinn and Ito note that this is most prevalent especially with emerging markets. Further, among emerging countries, the study shows that higher levels of bureaucratic quality and law and order, as well as the lower levels of corruption, increase the effect of financial opening in fostering the development of equity markets. The study also throws light on the nature of legal variables which enhance the effect of capital account opening.

In this regard, Chinn and Ito (2006) conclude that general legal and institutional variables enhance the effect of capital account opening more than finance related legal and institutional variables. The study also examines the relationship between trade opening and capital account opening and describes trade opening as being a precondition for capital account liberalization. In addition, Chinn and Ito also claim that there is synergy between banking and equity markets and argue that development of the banking sector is a precondition for development of the equity markets. Like Claessens et al. (2001), Chinn and Ito's study is based on a very broad study sample, which might also enhance the credibility of its findings. However, it focuses mainly on development which occurs in the equity markets and just partially focuses on development in the banking sector. As a result, the findings on development of the banking sector are just based on a single measure of banking sector development, which is the ratio of private sector credit to gdp. In addition, the study only makes use of the Kaopen measure of financial openness, and ignores *de facto* measures, which could probably have shown a different set of results. Ito (2006) goes further and undertakes a study to determine the impact of financial openness on financial development, this time using a sample of 87 Asian and other less developed countries. Using panel data regression, he finds out that a higher level of financial openness again spurs equity markets development amongst these

countries. Again the study only uses one measure of integration, the Kaopen measure. However, literature shows that this measure places emphasis on macroeconomic variables, ignoring the impact of some political variables which have a stronger effect (Karcher and Steinberg, 2010) hence can be complemented with other measures such as *de facto* measures for comparative analysis.

Prasad et al. (2003) study the effects of globalization on economic growth in developing countries. Their findings show that financial integration leads to growth through direct and indirect channels. The direct channels are more inclined to financial development aspects and these include augmentation of domestic savings, lowering of cost of capital due to better risk allocation, transfer of technology and development of the financial sector. They note that foreign bank participation can facilitate access to international financial markets. Secondly, it can help improve the regulatory and supervisory framework of the domestic banking industry. Thirdly, foreign banks often introduce a variety of new financial instruments and techniques and also foster technological improvements in domestic markets (ibid, p.25). The study fails to address the issue of threshold conditions that have to be attained for a country to reap the gains of financial liberalization. In a cross country study on bank competition, Claessens and Laeven (2004) also find that foreign bank entry brings in more competition to the domestic financial sector and results in reduction in costs of domestic financial services. Along with others in the field Mishkin (2007b) supports the view of the positive impact of financial integration on financial development. Mishkin notes that the entry of foreign firms into the domestic financial markets is at times associated with adoption of best practice standards in the domestic market and attributes more liberalized domestic financial markets to the impact of financial integration.

Baltagi et al. (2009) address the same empirical question of whether trade and financial openness can help explain changes in financial development, as well as its variation across countries in recent years. They make use of annual panel data from both developing and developed countries and dynamic panel estimation techniques. In agreement with Rajan and Zingales (2003) their findings also show that both types of openness are statistically significant determinants of banking sector development. Baltagi et al. (2009) also claim that relatively closed economies stand to benefit most

from opening up their trade and/or capital accounts and argue that either trade openness or capital account openness can lead to banking sector development for such countries. Farid (2013) examines the issues of regional financial integration and its impact on stock market development from an African context. The study uses data over a 30 year period and assesses the relationship using the GMM approach for panel data analyses. The study finds out that formal harmonization and integration of African stock markets may improve their informational efficiency. Farid (2013) notes that the integration of the financial markets requires that appropriate steps be taken to create the enabling environment. However, the study does not state the enabling environment needed for the integration process to be successful.

However, not all literature concurs with the positive view. For instance Rodrick (2008) notes that financial integration might have negative effects on a country's export competitiveness through an appreciation in the exchange rate of that country as capital flows into the country increase because of integration. Demirguc-Kunt and Detragiache (1998) also agree that financial integration does not always have positive effects. Their study analyses the relationship between banking crises and financial liberalization in a panel of 53 countries over a 15 year period. Through a multivariate logit framework, Demirguc-Kunt and Detragiache (1998) demonstrate that integration can also lead to increased fragility of the financial system. Demirguc-Kunt and Detragiache (1998, p.28) note that "interest rate ceilings and entry restrictions create rents that make a banking license more valuable to the holder". Accordingly, banks are induced to be more responsible in their operations in fear of losing their licences. However, financial liberalization removes these ceilings and other barriers to entry. As a result, Demirguc-Kunt and Detragiache (1998, p.28) argue that removal of interest rate ceilings or the reduction of barriers to entry reduces bank franchise values, thus exacerbating moral hazard problems. Bankers' appetite for risk is also assumed to be greater under a liberalized financial system, thus exacerbating the risk of financial fragility (Demirguc-Kunt and Detragiache, 1998, p.28). However, the study uses growth regressions intended for long-run growth rates yet its focus is on short to middle term growth rates, therefore coefficients obtained in the study might be inaccurate. Demirguc-Kunt and Detragiache (1998) also use interest rate liberalization as the sole measure for financial liberalization, whereas financial liberalization measures are broad and can

be in the form of stock or flows of capital. In addition, the study fails to provide convincing evidence that financial liberalization leads to financial crises as it ignores other factors that might cause financial instability in banks. Again, the study gives a biased perspective of the effects of financial liberalization as it ignores the financial development that might occur outside the banking markets for example in the equities markets.

Mishkin (2007b) also argues that liberalization can lead to financial crises. Mishkin (2007b) adds that the financial crises occur in two ways. In the first case, after integration, domestic banks engage in risky transactions through lending to international markets, which risks they are not quite aware of. In addition, because of lack of expertise in screening and monitoring borrowers, the loans to the international markets may eventually end up as non-performing loans, which may lead to bank failures (Mishkin, 2007b, p.16). In the second case, the same can occur if domestic financial institutions obtain loans from international markets at high rates of interest (Mishkin, 2007b). Mishkin argues that after liberalization, banks face the need to rapidly increase their lending activities and are forced to borrow from international markets. The easy access to inflows from the international markets leads to excessive risk taking on the part of banks and huge loan losses, which again may lead to financial crises post liberalization (Mishkin, 2007b, p.18). Mishkin advocates for prudential regulation after financial liberalization. However, his study is based on observations of countries that underwent financial crises after liberalizing their financial markets. The study fails to provide evidence linking the occurrence of financial crises to financial liberalization. In addition, Mishkin (2007b) argues that financial liberalization can only succeed under prudential supervision. However, his study fails to explain how a country like China can achieve high economic growth rates post liberalization, when its financial regulation framework is weaker than that of some developed countries. Similarly, Stiglitz (2000) warns that if carried out, too quickly, financial integration can destabilize the financial system.

In addition, Calvo and Reinhart (2002) state “Financial integration can increase the likelihood of financial crises due to the volatile nature of international capital flows. In extreme cases countries can experience an unanticipated withdrawal of short-term capital”. A more recent study by David, Mlachila and Moheput (2014) also shows

the negative side of financial integration on financial development. Like Farid (2013), the David et al. (2014) study is from an African markets context. Their study analyses links between financial and trade openness and financial development in Sub-Saharan African countries. They find no robust direct link between trade and capital account openness and financial development and urge policy makers to be cautious about their expectations regarding immediate gains in terms of financial deepening from greater trade and capital account openness. The difference in the nature of findings on the impact of financial integration has stimulated debate on the precise form of financial integration which can be adopted to possibly facilitate financial development and spur economic growth. This has again stimulated the need to examine the link between global financial integration and regional financial integration. As previously discussed, empirical evidence shows contrasting views on the impact of global financial integration. However, not much is known about the costs and benefits arising from financial integration accruing to countries within the same economic region, economic bloc or neighboring countries with almost trade links and business cycles (regional integration). Portes and Rey (2005) explore panel data on bilateral gross cross-border equity flows between 14 countries over an 8 year period. Using a gravity model, they show that the level of financial integration, measured by gross transactional flows depends on market size and transaction costs, with distance explaining a significant portion of these costs. In this regard, their findings demonstrate that the degree of financial integration might be greater and might result in lower transaction costs if carried out amongst countries within the same region. Likewise, Shin and Yang (2006) explore complementarities between bilateral trade and financial integration again using a gravity model. Their findings confirm that bilateral distance and other economic size variables determine both cross-border trade and financial flows. Empirical research by Garcia-Herrero and Ruiz (2007) and Rogoff et al. (2006) also shows that bilateral trade and financial linkages influence business synchronization in terms of output and policies signifying the importance of regional ties across countries. In terms of direct benefits from regional financial integration, empirical studies acknowledge that there might be risks and benefits. Ananchotikul et al. (2015) assess the impact of regional financial integration on financial inclusion in Europe and Asia using cross-border banking integration as a measure of financial integration. The study concludes that regional financial integration is a statistically significant determinant of financial inclusion in

Europe and Asia, in addition to financial deepening and acknowledges that cross-border banking integration may have increased the availability of banking services to segments of the population in these regions between the years 2000 to 2012.

Frey and Volz (2011) also examine the effects of regional financial integration though focusing more on the effects of political agreements on financial development. Their study finds out that regional financial integration contributes to the overall size of the financial sector, increases the efficiency of the financial sector. The study also shows that financial integration results in exclusion of small enterprises from access to funds as a result of the effect of foreign owned banks impeding the financing of small enterprises. This study has the strength that it is carried out in the context of regional integration in the Sub-Saharan context. However, it is carried out over a 4 year period, which might not be long enough to make conclusive statements. In addition the study adopts a weak measure of regional financial integration in the form of a dummy variable, depending on whether a country belongs to a regional grouping or not. Garcia-Herrero and Wooldridge (2007) carry out a comparative analysis of the effects of global and regional financial integration and come to the conclusion that the two are complementary. However, their examination of regional integration in Asia markets shows that regional integration in Asia has resulted in increased investments across the Asian markets and that there has been bias towards regional equity portfolio investments in Asian, European and Latin American markets. This finding confirms Wakemann-Linn and Wagh's (2008, p.1) assertion that regional integration can bring together scarce savings and expand opportunities for risk diversification. Similarly, UNECA (2008, p.275) notes that through regional integration, the SADC region has been able to harmonize listing requirements and encourage cross country listings amongst regional countries. On the other hand, the extent to which these cross listings have impacted the levels of market capitalization across regional stock exchanges or how this has affected the nature of regional equity markets investments is an area which still needs further investigation. UNECA and AU (2008), UNECA and SADC (2010), Yeyati, Stein and Daude (2002) and Deroose (2006) also provide further evidence of the benefits of regional financial integration. Other empirical studies, for example Laifi (2007) and Blomstrom and Kokko (1997) indicate that the effect of regional integration varies depending on the nature of countries.

Laifi (2007) argues that the response to integration between developed countries may differ with the response to integration between developing countries. According to Laifi (2007), regional integration between developed countries results in insignificant foreign bank entry and consequently little foreign direct investment as the integration would be between markets that are already liberalized. On the other hand, if integration occurs between developing countries or between a developed and a developing country, there is likely to be a notable impact on banking sector FDI (Laifi, 2007). In contrast to the increased benefits view of regional integration, Mmolainyane and Ahmed (2014, p.15) claim that the impact of integration on financial developments is mainly negative since financial markets integration may lead to increased instability. However, their study is based on evidence from one country and cannot be applicable to all countries. In concurrence with Mmolainyane and Ahmed (2014), Ananchotikul et al. (2015, p.104) note that deeper regional financial integration can amplify shock propagation and cause financial instability in the region. Financial integration can then result in transmission of output growth slowdowns across borders (ibid, 2015, p.104). Further empirical evidence from Velde and Bezemer (2006, p.29) shows that the question of whether regional integration results in increased investment depends on the region in which it has occurred. In this context, Velde and Bezemer (2006, p.29) argue that “smaller countries and countries located further away from the largest country in the region benefit less from being part of a region than larger countries and those close to the core of the region”. Vamvakidis (1998) also agrees with this assertion and claims that countries with open, large, and more developed neighboring economies grow faster than those with closed, smaller, and less developed neighboring economies. In contrast to later studies, earlier works by De Melo et al. (1993) and Brada and Mendez (1988) have produced no evidence that membership to a specific region results in increased benefits, putting into question the assumed benefits of regional financial integration. At the same time, findings by Laifi (2007) and Velde and Bezemer (2006) seem to claim that regional integration might not affect all regional countries in equal measure.

2.6 Conclusion

The divergence in findings on the impact of financial integration on both economic growth and financial development reflects the nature of differences in the way these studies were carried out (Mougani, 2012). As has been shown in this empirical review, in some cases, the difference arises because of the differences in sampling countries selected for the study (regional or global integration) or differences in methodology applied, differences in measures picked for financial integration as well as financial development. The divergence in views shows also that empirical studies have not been conclusive on this matter. Empirical studies reviewed have shown that it is possible that financial integration can influence financial development. At the same time, literature has also shown that it is not always the case; there are threshold conditions that have to be satisfied for that to happen. In addition, literature has also shown that there might be a link between regional financial integration and global financial integration. The two might not necessarily compete or be different in terms of benefits, but might actually be complementary. However, the literature reviewed in this chapter fails to capture the extent to which regional financial integration may impact global financial integration. The literature also fails to clearly articulate the mechanism through regional financial integration may affect levels of financial development. Further, the reviewed studies are lacking in highlighting the extent to which institutional quality and social capital affect the financial development process. These are areas which empirical literature has failed to adequately address thus necessitating the carrying out further study on the subject matter.

CHAPTER THREE

FINANCIAL DEVELOPMENT, INSTITUTIONAL QUALITY AND SOCIAL CAPITAL: THEORY AND EVIDENCE

3.1 Introduction

This chapter explores literature on financial development and its link with levels of institutional quality and social capital available in a country. Financial literature has shown that financial integration has a positive effect on financial development and economic growth. Further theoretical and empirical propositions have been made to suggest that such positive development can only occur within certain thresholds of general legal systems, institutional quality and social capital. This chapter discusses theoretical and empirical evidence relating to these variables, showing how they are assumed to enhance financial development after financial integration has occurred.

3.2 Financial development and institutional quality: Early views

As shown in the previous chapter, financial literature has over the years placed great focus on the impact financial integration has on economic growth and financial development. However, not much focus has been placed on the disparities that occur in terms of financial development and economic growth after financial integration has been firmly established within a region or an economic bloc. Thus, inadequate attention has been placed on other important elements that might affect the financial development process that should occur after financial integration. However, literature shows that one of those elements is the legal structuring of financial systems across countries herein referred to as institutional quality. Early works on law and finance by Stigler (1964) centre on the effects of regulation of the securities market on buyers of securities offered on the market. Stigler examines the returns of buyers' pre and post implementation of the United States securities act of 1933. His study finds no difference in terms of returns between the two sets of buyers, giving the hint that regulation of the markets has no effects. Jensen and Meckling (1976) bring a new perspective with regards to the legal structure of institutions through their theory of the firm, which combines elements from the theory of agency, the theory of property rights and the theory of finance to develop a theory

of the ownership structure of the firm. Their theory of property rights suggests that specification of rights is affected through the legal act of contracting and the behavior of managers in institutions depends on the nature of these contracts (Jensen and Meckling, 1976, p.4). The agency theory specifies the contractual relationship between shareholders and managers of institutions. According to the theory, managers of institutions are agents under contract, offered incentives to act in the best interest of institutions (Jensen and Meckling, 1976, p.5). Through the nature of these contracts, the theory claims that shareholder value of institutions is maximized. However, the theory takes biased view in that it assumes all managers at institutions are more motivated by personal gain, and without incentives would not act in the best interests of institutions nor increase shareholder value. It ignores the fact that there are managers motivated to act responsibly in the best interests of institutions and not necessarily through incentives. In addition, the early works on law and finance fail to show explain the role of law in terms of aspects such as rules for investors, investor protection, contract enforcement and how these are then used to create wealth in financial markets, leading to financial development.

Easterbrook and Fischel (1991) attempt to overcome this limitation and shed further light on the law finance relationship, touching on rules pertaining to insider trading and fiduciary duties, disclosure requirements for securities, corporate control rules and how these are applied to maximize wealth in financial markets and vice versa. The analysis by Easterbrook and Fischel (1991) takes more of a verbal logic approach and does not in any way attempt to provide proof of any relationship between establishment of any specific law and corresponding changes in wealth across financial markets. On the other hand, Hart (1995) adopts a modern view of the agency theory applicable mainly to financial institutions. Hart (1995) argues that traditional approaches such as the neoclassical, principal-agent, and transaction costs theories cannot by themselves explain firm boundaries. The study attributes the aspect of the agent having power in institutions to incomplete contracts and says if contracts are complete, agents have no power and can only act in the best interests of institutions they serve. In addition, Hart's (1995) theory views the financial system as being made up of contracts which in turn determine how it operates and develops. However, these early works do not go on to explain why there are variations in the levels of financial development amongst countries. They

do not give empirical evidence on how differences in the nature of legal rules applied across countries have gone on to shape the quality of institutions and financial landscape of those countries. They do not explain why some countries have greater depth in terms of their financial markets or why there are differences in terms of stock market valuations across equity markets, or why some countries have more sophisticated banking markets. These shortcomings have led to empirical studies being carried out in later years to try to find out if there is any link between financial development and institutional quality across countries.

3.3 Financial development and institutional quality: Empirical evidence

La Porta et al. (1996) originate the argument that differences in financial development could be a result of differences in nature of legal rules across countries. Their initial study examines investor protection rules for corporate shareholders and creditors across 49 countries and quality of enforcement of those rules. They also examine the origin of these rules in terms of whether they originate from civil law or common law. Their study finds out that countries whose legal rules originate in the common law tradition tend to protect investors considerably better than countries whose laws originate in the civil law (La Porta et al., 1996, p.40). In terms of protection of shareholders, the study finds out that concentration of ownership of shares in the largest public companies is negatively related to investor protections, giving an indirect indication that small investors do not get the same protection as big investors. The study does not go on to show how the differences in investor protection rules and enforcement go on to affect development of financial markets across countries. In response to this empirical question, La Porta et al. (1997) carry out further study using the same sample of 49 countries. This study finds out that countries with poorer investor protection rules have narrower debt and equity markets. The study also finds a link between origin of legal rules and financial development. Countries with civil laws are shown to be having narrower financial market than countries with common law (La Porta et al., 1997, p.19). These findings throw light on the mystery of the link between finance and institutional quality. They provide evidence that good investor protection rules can entice investors to provide investments funds towards specific countries, at the same time, from the findings; one can also note that weak investor protection rules can result in investors shunning countries with such, leading to lower levels of financial development.

Though the findings attest to the link between the two, the study does not answer the question as to the whether high institutional quality levels are the only condition necessary for financial development to take place. In the same vein, it does not show whether institutional quality really is a condition for financial development given a situation where countries open up their capital accounts through financial integration, leading to a rise in depth and breadth of financial markets, without any changes taking place to the rules of investor protection. The study does not also explain situations where countries which evidently have weaker financial regulation frameworks, can still attain higher levels of financial development in (in terms of depth and breadth) than countries with stronger financial regulation frameworks. Another study by La Porta et al. (2000) identifies the legal approach as the best way of understanding governance of institutions and again supports the view that differences in terms of breadth and depth of capital markets, in dividend policies, and in the access of firms to external finance are attributable to differences in legal approach.

In support of the significance of institutions in facilitating financial development, Beck and Levine (2003, p.1), note “in countries where legal systems enforce private property rights, support private contractual arrangements, and protect the legal rights of investors, savers are more willing to finance firms and financial markets flourish”. Their review of the relationship between law and finance across European countries again shows differences in terms of financial development across countries can be explained by the different legal systems adopted by those countries. Weill (2010) takes a different approach and examines how institutional quality in the form of corruption affects financial development. Findings of the study show a negative relationship between corruption and financial development, measured by the ability of banks to lend to households and firms. However, the study is based on sample data from one country. Unlike Weill, Huang (2010) looks at institutional quality from a political perspective. He argues that democratic rather than autocratic political institutions have a positive effect on financial development across countries. In agreement with La Porta et al. (1997), Huang (2010) notes democracies better facilitate property rights protection and contract enforcement, encouraging investment. In addition, Huang identifies the link between institutional quality and financial integration, indicating that institutional quality improvement can

be a way under which financial integration can lead to financial development and economic growth. Huang's study is based on extensive data from 90 countries over a 40 year period. His study does not conduct any tests to provide evidence that indeed financial development which occurred is a result of democratization. It is just based on observations on levels of financial development pre and post democratization. Minea and Villieu (2010) look at institutional quality from a growth perspective and conclude that governments can only stimulate economic growth under given threshold levels of institutional quality and financial development. Cherif and Dreger (2014, p.9) note that institutional conditions are important for the development of the banking sector and stock markets. In their study, Cherif and Drager (2014) find that corruption and law and order are the most prominent factors stifling financial markets development and recommend better law enforcement and anti-corruption practices as strategies to support the financial development process. However, the study by Cherif and Drager (2014) left out data from countries which were in conflict at the time of the study. As a result, there were gaps in the data, with unbalanced panels in some of the data. In spite of that, the findings concur with previous studies on institutional quality. In addition, Levine (2001) examines the legal origins of financial development in terms of their emphasis on the rights of private property owners' vis-à-vis the state and their ability to adapt to changing commercial and financial conditions in financial development. The study findings assert that legal origins adopted centuries back explain the differences in the level of financial development between countries. Furthermore, Rachdi and Mensi (2012) assess whether institutional quality matters for financial development and economic growth from a Middle Eastern and North African perspective. Their study again shows that institutional quality is an important factor for both financial development and economic growth. The findings of this study are significant in that unlike other studies, the study uses different measures of institutional quality which include law and order, corruption, external conflicts, socioeconomic conditions, and democratic accountability. These measures give much broader view of institutional quality. The study findings are also based on econometric tests carried out in the study rather than on verbal logic as in other previous studies. Another significant study by Chinn and Ito (2006) looks at aspects that matter for financial development from a financial integration point of view. The findings of this study are significant in that it becomes one of the first to emphasize the importance of institutions for financial development

to take place after financial integration has occurred. According to Chinn and Ito (2006, p.187) the general level of legal development on aspects such as law and order, corruption, quality of bureaucratic system, creditor and shareholder protection matters for financial integration and development. However, the perspective on legal development as an important aspect for financial development cannot be applied holistically as Chinn and Ito base their findings on data from the least developed countries and not from the industrialized countries. It might be that legal development might not be important if a country has reached a certain level of industrialization. Beck et al. (2001, p.2-3) assess four theories regarding the determinants of financial development across countries. Their study focuses on four areas:

1. The traditional law and finance theory which attributes financial development to legal origin.
2. The dynamic law and finance theory, which looks at adaptability of legal origin to changes.
3. The politics and finance theory, which emphasizes the importance of politics as the main determinant of financial development and takes law as secondary.
4. The endowment view, which looks takes the pre-existing conditions prior to establishment of any laws as the main determinants of financial development.

In agreement with La Porta et al. (1997), Beck et al. (2001) find that differences in legal origin help in explaining differences in financial development across countries. The study also finds out that countries with common law have stronger institutions while civil law limits the level of financial development (Beck et al., 2001, p.39-40). In addition, there is evidence in support of the dynamic law and finance theory as the study also shows that countries like Germany which have allowed their laws to adapt to changing times have had higher levels of financial development than those which have remained stagnant (Beck et al., 2001, p.39-40). However, the Beck et al. (2001) study is not done in the context of developing countries. For instance, Beck et al. (2001) base their findings on institutional laws adopted from developed countries such as German, France and Scandinavian countries. They ignore the institutional laws found in mostly developing countries like the pre-colonial centralized African setup of institutions which according to Gennaioli and Rainer (2005), reduce

corruption and foster the rule of law or the Islamic laws and systems found in many Middle Eastern and West African countries whose presence has an impact on levels of financial development as observed by Kuran (2004). Unlike Beck et al. (2001), Rajan and Zingales (2000) argue that the law does not influence finance. Their view is closer to the politics and finance theory as they claim that the level of financial development depends on those with political power. From their viewpoint, incumbents oppose financial development because it breeds competition hence they will not allow laws which will seek to promote financial development. However, recent studies by Law and Azman-Saini (2008, 2012) oppose the political view and maintain the viewpoint that institutional quality is important for financial development.

Law and Azman-Saini (2008, p.16) note that institutional quality significantly enhances financial development, especially for the banking sector, at the same time, in terms of stock market development, the relationship is assumed to be U shaped, indicating that there is a limit to the extent to which institutional quality enhances stock market development. The rule of law, political stability and government effectiveness are identified as important institutional elements in the financial development process (Law and Azman-Saini, 2008, p.16). In support of these findings, Law and Demetriades (2006) also provide evidence that openness and institutions are important determinants of financial development. Compton and Giedman (2007) subscribe to the view that institutional quality significantly enhances financial development. In concurrence with Law and Azman-Saini (2008, 2012), their study also finds strong links between banking sector development and well-functioning institutions. Again in agreement with Law and Azman-Saini (2008, 2012), the study also finds no robust link between institutional quality and stock market development. Having reviewed literature on law and finance, one can note that there is a large body of work which attests to a positive relationship between institutional quality and finance. However, there is also financial literature which views the role of law in the financial development process with uncertainty or with an element of doubt, especially advocates of the political viewpoint. Perotti and Haber (2008, p.2) argue that legal factors alone cannot spur financial development, but also have to be complemented by political institutions. They also claim that legal enforcement requires support by the executive branch and state that the time invariant nature of legal origin implies that it cannot be used to explain changes in financial

development over time. Another study by Perotti (2014) again supports the political viewpoint and identifies political accountability as the driving force behind financial development instead of the legal viewpoint. In relation to this, Perotti (2014, p.25) observes that as the need for political accountability increases, politicians are left with no option than to allow increased access to credit and to allow for greater entry into financial markets. Having taken into account the time variant nature of political accountability and time invariant nature of legal origin, Perotti (2014) identifies evolution in political institutions as the main determinant of evolution of the financial sector.

Rajan and Ramcharan (2011) try to investigate the relationship between land and access to banking sector credit for the United States in the 20th century. Their study also confirms the political view that elites may restrict financial development in order to limit access to finance. In addition, Benmelech and Moskowitz (2008) examine laws for financial regulation in the United States and find that strictness of financial regulation is correlated with strictness of other economic and political restrictions that exclude certain groups. They also argue that usury laws used in regulation reflect the outcome of personal interests of certain groups which have coercive power. Therefore, according to Benmelech and Moskowitz (2008) political interests instead of legal enforcement drive financial development. Similar viewpoints are expressed in other studies by Acemoglu et al. (2005), Pagano and Volpin (2005) and Roe (2003). However, advocates of the political viewpoint do not examine the direct impact on financial development of political influence across countries. Conclusions of these studies, for example Benmelech and Moskowitz (2008), Rajan and Ramcharan (2011), Perotti (2014) are based on single country evidence, which may not be applicable to other parts of the world. In addition, critics of the political viewpoint also argue that it is not always the case that the political elite will achieve what they desire in terms of restricting or allowing financial development, as a result of inefficiency or disorganization in the political organizations (see Blanchard and Shleifer, 2000). Besides advocates of the political viewpoint, there are others who also doubt the positive impact of improvements in the legal system. For instance, while acknowledging that improvements in the legal system are associated with broader equity markets, Lombardo and Pagano (2000), also agree that this can have different effects on equity returns, depending on the nature of changes that

would have taken place, so the effects are not necessarily always positive. On the other hand, Engermann and Sokoloff (2000) attribute the development of institutions to initial resource endowments which countries had access to. For example, they claim that in countries where land ownership was highly concentrated, inequality in the society persisted for longer periods than in countries where it was easy to access land. Such inequalities resulted in those countries following different paths in terms of economic and institutional development, leading to differences in the levels of financial development.

As a result, Engermann and Sokoloff (2000) claim that neither legal origin, contract enforcement, nor investor protection laws determine the level of financial sector development across countries, but initial resource endowments that were there at the beginning. In addition, though previous literature shows that common law countries are associated with good institutional quality and civil law with weak institutions, recent literature also shows that common law does not provide the desired investment protection rules as is assumed. For example, Graff (2006) compares countries with common law and civil law frameworks and finds no evidence that common law countries offer better investment protection and property rights to investors than civil law countries. Similarly, Coffee (2000) argues that civil law has evolved over time and offers the same investor protection rules as common law; hence there should not be any differences in terms of institutional quality and financial development between common law and civil law countries. These views cast doubt on the reliability of earlier findings by La Porta et al. (1997, 2000), which attribute institutional quality and financial development to the legal framework adopted by a country. Another school of thought emphasizes identifies culture as the main determinant of institutional quality and financial development instead of legal origin, property rights, contract enforcement rules, or investment protection rules. In support of the culture view, Williamson and Stulz (2001) note that a country's "principal religion helps predict the cross-sectional variation in creditor rights better than a country's openness to international trade, its language, its income per capita, or the origin of its legal system." Their study shows for example that countries with a very strong Catholic background have significantly weaker creditor rights than other countries (Williamson and Stulz, 2001, p.29). Instead of attributing investor protection to legal origin, the study proposes culture as the main determinant of

investor rights and differences in levels of financial development across countries (Williamson and Stulz, 2001, p.27). The same study also examines the relationship between openness and culture and finds that openness reduces creditor rights. The study is based on differences noted amongst samples of protestant and catholic countries. However, not all countries can be classified in such a manner for example Middle East countries, and Asian countries, where other religions/traditions are more prominent might not conform to the findings from Williamson and Stulz (2001).

More recent studies, for instance, Dutta and Mukherjee (2011) and Herger, Hobler and Lobsiger (2007) also concur with the view that informal institutions, in the form of culture are the ones which shape the financial development of a country. Dutta and Mukherjee (2011) assert that changes in cultural dimensions such as changes in the form of trust, control, respect, obedience other traits result in changes in attitudes towards financial markets which may result in increased use of financial markets and financial development. Unlike Williamson and Stulz, (2001), Dutta and Mukherjee (2011) use individual traits of people in a country as a measure of culture, rather than a blanket classification of a country as being of a certain cultural background basing on religion. However, in spite of these measurement differences, the studies end up with strikingly similar conclusions, the position that culture is a significant determinant of financial development, with Williamson and Stulz, (2001) placing it ahead of legal system origin in this respect. These views (including the political and endowment views) which express uncertainty on the effect of the legal system (institutional quality) in influencing financial development, necessitate the need to reexamine how institutional quality influences financial development, more so from a regional context, where countries are in close proximity, and might harness the benefits of having similar more or less legal systems. On the other hand, Guiso et al. (2004), Fragkandreas and Larsen (2009) and Sangnier (2011) claim that social capital positively affects financial development and economic growth. Therefore, this study focused on financial development in the context of regional financial integration, institutional quality and social capital and attempted to find out if the success of regional financial openness is dependent on institutional quality and social capital. The relationship between financial integration and financial development is generally positive as shown by Svaleryd and Vlachos (2002), Braun and Raddatz (2008), Baltagi et al. (2009). However, the present study attempted to

show the impact of financial integration on financial development, given differences in levels of institutional quality and social capital. Furthermore, unlike previous studies, the study attempted to show the extent to which the impact of institutional quality on financial development could be affected by other factors such as social capital under a regional financial integration scenario.

3.4 Financial development and social capital

In recent years, there has been growing debate on the impact of social capital on economic growth and financial development. In the midst of the 2008 global financial crisis, Hung, Leung Chung and Prakash (2010) note “The breakdown of trust in the present financial crisis and ensuing credit crunch is a reminder of the crucial invisible role the trust plays in normal times”. The importance of social capital is first emphasized in the work by Putnam et al. (1993) who try to investigate the causes for differences in terms of economic growth and political institutions in the Northern and Southern parts of Italy. Their study propounds that associational activity is positively correlated with economic performance. They assert that the use of social networks, trust, and reciprocity to enable cooperation among citizens beyond that required by law or employment can lead to higher levels of economic and civic success. In this regard, Putnam et al. (1993) find that Northern Italy has better economic performance and better functioning political institutions which the study attributes to active associational participation in groups, sports clubs and other activities (Putnam et al., 1993). The high levels of trust and cooperation amongst members of the society allow for effective implementation of policies. In contrast, Southern Italy is found to have low levels of active associational participation and hence lower levels of trust, economic performance and inefficient political institutions. Putnam (1995) carries out a similar study, though in a different setting in the United States and confirms findings of the earlier study. Putnam et al. (1993) succeed in their attempt to pointing out a link between social capital and economic growth. However, their study fails to give a convincing approach which links social capital to any dependent variable such as economic growth or financial development. The mechanism through which social capital leads to economic growth is not clearly illustrated. Knack and Keefer (1997) also investigate if social capital has economic growth benefits using studies from 29 market economies. Their study confirms findings by Putnam et al. (1993) that social capital in the form of trust and civic co-operation are associated

with stronger economic performance. In addition, their results also show that higher levels of education, low social polarization institutional rules that constrain the government from acting arbitrarily, are associated with the development of cooperative norms and trust (Knack and Keefer, 1997, p.1284).

Along the same lines, Ostrom (2000), Brown and Ashman (1996), Heller (1996), Krishna and Uphoff (1996), Rose (2000), Burts (2000) and Tabellini (2007) also uphold the view that in countries where levels of trust and civic participation (social capital) are higher, there tends to be better economic performance. More recent studies still support the aspect of a positive correlation between social capital and economic growth. For instance, Fragkandreas and Larsen (2009) examine the impact of social capital and economic performance from farm partnerships in Sweden observe that social capital combined with other forms of capital, such as financial, human, physical and organizational leads to greater economic outcomes. Their measurement of social capital is based on trust, sympathy, norms, access to networks, and relationship quality based on the confidence that one farmer has in his partner and other farmers (Fragkandreas and Larsen, 2009, p.27). The study claims that the mechanism for greater economic performance comes from a combination of the above stated social capital elements and other capital, leading to organizational capital, which in turn leads to higher quality products and better profitability (Fragkandreas and Larsen, 2009, p.27). Dincer and Uslaner (2010) also investigate the relationship between trust and economic growth in the United States. Their study shows a positive relationship between trust and the growth rate of manufacturing employment as well as GDP. However, their study is based on trust data the United States only, a developed country bound to have high levels of trust and high rates of economic growth. A developed country with such characteristics might always show a positive relationship between the two. The study does not take into account cross country data from other countries, especially developing countries where levels of trust may be lower. Algan and Cahuc (2010) take a similar route and examine the impact of trust on macroeconomic performance, with income per capita being their measure of macroeconomic performance and trust measured by world value survey indicators of trust and inherited trust from previous generations. The study finds that trust is positively correlated with levels of income per capita. In

addition, countries with lower levels of inherited trust are observed to have lower levels of income per capita.

In this context, Algan and Cahuc (2010) conclude that the backwardness of developing countries is a result of low levels of inherited trust. Unlike Fragkandreas and Larsen (2009) and Putnam (1993) whose studies are based on single country data, Algan and Cahuc (2010) use cross country data from 29 countries including European and African countries; hence their findings might have universal applicability. However, the concept of inherited trust being a measure of current levels of trust is highly debatable as trust might be time variant. In addition, the study ignores other factors which have an effect on economic development such as geography of regions, institutional quality, and levels of education, and levels of integration with other countries. Guiso et al. (2004) take a different approach and instead of looking at social capital and economic growth, they focus on the effect of social capital on financial development. They adopt a different measure of social capital in the form of civic participation in elections and associational activity in the form of voluntary blood associations across different parts of Italy, judicial efficiency, trust from world value survey indicators. Their study shows that in high social capital areas there is increased use of financial instruments such as cheques, greater access to institutional credit, greater investment in stocks, and less use of informal credit. The study also shows that the effect of social capital is stronger where legal enforcement is weaker and amongst less educated communities. However, the findings are based on data from households in Italy and cannot be generalized for all countries. Another study by Guiso et al. (2008) looks at the effect of trust on stock market participation across countries. The study again comes to the conclusion that differences in trust help to explain why some invest in stocks and why some do not (Guiso et al., 2008, p.2592). However, this study is based on data from selected European countries, which are of a different cultural and economic background compared to developing countries in Asia, Africa and South America. Some of the developing countries are agro based or commodity based economies hence there might not be great emphasis on investment in stock markets and financial development, and such perspectives are mainly driven by the cultural background of the countries. Having taken that into account, differences in levels of stock market investments across these developing countries might not necessarily be as a result

of differences in levels of trust as assumed by Guiso et al. (2008). The same findings are confirmed in a more recent study by Sangnier (2011) who examine the changes in social capital and financial development over an 87 year period. Their study also shows that increasing trust is also associated with increasing levels of financial development across countries. As with the other previous studies by Guiso et al. (2004, 2008), the studies are based on sample data from developed countries, which might have different levels of social capital as compared to developing countries. In addition, the studies do not show how social capital dynamics are affected by or how they affect aspects such as regional integration. For instance with the advent of the information technology age, it is now easier to have associational and networking activities across countries, hence the effects of social capital in one country might also be felt in other countries which are close by. How such developments would go on to affect levels of financial development across regionally connected countries are aspects that have not been empirically shown in the highlighted studies.

There is also conflicting evidence on the link between social capital and economic growth. For example, Sabatini (2007, p.86) notes that studies carried out by Putnam (2000) and Costa and Kahn (2003) show that social capital in the United States (US) declined in the twentieth century, yet over the same period, it cannot be said that the US economy did not flourish. Helliwell (1996) expresses skepticism about the growth effects of social capital. In a study of Asian countries, Helliwell attributes economic growth in these countries to more to openness than institutions and social capital. Helliwell (1996) assumes then that it is too early to make any assessment about the impact of social capital on economic growth. Durlauf (2002) agrees with Helliwell (1996) and also express the same level of skepticism. In this regard, Darlauf (2002, p.2) notes that the concept of social capital suffers from significant conceptual vagueness and empirical efforts to demonstrate the importance of social capital have largely been failures. His study argues that works on social capital have largely not been subject to the rigorous standards that other works on economic analysis have been subjected to hence some of the claims on the impact of social capital cannot be accepted (Darlauf, 2002, p.5). In addition Beugelsdijk and Smulders (2004) also argue that participation in family and community networks is time-consuming and comes at the cost of participation in the formal economic sphere and

working time. Through this channel, higher levels of social capital may crowd out economic growth. The same study also comes up with a contrasting view with regards to participation in intercommunity networks, which the study claims, reduces incentives for rent seeking, and cheating thus promoting economic growth. Again the study is based on sample data from European countries. Similarly, Portes and Landolt (1996, p.18-21) also argue that strong ethnical ties can lead to dominance of certain ethnical groups in industries and certain occupations, and this might have a negative effect on economic development.

The difference in these findings might be a result of the broad nature of the definition of social capital. Putnam (2000) and Costa and Kahn`s (2003) definitions of social capital encompass issues of trust between individuals, associations norms and networks between communities, whereas Sabatini`s (2007) definition of trust includes institutional trust. Therefore, Putnam and Costa and Kahn might have been correct to assume that social trust in the US had indeed gone down but that might not have had a negative effect on economic growth because the public could still trust the institutions in the country. Differences might also be a result of differences in methodology. Bovenberg (2003, p.417) supports this view and notes that theoretical models should be developed that define precisely the mechanisms through which various endogenous and exogenous variables of social capital interact. Unlike previous studies, the present study attempted to demonstrate through formal modeling, how social capital impacts financial development. Iyer, Kitson and Toh (2005, p.1019) point out; “The effects of social capital operate and interact at many different geographic levels: individual, community, regional and with the development of information technology, global”. The present study adopted a region specific approach by examining how social capital fuses with aspects of regional financial integration and institutional quality in influencing financial development. Previous studies on social capital have mainly focused on samples from the developed world. For instance, Putnam et al. (1993), Costa and Kahn (2003) and Guiso et al. (2004) use samples from Italy and the US whilst Helliwell (1996) uses samples from Asian nations, and Durlauf (2002) adopts an aggregated approach of both developed and developing nations. There are significant differences in the levels of poverty, and civil involvement between developed and developing countries (OECD, 2015, p.3) and this might result in differences in the

nature of social capital between the developed and the developing world. Findings on the social capital effects in the developed countries might therefore be different from those of the developing world. The present study thus focused on the impacts of social capital on financial development in the context of the developing world and taking into account the financial integration and institutional quality of such country regions.

3.5 Summary of contribution of the study

This study significantly differs from previous studies in a number of ways. Whilst previous studies have focused on either regional financial integration or global financial independent of each other, this study attempts to explore the link between the two. It has been proposed that regional financial integration enhances the attractiveness of the integrated region through removal of barriers and increase in market size (Marszk, 2014). This enhanced attractiveness is expected to result in increased FDI flows from countries within and outside the integrated region. This implies the possibility of improved global integration as a result of regional integration. Hence, this study explores the complementary relationship between regional integration and global integration. Furthermore, previous studies have mainly focused on the economic growth impacts of financial integration without outlining the mechanism for growth. This study will depart from previous studies by showing the financial development impact of integration. On the other hand, Chinn and Ito (2007) and La Porta et al. (1996, 2000) emphasize the importance of institutional quality in financial development yet, Perotti and Heber (2008) and Benmelech and Moskowitz (2008) argue that legal factors alone cannot spur financial development. The present study then adds to the body of knowledge by examining if institutional quality can be complemented by other factors such as social capital in the financial development process. The study also differs from previous studies in terms of methodological approaches. Whilst most of the recent studies for instance Farid (2013), Boyreau–Debray (2003), Rousseau and Wachtel (2011), Quinn and Toyoda, (2008) have applied the GMM estimation technique. However, for longer time period studies Pesaran and Smith (1995) indicate that GMM can produce inconsistent and potentially misleading results. Therefore, in line with Pedroni (2000), and departing from previous studies, the present study will estimate the financial integration and financial development relationship using the

fully modified OLS, a method applicable for macro panels. Through this, the study will also show if findings are sensitive to estimation method applied. Additionally, previous studies have not shown if findings are also sensitive to the measure of financial integration adopted. To uncover this, this study will make use of both *de jure* and *de facto* measures of global financial integration. Previous studies have also not assessed the direct impact of regional protocols on financial development. This study contributes to the body of knowledge by specifically looking at the effect of trade and finance and investment protocols on SADC`s financial sector.

CHAPTER FOUR

REVIEW OF METHODOLOGICAL APPROACHES

4.1 Introduction

As highlighted in previous chapters, early studies on the finance-growth nexus have mainly focused on the direct relationship between finance and economic growth. Contemporary works have tried to show the mechanism through which finance impacts growth. In this regard, enhanced financial links between countries have seen new studies being carried out to determine how these enhanced links (financial integration) impact growth through financial development. In these studies, different measures for financial integration have been applied, with some studies opting for *de facto* measures whilst some opting for *de jure* measures. Similarly, researchers on the subject have also differed on other matters, including the appropriate measure for financial development as well as whether there are other factors which influence the level of financial development which occurs after financial integration. As a result of these differences, financial literature has been inconclusive on the nature of the relationship between financial integration and growth through financial development. This chapter provides a critical assessment of the methodologies that have been applied in previous studies with a view to coming up with an appropriate methodology for the study. The chapter is split into two sections. The first section will review the different measures of financial integration which have been applied in previous studies. It will also discuss the measures for financial development that have been used in studies of a similar nature. In the second section, there will be a discussion of the different approaches that have been used to determine the relationship between financial integration and financial development.

4.2 Methodological approaches in previous studies

This section will look at the different methodological approaches that have been used in previous studies in terms of measurement of variables as well as econometric approaches.

Table 4.1: Literature on measures of financial integration

Researcher	Type of measure	Indicators
Quinn (1997)	<i>de jure</i>	AREAER based index
Klein & Olivei(2000)	<i>de jure</i>	AREAER based index
Bekaert et al. (2001)	<i>de jure</i>	Equity markets liberalization indicator by date , either 0 or 1
Alesina et al. (1993)	<i>de jure</i>	AREAER based index
Montiel & Reinhart (1999)	Hybrid	Index which takes 0,1 or 2
Quinn& Toyoda (2008)	<i>de jure</i>	AREAER based index
Kose et al. (2009a)	<i>de facto</i>	Share of assets & liabilities
Lane & Milesi-Ferretti (2007)	<i>de facto</i>	Ratio of assets&liabilities/GDP
Gehring (2013)	<i>de jure & de facto</i>	Chinn& Ito and Ratio of assets& liabilities/GDP
Alfaro et al. (2009)	<i>de facto</i>	Net IMF FDI/GDP
Bekaert et al. (2011)	<i>de jure</i>	AREAER based index
Mahachan& Vermar (2015)	<i>de facto</i>	Ratio of assets &liabilities/GDP
Volz & Frey (2011)	Hybrid	Indicator by membership to a regional group
Chinn & Ito (2007)	<i>de jure</i>	KAOPEN index
Mougani (2014)	<i>de facto</i>	Ratios of Capital & FDI to GDP
Prasad et al. (2003)	<i>de facto</i>	Ratio of assets &liabilities/GDP
Baltagi et al. (2009)	<i>defacto & hybrid</i>	Ratio of assets &liabilities/GDP and & Abiad & Mody (2003) measure
Farid (2013)	<i>de facto & dejure</i>	Ratio of assets &liabilities/GDP & capital flows , FDI GDP and AREAER
David et al. (2014)	<i>de jure</i>	KAOPEN index
Levchenko et al. (2008)	<i>dejure & defacto</i>	Capital flows to GDP & AREAER based index

Source: Author Compilation

4.2.1 Measures of financial integration

Financial literature shows that there is no single unit for the measure of the level of financial integration amongst countries. There is divergence on the acceptable methods of measurement of the extent to which one financial market is linked to global or regional financial markets. However, over the years, *de jure* and *de facto* have become the most commonly used indicators of financial integration. *De facto* indicators measure the openness of financial markets through stock or flows of assets and liabilities expressed as a percentage of the GDP (Gehring, 2013, p.6).

These can be in the form of foreign direct inflows or private capital flows (Alfaro et al., 2009; Wakemann–Linn and Wagh, 2008; Lane and Milesi Ferretti, 2007). A common *de facto* measure of financial integration is the volume based summation of total assets and liabilities held offshore shown as a percentage of GDP (Lane and Milesi Ferretti, 2003, 2007). In this context, the assets and liabilities denote the stock of offshore equity portfolio assets and liabilities plus the stock of foreign direct investments held by a country at a given point in time (ibid, 2007).

Kose et al. (2009) adopt this measure of financial integration in an examination of the effects of financial globalization. In their study, they argue that this *de facto* measure gives a much clearer picture of the extent of a country's integration into global markets and is much more suitable for empirical studies (Kose et al., 2009, p.16). To support this view, they compare patterns of globalization using both *de jure* and *de facto* indicators. Their study finds out that whilst *de jure* measures show that financial openness has not changed much, *de facto* measures show a sharp increase in openness over a twenty year period (ibid, 2009, p.16). In addition, the study also finds that when capital account openness is measured using *de facto* measures, financial integration is observed to have a more positive effect on growth than when *de jure* measures are used. However, refined *de jure* measures are also observed to have the same effect. Likewise, Quinn et al. (2011, p.493) assess the *de jure* and *de facto* measures of financial openness and acknowledge that *de jure* indicators are not reflective of the extent to which actual capital flows evolve in response to legal restrictions (Quinn et al., 2011, p.493-494). They also outline that this may be due to lack of enforcement of set capital controls or the inducement of capital flows in one asset after restrictions in another (ibid, 2011). Mahajan and Verma (2015) also use the Lane and Milesi-Ferretti based measure of financial integration in their examination of financial integration and economic growth. In coming up with the appropriate measure to use between the Lane and Milesi-Ferretti *de facto* and *de jure* measures, they note the Lane and Milesi-Ferretti measure is more consistent and is less prone to change over time, contrary to *de jure* measures which are mainly rule based measures .

The aspect of them being rule based measures means they do not adequately reflect the extent to which a country is financial integrated with other countries because institutions may defy the rules and still let capital flow in spite of the restrictions.

Prasad et al. (2003) also adopt the Lane and Milesi-Ferretti *de facto* measure of financial integration in their study of the effects financial globalization in developing countries. In concurrence with Mahajan and Vermar (2015), they indicate that this *de facto* measure is more appropriate as *de jure* measures do not show the extent to which control is being exercised over actual capital flows. However, despite having used the same measure of financial integration, Prasad et al. (2003) and Mahajan and Vermar (2015) come up with contrasting results. Mahajan and Vermar (2015) conclude that integration positively affects growth whilst Prasad et al. (2003) fail to find a relationship between the two. Baltagi et al. (2009) again apply the Lane and Milesi Ferretti measure and another measure based on six liberalization variables identified by Abiad and Mody (2005). These variables include interest rate restrictions, international transactions, regulation of markets, barriers to entry, and controls on credit and privatization. These measures again show a positive relationship between openness and financial development. More recent studies by Gehringer (2013) and Farid (2013) also use the stock of assets and liabilities as measures of financial integration and reach similar conclusions, again giving credence to the argument that when integration is measured using *de facto* measures, the effect on growth is found to be mainly positive. *De facto* measures can also be in the form of flows instead of stocks. The flows can be of different types, including private capital flows, cross border capital flows, FDI flows, foreign portfolio investments, trade flows, or investment incomes (Mougani, 2014; Levchenko et al, 2008; Alfaro et al., 2009). However, flows are said to be susceptible to short run factors hence are avoided in some instances (Mahajan and Verma, 2015). Also, Edison et al. (2002, p.4) note some policies may influence both economic growth and capital flows at the same time, so flows may not correctly account for changes in growth as opposed to stocks. On the other hand, Kose et al. (2009, p.12) believe that flows provide a good indicator of the extent to which a country's financial markets are integrated with those of other countries but are prone to measurement error. To militate against this, researchers adopt stocks which are seen as less volatile.

De facto measures can also be subdivided into quantity based measures, price based measures and hybrid measures (Quinn et al., 2011, p.494). Quantity based measures are based on the flows of capital, assets and liabilities as explained in the

previous paragraphs. Price based measures assume that the level of integration is reflected in the level of prices of common financial instruments across countries. It follows that if countries are truly or fully integrated, the prices of financial instruments across the countries should be similar (law of one price). However, the price based measures have many drawbacks, which weaken their applicability to real life situations. One of the drawbacks is that the pricing of financial instruments depends on a number of factors for example the level of risk in a specific market. If the level of risk in one market is higher, then financial instruments in that market will carry higher prices. As risk varies across countries, it also means financial instruments in different countries might not necessarily have the same prices. Again, the idea of financial instruments having similar prices across countries also depends on the availability of a facilitative arbitrage platform. However, in real life situations such a platform is not available as some countries have restrictions on the movement of funds across borders, and some impose punitive rates for transferring funds across countries. Despite these limitations, price based measures have been applied in previous studies (see Edison et al., 2002b; Baele et al., 2004; Baltzer et al., 2008). Hybrid measures of integration are those which may be based on the researcher's prerogative, independent of the common *de facto* measures. These may include measuring financial integration based on the fungibility of a specific share or stock or the eligibility of foreign investors to invest in certain sectors of the economy of a country (Edison and Warnock, 2003). Hybrid measures may also incorporate elements of both *de facto and de jure* measures, for example, generation of an index which incorporates *de facto* variables and selected restrictive controls imposed on the capital account (Montiel and Reinhart, 1999).

In some cases, a hybrid measure is generated depending on whether a country is part of a certain economic grouping or a regional block as seen in Volz and Frey (2011). However, hybrid measures are very subjective as they ultimately depend on the researcher's preferences. *De facto* measures also face the same criticism. For example, there is the argument that countries usually release different values of FDI or GDP from those that are released by multilateral institutions like the IMF; hence there is a tendency for researchers to select those values which best suit their research needs. In addition, the calculations of these variables vary across countries making it impossible to use them for comparative purposes (Quinn et al., 2011,

p.495). To overcome such limitations, some studies have adopted *de jure* measures of integration. These are measures derived from the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions (AREAER). The AREAER report tracks exchange and trade arrangements for all IMF members (IMF, 2016). It provides information on different types of capital controls used by countries, restrictions on current international payments and transfers, arrangements for payments and receipts, procedures for resident and nonresident accounts, exchange rate arrangements, and the operation of foreign exchange markets (IMF, 2016). The AREAER shows the extent to which the capital account of a country is being controlled. Restrictions on capital accounts according to the IMF guidelines include any prohibitions; need for prior approval, authorization, and notification; dual and multiple exchange rates; discriminatory taxes; and reserve requirements or interest penalties imposed by the authorities that regulate the conclusion or execution of transactions or transfers; or the holding of assets at home by nonresidents and abroad by residents (IMF, 2016, p.53). The AREAER report gives an indicator as to the presence or absence of a specified restrictive measure on a given component of the capital account. *De jure* measures have been applied in empirical numerous studies. Quinn (1997) adopts AREAER categories on exchange payments and receipts for invisibles, capital, exports and imports in an assessment of financial openness for 64 countries. Quinn adopts a scoring code between 0 and 2 for each restriction category with the summation of the scores of all the categories representing the level of financial openness of each country.

In Quinn's assessment, a score of 0 represents a financially closed economy and 14, a financially open economy. However, the study is not clear on how it classifies economies with midpoint scores such as 6 or 7. Similarly, Klein and Olivei (2000) use the AREAER report to generate restrictions on capital accounts through the use of a dummy variable for each country for each year over a 10 year period. For each country, they go on to calculate the variable share, representing the proportion of years in which the country has no restrictions on the capital account. Out of a sample of 93 countries, 61 are found to have a share of 0, meaning they have restricted flows and only 13 have a share of 1, meaning they have unrestricted capital flows. Rodrik (1998) also adopts the same measure of financial openness. However, the measure does not show the level of financial openness for each year, as it only

comes up with one share measure for all the years. Consequently, it might not capture aspects of a country moving from a capital account restriction era to a new era of no restrictions. More recent studies (Quinn and Toyoda, 2008; Bekaert et al. 2011; Farid, 2013) have also made use of the IMF binary indicators on capital accounts with the only differences being the set of capital account categories selected from one study to the other. Yet, binary indicators alone fail to show the intensity of capital restrictions. As such, Chinn and Ito (2007) come up with a new measure, again based on AREAER variables but accounting for intensity placed on capital controls. As in previous studies, Chinn and Ito (2007) assign dummy variables to categories relating to the presence of multiple exchange rates, current account restrictions, capital account restrictions, and requirements for surrender of export proceeds with 1 being an indicator of the absence of restrictions. For controls on capital account transactions, the measure uses the share of a five year window encompassing restrictions at current time and restrictions on four years preceding the advent of capital controls. From this, an index for capital account openness (KAOPEN) is constructed consisting of the share of capital account transactions and the obtained measures for presence of multiple exchange rates, current account transactions, and requirements for surrender of exports proceeds. Higher values for this index indicate greater financial openness.

Chinn and Ito (2007) believe the incorporation of the last three variables captures more accurately the intensity of capital controls of a country. However, like all other *de jure* indicators, the index has the limitation that it does not specify the range of indices at which the capital account can be said to be closed or open. It also does not show the extent to which countries are adhering to the controls which they have set for their capital accounts. For example, in some cases a country might appear as having high level restrictions on its capital account, but might have high capital flows as a result of lack of implementation of restriction policies set. Despite these limitations, the KAOPEN index has been accepted as a reliable *de jure* measure of financial openness and has been applied in other studies of a similar nature (see David et al., 2014; Baltagi et al., 2009).

There are also non AREAER based *de jure* indicators. These measure restrictions on the capital account through other variables or events, independent of IMF indicators. For example, they may be based on the date on which a given financial

market was liberalized (Makina, 2005; Bekaert et al., 2005). Amongst the non *de jure* based indicators is the index of economic freedom provided by the heritage foundation. The index is based on a measurement of ten freedoms grouped into four categories including rule of law, measure of a limited government, regulatory efficiency, and market openness (Heritage foundation, 2016). The index is derived from the fact that in economically free societies, governments allow labor, capital, and goods to move freely, and refrain from coercion or constraint of liberty beyond the extent necessary to protect and maintain liberty itself (Heritage Foundation, 2016). A country with a higher index score is said to be more free, hence more open than a country with a lower index score. However, the foundation does not show the weights given to each of the freedoms in coming up with the final index. Despite this, the index has been applied as a measure of openness in some studies (Gentzoglani, 2007; Quinn et al., 2011). From the above, one can observe that the type of measure adopted depends on whether one wants to focus on actual capital restriction policies in place or actual flows of assets, liabilities and capital. From this, one then decides on whether to adopt *de facto* or *de jure* measures or a hybrid of the two. However, are there any differences in terms of findings if one chooses either of the two?

4.2.2 Measures of financial development

In trying to determine the impact of financial integration on financial development, the measurement of financial development also presents another challenge as there are numerous indicators of financial development. However, two types of indicators are normally used as indicators of financial development and these are size and efficiency (Giannetti et al., 2002).

4.2.2.1 Ratio of narrow and broad money to GDP

The ratio of narrow and broad money aggregates (M1, M2 and M3) to GDP is usually applied as a measure of the size and liquidity of the financial sector (Lynch, 1996, Klein and Olivei, 2008). These narrow and broad money measures include the liquid liabilities held outside the banking system and demand and interest bearing instruments of banks and non-bank financial intermediaries (Klein and Olivei, 2008). The liquidity measures are also an indicator of the level of monetization of the economy. According to Lynch (1996, p.7), narrow money balances rise in tandem with the level of economic transactions, whilst broad money levels increase in line

with the level of financial deepening . The indicator also shows the depth of financial intermediation in the financial sector. King and Levine (1993, p.720) indicate that this perspective of the size of the financial sector comes from the fact that the size of financial intermediaries is seen as being positively related to the provision of financial services. Consequently, a higher M2 or M3 ratio in relation to GDP is an indicator of a larger financial sector and better financial intermediary development (Calderon and Liu, 2003, p.6).

However, the use of liquid liabilities as a ratio of GDP has its own limitations. The measures do not show the financial system`s ability to transfer to savings to private investments (Gehring, 2013, p.7). It does not show the distribution of credit between government entities and the private sector, hence does not give a true reflection of the extent to which the financial sector has played the intermediation role (Klein and Olivei, 2008, p.4). In concurrence, Calderon and Liu (2003, p.6) also argue that the liquid liability measures do not show how funds are being channeled in the financial sector hence do not fully explain the investment and growth observed in the economy. In addition, M1, M2 and M3 to GDP ratios do not clearly show the financial development which occurs as a result of investments and trade in stock, hence fails short of accounting for financial development which occurs mainly in the stock markets. In spite of these shortcomings, the liquid liability measures have been used extensively in previous empirical studies (see King and Levine, 1993; Klein and Olivei, 2008; Wolde-Rufael, 2009; David et al. 2014).

4.2.2.2 Domestic credit and private sector credit to GDP

Another common measure of the level of financial development is the ratio of domestic credit or private sector credit to GDP, an indicator of the credit intermediation role of the financial sector. This measure is used as an indicator of both the size and efficiency of financial markets. The total of domestic credit is used if one wants to ascertain the level of financing provided by the banking sector (Hassan et al., 2011, p.91). In this case, a higher ratio of domestic credit to GDP reflects a higher level of financial development. However, it does not show allocation to the private sector, hence in some instances, private sector credit is preferred ahead of domestic credit. Unlike the monetary aggregates and domestic credit, private sector credit represents more accurately the role of financial intermediaries in channeling funds to the private sector (De Gregorio, 1998; King and Levine, 1993).

Private sector credit shows the efficiency of financial intermediaries in that it isolates credit issued to the private sector from that issued to government entities (Klein and Olivei, 2008). Consequently, it is assumed that there is a direct link between private sector credit and the level of investment and growth (Calderon and Liu, 2003, p.6).

The measure of private sector to GDP is also premised on the supposition that the private sector is more able to allocate efficiently resources than the public sector (Gehring, 2013, p.7). Levine (2005, cited in Hassan et al., 2011, p.91) agrees with this viewpoint and points out that financial systems which allocate more credit to the private sector are more likely to be engaged in researching borrower firms, exerting corporate control, providing risk management control, facilitating transactions and mobilizing savings, thus leading to higher levels of financial development. In turn, higher levels of private sector credit to GDP are taken to be indicators of higher levels of financial development. Private sector credit to GDP has also been applied extensively in literature as a measure of financial development (see Ndlovu, 2013; Frey and Volz, 2011; Chinn and Ito, 2006; Hassan et al., 2011). However, domestic credit and private sector credit only measure financial development that occurs mainly in the banking sector. Like the monetary aggregates, private sector credit fails to show the changes in size and efficiency of stock markets. As a result, researchers have come up with other measures which do not have this limitation.

4.2.2.3 Stock market ratios

Stock market ratios have over the years been used as a measure of financial development that occurs outside the banking sector or as a measure of the development of equity markets. Although, there are conflicting views on the impact of stock markets on growth in developing countries, recent literature seems to show a positive relationship between the two. Levine and Zervos (1998, p.554) suggest that stock market liquidity and banking development are both positively and robustly correlated with contemporaneous and future rates of economic growth, capital accumulation, and productivity growth for both developed and developing countries. Seetanah et al. (2010, p.20) agree with this assertion and note that stock market development is an important ingredient of growth, but with a relative lower magnitude as compared to the other determinants of growth, particularly with banking development. In the same context, Wong and Zhou, (2011) point out that stock market development is one of the key drivers of economic growth in developed and

developing countries, whatever the modes of their financial systems, stage of their economic development and types of economic system. The commonly used stock market ratios also focus on the size and efficiency of stock markets. One of the indicators of the size of stock markets is the ratio of stock market capitalization to GDP, with stock market capitalization being the number of shares outstanding multiplied by the market price of the share. This measure is an alternative reflection of the channeling of savings and resource allocation in the economy. Seetanah et al. (2010, p.7) stress this intermediation role of stock markets and note that stock markets enable savings mobilization for financing which in turn lead to capital accumulation used to finance firm projects. An increase in the stock market capitalization to GDP ratio is hence taken to be a rise in the level of financial development. However, Levine and Zervoz (1998, p.540) urge caution against paying too much attention to this ratio as in some cases large markets do not necessarily function effectively. Consequently, alternative stock market indicators are used to complement stock market capitalization. Amongst the alternatives is the market turnover ratio, which measures the values of stocks traded on the exchange against the value of listed domestic shares. The turnover ratio is mainly used as measure of the liquidity and efficiency of the stock market. Higher liquidity in a stock market means that it would be easier to sell or buy shares in secondary markets, but also firms can sell their shares more easily in primary markets (Bayraktar, 2014). Liquidity increases the volume of stock trades; and higher volume helps further development of stock markets (ibid, 2014). It is an indicator of the activeness of the market (Chinn and Ito, 2006). Accordingly, Levine and Zervos (1998, p.540) stress that a large market is not necessarily an active market, as a large inactive market will have a high capitalization ratio and a low turnover ratio. In relation to efficiency, a high turnover ratio is seen as an indicator of low transaction costs (ibid, 1998) and also indicates the easiness with which to buy and sell shares on the stock market (Bayraktar, 2014). An alternative to the turnover ratio is the value of shares traded in relation to the GDP. This again is used to assess the liquidity and efficiency of stock markets. However, it is different from the turnover ratio in that it measures the shares traded in relation to national output whilst the turnover ratio measures shares trade in relation to the size of the stock market. It measures the ability to trade economically significant positions on the stock market (Seetanah et al., 2010). Value of shares trade to GDP measures the liquidity of the stock market on an economic scale

(Levine and Zervos, 1998). This contrast with turnover ratio may also result in differences in magnitude of figures as a small but liquid stock market will have a high turnover ratio and yet a small value traded to GDP (ibid, 1998). In addition, it may also be affected by huge price swings, in cases where positive market news is expected (Levine and Zervos, 1998). Such price swings may push the value traded up without necessarily increasing the volume of transactions or activity on the market, thus giving a distorted figure of the liquidity and activity of the stock market. It is thus important to use the value added ratio along with other measures of stock market activity such as market capitalization. Stock market ratio have been applied extensively in previous empirical studies, with Levine and Zervos (1998) and Chinn and Ito (2006) using all the three ratios discussed above, whilst Kar et al. (2011) and Ndlovu (2013) adopt the market capitalization ratio as the proxy for financial development.

4.2.2.4 Revenue and cost indicators

Revenue and cost indicators have also been used as proxies for the level of financial development. In addition to the monetary aggregate and stock market ratios, Frey and Volz (2011) also adopt three revenue and cost ratios as indicators of financial efficiency. The first is the net interest margin, which represents the net interest revenues of all banks in relation to total assets. The second is the ratio of overhead costs to total assets and the last ratio costs of all commercial banks in relation to their income. High ratios for these measures are taken to be indicators of low financial efficiency (Frey and Volz, 2011). The efficiency measures indicate the efficiency with which banks have channeled funds from savers to investors. Such measures have the advantage that they can be used to compare levels of financial development for countries which do not have stock markets or in situations where data for stock market development is unavailable. Lynch (1996) points out that financial systems require low costs and the aim of financial development is the minimization of costs for deposit collection and savings channeling. Lynch (1996) also suggests that financial development comparisons can also be made across countries using transaction costs such as comparing commercial banks interest rate spreads, general financial market spreads and commissions, interest rate flexibility real deposit and real lending rates. Real deposit rates and real lending rates should be positive for substantial financial deepening to occur (Lynch, 1996). However, such

comparisons also have the limitation that in some countries, interest rates might be fixed, making it difficult to compare flexibility and real rates across countries. In the same manner, it might also be difficult to compare spreads as banks in different countries face different cost structures, differences in deposit bases, and possibly differences in tax systems.

4.2.2.5 Other indicators of financial development

Beck et al. (1999) also compare the levels of financial development across countries using a wide variety of indicators which include less common indicators of size, efficiency and activity, of financial markets and intermediaries. In terms of the less common relative measures of size, Beck et al. (1999) use the ratios of central bank assets to total financial assets, deposit money assets to total financial assets, other financial institutions assets to total financial assets. Absolute measures of the same variables have GDP as the denominator. Their assessment also compares financial development in terms of market structure focusing on concentration of commercial banks, foreign bank ownership, and public and private bank ownership. In terms of concentration the ratio of the three largest banks to total banking sector assets is used, whilst for foreign bank ownership, the ratios of the number foreign banks to total banks and foreign bank assets to total bank assets are adopted. These are also used in other empirical works by Claessens et al. (2001), and Demirguc-Kunt et al. (1998). These measures are used to assess the level of competition in the financial sector. A high concentration ratio or low foreign ownership ratio might be an indicator of low competition which might reduce efficiency in channeling savings. Beck et al. (1999) also focus on the financial development across other financial institutions including insurance companies, pension funds, pooled investment funds and development banks. The ratio of private sector credit to GDP from each of these institutions is taken as the indicator for financial development. However, for developing countries where some of these institutions are not available, it might be difficult to make cross country comparisons. Other measures used also focus on the size of bond markets across countries, with bond market capitalization to GDP being an indicator of size. Lynch (1996) also measures financial development in terms of market structure and product range offered. Instead of focusing on ownership and concentration, Lynch (1996) focuses on the balance between intermediaries and securities through the ratio of marketable debt and equity securities to broad money

as well as the ratio of turnover on derivatives and turnover on the physical markets. On product range, Lynch (1996) posits that product range sophistication increases with levels of financial development. In such situations, products like derivatives and risk management become more prevalent. An assessment of these across countries can show differences in the levels of financial development. However, product range does not show the efficiency with which the intermediation process is taking place. It also does not show the level of activity in the market and might not be appropriate to use as measure of size of financial markets. Rather it can be more applicable as a measure of financial sophistication. Table 4.2 below summarizes measures of financial development observed in the literature.

Table 4.2: Literature on measures of financial development

Researcher	Indicator
Lynch (1996)	Ratios of M1, M2, M3/GDP, Private Sector Credit/GDP, Ratio of Broad money/Narrow Money, Real lending & deposit Rates, Interest rate spreads.
Klein and Olivei (2008)	M3/GDP, Private sector Credit/GDP
Mahajan & Vermar (2015)	Composite Indicator
Calderon & Liu (2003)	M2/GDP, Private Sector Credit/GDP
Beck et al. (1999)	Private Sector Credit/GDP
Benhabib & Spiegel (2000)	Liquid liabilities/GDP, Deposit-money bank assets/ deposit money bank assets plus central bank domestic assets, Private sector credit/GDP
Wolde-Rufael (2009)	M2/GDP, M3/GDP, Private Sector Credit/GDP.
Hassan et al. (2011)	Bank Domestic Credit/GDP Private Sector Credit/GDP,
Kar et al.	M2/Income, Domestic Credit/Income, Private Sector Credit/Income, Market Capitalization Ratio.
King & Levine (1993)	Liquid Liabilities/GDP, Private sector credit/Total Credit, Private Sector Credit/GDP.
Levine and Zervos (1998)	Private Sector Credit/GDP, Stock Market Capitalization/GDP, Stock market turnover (Value of trades/value of listed shares), Value stock market trades/GDP
Ndlovu (2013)	Domestic Credit/ Private Sector Credit, Stock Market Capitalization/GDP, Liquid Liabilities/GDP
Chinn & Ito (2006)	Private Sector Credit/GDP, Stock Market Capitalization/GDP, Stock Market Total Value/GDP, Stock Market Turnover.
Frey & Volz (2011)	Private Sector Credit/GDP, Liquid Liabilities/GDP, Net Interest Revenue/ Total Bank Interest Earning Assets, Bank Costs/Income Ratio of all commercial banks, Bank Overheads/ Total Bank Assets.

Source: Author compilation

4.2.3 Econometric approaches

Previous studies have used different models or approaches in trying to estimate the impact of financial integration on growth and financial development. The difference in the approaches originating from the fact that researchers have not settled on a single theoretical model which can conclusively explain the relationship between financial integration and development (Klein and Olivei, 2008). Absence of a theoretical model is not the only problem. Identifying the most appropriate measure for financial integration has also posed problems in previous studies. Similarly, there are numerous measures for the level of financial development across countries, and

previous studies have shown divergence on the most appropriate measure to use or adopt. As a result, studies have run tests of the relationship using the different measures (see Chinn and Ito, 2006; Frey and Volz, 2011). In the same context, difficulties also arise in selecting the most appropriate econometric model to use. Difficulties arise because of the nature of data being used, dependents of selected variables on other similar variables or for variables in one period to be dependent on the value of the variable in the preceding period.

Therefore, it is important that to select an econometric approach which overcomes these limitations. Previous studies have mainly made use of different regression techniques ranging from ordinary least squares regression (OLS), the generalized method of moments (GMM), panel data regression and instrumental variable regression. These will be critically reviewed in the sections to follow.

4.2.3.1 Ordinary least squares method

OLS is probably the most popular tool of regression analysis. It attempts to show the relationship between a dependent variable and a series of independent variables (Pohlman and Leitner, 2003, p.119). OLS assumes existence of a linear relationship between the dependent and independent variables. The OLS is said to be linear in the parameters, with the parameters raised to the first power only. However, it can also be used to fit non-linear relationships between the dependent and independent variables (Pohlman and Leitner, 2003, p.119). Its estimators are solely expressed in terms of the observable quantities of the dependent and independent variables (Gujarat, 2004, p.63). For OLS, the mean values of the error terms for conditional given values of the dependent is zero and the errors have the same variance throughout (ibid, 2004). In addition, OLS assumes that there is no serial or autocorrelation between the error terms and that the error terms and the explanatory variables are uncorrelated. The model is also assumed to be correctly specified, with no specification bias or error. The regression coefficients are interpreted as the change in the expected value of the dependent associated with a one unit increase in an independent variable, with the other independent variables held constant (Pohlman and Leitner, 2003, p.119). The OLS has been widely used for estimating relationships between variables across numerous fields. Quinn and Toyoda (2008) apply OLS in testing the effects of capital account liberalization on growth using pooled time series and cross sectional data from different countries. Their findings

show no signs of serial correlation, the model exhibits good explanatory power, and in all the model equations used, the coefficients are found to be positive and statistically significant.

Similarly, Juraev (2013) compares results from OLS, panel data, and GMM estimations in assessing the effects of financial integration and economic growth and finds out that all the three models produce more or less similar results. In another study, Mougani (2011) disproves this finding and notes that cross sectional analysis using OLS could be biased if there is endogeneity between variables. Mougani's study also shows conflicting findings on the relationship between financial integration and economic growth, with the cross sectional OLS showing a positive relationship, whilst the dynamic model showing a negative impact. These findings concur with Schularick and Steger (2006) who also argue that results from OLS may at times not be reliable because of endogeneity. On the other hand, Shrestha (2006) compares the performance of OLS to other regression techniques such as spatial auto regression. In this study, OLS performs equally well to the other models but exhibits elements of autocorrelation and spatial non-stationarity. From the above one can note that OLS estimations can be negatively affected if there are elements of non stationarity in the data, autocorrelation and heteroskedasticity. In addition, OLS assumes that the explanatory variables are stochastic and exogenous, meaning to say, there is no correlation between the explanatory variables and the error term (Heij et al., 2004). However, in some instances, the explanatory variables and the error terms may be correlated, hence in such cases; results from OLS may be inconsistent. Therefore, the limitations of the model lie in its assumptions. It is these limitations which have resulted in the development of other regression models which seek to overcome these weaknesses. However, despite limitations, OLS remains at the fulcrum of economic variable analysis, and has been used to test the finance growth relationship in other studies including Quinn (1997), Rodrik (1998), Kraay (1998) and Klein and Olivei (2000) .

4.2.3.2 Instrumental variable methods

One of the methods developed to overcome the limitations of OLS is that of instrumental variables (IV). This approach can be applied in situations where the explanatory variable may be correlated with the error term (endogeneity problem), thus limiting the accuracy of OLS estimations. The IV approach avoids such

correlation through finding a proxy which will be highly correlated with the explanatory variable but uncorrelated with the error term. Such a proxy is the one applied as the instrumental variable.

Gujarat (2004) notes that this method may be easy to apply if the IV is found, but may have the multicollinearity problem. This implies that the regression may have consistent estimates which are likely to be inefficient (ibid, 2004). In addition, finding a proxy which will act as the instrumental variable is not easy. However, one can check if the proxy they have found is appropriate through the Sargan (1975) test. The Sargan test of overidentifying restrictions checks for validity of selected instrument used in the IV regression. The null hypothesis for the test is that the overidentifying restrictions are valid, implying that the instruments selected are appropriate or valid. If the null is rejected, it would imply that the instruments selected are invalid, and one would have to look for better instruments. Instrumental variables have been observed to reduce measurement error (Angrist and Kruger, 2001; Klein and Olivei, 2008; Yang, 2012). However, Bound, Jager and Baker (1995) point out that the use of instruments that explain little of the variation in the endogenous explanatory variables can lead to large inconsistencies in IV estimates even if there is no correlation between the instrument and the error term in the equation. Again, like OLS, IV may produce biased estimates in finite samples if the set of instruments chosen is weakly correlated with the endogenous explanatory variables (ibid, 1995). As a solution, Larcker and Rusticus (2004) recommend that researchers adopt instruments whose correlations to the error term are small enough to make the IV estimators better than the OLS estimators. In the absence of such, IV estimations have been observed to be not that different from OLS estimations (Bound et al., 1995). In spite of this, IV regressions have been applied in several finance growth relationship estimations including Klein and Olivei (2008), Edison et al. (2002), Yang (2012).

4.2.3.3 Static panel models

Panel data analysis represents a method of studying a particular subject within multiple sites, periodically observed over a given time frame (Yaffee, 2003). It can also be defined as a study over time of a group of subjects or variables (Gujarat, 2004). Panel data is therefore made up of a combination of time series and cross sectional data and longitudinal data (ibid, 2004). It thus has time and space

dimensions. It is these dimensions which make panel data useful in describing change for example in terms of growth, or development over time. It can also be useful in estimating causal models as it provides superior results as compared to cross sectional models.

Hsiao (2007) concurs and notes that panel data produces more accurate inferences of model parameters as it contains more degrees of freedom and more sample variability than mere cross sectional data. Again, it captures the different complexities of subjects or variables than cross sectional data, controls the impact of omitted variables, and uncovers dynamic relationships that may exist between variables (ibid, 2007). In the same context, Baltagi (2008) stresses the argument that panel data is a much better option compared to time series and cross sectional data as it has more degrees of freedom, less multicollinearity and more data variation which ultimately results in its estimators being more efficient.

There are different types of panel data models. These include the pooled OLS, fixed effects and random effects models. The pooled model represents the ordinary OLS applied to a panel data set. The pooled model may be applied in cases where the basic assumptions of OLS such as homoscedasticity, absence of multicollinearity, exogeneity of regressors and no autocorrelation, are not violated. However, it might be improbable to have a panel where all these assumptions are not violated. The fixed effects model accounts for individual differences in intercepts assuming the same slope and variance across individual groups (Park, 2011). It can be a fixed effects model with all coefficients including the intercept constant, or slope coefficients constant with the intercept varying to capture the individuality of each cross sectional unit.

It can also be a fixed effects model where the intercept and coefficients vary across individual units and time. Because of the possibility of having too many dummy variables, the fixed effects model might have the multicollinearity problem, which might in turn increase standard errors and reduce the predictive power of the model. On the other hand, Yaffee (2003) points out that the fixed effects model might have autocorrelation especially if there are constant slopes and varying intercepts. For instance if it is used on cross country studies, because of constant coefficients, the model would have no significant differences but would have autocorrelation as

certain variables may be similar across countries. Additionally, too many dummy variables might gradually reduce the number of degrees of freedom, which might result in the degrees of freedom problem.

The random effects model assumes that the cross sectional units making up the panel have a common mean value for the intercept and the individual differences in the units should be reflected in the form of a composite error term. As a result of this error term the random effects model is also known as the error components model. The composite error term is made up of the individual specific error term and the time series and cross section error component. The model assumes absence of autocorrelation and that the individual error terms are not correlated with each other. However, in reality this might not be the case as there might be correlation between the regressors and the error terms. But how does one determine the appropriate model to use amongst the three models? Selection between the pooled OLS and the fixed effect is done through the F-test. The F-test compares the pooled model to the fixed effects model through determining whether use of the fixed effects model improves the goodness of fit of the model (Park, 2011). The null hypothesis for the test is that all dummy variables are equal to zero or alternatively, the pooled model is the most appropriate. Rejection of the null means the fixed effects model will be the most appropriate model to use. To select between the random effects model and the pooled model one can apply the Breusch-Pagan (1980) LM test to check if there is significant random effect.

The null hypothesis for the test is that there is no random effect or the individual specific variance components are zero. Rejection of the null means the random effect will be the most appropriate model to use. If in both the F-test and the Breusch-Pagan (1980) LM test, the pooled model is rejected, it means there would be need to select between the fixed effects and the random effects models. This can be done through the Hausmann (1978) test, which assumes that individual effects are uncorrelated with the regressors in the model or alternatively, random effect is the most appropriate model. Rejection of the null means the fixed effects model is the better of the two. However, the static models may not be applicable when the regressors are not exogenous, therefore, in cases where a lag of the dependent

makes up the regressors, there may be need to apply more dynamic panel estimation techniques.

4.2.3.4 Generalized method of moments

Another approach that has been adopted in recent literature is the GMM method proposed in early works by Hansen (1982) and Hansen and Singleton (1982). The GMM refers to a class of estimators constructed from exploiting the sample moment counterparts of population moment conditions (Hansen, 2007). This may be applicable where the full distribution function of the data available may not be known and only specified moments from an underlying model can be derived. For example in cases where data consists of a random sample from a population with an unknown mean, the moment estimator of the population mean is obtained by replacing the population moment with the sample moment (Heij et al., 2004). Therefore, in GMM, the estimates are obtained by replacing the unknown population moments with the known sample moments. The obtained estimates are consistent, have an asymptotic distribution, and are efficient (Nielsen, 2005). GMM has the advantage that the estimators can be obtained without specifying the complete data generating process (Hansen, 1982). More specifically, Hansen and Singleton (1982, p.1269) point out that GMM circumvents the theoretical requirement of a representation of stochastic equilibrium, does not require presentation of the complete economic environment which variables are exposed to and nature of forces or assumptions affecting the variables.

In other words, the approach is able to come up with consistent and efficient estimates given only a subset of the economic environment. On the contrary, Lucas (1976, cited in Hansen and Singleton, 1982) argues that this approach is actually a weakness and not an advantage as the decisions of economic agents depend on the stochastic specification of the variable forces affecting them as well as the economic environment the agents are operating under. Again, unlike IV estimators which are inefficient in the presence of heteroskedasticity, GMM provides efficient estimators even in the presence of heteroskedasticity (Baum et al., 2003). However, in the absence of heteroskedasticity, Baum et al. (2003) recommend the use of IV as they allege poor sample performance of the GMM estimator under absence of heteroskedasticity. One would then have to first check for heteroskedasticity through the Breusch-Pagan or the Cook-Weisberg test.

Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998) proposed a form of GMM for dynamic panel data models which makes use of internal instruments instead of external instruments as in IV regression. This form of GMM makes use of lags of the regressors as instruments. The Arellano and Bond (1991) model transforms the explanatory variables by differencing which in effect generates instruments for the endogenous regressors in the estimation equation. Therefore, it is known as the differenced GMM (Roodman, 2009). Arellano and Bover (1995) and Blundell and Bond (1998) added to differenced GMM by further proposing a system GMM in which the first differences of instrument variables are uncorrelated with the fixed effects, thus generating more instruments which are not in the differenced GMM (Roodman 2009). The difference and system GMM have gained favour with researchers especially when investigating dynamic economic relationships (see Juraev, 2013; Yang, 2012; Rousseau and Wachtel, 2011; Quinn and Toyoda, 2008). This is mainly due to the effectiveness in handling numerous regression estimation problems. Roodman (2009) notes the GMM estimator can be applied under situations of endogeneity, dynamic terms in estimation equations, fixed individual effects, heteroskedasticity, and autocorrelation within individuals. Assertions by Bond et al. (2001) and Caselli et al. (1996) also concur with the effectiveness of GMM in correcting for the aforementioned problems.

However, GMM may not be applicable in all cases and is best suitable for micro (short) panel situations where the number of observations will be greater than the time periods (Pedroni, 2000; Pesaran and Smith, 1995; Roodman, 2009). When the time series are persistent, the GMM estimator may produce poor estimates as the higher order of lags may generate weak instruments (Bond et al., 2001). Pesaran and Smith (1995) also note the inability of GMM to account for cross sectional dependency and add that under macro (long) panels, there may be an overfitting problem arising from too many instruments. Under such situations, the Sargan (1975) test may give improbably high p- values, giving a false impression that the overidentifying restrictions are valid. Eberhardt (2011) highlights that the majority of research on macro panels incorrectly applies micro panel methods such as GMM. On the other hand, to overcome weaknesses of the GMM and other short panel methods, Pedroni (2000) proposes the use of other long run relationship models such as cointegrated models for long panels.

4.2.3.5 Panel cointegration models (FMOLS and DOLS)

In situations when the time periods are greater than the number of observations, economic relationships can be analyzed through long-run cointegration estimation models. These include the fully modified ordinary least squares (FMOLS) proposed by Phillips and Hansen (1990) and the dynamic ordinary least squares model proposed by Stock and Watson (1994). Phillips and Hansen (1990) studied asymptotic distributions of estimators of cointegrated vectors with integrated of order 1 variables. Their findings showed that the estimators are extremely consistent even in the presence of endogeneity and serial correlation. Unlike the FMOLS which follows a non-parametric approach, the dynamic ordinary least squares (DOLS) by Stock and Watson (1994) adopted a parametric approach to generate efficient estimators for cointegrating vectors in higher order variables. DOLS uses leads and lags of first difference independent variables to come up with efficient estimators which are equally able to withstand serial correlation and endogeneity. Kao and Chiang (2000) compared the OLS, FMOLS and DOLS in cointegrated models in panel data and found that the OLS has non-negligible bias, whilst the DOLS estimator was observed to perform much better than the FMOLS. Jun (2012), applied both DOLS and FMOLS in a study on financial development and output growth for Asian countries. The study saw both estimators showing a statistically significant bi-directional relationship between financial development and growth, suggesting both estimators are equally efficient. Mitic et al. (2017) carried out a cointegration analysis of real GDP and carbondioxide emissions for transitional countries again using DOLS and FMOLS. The study had both estimators having similar statistically significant long-run relationship between carbondioxide emissions and GDP. The findings concur with the views that both DOLS and FMOLS produce asymptotically unbiased, normally distributed coefficient estimates under different scenarios as shown by Pedroni (2000), Phillips and Moon (1999), and Mark and Sul (2003). However, there are conditions which have to be met in order to apply the panel cointegration models. Firstly, one has to determine that the panel variables are non-stationary at level and stationary after first differencing. Unit root tests would then need to be carried out on the panel. There are different methods for panel unit root testing. These include the Levin, Lin and Chu (2002) test and IM, Pesaran and Shin (2003) test, Fisher-ADF test (Madala and Wu, 1999) and Fisher-PP test (Choi, 2003). All the tests assume the presence of unit root as the null hypothesis.

Acceptance of the null means the data will not be stationary. If stationarity is attained after first differencing for all the variables, then the next step in developing the cointegrating model would be to test for cointegration amongst the variables. Cointegration tests are applied to test for the presence of a long run relationship between the variables. Just like for panel unit root tests, there are different ways to test for panel cointegration. These include the Johansen Fisher (Madala and Wu, 1999), the Pedroni (1999) test and the Kao (1999) test. The Pedroni test produces 11 probability values and the decision criteria for accepting or rejecting the null depends on whether the majority of the probabilities accept or reject the null hypothesis (Dreger and Reimers, 2003). The Kao (1999) test is also another residuals integration test. The test is used for homogenous panels and like the Pedroni test, assumes a null of no cointegration. Rejection of the null in both cases confirms the presence of a long-run relationship. The Johansen Fisher test generates test probabilities for a given level of cointegrating equations. If at most one equation cointegrating equation is confirmed, a long run relationship is confirmed. When the presence of a long run relationship has been confirmed, one can then apply either the FMOLS or DOLS estimator to analyze the relationship between the cointegrated variables. However, in cases where there is cross sectional heterogeneity for cointegrated panels, Pedroni (2000) suggests the use of FMOLS over DOLS.

4.3 Conclusion

This chapter reviewed methodological approaches which have been applied in previous studies with a view to coming up with an appropriate methodology for the present study. The chapter looked at the various indicators of financial integration and financial development as well as the econometric approaches which have been applied previously in the financial integration and financial development relationship. In this regard, the chapter was able to highlight the strengths, weaknesses and applicability of each approach given the nature of data available from SADC countries.

CHAPTER FIVE

RESEARCH METHODOLOGY

5.1 Introduction

This chapter focuses on the methodological approaches adopted for the study. It explains and justifies the research design used in the study. The chapter also touches on the methods used for data collection and sources of secondary data used in the study. Cognisant of the different approaches that have been adopted to examine the relationship between financial integration and financial development, the chapter also explains the models and econometric approaches used to examine this relationship in this study and highlights the different techniques used in analyzing data relating to the study.

5.2 Research design

The study adopted a quantitative research design. The quantitative design generates statistics through the use of quantitative variables. It also focuses on numeric data which is used to construct statistical models applied in explaining the relationships between variables. The study made use of panel data to ascertain the relationship between regional financial integration and financial development. The quantitative design can take different forms. This study adopted a before and after design form, which measures the impact of an intervention on specific variables (Kumar, 2011, p.107). In the present study, the before period is the period before regional integration came into force and the after period represents the period when all the SADC countries began to implement a rules based agreement on regional economic integration. Adopting such an approach allowed for the determination of the impact of integration to be effectively measured.

5.3 Data collection

The study made use of secondary data from various sources. Data on private sector credit and ratios of broad money to GDP were sourced from World Bank database and SADC statistical database. FDI flows for SADC countries were also obtained from SADC statistical database. Stock market data including ratios of market capitalization to GDP and stock turnover ratios were obtained from the World Bank

database, African Exchanges database as well as individual stock exchanges making up the study sample. Data on inflation, trade openness, and GDP per capita were collected from the UNCTAD 2016 world investment report as well as the national statistical offices of the individual countries. World Governance Indicators (WGI) making up the institutional and social capital variables were also obtained from the World Bank database while Chinn Ito openness data could be obtained from the Chinn Ito index public domain sponsored by the Portland State University.

5.4 Data analysis

This section explains the approaches used in the analysis of collected data. It also explains the econometric approaches used in assessing the relationships between regional financial integration, global financial integration and financial development and how these are affected by differences in levels of institutional quality and social capital.

5.4.1 Descriptive statistics

Collected data was first analysed through descriptive statistics. Descriptive statistics represent graphical or numerical methods used to summarize the data in meaningful ways thus allowing for simpler interpretation of the data. The statistics generated included mode, median and mean. These measures attempted to describe data by identifying the central position within the data set (measurement of central tendency). Measures of central tendency were also complemented by measures of spread such as the standard deviation, maximum and minimum values. The measures of spread show how spread out or how similar or dissimilar the data are. The descriptive statistics were also summarized through tabulations and graphical representations which were also complemented with discussions. However, descriptive statistics only serve to describe the data. They do not allow for conclusions or inferences to be drawn from the data. This means descriptive statistics have to be augmented by other data analysis approaches. A summary of the descriptive statistics are presented in chapter six of the present study.

5.4.2 Correlations

Correlation analysis was also carried out to quantify the strength and direction of the linear association between the variables selected in the study. Correlation coefficients indicate the strength of this association between variables. The

magnitude of the coefficient therefore indicates the strength of the association. For this study, the Pearson correlation coefficient was used as a measure of the linear association between variables. In some cases, the correlation coefficient might show a linear association between variables, but the linear association might not be strong enough to use the variables in other models. There is therefore need to test for significance of the correlation coefficient. In line with this, hypothesis tests were done to determine if the linear association between the variables was strong enough to apply them in further econometric models. Findings of the correlation analysis are presented in chapter six of the present study.

5.4.3 Diagnostic tests

Panel unit root tests were done on all the variables using four panel unit root testing methods. These included the Levin et al. (2002) and IM et al. (2003), Fisher-ADF test (Madala and Wu, 1999) and Fisher-PP test (Choi, 2003). Unit root tests were done at level and first difference with both intercept and trend. Having established that the variables were non-stationary at level, but stationary after first differencing, the next stage involved testing for the presence of a long-run relationship amongst the variables. Therefore, the Pedroni (1999 and 2004) and Kao (2004) cointegration tests were applied to examine if there was cointegration amongst the variables. For the cointegration tests, the optimum lag length was set at 2 based on the Final predictor error (FPE), Akaike information criterion (AIC), and the Hanann-Quinn information criterion (HQ). Having tested for cointegration, the next step was to check if any of the main explanatory variables were correlated with the error term (endogeneity). In the presence of endogeneity, the OLS estimators become biased and inconsistent. Endogeneity tests were thus carried out through the Durbin (1954), Wu (1974) and Hausman (1978) tests for endogeneity. Findings of the aforementioned tests are shown in the forthcoming chapter.

5.4.4 Dating of regional financial integration

Frey and Volz (2011) identify removal of capital controls, creation of regional institutions, harmonization of payment systems and regulatory harmonization as the main elements of regional financial integration. In the SADC region these can be said to have been achieved by the signing and entry of two protocols, namely:

- The Protocol on Trade implemented by all SADC countries as from 26 September 2003.

- The Protocol on Finance and Investment implemented as from 24 April 2010.

These protocols were signed with the intention of creating economic growth through increased cooperation, coordination and management of macroeconomic, monetary and fiscal policies, progressive elimination of obstacles to the free movement of capital, labour, goods and services (SADC, 2015). Hartzenberg (2012, p.3) notes that the trade protocol was central to the implementation of the SADC's economic integration agenda. The trade protocol called on the SADC grouping to eliminate barriers to intra SADC trade, eliminate import and export duties, quantitative restrictions on exports and imports and all other non-tariff barriers to trade, remove any obstacles to the free movement of labour, cross border FDI, goods and services, and cooperate in regional capital markets (SADC, 2015). Through the trade protocol, member countries embraced economic integration as opposed to cooperation and committed to a rule based dispensation for economic integration (ibid, 2015, p.13).

On the other hand, the finance and investment protocol facilitated coordination on investments and exchange controls, regional and foreign direct investments and cooperation in capital markets. Implementation of these protocols allowed the SADC region to achieve regional integration in a manner similar to the regional integration theory proposed by Ravenhill (2004). In this theory, regional integration takes hierarchical forms beginning with a free trade area, followed by a customs union, common market and lastly and economic/monetary union. According to Ravenhill, the monetary union represents the highest level of regional integration. The protocol on trade removed trade barriers for goods and services and facilitated the free movement of goods and services across borders. Through its implementation, a form of free trade area was achieved, therefore, it can be said to have achieved level 1 of Ravenhill's (2004) hierarchy of regional financial integration. Similarly, the finance and investment protocol achieved some uniformity for the region in terms of exchange control policies, taxation and handling foreign direct investments in capital markets, all elements of a customs union. Therefore, the finance and investment protocol allowed the SADC region to move a scale higher to level 2 of the Ravenhill hierarchy of regional integration. By September 2003, implementation of the protocol on trade had been endorsed by all SADC countries. In light of this, the reference starting point for regional financial integration through the trade protocol will be the year 2003. On the other hand, the finance and investment protocol was adopted in

2006 but only implemented as from 2010. Therefore, the reference starting point for regional financial integration through the finance and investment protocol is 2010. The study examined the pre and post integration periods covering 20 years from 1996 to 2015. The pre-integration period for the trade protocol was 8 years, from 1996 to 2003 and the post integration period for the trade protocol was 12 years from 2004 to 2015. The pre-integration period for the finance and investment protocol was 14 years from 1996 to 2009 and the post integration period was 6 years from 2010 to 2015.

5.4.5 Empirical models

The study applied three dynamic panel models with lagged values of the dependent as explanatory variables to explain the impact of regional financial integration on financial development given varying levels of institutional quality and social capital across 14 SADC countries. The dynamic panel models follow work by Mougani (2011), Schularick and Steger (2006), and Klein and Olivei (2000) and Chinn and Ito (2007). The difference in the models was on the measures of regional financial integration adopted. Thus the empirical models were specified as follows:

Model 1: Trade protocol model

$$FD_{it} = \beta_0 + \beta_1 FD_{it-1} + \beta_2 GFI_{it} + \beta_3 IQSC_{it} + \beta_4 INFL_{it} + \beta_5 GDPC_{it} + \beta_6 TO_{it} + \beta_7 TRADEPRO_{it} + \varepsilon_{it} \quad (1)$$

This model examined the impact of regional financial integration through the SADC protocol on trade. It assumed that regional financial integration was effectively achieved through establishment of a free trade area, through removal of tariffs and other barriers to trade for goods and services. In the model, FD denotes the level of financial development, while i and t are subscripts for country and the time period respectively. The study used four indicators of financial development, focusing on size and efficiency of the banking sector and stock markets. In line with Ndlovu (2013), King and Levine (1993), Hassan et al. (2011) the ratios of broad money (BM) and stock market capitalization to GDP (Mktcapita) were picked as measures of size of financial markets. Ratios of private sector credit (PSC) and stock market turnover (Turnover) were applied as indicators of financial efficiency.

FD_{it-1} represents lagged values of financial development. Previous empirical studies, notably Mhadhbi (2014), Makina and Tsaurai (2017) have shown that current levels

of financial development are dependent on their past levels. Taking this into account, it was prudent to include the immediate past level of financial development as an explanatory variable for its current level.

TRADEPRO represents the proxy for regional financial integration represented by a dummy variable taking the value of 1 for the post integration year and 0 for the pre-integration year. For the trade protocol, the pre-integration period was from 1996 to 2003 and the post-integration period was from 2004 to 2015.

GFI is the proxy for global financial integration represented by two sets of data namely, the ratio of FDI inflow stock to GDP (FDI) and the capital account (KAOPEN) openness index. The FDI inflow stock to GDP was used as a *de facto* indicator of global financial integration. The higher the FDI stock to GDP ratio the greater the level of financial integration. The KAOPEN was applied as a *de jure* measure to capture the intensity of capital controls. The index is based on the IMF's AREAER indicators of restrictions on the capital account of a country. The higher the index, the more open is the capital account of the country. Use of both *de facto* and *de jure* measures allowed the study to note any significant differences arising from use of the two measures of global financial integration. Velde and Bezemer (2006) and UNCTAD (2003) suggest that regional trade agreements increase levels of intra-regional and extra regional FDI as multinational corporations are attracted by the possibility of serving a larger market with lower tariffs. If such changes in FDI inflows occur as a result of the implementation of a regional trade agreement, it then follows that regional integration should improve global financial integration for the regionally integrated countries. However, this had not yet been empirically proven. Therefore, to prove the link between global financial integration and regional integration, the global financial integration indicators were also included as explanatory variables for financial development. If the changes in global financial integration indicators in relation to financial development were significantly in tandem to the regional integration indicators, it could then be concluded that regional integration improves global financial integration and in turn has an effect on levels of financial development.

IQSC denotes the interaction variable of institutional quality and social capital. This variable measured the complementary effect of social capital on institutional quality

in financial development. Institutional quality was based on three world governance indicators (WGI) indicators by Kaufmann et al. (2010). These include regulatory quality, rule of law, and control of corruption represent dimensions which have a direct impact on corporate governance. These indicators have been used as a measure of institutional quality in previous studies (see Kaasa, 2013; Law and Azman, 2012; Charron et al., 2010; Meon and Weill, 2005). Social capital was measured through the social variables of the WGI indicators namely voice and accountability, political stability and absence of violence, government effectiveness. Sabatini (2007), Putnam et al. (1993), Knack and Keefer (1997) agree that trust, civic involvement, civic norms, and levels of confidence in public institutions are major components of social capital. The WGI social dimensions captured perceptions of the extent to which a country`s citizens are able to participate in selecting their own government (civic involvement), quality of civil service, quality of government policy formulation and implementation, and perceptions of the public on peace and stability in a country (World Bank, 2015) .

The model also controlled for other variables which impact financial development. Colombage (2009), Yang and Yi (2008) and Calderon and Liu (2003) note that GDP per capita is a major determinant of financial development, hence GDP per capita (GDPC) was included as a control variable. The model also controlled for inflation (INFL) and trade openness (TO) as changes in the rate of inflation may promote or discourage investment in financial assets (Frey and Volz, 2011, p.15) and trade openness has been seen to be another determinant of financial development (Law , 2009, Chinn and Ito, 2006, Baltagi et al., 2009). Variables not captured in the model were represented through the error term ϵ .

Model 2: Finance and investment protocol model

The second model examined the impact of regional financial integration through implementation finance and investment protocol. The model was specified as follows:

$$FD_{it} = \beta_0 + \beta_1 FD_{it-1} + \beta_2 GFI_{it} + \beta_3 IQSC_{it} + \beta_4 INFL_{it} + \beta_5 GDPC_{it} + \beta_6 TO_{it} + \beta_7 FINVPRO_{it} + \epsilon_{it} \quad (2)$$

Model 2 retained the same variables as model 1 except that the measure for regional financial integration changed from the trade protocol dummy (TRADEPRO) to the

finance and investment protocol dummy (FINVPRO). The underlying assumption for model 2 was that regional financial integration was attained through harmonization of taxation, exchange control, central bank and capital markets practices through the finance and investment protocol (FINVPRO) and not through the trade protocol. In essence, the finance and investment protocol was assumed to have achieved customs union level of financial integration in line with Ravenhill's (2004) theory. For the finance and investment protocol, the pre-integration period was from 1996 to 2009 and the post-integration period was from 2010 to 2015.

Model 3: Combined trade and finance protocols

The third model analyzed the impact of regional financial integration through both the protocol on trade and the finance and investment protocol. Its specification is as follows:

$$FD_{it} = \beta_0 + \beta_1 FD_{it-1} + \beta_2 GFI_{it} + \beta_3 IQSC_{it} + \beta_4 INFL_{it} + \beta_5 GDPC_{it} + \beta_6 TO_{it} + \beta_7 TRADEPRO_{it} + \beta_8 FINVPRO_{it} + \varepsilon_{it} \quad (3)$$

The model also retained the same variables as defined in model 1 but had two dummy variables representing regional financial integration through the trade protocol (TRADEPRO) and the finance and investment protocol (FINVPRO). The underlying assumption for this model is that regional financial integration was attained through the trade protocol (TRADEPRO) and enhanced through the finance and investment protocol (FINVPRO). Therefore, the model attempted to show the combined effect of both protocols. All the three empirical models were run with variations in the measures of banking development, stock market development as well as *de facto* and *de jure* measures of global financial integration. Table 5.1 below shows all the regression equations run for the three models.

Table 5.1: Regression equations per model

Model 1: Trade Protocol Model
BM BM _{t-1} FDI IQSC INFL GDPC TO TRADEPRO
BM BM _{t-1} KAOPEN IQSC INFL GDPC TO TRADEPRO
PSC PSC _{t-1} FDI IQSC INFL GDPC TO TRADEPRO
PSC PSC _{t-1} KAOPEN IQSC INFL GDPC TO TRADEPRO
MktCapita MktCapita _{t-1} FDI IQSC INFL GDPC TO TRADEPRO
MktCapita MktCapita _{t-1} KAOPEN IQSC INFL GDPC TO TRADEPRO
Turnover Turnover _{t-1} FDI IQSC INFL GDPC TO TRADEPRO
Turnover Turnover _{t-1} KAOPEN IQSC INFL GDPC TO TRADEPRO
Model 2: Finance and Investment Protocol
BM BM _{t-1} FDI IQSC INFL GDPC TO FINVPRO
BM BM _{t-1} KAOPEN IQSC INFL GDPC TO FINVPRO
PSC PSC _{t-1} FDI IQSC INFL GDPC TO FINVPRO
PSC PSC _{t-1} KAOPEN IQSC INFL GDPC TO FINVPRO
MktCapita MktCapita _{t-1} FDI IQSC INFL GDPC TO FINVPRO
MktCapita MktCapita _{t-1} KAOPEN IQSC INFL GDPC TO FINVPRO
Turnover Turnover _{t-1} FDI IQSC INFL GDPC TO FINVPRO
Turnover Turnover _{t-1} KAOPEN IQSC INFL GDPC TO FINVPRO
Model 3: Combined Trade and Finance Protocols
BM BM _{t-1} FDI IQSC INFL GDPC TO TRADEPRO FINVPRO
BM BM _{t-1} KAOPEN IQSC INFL GDPC TO TRADEPRO FINVPRO
PSC PSC _{t-1} FDI IQSC INFL GDPC TO TRADEPRO FINVPRO
PSC PSC _{t-1} KAOPEN IQSC INFL GDPC TO TRADEPRO FINVPRO
MktCapita MktCapita _{t-1} FDI IQSC INFL GDPC TO TRADEPRO FINVPRO
MktCapita MktCapita _{t-1} KAOPEN IQSC INFL GDPC TO TRADEPRO FINVPRO
Turnover Turnover _{t-1} FDI IQSC INFL GDPC TO TRADEPRO FINVPRO
Turnover Turnover _{t-1} KAOPEN IQSC INFL GDPC TO TRADEPRO FINVPRO
Series Key
BM- Broad Money to GDP Ratio
BM _{t-1} - Broad Money Lagged 1 period
FDI- FDI to GDP Ratio
IQSC- Interaction of institutional quality and social capital
INFL- Rate of inflation represented by consumer price index
GDPC- Per Capita GDP
TO- Trade Openness
TRADEPRO- SADC Protocol on Trade
FINVPRO- SADC Finance and Investment Protocol
PSC- Private Sector Credit to GDP Ratio
PSC _{t-1} - Sector Credit lagged 1 period
KAOPEN- Capital Account Openness
MktCapita- Stock Market Capitalization to GDP Ratio
MktCapita _{t-1} - Stock Market Capitalization lagged 1 period
Turnover- Stock Market Turnover Ratio

Source: Author`s compilation

5.4.6 Interaction models: Financial integration, institutional quality and social capital

Each of the three empirical models was also modified to show the interaction effect of global financial integration, institutional quality and social capital on financial development under each regional integration scenario. Financial literature has shown that good institutional quality positively impacts financial development. However, emerging literature uncovered in previous chapters of this study also shows that legal enforcement might not have the same effect on financial development when social capital issues such as instability, low trust and civic involvement are prevalent. In cases of increased financial integration, how would institutional quality and social capital impact the effectiveness of the integration process? This necessitated the interaction of the global measures of financial integration, institutional quality and social capital to show the effectiveness of financial integration under limitations of institutional quality and social capital. The three modified interaction models were specified as follows:

Interaction model 1

$$FD_{it} = \beta_0 + \beta_1 FD_{it-1} + \beta_2 GFIQSC_{it} + \beta_3 INFL_{it} + \beta_4 GDPC_{it} + \beta_5 TO_{it} + \beta_6 TRADEPRO_{it} + \varepsilon_{it} \quad (4)$$

Interaction model 1 retains all the variables from empirical model 1 with the only change being the interaction variable GFIQSC which captures the interaction of global financial integration, institutional quality and social capital when the protocol on trade was implemented.

Interaction model 2

$$FD_{it} = \beta_0 + \beta_1 FD_{it-1} + \beta_2 GFIQSC_{it} + \beta_3 INFL_{it} + \beta_4 GDPC_{it} + \beta_5 TO_{it} + \beta_6 FINVPRO_{it} + \varepsilon_{it} \quad (5)$$

Interaction model 2 also retains all the variables from empirical model 2 and also has the interaction variable GFIQSC to capture the interaction of global financial integration, institutional quality and social capital under the finance and investment protocol.

Interaction model 3

$$FD_{it} = \beta_0 + \beta_1 FD_{it-1} + \beta_2 GFIQSC_{it} + \beta_3 INFL_{it} + \beta_4 GDPC_{it} + \beta_5 TO_{it} + \beta_6 TRADEPRO_{it} + \beta_7 FINVPRO_{it} + \varepsilon_{it} \quad (6)$$

Interaction model 3 captures the interaction impact of global financial integration, institutional quality and social capital under both the trade and finance and investment protocols.

5.4.7 Panel regression estimators applied

All the modeled equations were estimated using the fully modified ordinary least squares (FMOLS) in line with Stock and Watson (1994), Kao and Chiang (2000), Pedroni (2000) and Jawaid (2017). For robustness, results of FMOLS were also compared with the Arellano and Bover (1995) or Blundell Bond (1998) generalized method of moments (GMM) estimator. The FMOLS approach involved three steps, namely panel unit root tests, cointegration tests and then estimation of the model using FMOLS. There are various methods to test for panel unit root. The methods used to test for panel unit roots in this study included the Levin et al. (2002) test, IM et al. (2003) test, Fisher-ADF test (Madala and Wu, 1999) and Fisher-PP test (Choi, 2003). These tests have been applied extensively in previous panel data studies (see Chindo and Rahim, 2017; Baltagi, 2008). In all the tests the null hypothesis assumed existence of unit root in the panel and rejection of the null implied stationarity of the data. The tests were carried out at both level and at first difference.

Having confirmed that the data were non-stationary at level but stationary after first difference, the next step involved determining the existence of a long run relationship through cointegration tests. Again, there are various methods of testing for panel cointegration, including Pedroni (1999) tests, Kao (1999) tests and the Johansen and Fisher (1999) panel tests. The Kao test is a residual based test which assumes a homogenous panel, while the Pedroni tests allow for estimation of cointegration at cross sectional level in a similar manner to the Johansen and Fisher tests. Therefore, the Pedroni test was used to test for cointegration as it allowed for heterogeneity in the panel whilst Kao tests which assume homogeneity in the panel were also applied for comparison. In both tests, the null hypothesis assumed that the variables were not cointegrated. Rejection of the null confirmed the existence of cointegration amongst the variables. According to Pedroni (2000) in the presence of cointegration for macro panels, one can apply panel cointegration estimators. FMOLS requires that both the dependent and explanatory variables be integrated of order (1). Having confirmed that the variables were cointegrated, equation (1) could then be estimated using FMOLS. The FMOLS estimators are extremely consistent

even in the presence of endogeneity and serial correlation (Phillip and Hansen, 1990). The Arellano and Bover (1995) or Blundell Bond (1998) GMM estimator makes use of lags of the regressors as instruments. The GMM was selected on the basis of its ability to be applied in situations of endogeneity, when there are dynamic terms in estimation equations, and when there is heteroskedasticity and autocorrelation (Pedroni, 2000; Pesaran and Smith, 1995; Roodman, 2009). Analysis and discussion of these estimations is shown in the following chapter.

5.5 Conclusion

This chapter explained the methodological approach of the present study. It outlined the research design applied and the sources of data for the study. The chapter also explained the models and econometric approaches used to examine the regional financial integration and financial development relationship and highlighted the different techniques used in analyzing data. In the next chapter, findings of the study will be presented, analysed and discussed.

CHAPTER SIX

PRESENTATION, ANALYSIS AND DISCUSSION OF FINDINGS

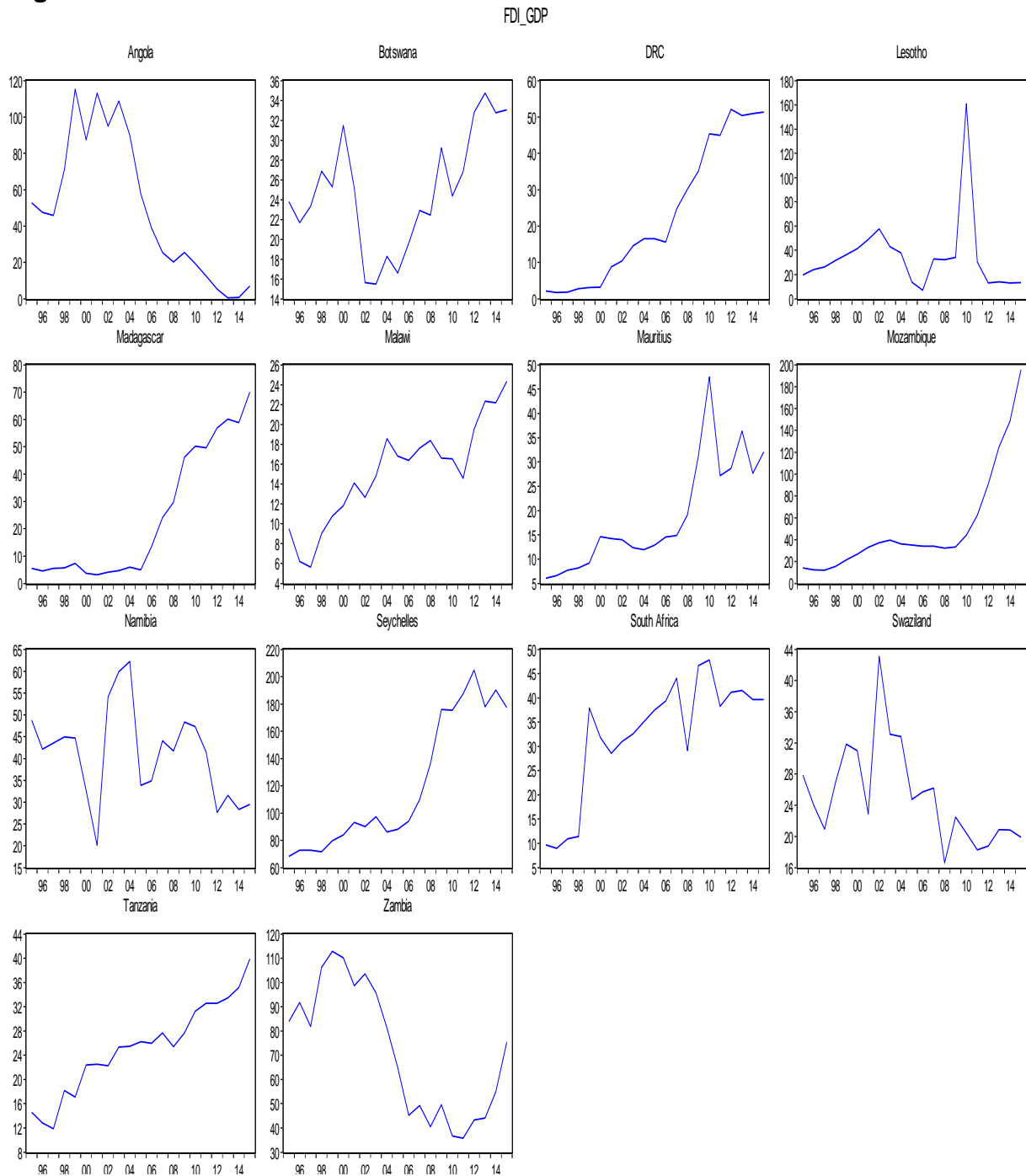
6.1 Introduction

The previous chapter explained the methodological approaches used in carrying out the study. This chapter presents the results obtained from these approaches. The chapter begins with trend analysis of the main variables used in the study namely levels of regional financial integration, financial development, institutional quality and social capital. Trend analysis will be followed by descriptive and correlation analysis of these variables, and presentation of diagnostic tests and regression results. Findings of the empirical model estimations of will constitute the concluding sections of the chapter.

6.2 Trend analysis for SADC global financial integration

Trend analysis of the levels of SADC countries financial integration with the rest of the world was done through analysis of both *de facto* and *de jure* measures of integration. The *de facto* analysis assessed financial integration through the FDI stock to GDP ratio for individual countries whilst *de jure* analysis was done using the Kaopen index. The set of graphs in figure 6.1 below show the trend in the level of global financial integration depicted by the ratio of FDI stock to GDP over time.

Figure 6.1: Ratio of FDI stock to GDP



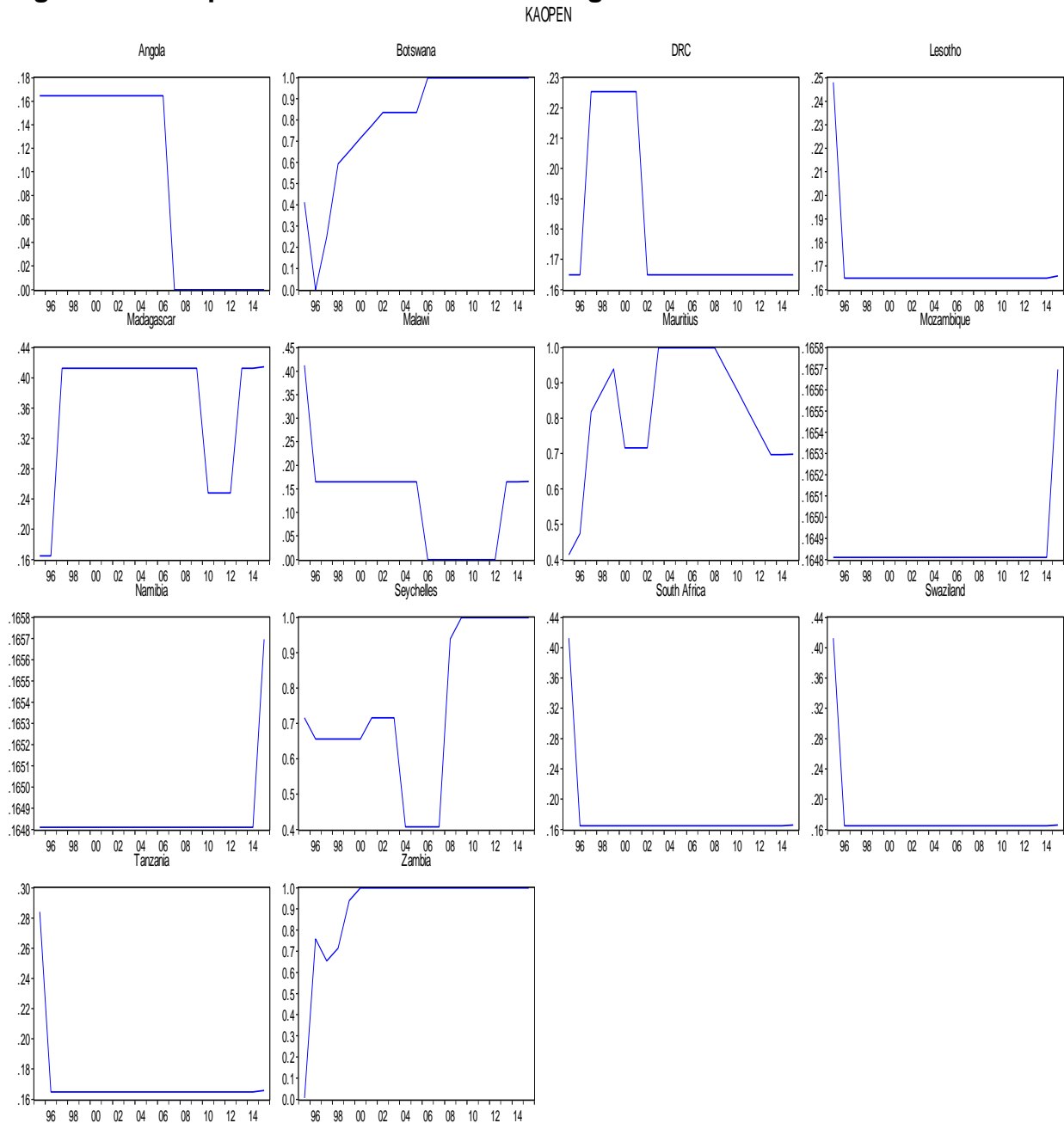
Source: Author Compilation

The graphs in figure 6.1 depict an upward trend in the ratio of FDI stock to GDP for 9 of the 14 of the countries studied, namely Botswana, DRC, Madagascar, Malawi, Mauritius, Mozambique, Seychelles, South Africa and Zambia. The trend for these countries suggests an improvement in the level of global financial integration for SADC countries over time. However, the remaining 5 countries depicted both

upward and downward trends. Angola had an upward trend from 1995 up to 2005, which was then followed by downward trend for the next 9 years up to 2015 onwards. Similarly, Lesotho starts with an upward trend from 1995, followed by a downward trend from 2002 to 2006 and a sharp upward and downward movement between 2007 and 2014. Zambia and Swaziland follow similar trends but are different from Angola and Lesotho in that their downward trends occur over extensive periods as compared to the other countries. The general upward trend in levels of FDI stock to GDP for the majority of the SADC countries might be an indicator of the impact of regional efforts towards integration of regional markets spilling over to having a global integration effect. Policies and strategies adopted by the SADC region towards integration might have resulted in increased FDI inflows and outflows in the integrated region. Blomstrom and Kokko (1997), propose that the macro environment of integrated countries has to be favourable for any efforts towards regional integration to work. In this regard, it is a possibility that the upward and downward trends observed in some of the countries might be a reflection of the changes in the macroeconomic environment of the affected countries, with positive macroeconomic changes resulting in the upward trend and negative changes resulting in downward trends.

The trends also show that financial integration is not constant when measured through *de facto* means. This may be explained by the fact that *de facto* measures capture the actual flows/stock of capital and hereby capture the actual degree of a country's openness to international markets in spite of any capital restrictions that may be in place. Again, in this case, financial integration was measured through stocks of FDI to GDP, therefore changes in the valuations of FDI stock as well as GDP might also explain the non-constant nature of levels of financial integration. The situation was however different when levels of global financial integration for SADC countries were assessed through a *de jure* measure in the form of the Chinn Ito (Kaopen) index. A visual inspection of the set of graphs in figure 6.2 below shows that levels of financial integration were largely constant during the same period. In contrast to the FDI stock to GDP measure, the Chinn Ito index shows minimal up and down movement.

Figure 6.2: Kaopen measure of financial integration



Source: Author Compilation

From figure 6.2, the Kaopen levels of financial integration show that only Zambia, Botswana and Mauritius can be said to be open economies. Botswana and Zambia reached the highest level of integration of 1, whilst Mauritius's level dropped from a high of 1 to around 0.7 by 2015. The other 11 countries have Kaopen indices which are less than 0.5, implying that they are more of closed economies and not integrated with other financial markets. Although, not similar in nature, the FDI stock to GDP and the Kaopen measures show financial integration trends which are

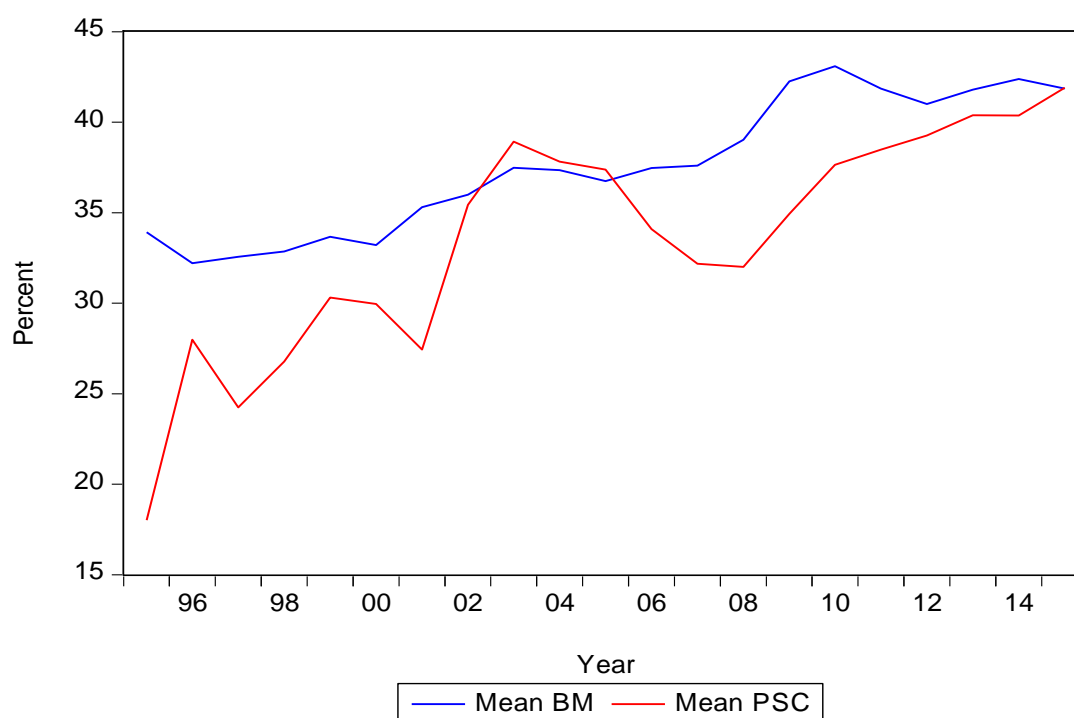
almost identical for certain countries. For example, in the case of Angola, the drop in the level of FDI stock to GDP is also replicated in the drop in the country's Kaopen index, whilst for Seychelles and Mozambique, the upward trends which occur in the FDI stock to GDP measure are also replicated by the Kaopen index. This could be an indicator that there is some element of comovement between the two measures. In terms of structure, the Kaopen set of graphs are flat or inelastic for extensive periods for example Tanzania, Namibia and Swaziland can be said to have perfectly inelastic levels of financial integration from 1997 to around 2014. This is largely due to the fact that the Kaopen index is based on restrictions to capital movement that are in place for each country. If there are no changes to rules or laws pertaining to capital movement for a specific country, it implies that the country's ranking in terms of level of financial integration will not change.

However, as noted by Quinn et al. (2011), *de jure* measures are not reflective of the extent to which capital controls are being complied with. In some cases, they may show that levels of financial integration have not changed, yet in actual fact changes would have occurred (Kose et al., 2009b). This is clearly exemplified in the case of South Africa, which has a very low Kaopen score of 0.16 from 1996 to 2015, yet for the same period, the ratio of FDI stock to GDP shows a rising trend. It is the same case with Tanzania, whose Kaopen score again of 0.16, is contrasted with an increasing FDI stock to GDP ratio. It is these differences which validated the need to examine financial integration from both a *de facto* and *de jure* perspective so as to determine if such differences could ultimately lead to different perspectives on the relationship between regional financial integration and financial development.

6.3 Trends in financial development in the SADC region

Trend analysis of financial sector development in the SADC region was done on the selected measures of financial development, namely the ratios of broad money to GDP (BM) and private sector credit to GDP (PSC). In this case broad money takes into account currencies outside banks, demand, time, savings and foreign currency deposits and other securities. Private sector credit is made up funding which has been provided to the private sector in the form of loans, trade credits and other sources by financial institutions. Figure 6.3 shows the trend in the measures of financial development over time.

Figure 6.3: Broad Money (BM) and Private Sector Credit (PSC) Trends in SADC

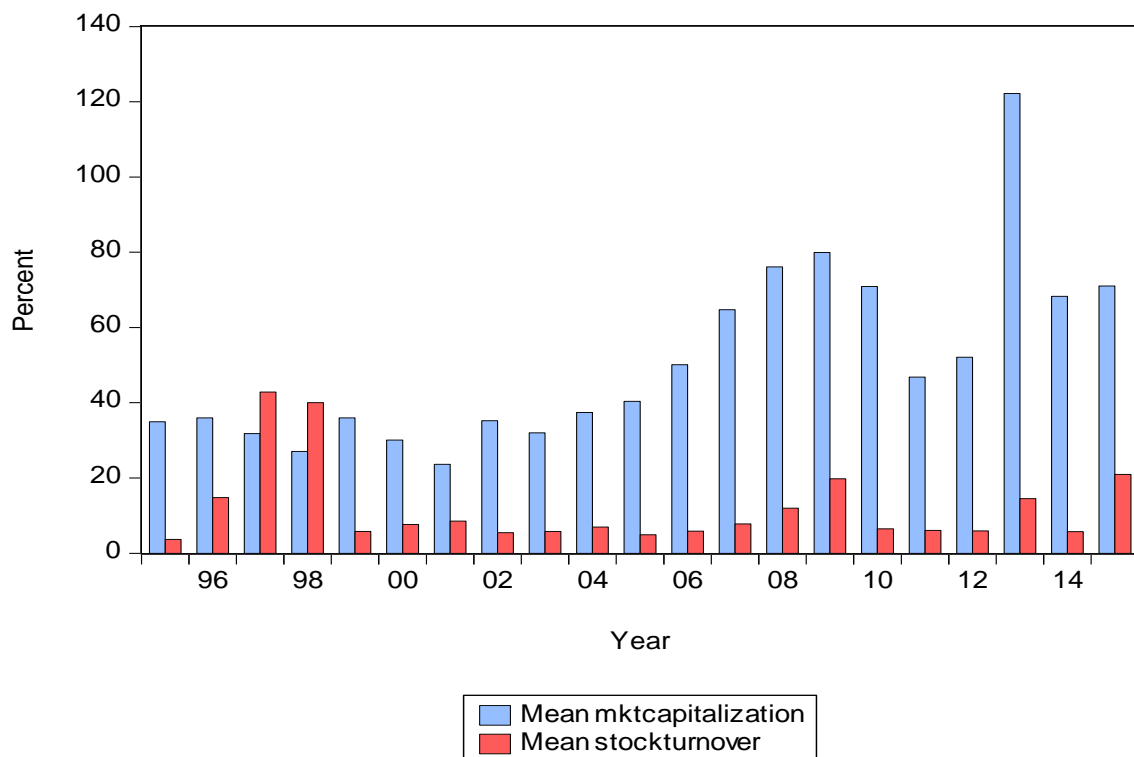


Source: Author Compilation

Figure 6.3 shows private sector credit and broad money following an almost similar trend. Both show a general upward trend from 1995 to 2015 indicating a rise in the level of financial development over the time period. However, broad money on average trends at a higher rate than private sector credit over the same period, rising from a mean of 34% in 1995 and reaching a mean of 43% by 2015. Private sector credit also rises from a mean value of 18% in 1995 to a mean value of around 43% by 2015. However, between the years 2003 to 2005 private sector credit trends higher than broad money before returning to its normal levels below broad money by the year 2006. Interestingly, as the year 2015 approaches, both broad money and private sector credit appear to converge towards the same mean values close to 43%. The rise in ratio of private sector credit signifies the increasing importance of financial intermediaries in channelling credit to the private sector within the SADC region. It also signifies increasing efficiency in credit allocation by financial intermediaries as more credit is channelled to the private sector as opposed to government entities. The rise in the monetary aggregates (broad money) and liquid liabilities (financial sector deposits) is an indicator of the increasing size and depth of

the SADC financial sector as increases in these measures are associated with higher levels of financial deepening (Lynch, 1996) and better financial intermediary development (Calderon and Liu, 2003, p.6). Likewise, stock market development has been observed to be a significant driver of economic growth hence is seen as a significant complementary to banking development in the financial development matrix. However, in terms of stock market development, the SADC region still lags behind as one fifth of the countries in the region do not have stock exchanges, whilst another fifth of the stock exchanges have been in existence for a period less than five years. Therefore, in the present study, analysis of stock market development focused on 8 stock exchanges that were in existence prior to 1995. Stock market capitalization and stock turnover trends for these countries were summarized in figure 6.4 below.

Figure 6.4: Stock market development trends in SADC Countries



Source: Author Compilation

Average market capitalization as a percentage of GDP in the SADC region has risen over the period 1995 to 2015. In 1995, average market capitalization to GDP was around 38% and remained within the 35% to 40% range up to 2005. From there capitalization rose steadily up to 80% by the year 2009 before reaching a peak of

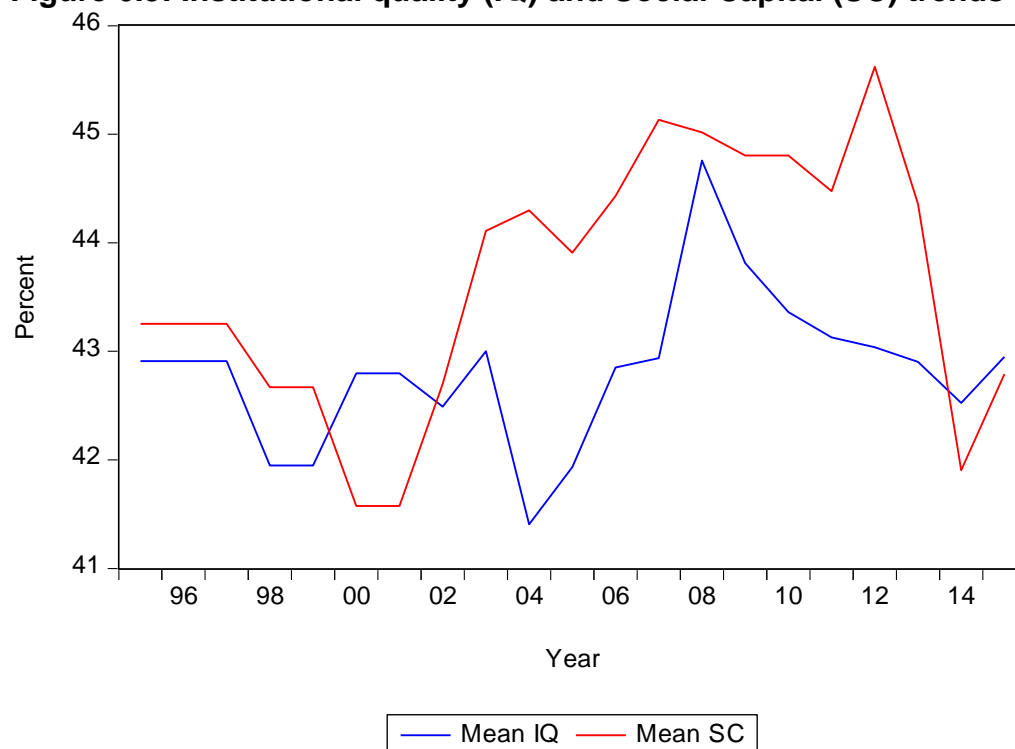
around 120% by 2013. Between the years 2014 and 2015 capitalization decreased from this peak and ranged between 60% and 70%. However, the general trend overtime has been upwards. The rise in market capitalization supports the view of increasing FDI within the SADC region over the study period as investors could have been attracted by the harmonization of regional financial practices. Again, increasing market capitalization is an indicator of increased resource and savings mobilization within financial markets. These resources and savings are in turn allocated as capital for growth in the economy. An improvement in this ability to mobilize resources and savings through the stock markets is seen as an increase in the level of financial development for the region. However, it should be noted the regional stock markets are largely dominated by South Africa, which has the 17th largest stock exchange and the largest in Africa. Therefore, trends in market capitalization could have been inflated by the South African exchange. Whilst the size of stock markets in the SADC region has increased significantly over time as noted above, the same cannot be said of stock market turnover. Stock market turnover is seen as a measure of the efficiency of financial markets. Efficient stock markets should allow for timely and easy acquisition and disposal of securities as according to investor preferences. These acquisitions and disposals are then represented as a ratio to value of listed market shares to come up with the market turnover. Markets with higher turnover ratios are in turn seen as more efficient than those with lower turnover ratios. In the SADC region, the average market stock turnover has not changed significantly between the periods 1995 to 2015. The average stock market turnover started at a low of around 3% in 1995 and rose to reach peaks of around 40% between the years 1997 and 1998. From then on, the market turnover dropped significantly to between 3% and 4% for the years 1999 to 2008 before increasing slightly to 18% in 2009. This up and down trend continued with the years 2010 to 2012 averaging 4% in terms of turnover before the upward trend took over again in 2015, leaving the ratio at 18% again. The low turnover ratios as opposed to high capitalizations indicate that the stock markets in the SADC region are largely inactive and investors do not find it easy to buy or sell shares within these markets. The stock markets also appear to be characterized by sporadic high buying and selling activities for a few years which in turn result in sudden increases in the turnover ratio from as low as 4% to as high as 18%. The low turnover ratios are also an indicator of illiquidity within the SADC stock markets. If stock markets are illiquid, investors find it difficult to trade shares,

resulting in low turnover ratios. The low turnover can also be a sign of inefficiency within the markets in that trades of shares are taking longer than expected to be approved at the same time it could be an indicator of prohibitive legislation within the markets which make it difficult for traders to disinvest from the markets or for stock buyers to come through. Therefore, though size of stock markets measured by capitalization has increased, efficiency has not really increased by the same margin. However, when we consider both the increase in size and efficiency of the banking sector and the corresponding increase in the size of stock markets, one can conclude there has generally been an upward trend in terms of the level of financial development across the SADC region.

6.4 Trends in institutional quality and social capital

Institutional quality and social capital are factors which might impact the level of financial development attained by countries. In assessing trends for institutional quality, the study focused on regulatory quality, rule of law and control of corruption indicators changed overtime. In a similar manner assessment of social capital trends involved analysing trends for voice and accountability of governments and citizens of a country, government effectiveness, stability of a country and absence of violence in a country. Trends for both institutional quality and social capital are shown in Figure 6.5 below.

Figure 6.5: Institutional quality (IQ) and Social Capital (SC) trends in SADC



Source: Author Compilation

Figure 6.5 shows institutional quality and social capital trending in the same direction for the SADC region. Both start at close to 43% between the years 1995 and 1996, though average social capital levels appear a bit higher than institutional quality levels. Towards the years 1998 and 2000, social capital takes a deep and falls below institutional quality. This could be attributed to a period of instability within the region when many of the countries in the region were in one way or the other involved in the DRC war. After the year 2002, social capital rises again above institutional quality levels. The upward trend continues up to the year 2013 when social capital reaches close to 46%. From there it falls to levels below 42% and below institutional quality levels before ending on an upward trend between 2014 and 2015.

During the same period, institutional quality follows a similar pattern to social capital and also rises from 2004 up to around 2009 reaching close to 45%. From then on, institutional quality takes a downward trend from 2009 to 2013, before rising again above social capital between 2014 and 2015. The rise in both institutional quality and social capital between the years 2004 and 2009 can possibly be attributed to the increased

harmonisation of trade rules through the trade protocol signed in 1996 and came into effect in 2001. The protocol might have led to increased confidence and trust in the region at the same time investor perceptions of their legal rights in the region might have also improved. However, from the onset of 2009, the gradual fall in both institutional quality and social capital might be attributed to the negative effects of the global financial crisis which knocked off confidence and trust. According to Jefferis (2009), the crisis prompted governments in the SADC region towards increased regulation in the form of protectionism. However, investors generally may have a negative perception towards protectionism, therefore might explain the fall in institutional quality levels after 2009.

However, it is also important to note that both graphs are trending below the expected standard of at least 50% for both institutional quality and social capital. In terms of institutional quality, this implies that the SADC region could be having weaker investor protection rules, weaker financial regulation frameworks and might be not doing enough in enforcing private property rights and other legal rights of investors. In terms of social capital, it implies that the citizens of countries in the SADC region do not have adequate trust in their governments and other institutions and may not be keen on actively participating in government economic activities hence may not cooperate in supporting economic growth programmes. It might also imply that the quality of policy formulation and implementation by governments in the SADC region is low and perceptions of stability by the citizens of these countries are largely negative. How such levels of institutional quality and social capital can impact financial development in the SADC region is what will be revealed in the later stages of this chapter.

6.5 Descriptive statistics

The study made use of panel data from 14 SADC countries for a period ranging from 1995 to 2015. Descriptive statistics for the data are given in tables 6.1 and 6.2 below. The maximum ratio of broad money to GDP was 110.8% whilst the lowest rate was 1.6%. The mean broad money ratio was 37.60% whilst the standard deviation was below the mean at 25.29%, meaning there is not much variability in broad money ratios across the SADC region. Private sector credit to GDP had a maximum of 192.7% and a minimum of -0.79%. The standard deviation of 49.22%

was above the mean of 33.59% indicating a higher degree of variability in levels of credit allocated to the private sector in SADC countries. In terms of financial integration, the maximum attained ratio of FDI to GDP was 204% whilst the minimum ratio was 0.61%.

The mean FDI to GDP ratio was 39.90% whilst the variability was 37% and below the mean. In terms of capital account openness measured by the Kaopen, the maximum attained level was 1, indicating an open capital account while the minimum attained was 0 indicating a closed account. The mean openness was 0.361 whilst the standard deviation was 0.32%, indicating little variation in levels of capital account openness across the SADC region. Institutional quality had a maximum of 77.38% and a minimum of 0.32%. The mean value for institutional quality was 42.82% and the standard deviation was 20.80% implying a low coefficient of variation in institutional quality amongst regional countries. Social capital recorded a maximum of 77.57% from a low of 1.126%. The mean was 43.64% whilst the standard deviation was 20.87%, again implying a low coefficient of variation for social capital. The highest rate of inflation recorded was 4 145% and the lowest deflation rate was -2.372%. The mean rate of inflation recorded was 46.78% whilst the standard deviation was 292.91%, implying high variation in the levels of inflation across the SADC region.

The highest GDP per capita recorded was \$16 922 whilst the lowest was \$100.69. The mean GDPC was \$2 815 whilst the standard deviation was \$3 221, meaning there is significant variation in living standards in SADC countries. Trade openness recorded a high of 107.95% and a low of 12.11% whilst the coefficient of variation was below 1 as the mean was greater than the standard deviation. The Jarque -Bera probability values of less than 5% indicate that the data for all the variables are not normally distributed. All the data has positive kurtosis, implying a heavy tailed distribution of the data. Institutional quality and social capital are left skewed, meaning they have long left tails, whilst the rest of the variables are right skewed meaning they have long right tails.

Table 6.1: Descriptive statistics of bank and control variables

	Broad Money	Private Sector Credit	FDI to GDP Ratio	KAOPEN Index	Institutional Quality	Social Capital	Inflation	GDP per capita	Trade Openness
Mean	37.602	33.595	39.902	0.361	42.825	43.648	46.782	2815.514	43.751
Median	27.650	15.500	30.257	0.165	42.159	43.169	7.895	1200.604	39.413
Maximum	110.800	192.700	204.632	1.000	77.382	77.570	4145.110	16922.130	107.950
Minimum	1.600	-79.100	0.615	0.000	0.323	1.126	-2.372	100.690	12.114
Std. Dev.	25.299	49.225	37.002	0.324	20.805	20.972	292.911	3221.712	20.949
Skewness	1.142	1.479	2.191	1.075	-0.295	-0.234	11.881	1.556	0.714
Kurtosis	3.489	5.156	8.391	2.581	2.385	2.183	153.426	5.432	2.868
Jarque-Bera	66.889	164.121	591.382	58.769	8.898	10.844	284108.600	191.095	25.165
Probability	0.00000	0.00000	0.00000	0.00000	0.01169	0.00442	0.00000	0.00000	0.00000
Sum	11054.95	9877.04	11731.05	106.11	12590.46	12832.41	13754.01	827761.00	12862.93
Sum Sq. Dev.	187527.3	709972.6	401151.3	30.7	126824.7	128863.7	25138440.0	3040000000.0	128584.1
Observations	294	294	294	294	294	294	294	294	294

Source: Author compilation

Table 6.2: Descriptive statistics of SADC stock markets

	Market Capitalization	Market Turnover
Mean	50.79524	11.97792
Median	18.56500	4.035000
Maximum	487.8200	276.0000
Minimum	1.860000	0.000000
Std. Dev.	75.97282	30.13325
Skewness	2.477181	6.740559
Kurtosis	10.15797	54.58641
Jarque-Bera	530.4761	19900.29
Probability	0.000000	0.000000
Sum	8533.600	2012.290
Sum Sq. Dev.	963902.2	151638.1
Observations	168	168

Source: Author compilation

In terms of stock markets, table 6.2 shows the highest recorded market capitalization to GDP to be 487% whilst the minimum was 1.86%. The mean market capitalization was 50.79% whilst the standard deviation stood at 75.97%, indicating significant variation in levels of market capitalization across SADC stock markets, largely because of the size of the JSE which is the 17th largest in the world. The highest market turnover was 276% and the lowest recorded was 0. The mean turnover was 11.97% and the standard deviation was 30.13%. Jarque Bera values for stock market data show this data are not normally distributed while the positive kurtosis indicates a heavily tailed distribution. Both market capitalization and market turnover are right skewed, indicating they have long right tails.

6.6 Correlation analysis

Table 6.3: Correlation matrix

Sample : 1995-2015								
Correlation								
	BM	PSC	FDI	KAOPEN	IQSC	INFL	GDPC	TO
BM	1.0000							
PSC	0.7154*	1.0000						
FDI	0.2009*	0.1371*	1.0000					
KAOPEN	0.3968*	0.1083	0.3173*	1.0000				
IQSC	0.7535*	0.4212*	-0.0152*	0.5075*	1.0000			
INFL	-0.0738	-0.0836	0.0097	-0.0742	-0.1659*	1.0000		
GDPC	0.7421*	0.4925*	0.3955*	0.4508*	0.5984*	-0.1003	1.0000	
TO	0.2839*	-0.0230	0.4098*	0.2435*	0.1230*	0.1244*	0.5255*	1.0000
FDIQSC	0.5457*	0.3303*	0.7295*	0.4701*	0.5014*	-0.0993	0.7674	0.3777*
KAOPENIQS	0.6280*	0.1868*	0.1016	0.8349*	0.7949*	-0.0931	0.6023*	0.2953*
	Capita	Turnover	FDI	KAOPEN	IQSC	INFL	GDPC	TO
Capita	1.0000							
Turnover	0.0870	1.0000						
FDI	-0.0578	-0.0135	1.0000					
KAOPEN	-0.1418	-0.1291	0.2628*	1.0000				
IQSC	0.1526*	-0.0627	-0.2140*	0.3928*	1.0000			
INFL	-0.1209	-0.0901	0.1637*	-0.0078	-0.3473*	1.0000		
GDPC	0.3538*	0.0208	-0.1169	0.2979	0.7619*	0.4272*	1.0000	
TO	-0.0724	0.0985	-0.0902	0.2880*	0.2995	-0.2747*	0.4072*	1.0000
FDIQSC	0.1599*	0.0006	0.4272*	0.2659*	0.6617*	-0.2647*	0.6224*	0.1195
KAOPENIQS C	-0.0574	-0.1225	-0.1480	0.8012*	0.7710*	-0.2057*	0.6137*	0.4017

Source: Author compilation Note * Denotes significance at 5% level

Results of table 6.3 show a positive linear association between the measures of banking development, broad money, private sector credit (BM, PSC) and the *de facto* measure of global integration represented by the ratio of FDI to GDP (FDI). Capital account openness (KAOPEN) also shows a positive and significant correlation with broad money whilst private sector credit is positive but not significant. The positive results imply that an increase in the level of financial integration should be followed by a linear increase in levels of financial development. The results also show a weak negative and insignificant correlation between the measures of stock market development (Mktcapita and Turnover) and both measures of global integration measured by fdi/gdp and capital account openness (KAOPEN).

This might suggest that there is a weak association between global financial integration and flows of investment capital to SADC stock markets. The interactive term comprising Institutional quality (IQ) and social capital (SC) has a strong and significant linear association with broad money and a moderate correlation with private sector credit. Stock market capitalization shows a weak but positive and significant correlation with institutional quality and social capital. However, stock market turnover is observed to have a weak and insignificant correlation the institutional quality and social capital interactive term. The other two interaction terms representing combinations of global financial integration with institutional quality and social capital (FDIQSC,KAPENIQSC) all show positive and significant correlations with all the banking development variables (BM, PSC) .

This might mean that a combination of greater global openness and better investor protection rules coupled with effective policy formulation, better trust and civic involvement in economic affairs might lead to increased savings and capital flows as well as improved financial intermediation. However, such combinations show mixed results for stock market development measures. Market capitalization and stock turnover show positive correlations between FDI to GDP ratio, institutional quality and social capital interaction terms (FDIQSC) and negative correlations when Kaopen replaces FDI to GDP ratio as the measure of financial integration (KAOPENIQSC).

In both cases, the correlations are however insignificant. The rate of Inflation (INFL) is seen to have a negative correlation with all measures of banking development. This may suggest that inflation discourages investments in financial markets. On the contrary, the gross domestic product per capita (GDPC) has positive and significant correlations for all the 2 measures of banking development. Trade openness shows positive and significant correlations with broad money and at the same time has a negative but insignificant correlation with private sector credit.

In terms of stock market development, both market capitalization and stock market turnover have negative but insignificant correlations with the rate of inflation. This might support the view that investors may opt not to invest in stock markets as inflation increases as they would rather invest in assets which can effectively compensate for any rise in the level of inflation. On the other hand, GDP per capita is shown to have positive correlations with both stock market development measures as higher levels of income per capita may also lead to greater investments in stock markets.

Trade openness shows contrasting correlations between market capitalization and stock turnover. Market capitalization shows a negative correlation with trade openness while on the other hand, turnover shows a positive correlation with the same variable. The interpretation from this might be that as trade markets in the SADC region become more open, there is increased activity on the stock markets which result in increased turnover. However, the increased turnover is not necessarily in the form of increased acquisition of stocks but rather a sign of increased disposal of stocks, which might push the prices of stocks downwards and reduce levels of capitalization of SADC stock markets.

The correlation matrix is also useful in determining if there is multicollinearity problem. Multicollinearity may arise in cases where the pairwise correlation coefficient between two variables is greater than 0.8. From the tables, such a high pairwise correlation is observed between the interactive term representing capital account openness, institutional quality and social capital, and the KAOPEN measure itself. Multicollinearity may make significant variables insignificant by increasing the standard errors.

If the standard errors go up, the t values will decrease resulting in higher p values. However, Frost (2013) notes that multicollinearity isn't always a problem especially if it does not affect the overall fit of the model hence it can be ignored. Alternatively, one can use regression with standardised predictors or remove highly correlated variables. However this might mean getting rid of very important variables. Frost (2013) suggests that it is better to have a model with coefficients which are less accurate or a high r squared model which has a few significant coefficients as it will not affect the fit than to remove important variables.

6.7 Unit root tests

Panel unit roots tests were carried out on all the variables using the Levin et al. (2002), IM et al. (2003), Fisher-ADF test (Madala and Wu, 1999) and Fisher-PP test (Choi, 2003) methods. The Levin, Lin and Chu (LLC) method assumes cross sectional independence in the panel. Its null assumes that all cross sections have a unit root whilst the alternative hypothesis assumes stationarity for all cross sections. It does not allow for situations where cross sections may be correlated.

In contrast to LLC (2002), the IM et al. (2003) method allows for unit root tests in heterogeneous panels. Therefore, its null hypothesis assumes that all cross sections have a unit root whilst the alternative assumes that some and not all of the cross sections have a unit root. The Fisher-ADF test and Fisher-PP tests follow similar hypotheses. Tests were carried out at level with intercept and at first difference with intercept. The results of the unit root tests at level with intercept are shown in table 6.4 while the results after first difference with intercept are shown in table 6.5.

Table 6.4: Panel unit root tests at level with intercept and trend

Variable	Levin , Lin,Chu Test statistic (p-value)	IM Pesaran Test statistic (p-value)	Fisher-ADF Test statistic (p-value)	Fisher-PP Test statistic (p-value)
BM	-0.60401 (0.2729)	-0.08789 (0.4650)	29.1185 (0.4065)	23.3719 (0.7142)
PSC	1.24704 (0.8938)	-0.3658 (0.3573)	36.7146 (0.1253)	60.2200 (0.0004)**
MktCapita	-0.49279 (0.3111)	-0.1616 (0.4358)	25.4984 (0.0615)	55.5625 (0.0000)***
Turnover	-1.45516 (0.0728)	-1.75626 (0.0595)	37.4907 (0.0018)***	104.909 (0.0000)***
IQSC	-1.28599 (0.0992)*	-0.95830 (0.1690)	34.2206 (0.1937)	31.9752 (0.2755)
FDI	1.81633 (0.9653)	1.89896 (0.9712)	27.5923 (0.4862)	24.9651 (0.6297)
KAOPEN	463.995 (1.0000)	-0.97870 (0.1707)	33.7175 (0.0059)***	35.9898 (0.0209)**
INFL	0.24860 (0.5982)	-0.9762 (0.1570)	97.3682 (0.0000)***	97.0345 (0.0000)***
GDPG	-0.37490 (0.3539)	1.74481 (0.9595)	19.0038 (0.8980)	17.3329 (0.9419)
TO	-0.24433 (0.4035)	-0.62603 (0.2656)	35.4123 (0.1582)	31.9801 (0.2753)
FDIQSC	-1.10427 (0.1347)	-0.29328 (0.3847)	32.1174 (0.2698)	32.2421 (0.2648)
KAOPENIQSC	2.50561 (0.9939)	-0.9627 (0.1678)	39.1817 (0.0780)	314.79 (0.0000)***

***, ** and * denote significance at 1, 5 and 10% levels respectively.

Source: Author Compilation

Results of the unit root tests suggest that at level all the variables seem to have unit root, implying data from these variables is not stationary at level. For some variables such as the Kaopen index and inflation there were mixed results with the LLC and IM Pesaran showing that the variables had unit root whilst the Fisher PP and Fisher ADF tests rejected the unit root hypothesis. Such situations made it difficult to confirm if such variables are stationary or not, therefore further tests were done in first difference.

Table 6.5: Panel unit root tests at first difference with intercept and trend

Variable	Levin , Lin,Chu Test statistic (p-value)	IM Pesaran Test statistic (p-value)	Fisher-ADF Test statistic (p-value)	Fisher-PP Test statistic (p-value)
BM	-8.53289 (0.0000)***	-8.39517 (0.0000)***	118.430 (0.0000)***	139.316 (0.0000)***
PSC	-8.86256 (0.0000)***	-10.2520 (0.0000)***	151.646 (0.0000)***	267.156 (0.0000)***
MktCapita	-12.6342 (0.0000)***	-11.8109 (0.0000)***	148.796 (0.0000)***	892.459 (0.0000)***
Turnover	-9.13719 (0.0000)***	-11.5389 (0.0000)***	125.052 (0.0000)***	700.494 (0.0000)***
IQSC	-6.70423 (0.0000)***	-6.58529 (0.0000)***	96.9856 (0.0000)***	180.607 (0.0000)***
FDI	-9.41429 (0.0000)***	-10.5269 (0.0000)***	158.756 (0.0000)***	238.622 (0.0000)***
KAOPEN	-16.9153 (0.0000)***	-12.5455 (0.0000)***	231.555 (0.0000)***	162.400 (0.0000)***
INFL	-52.1467 (0.0000)***	-25.6350 (0.0000)***	453.830 (0.0000)***	338.181 (0.0000)***
GDPC	-5.79011 (0.0000)***	-7.31687 (0.0000)***	103.488 (0.0000)***	342.836 (0.0000)***
TO	-9.59469 (0.0000)***	-11.0069 (0.0000)***	158.549 (0.0000)***	245.575 (0.0000)***
FDIQSC	-9.08542 (0.0000)***	-8.31793 (0.0000)***	120.115 (0.0000)***	314.933 (0.0000)***
KAOPENIQSC	0.86232 (0.8057)	-7.61238 (0.0000)***	111.097 (0.0000)***	573.479 (0.0000)***

***, ** and * denote significance at 1, 5 and 10% levels respectively.

Source : Author Compilation

As shown in table 6.5, in first difference with intercept and trend, all the variables became stationary for all the four tests except for the interactive term between capital account openness, institutional quality and social capital (KAOPENIQSC) which accepted the null of unit root for the LLC test and rejected the unit root null for the other three tests. This means the majority (three out of the four tests) indicated

that the data for this variable was stationary at first difference; hence data for this variable was taken to be stationary at first difference on the basis of the majority of the tests. With all the variables stationary at first difference, the variables were taken to be integrated of order 1. This meant that the first requirement of panel cointegration regression had been satisfied. The next stage involved testing for cointegration amongst the variables.

6.8 Panel cointegration tests

The Pedroni (1999 and 2004) and Kao (1999) tests were applied to test for the presence of a long run relationship amongst the variables used in the study. The Pedroni test is based on the examination of residuals and has a null of no cointegration amongst the examined variables. It is split into within dimension tests and between dimension tests. The within dimension tests include panel v , panel ρ , panel PP and panel ADF statistics and has a homogeneous alternative hypothesis which is also known as the panel statistics test. On the other hand, the between dimension tests include group ρ , group PP and group ADF statistics have a heterogeneous alternative referred to as the group statistics test. The Pedroni test produces eleven probability values and the decision criteria for accepting or rejecting the null depends on whether the majority of the probabilities accept or reject the null hypothesis (Dreger and Reimers, 2003). The Kao (1999) test is also another residuals integration test. The test is used for homogeneous panels and similar to the Pedroni test, assumes a null of no cointegration.

The test generates an ADF statistic which determines acceptance or rejection of the null. A total of eight base series were used in the Pedroni tests with variations in the variables emanating from the different measures of financial development and financial integration applied. The Pedroni tests did not include variations in the dummy variables. The variations in the dummy variables were accommodated in the Kao series of tests. However, before the cointegration tests were done, the optimum lag length had to be selected. The optimum lag length was set at 2 based on the final predictor error (FPE), Akaike information criterion (AIC), and the Hannan-Quinn information criterion (HQ). Results of the Pedroni cointegration tests are shown in table 6.6.

Table 6.6: Pedroni cointegration tests

	Series 1	Series2	Series 3	Series 4
Panel v	0.9432	1.1417	-0.4489	0.2369
Panel rho	1.5445	1.8268	2.4321	1.2411
Panel PP	-5.6324***	-6.3257***	-4.3297***	-6.0524***
Panel ADF	-5.4500***	-5.7807***	-4.0759***	-5.7789***
Panel v (W)	0.8074	0.3589	-1.2305	-1.1553
Panel rho (W)	1.6632	2.3239	2.7439	2.2864
Panel PP (W)	-6.1315***	-3.9471***	-4.6877***	-6.8374***
Panel ADF (W)	-6.0166***	-3.6770***	-3.7408***	-5.0444***
Group rho	2.6649	3.4788	4.1584	3.4350
Group PP	-7.8933***	-8.6186***	-5.4642***	-7.6347***
Group ADF	-7.2005***	-4.7685***	-3.3283***	-5.3873***
	Series 5	Series 6	Series 7	Series 8
Panel v	-1.2013	-0.8633	-2.5070	-2.7721
Panel rho	1.9575	2.1100	1.6855	3.0123
Panel PP	-3.7112***	-2.8949***	-1.8242**	-2.3827***
Panel ADF	-2.0718**	-1.9305**	-1.8654**	-6.6841***
Panel v (W)	-1.9466	-1.8116	-2.9762	-2.7402
Panel rho (W)	2.0247	1.6936	1.9660	1.2997
Panel PP (W)	-4.7121***	-4.3297***	-4.5752***	-5.8435***
Panel ADF (W)	-3.4614***	-3.7284***	-4.7789***	-5.3056***
Group rho	3.0340	2.8055	2.9152	2.2981
Group PP	-6.0990***	-5.0338***	-5.4490***	-8.9217***
Group ADF	-2.7489***	-3.4337***	-4.0653***	-4.3903***

***, ** and * denote significance at 1, 5 and 10% levels respectively. (W) denotes weighted statistics

Table 6.7: Series key

Series 1	BM LAGBM FDI IQSC INFL GDPC TO
Series 2	BM LAGBM KAOPEN IQSC INFL GDPC TO
Series 3	PSC LAGPSC FDI IQSC INFL GDPC TO
Series 4	PSC LAGPSC KAOPEN IQSC INFL GDPC TO
Series 5	MktCapita LagMktCapita FDI IQSC INFL GDPC TO
Series 6	MktCapita LagMktCapita KAOPEN IQSC INFL GDPC TO
Series 7	Turnover LagTurnover FDI IQSC INFL GDPC TO
Series 8	Turnover LagTurnover KAOPEN IQSC INFL GDPC TO

Source: Author's computation

The results of the Pedroni cointegration tests confirm the existence of a long run relationship between the model variables for all the eight series. Only five of the Pedroni statistics, especially the panel v and panel rho and group rho values largely accepted the no cointegration null. However, six of the eleven statistics generated by

the Pedroni test, namely, the panel PP, Panel ADF, weighted panel PP, weighted panel ADF, group PP and group ADF strongly rejected the no cointegration hypothesis at the 1% level of significance respectively. As indicated earlier, the decision criteria of the Pedroni tests depends on whether the majority reject or accept the null hypothesis.

In this case the majority of the generated statistical values reject the no cointegration null, therefore, it can be concluded that there is presence of a long run relationship between financial development, regional financial integration and other explanatory variables such as institutional quality, social capital, inflation, trade openness and GDP per capita. The results support the cointegration argument for both bank development and stock market development measures of financial development. These findings are in line with findings from previous works on the finance growth nexus by Herve (2016), Nasreen and Anwar (2015), Asghar and Hussain (2014). For robustness, Kao tests were also done on the same set of variables, this time with dummy variations for regional financial integration enhancement through protocols. The same set of series was thus tested with the trade protocol and finance and investment protocol substituting each other as proxies for enhanced regional financial integration. Results of the Kao tests shown in table 6.8 strongly confirm the assertion that financial development, regional financial integration, institutional quality, social capital, trade openness, inflation and GDP per capita are cointegrated.

Table 6.8: Results of Kao cointegration tests

Series	ADF t-statistic
BM BM _{t-1} FDI IQSC INFL GDPC TO TRADEPRO	-12.0264***
BM BM _{t-1} KAOPEN IQSC INFL GDPC TO TRADEPRO	-11.7923***
PSC PSC _{t-1} FDI IQSC INFL GDPC TO TRADEPRO	-12.5792***
PSC PSC _{t-1} KAOPEN IQSC INFL GDPC TO TRADEPRO	-12.7539***
MktCapita MktCapita _{t-1} FDI IQSC INFL GDPC TO TRADEPRO	-9.6635***
MktCapita MktCapita _{t-1} KAOPEN IQSC INFL GDPC TO TRADEPRO	-8.1736***
Turnover Turnover _{t-1} FDI IQSC INFL GDPC TO TRADEPRO	-10.6824***
Turnover Turnover _{t-1} KAOPEN IQSC INFL GDPC TO TRADEPRO	-10.6242***
BM BM _{t-1} FDI IQSC INFL GDPC TO FINVPRO	-12.1069***
BM BM _{t-1} KAOPEN IQSC INFL GDPC TO FINVPRO	-11.9080***
PSC PSC _{t-1} FDI IQSC INFL GDPC TO FINVPRO	-12.7613***
PSC PSC _{t-1} KAOPEN IQSC INFL GDPC TO FINVPRO	-13.0448***
MktCapita MktCapita _{t-1} FDI IQSC INFL GDPC TO FINVPRO	-9.5532***
MktCapita MktCapita _{t-1} KAOPEN IQSC INFL GDPC TO FINVPRO	-8.0109***
Turnover Turnover _{t-1} FDI IQSC INFL GDPC TO FINVPRO	-10.9992***
Turnover Turnover _{t-1} KAOPEN IQSC INFL GDPC TO FINVPRO	-10.9987***

Source: Author compilation ***, ** and * denote significance at 1, 5 and 10% levels respectively

All the Kao tests with variations in measures of financial development and protocols for regional integration rejected the null hypothesis of no cointegration at 1% level of significance. The results prove that in the long run there is a relationship between the selected variables. With the variables having been confirmed that they were integrated of order 1 and cointegrated, the requirements for panel cointegration regression had been met. Cointegration implied the presence of a long run

relationship in the selected macroeconomic variables for SADC countries. Meaning the macroeconomic variables are expected follow the same long run path and will converge in the long run. To estimate the long run coefficients of the cointegrated variables, Chen et al. (1999) proposed the use of cointegrated panel regression estimations such as the fully modified ordinary least squares model (FMOLS) and the dynamic ordinary least squares model (DOLS).

They showed that in cointegrated panels, the OLS estimator has a non-negligible bias in finite samples. The fully modified OLS proposed by Phillips and Hansen (1990) provides more favourable results in panel cointegration estimations than OLS. Phillips (1993) acknowledges that the method modifies least squares to account for serial correlation effects and endogeneity which arises from a cointegration relationship. Thus, in panel data issues of serial correlation may also arise. Therefore, Wooldridge (2002) tests of serial correlation were done and the results confirmed the presence of serial correlation in the panel.

However, Pedroni (1999) suggested the use of FMOLS as it accounts for the serial correlation in the panel. In addition the models applied in the present study had a lag of the dependent variable as part of the explanatory variables, leading to endogeneity bias. Therefore, the present study adopted the FMOLS estimation method to best account for any endogeneity bias arising from the lagged dependent as well as the cointegration relationship.

For robustness, results of FMOLS were also compared with the Arellano and Bover (1995) or Blundell Bond (1998) generalised method of moments (GMM) results. The GMM is used as it also solves serial correlation and endogeneity problems. The Arellano Bover method uses moment conditions in which lagged differences are used as instruments for the endogenous variables. To identify the endogenous variables, endogeneity tests had to be done on the selected variables.

6.9 Endogeneity tests

Endogeneity arises when any of the explanatory variables is correlated with the residual or error term. It can also be explained as a situation in which there is a non-zero covariance between any of the explanatory variables and the error term (Dranove, 2012). Endogeneity can arise from omitted variables when relevant

variables are excluded from a model or reverse causality (simultaneity) when one or more of the independent variables is jointly influenced by the dependent variable.

It can also arise from measurement error when one or more of the explanatory variables are poorly measured. Under all these scenarios, the OLS estimator becomes biased and inconsistent (Dranove, 2012). This necessitated the use of estimation methods which could solve endogeneity issues. The models used in this study already had a lagged value of the dependent as explanatory variables; hence the models already had an endogenous variable within them.

However, to check if there was any endogeneity arising from other regressors in the cointegration relationship, endogeneity tests were done through the Durbin (1954), Wu (1974) and Hausman (1978) augmented regression tests for endogeneity. In these tests the lag of the regressor is used as the instrument and assumes a null of exogeneity in the regressor. Rejection of the null is an indicator that the regressor is endogenous. The results of the endogeneity tests are shown in table 6.9.

All the main explanatory variables were found to be exogenous under both the Durbin and Wu- Hausman tests. In all the cases the null of exogeneity was accepted except for the institutional quality and social capital interactive term which rejected the null when broad money was used as the dependent variable. Basing on results of the tests, all the main explanatory variables were then taken to be exogenous except for the lag of the dependent variable. The control variables were also assumed to be exogenous in line with Hansen (1999), Kremmer et al. (2009).

Table 6.9: Results of endogeneity tests

Variable	Hypothesis	Durbin (p values)	Wu-Hausman (p values)
FDI with BM dependent	Variables are exogenous	0.0793	0.0831
FDI with PSC dependent	Variables are exogenous	0.6597	0.6645
FDI with MktCAPITA dependent	Variables are exogenous	0.2636	0.2757
FDI with Turnover dependent	Variables are exogenous	0.3108	0.3232
KAOPEN with BM dependent	Variables are exogenous	0.9581	0.9588
KAOPEN with PSC dependent	Variables are exogenous	0.7616	0.7652
KAOPEN with MktCAPITA dependent	Variables are exogenous	0.2259	0.2375
KAOPEN with Turnover dependent	Variables are exogenous	0.7558	0.7622
IQSC with BM dependent	Variables are exogenous	0.0047***	0.0051***
IQSC with PSC dependent	Variables are exogenous	0.2594	0.2662
IQSC with MktCAPITA dependent	Variables are exogenous	0.8163	0.8212
IQSC with Turnover dependent	Variables are exogenous	0.9390	0.9407

Source: Author compilation

*** denotes significant at 1%

6.10 Trade Protocol impact on banking development

Table 6.10 shows the estimation results for the impact of regional integration on financial development using banking development proxies as measures for financial development.

Table 6.10: Model 1- Trade protocol impact on banking development

Dependent Var	FMOLS				GMM			
	BM	PSC	BM	PSC	BM	PSC	BM	PSC
Coeff: BM _{t-1}	0.4690*** (11.94)		0.5407*** (13.600)		0.8968*** (35.75)		0.8892*** (35.39)	
PSC _{t-1}		0.3122*** (9.6306)		0.4802*** (14.002)		0.8491*** (31.38)		0.8429*** (31.35)
FDI	-0.001 (-0.5475)	0.0476 (1.2677)			0.0207** (2.07)	0.023 (0.85)		
KAOPEN			-2.0311*** (-5.005)	0.8520 (1.1684)			-0.0011 (-0.06)	0.0383 (0.73)
IQSC	0.0083*** (3.5542)	0.02184*** (5.5990)	0.0043*** (2.2779)	0.0134*** (3.9740)	0.2501*** (5.12)	0.5057*** (4.84)	0.2282*** (4.64)	0.4589*** (4.00)
INFL	-0.064 (-0.1401)	-0.33175*** (-3.2648)	-0.14533*** (-3.4476)	-0.3278** (-2.5160)	-0.029** (-2.49)	-0.017 (-0.48)	-0.0318*** (-2.65)	-0.0094 (-0.26)
GDPC	0.4115*** (4.3573)	0.5459*** (5.9060)	0.2770*** (2.7225)	0.5644*** (5.5892)	-0.007 (-0.42)	-0.0343 (-0.64)	0.0078 (0.45)	-0.026 (-0.51)
TO	-0.0021 (-0.077)	0.0254 (0.3091)	0.0422 (1.3170)	0.1680 (1.5741)	-0.0634*** (-2.71)	-0.2765*** (-4.01)	-0.051** (-2.25)	-0.2883*** (-4.10)
TRADEPRO	2.5423*** (4.0775)	0.6600 (0.6470)	2.3781*** (4.4262)	-2.6982* (0.0812)	0.9958 (1.60)	0.4869 (0.26)	0.8400 (1.36)	0.5467 (0.30)
Observations	266	266	266	266	280	280	280	280

Source: Author compilation

***, ** and * denote significance at 1, 5 and 10% levels

Table 6.10 shows the results of model 1 estimations of the impact of regional financial integration on financial development. In the table results of both the FMOLS and GMM approaches are given. In this case financial development is measured through two banking development variables, namely broad money (BM) and private sector credit (PSC). The coefficients of the trade protocol dummy show a positive impact of regional integration on financial development. Under model 1, the findings show that the protocol on trade (TRADEPRO) had a positive effect on banking development in terms of both size and efficiency for both FMOLS and GMM regressions.

Three of the four regressions under FMOLS turned out to be positive with two significant at 1% level of significance whilst for the GMM estimator, all the four regressions turned out to be positive but insignificant. This might imply that financial systems within the SADC region benefited from the removal of barriers to trade and lowering of tariffs amongst SADC countries. This could have possibly seen countries in the region having access to broader regional markets, low cost capital and improved competition levels within the region through foreign entry.

Such changes could have attracted greater outside investment as investors could have been enticed by the possibility of having access to a bigger market in the form of a regional bloc. In turn, this could have led to increased capital flows to the region and enhanced financial deepening at the same time improved allocation of funds to the private sector. However, the fact that though positive, some of the results are insignificant might be an indicator that the countries in the region might not be large enough for the benefits of regional integration to be noticeable through changes in broad money and private sector credit. This also resonates with findings by Lewis et al. (1999) Flatters (2001) who note that the SADC region is too small for any regional integration gains to be reaped from it. Nonetheless, it should also be noted that the trade protocol was mainly meant to create a free trade area with financial integration coming through the goods market rather than the capital markets. It was meant to have an indirect rather than a direct impact on financial integration. Therefore, the impact of protocol might not have been significantly felt on the financial markets as its policies were not mainly targeted on the financial systems of SADC countries.

Results also show that the trade protocol could have led to financial development through an improvement in global financial integration for the examined period. When the ratio of fdi to gdp (FDI) is used as a comparative indicator of global financial integration, the effect on size and efficiency of financial institutions is largely positive. Two of the FDI coefficients were positive (0.0476 and 0.023) but insignificant for both broad money and private sector credit under both FMOLS and GMM whilst one was positive and significant at 5% and the fourth negative and insignificant. This might imply SADC attempts at increased integration through the trade protocol might have attracted more FDI from outside the SADC region as investors anticipated the benefits of a bigger regional market. Therefore, increased levels of regional integration had a positive corresponding effect on the depth of regional financial markets. This might have been through an increase in the channels through which financial institutions were able to access finance. Removal of barriers enabled domestic institutions to access funding from both regional and non-regional institutions, thus increasing the level of broad money available in the domestic markets. The positive coefficient for FDI for private sector credit also implies an increase in the level of financial efficiency in financial markets. This means through increased levels of integration, there was effective allocation of resources through sharing of information and institutions had the option of selecting the best investment options for their funding. Theoretically more efficient allocation of resources by the financial sector is noted when there is an increase in the levels of funding allocated to the private sector as there is a supposed link between private sector credit and growth (Calderon and Liu, 2003, p.6). The findings concur with other empirical studies that have been done on the subject.

However; the results should be taken with caution as some of the positive FDI coefficients are all not significant for both FMOLS and GMM. When FDI was replaced by the capital account openness (KAOPEN) index as a measure of global integration, the results were mixed for broad money and private sector credit. Whilst the KAOPEN coefficient was negative for broad money (-2.03); it became positive when private sector credit replaced broad money as the measure of financial development. This might be an indicator that improvement in capital account openness through the trade protocol might have had a negative effect on monetization levels of SADC regional financial systems, and reduced depth of

financial systems. On the other hand greater capital account openness was observed to allow for more efficient allocation of resources through an increase in allocation of funds to the private sector. This is corroborated through the positive coefficients for the KAOPEN for private sector credit. The contrast between broad money and private sector credit can be explained by the fact that in developing countries, greater capital account openness has been observed to lead to greater capital flight for various reasons such as distrust of governments and inequality amongst the people (Mohammed and Finnoff, 2004).

Such capital flight can evidently lead to a reduction in monetization levels of financial systems. On the other side, greater openness is seen as imposing discipline on the financial sector as entrance of foreign firms exposes domestic financial institutions to competition, hence forcing domestic institutions to improve on their allocation of funding, resulting in the positive impact of openness on private sector credit.

The results also confirm the view that financial development is also affected by its own lagged dependent. In all the regressions for both FMOLS and GMM, the lagged values of private sector credit and broad money came out positive and statistically significant at 1% level. Findings on the lagged values of financial development impacting future values are in line with previous studies by (Mhadhbi, 2014; Makina and Tsaurai, 2017). Unlike previous studies which only examined the impact of institutional quality on financial development, this study also focused on the interaction between institutional quality and social capital and how this interaction impacts financial development. Results for model 1 showed that there is a strong positive and significant relationship between the institutional quality and social capital interaction term and banking development.

Both the FMOLS and GMM outputs show that there is a positive impact of institutional quality and social capital on both private sector credit and broad money at 1% significance level. This implies countries in which the legal system upholds property rights and investor protection laws, where there is control on corruption levels and where the citizens of a country have confidence and trust in these legal systems, and where there is effective policy implementation by institutions, are more likely to attract greater capital flows from investment than countries which have weaknesses in all these aspects. Such countries are also likely to have more

competitive and efficient financial systems than those without. The results justify the strong positive associations between institutional quality, social capital, private sector credit and broad money. However, an examination of the levels of institutional quality and social capital for the SADC region reveals that the two fall below the expected levels of 50%, meaning there are low levels of institutional quality and social capital. The positive and significant coefficient of the interaction between institutional quality and social capital shows that even at these low levels, the two have had a significant impact on levels of financial development within the region.

Such results indicate that SADC countries might benefit greatly from enhancing investor protection laws, property rights, reducing levels of corruption, and raising levels of trust and confidence in institutions. The changes towards better investor protection might encourage further investment in the region and spur more efficient allocation of resources within the financial system. The results also show that it is not only important for a country to have strong legal system, but it is also important that for the legal system to be complemented by social capital aspects such as citizen belief in the systems, political stability and effective government policy implementation.

For the control variables, inflation was consistently negative and significant for both the FMOLS and GMM estimations. From this it could be inferred that an increase in inflation levels is associated with a decrease in the level of monetization of financial systems as the findings show a negative impact of inflation on broad money. This can be explained by the fact that increases in the level of inflation seem to be met by corresponding increases in capital flight levels as hypothesized by Davies (2008) and Ajayi and Khan (2000).

On the other end, inflation also increases the cost of borrowing for those who want to borrow from financial institutions, therefore, any increase in the level of inflation can lead to a decrease in the levels of credit issued to the private sector. Again, instability in the rate of inflation makes it difficult to plan ahead such that some investment projects might be suspended, in turn reducing the amount of credit financial institutions can issue out.

These findings agree with previous studies by Bittencourt (2007) and Khan (2015) who also showed that a rise in inflation levels has detrimental effects on financial

development. Gross domestic product per capita had a positive and significant impact on both broad money and private sector credit for the FMOLS method. This is in line with the view that higher GDP per capita is normally associated with greater levels of financial depth and higher demand for private sector credit (Djankov et al., 2007, La Porta et al. 1997). In contrast, results from the GMM estimator show a negative and insignificant impact of GDPC on both measures of banking development. This could be an indicator that the results might also be influenced by the estimation method applied. Trade openness also had a positive though insignificant impact on the banking development variables for the FMOLS estimations. On the contrary the GMM estimation produced negative and significant estimations.

The positive impact resonates with previous findings for example Law and Habibullah (2009) and Ayadi et al. (2013). This means financial development can occur through greater openness of the goods markets for instance higher levels of liquidity in financial markets can be attained through cross-border trades. In the same instance, more open goods markets may encourage borrowing from financial institutions by registered cross border associations, which may possibly increase the levels of private sector credit.

The positive coefficients are in line with results of the correlation analysis, which also came out positive. On the other hand, just like in the case of GDPC, GMM had contrasting results for trade openness as it showed a negative and significant impact of trade openness on the banking development measures. The GMM findings on trade openness and GDPC contrast with findings from previous studies. This again affirms the fact that the estimation method also has a bearing on the results output obtained.

It might also give credence to the view that GMM is more efficient under small time periods and when cross sections are larger than time (Das, 2017). Such differences can also arise from the assumptions underlying the estimation methods. For example Qiao (2010) notes that GMM assumes homogeneous dynamics in terms of impulse response to disturbances. This means it assumes impulse responses are the same across countries in terms of size and speed. On the other hand, the FMOLS has the assumption that the responses are different across countries.

Table 6.11: Model 1: Interaction of financial integration, institutional quality and social capital - Banking development

Dependent Var	FMOLS				GMM			
	BM	PSC	BM	PSC	BM	PSC	BM	PSC
Coeff: BM _{t-1}	0.4024*** (9.4182)		0.5710*** (13.34)		0.9657*** (39.38)		0.9162*** (39.88)	
PSC _{t-1}		0.4610*** (13.8217)		0.5726*** (14.18)		0.8522*** (31.05)		0.8568*** (31.59)
FDIQSC	-0.0048 (-1.2055)	0.0166** (2.3237)			0.0011** (2.48)	-0.0006 (-0.57)		
KAOPENIQSC			-0.012 (-1.3063)	0.011 (0.6715)			0.0017*** (4.50)	0.004*** (4.64)
INFL	0.0323 (0.6140)	-0.3972*** (-3.5543)	-0.028 (-0.6219)	-0.3633*** (-2.7226)	-0.3275*** (-2.62)	-0.1661 (-0.46)	-0.0317*** (-2.65)	-0.0086 (-0.24)
GDPG	0.5847*** (6.1177)	0.9112*** (10.50)	0.4064*** (3.6915)	0.5141*** (4.5997)	-0.1726 (-0.75)	0.1008* (1.71)	-0.0008 (-0.05)	0.0030 (0.06)
TO	-0.0117 (-0.3990)	0.0717 (0.8009)	0.0051 (0.1674)	0.1498 (1.3308)	-0.5608** (-2.35)	-0.27777*** (-4.12)	-0.0552*** (-2.45)	-0.3265*** (-4.82)
TRADEPRO	2.7157*** (4.1117)	0.0753 (0.0662)	1.8756*** (3.2889)	-1.7726 (-1.1414)	0.3166 (0.50)	-1.9842 (-1.07)	0.4374 (0.73)	-1.3376 (-0.74)
Observations	266	266	266	266	280	280	280	280

Source: Author compilation

** and * denote significance at 1, 5 and 10% levels

The financial integration measures were also combined with institutional quality and social capital to determine the combined effect and the results are as depicted in table 6.11. Combining the *de facto* measure of global openness with institutional quality and social capital (FDIQSC) resulted in an indeterminate outcome on banking development. Two of the four regressions conveyed negative and insignificant coefficients for the FDIQSC combined effect whilst the other two regressions supported the positive impact view with positive and significant coefficients at 5% level for both broad money and private sector credit. The negative combined coefficients might be an indicator that financial integration may not necessarily bring the desired impact on financial development especially under poor legal systems and when there is a general lack of trust, instability and poor policy implementation. The findings agree with Frey and Volz's (2011) view that countries should be cautious when opening up their markets if they do not have the required levels of institutional quality. When the *de jure* measure of financial integration was combined with institutional quality and social capital, the resultant variable (KAOPENIQSC) displayed a largely positive and in some instances significant impact on financial development for both FMOLS and GMM estimations.

This again confirms the importance of combining greater capital account openness and effective legal systems supported with trust and confidence of the citizens of a country. Therefore, greater capital account openness needs to be supported with corresponding higher levels of institutional quality and social capital to spur financial development. The coefficient of the protocol on trade (TRADEPRO) remained largely positive with some of the coefficients significant at 1% level. This finding further affirms the positive impact of this regional integration agreement on the size and efficiency of the SADC financial system. In terms of the control variables, inflation retained the negative and significant coefficients on both private sector credit and broad money confirming its negative impact on banking development. In line with literature, GDPC exhibited largely positive and significant coefficient on the banking development variables for both FMOLS and GMM. However, the estimations for trade openness impact remained at variance for the two estimation methods. FMOLS showed a positive impact and GMM a negative one.

Table 6.12: Model 1: Trade protocol impact on stock market development

Dependent Var	FMOLS				GMM			
	Mktcapita	Turnover	Mktcapita	Turnover	Mktcapita	Turnover	Mktcapita	Turnover
Coeff: mktcapita _{t-1}	0.028 (0.2821)		-0.025 (-0.5766)		0.2594*** (4.05)		0.2197*** (3.38)	
Turnover _{t-1}		-0.1122** (-2.1060)		-0.11098** (-2.3684)		0.5946*** (11.28)		0.5896*** (11.18)
FDI	1.1966*** (2.7711)	-0.7589*** (-3.4465)			-0.1273 (-0.33)	-0.032 (-0.18)		
KAOPEN			1.4943*** (2.7664)	-0.7629 (-1.4732)			-0.0895*** (-2.63)	-0.022 (-1.34)
IQSC	0.035*** (3.8819)	0.002 (0.4309)	0.013 (1.300)	0.010* (1.7562)	0.0243** (2.29)	-0.0046 (-1.14)	0.0277*** (2.63)	-0.058 (-1.42)
INFL	-0.2304 (-0.3147)	-0.058 (-0.1444)	0.0843 (0.098)	-0.048 (-0.1121)	0.6376 (1.18)	0.1428 (0.54)	0.6262 (1.18)	0.1815 (0.69)
GDPG	-0.044*** (-3.5697)	0.0077** (2.0072)	0.0014 (0.0835)	-0.007** (-2.2547)	0.0107** (2.48)	0.0004 (0.22)	0.008** (2.08)	-0.0001 (-0.01)
TO	0.1879*** (3.9396)	-0.1628 (-0.9258)	0.2028*** (3.8679)	-0.034* (-1.7233)	-0.5594 (-1.05)	-0.024 (-0.11)	-0.2872 (-0.54)	-0.063 (-0.29)
TRADEPRO	9.844 (1.400)	7.7147* (1.8243)	30.23*** (4.1913)	6.8612 (1.4869)	2.4268 (0.18)	-7.2795 (-1.24)	9.4111 (0.68)	-3.594 (-0.62)
Observations	152	152	152	152	160	160	160	160

Source: Author compilation

***, ** and * denote significance at 1, 5 and 10% levels

6.11 Trade Protocol Impact on Stock Market Development

The impact of regional financial integration on stock market development is shown on table 6.12. When we consider the impact of regional financial integration directly through the trade protocol dummy, the results show that enhancement of financial integration through the trade agreement had a positive and significant impact on both equity markets capitalization and turnover volumes for 50% of the regressions under the FMOLS estimations. For the GMM estimations, a positive but insignificant impact was recorded for stock market capitalization and a negative and still insignificant impact was also recorded for stock market turnover. Therefore, the protocol on trade might have increased intra-regional trade as a result of reduced tariffs and offered protection for regional industries. Such trade of industrial and primary products and protectionism could have attracted FDI in the form of capital investments on the equities markets, thus resulting in increased stock market capitalization and turnover volumes on the SADC stock markets as reflected in the FMOLS model. This finding concurs with previous findings by Carrere (2004) and Afesorgbor and Bergeijk (2011) who showed that regional membership to trade blocs contributed to increased trade flows for ECOWAS and SADC countries.

The significant effect of the protocol on stock market development is also depicted in the global indicators of financial integration under the FMOLS estimator. The FMOLS findings show that regional integration might have improved global financial integration and in turn led to greater stock market capitalization for both fdi/gdp and KAOPEN measures. However in terms of turnover, unlike the trade protocol dummy, both fdi/gdp and KAOPEN measures showed largely negative results for both FMOLS and GMM. In terms of fdi, estimations for FMOLS showed a negative 0.7589 for stock market turnover for a unit increase in the level of global integration. GMM estimations had negative coefficients of 0.1273 and 0.032 for unit increases in the level of global integration. For the FMOLS estimator, stock market turnover was observed to decrease by 0.7629 for a unit increase in the level of capital account openness, strikingly close to -0.7589 when the *de facto* measure of integration was applied. This affirms the fact that greater financial openness brought about by regional integration may not have significantly improved turnover levels on regional stock markets but may have positively impacted stock market capitalization.

However, again the results should be taken with caution as some of the coefficients were not significant. The insignificance of the coefficients could be an indicator that the protocol did not significantly improve global integration for the region and in turn have a significant impact on stock markets. The trade protocol might not have attracted significant FDI inflows into SADC stock markets from non-regional countries, resulting in insignificant impact of global integration measures on stock market development for the period covered by the protocol. However, the coefficients for stock market capitalization were significantly higher and positive as compared to coefficients for stock turnover, implying that the protocol could have had a greater impact on stock market capitalization levels than on volumes traded. The findings support Oxelheim's (1990) theory of indirect impact of integration through the goods market.

On the other hand, the combination of institutional quality and social capital was shown to have a positive impact on both stock market capitalization and stock market turnover with significant coefficients at all levels. These findings on institutional quality and social capital show the significance of the two in facilitating financial markets development through the equities markets. This might also imply that where institutional quality and social capital levels are low, greater financial openness might not have the desired effects of raising the levels of financial development through the equities markets. These findings agree with La Porta et al. (1997, 1998) and Claessens et al. (2001) who found out that greater protection of shareholder interests is associated with positive equity markets development. It also concurs with Chinn and Ito (2006) who showed that financial openness can only have a positive impact on financial development if a given threshold of institutional quality has been attained. The findings of the present study show that in addition to institutional quality, the level of social capital is also an important precondition to consider before a country or region decides to open its financial markets or increase the level of integration.

High levels of trust and civic cooperation in economic activities and low social polarization levels as postulated by Putnam (1993) have a bearing on participation in financial markets, adoption and use of financial instruments.

The lagged values of both stock market turnover and market capitalization were largely positive and significant at 1% level, again confirming that current levels of financial development depend on past levels.

The rate of inflation also largely had positive but insignificant impact on equity markets development. This implies increases in the rate of inflation had positive effects on equity markets capitalization levels and stock turnover volumes. The increase in capitalization and turnover levels can be due to the fact that stock market investments are seen as a form of a good hedge against inflation. Stock markets offer an alternative form of investment for mobilised savings. Again it offers an alternative platform for diversification of risk by investors.

This implies under inflationary pressures, investors will forego other financial instruments and invest in stocks. This will in turn increase prices of stocks and also raise stock turnover volumes. Under such conditions, there is likely to be a positive relationship between stock markets development and inflation. These findings agree with Pradhan et al. (2014) who found that there is bidirectional and unidirectional causality between economic growth, inflation, money supply and stock market development. The findings also resonate with those by Falahati et al. (2012) who proved that there is a positive relationship between inflation and indicators of stock development and that there is no threshold for effect of inflation on stock market. Further, the study also looked at the impact of income per capita on equity markets development. The general expectation is that higher levels of income per capita should be able to invoke development of financial markets as they allow for accumulation and mobilisation of savings within the financial sector. Results of the study appear to confirm the positive impact of general wealth of the population of country on financial markets development as the GDPC coefficient was largely positive and significant in the majority of the cases under the two estimations. Trade openness showed a positive and significant impact at 1% level on stock market capitalization under the FMOLS estimation method. The impact on turnover for both FMOLS and GMM was largely negative and insignificant.

The positive impact on market capitalization might suggest that investors are more inclined to invest in countries which are more open to trade in goods as opposed to those which are not. Chinn and Ito (2006) note that trade openness is a precondition

for financial openness; therefore greater openness is viewed by investors as a sign of willingness to accept greater financial openness. This means greater trade openness may result in an increase in the size of equity markets. This finding is in line with findings by Chinn and Ito (2006). On the contrary the negative and insignificant coefficients of trade openness on stock market turnover might suggest the absence of a relationship between the two, therefore trade openness can be said not to have any impact on the efficiency or liquidity of stock markets.

This finding supports findings by Alajekwu et al. (2013) who also showed that trade openness has no significant contribution to stock turnover. The study also focused on the interaction between the financial integration measures with institutional quality and social capital to determine how the combination of these variables impacted stock market development in the SADC region under the trade protocol. Through the interaction regressions, the importance of institutional quality and social capital in influencing equity markets could be assessed. Results of the interaction regressions for stock market variables are shown in table 6.13.

Table 6.13: Model 1: Interaction of financial integration, institutional quality and social capital – Stock market development

Dependent Var	FMOLS				GMM			
	Mktcapita	Turnover	Mktcapita	Turnover	Mktcapita	Turnover	Mktcapita	Turnover
Coeff: mktcapita _{t-1}	0.0668 (0.6214)		0.052 (0.4599)		0.2611*** (4.11)		0.2360*** (3.62)	
Turnover _{t-1}		-0.054 (-1.077)		-0.111** (-2.367)		0.6051*** (11.76)		0.6022*** (11.68)
FDIQSC	0.0865*** (3.8535)	-0.022* (-1.664)			0.0001 (0.86)	0.00004 (0.80)		
KAOPENIQSC			0.1268*** (2.9610)	0.029 (0.8457)			-0.00001 (-1.49)	-0.510 (-1.54)
INFL	0.9525 (1.0940)	0.555 (1.382)	0.1111 (0.1286)	0.2282 (0.5721)	0.2494 (0.49)	0.1164 (0.45)	0.1164 (0.23)	0.1498 (0.57)
GDPC	-0.030** (-2.557)	-0.002 (-0.7378)	0.004 (0.2453)	-0.002 (-0.9329)	0.1187*** (2.70)	-0.010 (-0.54)	0.013*** (3.48)	-0.0005 (-0.31)
TO	0.2158*** (3.8605)	-0.3885** (-2.2986)	0.3308*** (5.8257)	-0.6311*** (-4.056)	-0.4865 (-0.92)	0.077 (0.37)	-0.3631 (-0.68)	0.02468 (0.12)
TRADEPRO	2.529*** (3.365).	-1.4319 (-0.338)	3.513*** (4.607)	3.5325 (0.8232)	-2.5264 (-0.19)	5.917 (1.04)	0.029 (0.00)	-2.9464 (-0.49)
Observations	152	152	152	152	160	160	160	160

Source: Author compilation

***, ** and * denote significance at 1, 5 and 10% levels

When financial integration was combined with institutional quality and social capital, the net effect on stock market development turned out to be positive. Stock market capitalization was observed to increase by 0.0865 per unit increase in the combined effect of fdi, institutional quality and social capital (FDIQSC) at 1 % significance level under the FMOLS estimation and by 0.0001 using the GMM estimator.

The FDIQSC effect on stock turnover was observed to be negative 0.022 for FMOLS and positive 0.00004 for GMM with both figures insignificant. When FDIQSC was replaced by KAOPENIQSC as the combined effect of financial openness, institutional quality and social capital, the effect on market capitalization remained positive and significant at 1% level under FMOLS. The effect on turnover was also seen to be positive but insignificant. The GMM estimator had negative but insignificant coefficients.

The observed positive and significant coefficients for stock market capitalization emphasize the importance of institutional quality and social capital in the financial integration process. They again prove that financial integration can be enhanced through better institutional quality and social capital frameworks. Respect for shareholder and property rights, presence of the rule of law and absence of corruption combined with a stable country, with effective government policy implementation, and citizen trust and participation will positive impact the size of stock markets through attracting local and foreign shareholder investments. The combined impact on efficiency in the form of stock turnover had mixed results with estimations showing both negative and positive impacts, without any significant results.

This might again suggest the efficiency and liquidity of the stock markets is not influenced by the combined effects of financial integration, institutional quality and social capital. The results suggest for the period under examination, the trade protocol had a positive impact on stock market capitalization. This is also corroborated by the positive and significant coefficients (2.529 and 3.513) of the trade protocol dummy when stock market capitalization is the dependent. However, the protocol coefficients for turnover again show mixed results of positive and negative impacts which are insignificant again confirming that there was no effect on stock turnover. The positive impact of trade protocol on stock market capitalization is

supported by the view that stock markets tend to rise when trade agreements occur between countries which already trade in high volumes (Moser and Rose, 2013). Such changes tend to arise from the fact that trade agreements remove or lower trade barriers, leading to the possibility of increased profits for firms which are in countries bound by the agreement. The chances of better firm performance tend to attract investment into those firms through the stock markets. The mixed positive and negative results for turnover seemed to arise from the difference in the estimation method applied with the GMM probably sensitive to time periods being greater than observations. This might arise from the inefficiency of GMM for macro panels when time periods are greater than observations (Bond et al., 2001). In such cases the GMM has been observed to produce weak instruments. This again suggests that in some instances the results ultimately depend on the selected applied technique. Nevertheless, the findings on the combined effect of financial integration and institutional quality agree with Frey and Volz (2011), David et al. (2014), Chinn and Ito (2006).

The rate of inflation maintained its positive impact on both measures of stock market development for the interactive regressions. However, none of all the inflation coefficients were statistically significant. Income per capita (GDPC) had positive and statistically significant coefficients at 1% level for stock market capitalization. The results confirm the first stock market regressions without the interaction terms which showed that higher levels of income have a positive impact on market capitalization. This can be through greater demand for investment alternatives on the stock market. A negative and insignificant relationship was observed for stock market turnover suggesting efficiency of the stock markets is not really influenced by the levels of income per capita.

The interactive regressions also confirmed the positive impact of greater trade openness on stock market. A unit rise the level of trade openness had a 0.2158 and 0.3308 positive impact on stock market capitalization under both FDIQSC and KAOPENIQSC with both figures significant at 1% level. The impact of trade openness on stock market turnover was largely negative with half of the coefficients significant at 1% level. This affirms the earlier findings on the negative impact of trade openness on stock market turnover.

6.12 Summary of the Trade Protocol Impact on Financial Development

A summary of the trade protocol impact on both banking and stock market development is shown below.

Table 6.14: Summary of Model 1 findings: Impact of trade protocol

Variable	BM	PSC	Mktcapita	Turnover
BM _{t-1}	Positive			
PSC _{t-1}		Positive		
Mktcapita _{t-1}			Positive	
Turnover _{t-1}				Indeterminate
FDI	Positive	Positive	Positive	Negative
KAOPEN	Negative	Positive	Positive	Negative
IQSC	Positive	Positive	Positive	Positive
INFL	Negative	Negative	Positive	Indeterminate
GDPC	Positive	Positive	Positive	Positive
TO	Indeterminate	Indeterminate	Positive	Negative
TRADEPRO	Positive	Positive	Positive	Positive
KAOPENIQSC	Positive	Positive	Positive	Indeterminate
FDIQSC	Indeterminate	Indeterminate	Positive	Indeterminate

Source: Author's compilation

Table 6.14 summarises the findings of all the regressions run for model 1 under the trade protocol. The findings confirm the view that current levels of financial development depends on their immediate past values. The 1 period lagged dependents of the measures of financial development had positive and statistically significant coefficients for broad money, private sector credit and stock market capitalization. This indicates that future values of financial development depend on its current values as shown by Law and Azman-Saini (2012) and Mhadhbi (2014). The lagged dependent for stock market turnover produced indeterminate results, indicating that current levels of stock market turnover might not be dependent on past turnover values. The findings also showed a positive and significant relationship

between the trade protocol dummy variable and the banking development variables suggesting that the protocol could have contributed to greater banking development through attracting greater FDI. The protocol could also have allowed for more efficient allocation of resources as removal of trade barriers enabled financial institutions to select the best options in terms of projects funded. Findings also indicate an improvement in global financial integration which in turn positively impacts the banking sector for the period covered by the protocol. This is reflected by a positive relationship between the *de facto* measure of global financial integration (fdi/gdp) and the banking development variables, namely broad money and private sector credit for the period when the SADC region adopted and implemented the trade protocol. Study findings also showed a positive relationship between the *de facto* measure of global financial integration for the region and stock market stock market capitalization and a negative impact for stock market turnover. However, in this case the findings should be taken with caution as the coefficients obtained were largely insignificant. When the *de facto* measure of global financial integration was replaced by the *de jure* measure in the form of the KAOPEN index, the coefficient for financial integration became negative for broad money in contrast to the findings on the *de facto* measure, indicating that greater capital account openness had a negative effect on size of regional financial markets. On the other hand, capital account openness was shown to have a positive impact on efficiency of the banking sector through a positive impact on private sector credit. In terms of stock market development, greater capital account openness was observed to have a positive impact on stock market capitalization and a negative impact on stock market turnover. In contrast, the trade protocol dummy had a positive impact on both stock market development variables. However, when greater capital account openness was combined with institutional quality and social capital (KAOPENIQSC), the combined effect on broad money, private sector credit, and stock market capitalization turned out to be positive suggesting that in the rule of law and confidence and trust in financial markets are essentials for financial development. The importance of institutional quality and social capital was also detected as the IQSC coefficients turned out positive and significant for both banking development and stock market development measures. The findings also indicated a negative relationship between inflation and banking development, at the same time its relationship between with stock market capitalization was observed to be positive

whilst that with turnover was mixed. Also amongst the control variables, greater income was seen to contribute positively to both banking and stock market development. However, trade openness had mixed results for broad money and private sector credit; hence its impact on banking development was indeterminate whilst the impact on stock market capitalization and stock market turnover was positive and negative respectively.

Table 6.15: Model 2: Finance & investment protocol impact on banking development

Dependent Var	FMOLS				GMM			
	BM	PSC	BM	PSC	BM	PSC	BM	PSC
Coeff: BM _{t-1}	0.5625*** (0.0000)		0.4932*** (0.0000)		0.9021*** (0.0000)		0.8934*** (0.0000)	
PSC _{t-1}		0.3799*** (0.0000)		0.4568*** (0.0000)		0.8511*** (0.0000)		0.8450*** (0.0000)
FDI	-0.0297 (0.1711)	-0.053 (0.2799)			-0.01964** (0.049)	0.0200 (0.466)		
KAOPEN			-0.6911 (0.1150)	0.1157* (0.072)			-0.0038 (0.834)	0.0410 (0.433)
IQSC	0.3429* (0.0559)	1.1331*** (0.0056)	0.1854 (0.2373)	0.9070*** (0.0063)	0.2145*** (0.0000)	0.5327*** (0.000)	0.2016*** (0.0000)	0.4879*** (0.0000)
INFL	-0.1569*** (0.0022)	-0.2680* (0.0797)	-0.3308*** (0.0000)	-0.5106*** (0.0001)	-0.03328*** (0.0005)	-0.01854 (0.600)	-0.0345*** (0.004)	-0.0110 (0.758)
GDPC	0.5881*** (0.0000)	0.3383*** (0.0083)	0.3941*** (0.0000)	0.2048** (0.0440)	0.01349 (0.453)	-0.0622 (0.248)	0.0260 (0.144)	-0.0577 (0.285)
TO	0.0305 (0.3489)	-0.1051 (0.3607)	0.0838** (0.028)	0.2136** (0.0414)	-0.0629*** (0.007)	-0.2543*** (0.0000)	-0.0509** (0.025)	-0.2676*** (0.0000)
FINVPRO	-0.6326 (0.5176)	3.0516 (0.1208)	-3.8132*** (0.0000)	-1.2189 (0.3807)	-0.6525 (0.274)	2.1425 (0.212)	-0.5569 (0.352)	2.3030 (0.177)
Observations	266	266	266	266	280	280	280	280

***, ** and * denote significance at 1, 5 and 10% levels

Source: Author compilation

6.13 Finance and Investment Protocol impact on Banking Development

Table 6.15 depicts regression results for model 2 showing the impact of regional financial integration through adoption of the finance and investment protocol by countries within the SADC region. The finance and investment protocol set out to promote greater regional integration by enhancing the attractiveness of the SADC region as an investment destination. This was to be achieved through cooperating with respect to taxation, having the same standards for regulation of financial institutions such as banks and SADC stock exchanges, sharing information and technology facilities, harmonising payment and settlement systems, encouraging the free movement of capital within the region and facilitating development of capital markets (SADC, 2016).

Positive impacts of such initiatives were expected to be reflected in the form of greater FDI from investors as well as greater capital account openness, ultimately leading to financial development. The results show the finance and investment protocol dummy (FINVPRO) had negative coefficients (-0.6326, -3.8131, -0.6525 and -0.5569) when broad money was used as the dependent for banking sector development. This indicates that the protocol had a negative impact on the level of monetization in the SADC region. However, the findings should be taken with caution as only one of the four negative FINVPRO coefficients were significant for broad money. On the other hand, the FINVPRO dummy coefficients for private sector credit were also largely positive suggesting an improvement in financial efficiency for the banking sector when the protocol was implemented. This might suggest that the banking sector benefited from sharing information and information technology as required by the investment protocol. This might have reduced information asymmetry and allowed banks to be more efficient in selecting investment projects to be funded. Therefore, liberalization of capital accounts through regional agreements might have a positive effect on financial resources allocation. This can occur through better information sharing of investment opportunities across countries and easier mobility of capital across countries bound by the agreements. It can also be through greater support of development focused financial institutions, whose sole purpose will be to identify viable projects in countries which have agreed to cooperate.

To investigate if the protocol had any effect on the SADC region's links with countries outside the region, changes in global indicators of financial integration for

the period covered by the protocol were also considered. *De facto* global financial integration indicators for SADC countries for the period covered by the protocol show a possible negative impact on broad money, implying that the protocol might not have had the desired impact in terms of increasing size of the financial sector through improved links with countries outside the region. The FDI coefficients with broad money as the dependent were negative for both FMOLS (-0.0297) and GMM (- 0.019) with the latter coefficient significant at 5%. The *de facto* global integration FDI coefficients for private sector credit had contrasting results with FMOLS showing a negative but insignificant impact and GMM showing a positive yet again insignificant impact. The insignificance of the coefficients could be an indicator that regional financial integration through the finance and investment protocol did not significantly improve the SADC region`s links with countries outside the region and in turn failed to significantly impact private sector credit allocation, and as a result did not have any effect on efficiency of the regional banking sector. When the *de jure* measure of global integration (KAOPEN) was applied, a unit increase in capital account openness for the region would lead to a decrease in broad money by 0.6911 under the FMOLS method and 0.0038 for the GMM estimation. The findings are again corroborated by the FINVPRO dummy which shows the negative effect of the protocol on broad money for both estimation methods. In this case the findings of the *de facto* measure agree with findings of the *de jure* measures, suggesting a possible link between the two measures. When broad money was replaced by private sector credit, the KAOPEN coefficient turned out positive (0.1157) and significant at 10% under the FMOLS method and again positive (0.0410) yet insignificant under the GMM method. The positive impact on private sector credit was also observed in the FINVPRO measure. The largely non-significant coefficients could also be an indicator that the protocol might not have had the desired impact for a number of reasons. It should also be noted that the finance and investment protocol is still in its infancy in terms of implementation. Though it was agreed upon in 2006, actual ratification by all the countries only occurred in 2010, therefore, some of its impact might not have yet been fully transmitted through the financial systems. This might also contribute to insignificant results. In addition, the protocol was not clear on implementation framework and timelines, therefore countries might not have implemented the protocol at the same pace. Again, the protocol left too much room to manoeuvre as it did not entirely dictate adoption of the stated policies in the

protocol by SADC member countries. Therefore, countries could have the discretion of observing their own laws and regulations in spite of there being regional integration laws that have been set through the protocol. Again, some of the countries within the region may not have had the capacity to implement what the protocol called for, at the same time remaining competitive. For example, in reality, a country like Mozambique would not be expected to have the same investment laws and regulations as a country like South Africa as it would lose its competitive edge hence such a country would be motivated to partially implement resolutions of the protocol. In spite of that, the current findings agree with the view that financial integration is insignificant in influencing private sector credit (Law and Azman-Saini, 2012). They are also in contrast to Beji (2007) who noted the existence of a negative relationship between financial integration and private sector credit.

The results also show that a combination of institutional quality and social capital contributes significantly to financial development. A unit increase in the institutional quality and social capital variable is observed to lead to increases of 0.3429 and 0.1854 in broad money under the FMOLS method, with the former coefficient significant at 10% level. On the other hand, at 1% level of significance, a unit increase in institutional quality and social capital is also observed to lead to a 1.13 and 0.90 change in private sector credit under the FMOLS method, proving the existence of a strong relationship between institutional quality, social capital and the lending activities of banks. GMM estimations produce the same results for both broad money and private sector credit with all the four coefficients significant at 1%. The results again emphasize the importance of institutional quality and social capital in the financial development process. The findings also show that effectiveness of a country's legal system in protecting investors and creditors and ensuring enforcement of contracts are crucial in facilitating financial development. In addition, the results attest to the fact that institutional quality has to be complemented by aspects such as trust in institutions, civic engagement in the economic process, and effective government policy implementation.

A country can have the rule of law, respect for property rights and an effective legal system but in the absence of belief in the legal system, investors and other market participants are unlikely to be involved in the financial development process of the

country. This is due to the fact the activities carried out by financial institutions rely on the levels of trust between the institutions themselves and market participants. For example lending depends on whether there is trust between the institution providing the funding and the organisation or individual accessing the funding.

In such a case, if trust is absent, the organisation or individual is unlikely to make use of formal lines of credit for borrowing, thus negatively impacting credit issued by the financial sector. Similarly, in the absence of trust in institutions, one is unlikely to invest in formal financial institutions, or invest in products offered by these institutions. Again, if there is no civic engagement, citizens are unlikely to have a sense of duty to act in the best interests of economic processes. Social capital also entails having a society free from violence.

Absence of violence gives investors a sense of security for the future and hence stable countries tend to attract more investors than unstable ones. In addition, financial market participants tend to be attracted by markets where there is consistent and effective government policy implementation. Consistence in policy implementation provides assurance to investors and other market participants on the safety of their investments and economic activities.

Given that financial market participants consider all these factors before engaging before investing in any products, social capital becomes an important determinant of financial development. Therefore, from the findings, it can be said that institutional quality should not be looked at independent of the level of social capital because elements of social capital have a significant impact on financial development. Previous studies (see Chinn and Ito, 2006; Beji, 2007; Law and Azman-Saini, 2012) have emphasized on the importance of institutional quality alone in the financial development process. Institutional quality has been viewed as independent in determining financial development. However, the study findings show that trust the institutions is also important, therefore institutional quality can also be complemented by social capital in improving financial development levels .

Table 6.15 also reports the impact of the control variables on banking development for model 2. The rate of inflation was observed to have a negative impact on both broad money and private sector credit for both estimation methods. The inflation coefficients were all negative and largely significant at 1% level. This means implies

that inflation reduces the size and efficiency of financial markets. The findings agree with findings from model 1, which also showed a negative relationship between the rate of inflation and financial development.

The decrease in broad money as inflation increases can be attributed to portfolio shifts by investors as they flee from financial markets afflicted by higher inflation levels. The results also corroborate the findings from model 1 on the negative impact of inflation on credit issued to the private sector. As highlighted earlier, an increase in the rate of inflation is likely to increase the cost of borrowing resulting in reduced credit access by the private sector. Income depicted by GDPC was shown to be a positive and statistically significant determinant of the level of banking development. Under FMOLS, all the GDPC coefficients were positive and statistically significant at 1% level. For the GMM method, the GDPC coefficients for broad money were positive but insignificant whilst those for private sector credit were negative and again insignificant. The insignificant coefficients for GMM could be an indicator of the sensitivity of the GMM estimator to time periods being greater than the number of observations. Trade openness also produced inconsistent results for the two estimation methods. The GMM estimator had negative and statistically significant coefficients at 1% level for both broad money and private sector credit, greater trade openness has a negative impact on banking development whilst the FMOLS had a combination of negative and positive but statistically insignificant coefficients.

Table 6.16: Model 2: Interaction of financial integration, institutional quality and social capital – Banking development

Dependent Var	FMOLS				GMM			
	BM	PSC	BM	PSC	BM	PSC	BM	PSC
Coeff: BM _{t-1}	0.5770*** (0.000)		0.5132*** (0.000)		0.9624*** (0.000)		0.9164*** (0.000)	
PSC _{t-1}		0.4617*** (0.000)		0.5668*** (0.000)		0.8509*** (0.000)		0.8564*** (0.000)
FDIQSC	-0.002 (0.3204)	0.012** (0.045)			0.0011** (0.011)	-0.0004 (0.738)		
KAOPENIQSC			-0.009 (0.3208)	0.021 (0.2442)			0.0016*** (0.000)	0.004*** (0.000)
INFL	-0.1180** (0.0379)	-0.2784* (0.0610)	-0.2183*** (0.0001)	-0.3459** (0.0241)	-0.034*** (0.005)	-0.0156 (0.664)	-0.033*** (0.005)	-0.008 (0.813)
GDPG	0.6583*** (0.000)	0.2707** (0.031)	0.4074*** (0.000)	0.1481 (0.2255)	0.002 (0.905)	0.072 (0.195)	0.015 (0.386)	-0.0311 (0.554)
TO	-0.014 (0.6509)	-0.1422 (0.2236)	0.067** (0.049)	0.1271 (0.2960)	-0.578** (0.015)	-0.2850*** (0.000)	-0.055** (0.014)	-0.3215*** (0.000)
FINVPRO	-0.7550 (0.4553)	3.519* (0.072)	-1.9283** (0.018)	1.1974 (0.4602)	-1.308** (0.027)	-0.2493 (0.880)	-0.7431 (0.201)	1.1067 (0.509)
Observations	266	266	266	266	280	280	280	280

***, ** and * denote significance at 1, 5 and 10% levels

Source: Author compilation

Table 6.16 shows the model 2 results of the interaction between financial integration, institutional quality and social capital. For both estimation methods, half of the 8 interaction coefficients for FDIQSC and KAOPENIQSC became positive and significant at 1% and 5% levels of significance. When the defacto form of financial integration was combined with institutional quality and social capital (FDIQSC), private sector credit was observed to increase by 0.012 for a unit change in the interactive variable with the coefficient statistically significant at 5%. Similarly, broad money was observed to increase by 0.0011 for a unit increase in the interactive variable again with the coefficient statistically significant at 5%.

When the *de jure* form of integration was combined with institutional quality and social capital (KAOPENIQSC) 2 of the 4 coefficients generated were positive and statistically significant at 1%. The finance and investment protocol dummy coefficients for both were positive but largely insignificant for private sector credit and largely negative for broad money, confirming earlier findings. The largely insignificant FINVPRO coefficients along with the largely positive and significant interaction variables demonstrate the importance of institutional quality and social capital.

This is highlighted by the fact that in both cases where the *de facto* and *de jure* measures of financial integration were combined with institutional quality and social capital, the interaction term was observed to increase the size and efficiency of the banking sector and the resulting coefficients would be significant. These results attest to the significance of institutional quality and social capital when the two are combined with financial integration. Further, the significant interaction variables also prove that financial integration alone might not achieve the desired results if levels of institutional quality are low and if there is no trust in institutions.

This implies that the success of any integration frameworks will also depend on the levels of institutional quality and social capital. Enhanced financial links between regional countries combined with greater capital account openness will only be able to attract more investment and promote better allocation of financial resources if the regional countries have low levels of corruption, enforce investor protection rights and if the countries are politically stable. In the absence of these conditions, the study results indicate that greater regional links may actually negatively impact financial development. The results of the impact of institutional quality agree with La

Porta et al. (1997) and Chinn and Ito (2006) whilst the positive impact of social capital findings agree with Huang (2010) and Girma and Shortland (2008). In the interaction terms regression, the rate of inflation maintained its negative and statistically significant impact on banking development implying that higher rates of inflation are associated with lower levels broad money and private sector credit. The level of income was still shown to have a positive impact on size and efficiency of the banking sector. This affirms the point that higher income levels encourage investment in the formal financial sector. In the interaction regressions, the results for trade openness were more consistent.

The results indicated a negative and statistically insignificant impact on both broad money and private sector credit under the FMOLS method whilst a negative and statistically significant relationship was established under the GMM estimator. This might imply that greater trade openness negatively affected the banking sector. This finding contrasts Rajan and Zangales (2000) theory that greater trade openness creates new opportunities for companies which may allow the financial sector to increase private sector credit. In this case, greater trade openness seems to have a negative impact on industry and financial incumbents such that their profits/rents are lowered with increased competition levels from openness. This in turn reduces levels of activity and credit issued by the financial sector leading to thus impacting negatively on financial sector development.

Table 6.17: Model 2: Finance and investment protocol impact on stock market development

Dependent Var	FMOLS				GMM			
	Mktcapita	Turnover	Mktcapita	Turnover	Mktcapita	Turnover	Mktcapita	Turnover
Coeff: mktcapita _{t-1}	-0.089 (0.4224)	-	-0.077* (0.057)		0.2665*** (0.000)		0.2322*** (0.000)	
Turnover _{t-1}		0.064 (0.3011)		-0.1735*** (0.0014)		0.6084*** (0.000)		0.5944*** (0.000)
FDI	0.2402 (0.5389)	-0.9234*** (0.0001)			0.1524 (0.693)	-0.0398 (0.833)		
KAOPEN			0.3278*** (0.0000)	-0.8400 (0.8715)			0.085** (0.011)	-0.0252* (0.094)
IQSC	0.044*** (0.0001)	0.013* (0.081)	0.032*** (0.0014)	0.006 (0.3895)	0.021* (0.051)	-0.004 (0.240)	0.024** (0.027)	-0.0066 (0.122)
INFL	-0.1169 (0.1755)	-0.7913* (0.0993)	0.1438** (0.0388)	-0.2143 (0.6605)	0.714 (0.194)	0.1753 (0.509)	0.707 (0.190)	0.2129 (0.422)
GDPC	-0.0373** (0.014)	-0.006 (0.2415)	0.011 (0.5440)	-0.0008 (0.8147)	0.0134*** (0.002)	-0.0001 (0.932)	0.012*** (0.003)	0.00003 (0.984)
TO	0.2405*** (0.000)	-0.1623 (0.4332)	0.2652*** (0.0000)	-0.5947*** (0.0022)	0.4755 (0.378)	-0.0335 (0.877)	0.1988 (0.714)	-0.0736 (0.735)
FINVPRO	-0.2881*** (0.0002)	0.5458 (0.1947)	-0.4523*** (0.0000)	-0.6254 (0.1432)	-1.053 (0.410)	0.4606 (0.361)	0.9725 (0.441)	-0.3905 (0.439)
Observations	152	152	152	152	160	160	160	160

***, ** and * denote significance at 1, 5 and 10% levels

Source: Author compilation

6.14 Finance and Investment Protocol impact on Stock Market Development

The impact of the finance and investment protocol on stock market development is reported on table 6.17. The results show mixed results for stock market capitalization and stock turnover. Observation of the finance and investment protocol dummy shows that the introduction of the protocol largely had a negative impact on stock market capitalization and mixed results on turnover. Only 3 of the 8 FINVPRO coefficients generated showed a positive impact of the protocol on the stock market development indicators and in addition, none of the 3 coefficients were statistically significant. In assessing if the protocol improved the global standing of SADC countries thereby stimulating stock market development, observations of the global integration indicators was done. The findings of the global indicators were largely in contrast to the FINVPRO dummy. For the *de facto* form of global integration (FDI), a unit increase in financial integration was observed to lead to a 0.2402 increase in stock market capitalization under the FMOLS method.

On the other hand, when the KAOPEN measure was taken as the measure of global financial integration, a unit increase in capital account openness led to an increase in stock market capitalization by 0.3278 with the coefficient significant at 1% level. Under the GMM estimation, stock market capitalization maintained its positive relationship with global financial integration. A unit increase in the *de facto* level of global financial integration had a positive impact on stock market capitalization of 0.1524 whilst the KAOPEN measure had a positive and statistically significant 0.085 impact on stock market capitalization.

The findings also showed a negative relationship between stock market turnover and both measures of global financial integration. Under the FMOLS estimation, a unit increase in the *de facto* level of financial integration generated a statistically significant negative impact of 0.9234 on turnover whilst the KAOPEN measure had a negative coefficient of 0.8400. For the GMM estimation, a unit increase in FDI was observed to have 0.039 negative impact on turnover whilst greater capital account openness was observed to lead to have a negative effect of 0.025 on the same variable. For both estimation methods, an increase in the level of global financial integration had a positive impact on stock market capitalization at the same time a negative impact on stock market turnover.

The contrast in findings of the impact on stock market capitalization between the FINVPRO coefficients and both the *de facto* and *de jure* integration measures may be an indicator that the protocol did not have the desired impact in terms of improving global financial integration, thereby positively impacting stock market development. Harmonization of laws pertaining to taxation, central banking and capital markets may not have attracted FDI from countries outside the SADC region as was expected. As a result, there might not have been a significant change in capital account openness and FDI flows from non-regional countries arising from direct implementation of the protocol. The positive impacts on stock market capitalization of fdi and KAOPEN generated might have been a result of other global market factors and not a direct result of implementation of the finance and investment protocol. Again the, small number of significant FINVPRO coefficients may be an indicator implementation of the protocol might not have had any impact on stock market development.

This might be due to the fact that stock markets in African countries are not really that well developed. In fact some of the countries in the SADC region do not have stock markets. Therefore, when coming up and when implementing policies for regional financial integration, not much focus may be placed on integration through the stock markets. This leaves the banking sector as the main source of financial development, therefore, any policies which are initiated for regional integration might not significantly impact the stock markets. A lack of stock market focused implementation of regional integration policies may also explain the negative relationship between stock turnovers and the financial integration measures. Logically, any policies which are intended to integrated stock markets of the same region are expected to significantly increase stock turnover as taxes and other transaction costs are lowered.

This was not the case after implementation of the protocol as results indicate a negative relationship between all the measures of financial integration and stock turnover. Such results do raise questions on whether concerned SADC member countries have really implemented the protocol to attain material welfare benefits from it. Again the results could also be an indicator of the short time period within which the protocol has been ratified by all the member countries, such that all the

material benefits from it have not yet been attained as countries are still in stages of implementing the protocol. The findings on stock turnover resonate with findings by Claessens and Schmukler (2007) who found that any increases in the levels of financial integration do not necessarily lead to increased participation by firms and countries in international financial markets. They suggest that it is only the large firms and countries which are able to participate abroad after integration has occurred. In such cases stock markets turnover might not increase after integration has occurred.

Results of the interactive variable of institutional quality and social capital are also summarised in table 6.17. Significant coefficients of the interactive variable of institutional quality and social capital are found for both stock market capitalization and turnover. A unit change in the interactive of variable institutional quality and social capital contributed to 0.044 and 0.032 changes in the levels of stock market capitalization for the FMOLS. The same units under the GMM method were 0.021 and 0.024 and all coefficients were statistically significant, indicating that institutional quality and social capital are not sensitive to the estimation method applied.

Institutional quality and social capital also had a positive effect on stock turnover under the FMOLS method whilst inconsistencies were observed for the GMM estimator which had negative but insignificant coefficients. The findings confirm earlier findings of the significant impact of institutional quality and social capital on financial development. In support of the significance of the social capital finding, Guiso et al. (2004) argue that investors who have greater trust in the continuity of listed firms tend to invest more in stock than to hold their wealth in the form of cash. The findings also confirm the view that financial markets where shareholder protection is highly regarded tend to have more developed stock markets (Chinn and Ito, 2006).

In addition, analysis of the trends for social capital and institutional quality in figure 6.5 showed social capital trending higher than levels of institutional quality implying that the SADC region could be having weaker investor protection rules, weaker financial regulation frameworks and might be not doing enough in enforcing private property rights and other legal rights of investors. However, in spite of these low levels of institutional quality, the findings summarised in table 6.17 which show a

largely positive effect of the interactive effect of institutional quality and social capital give credence to the claim that social capital is more important in countries where legal enforcement is weaker. This means that greater social capital can be a complement as well as a substitute for lower institutional quality in the financial development process. This means even under low levels of institutional quality, if the investors have high levels of trust and if there is stability and effective policy implementation, financial development may still take place.

The rate of inflation maintained its positive relationship with both stock market capitalization and stock market turnover, though there were a few negative coefficients. The largely positive nature of the inflation and stock market development relationship affirms the role of the stock market as a means through which investors adjust their portfolios when they face the risk of loss through higher inflation levels. In cases of higher inflation, investors tend to go for real assets, and stock market investments are viewed as part of real asset investments which can be used to hedge against loss arising from inflation.

Income levels depicted by GDPC had inconsistent results with both negative and positive coefficients for the two stock market development variables. However GDPC showed a largely positive impact on stock market capitalization and a negative impact on stock turnover. The same can be said of trade openness whose results also showed positive and negative effects on stock market capitalization and turnover. In both cases the coefficients were largely insignificant, therefore in these regressions, GDPC and trade openness can be said to be statistically insignificant determinants of stock market development.

Table 6.18: Model 2 - Interaction of financial integration, institutional quality and social capital –Stock market development

Dependent Var	FMOLS				GMM			
	Mktcapita	Turnover	Mktcapita	Turnover	Mktcapita	Turnover	Mktcapita	Turnover
Coeff: mktcapita _{t-1}	-0.1453 (0.2101)		-0.1789 (0.1149)		0.2701*** (0.000)		0.2457*** (0.000)	
Turnover _{t-1}		-0.088 (0.1311)		-0.1745*** (0.0013)		0.6168*** (0.000)		0.606*** (0.000)
FDIQSC	0.0679*** (0.0033)	-0.0234* (0.0965)			0.0001 (0.446)	0.00005 (0.406)		
KAOPENIQSC			0.1627*** (0.0024)	0.0372 (0.3780)			-0.00001* (0.094)	-0.573* (0.067)
INFL	-0.1980 (0.7992)	0.3711 (0.4006)	-0.2340*** (0.0020)	-0.2777 (0.5666)	0.4104 (0.433)	0.1421 (0.589)	0.3086 (0.554)	0.1747 (0.507)
GDPC	-0.0236* (0.0672)	-0.006** (0.0439)	0.0130 (0.5683)	0.00004 (0.8896)	0.0147*** (0.001)	-0.0018 (0.321)	0.0174*** (0.000)	-0.0005 (0.746)
TO	0.2178*** (0.0001)	-0.5307*** (0.0070)	0.3676*** (0.0000)	-0.5118*** (0.0034)	-0.3752 (0.484)	0.0672 (0.749)	-0.2025 (0.710)	0.023 (0.911)
FINVPRO	-0.2875*** (0.000)	0.4983 (0.8937)	-0.41111*** (0.0000)	-7.220* (0.0761)	-0.1676 (0.168)	-2.676 (0.577)	-0.1956 (0.107)	-2.960 (0.535)
Observations	152	152	152	152	160	160	160	160

***, ** and * denote significance at 1, 5 and 10% levels

Source: Author compilation

Table 6.18 summarises the findings of the interaction between measures of financial integration, institutional quality and social capital. When the *de facto* form of global integration was combined with institutional quality and social capital (FDIQSC) 3 of the 4 coefficients showed a positive impact on both stock market capitalization and stock turnover. The results were consistent for both FMOLS and GMM estimations. The effect of institutional quality and social capital is reflected in the change in some of the FDI coefficients which were strongly negative in the independent regressions without interactions but became positive or weakly negative when FDI was combined with institutional quality and social capital. For example the effect of FDI alone in table 6.17 is shown to be -0.9234 under the FMOLS estimation but when interacted with institutional quality and social capital the negative impact becomes -0.0234. The reduction in the negative impact can be attributed to the positive effect of institutional quality and social capital. Similarly, the negative 0.0398 FDI coefficient reported in table 6.17 under the GMM method for turnover becomes positive again when institutional quality and social capital are added. The same trend is observed when capital account openness (KAOPEN) replaces FDI as the measure of financial integration. Combining the KAOPEN measure with institutional quality and social capital changes the negative KAOPEN coefficient of -0.8400 on turnover to a positive 0.0372. However, the mean change in the stock market development indicators was negative for the finance and investment protocol dummy in the interactive equation.

This may imply that the protocol alone did not have the desired effect on FDI, capital account openness and ultimately stock market development. Nevertheless, results of the interactive variables emphasize the effect of importance of legal enforcement, trust, stability, and effective policy implementation on investor perceptions. Investors respond positively to situations where there is respect for property rights and where their interests are well protected by effective legal systems. Given that overall level of institutional quality for SADC countries is low as compared to those of the developed world, it becomes important for institutional quality to be complemented by higher levels of social capital. In this regard, the findings show that greater financial integration alone may not have the desired positive effect. Groundwork has to be laid out in raising the level of trust in institutions and improving the institutional quality levels. Investors tend to invest more when they trust the environment they are

investing in and are sure of the continuity of institutions they are investing in. Therefore, given low levels of institutional quality, increased integration can have positive material benefits when levels of social capital are higher than levels of institutional quality. The results are corroborated with findings by Guiso et al. (2004), La Porta (1997, 1998), Chinn and Ito (2006). The control variables retained their previous findings under the interaction regressions. Inflation still had a largely positive impact on stock market development whilst GDPC and trade openness still had traits of both positive and negative impacts. GDPC is shown to have a largely positive impact on market capitalization, implying higher income levels encourage investment into stock markets. The relationship of trade openness remained largely indeterminate.

6.15 Summary of Finance Protocol impact on Financial Development

A summary of the impact of the finance protocol on financial development is given in table 6.19 below.

Table 6.19: Summary of Model 2 findings: Impact of finance protocol

Variable	BM	PSC	Mktcapita	Turnover
BM _{t-1}	Positive			
PSC _{t-1}		Positive		
Mktcapita _{t-1}			Positive	
Turnover _{t-1}				Positive
FDI	Negative	Indeterminate	Positive	Negative
KAOPEN	Negative	Positive	Positive	Negative
IQSC	Positive	Positive	Positive	Positive
INFL	Negative	Negative	Positive	Indeterminate
GDPC	Positive	Positive	Positive	Negative
TO	Negative	Negative	Positive	Negative
FINVPRO	Negative	Positive	Negative	Negative
KAOPENIQSC	Positive	Positive	Positive	Positive
FDIQSC	Positive	Positive	Positive	Positive

Source: Author compilation

Table 6.19 summarises the findings of for all the regressions under model 2, taking into account the finance and investment protocol. The findings show that current

levels of financial development depend on immediate past values. Lagged values of all the dependent financial development variables showed positive and significant relationships with the dependent. The *de facto* measure of global integration was shown to have a negative impact on broad money but indeterminate impact on private sector credit. The mean change in broad money as a result of the introduction of the finance and investment protocol was also shown to be negative whilst positive for private sector credit suggesting the protocol had negative effects on broad money and positive effects on private sector credit. FDI was also shown to have a positive impact on stock markets capitalization and a negative impact on turnover.

In contrast, the mean change in stock market capitalization and turnover as a result of implementation of the finance and investment protocol was negative. Capital account openness was observed to have a negative impact on broad money and the relationship with private sector credit was positive. Capital account openness was also observed to have a positive impact on stock market capitalization and a negative impact on turnover. In all cases the interaction of institutional quality and social capital proved to be positive and significant for financial development. Interaction of capital account openness and institutional quality and social account resulted in a positive material benefits for all the measures of financial development.

The interactions for the *de facto* measures produced positive results for banking development as well as stock market development and turnover. The rate of Inflation was shown to be positively related to stock market capitalization and negatively related to banking development. The level of income had a positive impact on all measures of financial development except on stock market turnover. Likewise, trade openness was shown to have a negative impact on all financial development measures except stock market capitalization.

Table 6.20: Model 3 – Impact of both trade and finance protocols - Banking development

Dependent Var	FMOLS				GMM			
	BM	PSC	BM	PSC	BM	PSC	BM	PSC
Coeff: BM _{t-1}	0.4601*** (0.0000)		0.4823*** (0.000)		0.8991*** (0.000)		0.8904*** (0.000)	
PSC _{t-1}		0.2835*** (0.000)		0.4387*** (0.000)		0.8510*** (0.000)		0.8448*** (0.000)
FDI	-0.052** (0.0102)	-0.004 (0.9134)			0.0222** (0.027)	0.0199 (0.477)		
KAOPEN			-0.1203*** (0.0037)	0.5512 (0.3887)			-0.0031 (0.865)	0.0410 (0.434)
IQSC	0.6011** (0.0146)	2.024*** (0.000)	0.3705* (0.0536)	1.4650*** (0.0000)	0.2356*** (0.000)	0.5341*** (0.000)	0.2161*** (0.000)	0.4901*** (0.000)
INFL	-1.4906*** (0.0010)	-1.7714 (0.1349)	-0.2797*** (0.0000)	-0.3634** (0.0126)	-0.0297** (0.013)	-0.018 (0.609)	-0.031*** (0.008)	-0.104 (0.771)
GDPC	0.3370*** (0.0005)	-0.0010 (0.9946)	0.3479*** (0.0006)	0.1699 (0.1609)	0.0008 (0.965)	-0.0631 (0.284)	0.016 (0.381)	-0.0596 (0.307)
TO	0.043 (0.1303)	-0.076 (0.3867)	0.083** (0.012)	0.1597 (0.1301)	-0.065*** (0.005)	-0.2547*** (0.000)	-0.0514** (0.024)	-0.2685*** (0.000)
TRADEPRO	1.911*** (0.0027)	3.8866*** (0.0004)	2.1233*** (0.0001)	0.1128 (0.9404)	1.175* (0.065)	0.04781 (0.980)	0.9748 (0.121)	0.1194 (0.949)
FINVPRO	-0.099 (0.9060)	7.244*** (0.000)	-2.9404*** (0.0001)	0.7769 (0.5764)	-0.8771 (0.149)	2.1381 (0.222)	-0.7302 (0.229)	2.2861 (0.188)
Observations	266	266	266	266	280	280	280	280

***, ** and * denote significance at 1, 5 and 10% levels

Source: Author compilation

6.16 Combined effect of the trade and finance protocols on Banking Development

Table 6.20 reports the findings of model 3 which incorporates both the trade and finance protocols. Model 3 findings show regional integration through the trade protocol had a positive and strongly significant impact on broad money and private sector credit for the FMOLS estimator. The same positive impact of the trade protocol dummy was detected on the GMM estimator although with less significant coefficients. Implementation of the protocol on trade allowed the SADC region to achieve a semblance of a free trade area allowing for free movement of between regional countries thus attracting investment through a broader regional market. Removal or lowering of trade tariffs also enabled some firms within the region to have chances of greater profitability through access lower cost intermediate and capital goods, which might in turn have encouraged financial institutions to allocate more funds to these firms. Such developments could have seen the trade protocol having a positive impact on broad money through investments and better efficiency in higher credit allocated to firms in the private sector which were to gain material benefits from the protocol. The FINVPRO dummy again showed a negative impact on broad money and a positive impact on private sector credit.

In terms of global impact, Model 3 findings showed that for the *de facto* form of global integration, an increase in the level of integration had a negative impact on the levels of broad money and private sector credit in the long run under the FMOLS method. For the same measure of global integration, an increase in the level of global integration was observed to have a positive impact on broad money and private sector credit for the GMM method.

The contrast in findings for the methods again confirms the sensitivity of the *de facto* measure of integration to the estimation method. When the *de facto* form of global integration was replaced by the KAOPEN measure, a unit increase in capital account openness was seen to have a negative and significant impact of 0.1203 on broad money and a positive but insignificant effect of 0.5512 on private sector credit under the FMOLS method. Similar results were obtained under the GMM method though the GMM coefficients were much smaller than the FMOLS coefficients.

The findings appear to confirm that greater capital account openness has a negative impact on the level of monetization of SADC countries. This confirms earlier findings

that greater capital account openness leads to capital flight from the less developed countries out of fear of negative government policies or to escape government controls (Epstein, 2017). In some cases, this may be partly due to political uncertainty in the less developed countries.

Such negative consequences of greater capital account openness can partly explain the stringent controls on capital accounts by SADC countries as indicated by their low KAOPEN index scores. On the other hand, greater capital account openness was observed to have a positive impact on private sector credit, implying better financial intermediary efficiency in allocation of financial resources. This may be due to the fact that greater openness offers financial institutions with more productive investment opportunities within and outside a country's borders.

Openness may reduce moral hazard as financial institutions share information on viable investment opportunities and risks pertaining to different countries. This resonates with views from previous theoretical and empirical assertions that financial liberalization allows for more efficient allocation of savings through diversification of financial markets thus allowing investments to compete for savings flows (Mckinnon, 1973; Shaw, 1973).

However, the contrast in findings between the trade protocol coefficients and the other integration coefficients (FDI and KAOPEN) in terms of impact on broad money show that the impact of the protocol might have been too small for it to result in an improvement in the global integration indicators, and be reflected in the form of improved levels of financial development. As such its effects could not be detected in the form of significant increased fdi to gdp ratios or improvements in capital account openness indicators. This could partly be a result of the protocol focusing mainly on integration and improving trade within the region without taking into account the need to make the SADC region a more attractive destination for trade to countries outside the region.

It can also be due to partial or slow pace of implementation of the protocol by SADC countries. The region may still be far from being a completely free trade area as tariffs are still being applied on other goods and there are still protectionist tendencies from some member countries. In model 3, findings of the finance and investment protocol dummy agree with the *de facto* and *de jure* measures of regional

integration in terms of impact on broad money and private sector credit. The protocol dummy had a negative impact on broad money and a positive impact on private sector credit implying that implementation of the protocol reduced the liquidity or monetization levels of the countries in the region but resulted in better and more efficient allocation of funds. The negative relationship between the FINVPRO and broad money could support the view that greater regional integration levels do not always result in an increase in the levels of monetization (ECB, 2012). However, the positive relationship identified between the FINVPRO protocol dummy and private sector credit shows that greater regional integration does result in more efficient allocation of financial resources.

Adoption of the protocol was supposed to set the SADC region on a path to achieving customs union, where a common set of policies and laws are adopted for imports and exports of goods and services , and for of the financial services sector . The intention was to make the region an attractive centre for investment. The positive impacts on private sector credit indicate that to some extent the protocol did provide gain to the region in terms of allocation of funds to the productive sectors.

The largely insignificant coefficients indicate that the results should be taken with caution. Insignificant coefficients appear to suggest that the finance and investment protocol may also have been an insignificant determinant of the level of banking development. This could again be a result of slow implementation of the protocol, or it could be that the gains of the protocol are still to be fully realised as it is still in its early years of implementation.

The positive impact finding on private sector credit agrees with the assertion that entry of foreign firms into the domestic financial markets is at times associated with adoption of best practice standards in the domestic market (Mishkin, 2007a). Institutional quality and social capital remained positive and significant determinants of banking development for all the regressions under the two estimation methods. This shows that the interaction of institutional quality and social capital is a robust determinant of the level of financial development. The rate of inflation also maintained its negative and significant relationship with financial development. The level of income was shown to be a largely insignificant determinant of financial development. As in findings from previous sections in this chapter, trade openness

appeared not to be a strong determinant of financial development as its coefficients were largely insignificant and its coefficients were constantly changing in line with changes in the model equations. Similar findings on trade openness were uncovered by Rodriguez and Rodrik (1999). In all the regressions for model 3, the lagged values of the dependent variables were observed to be significant determinants of financial development.

Table 6.21 below shows the interaction regressions for model 3. When the *de facto* and *de jure* forms of integration were combined with institutional quality and social capital some of the became positive and significant for both broad money and private sector credit, enhancing the argument for the positive impact of institutional quality and social capital. The significance of legal enforcement and trust in institutions is also noted in the negative coefficients which become smaller as financial integration is combined with the two interactive variables. For example, a negative coefficient of 0.1203 for the KAOPEN under the FMOLS method becomes 0.010 when institutional quality and social capital are applied in support of integration.

Therefore, initiatives towards greater capital account openness or enhancing regional links should be complemented by credible institutions and trust in those institutions. The trade protocol dummy maintained its positive and in some instances significant impact on both broad money and social capital for the interaction regressions. The finance and investment protocol dummy findings were consistent with earlier findings in table 6.20. The FINVPRO coefficients were negative for broad money but positive for private sector credit. In this case, half of the FINVPRO coefficients were also significant as opposed to the regressions without interactions. In both regressions the lagged dependents of both broad money and private sector credit were positive and significant at 1% level, proving again that current banking development levels depends on immediate past values.

Table 6.21: Model 3 Interaction of financial integration, institutional quality and social capital – Banking development

Dependent Var	FMOLS				GMM			
	BM	PSC	BM	PSC	BM	PSC	BM	PSC
Coeff: BM _{t-1}	0.4660*** (0.0000)		0.5177*** (0.0000)		0.9639*** (0.000)		0.9159*** (0.000)	
PSC _{t-1}		0.4238*** (0.0000)		0.5212*** (0.0000)		0.8523*** (0.000)		0.8585*** (0.000)
FDIQSC	-0.0077** (0.0212)	0.0162*** (0.0092)			0.0012*** (0.007)	-0.0007 (0.569)		
KAOPENIQSC			-0.010 (0.3015)	0.0249 (0.1674)			0.0016*** (0.000)	0.0043*** (0.000)
INFL	-0.9796** (0.0487)	-2.074* (0.0704)	-1.7529*** (0.0001)	-0.3258** (0.0167)	-0.0327*** (0.009)	-0.0167 (0.644)	-0.0317*** (0.008)	-0.0093 (0.796)
GDPG	0.6881*** (0.0000)	0.1724 (0.2497)	0.4356*** (0.0000)	0.1272 (0.3472)	-0.005 (0.810)	0.099 (0.107)	0.0094 (0.609)	-0.0154 (0.781)
TO	0.051* (0.0821)	-0.0545 (0.5676)	0.0792*** (0.0079)	0.1476 (0.1587)	-0.0589** (0.013)	-0.2764*** (0.000)	-0.0559** (0.013)	-0.3151*** (0.000)
TRADEPRO	2.5047*** (0.000)	3.6024*** (0.0009)	1.4850*** (0.0055)	0.0920 (0.9447)	0.7135 (0.271)	-2.022 (0.290)	0.6378 (0.299)	-1.6884 (0.364)
FINVPRO	-1.3010 (0.1204)	7.282*** (0.0000)	-1.7446** (0.0154)	2.7977** (0.0402)	-1.484** (0.015)	0.1509 (0.929)	-0.8861 (0.136)	1.4537 (0.398)
Observations	266	266	266	266	280	280	280	280

***, ** and * denote significance at 1, 5 and 10% levels

Source: Author compilation

Table 6.22: Model 3 Finance and investment protocol impact on stock market development

Dependent Var	FMOLS				GMM			
	Mktcapita	Turnover	Mktcapita	Turnover	Mktcapita	Turnover	Mktcapita	Turnover
Coeff: mktcapita _{t-1}	-0.0686 (0.3917)		-0.1026** (0.0110)		0.2654*** (0.000)		0.2256*** (0.001)	
Turnover _{t-1}		-0.1234** (0.0196)		-0.1974*** (0.000)		0.5915*** (0.000)		0.5873*** (0.000)
FDI	0.14436*** (0.0012)	-0.8809*** (0.0002)			-0.1508 (0.696)	-0.0282 (0.877)		
KAOPEN			2.983*** (0.000)	0.1350 (0.9836)			-0.0891*** (0.009)	-0.0205 (0.212)
IQSC	0.0487*** (0.000)	0.007 (0.2896)	0.0298*** (0.0023)	0.004 (0.4930)	0.0217* (0.053)	-0.005 (0.174)	0.0253** (0.022)	-0.006 (0.114)
INFL	-0.3338 (0.6789)	-0.8646* (0.0702)	-0.9908 (0.1660)	-0.3428 (0.4657)	0.7074 (0.200)	0.1544 (0.559)	0.6870 (0.204)	0.1891 (0.476)
GDPC	-0.017 (0.2584)	-0.0009 (0.8710)	0.0010 (0.5865)	-0.0014 (0.7738)	0.012** (0.012)	0.0014 (0.507)	0.0108** (0.031)	0.0009 (0.681)
TO	0.2277*** (0.000)	-0.042 (0.8240)	0.2392*** (0.000)	-0.4506** (0.0411)	-0.4839 (0.372)	-0.016 (0.941)	-0.2167 (0.690)	-0.0537 (0.805)
TRADEPRO	0.3665 (0.6134)	0.2224 (0.9628)	0.8275 (0.2560)	-0.077 (0.9900)	2.253 (0.870)	-7.3522 (0.208)	0.9277 (0.502)	-4.231 (0.507)
FINVPRO	-2.018*** (0.0045)	-7.4756* (0.0876)	-3.873*** (0.000)	-6.9684 (0.2001)	-1.0564 (0.410)	-4.6169 (0.358)	-0.9750 (0.440)	-3.9956 (0.429)
C								
Observations	152	152	152	152	160	160	160	160

***, ** and * denote significance at 1, 5 and 10% levels

Source: Author compilation

Table 6.22 shows the results of model 3 regressions taking into account both the trade and finance and investment protocols. In model 3, the trade protocol dummy also shows a positive impact on stock market capitalization and a largely negative and insignificant impact on stock turnover implying the protocol may not have been a robust determinant of stock market efficiency. Whereas the trade dummy showed a positive impact on stock market capitalization, the finance and investment protocol dummy showed a negative mean change in stock market capitalization and turnover. This implies that implementation of the protocol had a negative impact on stock market development. This again reaffirms the fact that implementation of the protocol may not have been focused on stock markets in the SADC region mainly because these markets are small, largely inactive and illiquid. Therefore, in fostering financial development, focus may have been placed more on financial development through the banking sector. As such, countries within the region were more likely to implement protocol resolutions with the banking sector in mind, leaving the stock markets with the same rules and regulations as prior to implementation of the protocol. This might explain the decrease in the level of stock market capitalization and stock turnover upon implementation of the finance protocol. Just like the trade protocol, the finance and investment protocol coefficients were largely insignificant, implying that the results should also be taken with caution. The insignificant coefficients may also indicate the non-robust relationship between stock market development and implementation of the finance and investment protocol. Since the protocol was only fully ratified by member countries in 2010, the absence of a non-robust relationship can also partly be explained by the fact that the protocol has not yet been fully implemented as member countries are still aligning their laws to the requirements of the protocol.

In terms of the impact of the protocols in improving global integration, the results for model 3 were mixed. While the *de facto* FDI agrees with models 1 and 2 findings and shows a positive (0.1443) and significant relationship between global integration and stock markets capitalization for FMOLS, the GMM shows a negative (0.1508) and insignificant impact. Still on the *de facto* measure of integration, both estimation methods show a negative impact of FDI on turnover and again concur with model 1 and 2 findings. When the KAOPEN measure is applied, the FMOLS estimation again shows a positive relationship between capital account openness and stock market

capitalization whilst the GMM estimator shows a negative impact. In terms of the impact of capital account openness on stock turnover, the findings again appear contrasting. The impact of capital account openness on stock turnover as depicted by the FMOLS method is a positive 0.1350, whilst the GMM estimator shows a negative 0.0205. It is significant to note that for the FMOLS, the impact of the trade protocol dummy on both measures of stock market development is mimicked in both measures of global integration, possibly implying that the trade protocol improved global financial integration for the SADC region and in turn impacting stock market development in the region.

These findings reaffirms the idea that implementation of the protocol may have increased intra-regional trade in terms of consumer and capital goods because of removal or lowering of tariffs and other trade barriers and may have attracted FDI from non-regional countries. Such changes may have been enhanced prospects of better performance for firms within the region and served to attract investment in such firms. This might have led to increased market capitalization levels as depicted on the results. It might also explain the positive though insignificant coefficients obtained for the trade protocol. The positive impact findings of the protocol resonate with the idea that regional agreements are bound to have positive impacts on stock market development as shown by Moser and Rose (2013) or result in increased capital flows as highlighted by Carrere (2004) as well as Afesorgbor and Bergeijk (2011). Unlike the trade protocol, coefficients of the finance protocol were not in tandem with the global integration indicators, possibly implying that the finance and investment protocol may not have significantly improved global financial integration for the region and as a result failed to have a significant impact on financial development in the region. The contrasting findings between the two protocols may be due to the fact that the trade protocol has been implemented for a longer period than the finance protocol.

The findings also show results are sensitive to the estimation method selected. The FMOLS method generates long run coefficients and is based on a cointegrating relationship amongst the variables examined. It produces efficient estimates for macro panels. On the other hand, when time is persistent the GMM method becomes less efficient as weaker instruments are generated with increasing time periods. Such differences in the nature of estimation methods may account for some

of the variations in the results estimated and may explain why the FMOLS estimator has more significant coefficients than the GMM estimator. The interaction of institutional quality and social capital retained its characteristic of being a robust determinant of financial development with positive and significant coefficients for both stock market capitalization and stock turnover. However, there were more significant coefficients for the IQSC and stock market capitalization relationship than there were for the stock turnover relationship. This might suggest institutional quality and social capital are more important for investors who are coming in as shareholders. These investors are more interested in the level of shareholder protection laws that are within countries and the findings also show that the trust they have in institutions responsible for upholding these laws also matter for financial development. This implied that investors are not only interested the existence of laws but are also interested in the confidence there is that the countries and institutions they are investing in will have continuity in the future. Such continuity can only be assured in a stable environment where there is the absence of violence, where policy implementation is effective and where there is trust in the legal enforcement mechanism. All these elements constitute the social capital of the country, thus a combination of institutional quality and social capital is important for the development process. The institutional quality findings agree with Chinn and Ito (2006) and La Porta (1997, 1998). Guiso et al. (2004) also have stated the importance of social capital in the financial development process. However, none of these studies have proved the significance of the interaction between institutional quality and social capital. With the inclusion of the trade and finance dummies in the specification, the relationship between stock market development and inflation became indeterminate. The FMOLS showed a negative impact of inflation on both stock market capitalization and stock turnover, in contrast to previous findings and in contrast to the view that higher levels of inflation spur stock market development. On the other hand, the GMM estimation showed a positive impact of the rate of inflation on stock market development, with insignificant coefficients. The same findings applied to the level of income represented by GDPC. Negative long run GDPC coefficients were obtained for both stock development measures for FMOLS whilst GMM had positive coefficients. Trade openness was also observed to have a consistently negative impact on stock market development in contrast to previous contrasting findings shown in this study.

Table 6.23: Model 3 Interaction of financial integration, institutional quality and social capital – Stock market development

Dependent Var	FMOLS				GMM			
	Mktcapita	Turnover	Mktcapita	Turnover	Mktcapita	Turnover	Mktcapita	Turnover
Coeff: mktcapita _{t-1}	-0.0479 (0.5491)		-0.0800 (0.3381)		0.2710*** (0.000)		0.2448*** (0.000)	
Turnover _{t-1}		-0.1067** (0.0333)		-0.2216*** (0.000)		0.6050***		0.6021*** (0.000)
FDIQSC	0.1012*** (0.000)	-0.0275* (0.0541)			0.0001 (0.452)	0.00004 (0.440)		
KAOPENIQSC			0.1826*** (0.0003)	0.0244 (0.5532)			-0.00001* (0.097)	-0.514 (0.122)
INFL	0.7201 (0.3383)	0.3585 (0.4104)	-1.3096* (0.0805)	-0.3733 (0.4302)	0.4161 (0.429)	0.1205 (0.645)	0.3026 (0.565)	0.1548 (0.556)
GDPC	-0.012 (0.3816)	-0.0041 (0.2638)	0.009 (0.6620)	0.0002 (0.9438)	0.0150*** (0.003)	-0.0005 (0.788)	0.0172*** (0.000)	-0.00003 (0.986)
TO	0.2497*** (0.000)	-0.4924*** (0.0065)	0.3511*** (0.000)	-0.4834*** (0.0037)	-0.3721 (0.489)	0.0903 (0.668)	-0.2047 (0.707)	0.4009 (0.848)
TRADEPRO	1.445** (0.0475)	-2.3569 (0.6238)	1.853*** (0.0098)	0.044 (0.9927)	-1.7832 (0.895)	-5.7965 (0.312)	1.2982 (0.924)	-2.7767 (0.648)
FINVPRO	-2.5078*** (0.0002)	-0.4308 (0.9147)	-3.191*** (0.000)	-7.035 (0.1030)	-1.6715 (0.171)	-2.4171 (0.615)	-1.965 (0.107)	-2.7764 (0.563)
Observations	152	152	152	152	160	160	160	160

***, ** and * denote significance at 1, 5 and 10% levels

Source: Author compilation

6.17 Combined effect of the trade and finance protocols on Stock Market Development

Table 6.23 summarises the model 3 interaction regressions with both the trade and finance protocols in the specification. The interaction of the *de facto* measure of financial integration with institutional quality and social (FDIQSC) appears to turn the negative FDI coefficients obtained in table 6.22 into positive coefficients. The *de facto* interaction regressions affirm the positive effect of institutional quality and social capital on stock market development.

However, unlike in findings from previous sections of this chapter, the KAOPENIQSC does not appear to show a robust relationship with the two measures of stock market development. The trade protocol maintains its positive impact on stock market capitalization signalling a possible increase in investment in stock markets after implementation of the protocol or an increase in stock prices as a result of positive sentiment brought about by listed firms whose performance was positively impacted by implementation of the protocol.

However, the impact of the protocol on turnover remained negative, suggesting that implementation of the protocol, might not necessarily have increased the amount of trades on the stock markets. The findings agree with the view that higher market capitalization levels do not necessarily result in high stock turnover activity (Levine and Zervos, 1998, p.540). The finance and investment protocol dummy is observed to have a negative impact on stock market capitalization and turnover.

However, as in previous findings, the FINVPRO coefficients are largely insignificant as is the case with the TRADEPRO coefficients suggesting that both protocols did not have robust impacts on stock markets development. In the model 3 interaction regressions, the rate of inflation retained its positive impact on stock market development in line with literature. The level of income depicted by GDPC was inconsistent with positive and negative coefficients for the two measures of stock market development. The same findings were also uncovered for trade openness, affirming the view that the impacts of income and trade openness change with the nature of specification (Rodriguez and Rodrik, 1999).

6.18 Summary of the effects of the combined protocols on Financial Development

The impact of the trade and finance protocols is summarised in table 6.24 below.

Table 6.24: Summary of Model 3 findings: Trade and finance protocols

Variable	BM	PSC	Mktcapita	Turnover
BM _{t-1}	Positive			
PSC _{t-1}		Positive		
Mktcapita _{t-1}			Positive	
Turnover _{t-1}				Positive
FDI	Indeterminate	Indeterminate	Positive	Negative
KAOPEN	Negative	Positive	Positive	Indeterminate
IQSC	Positive	Positive	Positive	Positive
INFL	Negative	Negative	Negative	Negative
GDPC	Positive	Negative	Positive	Indeterminate
TO	Indeterminate	Negative	Indeterminate	Negative
TRADEPRO	Positive	Positive	Positive	Negative
FINVPRO	Negative	Positive	Negative	Negative
KAOPENIQSC	Positive	Positive	Indeterminate	Indeterminate
FDIQSC	Positive	Positive	Positive	Positive

Source: Author compilation

Table 6.24 summarises the findings for the specifications where both the trade and finance protocols are included in the model specification. Cases where both positive and negative coefficients are obtained for the same dependent were classified as indeterminate, meaning mixed results were obtained. Such results were obtained for FDI when broad money and private sector credit were taken as measures of financial development. The KAOPEN measure showed negative and positive impacts on broad money and private sector credit respectively. Institutional quality and social capital generated positive coefficients for all the measures of financial development whilst the rate of inflation also showed a negative relationship with financial

development. The level of income was shown to have a positive impact on broad money and stock market capitalization and a negative impact on private sector credit. The interaction of capital account openness, institutional quality and social capital had positive impacts on private sector credit, and broad money and was indeterminate for stock market capitalization and turnover. The FDIQSC interaction largely had positive impacts for all the measures of financial development.

6.19 Conclusion

This chapter has shown findings of the impact of regional financial integration under different model specifications. The study findings showed mixed results for the different measures of regional financial integration, global integration and financial development adopted. The protocol on trade was observed to have improved global financial integration for the SADC region which ultimately positively impacted financial development. Findings on the impact of the finance and investment protocol showed the protocol did not improve global integration for the SADC region and had no significant impact on stock market development but positively impacted private sector credit. The findings also showed that the interaction of institutional quality and social capital matters for financial development. The next chapter discusses the contribution of the study to the body of knowledge and draws conclusions on the study findings.

CHAPTER SEVEN

DISCUSSION OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

7.1 Introduction

Financial literature on financial integration has mainly focused on its relationship with economic growth. Review of previous theoretical and empirical works also showed that less attention has been given to the role that financial integration plays in fostering financial development and thereby influencing economic growth. Of particular interest to this study was the aspect of regional financial integration. Theoretical literature reviewed assumed that regional financial integration could bring additional benefits including greater investment attraction from both regional and non-regional countries as well as economies of scale in borrowing as a block, and improved efficiency of financial systems from increased competition.

Thus, deeper regional integration was assumed to lead to greater financial depth and efficiency. In this regard, the main aim of the study was to determine the impact of regional financial integration on financial development in the context of the SADC trade and finance harmonisation protocols. Particular attention was also paid to how regional financial integration impacts or links with global integration in the financial development process. The study also focused on how shifting between *de facto* and *de jure* measures of financial integration could influence the nature of impact. In addition, no study has shown the extent to which the interaction of institutional quality and social capital can influence the financial development process.

Financial literature has shown that aspects such as presence of the rule of law, legal enforcement and nature of corporate governance (institutional quality) do matter for financial development. Therefore, further motivation for the study lay in uncovering the extent to which trust in the legal institutions and continuity of firms, the stability of the environment under which the laws are being applied and effectiveness of

government policy implementation (social capital) could impact financial development when combined with institutional quality.

Chapter six has provided detailed findings on all these inquisitions. The findings showed mixed results with the protocol on trade shown to have had a largely positive impact as opposed to the finance and investment protocol. However, in both cases insignificant coefficients may have implied a non-robust relationship between the aforementioned regional integration initiatives and financial development. The remainder of the chapter is organised as follows: Subsection 7.2 discusses the empirical results of the study, section 7.3 notes the contribution of the study to the body of knowledge, section 7.4 draws conclusions on the study, section 7.5 outlines the limitations of the study, section 7.6 provides recommendations for the study and section 7.7 suggests areas of possible further research in accordance with the current study findings.

7.2 Discussion of empirical findings

Correlation analysis performed on relevant variables in the previous chapter showed a positive and significant linear association between both the *de facto* (FDI) and *de jure* (KAOPEN) indicators of global financial integration and banking development denoted by broad money and private sector credit. The correlations also showed a negative and insignificant linear association between the *de facto* and *de jure* measures of global integration and stock market development indicators, namely stock market capitalization and stock turnover.

The correlation analysis also revealed a strong and significant linear positive association between broad money and the interactive of institutional quality and social capital and a moderate positive association with private sector credit. On the other hand, institutional quality and social capital were observed to have a weak positive association with stock market capitalization and a weak negative association with stock market turnover.

Having determined the nature of correlation between the financial integration measures and all financial development variables, the next step involved

determination of the existence of a long run relationship between these variables, with lags of the dependent variables as well as inflation, GDP per capita and trade openness as control variables. Results of the Pedroni and Kao cointegration tests strongly supported the existence of a long run relationship between the variables. Durbin and Wu Hausman endogeneity tests to check for correlation between the explanatory variables and the residuals confirmed exogeneity of the explanatory variables, leaving the lag of the dependents as the only source of endogeneity. The presence of cointegration and an endogenous explanatory variable necessitated the need to adopt panel cointegration estimation methods which could handle both serial correlation and endogeneity in determining the impact of regional financial integration on financial development. The results of these estimations are discussed in the sections to follow.

7.2.1 Regional integration impact on banking development

Empirical findings showed that regional integration through the protocol on trade had a positive and significant impact on the size of domestic financial markets through a rise in the level of monetization. The findings were corroborated by positive coefficients for the trade protocol dummy in relation to broad money for the FMOLS estimator. The findings also point to an improvement in global financial integration indicators as a result of the trade protocol, which in turn also contributed to an increase in the level of monetization of regional financial markets. Using the *de facto* measure of global financial integration, study findings showed a positive relationship between regional FDI and broad money for the time period when the SADC region adopted the protocol.

Changes in the level of monetization in the region after implementation of the protocol could have been a result of increased FDI investment in the region as investors anticipated the benefits of a bigger regional market. Also, deeper integration through the protocol could have allowed regional countries to enjoy economies of scale through reduced borrowing costs, which in turn could have allowed the countries to have access to higher levels of funding. In contrast to these findings, the *de jure* measure of global financial integration reflected a negative relationship with broad money.

This can be explained by the fact that *de jure* measures of integration do not measure actual capital flows but are mainly focused on restrictions placed on the flows of capital. Therefore, the change in capital flows after implementation of the protocol might not have been immediately detected in the *de jure* measures. In terms of private sector credit, the positive effect of regional integration was also reflected in the trade protocol dummy though again the regressions coefficients were again insignificant. In relation to the link with global integration indicators, both *de facto* and *de jure* measures pointed to a positive yet insignificant impact of regional integration on credit allocation to the private sector. This means through increased levels of integration, there was effective allocation of resources through sharing of information and institutions had the option of selecting the best investment options for their funding. Theoretically more efficient allocation of resources by the financial sector is noted when there is an increase in the levels of funding allocated to the private sector as there is a supposed link between private sector credit and growth (Calderon and Liu, 2003, p.6). However insignificance of the findings suggests a non-robust impact of the protocol on banking development. This might be as a result of the protocol not being fully implemented by all the regional countries.

Flatters (2001) acknowledges that some countries did not remove tariff barriers to trade on goods and services as agreed by member countries. Such actions negate the positive material benefits that would arise from full implementation of the protocol. Again, the impact of the protocol might have not been significantly felt as a result of the SADC region not being significantly large enough for any regional benefits to be attained from it especially after implementation of a protocol which is mainly meant to facilitate ease of trade amongst SADC countries only. As such any material benefits from the protocol may not be noticeable through significant changes in broad money or private sector credit.

The trade protocol mainly focused on integration of the SADC region through the goods market. Integration of the financial services sector was meant to be enhanced through implementation of the finance and investment protocol. Positive impacts of this protocol were expected to be reflected in the form of greater FDI from investors

as well as greater capital account openness, ultimately leading to financial development. Empirical findings of the impact of the finance and investment protocol on broad money showed negative impacts for the *de facto* form of global integration with some of the coefficients significant at 5% level.

Similar findings were recorded for the *de jure* form of global integration. These findings suggest the failure of the protocol in attracting FDI from non-regional countries and as a result its inability to increase the size of regional financial markets. An examination of the finance and investment protocol dummy, again confirmed the negative impact of the protocol on broad money, implying that implementation of the protocol might have had a negative effect on the size of SADC's financial system. However, the protocol coefficients were largely insignificant. On efficiency of the banking sector through private sector credit, results for *de facto* integration were mixed, showing both positive and negative effects. However, when the *de jure* measure was applied, the findings were positive and significant for the FMOLS estimation method and again positive, yet insignificant for the GMM estimation. The protocol dummy corroborated a positive impact of implementation of the protocol on private sector credit. This might imply that implementation of the protocol enhanced the intermediary efficiency of the banking sector in terms of allocating funds towards productive investments. This could have been achieved through sharing of information reducing information asymmetry on investment opportunities which financial institutions could fund.

However, the findings should again be taken with caution because of the insignificance of some of the coefficients. This could again be as a result of slow or inadequate implementation of the protocol by member countries. The SADC finance and investment protocol required member countries to achieve deeper integration through harmonisation of taxation laws and standards for regulation of banks and stock markets as well as sharing information and technology. However, changes in laws and regulation might be a slow process in some countries hence the agreed protocol positions might not have been implemented.

Again, there might be reluctance by member countries to implement the protocol resolutions as some countries will be serving their own interests. For example, it is difficult for a smaller country like Lesotho to have the same investment laws as South Africa or Mauritius as it would then surrender its competitive advantage, in such a case the smaller country would forego implementation of some of the protocol resolutions. The insignificant coefficients might again be a result of the material benefits of the protocol not yet having been fully achieved as it is still in its early years of implementation after full ratification. The significant material benefits might be realised in the future.

7.2.2 Regional integration impact on stock market development

Results of the impact of regional financial integration on stock market development with the trade protocol in the specification had mixed results on stock market capitalization. The regression coefficients for the trade protocol showed a positive and significant relationship with stock market capitalization, supporting the positive impact view of regional integration through the trade protocol. In terms of global integration impact, the *de facto* and *de jure* measures of integration revealed a positive relationship between integration and stock market capitalization with the coefficients significant at 1% under the FMOLS estimation technique. The findings suggest a possible improvement in global integration which positively impacts stock markets from implementation of the trade protocol. However, findings from GMM estimation showed a negative but insignificant relationship. Such differences from estimations could have arisen from the difference in properties of the estimators. The FMOLS method generates long run coefficients and is based on a cointegrating relationship amongst the variables examined. It produces efficient estimates for macro panels. On the other hand, when time is persistent the GMM method becomes less efficient as weaker instruments are generated with increasing time periods.

The possible explanation for a positive effect of the trade protocol on stock market capitalization is that the protocol might have raised prospects for better performance for firms whose activities mainly depend on intra-regional trade for example those which depend on capital goods from other regional countries. In such a case removal

or lowering of trade tariffs through the protocol could have attracted equity investment into those firms in the hope of better performance, since the firms now faced lower operational costs. The prospects of better performance could have attracted equity investments into regional stock markets from both regional and non-regional countries.

This assertion agrees with the proposal that regional financial integration can occur through the goods market as stated by Oxelheim (1990). The protocol coefficients were however also not significant hence the findings should again be taken with caution. The insignificance could have been for the same reasons of slow or inadequate implementation of the protocol as explained in the preceding section. It is also important to note that in terms of impact on stock market capitalization, the two estimation methods applied produced contrasting results, indicating possible sensitivity of stock market capitalization to the estimation method applied.

While results on stock market capitalization showed mixed results, this was not the case for stock market turnover. Both the *de facto* and *de jure* regression estimations produced negative coefficients for stock turnover, suggesting a negative relationship between the global integration measures and efficiency of the stock market. The finding supported the negative correlations identified between the *de facto* and *de jure* forms of integration. However, the trade protocol dummy again showed a positive impact of the protocol on turnover, in contrast to the *de jure* and *de facto* findings, though the protocol coefficients were insignificant.

When the finance and investment protocol was included in the specification, the coefficients for the finance and investment protocol dummy in relation to stock market capitalization were largely negative and insignificant, implying a negative impact of regional integration through the finance and investment protocol. For the global integration indicators, empirical findings showed a positive and significant relationship between the *de facto* and *de jure* forms of global integration and stock market capitalization. On the other hand, the impact on turnover was shown to be negative. The findings on stock turnover resonate with findings by Claessens and Schmukler (2007) who found that any increases in the levels of financial integration

do not necessarily lead to increased participation by firms and countries in international financial markets.

The contrast in coefficients between the regional protocols and the global measures might be a reflection that the protocol might not have significantly improved the SADC regions global standing in terms of attracting investments from countries outside the region, and as a result failed to improve global financial integration for the region. As a result, the protocol might have had restricted impact on stock market capitalization and turnover. The contrast in findings might also be due to the fact that stock markets of SADC countries are not that well developed. Therefore, when coming up and when implementing policies for regional financial integration, not much focus may be placed on integration through the stock markets. This leaves the banking sector as the main source of financial development therefore; any policies which are initiated for regional integration might not positively and significantly impact the stock markets.

7.2.3 Impact of institutional quality and social capital interactions

Financial literature has always emphasized on the importance of institutional quality in the financial development process. It has been argued that countries where investors have greater protection through the rule of law , respect for property rights , shareholder protection laws and where contract are enforced have a greater chance of developing their financial markets as opposed to countries where legal enforcement is lower.

However, there has also been the argument that countries where there is no trust or confidence that the rule of law will be upheld or where there is no trust that firms will continue to survive in the future, and where there is instability and poor policy implementation (social capital) will also have lower levels of financial development even if they have appropriate laws in place. In this context, the study sought to determine if social capital can complement institutional quality in financial development. Empirical findings showed that there is a robust positive relationship between the institutional quality and social capital interaction and financial development. The institutional quality and social capital interactive variable was

largely positive and significant for all both banking and stock market development. The effect of institutional quality and social capital was also noted in findings of the interaction regressions where the *de jure* and *de facto* measures of integration would be combined with institutional quality and social capital. These findings revealed positive outcomes for the aforementioned interaction variables even in situations where initially, the coefficients for the *de facto* or *de jure* measure would be originally negative.

The interactive regressions also show that financial integration may not achieve the desired objectives unless combined with institutional quality and social capital. Findings of the interactive regressions also indicate that countries need to take note of the levels of institutional quality and social capital first before opening up their markets through financial integration. Given that levels of institutional quality were observed to be trending lower or rather at lower levels than social capital levels, the largely positive effect of the interactive effect of institutional quality and social capital shows that social capital is more important in countries where legal enforcement is weaker.

This implies that even under low levels of institutional quality, financial development can still take place if investors have trust in institutions, and the environment is free from instability and where policies are effectively implemented. The findings of this study depart from previous findings where institutional quality would be examined independent of social capital and views social capital as complimentary to institutional quality in the financial development process.

7.2.4 Other determinants of financial development

Study findings also showed that financial development was also dependent on other factors. The study revealed a positive and significant relationship between the rate of inflation and stock market development while the relationship with stock turnover produced mixed results. The rate of inflation was also observed to have a negative impact on both measures of banking development. The impact of income and trade openness appeared to have been dependent on the estimation method applied, hence showed both positive and negative impacts.

7.2.5 De facto and de jure measurement of integration

There are different ways of measuring financial integration. *De facto* and *de jure* indicators have been the most commonly applied forms of measurement in financial literature. *De facto* measures integration through actual flows of assets and liabilities across countries. *De jure* measures focus on the restrictions placed on capital movement by countries. This study sought to determine if there were any differences in terms of nature of findings from applying each of these measures in determining impact on financial development. The *de facto* form of global integration used was the ratio of FDI to GDP while the *de jure* indicator was the KAOPEN index. Empirical findings from the regressions run showed no significant differences in terms of nature of impact on all the selected measures of financial development. The positive and negative signs of the *de facto* indicator were also replicated in the *de jure* indicator. The only differences noted was in the size of the coefficients where the *de jure* coefficients appeared to be greater than the *de facto* coefficients. The similarities in the nature of impact corroborate earlier findings from the preceding chapter of comovement between the selected *de facto* and *de jure* measures of integration.

7.2.6 Impact of estimation method

The results generated had the FMOLS estimator with more significant coefficients and performing much better than the GMM estimator under both the trade and finance protocols. This gives credence to the view that the cointegrated techniques are more efficient estimators for macro panel estimations (Pedroni, 2000). The findings also support the view that for macro panels GMM may produce inconsistent and misleading estimates (Pesaran and Smith, 1995). This may be a result of the overfitting problem arising from too many weak instruments being generated with increases in time periods. The difference in significant coefficients generated also shows that the results obtained may be sensitive to the estimation method applied.

7.3 Contribution to the body of knowledge

Empirical studies on financial integration have mainly reported its impact on economic growth. For instance Quinn (1997), Klein and Olivei (2000), Bekaert et al. (2001) and Wakemann-Linn and Wagh (2008) all examine financial liberalization in

the context of its economic growth effects. However, these studies do not clearly show the mechanism through which financial integration can facilitate economic growth through deepening of the financial sector. The present study departs from this approach by focusing on the financial deepening effects of financial integration.

The study also contributes to the body of knowledge by focusing on a specific type of financial integration in the form of regional integration. Demartino and Grabel (2003) and Ravenhill (2004) argued that regional integration brings material benefits as through it, countries gain control over capital flows, enhance their bargaining power and their domestic companies enjoy economies of scale and increased investment, whilst being protected from global competition. However, these suggestions fell short of being proven empirically. Therefore, the present study adds to the body of knowledge by empirically showing the financial sector impacts of initiatives towards regional integration. Furthermore, it has been proposed that regional integration enhances the attractiveness of the integrated region through removal of trade barriers, enlarged markets and the possibility of protection provisions. In this way, both intraregional FDI and FDI inflows from non-member countries are expected to increase. If that is the case, it implies that regional financial integration should in some form enhance global financial integration for the integrated region. Therefore, this study adds to the body of knowledge by uncovering the link between regional integration and global financial integration. The study findings showed similarities in terms of regional integration coefficients and global integration coefficients in relation to financial development, implying that in some instances regional integration improves global integration, and in turn spurs financial development.

In addition, from the literature that has been reviewed by the author, no empirical studies have examined the impact of regional integration in the SADC region through the trade and finance and investment protocols. This study fills this gap by proving that the trade protocol had a positive yet insignificant impact on size and efficiency of the banking sector. The protocol was also shown to have had a positive yet insignificant impact on stock market capitalization and a negative impact on efficiency of the stock market in the form of stock turnover. The insignificant

coefficients suggesting absence of a robust relationship between the protocol's implementation and banking development. The insignificant coefficients may also be due to the fact that the protocols have not been fully implemented by all the member countries and have been implemented for a short time period. For example, the finance and investment protocol has less than 10 years of full implementation.

In the same vein, the study fills the gap on the impact of the finance and investment protocol by proving that the protocol had mixed effects on banking development. The protocol was shown to have had negative effects on size of the banking sector, yet it was also observed to have improved the intermediary efficiency of banks. In terms of stock market development, the finance protocol was shown to have had negative impacts on stock market turnover and capitalization. The insignificant coefficients again suggesting implementation of the protocol might not have robustly impacted financial development. Previous studies have also shown that institutional quality issues such as presence of the rule of law and investor protection laws positively impact financial development. However, these studies have focused on institutional quality in isolation, devoid of important aspects such as trust in institutions themselves and the environment under which the laws are applied. This study fills this gap by combining institutional quality and these aspects of social capital to determine how they impact financial development. All the results of the study show a robust positive impact of the institutional quality and social capital interactive on financial development, proving that social capital matters for financial development even where institutional quality is low.

The study also avoids examining the impact of regional financial integration on financial development in isolation. It adds to the body of knowledge by showing the impact of combining institutional quality and social capital. In this regard, the study finds that financial integration might not achieve the desired benefits unless if combined with institutional quality and social capital. Previous studies have mainly applied the GMM estimation method in assessing the financial integration and financial development relationship. However, this study departs from this approach by using both the GMM and the cointegrated panel fully modified ordinary least

squares method. The FMOLS is equally able to handle issues of serial correlation and endogeneity as much as the GMM method and has been observed to be a more appropriate estimator for macro panel regressions. In this regard, this approach allows us to determine if findings are sensitive to changes in methodological approach. The study findings proved that the FMOLS is a better estimator for macro panels than the GMM through having more significant coefficients than the latter. In the study, financial development factors such as trade openness and GDP per capita were also seen to be sensitive to the methodological approach adopted.

In addition, previous studies have adopted either *de jure* or *de facto* indicators as their measure of financial integration (see Gehringer, 2013, Bekaert et al., 2011, Milesi-Ferretti, 2007). However, both indicators have their own weaknesses. *De facto* measures do not adequately indicate the intensity of controls on the capital account of a country (Chinn and Ito, 2007, p.3) at the same time, *de jure* scoring indicators might give the picture that an economy is open when it is actually closed and vice versa (Gehringer, 2013, p.7). This might lead to misleading conclusions on the nature of impact. To avoid this, the present study sought to add to the body of knowledge by using both measures of integration. The study showed that there are no significant differences in terms of findings if either of the measures is applied.

7.4 Conclusion

The study concludes that regional financial integration has both positive and negative impacts on financial development. However, the impact of the finance protocol was not significant enough to be detected in global integration measures; implying regional integration through the protocol may not have significantly improved global financial integration. The study also concluded on the specific impacts of the SADC trade and finance and investment protocols. The study concluded that regional integration through the trade protocol had a positive and significant impact on size and efficiency of the banking sector using the FMOLS estimator. GMM estimations for the same variables were largely insignificant. In terms of stock market development, the study found a positive relationship between stock market capitalization and implementation of the trade protocol for the FMOLS

estimator. A negative and insignificant relationship between stock turnover and the trade protocol was also observed for both estimators. In terms of the finance and investment protocol, the study showed a weak and negative relationship between broad money and implementation for the finance protocol. The study also showed a positive and significant impact of the finance protocol on efficiency of the banking sector through private sector credit for both FMOLS and GMM. In terms of stock market development, the finance protocol was observed to have a negative and insignificant impact on both stock market capitalization and turnover. The interaction of institutional quality and social capital was also observed to have a strong and significant relationship with both banking sector and stock market development. From this it can be concluded that institutional quality and social capital complement each other in financial development. Financial integration was also shown to be positively related to financial development when interacted with institutional quality and social capital. In terms of financial integration measurement, the study found no significant differences in results when one opts to use either *de jure* or *de facto* measures. Higher rates of inflation were found to have a negative and significant impact on banking development and positive and significant impact on stock market capitalization whilst the relationship with stock turnover was mixed. The study also concludes that the cointegrated panel approach using the FMOLS is a better estimator for macro panel regressions as it had more significant coefficients than the GMM in the regressions run.

7.5 Limitations of the study

In determining the impact of regional financial integration on financial development, the study made use of secondary data. As a result, the study faced some limitations.

The first limitation emanated from the unavailability of secondary data for some countries especially for the periods when the countries were battling with civil conflicts. For example, some economic data for the DRC was missing between the years 1997 to 1999 because of the war situation in that country at the time. Incompleteness of such missing data for these years was addressed through imputation using the expectation maximization technique, which estimates the

means, correlations and covariances of the missing data using available data from the other years.

The second limitation emanated from the unavailability of complete sets of regional capital flows to accurately measure regional financial integration. For example, cross boarder remittances would have been a good measure of regional integration. However such data was unavailable, therefore the study relied on dummy variables generated from time periods when regional integration protocols were implemented.

Thirdly, 6 of the 14 selected SADC countries either do not have stock markets or have stock markets which have been in existence for periods less than 10 years. Therefore, the impact on stock market development could not be ascertained for such countries as they did not have data for the other years. Such countries were discarded from the sample when determining the impact of regional integration on stock market development.

Lastly, there was no continuous data on literacy rates for all the SADC countries for the period covered by the study, therefore the element of education levels as another component of social capital could not be captured. The study had to rely on available components of social capital such as voice and accountability, political stability, absence of violence, and government effectiveness.

7.6 Recommendations of the study

The study recommends a change in the nature of SADC regional integration policies from being inward looking to outward looking. Findings from the study show that the trade and finance and investment protocols have yielded some positive gain in terms of financial development. The results also show that such positive gains are insignificant, implying that the effect of the protocol has not been robust enough. One of the reasons for the failure of the protocols to bring about much change in terms of investment attraction is that they are more of inward looking policies, which are meant to enhance trade and make it easier to move capital amongst regional countries.

However, the SADC region is made up of countries with low per capita income, and small populations therefore the markets are smaller as compared to other regional blocks like the EU. In such a case promotion of intra-regional trade or intra-regional investment will not result in significant gains. Therefore regional integration policies should rather be outward looking to promote integration between the SADC region and the outside world, which brings about the possibility of greater investment from a bigger global market.

Insignificance of the regional integration initiatives might also arise from partial or slow implementation of the protocol resolutions or sudden complete reversal of the agreed regional policy positions by member countries. The study recommends that the region have a regional integration protocol compliance monitoring system, similar in nature to the European Commission, which is responsible for ensuring adherence to regional integration policy resolutions by member countries. Such a system can set deadlines for making sure countries comply with specific provisions in the agreed and should also be able to recommend punitive actions for slow implementation or non-compliance with resolutions by member countries. Such a commission can also suggest that member countries be involved with one regional bloc to avoid conflicting policies if a member country is also a member of many other regional blocs. Since the study found a robust relationship between institutional quality, social capital and financial development, it is recommended that member countries strengthen their legal systems and investor protection laws to promote financial development. SADC Countries are also recommended to have policies which encourage citizen participation in financial markets as this increase the level of trust in institutions. In addition, it is recommended that the region have effective mechanisms for quick resolution of disputes as the absence of violence in countries is a key aspect of social capital which goes along with institutional quality in facilitating financial development. The study also recommends increased use of financial technology such as mobile banking to improve access to financial services for the SADC region. The use of mobile banking for instance should make it easier to transact across borders without joining international financial networks. Such an initiative raises the

possibility of increasing levels of regional integration as well as further improving levels of financial development through reduction in transaction costs.

7.7 Suggestions for further study

The study showed the impact of implementation of regional integration agreements on financial development with specific focus on the SADC region. It would be interesting to apply the same concept to other regional blocs from emerging markets as well as the developed markets to see if implementation of similar agreements would have the same results as the SADC region. Subject to data availability, the study suggests further study with cross border remittance flows as the measure of regional integration. Results of such a study would be useful to the region as it may possibly highlight the significance of the flow of remittances through formal financial market channels. Having ascertained the link between institutional quality and social capital, it is also important to determine the minimum threshold levels of institutional quality and social capital which can facilitate financial development, therefore future studies can adopt a threshold regression to determine such. Further, in a bid to remove barriers to accessing financial services, some SADC countries have recently made changes to regulations relating to cross border remittances. In turn, some “know your customer” requirements have been done away with. How such changes have impacted institutional quality, social capital and financial development is an area which requires further study.

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