FINANCIAL INTEGRATION, CAPITAL MARKET DEVELOPMENT AND PRIVATE SECTOR ACCESS TO FINANCE IN BOTSWANA

A Dissertation Submitted By

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CERTIFICATION OF THESIS

I certify that this thesis does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university; and that to the best of my knowledge and belief it does not contain any material previously published or written by another person except where due reference is made in the text.

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Signature of Candidate

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Date

ENDORSEMENT

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Signature of Principal Supervisor

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Date

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ABSTRACT

This thesis investigates financial integration in Botswana with a specific emphasis on its effect on economic growth, capital market development and financial access by the private sector. The study focuses on Botswana because of its democratic governance, which is unique among African nations. An overview of the local economy provides an understanding of institutional quality, development and the general structure of governance in Botswana. A review of the literature related to the thesis topic revealed that researchers have discussed the impact of financial integration on growth in different countries using various methodologies. This is the first study on Botswana to empirically test financial access and relate it to financial integration and other macroeconomic variables. There is previous scarcity of empirical evidence on the effects of financial integration on the local Botswana economy. This study therefore makes theoretical contributions to the literature.

Conclusions and policy implications drawn from the study could be used to inform decision and policy-makers on issues related to financial integration. Based on neoclassical growth theory, the study applies an empirical methodology to analyse time series data from 1975 to 2011. Unit root tests, cointegration and causalities were conducted prior to investigating the equilibrium relationships based on vector error correction models (VECMs). Empirical analysis began with a standard neoclassical growth model, aimed at understanding the impact of several economic growth indicators. The study findings support the existing literature with some minor differences as a result of country-specific data and the methodology applied. The data indicates that investment, trade openness, human capital and economic freedom have a positive long-run influence on growth. Inflation, on the other hand, significantly and negatively influences economic growth. The impact of financial integration on growth was analysed using four indicators: aggregate stock of external asset and liabilities to GDP; stock of liabilities as a share of GDP; ratio of inflows and outflows of capital to GDP; and ratio of inflows of capital to GDP. A negative influence on growth by financial integration was observed but the investigation clearly shows that there seems to be no robust relationship between the indicators and growth. The impact of foreign direct investment on capital market development was then analysed after estimating interactions between capital market development and economic growth in Botswana.

The findings reveal that both capital market development indicators (market capitalisation and market liquidity) have a significant positive impact on growth and market liquidity. Overall, it was observed that FDI flows have a positive impact on capital market development even though the impact is not significant. FDI flows may not have reached the threshold level necessary to affect movements on the Botswana stock market significantly. Furthermore, it is argued that the impact of financial integration on financial access to the private sector is based on the availability and accessibility of financial innovations. This analysis was done to in order to investigate both direct and indirect channels through which financial integration impacts growth in Botswana. The effects of financial integration on financial access are mixed, whilst financial innovations positively influence growth. An indirect influence of financial integration on growth through financial innovations was therefore established. Moreover, a dual positive impact exists between growth and financial development but financial integration negatively and significantly influences financial development in Botswana.

Overall, this study supports previous research, arguing that financial developments drive economic growth. Botswana should continue to strengthen its trade openness policy, develop and empower institutions and promote the rule of law in order to reap more benefits from financial integration.

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African Economic Community ..... AEC
Arab Maghreb Union ..... UMA
Augmented Dickey-Fuller ..... ADF
Automated Teller Machines ..... ATMs
Autoregressive Distributed Lag ..... ARDL
Bank Deposits ..... BKD
Bank of Botswana ..... BoB
Bankruptcies ..... BKRU
Botswana Agricultural Marketing Board ..... BAMB
Botswana ..... BEDIA
Botswana Building Society ..... BBS
Botswana Bureau of Standards ..... BOBS
Botswana Democratic Party ..... BDP
Botswana Development Corporation ..... BDC
Botswana Housing Corporation ..... BHC
Botswana National Veterinary Laboratory ..... BNVL
Botswana Power Corporation ..... BPC
Botswana Savings Bank ..... BSB
Botswana Technology Centre ..... BOTEC
Botswana Telecommunication Corporation ..... BTC
Botswana Vaccine Institute ..... BVI
Broad Money ..... BM
Central African Economic and Monetary Community ..... CAEMC
Common Market for Eastern and Southern Africa ..... COMESA
Consumer Price Index ..... CPI
Department of Building and Engineering Services ..... DBES
Department of Radiation Protection Inspectorate ..... DRPI
Department of Research Science and Technology ..... DRST
Deposits Market Index ..... DI
East Africa Sub-marine System ..... EASSY

East African Community ..... EAC
Economic Community of West African States ..... ECOWAS
Economic Freedom in the World Database ..... EFWD
Economic Partnership Agreements ..... EPAs
Exchange Arrangements and Exchange Restrictions ..... AREAER
Financial Development ..... FD
Financial Access ..... FA
First National Bank Botswana ..... FNBB
Foot and Mouth Disease ..... FMD
Foreign Direct Investment ..... FDI
Free Trade Areas ..... FTAs
Government Expenditure ..... GEX
Gross Domestic Product ..... GDP
Human Capital ..... HC
Independent Electoral Commission ..... IEC
Inflation ..... INF
Institutional Structure ..... IS
Intermediation costs and Physical Structure ..... IPS
Intermediation ..... MEDI
International Asset Pricing Models ..... IAPMs
International Financial Integration ..... IFI
International ..... .IFSC
International Monetary Fund ..... IMF
Investment ..... INV
Judicial Service Commission ..... JSC
Khokho B Holdings ..... .KBH
Land Administration, Procedures, Capacity and Systems ..... LAPCAS
Land Integrated Management System ..... LIMS
Liquid Liabilities ..... LLY
Long-run Relations ..... LR
Lower Critical Bounds ..... LCB

Market Capitalisation ..... MCAP
Market Efficiency ..... ME
Market Liquidity ..... ML
Market Size ..... MS
Market Turnover ..... MT
Market Volatility ..... MV
Memorandum of Understanding ..... MOU
Middle East and North Africa ..... MENA
Millennium Development Goals ..... MDGs
Ministry of Lands and Housing ..... MLH
National Development Bank ..... NDB
National Development Plans ..... NDPs
National Food Technology Research Centre ..... NAFTEC
Ordinary Least Squares ..... OLS
Organisation of African Unity ..... OAU
Penn World Table ..... PWT
Phillips and Peron ..... PP
Political and Economic Freedom ..... PEF
Private Sector Credit ..... PC
Private Sector Weight ..... PSW
Product Innovation ..... PI
Public Accounts Committee ..... PAC
Public Procurement and Asset Disposal Board ..... PPADB
Quality and risk ..... QL
Regional Reference Laboratory for Foot and Mouth Disease ..... RRLFMD
Rural Industries Promotions Company ..... RIPCO
School ..... SCH
Self Help Housing Agency ..... SHHA
Small, Medium and Micro Enterprises ..... SMMEs
Southern African Customs Union ..... SACU
Southern African Development Community ..... SADC

Town ..... TPS
Technical Change..... TC
Technological Development ..... TD
Trade Openess..... TO
Transport Technology Transfer Centre..... TTTC
United Nations Conference on Trade and Development ..... UNCTAD
United Nations Economic Commission for Africa..... UNECA
United Nations ..... UN
Unrestricted Error Correction Model..... UECM
Value Added Tax ..... VAT
Value of Listed Equities and Government Stock..... LEGS
Value of New Issues ..... TNI
Value of Shares Traded..... VLT
Vector Auto Regression..... VAR
Vector Error Correction Model..... VECM
West Africa Cable System..... WACS
World Trade Organisation ..... WTO

CHAPTER 1: INTRODUCTION

1.1 Introduction

This thesis explores the important issue of financial integration, which has motivated various economic policies and reforms in the developing economy of Botswana in the last decades. Even though international debates on the effects of financial integration are ongoing (Edison, Levine et al. 2002; Schularick and Steger, 2007; Chen and Quang, 2012), very few studies exist in this area regarding Southern African Development Community (SADC) and Southern African Customs Union (SACU) member states, and especially Botswana. Given that Botswana is the fastest growing economy in the region (Ahmed and Wahid, 2011), it is compelling to observe financial integration developments in this country.

Emerging economies in the African continent have followed after the industrialised nations, implementing financial integration in an effort to modernise their financial markets, hopefully grow their economies and alleviate poverty (Draper, Halleson et al. 2007). Financial integration implies that the domestic financial market is linked or intertwined with global financial markets (Volz, 2004). Fundamental to achieving these developments, the African Economic Community (AEC) was established in 1991 by an agreement between the Organisation of African Unity (OAU) and the United Nations Economic Commission for Africa (UNECA). The agreement grouped African countries into five regions but recent reports show that out of the 51 countries of Africa, 14 economic regions have been created (Draper, Halleson et al. 2007).

Regional financial integration means that a group of neighbouring countries legally agree to interlink their financial systems in order to deepen and broaden their financial markets at a higher level, over and above individual country markets (Wakeman-Linn and Wagh, 2008). Thus far, regional financial integration in Africa has been launched in: the Southern African Development Community (SADC); the Southern African Customs Union (SACU); the Common Market for Eastern and Southern Africa (COMESA); the Arab Maghreb Union (UMA); the Central African Economic and Monetary Community (CAEMC); the East African Community

(EAC); and the Economic Community of West African States (ECOWAS) (African Development Bank, 2010; Ahmed, 2011). The degree of financial integration varies across the regions; some are at implementation level whilst others are at policy development stage (Wakeman-Linn and Wagh, 2008).

Besides being a member of SADC and SACU, Botswana is also a member of international bodies like the World Trade Organisation (WTO), International Monetary Fund (IMF) and the United Nations (UN). Furthermore, as a member of regional financial integration, Botswana may benefit from the envisaged free trade areas (FTAs) and Economic Partnership Agreements (EPAs) that are ongoing between Africa and the European Union. Therefore, regional and international financial integration is expected to enhance Botswana's economic growth. Regional financial integration is considered necessary because: (i) it motivates countries to upgrade their financial reforms; (ii) it induces productivity and efficiency through competition with outside markets; (iii) it increases foreign direct investment (FDI) inflows; and (iv) it enables small African markets to trade regionally and globally, thus providing greater opportunity for growth (African Development Bank, 2010).

A number of researchers argue that regional financial integration can positively drive economic development in Africa (Wakeman-Linn and Wagh, 2008; Ahmed, 2011). Nonetheless, many setbacks can transpire in the implementation of regional financial integration. This includes: (a) abnormal distribution of capital flows across the region; (b) difficult access to capital flows by less developed economies within the region; (c) capital misallocation within the local economy; and (d) macroeconomic destabilisation (Aziakpono, Burger et al. 2009). Thus the positive effects of financial integration may take a while to manifest owing to adaptation and the institutional frameworks of local financial systems (Klein and Olivei, 1999; Volz, 2004). Furthermore, benefits from regional financial integration in Africa are mainly hampered by a 'spaghetti bowl effect' that results in lack of clarity, conflicts, and multiple and overlapping commitments by member states (Draper, Halleson et al. 2007; Wakeman-Linn and Wagh, 2008). Draper, Halleson et al. (2007) and Wakeman-Linn and Wagh (2008) further point out that while aiming for financial integration in Africa, authorities should mainly strive to enhance financial access by poor and rural communities.

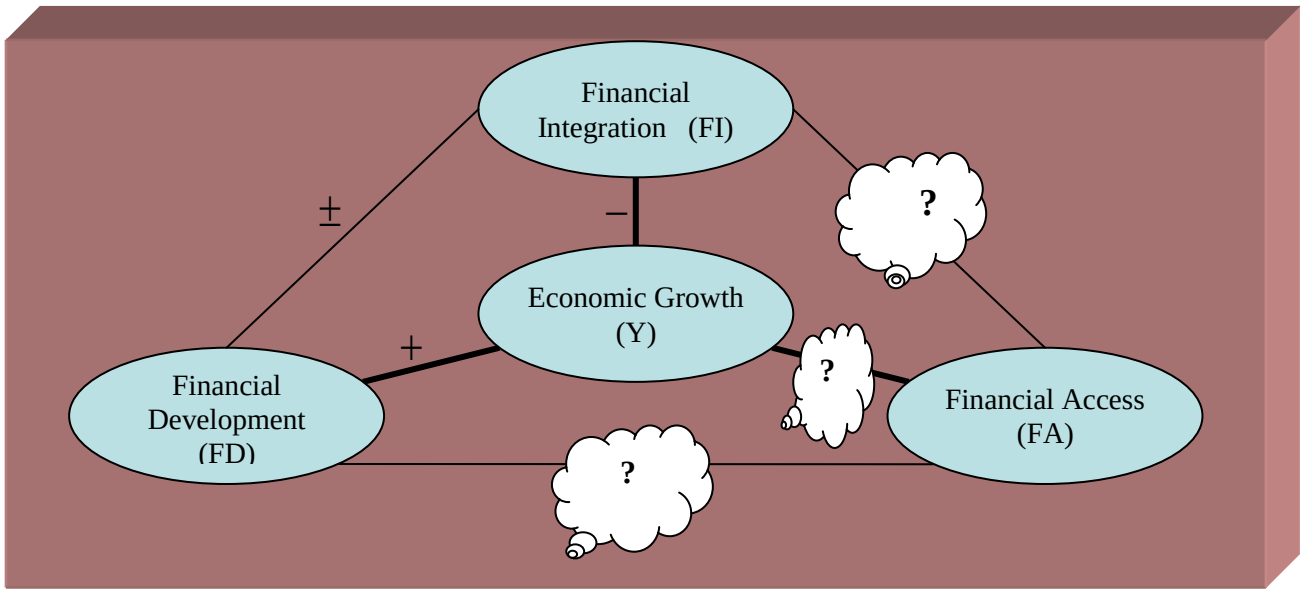
The research literature suggests that financial integration and financial development do not automatically enhance access to finance but there is a need for governments to ensure that open channels of capital flows exist in order for finance to reach where it is most needed (Volz, 2004; Khalid, Zeeshan et al. 2012). A well-financed private sector enhances growth through technological innovations, investments in high return projects and job creativity, amongst other benefits. In his 2012 budget speech, the Minister of Finance in Botswana alluded to the notion that there is a need to reduce dominance in the economy by the government and create space for private sector investment and growth (Matambo, 2012). His position is substantiated by Wakeman-Linn and Wagh (2008) who argue that government dominance in the African capital markets crowd out the private sector, resulting in narrow and illiquid markets. They further noted that African financial markets are bank oriented and, as a result, investment in projects that need long-term financing is compromised. Torre and Schmukler (2007) observed that, unfortunately, in emerging economies, the implementation of financial integration is more focused on the banking sector and less consideration is given to the capital markets (African Development Bank , 2010), yet, advocates that developed capital markets are desperately needed to facilitate FDI inflows. This research follows several other studies (Demirguc-Kunt, Asli et al. 1996; Levine and Zervos, 1996; Naceur, 2003; Mishra, Malla et al. 2010; Issouf and Fulbert, 2011; Wong and Zhou, 2011) in using capital market development to measure financial development. Unlike Meshach (2007), who used bank assets and liabilities only to measure financial integration in Botswana, this study follows current research and applies FDI flows, national assets and liabilities to measure financial integration (Ahmed, 2011; Issouf and Fulbert, 2011).

In his study on SACU member states, Meshach (2007) found out that unlike other countries within the same region, financial integration has had a significant negative impact on Botswana's economic growth. He also concluded that in Botswana, financial integration has had no direct effect on financial market development. Interestingly, his research and other related studies on Botswana found a strong positive influence of financial development on economic growth (Akinboade, 1998; Eita and Jordaan, 2010). Caution is given though, that where weak institutions and policies exist, financial integration may relate negatively to growth (Boyd and Smith, 1992; Osada and Saito, 2010). Botswana has an under-developed financial market with a

small banking sector and a very illiquid capital market. These characteristics may be playing a bigger role in the negative association between financial integration and economic growth.

Whilst literature on Botswana barely records the influence of financial integration on financial market development and growth, there is a theoretical void on whether financial integration and financial development have a significant bearing on private sector access to finance in Botswana, as illustrated in Figure 1-1. This study seeks to fill this gap in knowledge. The study is limited to empirical evidence and does not focus on policy issues. Its primary aim is to establish the magnitude of influence and the impact of financial integration on capital market development in Botswana. Furthermore, the study seeks to measure the effect of financial integration on access to finance by the private sector in Botswana. Other objectives of the study are to establish causality between financial integration and capital market development, financial integration and economic growth and to test causality between capital market development and FDI inflows. Most importantly, knowing the causal relationships between related variables will help authorities make informed decisions on policies and reforms regarding sustainable economic growth. This will be based on empirical evidence rather than on perceptions and assumptions, thus reducing the chance of bias and subjective opinions (Shahbaz, 2012).

Figure 1-1: Literature Gap



1.2 **Study Significance (Practical and Theoretical)**

This study investigates the effects of financial integration on growth from Botswana's perspective and has both practical and theoretical significance. First, unlike previous research, this study is country-specific and therefore uses time series data analysis, thus avoiding distortions and generalisation of results associated with cross-section and panel data analysis. Thus the study empirically tests cointegration and causalities (relationships) between growth, financial integration, capital market development and access to finance. Second, the study is timely since the concept of financial integration is an ongoing phenomenon in the country, both regionally and internationally. Furthermore, Botswana's financial system is currently going through great transformations, both in structure and service delivery, in order to improve its intermediation role. Therefore this study gives current observations of the effects of financial integration in the country and updates previous literature. Third, findings, conclusions and suggested policy implications drawn from the study results may be used by policy-makers and market players to develop best practices related to financial integration. Botswana is currently restructuring its economy through economic diversification, citizen empowerment and poverty alleviation strategies, amongst other things. Thus, the strategies seek to lower government dominance and promote public-private sector partnerships for sustainable economic growth. The country may benefit from financial integration in the long-run and therefore outcomes from this study may inform ongoing discussions regarding the phenomenon.

Fourth, this research adds value to existing literature as it fills agap regarding associations between economic growth, financial integration, capital market development and financial access by the private sector in Botswana. Financial integration is associated with transfer of skills, managerial 'know-how' and technological developments from industrialised to developing economies. Financial access is often prohibited by the high intermediary costs charged by financiers and in less developed countries the situation is worsened by a lack of open-minded managers and very few financial innovations. In this era of advanced technology, physical access to finance, as well as affordability and eligibility, may be made easier by innovation and creativity. Nonetheless, Beck, Chen et al. (2012) argue that *"Everybody talks about financial innovation, but (almost) nobody empirically tests hypotheses about it."* Existing descriptive

information, assumptions, and perceptions on financial innovations in Botswana may not provide a clearer guide to the public and policy-makers. Decision-makers may need to understand the influence of financial innovations on economic growth and the interactions of innovations with other economic variables as the local market integrate with global markets. Therefore this study empirically tests financial access based on financial innovations in Botswana.

Finally, this study extends the existing literature. The study validates previous findings, contributes to ongoing debates and suggests future research areas, expanding the knowledge and understanding on the subject matter. Results from this study can be used to compare and contrast research outcomes from other studies that analyse the effects of financial integration on economies of mineral and resource rich countries like Botswana.

1.3 **Research Problem and Questions**

This thesis seeks to understand the influence of financial integration on capital market development and financial access by the private sector in Botswana.

The research questions of this study are:

1. How is financial integration related to economic growth in Botswana?
2. What is the relationship between capital market development and Botswana's economic growth?
3. What is the impact of financial integration through FDI inflows on the development of Botswana capital markets?
4. What are the potential benefits of the private sector to the Botswana economy?
5. To what extend does financial integration enhance access to finance by the private sector in Botswana?
6. What policy reforms are needed to guide the implementation of financial integration in Botswana?

1.4 **International Financial Integration Overview**

Ongoing debates regarding the implementation of financial integration may be motivated by broad existing definitions of the phenomenon for the following reasons. First, certain studies define financial integration by the existence of a group of financial markets that create an enabling environment in which market players of the concerned countries are given equal opportunities, judgements and treatment to facilitate non-restricted flow of capital across borders (Baele, Ferrando et al. 2004; Tahari, Brenner et al. 2007). Second, some writers define financial integration by the degree of freedom in cross-border financial transactions in a given economy (Edison, Levine et al. 2002; Schularick and Steger, 2007; Vermeulen, 2010). Still other scholars (Held, McGrew et al. 1999; Adam, Jappelli et al. 2002) view financial integration as a practice in which no added advantages exist when investing in another country, since similar assets, returns and prices are equal across borders. Lastly, a popular definition in current research, which is adopted in this study, is given by Prasad, Rogoff et al. (2003) and Volz (2004) who argue that financial integration exists when domestic financial markets are interlinked and intertwined with other regional and/or international markets. Removal of obstacles to capital flows and unification of trade across regional and international financial markets seems to be the common theme across these definitions.

Individual economic conditions and financial developments in a country largely determine the outcomes from financial integration. Therefore efforts are continuing internationally to develop market policies and reforms, physical infrastructure, and legal and institutional frameworks that may help countries to maximise benefits from financial integration, as well as enable sustainable economic growth. Countries that embrace and implement financial integration are considered to be committed to good economic policies as well as strong political and economic discipline, according to Stiglitz (2000) and Kose and Prasad (2004). Corruption, and political and market instability causes capital flight and acts as a barrier to sustainable economic growth since investors prefer secure investment enviroments. On the other hand, an efficient and effective financial system promotes growth and offers prudent intermediation service, distributes financial resources, allocates risk, encourages savings, provides a trading platform for financial products and services, and ensures good corporate governance (Levine, 1997). Countries are encouraged

to benchmark and implement prudent corporate governance and disclosure, good credit risk pricing, reliable trading systems, and to develop various financial instruments in order to deepen their markets (Raghavan and Sarwono, 2012; Borst, 2012). Raghavan and Sarwono (2012) further argue that in order to encourage foreign participation, countries should relax trade regulations, provide tax incentives and enhance credit through default swaps and corporate repurchase agreements. Protection of creditor rights and inclusion of institutional investors enhances and promotes market growth (World Bank, 2006; Dahou, Omar et al. 2009). Financial integration facilitates development of common securities exchanges, which may help to spread of infrastructure costs among member states (World Bank, 2006). A prudent financial system mitigates the costs of transactions and information in carrying out its duties so as to encourage savings, investment and innovation (Peachey and Roe, 2004). Botswana, unlike most African economies, has well-developed physical infrastructure, a stable political landscape and upholds the rule of law and order. Nonetheless, the country has a narrow and under-developed financial system that may hinder benefits from financial integration and ongoing market reforms.

1.5 **Thesis Structure**

Chapter 2 provides a background on Botswana's economic growth. Focus is given to what has an impact on economic growth, financial markets and financial integration in the country. Discussions in this chapter cover the governance structure, institutional frameworks and national developments in Botswana, whilst showing evidence for what is actually happening. Botswana is a landlocked country with a semi-arid climate and a very small population of two million people, therefore integration may help to overcome disadvantages associated with such an environment. Both macro- and microeconomic environments, within which financial integration is implemented, have significant implications for outcomes derived from this phenomenon. The research literature indicates that the condition and structure of domestic institutions dictate the effects of capital inflows on economic growth and impact development policy decisions (Maipose, 2008; Mougani, 2012). According to Maipose (2008), Botswana's economic growth is one of the fastest in the world, with real GDP growing at an average of 9% between 1966 and 2006. The country has one of the longest serving democratic governance structures in Africa, known for its trade openness and inclusive dialogues in economic developments. Its unique governance structure, which incorporates political, judicial and traditional leadership in

upholding the rule of law and order, has ensured the economic and political freedom necessary for sustainable economic growth.

Chapter 3 details the general review of literature related to the topic of this thesis. Financial integration is an ongoing phenomenon worldwide and, as a result, a vast amount of literature exists on this subject matter. Theories on integration are still developing and debates continue to arise as investigations are initiated at country, regional and international levels. Studies seeking to understand the relationship between financial integration and economic growth reach different conclusions; some argue that financial integration promotes growth; others conclude that financial integration shrinks productivity and leads to market instability; whilst other studies find mixed outcomes. Even when observing the same country, researchers can differ in their conclusions. This may be caused by disagreements about measurements and definitions of financial integration. Whilst there is extensive literature on financial integration worldwide, there is no country-specific study on Botswana and only one cross-section study exists on SACU that investigates financial integration effects on financial development and economic growth (Meshach, 2007). Literature on the relationship between financial integration and access to finance by firms is very scarce, even at the international level.

Chapter 4 outlines the theoretical and empirical methodology applied in this study. In line with current literature (Ahmed, 2011; Shahbaz, 2012), this study was premised on the augmented Solow growth theory, which is discussed in more detail in this chapter. The study used E-Views 7 statistical software and applied a vector error correction model (VECM) for empirical analysis. Financial integration has both short- and long-term implications and, therefore, using VECM enabled observation of both the long- and short-term impacts on the local economy. Conclusions on economic growth and its factors vary from one study to another, mainly because researchers use various theoretical and methodological approaches. Furthermore, conclusions on the impacts of financial integration need not be generalised since countries differ, ranging from emerging to developed economies. Most previous studies investigating financial integration in Africa use panel and cross-section data, which generalises results over a number of countries and misses out country-specific information. This study uses annual time series data on Botswana to enable

focused and concentrated investigation of the financial integration phenomenon in the country. Thus unit root, cointegration and causality tests are used to build the VECM in this study.

Chapter 5 answers research question 1. The chapter provides a discussion on the empirical investigation of associations between growth and financial integration. A standard neoclassical growth model is tested initially to understand the impact of several macroeconomic indicators. Sustainable economic growth is promoted by capital investments, human capital development, trade openness, economic freedom and financial developments, amongst other factors. Countries with natural resource endowment and mineral wealth have been known to suffer from 'mineral-led economy syndrome' and 'the resource curse'. However, Maipose (2008) argues that Botswana has avoided both. Botswana has large mineral deposits, especially diamonds, and over the years the country has accumulated significant foreign reserves through the sale of this precious stone. Trade liberalisation and integration may promote the local economy through external market creation, competition and skills and knowledge transfer. The impact of financial integration on growth is then analysed using four indicators: aggregate stock of external asset and liabilities to GDP; stock of liabilities as a share of GDP; ratio of inflows and outflows of capital to GDP; and the ratio of inflows of capital to GDP. Researchers have measured financial integration using *de jure* and/or *de facto* indicators. This study uses *de facto* measures in order to enable comparison with previous studies on Botswana and other similar economies. Debates still exist regarding the relationship between growth and financial integration in Botswana. Worse still, empirical studies that are country-specific are scarce.

Chapter 6 attends to research questions 2 and 3. It provides a summary of the analyses of FDI impact and portfolio flows on capital market development after estimating interactions between capital market development and economic growth in Botswana. The country's financial system is divided into debt, equity and money markets. Whilst money markets or banks dominate the local financial system, the role of the capital market in economic building cannot be underestimated. Botswana's capital market has grown significantly over the years, as evidenced by the increase in the number of listed companies, new securities and market capitalisation. FDIs and portfolio inflows may help to fill the resource gap common in developing economies like Botswana. This chapter specifically focuses on the capital market part of the financial system in

Botswana. This is because the literature argues that in measuring the financial integration impact on growth, developing countries mainly focus on the banking sector and less on capital markets. Whilst debates still continue regarding the benefits of FDI flows, foreign capital inflows have the potential to deepen and broaden the local stock exchange and thereby contribute to sustainable economic growth. The literature describes the Botswana Stock Exchange (BSE) as a narrow and illiquid capital market. Therefore, observing the impact of financial integration on this market is of interest to this study.

Chapter 7 gives answers to research questions 4 and 5. Firstly, discussions are presented on the contribution of private sector to local growth and secondly the chapter provides an examination of the financial integration impact on private sector financial access in Botswana based on the availability and accessibility of financial innovations, as outlined by Valverde, Paso et al. (2007). This study adopts a definition for financial access from Africa (2012) as "*Access to finance refers to the availability of financial services – in the form of deposits, credit, payments, or insurance – to individuals or enterprises. The availability of such services can be constrained for instance by physical access, affordability or eligibility"*. In Botswana, a larger portion of the private sector is made up of small, medium and micro enterprises (SMMEs) and many researchers argue that, in Botswana, most of these firms are located in rural areas and they have less access to financial products and services (Lisenda, 1997; Gabaraane, 2003; Genesis Analytics, 2003; Jefferis, 2007; Jefferis and Tacheba, 2010; BoB, 2013). Financial innovations and creativity have the potential to lower intermediary costs and promote access to finance. Therefore this study empirically tests the impact of financial innovations on economic growth and thereafter establishes the influence of financial integration on innovations in Botswana. Financial innovations are divided into two sets: (1) business innovations; and (2) technological innovations. Business innovations are measured using bank investments and loans to the private sector, whilst technological innovations include automated teller machines (ATMs) and bank branches. Recent technological developments transferred from developed countries and adapted by banks in Botswana are expected to benefit the private sector and increase productivity in the economy.

Chapter 8 draws conclusions and policy implications from the study results, as well as highlighting study limitations and future research areas and thus answers research question 6.

CHAPTER 2: BOTSWANA – AN ECONOMIC BACKGROUND

2.1 Introduction

Botswana is one of the African economic 'tigers' and a success story of Africa. Background to the country's economic success is discussed in this chapter. The country boasts a continuous and rapidly growing economy in Africa. Since its independence in 1966, Botswana moved from a low income to a middle income class status. Mineral resources, especially diamond mining, and beef exports have seen the country's revenues accumulating from the independence era to date; from its poor and invisible colonial status to international stature. Its outstanding record of national development (Botswana Government, 2013) is driven by sound macroeconomic policies, political stability, a strong legal framework, good infrastructure and a non-discriminatory culture. One of the country's most appreciated attributes is its open door policy (a friendly and inclusive market environment) in which the government co-exists with the parastatal and private sectors, as well as its neighbours and the world at large. Its central geographical positioning in Southern Africa plays a pivotal role in regional trade. But its success story is not without challenges. These include unequal income distribution, lack of prudent financial management, HIV-AIDS, unemployment and poverty. Botswana must address these challenges to avoid a reversal of its economic achievements.

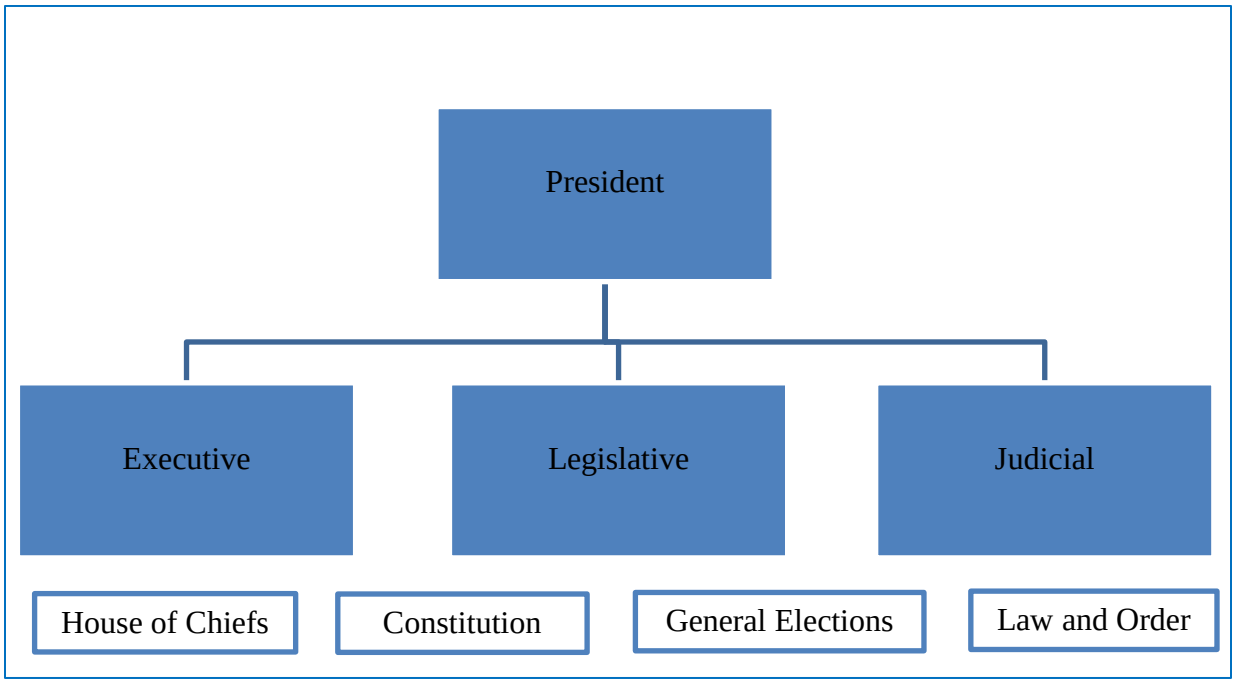
Botswana has a small population of about two million and its governance is based on democratic principles; governance for the people by the people. Thus, the economy of Botswana is meant to be built and enjoyed by its nationals. The general governance structure for the country, as shown in Figure 2-1, is distributed between the three arms of government: the judicial, executive and legislative. The President, as the head of state, oversees the nation building structure. The legislative is composed of the President and the National Assembly (members of parliament); entrusted with the making of constitutional laws that govern the nation. The judiciary is an independent and autonomous body that ensures justice prevails and is the right of every individual in the country. The court of appeal, high court, magistrates' courts and customary courts make up the country's judicial system. Botswana upholds the rule of law and therefore

decisions made at the courts are free from political interferences. Foreign investors are attracted to Botswana knowing that their human and property rights are legally protected. The executive arm of government is composed of the President, Vice President, Cabinet members and Attorney General. Cabinet ministers are heads of ministries and government departments, both at the central and local level. The executive is also free and independent of political influence so that product and service delivery by public institutions is not biased towards political affiliations. The House of Chiefs is made up of 'Dikgosi' or tribal leaders and they advise all three arms of government on regulations pertaining to cultural matters. Economic Building the economy in Botswana is based mainly on the constitution, national vision, national pillars, national development plans (NDPs) and international agreements (like the millennium development goals, also known as MDGs). The national vision guides economic development towards specific goals within a given timeframe whereas national pillars are the values to be upheld in order to realise the vision. The five national pillars are: democracy; discipline; dignity; delivery; and development (the 5Ds). Currently, the country is guided by Vision 2016 themed, 'Prosperity for all,' a five-year plan that is ending in 2016. NDPs are economic building plans that identify national investment projects to be achieved every five years. It is through the NDP that the country's resource allocation is completed to cover both recurrent and development expenditures. NDPs assist in ensuring that scarce resources are not misallocated to projects that have no economic value-add. The private sector in Botswana therefore benefits a great deal from the national governance structure, since elements of trade integration, openness and economic freedom are upheld by the existing authorities. Furthermore, private sector growth is promoted by government through company participation in both planning and actual implementation of development projects. The cordial working relationships between the three arms of government enhance economic developments in the country since this creates the stable political, economic and social landscape necessary for resource allocation and production growth.

Botswana's economic growth is enhanced by the country's prudent management of its resources. Even though the country boasts large external financial reserves and natural resource endowments, cases of corruption and financial misappropriation are minimal. Unlike other African states where economic landscapes are unstable, the local economy base is solid and the effects of this can be seen in the country's growth in human capital developments, infrastructure

developments, and increase in FDIs and international associations. Sustainable economic growth is envisaged for Botswana if the country's leadership continues to uphold the democratic principles.

Figure 2-1: General Structure of Governance in Botswana



2.2 Political and Legal Framework in Botswana

Politics and economics are correlated; where the political landscape is stable and accommodating, positive economic growth is realised. Politically unstable nations worldwide (especially in Africa) have records of economic corruption and crises. As indicated, Botswana prides itself on being one of the most politically stable nations in Africa because of its democratic rule. The country has had four peaceful presidential successions within its 49 years of freedom from the British protectorate. The rule of democracy prevails; hence citizens willingly elect their political representatives to power without discrimination based on gender, religious affiliations, socioeconomic status and cultural background. Thus politicians in Botswana enjoy freedom of speech whilst citizens are given an opportunity to freely express their rights through their votes. Since politics in Botswana are gender neutral, women are given equal opportunity to

compete for political positions with their male counterparts, without favour. Organisations like the Botswana National Council for Women have been established mainly to encourage women to participate in political leadership. Voting rights are largely inclusive, since citizens aged 18 years and above are allowed to vote. There is an increased trend in youth participation in voting as witnessed during the recent 2014 general elections. This may signal youth awakening to issues of economic empowerment and employment creation, which have been negatively affected by increasing rates of unemployment in the country.

The political structure is made up of multiple political parties even though only one party, the Botswana Democratic Party (BDP), has ruled the nation since independence. Constitutionally, elections are held every five years. A separate constitutional body known as the Independent Electoral Commission (IEC) has been put in place to ensure that elections in Botswana are orderly and non-exclusive. This Commission is tasked mainly with educating the nation about elections, and overseeing the election process to establish free, fair and competitive elections across the country. The political structure is such that members of parliament and councillors are elected into power whilst the President is appointed by the ruling party. The concept of 'majority rules' is applied, therefore any political party that wins more parliamentary seats becomes the ruling party. The President in turn appoints cabinet members who are ministerial heads. Other appointments of specially elected members are also at the grace of His Excellency. Parliament creates legislation, which governs national activities.

Legalised institutions safeguard human and property rights of both individuals and corporations in any given nation. The existence and prudent operation of legal bodies signals good governance and the country's commitment to protect both local and foreign investors. Legally stable countries attract FDIs and portfolio flows and discourage corruption. This thereby promotes capital accumulation and economic growth. Furthermore, legal institutions mitigate labour-related issues giving fair judgements and thus lower incidents of employer-employee exploitation. A specific Ministry of Defence Justice and Security has been assigned to strategically coordinate all legal arms, comprising the judiciary, army, police service, prison department and the attorney general's chamber. The combined efforts of the legal entities provide a safe and a peaceable environment in which democracy and human rights are held in

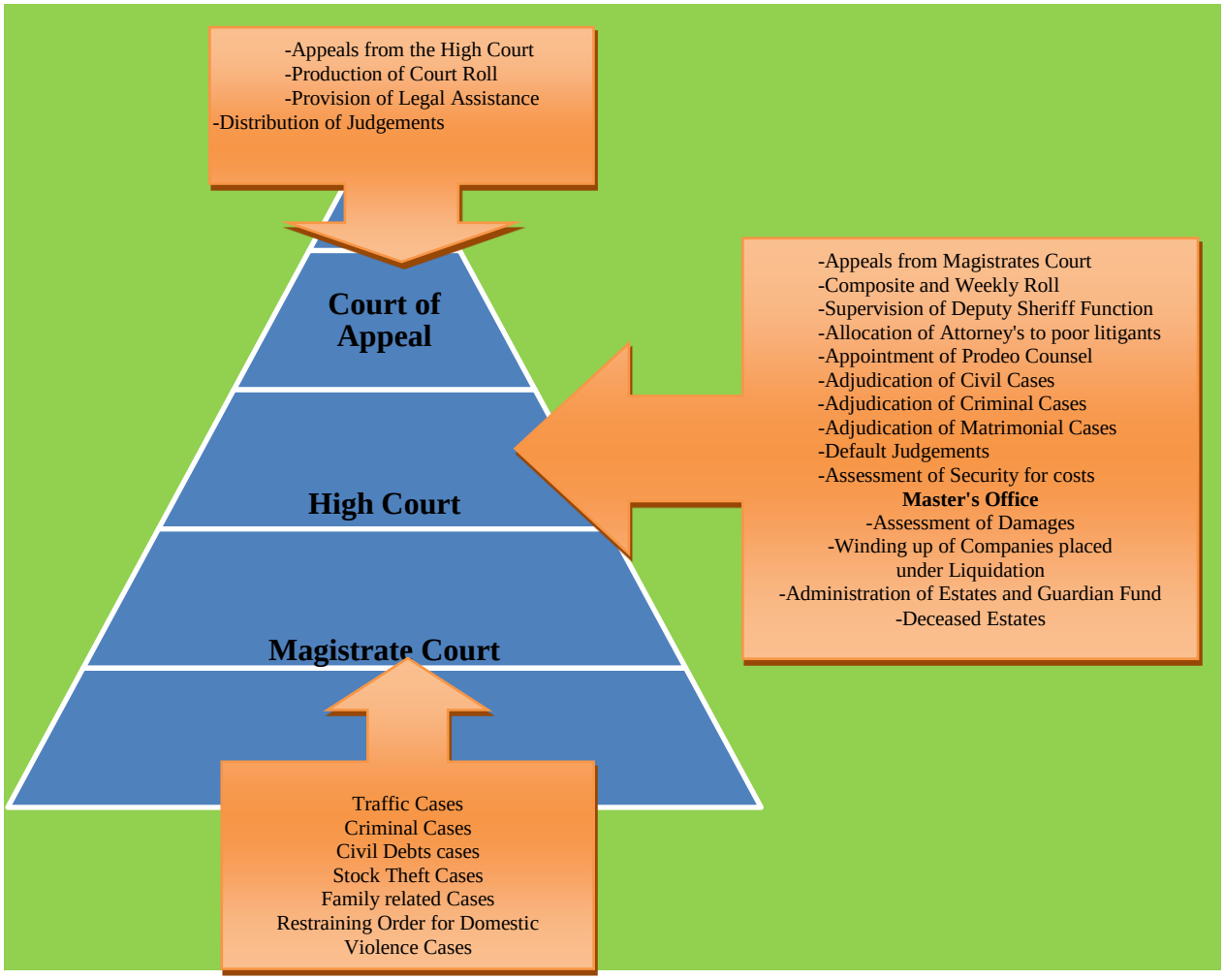
high esteem. The judiciary constitutionally exists independent of both parliament and executive and has its own autonomy. At the top of the institution is the Chief Justice who is assisted by judges, registrars and magistrates. The Chief Justice supervises both the higher and lower courts from the Court of Appeal, High Court to the Magistrate Courts. All the judicial officers, except the President of the Court of Appeal and the Chief Justice, are recommended by the Judicial Service Commission (JSC) and then appointed by the Head of State. Thus the President of the Court of Appeal and the Chief Justice are appointed by the President without a JSC recommendation.

Since Botswana used to be a British colony, the country has two sets of laws - Customary Law and the Roman Dutch Law. The Customary Law is indigenous and mainly applied to the indigenous citizens, whilst the Roman Dutch Law has been adopted from the colonisers and applies to both citizens and non-citizens. Across the nation, there exist Customary Courts (Kgotla) presided by traditional leaders (Dikgosi) who are custodians of the Customary Law. Nonetheless, the judiciary has got powers to pass final judgements on any of the laws. Accordingly criminal and civil cases are adjudicated and can be appealed from the Customary Court to the Court of Appeal and such cases are transferred though the system expediently until final ruling is made without any discrimination. The specific responsibilities of each court are illustrated in Figure 2-2. The Kgotla setup is a pure expression of democracy in Botswana. Besides issues of adjudication, the Kgotla is a physical structure where village development issues are discussed in consultation with the village community. The villagers gather at the Kgotla during meetings called by the Kgosi and they are given an opportunity to freely express their views and grievances to the leadership on developmental issues and even on issues pertaining to daily living. The Kgotla arrangement is highly respected, so much so that even the President and the executive follow this custom when addressing villagers on national development issues. The Kgosi is assisted by elder tribesmen and his uncles to ensure fair and informed judgements.

The Attorney General’s Chamber is mainly assigned to legally advise the government. This responsibility is carried out through various departments within the Chamber (Directorate of Public Prosecutions Division, Corporate Services Division, International and Commercial

Division, the Legislative Drafting Division and Civil Litigation Division). In order to deal with issues of corruption in the country, the Directorate on Corruption and Economic Crime was constitutionally set up in 1994. The Directorate has three main assignments: (i) to investigate suspicions of economic corruption and crime; (ii) to curb corruption through frequent and random auditing of business systems in parastatals and government divisions; and (iii) to educate and engage the public on issues of corruption. Nonetheless, all the legal institutions serve the purpose of ensuring that law and order prevails in the nation and the institutions work harmoniously together such that the legal landscape in the country is stable, efficient and effective. Furthermore, the open, democratic and legalised institutional framework existing in Botswana encourages citizens to freely participate in nation building projects hence supporting productivity and economic growth.

Figure 2-2: Botswana's Judicial System



2.3 The Executive and Economic Growth in Botswana

The executive arm of government in Botswana is the body tasked with the national resource allocation of human, physical and financial capital. Inappropriate distribution of resources may lead to unequal economic empowerment amongst citizens of the country. National resources are meant to be invested in productive projects and thereby increase employment, distribute income, alleviate poverty and improve the standard of living. Thus human capital and infrastructure developments are necessary for sustainable economic growth. Poverty alleviation has been at the core of economic policies in Botswana and through these services and products offered by various ministerial departments, resources are allocated to the needy country-wide. Socioeconomic responsibilities are also observed in the operations of the executive sector as basic and free health, quality education, housing, water, transport and communication systems are offered by the government nationwide. In order to ensure timely delivery of public goods and services, government has decentralised service delivery through the establishment of central government and local government. Central government provides the headquarters for government ministries and local governments are empowered to make independent decisions based on the specific needs of each district.

Decentralisation of the public service further improves resource management and accountability at lower levels of governance (Osei-Hwedi, 2004). Nonetheless, Botswana, like other nations in the continent, suffers from rural to urban migration attributed to formal sector employment being offered mainly in urban places. Most government facilities that offer more employment opportunities are based in major cities whilst rural departments are barely staffed. There is therefore a challenge of job creation in the country, which must be met through expansion of services offered and further decentralisation of ministries to the rural areas. Alternatively, private sector investment in rural places can be encouraged through government's provision of quality infrastructure and lowering the cost of doing business in rural parts of Botswana. For example, tax subventions and exemptions can be offered to rural investors who seek to collaborate with government in delivering basic services to rural dwellers. Nonetheless, all ministries are tasked to implement portions of the NDPs that fall under their respective portfolios and therefore

innovative, skilful and open-minded management is required to ensure delivery. The NDPs sustain and guide economic developments in Botswana and hence they are given a high priority. Ministries are headed by accounting officers who are public servants and, though not politically affiliated, report to the respective Minister. The annual national budget exercise allocates resources for both recurrent and development expenditures proportionally to every ministry and therefore each ministry is expected to contribute positively to economic growth in Botswana. To ensure prudence and minimal misuse of resources, every year through the Public Account Committee, ministries are required to account publicly for resources allocated to them.

2.3.1 Agriculture

The agricultural sector contributes significantly to economic development in Botswana through provision of food security, employment creation, and capital accumulation and investments. The sector has both traditional and commercial activities in arable and horticultural farming. Agricultural stakeholders are subdivided into households, corporate and government, but the Ministry of Agriculture coordinates all agricultural activities nationwide to ensure sectoral developments and stability. Statistics shown in Table 2-1 illustrate that the agricultural contribution to GDP increased significantly from 3.9% to 7.8% between years 2010 and 2011 respectively. At independence and several years after, the country accumulated substantial amounts of revenue through beef exports. The Botswana Meat Commission, which is a parastatal charged to oversee meat trading, has been exporting large amounts of beef to Europe and other nations worldwide. External trading in beef potentially grows the local financial market since sales transactions are channelled through local banks and the country can also benefit from exchange rates. The beef market was negatively impacted by foot and mouth disease (FMD), which led to periodical market closure. FMD is a very contagious disease and therefore Botswana was required to apply preventative measures to avoid the spread of the disease to neighbouring countries and even to its trading partners internationally. Some of the disease control measures included infected livestock culling and demarcations. As a result, the cattle population was significantly reduced. Cordon fences were erected country-wide to demarcate farming zones, enabling FMD to be contained and controlled within the affected region and thus avoid its spread to other zones.

Table 2-1: Real GDP growth; (%) Contribution per sector

Sector	2011	2010
Agriculture	7.8	3.9
Mining	0.9	6.7
Manufacturing	12.1	6.6
Water and Electricity	5.4	5.5
Construction	25.4	15.4
Transport and communication	7.2	5.9
Tourism	5.1	9.1
Financial and business service	3.8	4.5
Government	4.9	0.4
Social and personal services	5.4	3.6

Source: BoB (2012)

The disease control measures demonstrated the country's commitment to growth of the beef industry and, eventually, sustainable economic development. Furthermore, investment in agriculture has proved to be one means of employment creation. In 2012 there were 30,168 farm labourers in Botswana (CSO, 2012). The local agricultural labour market is dominated by male labourers, which are recorded at 28,668. These figures are not a surprise since farming is generally associated with men. Women in Botswana, as elsewhere in Africa, are housekeepers and caregivers, whilst men are considered household income providers. Therefore men seek employment whilst women stay at home to care for family members. It is further observed that the educational background of farm labourers varies: 16% have secondary education; 40% are primary educated; 43% have no education background; and the rest have non-formal education. An educated workforce is more innovative, strategic, effective and efficient in production. There is need therefore to empower the farm workers with appropriate education in order to maximise labour potential and increase productivity, and hence grow the agricultural sector in the country. Further analysis of employment in the local agricultural sector shows the distribution of labour per nationality. The total of farm labourers at 30,168 is made up of 2,331, 230, 20 and 4

labourers from Botswana, Zimbabwe, SADC and other countries respectively. Thus agricultural growth in Botswana results from integrated efforts and signals Botswana's trade openness policy, which allows foreigners to benefit from the country's markets. Foreign employees in turn transfer to the local industry new knowledge and skills that may enhance growth in agricultural productivity.

Productivity in agriculture is further enhanced by the existing prudent institutional structures that involve agricultural training, business advice, laboratory services, support schemes and initiatives, licences and permits, livestock and crops departments (MOA, 2015). There are several local agricultural training institutions, the largest being the Botswana College of Agriculture. Other rural training centres have been set up across the country to offer short courses to farmers to develop their skills and increase capacity. Furthermore, services have been decentralised such that each town and village has an agriculture office with a small staff responsible for training and assisting farmers in the respective places. The office acts as a broker between farmers and higher authorities. Therefore, farming activities are coordinated locally whilst challenges and difficulties faced by farmers are identified and dealt with in a timely manner in order to avoid poor productivity caused by delayed service delivery. Government agricultural services and assistance are freely offered to willing citizens regardless of age, race or gender. Nonetheless, the growth of the agricultural sector in Botswana is mainly concentrated on livestock farming and less on the horticultural sector. Botswana has a semi-arid climate characterised by little rainfall and long periods of drought, therefore the environment is not conducive to ploughing. The country is heavily dependent on imported foodstuffs from neighbouring South Africa and other nations in the region.

The growth of the agriculture sector is not without challenges. The sector experiences poor yields in crops and high livestock mortality because of drought. Furthermore, there is the challenge of concentrated traditional farming instead of commercial productivity. Traditionally, Botswana's farming was done for consumption, not for trading purposes and, as a result, most farming activities are for individual household benefit. Botswana's food security is also compromised by heavy reliance on other countries' produce. In this era of financial difficulties, farmers are encouraged to shift their efforts towards profit-making, seeking productive

investments in agriculture that could benefit both individuals and the larger economy (Tlhalefang and Mangadi, 2013). The government has collaborated with the private sector to find solutions to make agricultural investments resilient and productive in the long-run. Some of the initiatives and innovations involve investment in farm technologies, financial schemes and market creation. Farm technologies include necessary tools and equipment that enhance productivity using modern innovations. Some of these innovations are soft and intangible, like skills and knowledge transfer, but some technologies are physical, like plant and machinery.

In order to increase livestock production at lower cost, artificial insemination and vaccinations are provided free of charge. Livestock farmers are also offered supplementary feeds at subsidised prices. Crop producers on the other hand are freely assisted with tractors for seed broadcasting and harvest, saving them both time and money. Farmers are also offered various financial schemes in the form of grants and loans to equip them to expand their farming business. Such financial access helps farmers invest in modern irrigation equipment, making them less dependent on unreliable rainfall. Financial market development is therefore also enhanced through agricultural investments. Markets for local produce have been created both in the country and beyond. The Botswana Agricultural Marketing Board (BAMB) buys fresh farm produce of crops in bulk from subsistence farmers and sells them to the larger population. Since small farmers produce in small scale, they fail to secure market from buyers in need of bulk purchases. Therefore, the BAMB consolidates small farmers' efforts under one roof and sells to large buyers. Small producers are also assured of revenue from the BAMB and saved from loss of income through perished products. The government has further created external linkages for selling local produce to overcome the small market population in Botswana. With all the strategic efforts put in place, agriculture is envisaged to add more economic value and increase employment and income to alleviate poverty in Botswana.

2.3.2 Tourism

Botswana is one of the best tourist destinations in Africa. The tourism sector is the second largest contributor to Botswana's economic growth. Researchers argue that productivity can be increased through further tourism sector development (Makochekanwa, 2013). This includes

employment creation, poverty alleviation, export revenues and investment. Makochekanwa (2013) provided statistical evidence that the economic contribution of tourism in Botswana had grown significantly from 2000 to 2012. The tourism sector contribution to GDP has grown from 6.5% to 6.8% in 2000 and 2012 respectively and the share is equivalent to US$0.7 billion and US$1.4 billion in the respective years. Meanwhile Table 2-1 indicates that the tourism sector's contribution to GDP lowered significantly from 9.1% in 2010 to 5.1% in 2011.

The flow of tourists into Botswana brings much needed foreign currency since most tourists are from European nations that have stronger currencies than the local Pula. Thus whilst the tourist sector develops, local financial markets also benefit from foreign currency flow and exchange. Although South Africa is the leading economy in Africa's tourist industry, Botswana still has unique characteristics that give it a competitive edge above its powerful neighbour. Botswana boasts of its undisturbed natural beauty, with abundant wildlife and flora. The country's economic freedom, low corruption and political stability also offer a safe environment for vacations and game viewing.

The tourism sector includes investments into hotels, lodges and many other holiday resorts. There are also spill-over effects into other business sectors since employment and business opportunities arise for food vendors, security companies, beauty and fashion, travel and entertainment industries, amongst others. Employment from tourism was recorded at 43,000 in 2000 and increased to 49,000 in 2012 (Makochekanwa, 2013). Since the tourism industry is based mainly on natural resources located in specific areas in the country, locals in the affected places tend to benefit more from the employment opportunities that arise. Even unskilled and less educated locals find job opportunities in casual employment, such as cleaning, security or as tour guides. Employment in the tourism sector therefore financially empowers rural and disadvantaged communities that would otherwise remain outside the formal labour market. Investments into the tourism sector are in both human capital and infrastructure. Investors in the tourism industry demand a knowledgeable and informed workforce with international exposure. Therefore, there is a need to train and expose local employees to foreign markets in order to attract and sustain the influx of tourists.

Investments into capital goods like buildings and roads are also of the utmost importance. Tourist accommodation should meet international standards, offering the comfort and luxury demanded by tourists. Botswana's tourism industry has achieved such, with excellent accommodation facilities both at the hotel and outdoor camp level. The country has a solid tarred road network, linking all major villages and towns, and there is an efficient airline operation. Travelling is therefore made easy for tourists within the country. Rural areas also benefit from infrastructure investments in tourism. Another competitive advantage is Botswana's central location in the SADC, making it an exit point to many countries in the region.

Tourist attractions include the Okavango River, which lies on the north-western part of the country. This perennial river flows from neighbouring Angola and spreads into the largest inland delta in Africa. This delta hosts a variety of wild animals, marine life, birds, reptiles and plants. As well as government revenues collected from the safaris, villagers living in the vicinity of the Okavango River also benefit from the river tourism. Another popular site is the Chobe River, which creates the border between Botswana, Namibia and Zambia. This river is a gateway for merchandise freight through and into Botswana from neighbouring countries. The river also hosts various wildlife, especially elephants that graze freely along the river banks. The ancient Tsodilo hills, Makgadikgadi salt pan, Tswapong hills and the Kgalagadi desert are also major tourist attractions in Botswana.

The Ministry of Environment, Wildlife and Tourism coordinates both social and economic activities that affect the environment to ensure that the natural resources are conserved and protected for sustainable environmental and economic health. Existing strategies deal with issues that cover a wide scope of meteorological services, tourism, pollution control and waste management, forestry resources and wildlife. The Botswana Tourism Board acts as a link between government and the private sector. Investments into the tourism industry in Botswana are mainly private and some of the big companies, like Wilderness Safari and Chobe, are listed on the BSE. Thus tourism attracts foreign direct investments that encourage capital accumulation and increase economic growth. The expansion of the tourism sector in Botswana may lead to increased financial and capital market developments. Continued efforts to strengthen the tourism

industry by both the private and public sector should be encouraged to ensure sustainable economic growth in Botswana.

Several innovations have been implemented to enhance the tourism industry in Botswana, such as market integration, modern facilities, entertainment and man-made tourist sites. The local market players have integrated their businesses to related ones in the region and they have built systems that link tourists from Botswana to other countries. That is, tourists who wish to make hotel bookings and safari tours in other countries can actually book and plan their trips through travel agents and hotels in Botswana. These businesses have established arrangements with foreign markets and can therefore cut costs related to searching for new destinations in the region. In pursuing international standards, local companies in the tourism business have invested in modern facilities like electric boats and electric cars that transport tourists during boat cruises or for viewing wildlife. Tourism in Botswana has also been diversified to include creative arts, like music and drama. Botswana has unique and rich varieties of traditional music and dance and local artists have seized the opportunity to export their talents to foreign markets. Cultural exchange concerts are held in the country and this initiative attracts foreign travellers to Botswana. Local communities have packaged their diminishing cultural heritage, such as food, traditional housing, language, songs and dance, into the tourist attraction business. While tourists pay to view and listen to community stories, revenue is collected to finance village developments and support economic growth.

The tourism sector faces challenges through the extinction of wildlife and flora, conflict associated with the co-existence of humans and wildlife on diminishing land, waste disposal, overlapping products and services, ownership rights, community income distribution and mismanagement of natural resources. Tourism in Botswana is threatened by the high mortality rates of rare species of animals and birds through natural death and poaching. Authorities have deployed security officers in affected areas to safeguard the wildlife from poachers. Animal scientists are also engaged in preserving generations of rare species. Waste management techniques have been put in place and tourists are taught about waste disposal upon entry into the country. There is a need for proper waste disposal to avoid environmental pollution and infections. The tourism market is flooded with service providers and this has led to the offering

of overlapping services. Unfair competition and illegal market practices may arise from the saturated market. Authorities are now limiting licence issuance to traders in order to control the market. Other challenges of ownership and income management and distribution arise from private sector investment into community lands. Disagreements arise relating to the sharing of resources generated from tourists' visits to community sites that have been developed by private investors. Consultations regarding issues of property rights related to natural sites are underway. Despite the challenges experienced in the local tourism sector, outputs from the industry positively drive economic growth in Botswana and the government should continue to strengthen the sector and empower it.

2.3.3 Infrastructure, Science and Technology

British colonialists left Botswana with almost no physical infrastructure, unlike neighbouring countries, which have schools, roads, hospitals and railway lines from the colonial era. The nation therefore had to plan and build its infrastructure developments on its own. The country employed its resources prudently and over time it constructed solid roads, hospitals, schools, markets and government offices in order to enable efficient and effective service delivery to the public. Most of the construction work involved manual labour and therefore a lot of manpower was employed in the construction industry. Many households are sustained by income derived from construction, helping to reduce poverty levels.

Infrastructure developments, science and technology positively influence economic growth through employment creation, capital gains and increased productivity. The infrastructure, science and technology sector was the highest contributor to real economic growth in years 2010 and 2011 as shown under Table 2-1. The sector contributed 15.4% and 25.4% of GDP in 2010 and 2011 respectively. However, Botswana is a developing economy and needs to invest in infrastructure that will support innovations in the production of goods and services. Private sector development can also be encouraged and strengthened through national investments in infrastructure and technology. Specialised and technical skills are generally associated with the private sector. For example, state-of-the art building construction, characterised by international design, has been created by the private sector in Botswana. Therefore infrastructure

developments must involve public-private collaborations for sustainable economic growth. Infrastructure is capital asset that stores wealth for a longer period and appreciates in value over time. The sale of any fixed asset has the potential for capital gains to the investor.

Equally important to infrastructure is investment in research and development in science and technology production. Outputs from scientific research are usually derived after a long period yet the yield can be of great economic benefit. The government of Botswana prioritises building and innovation projects and treats such activities as profitable investments for the long-term. Technology is embraced in all sectors of the economy in Botswana and this has led to the growth of the manufacturing industry, public service delivery and the private sector. The use of technology and machinery in manufacturing promotes bulk production within a much shorter period of time when compared to using manual labour. Thus technology helps production companies to be more efficient and effective and to overcome the problem of limited human capacity. The Ministry of Infrastructure, Science and Technology coordinates all government building projects and innovations in science and technology. Three departments: the Department of Building and Engineering Services (DBES); the Department of Research Science and Technology (DRST); and the Department of Radiation Protection Inspectorate (DRPI), have been established under this ministry to monitor the implementation of these activities. The DBES develops building plans and designs, engages and supervises building contractors. Contractors and consultants are sourced from the private sector. The department, through its professional staff of engineers, inspects and certifies the completed projects before handing them over for occupation. It also maintains and repairs buildings, through its district depots, when the need arises to ensure that benefits are derived into the future.

Botswana's trade openness policy has led to transfer of new technologies from the international market. Investments into scientific innovations have improved standards of productivity in the economy. All national activities in the country related to innovations in science and technology are coordinated by the DRST. The department carries out research and informs national policy reforms and regulations on the implementation of proposed scientific and technological innovations. The DRPI oversees the usage of nuclear technology to ensure a safe environment. Nuclear technology is widely used for medical purposes, for example in x-rays, mineral

explorations, agricultural activities and in construction. The technology is commonly believed to be more environmentally friendly than coal and other substitutes, especially in the production of electricity. Even though atomic energy is profitable, it can be harmful to both citizens and the environment at large if it is not properly handled. Therefore, for national security purposes, the DRPI has the task of developing guidelines and controls on monitoring and usage of atomic energy. Furthermore, the department carries awareness campaigns to educate the public on related issues. In 2002, Botswana joined the International Atomic Energy Agency (IAEA) to tap into international strategies for managing nuclear energy. In 2006, the Radiation Protection Board was established to advise government on issues and decisions relating to nuclear technology.

As indicated earlier, growth of the manufacturing sector has also been enhanced by the use of technology. Firms nowadays invest in science and technology, creating new services and goods that help them remain competitive. Competition determines the survival of firms in the market. Notable company innovations and research in Botswana have been discussed at length in previous research (Lemarchand and Schneegans, 2013). Innovative and research institutions in the country are: the National Food Technology Research Centre (NAFTEC), the Botswana Bureau of Standards (BOBS), the Botswana Technology Centre (BOTEC), the Rural Industries Promotions Company (RIPCO), the Botswana National Veterinary Laboratory (BNVL), Khokho B Holdings T/A Dobi Foods (KBH) and the Botswana Vaccine Institute LTD (BVI).

It is NAFTEC's mandate to ensure that local food safety, nutritional content and processing satisfy set international standards. The BOTEC conducts research and informs national policy in civil engineering, renewable energy, architecture, electronics engineering, as well as information and communication technology developments. The RIPCO researches into agricultural equipment for commercial purposes. The company trains entrepreneurs and installs equipment at clients' sites, thereby empowering firms with the skills and knowledge necessary for profitable production. The BNVL supports livestock production in the country through the provision of laboratory services that are veterinary related. The company diagnoses animal diseases and tests to provide assurance on the quality of animal feeds and food originating from animals. The BVI manufactures and sells vaccines for livestock, as well as providing professional services,

especially on the treatment of FMD. In SSA, BVI is the Regional Reference Laboratory for Foot and Mouth Disease (RRLFMD) and the institution also provides FMD information to national veterinary laboratories across Africa. As discussed previously, FMD outbreaks must be contained as the disease negatively affects economic growth.

Botswana faces a number of challenges related to the promotion of technological developments. (1) Funding of innovation and technology in Botswana is still a challenge. Of the seven innovative and research institutions in the country, only KBH is privately-owned and funded, other intuitions are parastatals and mainly government funded. The lack of private funding may limit the scope and expansion of services and goods produced by these institutions. (2) The country's workforce lacks the research and innovation skills needed to embrace current technologies, mainly because of Botswana's traditional approaches to education. However, science and technology is now promoted in learning institutions, such as medical schools, universities of science and technology, research centres and technology hubs. These have been established to empower human capital relating to science and technology, with the aim of building capacity and productivity for the future. (3) There is a need to coordinate efforts and outputs from the existing national resource centres (innovation and technology hubs, agricultural hubs, educational hubs, health hubs and the diamond hub) in order to maximise gains from such investments, avoid duplication and address the disaggregation of knowledge and skills.

2.3.4 Land and Housing

Land is a limited resource in any given economy, therefore, its prudent use and management for economic and social development is highly recommended. Botswana's approach to land administration is unique compared to other African countries. The country's innovative land tenure, policy and administration, which respect values, statutory and customary rights, are some of the drivers of economic growth and good governance (Martin, Kalabamu et al. 2003). Botswana's land administration system is envied by most African countries, which have experienced conflicts, bloodshed and economic corruption related to land distribution. One study (Tagini, 2001) argues that land tenure determines FDI inflows. According to Tagini (2001), foreign investors are not attracted to countries where land tenure security is uncertain and land

policy is not transparent. In Botswana, the state owns and allocates the land, which is grouped into three categories: (i) tribal land; (ii) freehold land; and (iii) state land. The largest portion of land is classified as tribal land (71%), followed by state land (25%) and freehold land (4%) (Martin, Kalabamu et al. 2003).

Tribal land is the communal land that constitutes all villages and rural places in Botswana and that fact that it represents the largest portion of land in the country implies a certain level of citizen empowerment. Smooth and systematic tribal land allocation is done through the Regional Land Boards, which consult with tribal authorities and other stakeholders in decision-making. Freehold land is privately-owned and is not therefore under Land Board supervision. The owners enjoy perpetually exclusive rights to trade their property at will (BEDIA, 2013). All cities, towns and wildlife areas are considered state land. The Department of Lands is responsible for allocation of state land.

Land administration in the country is guided by statutory legislation in several forms: the Constitution of Botswana; the Town and Country Planning Act; the Tribal Land Act; the State Land Act; the Deeds Registry Act; and the Land Control Act. Thus law and order are upheld in Botswana to protect property rights of land users. The Ministry of Lands and Housing (MLH) was established to coordinate and administer all land allocations in Botswana. This Ministry formulates land management policies and reforms to guide and regulate land usage in Botswana for sustainable growth. It is very important that land is used according to its allocated purpose to ensure coordinated developments and avoid land misuse. The MLH's specific assignments include land survey and mapping, provision of geographical information, physical planning, settlement planning, land registration, tittle deeds registry, land management, building sewerage, reticulation services provision, installation of streets lights and housing. Accordingly, land is serviced before allocation to citizens. In order to maintain and sustain land services, owners are charged rates annually, with charges payable to regional councils. Every indigenous citizen of Botswana (18 years old and above) is equally entitled to free land allocation for residential purposes anywhere in the country within demarcated areas. The government enters into a contract to bind the owner to develop the plot within a maximum of five years. Failure to do so results in the land being forfeited to the state for reallocation. Individuals and firms are allowed

to have tittle deeds that secure their property rights on a lease basis. A residential land lease equals 99 years but commercial property leases run for 50 years. Owners are allowed to sell their leased properties only after development. However, the MLH is responsible for ensuring developments are done in government plots. Furthermore, some residential serviced plots are sold to the public in urban areas through the Department of Surveys and Lands.

Systematic and prudent lands and housing allocation is aimed at ensuring that both government and the general public have appropriate 'spaces' from which to operate. Access to shelter is one of the basic human needs without which productivity is compromised and economic growth may be hampered. The MLH provides office space for all government divisions. Government houses are offered to specified public servants in cities and most government officers in remote areas. Poor communities and individuals are allocated ready-made houses by the government through the Self Help Housing Agency (SHAA) programme. Land scarcity in urban centres in Botswana has led to land commercialisation. Rich individuals and corporations buy and develop land for onward sale or rental to those in need. High property prices in towns and cities have led to a lack of accommodation for many people who cannot afford to purchase from private land developers. As a measure of intervention, government, through the Botswana Housing Corporation (BHC), builds and sells houses in urban centres for individuals at subsidised prices. For the sake of citizen empowerment, non-citizens can own land in Botswana through purchase from private developers only if there are no citizens interested in the same property. Alternatively, non-citizens can form joint ventures with the locals for ownership of commercial and industrial plots. Whilst commercial plots are sold in urban places, plots are allocated freely in villages to qualifying citizens owing to land availability. In order to ensure transparency and avail equal opportunities to the public, sale of land for commercial purposes in the country is processed through the Public Procurement and Asset Disposal Board (PPADB). Advertisements for commercial land sales are broadcasted in gazettes and other public broadcasting media.

Challenges to land use and allocation in Botswana include: (i) rural to urban migration, which causes overcrowding, creates difficulties in land allocation and use and increases demand for land and houses, all leading to high sale prices; (ii) a shortage of employees in Land Boards offices creates a backlog in land allocation; (iii) undeveloped land, which is already allocated to

individuals and firms, does not promote productivity and disadvantages potential investors who need land for productive and profitable operations; and (iv) occupant failure to pay rates and levies for land cripples efforts to maintain and develop the land. Councils are tasked with ensuring that the environment and public places are developed, maintained and kept clean at all times, with revenue collected from rates and levies to be used for this purpose. Unfortunately, Land Boards in the country have limited power and administration capacity to repossess and reallocate the unused land (Martin, Kalabamu et al. 2003).

Creation of a land portfolio and the use of information and communication technology (e.g. a computerised land database) may improve land administration in Botswana (Sietchiping and Ezigbalike, 2010). Botswana has been using manual registers, which are prone to omission and errors, for land administration data since independence. Even though land use is categorised in Botswana, there is a need to integrate the use of land in order to maximise investments from land development. In 2009, Botswana and Sweden collaborated in a project known as Improvement of Land Administration, Procedures, Capacity and Systems (LAPCAS). This project aimed at creation of systems and processes for efficient and effective land information management (Malatsi and Finnström, 2011). The five-year project worked on piloted sites to compile and computerise data related to land administration. Following LAPCAS, the Land Integrated Management System (LIMS) was started in various Land Boards and the exercise to upload and update registers online is still ongoing. It is expected that once the information has been computerised, policy-makers will be better informed and guided on land use priorities and allocation country-wide. An online land inventory may also enable land auditing, serving as a 'watchdog' against maladministration of land. Revenue collection may also improve since accounts can be easily generated and follow-ups on defaulters can be done without delay. Plots allocated in tribal areas currently have no identification numbers, which causes difficulties to locate places in villages and rural settlements; computerisation may enable identification of plots. The ongoing efforts to implement land administration using digital technology, however, is hampered by lack of equipment, especially computers, and the absence of internet connectivity in some villages. Technologically trained, knowledgeable and skilled labour will be needed for technology based land administration (Sietchiping and Ezigbalike, 2010). Thus the country needs to invest in building relevant human capacity in order to realise the benefits of technology use.

Botswana's efforts to improve land tenure may attract foreign investments and enable effective and efficient land allocation processes necessary for sustainable economic growth.

2.3.5 Transport and Communications

Botswana is a landlocked country, geographically located in the centre of Southern Africa. Transport and communication systems of Botswana play the important role of networking the country to other countries in the region (SADC). Transport and communication services are needed to promote trade between and within nations. Therefore sound transport infrastructure, information and telecommunication networks benefit both Botswana and its neighbours. Different modes of transport exist in Botswana but the common ones are road, rail and air. Whilst railway transport is wholly government-owned there is a mixture of state and private ownership in road and air transport. Overall investment in transport promotes economic growth through transportation cost reductions, increased economic activity, employment creation, business sales growth and tax revenue increases, amongst others (Forkenbrock and Foster, 1990: Weisbrod and Reno, 2009). Some researchers (Boarnet, 1997) argue, however, that heavy investment in highway construction does not have much economic benefit and such investments should be thoroughly assessed prior to implementation. The transport and communication sector contributed 5.9% and 7.2% to real GDP in 2010 and 2011 (Table 2-1).

Before and several years after independence, Botswana had no stable transport system; roads were not tarred, travelling across the country was hectic, expensive and time consuming; goods and service delivery was very inefficient and costly, remote areas were hardly accessible, and all motor vehicles were imported from abroad. Nonetheless, over the years, investments in transport and the formulation of related policy have led to a robust transport system, which makes significant contributions to economic and social developments in Botswana. Productivity is increasing in the country as business activities from rural and urban centres integrate and the movement of goods and services is easily facilitated by the transport network. Moreover, cross-border trade integration is promoted by the well-functioning transport system (Attaran and Auclair, 1990). The import and export trades are largely dependent on transport availability,

accessibility and affordability. Thus transport investment encourages cordial relations between countries, especially among trading partners.

Previous research argues that there is a relationship between highway stock and levels of productivity by the private sector (Attaran and Auclair, 1990). Countries with more highways have greater private sector productivity than their counterparts. In Botswana, business opportunities exist in the transport sector for private investors since all public road transport is privately-owned, creating private sector empowerment and economic diversification. Other opportunities exist in the aviation industry for small flights that transport tourists to various destinations in the north western part of the country characterised by rivers and delta safaris. In addition, car dealerships in Botswana have led to the establishment of related businesses, such as car assembly, motor vehicle parts sales and motor mechanics. The financial sector has also expanded to offer finance and insurance packages to qualifying customers. Thus the growth of the transport sector activates trading and productivity in other sectors of the economy.

The government of Botswana has developed a prudent organisational structure for the transport sector to ensure stability and accountability. The Ministry of Transport and Communications has the task of coordinating all transport and telecommunications activities in Botswana and advises the government on policies and reforms regarding the same. The Ministry also acts as the broker between government and public transport operators. Through its Department of Roads, the Ministry designs, plans and surveys all roads in the country. The Department is also responsible for construction and routine maintenance of roads. Restrictions on the weight of road carriage are in place and weigh bridges have been built along highways to ensure that vehicles are not overloaded and the roads are not heavily laden. Currently, all major roads that connect cities and villages in Botswana are paved and well-kept. Traffic signals have been installed to monitor traffic flow in all urban places and major villages. One railway line connects the southern and northern parts of the country enabling freight transportation from South Africa through Botswana to Zimbabwe. Plans are under way to construct a trans-Kgalagardi railway line that will connect Botswana to Namibia. Aviation services are dominated by Air Botswana, which is a parastatal organisation. Nonetheless, other regional airlines are operating in Botswana. Airports have been built country-wide with the capacity to accommodate both international and domestic flights.

The government and its international trading partners fund all roads, railway lines and airports in Botswana. Revenue is collected from the transport sector through charges imposed on road carriers, rail carriages and air bills, which promotes capital accumulation. Thus transport infrastructure investment promotes sustainable economic growth in the country.

Building economic and social networks for productivity involves both transport and telecommunication systems. The telecommunication system in Botswana encompasses postal services, internet connectivity and telephones (landlines and mobiles). Government, through the Botswana Telecommunication Corporation (BTC) provides most of the services and infrastructure. Other service providers are private businesses. The Botswana government has formulated a Universal Service and Access Policy that guides implementation of initiatives aimed at making telecommunications available and accessible to every citizen and non-citizen across the country. The Rural Telecommunication Strategy has been formed to guide connectivity in rural places through the Nteletsa project. The private sector also initiated the Kitsong Centres which have been established in different villages with the main aim of supplementing government efforts in bringing internet services to the rural community. Botswana has networked with other African countries in building (i) the East Africa Sub-marine System (EASSY) and (ii) the West Africa Cable System (WACS). The EASSY and WACS connections integrate communication systems amongst African nations with the international community, especially European countries who are Africa's main trade partners.

Some of the challenges experienced by the transport and communication sector in Botswana are discussed as follows. (1) There has been an influx of second-hand imported cars that are not roadworthy. Sales of these imports are encouraged by lower prices. Researchers argue that there is a need to balance transport usage and environment preservation (Lane, 2000; Piecyk and McKinnon, 2009). Emissions from vehicles, particularly un-roadworthy cars, negatively affect vegetation and the ozone layer, which may impact human and animal health in the long-term. Lack of public awareness on the negative effects of vehicle pollution hampers the efforts of environmental safety advocates (Lane, 2000). In the long-run, ongoing educational campaigns on environmental preservation may increase awareness on vehicle pollution in the country. (2) A lack of online transport services to facilitate licence registration and renewal creates addition

costs as, currently, customers travel to the Ministry and post offices for registration and renewal. (3) Public transport is often unreliable because of limited fleet, poor maintenance by private owners and the absence of time-tables. Public transport operators prefer businesses in urban centres and neglect rural areas. This can negatively affect the productivity of rural dwellers. (4) Telecommunication networks are not efficient in rural areas in the country and this situation may increase production costs related to transportation and information acquisition.

Local innovation and technological developments in transportation promote the sector and build economic growth for the future (Oladele, 2014). The recently established Transport Technology Transfer Centre (TTTC) is aimed at integrating Botswana's transportation sector with other sectors in the economy. Through TTTC, local transport specialists and engineers can exchange knowledge with their counterparts in other countries, adopting best practices to promote skills and technology transfer. The TTTC has also led to stakeholder training programmes, and database and website creation, which may improve coordination and service delivery.

2.3.6 Minerals, Energy and Water Resources

Botswana is rich in natural resources especially minerals. According to Botswana governance, natural resources in the country are used for the benefit of all. This approach has contributed to sustainable growth and formed the basis of the NDPs, which aim at coordinating investments using limited resources. Thus government is the custodian of all natural resources and these resources are managed and coordinated carefully by the Ministry of Minerals, Energy and Water Resources. This Ministry provides policies and guidelines that ensure human and environmental safety in the exploitation and extraction of natural resources. Botswana earns most of its revenue from diamond exports to international markets, especially in Europe. Locally, mineral extraction creates employment, promotes capital accumulation, encourages developments in physical infrastructure in host locations, increases productivity of goods and services, grows the business sector and empowers households thereby reduce poverty. International trade of minerals strengthens Botswana's relations with its trading partners, since trade negotiations and agreements require concerted efforts from both parties. Furthermore, the financial markets of trading partners are integrated as financial transactions are generated. Thus investment in mining

leads to financial developments and contributes to sustainable economic growth. In addition, current technological skills and innovations in mineral trading may be exchanged by partners and improve productivity and service delivery in the local market. There was a sharp fall in mining contribution to growth from 6.7% recorded in 2010 to 0.9% in 2011 (Table 2-1) indicating the fragility of the mining industry. Statistics in Table 2-1 show that water and electricity contributed a share of 5.5% and 5.4% during the same period.

Besides diamonds, large deposits of coal exist in the country. Most coal is used locally for the production of electricity. The Morupule mine is the largest producer of electricity. Developments in the mine are currently underway to build its capacity to produce sufficient electricity for the whole country and for exporting to neighbouring countries in the near future. Currently, as the local power production is insufficient, the government buys supplementary electricity from South Africa and Namibia. The Botswana Power Corporation (BPC) has been formed as a parastatal to distribute power throughout the country. Development plans to provide electricity to more remote areas will also improve human dignity and lower rural to urban migration. All urban areas and most villages are electrified. Availability, accessibility and affordability of electricity are of the utmost importance to socioeconomic activities. Production is largely dependent on plant and machinery that is electrically powered. Therefore, lack of electricity may delay productivity, decrease income and negatively affect economic growth in the long-term. Power shortages may also cripple organisations through disruption in communication, as processes and business systems in Botswana are mainly computerised.

Botswana is sparsely populated and the distance between some towns and villages is significant, implying costly investments into electricity provision. Moreover, more technological developments and innovations in power supply are needed in the country. The proposed privatisation of the BPC may lead to economic diversification and private sector participation in electricity provision. Less bureaucratic management and more efficient and effective operational systems that enhance power supply may result from the envisaged privatisation strategy. Cost recovery is yet another challenge to the current system, largely because client databases and meter reading systems are unreliable. In order to minimise errors and payment defaults, prepaid meter systems are being installed country-wide. Unlike the old system, which allowed purchase

of electricity only from the BPC, electricity can now be purchased from different outlets like supermarkets and filling stations. Thus, related travelling costs and inconveniences have been reduced. Nonetheless, timely maintenance of equipment and the availability of skilled labour remains a necessity to ensure a sustainable supply of electricity.

Water is a scarce resource in Botswana given that the country has a semi-arid climate. Geographically, Botswana is a desert country and therefore rainfall is quickly drained by the sand and surface water evaporates quickly due to high temperatures. Nonetheless, water is a basic human, animal and vegetation need without which life cannot be sustained. Water is also important for economic and social productivity. Cultural practices, political influences and managerial styles determine the sustainability and efficiency of water usage management plans (Rahm, Swatuk et al. 2006). The Botswana government has policies and water management structures that ensure a continuous supply of water to the public. Water is mainly harvested from rainfall and contained in large dams before onward distribution across the country. Other government initiatives include drilling boreholes and pumping water from local perennial rivers (the Okavango and Chobe rivers). Revenue from water charges is used mainly for new water line connections and maintenance of equipment.

Demand for water in Botswana has increased over the years, from 20 million cubic metres in 1990 to 88.3 million cubic metres in 2006 (Desert, 2007). Population and industrial growth are some of the causes of increased water demand in the country. Water is distributed throughout the country by way of networked water pipes. For the safety of the nation, water is thoroughly treated so that all water from stand-pipes in Botswana is clean and safe for drinking. One study (Desert, 2007) showed that 96% of the local population had access to sustainable drinking water in 2005. Water used for agricultural and industrial activities is not treated. Currently all cities, towns, villages and most remote areas in Botswana are connected to main water supplies. The Water Utilities Corporation is responsible for distribution of water to the whole country. Investment into the continuous supply of clean water may promote sustainable economic growth since water borne diseases can affect human health and lower productivity. Wastewater and sanitation remains a challenge to the country. Sewage blockages and lack of sewage connectivity in some towns and villages continue to compromise hygienic and health efforts in the country.

Thus besides water supply, management and disposal of wastewater should be prioritised by the responsible bodies. Households and corporations also have responsibility to ensure prudent usage of water for sustainable productivity.

2.4 Summary of Botwana's Economic Background

The impact of financial integration in Botswana is influenced significantly by the country's economic background. Botswana's unique economic development explains the country's continuous record of GDP growth in Africa. Integration of the three arms of government (judiciary, executive and legislative) provides a firm socioeconomic foundation. Overall, a governance structure that is based on democratic rule ensures political stability and strong international relations, attracting more foreign investment. The existing government consultative approach promotes citizen empowerment and participation in building a diversified economy that is less dominated by government. Institutional structures are sound and integrated, promote corporate governance and uphold the rule of law and order. The resulting investment environment is very attractive to investors both locally and internationally. Besides well-functioning organisations, Botswana's culture of 'botho', which respects human beings regardless of race, age and gender, contributes to peace and tranquillity necessary for sustainable economic growth. Nonetheless, the country needs more investment into technological development and human capacity in this field, in order to be more competitive and increase productivity. With its ongoing visionary NDPs, the country has great potential to build a diversified economy, further integrate its institutions, create job opportunities, empower households and alleviate poverty for the long-term.

CHAPTER 3: LITERATURE REVIEW

3.1 Introduction

This chapter reviews literature related to the thesis topic. Economic technological change and capital accumulation is generally associated with global financial integration, thus strengthening the link between finance and growth (Schumpeter, 1939; McKinnon, 1973). An extensive body of literature gives evidence of how financial integration across the globe brings many benefits that drive economic performance, such as diffusion of technological innovations, efficient capital allocation from rich to poor nations, domestic market development and transfer of managerial 'know-how' (King and Levine, 1993; Obstfeld, 1994; Daron and Zilibotti, 1997; Klein and Olivei, 1999; Levine, 2001; Baele, Ferrando et al. 2004; González-Páramo, 2005; World Bank, 2006; Ahmed, 2011; Kolapo and Adaramola, 2012). It is reported that financial integration is seen by investors as a signal that a country is committed to good economic policies (Kose and Prasad, 2004). Researchers argue that a lack thereof may lead to market volatilities that can cause an exodus of both local and foreign investors and have negative consequences for the local economy. FDI leads to long-term success because countries are forced to implement a disciplined approach to the economy and political process (Stiglitz, 2000).

While so much has been documented about the benefits derived from financial integration, there are mixed results on the nature of the causal relationship between financial integration and economic growth (Eichengreen, 2001; Edison, Levine et al. 2002). Some researchers have concluded that the current wave of financial integration does not result in high capital flows or worthwhile investments (Schularick and Steger, 2007; Mougani, 2012). Contradictions and conflicting results are mainly generated by different growth theories and the models applied by different researchers. Also the dynamics in economies studied result in different conclusions. For example, one study on SSA countries concluded that there is an indirect positive relationship in which financial integration influences economic growth through financial market development (Ahmed, 2011). In his study on SACU member states, Meshach (2007) found that, unlike other

countries within the same region, financial integration has a significant negative impact on Botswana's economic growth. Caution is given though, because where weak institutions and policies exist, financial integration may relate negatively to growth (Boyd and Smith, 1992; Osada and Saito, 2010). Botswana has an under-developed financial market with a small banking sector and a very illiquid capital market. These characteristics may have a significant association with the negative realtionship between financial integration and economic growth. Unlike Meshach (2007), who used bank assets and liabilities to measure financial integration, this study follows current research in using FDI flows and national assets and liabilities to measure financial integration (Ahmed, 2011; Issouf and Fulbert, 2011).

Klein and Olivei (1999) and Volz (2004) observed that financial integration is associated with broad and deep financial markets. As a result, they suggested policy reforms to open up the accounts of developing economies so as to develop their financial markets. While the role of financial markets still remains an issue of debate, as pointed out by Levine and Zervos (1996), the importance of the financial system in economic growth cannot be over-emphasised. This is because financial markets are tasked with financial intermediation and the channelling of capital flows from savers to investors to finance high return projects (Peachey and Roe, 2004). Thus technological change, capital accumulation and growth can be predicted using the degree of financial development (Levine, 1997). Torre and Schmukler (2007) observed that, unfortunately, in emerging economies, the implementation of financial integration is more focused on the banking sector and less consideration is given to the capital markets, and yet the African Development Bank (2010) advocates that developed capital markets are needed to facilitate FDI inflows. This study follows other research (Demirguc-Kunt, Asli et al. 1996; Levine and Zervos, 1996; Naceur, 2003; Mishra, Malla et al. 2010; Issouf and Fulbert, 2011; Wong and Zhou, 2011) in using stock market development to measure financial development.

Unlike the situation in industrialised economies, capital markets in emerging economies of Africa are characterised by a relatively small number of listed companies, few market participants, low capitalisation and low trading volume (African Development Bank, 2010). In order to overcome the small size and illiquidity of the developing markets in Africa, Ahmed (2011) suggests that regional financial integration should be embraced. Moreover, Obstfeld

(1994) is of the view that integrated capital markets allocate resources efficiently as they distribute risk internationally and thereby enhance economic growth. On the contrary, Stiglitz (2000) argues that integration of capital markets is not necessary as it does not lead to increased domestic investments. Other financial market developments attributed to the positive impact of financial integration are adequate foreign reserves and financial stability (King and Levine, 1993; Baele, Ferrando et al. 2004; Osada and Saito, 2010; Borst, 2012). Changing financial market policies can be a very sensitive issue and need to be considered carefully because financial markets have inherently high transaction costs, are particularly fragile and vulnerable to changes in institutional arrangements, as well as being prone to market failure (David Porteous, 2004). Nonetheless developing nations may need to change their outdated policies in order to promote financial developments.

Capital inflows resulting from financial integration imply access to finance, and financial integration is commonly known to accelerate developments in financial markets. It is therefore reasonable to assume that financial integration also enhances access to finance. Contrary to popular belief, Khalid, Zeeshan et al. (2012) argue that there is no guarantee that capital inflows will trickle down to the poor. Whilst it is taken for granted that well-developed financial markets in industrialised economies make access to finance much easier, an investigation of the impacts of financial integration in the European market by Volz (2004) gives evidence that even though financial developments occurred, they did not necessarily improve financing conditions for the local private sector. A well-financed private sector enhances growth through technological innovations, investments in high return projects and job creativity, amongst other benefits. Some researchers have concluded that lack of access to finance by both households and firms negatively impacts economic growth and poverty alleviation (Peachey and Roe, 2004; Torre, Gozzi et al. 2006). Even though theoretically a strong relationship exists between financial integration and financial market development, less empirical evidence is available regarding the influence of financial integration on access to finance. This is demonstrated in Table 3-1.

Table 3-1: Some Empirical Findings from the Literature on Financial Integration

Author	Topic	Inputs	Methodology	Location	Duration	Outcome
Edison, Levine et al. (2002)	International financial integration and economic growth	Real per capita GDP growth, IFI	Assortment of statistical methodologies (OLS, GMM)	57 international countries	1980 –2000	Effects of financial integration were mixed
Guiso, L., T. Jappelli, et al. (2004)	Financial market integration and economic growth in the EU	IFI, Financial development and real GDP	Simulation methodology, international industry-level panel	EU countries	1996 –2001	EU financial integration impact is mixed
Osada and Saito (2010)	Financial integration and economic growth	Real per capita GDP growth, IFI	International panel data model	83 international countries	1974 –2007	The effects of financial integration differ considerably.
O'Toole (2012)	Does financial liberalisation improve access to investment finance in developing countries?	Liberalisation policies, firms' constraints	Standard probit model, cross-sectional data	57 international developing and transition countries	2001-2007	Increases in the degree of liberalisation, decrease the probability of being constrained, results opposite for SSA
Ahmed (2011)	International financial integration, investment and economic performance	Real per capita GDP growth, IFI	Generalised Method of Moments (GMM) approach - panel data	25 SSA Countries	1976 –2008	Financial integration drives growth indirectly.
Meshach (2007)	Effects of financial integration on financial development and economic performance	IFI, Financial development and real GDP	Time series, vector autoregressive and error correction model	4 SACU Countries	1970 – 2004	Effects of financial integration on growth were mixed; negative association for Botswana
Eita and Jordaan (2010)	A causality analysis between financial development and growth	Financial development and real GDP	Time series, vector autoregressive and error correction model	Botswana	1977 –2006	Financial development causes growth
Akinboade (1998)	Financial development and economic growth in Botswana	Financial development and real GDP	Time series, VAR and ECM models	Botswana	1976 –1995	Financial development influences growth
Volz (2004)	European financial integration and the financing of local businesses in the new EU member states	BEEPS, service and foreign banks	Panel data	New EU member states	1996 –2002	Access to finance still difficult for firms because of concentrated services and dominance by foreign banks

3.2 International Financial Integration (IFI)

3.2.1 Definitions and measurements of IFI

International financial integration (IFI) is a broad term associated with inter-linkages of financial markets across the globe through capital flows and regulations. More notably, IFI implies that a country decides to open up its own capital account to other countries and thereby create linkages between local financial markets and external markets (Frey and Volz, 2011). Various definitions have been provided by a number of researchers. One view is that financial integration exists when a set of financial markets offer equal opportunities, judgments and treatment to potential players within and outside national borders such that capital flows without restrictions from one country's financial system to another (Baele, Ferrando et al. 2004; Tahari, Brenner et al. 2007). Relative to this definition, financial integration can be defined by the economy's degree of freedom of cross-border financial transactions (Edison, Levine et al. 2002; Schularick and Steger, 2007; Vermeulen, 2010). The most used definition is that financial integration exists when the domestic market is linked with or intertwined with regional and/or international financial markets (Prasad, Rogoff et al. 2003; Volz, 2004; Ahmed, 2011). Other scholars say financial integration is prevalent when similar asset returns and prices are equal across borders such that no added advantage exists when investing in another country, thus arbitrage power is at play (Held, McGrew et al. 1999; Adam, Jappelli et al. 2002). The central theme across these definitions is that of removal of obstacles to capital flows and unification of trade across international financial markets.

Different conclusions on the effects of financial integration can mainly be attributed to various measurements applied by many researchers in this research area. Detailed discussions on financial integration measurements have been documented by previous researchers, for example Prasad, Rogoff et al. (2003), Baele, Ferrando et al. (2004), Lane and Milesi-Ferretti (2007), Meshach (2007) and El-Shagi (2012). Briefly, there are two broad ways of measuring financial integration: *de jure* and *de facto* measures, or rule-based and outcome-based approaches respectively (Prasad, Rogoff et al. 2003; Frey and Volz, 2011). Nonetheless, past studies (Alfaro

and Charlton, 2007) use both *de jure* and *de facto* measures to investigate the impact of financial integration on entrepreneurial activity. Measures classified as *de jure* show countries' degree of capital account openness, reflecting on policies, regulations and controls set on capital account transactions. Such measures are mainly based on the IMF Annual Reports on Exchange Arrangements and Exchange Restrictions (AREAER). Annually, an economy scores zero when there are no restrictions on the capital account transactions and the country is considered open; a closed economy has restrictions and scores one under the IMF measure. Previous studies have used this measure as an average or as a share (Alesina, Grilli et al. 1993; Grilli and Milesi-Ferretti, 1995; Rodrik, 1998; Miniane, 2004). Another *de jure* measure commonly known as Quinn's measure was developed to augment the IMF measure (Quinn, 1997; Quinn and Toyoda, 2008). Quinn's measure gives the intensity of restrictions, but the measure is formulated for industrialised economies only and consequently it is not useful for developing economies.

Financial integration *de facto* measures show the amount of capital flows between countries and are subdivided into price and quantity. Price-based measures argue that if the markets are integrated then the prices and returns on financial assets of similar class should be the same, irrespective of the country where the transaction is done. Again, this represents arbitrage power. Further bank charges for services and products offered in an integrated market should be equal or minimal differences should exist. On the other hand, quantity *de facto* measures are based on cross-country investment, savings, consumption and capital flows. Investment and savings are not expected to be largely correlated if the markets are integrated, rather the two variables should portray independence from each other. Equal consumption growth per capita rates exist across countries with integrated markets otherwise there is no financial integration.

Current research has shown much interest in measuring integration using capital flows. The capital flows measure is sub-divided into three categories: (i) bank assets and liabilities; (ii) national assets and liabilities given by exports and imports; and (iii) FDIs and portfolio flows. Cross-border bank mergers and interbank lending are expected to promote financial integration amongst segmented regional markets (Inderst, Pfeil et al. 2014). Integration encourages banks to hold long-term investments that are less liquid and more profitable (Castiglionesi, Feriozzi et al. 2010). Liquidity shocks may be reallocated to less affected markets when banks are interlinked

but in the case that a shock affects all interlinked banks, liquid resources are low and therefore associated interest rates increase significantly. Free capital movements, in the form of FDIs and portfolio flows, in and out of the country are expected to increase when the local and international financial markets are intertwined. This promotes growth. Nonetheless, previous studies argue that economic growth and capital flows are negatively correlated, and countries with high growth rates do not need to attract more foreign capital (Gourinchas and Jeanne, 2013).

3.2.2 Determinants and Implications of IFI

The impact of financial integration on any given economy is largely determined by the level of institutional quality, trade openess, financial development, macroeconomic policies, political integration, capital account liberalisation and country risk (Bekaert, Harvey et al. 2005; Mendoza, Quadrini et al. 2007; Kose, Prasad et al. 2009; Friedrich, Schnabel et al. 2013). Interestingly, Kose, Prasad et al. (2009) argue that the impact of financial integration on economic growth largely depends on the 'threshhold conditions' as determined by four elements: institutional quality; financial development; trade openess; and macroeconomic policies. Thus countries should aim to achieve prerequsite levels of threshold conditions if they are to benefit from IFI. Similarly, Mendoza, Quadrini et al. (2007) argued that different levels of financial depth amongst integrated markets may cause financial imbalances, whilst Bekaert, Harvey et al. (2005) argued that benefits from financial integration acrue to countries with high quality institutions. Friedrich, Schnabel et al. (2013) found that countries with close political ties to the European Union experienced more positive impacts of financial integration than their counterparts without such connections.

Capital account openness is statistically proven to positively influence financial depth and economic growth (Klein and Olivei, 1999). These results are mainly an outcome of developed economies included in the sample used by Klein and Olivei (1999). Other countries covered in Klein and Olivei's study sample, most of which were developing nations with closed capital accounts, did not seem to enjoy the benefits of capital account liberalisation. Risks associated with capital account liberalisation entail, but are not limited to, commercial bank debts

denominated in foreign currencies, foreign currency reserves subject to large drops in value, a high proportion of short-term foreign debt, and unmanageable risks in the property and capital markets (Borst, 2012). Stiglitz (2000) further argued that opening capital accounts through capital market liberalisation leads to capital outflow since countries would be exposed to the vicissitudes associated with changes in economic circumstances outside the country; a sudden change in lender perceptions concerning the emerging market can result in huge capital outflow creating economic instability.

An extensive amount of research suggests that financial integration enhances economic growth through efficient resource allocation, smooth and non-restrictive exchange, massive capital flows, increased access to foreign markets, current technological transfer, reduced cost of capital, domestic financial market development, as well as portfolio and risk diversification (King and Levine, 1993; Obstfeld, 1994; Daron and Zilibotti, 1997; Klein and Olivei, 1999; Stiglitz, 2000; Levine, 2001; Edison, Levine et al. 2002; Agénor, 2003; Baele, Ferrando et al. 2004; World Bank, 2006; Kose, 2007; Kose, Prasad et al. 2009; Ahmed, 2011; Frey and Volz, 2011; Kolapo and Adaramola, 2012). Specifically, Frey and Volz (2011) grouped the benefits of financial integration into four themes: FDI spill-over effects; international risk sharing; domestic investments increase; and consumption smoothing. Increase in domestic investments is promoted by domestic firms' access to pooled financial resources resulting from integration. FDIs are known to promote technological developments and transfer managerial 'know-how' from developed to less developed markets. Financial integration encourages risk sharing since local investors can diversify their portfolio beyond domestic markets. Consumption smoothing can be realised by integrated economies since countries can borrow funds from the pool during deficits and lend to others during surplus periods, thus creating economic stability. Foreign capital availability may be used to overcome low savings levels in the host country, and less costly funds available and accessible from foreign markets may be preferred by local investors.

Despite the positive outcomes alluded to, financial integration also has some negative aspects. Some argue that IFI contributed to the recent global financial crises (Mendoza, Quadrini et al. 2007; Kose and Prasad, 2004; Reinhart and Rogoff, 2009; Obstfeld, 2011) and, as a result, investors are no longer investing in developing economies (Das, 2010). However, Menon (2012)

argued that the crises were mainly an outcome of poor monetary policies. European markets experience financial integration disadvantages of concentrated financial services and the heavy presence of foreign-owned institutions (Volz, 2004). Too much financial deepening negatively affects competition (Baele, Ferrando et al. 2004). Although the Managing Director of Monetary Authority of Singapore, during the panel discussion at the Bank for International Settlements Annual Conference in June 2012, argued that the inflow of foreign institutions is good for the local market since they inject competition, transfer new technologies and bring in new innovations (Menon, 2012). That said, caution should still be taken to ensure that the dominance of foreign institutions, especially from well-developed markets, does not suffocate emerging local enterprises.

Other researchers have also questioned the benefits of financial integration, for example Stiglitz (2000), Schularick and Steger (2007), Borst (2012), Menon (2012), Mougani (2012) and Friedrich, Schnabel et al. (2013). In particular, Mougani (2012) gives empirical evidence that the condition of the domestic institutional framework dictates the effects of capital inflows on economic growth. The study reveals that financial integration through portfolio investments brings in some instability as compared to FDIs because FDIs are of longer term than portfolio investments. This argument supports that of Stiglitz (2000) who preferred FDI inflows and argued that capital market liberalisation (in the short-term) does not provide additional sources of funding since it does not lead to increased capital market investments. Other research (Schularick and Steger, 2007; Das, 2010; Mougani, 2012) concluded that the current financial integration is associated with macroeconomic volatility and does not mobilise as much capital investments to poor countries. Some writers argue that benefits only accrue to developed economies and negative impacts are actually experienced by emerging countries (Boyd and Smith, 1992; Klein and Olivei, 1999; Osada and Saito, 2010).

3.3 IFI and Financial Development (FD)

3.3.1 Financial Development Explanation and Measurements

Financial development (FD) occurs when financial sector efficiency and size increases (Frey and Volz, 2011). A well-developed financial system or structure can be analysed according to its markets, instruments and institutions. A combination of these elements and the services provided by the markets gives the functions of the financial system (Levine, 1997). Financial institutions can be classified into two major categories: banks and non-banks. Main financial markets are bond and equity markets, money markets, derivatives markets, exchange rate markets and superannuation markets. Various financial instruments are traded in these markets, such as options and futures, shares, bonds and bills. There are numerous studies that relate money and stock markets to economic growth yet a smaller portion of literature explores the bond market growth nexus. Bond trading is associated with government and big investors, unlike other markets that attract the general public. Money and equity markets have lower sales denominations than bonds; they deal with short-term investments whilst bonds are long-term investments. Moreover, equity and money markets are considered riskier yet have high returns, while bonds are less risky and have lower yields. Thus contributions to economic growth from these markets vary depending on investors' preferences and aims.

Financial market development is measured by the system's level of financial liberalisation, financial deepening and financial broadening (King and Levine, 1993; Ansari, 2002). Financial liberalisation relates to interest rates deregulation and unrestricted capital flows across borders. An increased supply of different financial products demonstrates financial deepening whilst financial broadening is indicated by growth in numbers of financial institutions and transactions.

The most commonly used measures of financial development are DEPTH, BANK, PRIVATE, PRIVY, VT and TR (Levine, 1997). DEPTH gives the financial system size and is calculated as financial institutions' liquid liabilities as a share of GDP. Commercial banks credit allocation compared to central bank credit is measured using BANK and is given by bank credit relative to the sum of central bank domestic assets and bank credit. In order to establish the portion of credit

issued to firms, a PRIVATE measure is applied, which is calculated as private sector credit divided by total domestic credit without bank credit. Relatively, PRIVY is the private sector credit as a share of GDP. A common measure of stock market development is liquidity and this is indicated by VT and TR ratios. VT is the total value of shares traded relative to GDP, whereas TR represents turnover ratio and it is calculated as total value of shares traded as a share of market capitalisation. In other instances, market capitalisation, which is the total value of listed shares as a share of GDP, is used to proxy stock market development because it gives the size of the market compared to economic growth.

3.3.2 IFI and FD

Much of the research literature indicates a strong relationship between financial integration and financial development, a relationship that serves as an indirect significant channel from financial integration to growth (Frey and Volz, 2011). Financial integration seems to work well in open economic enviroments that have sound institutional frameworks, well-developed financial markets, proper macroeconomic policies, adequate foreign reserves and financial stability (King and Levine, 1993; Arestis and Demetriades, 1997; Baele, Ferrando et al. 2004; Osada and Saito 2010; Borst, 2012). It is therefore expected that individual countries will develop their markets so that they can reap the envisaged benefits of integration.Financial markets are also the channels through which capital flows, therefore, ensuring that the markets are efficient and effective should be at the top of a country's agenda (Alfaro, Chanda et al. 2000). In implementing financial integration agreements, foreign banks enter the domestic market and therefore domestic markets are forced to open up, monopolies are dismantled and government dominance is lowered. The result is that local financial markets become more efficient in intermediation business and channel more capital thereby increasing market depth, and hence international financial integration leads to financial development (Gregorio, 1998; Frey and Volz, 2011). In their investigations, Osada and Saito (2010) as well as Frey and Volz (2011) highlighted the impact dynamics of financial integration on the economies of both well-developed and less developed countries . Their results suggest that good institutions and efficient financial markets characterise countries that benefit more from financial integration. Certain thresholds must be achieved in order for financial integration to promote financial development (Frey and Volz,

2011). Findings by Frey and Volz (2011) support the earlier study by Mendoza, Quadrini et al. (2009), which gives evidence that different levels of financial development across nations give rise to varying degrees of FDIs, portfolio investments, assets and liabilities accumulated.

Eventually, international financial volatilities may result from the differences in global financial market developments. Osada and Saito (2010) observed that differences in FD do exist even within developed nations. Recent research on transitional economies (Brezigar-Masten, Coricelli et al. 2011) indicated that financial integration positively affects growth indirectly through financial development, and capital account openness attracts capital inflows that supplement domestic credit, hence less impact was experienced from global recession. Studies on emerging markets found dual causality between FDI flows and equity market development whilst causality between FDIs and banking development was not robust (Issouf and Fulbert, 2011). Financial integration is argued to promote liberalisation of equity markets which, in turn, increases growth in the long-term (Bekaert, Harvey et al. 2005). Small firms, innovative firms and expanding firms need equity for growth and expansion, and the stock market provides a platform for financing such projects (Duisenberg, 2001). Banks are profit-driven and therefore reluctantly offer credit to small and new firms, which are risky and lack collateral. However, share markets are characterised by volatilities since listed firms are sensitive to changes in economic activities.

Notwithstanding, Borst (2012) highlighted that the development of the corporate bond market is a key aspect of capital account liberalisation and that there is a need to rapidly grow the size of the corporate bond market and move away from overreliance on state-owned issuers and buyers. In support, RMB Treasury and Bond Exchange South Africa (2001) observed that an ever decreasing supply of new government debt provided an opportunity to grow the corporate bond market. On the contrary, Raghavan and Sarwono (2012) argued that development of the corporate bond market was influenced by the growth of the government bond market. Previous research (Fabella and Madhur, 2003; Raghavan and Sarwono, 2012) identified several factors that may promote the development of domestic bond markets in the long-run. These are:

(a) existence of a strong regulatory framework;
(b) development of a government bond market that sets bonds trading benchmarks;

(c) low inflation and less fluctuating interest rates;
(d) membership to regional bond markets;
(e) increased investor pool;
(f) credit risk pricing;
(g) availability of reliable trading systems; and
(h) development of hedging instruments.

Raghavan and Sarwono (2012) emphasised that encouraging foreign participation by relaxing regulations, providing tax incentives, providing credit enhancements and introducing new instruments, such as credit default swaps and corporate repos, are some of the strategies that may further develop corporate bond markets. Protection of creditor rights is also one of the main determinants of the size of bond markets (World Bank, 2006).

Borst (2012) argued that the small size of the bond market may lead to the absence of market-determined interest rates, the lack of a unified corporate bond market and a relatively undeveloped government debt market. He further noted that creating a thriving corporate bond market would be an important component of building a deep and liquid bond market to absorb financial inflows once China opens its capital account. In order to overcome the size constraint in developing their bond markets, small countries should issue bonds in foreign countries and foreign currencies or develop common securities exchanges and spread the infrastructure costs among members (World Bank, 2006). Furthermore the World Bank (2006) considers protection of creditor rights as the main determinant of the bond market size and emphasises that bond financing is a significant part of countries and firms' financing, especially in emerging market economies. Another tool that can be used to develop the emerging bond markets is the inclusion of institutional investors (Dahou, Omar et al. 2009). Raghavan and Sarwono (2012) report that, in India, certain factors such as the size of the economy, size of the stock market and institutional factors like corruption, have little or no impact on the development of the corporate bond market. While domestic markets should interlink with international markets, there is need for domestic markets themselves to be integrated to ensure market stability. According to Raghavan and Sarwono (2012), bank lending may slow the development of the corporate bond market.

Some researchers are of the view that gains from integration may quickly reverse as capital inherently flies out of economies with institutional and monetary policy distortions (Boyd and Smith, 1992; Osada and Saito, 2010; Menon 2012). In order to ensure financial stability and smooth implementation of the monetary policy in any given economy, a country should have a financial system that is sound and efficient (Nicolò and Juvenal, 2010). Some of the drivers of financial stability are close supervision of financial institutions, availability of sufficient capital and liquid reserves, enhanced transparency and good corporate governance (Menon, 2012). Success of capital account liberalisation depends on macroeconomic stability, competent financial regulation, adequate foreign exchange reserves, and stable financial institutions (Dahou, Omar et al. 2009; Borst, 2012; Menon, 2012). Limitations in the management of fiscal and exchange rate policies make it difficult for developing countries to utilise international markets (World Bank, 2006). Some authors advocate for an orderly liberalisation of capital movements to foster smooth operation of international capital markets (Camdessus, 1997).

3.3.3 Technological development and financial integration

Growth theory considers technical change as one of the main factors of economic growth and the level of technological development can be used to explain differences in economic growth rates (Fagerberg, 1987; Greenwood and Jovanovic, 1989; Lall, 1992; Agénor and Neanidis, 2011). Furthermore, Ruttan (2000) argues that institutional innovations induce both the direction and rate of technical change. In support, other studies (Malecki, 1997; Agénor and Neanidis, 2011) argued that institutions and governments should harness the growth potential of human capital in their competitive strategies, as well as research and development, in order to succeed in this rapidly changing technological market. Malecki (1997) further argued that location and possession of external networks, technical skills plus relevant information determines the competitiveness and innovativeness of any given firm. Human capital formation is pivotal to productivity growth since it measures innovation capacity of the economy. Nations are encouraged to invest in the continuous training of their workforces and develop technological skills that can drive innovation (Agénor and Neanidis, 2011). People have networks that extend beyond borders and they possess various skills and abilities which may be maximised for sustainable economic growth. Therefore in order to build more capacity, technical skills and

innovations may be transferred and/or learnt from international associations for the benefit of the local economy. The ability to access global information on current technologies may empower locals to innovate competitive goods and services.

Technological development plays a major role in financial development since financial innovation is associated with both financial diversification and technological diversification (Saint-Paul, 1992). In pursuing their intermediary role, financial markets aim to spread risk through financial diversification and therefore the market innovates different technologies to achieve the highest investment returns. Similarly, Tadesse (2007) concludes that technological innovation is induced by financial development, as financial institutions distribute capital and diversify risk. It is therefore implied that economies with more technologically innovative financial institutions grow faster than their counterparts. Insufficient institutional infrastructure as well as non-flexible policies hinder innovations, resulting in less productive technologies and poor financial services (Saint-Paul, 1992; Malecki, 1997). Another study argues that companies that invest more into research and development for their growth are preferred by financiers more than their competitors (Ilyina and Samaniego, 2011). Nonetheless, small firms with limited technological capacity can be assisted to remain competitive by their able networks (Malecki, 1997). The research literature therefore implies that financial market integration strengthens strategies, and external and internal networks of financial institutions through shared technological innovations.

In contrast, Ang (2011) argues that financial knowledge stock liberalisation (that is promoted by financial development) negatively relates with implementation of financial reform policies. Ang (2011) continues to argue that talent is drawn from the innovation sector to the financial system because of financial liberalisation and therefore technological deepening of the innovation sector is inhibited. Nonetheless, feedback and sharing of resources between various economic sectors within the same country is expected to promote growth in the long-run, but talent flight caused by the search for ‘greener pastures’ may negatively impact growth.

New technology diffusion and adoption may give rise to frictions amongst competitors but financial markets that are well-developed can lower such frictions and promote market stability

(Comin and Nanda, 2014). Furthermore Comin and Nanda (2014) show that whilst capital markets can be used for experimenting with new technologies, banking sector depth promotes faster diffusion of new technologies that are mainly capital intensive. It is therefore important for financial institutions within the local economy to be integrated themselves in order to overcome frictions from adopting and diffusing new technologies. Notwithstanding, for security purposes and to avoid unfair competitions, each institution's intellectual property rights should be protected by law even in this financial integration era. Increase in research and development (R&D), plus a firm framework that protects intellectual property, promotes knowledge stock (Ang, 2011). Interestingly, the amount of technological development should not be excessive as too much R&D and innovation may cause financial development to negatively impact growth (Bhatti, Haque et al. 2013). It is evident from the literature that technological development and financial development do affect one another. Financial market integration therefore promotes diffusion of technological innovations across borders, enhances local market intermediation and strengthens external networks for better products and service delivery. This is required for sustainable economic growth.

3.3.4 Financial Development and Growth

In her study, Levine (1997) presented a classic analysis of the relationship between FD and growth, applying various growth theories. She explained how, through its intermediary functions, the financial system contributes significantly to economic growth. Other research works demonstrate dual causation between FD and growth in that financial intermediation increases growth through capital return earnings whilst economic growth avails resources to build financial structures that are often costly (Greenwood and Jovanovic, 1989). In general, the financial system distributes financial resources, allocates risk, encourages savings, provides a trading platform for financial products and services and ensures good corporate governance. Each of these functions leads to productivity and accumulation of capital, and hence economic growth. A prudent financial system mitigates the costs of transactions and information in carrying out its duties so as to encourage savings, investment and innovation (Peachey and Roe, 2004). Thus the financial system has a very important intermediary role in that it pools resources from savers to those in need of capital for production and innovation purposes.

The issue of liquidity is an integral part of any financial system, to strike a balance between savers who may want to convert their assets into cash within a short period and production firms that need capital to invest in high return projects over a longer period at minimum costs. Savers need the assurance that they will cash-in within the shortest time possible without losing the value of their assets, and firms need the assurance of continuous capital supply for their long-term projects. This scenario can only be facilitated by a well-developed financial system. In order to reach a steady state of growth, developing economies need not only a well-functioning financial system but also the contribution of both the private and public sector (Hassan, Sanchez et al. 2011). Furthermore, Hassan, Sanchez et al. (2011) found a positive correlation and dual causality between FD and growth. Interestingly Arestis, Demetriades et al. (2001) found no robust link between growth and equity market development. Nevertheless, equity market development is positively correlated with growth in Hong Kong, the US, Japan, China and the UK, even though the financial structures of these economies differ (Wong and Zhou, 2011). Wong and Zhou (2011) support the theory that a bank-oriented system promotes long-term growth compared to a market-oriented system.

Capital projects that require long-term financing are better financed through the bond market than other options and vice-versa. Previous research shows that bond markets positively drive growth (Fink, Haiss et al. 2003; Thumrongvit, Kim et al. 2013). Evidently, bonds and bank credit have an inverse relationship since bond market development lowers the positive impact of bank credit on growth (Thumrongvit, Kim et al. 2013). The study by Thumrongvit, Kim et al. (2013) further argues that growth is promoted by government bonds, while the impact of corporate bonds on growth changes with shifts in the structure of the domestic market. Moreover, bond market influence on growth varies according to the economic development of nations. Understandably, bond markets in developed economies are well established, larger in size, more active, have solid infrastructure and effective and efficient operational systems than in emerging nations. However, over time, public sector deficits, FDI and portfolio flows, corporate sector reforms and fiscal adjustments have necessitated the existence of some emerging bond markets (Mihaljek, Scatigna et al. 2002). Thus the growth of local debt markets in developing economies may finance public expenditure and encourage productivity. The research literature implies that

where bond markets are well-developed, more FDIs may be realised. Banks and institutional investors are the main holders of debt instruments. Bond markets in developing nations are small and very illiquid because of limited alternative debt instruments.

The question of whether government should intervene to develop the financial market is still debatable, as evidenced in the literature (Wakeman-Linn and Wagh, 2008). Three different positions regarding government involvement exist: interventionist; laissez-faire; and pro-market activism (Torre, Gozzi et al. 2006). The interventionist view argues that active government involvement in mobilising and allocating financial resources, including through government ownership of financial institutions, is needed to broaden access to credit, as private markets fail to expand access. In contrast, the laissez-faire view contends that governments can do more harm than good by intervening directly in the financial system; government efforts should instead focus on improving the enabling environment. The emerging pro-market activism view represents the middle ground, favouring direct government interventions in non-traditional ways. It contends that there might be room for well-designed, restricted government interventions to address specific market failures and help smooth the transition towards a developed financial system or even speed it up. Financial markets have inherently high transaction costs and are particularly fragile. As such, they are vulnerable to changes in institutional arrangements and prone to market failure. This fragility warrants some, but not too much, caution in changing policies (David Porteous, 2004).

3.4 Access to Finance (FA)

3.4.1 Access to Finance and Financial Development

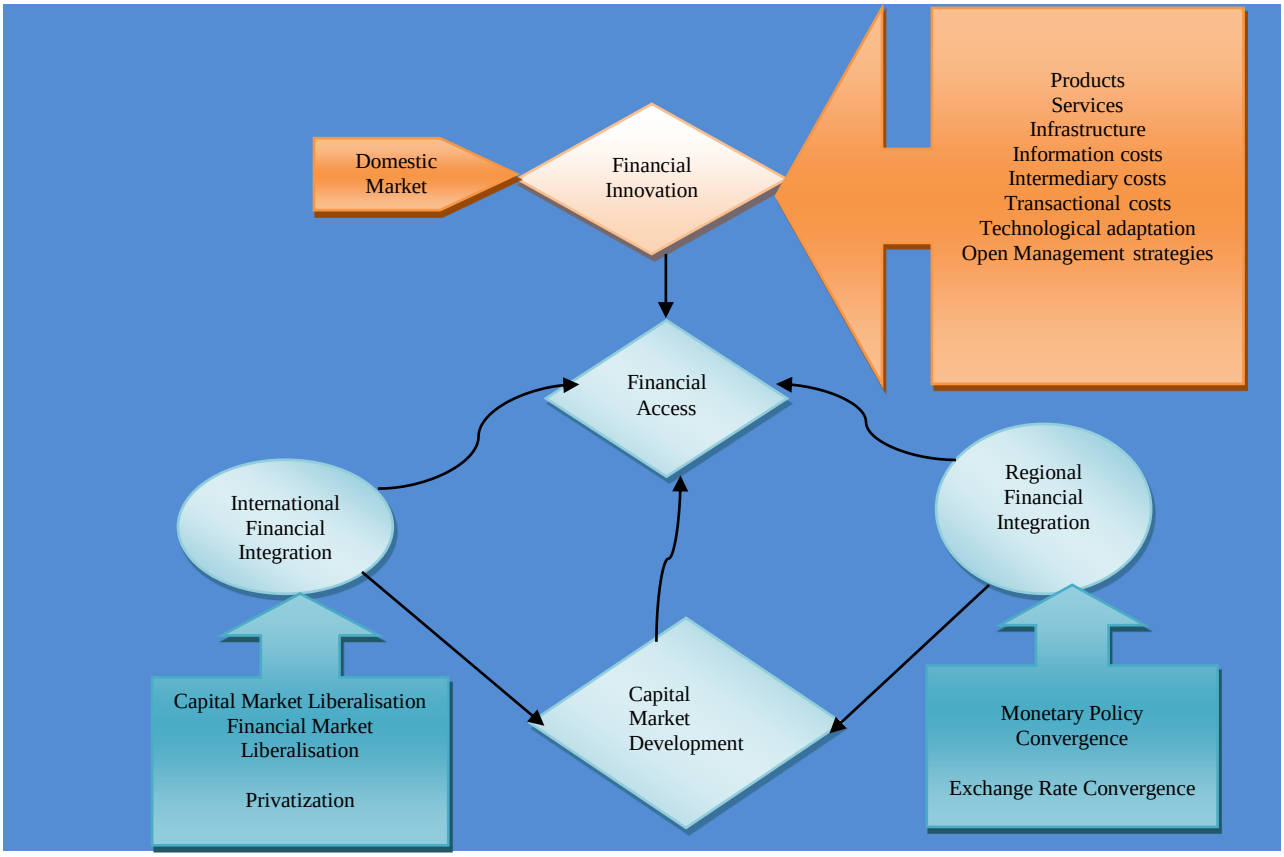
Whilst the government is expected to build a sound institutional framework that enhances access to finance, those responsible for the financial system have a mandate to provide access to finance (Peachey and Roe, 2004). The issue of access to finance differs between developed and developing nations since, in some emerging economies, lack of access to finance is so acute that it has been likened to lack of basic necessities like water, shelter, health, education and other infrastructure (Peachey and Roe, 2004). Financial access, or access to finance, entails both usage

and financial market depth in that financial products and services should be made available as and when they are needed by users (World Bank, 2006). Following Africa (2012), in our study financial access implies the availability of financial services like deposits and payments, which can be constrained by physical access, eligibility or affordability. Weak and non-efficient financial systems may result in misallocations of capital and disadvantage the needy. The research literature indicates that lack of access to credit prevents lower-income households and small firms from financing high return investment projects, having an adverse effect on growth and poverty alleviation (Torre, Gozzi et al. 2006). A banking sector that fails to exercise its role of intermediation results in very high interest rate spreads, which make credit expensive and deposits poorly remunerated, thereby inhibiting access to finance (Dahou, Omar et al. 2009).

While the World Bank (2006) argues that bond financing is considered a significant part of a country's and a firm's financing, especially in emerging market economies, Dahou, Omar et al. (2009) concluded that in Africa, capital markets are underdeveloped and remain narrow and illiquid, thereby limiting access to long-term financing and hindering countries' capacities for local debt financing. Their conclusions are in line with results from earlier studies that suggest that liquid equity markets attract portfolio investors and, as a result, firms can access capital in the long-term (Demirguc-Kunt, Asli et al. 1996). An issuer would prefer to raise capital domestically than internationally in order to reduce currency mismatch, unless the domestic market is underdeveloped (World Bank, 2006). Even though capital markets are seen as better alternatives to banks for resourcing new and highly productive innovations (Smith and Boyd, 1998; Allen and Gale, 1999; Rioja and Valev, 2005), for new entrants, accessing finance through the capital market is made even more difficult by the fact that bond financing depends mainly on the firm's creditworthiness (Santos, 2003). Coordinated efforts at both regional and international level are necessary in order to benefit from financial integration as shown in Figure 3-1. Lack of innovative financial instruments (as illustrated in Figure 3-1), especially those geared towards SMMEs, which constitute the majority of the businesses in Africa, causes these firms to too often remain confined to the informal sector due to inadequate financial services (Dahou, Omar et al. 2009). The study by Dahou, Omar et al. (2009) concluded that financial market developments create avenues that enhance financial access. However, results from research on the Middle East and North Africa (MENA) region show that financial deepening does not closely

correlate with financial access (Rocha, Arvai et al. 2011). Yet, according to González-Páramo (2005), increased access to finance actually leads to financial development. Clearly, the nature and direction of the relationship between access to finance, financial integration and financial development internationally, is still debatable.

Figure 3-1: Challenges of Implementing Financial Integration



3.4.2 IFI and Access to Finance by Firms

A previous study (Alfaro and Charlton, 2007) argues that foreign capital promotes local entrepreneurial productivity, implying that financial integration enhances access to finance. Free capital flows across nations do not automatically translate into enhanced access to finance by locals (Khalid, Zeeshan et al. 2012), yet firms which have global networks are said to have greater opportunities to financial access as compared to firms that only depend on domestic sources of financing (Schmukler and Vesperoni, 2006). Some researchers argue that financial

integration does not seem to enhance conditions of financing for firms in the host country because of market dominance by foreign banks and large banks (Volz, 2004; Frey and Volz, 2011). Both foreign banks and large banks seem to create more barriers to impede small firms from accessing bank credit whilst large firms are not severely affected. The banks seek to minimise their risk exposure by investing in large firms that have a track record and have strong supervision, compared to small firms that lack a solid profile and collateral to secure credit. Moreover, financial integration often leads to overcrowding in the banking sector and unfair competition between foreign and domestic businesses when the local regulatory framework is weak; a state of affairs that impairs access to finance (Baele, Ferrando et al. 2004; Volz, 2004; Dahou, Omar et al. 2009). In Europe, Volz (2004) gives evidence that financial integration leads to financial development, but such developments do not improve access to finance by the private sector. Results from a study on developing SSA countries (Frey and Volz, 2011) revealed that while the impacts of financial integration on access to finance are mixed, there is strong evidence that financial integration actually hinders the access of small firms to finance. The research literature therefore implies that both developed and developing economies still face a challenge to ensure credit constraints for firms, especially small enterprises, are not worsened by financial integration. SMMEs are regarded as the engines of economic growth since entrepreneurship promotes innovation and creativity, which are necessary for sustainable economic growth.

Financial innovations promote economic growth through provision of better and less costly service, risk diversification and improved resource allocation (Allen and Gale, 1994). Through financial integration, financial innovations may be transferred from developed to emerging economies and enhance access to finance for the locals. Innovations accumulated by integrated markets are made accessible to domestic firms which have foreign linkages. Moreover, local firms' productivity, competitiveness and expansion may be enhanced by investments into offshore markets which offer better returns. Thus financial integration may enhance penetration of local firms into previously hard to enter markets in developed countries. Financial innovations entail both product and business innovations. Product innovations may include ATMs, credit and debit cards; business innovations refer to financing packages like bank insurances and bank investments into private firms (Valverde, Paso et al. 2007). Such innovations promote convenience since transactions may be processed online, saving both time and travelling costs.

Financial innovations may promote cross-border trading since orders may be placed and settled online, thus reducing traditional costs and the related delays of intermediation by banks.

However, financial innovations that are transferred across integrated markets are not always good. The current literature argues that the use of financial innovations leads to neglected risk and some researchers believe that this actually caused the recent global financial crises and made access to finance even more difficult than before (Brunnermeier, 2008; Henderson and Pearson, 2011; Beck, Chen et al. 2012; Gennaioli, Shleifer et al. 2012). Financial innovations lead to creation of very risky securities that may cause the market to become more fragile, volatile and experience huge losses. Moreover, through financial innovations, banks may create structured financial instruments that are enticing and easily accessible, but less understood by investors and, in the long-term, such investor exploitation may lead to over indebtedness and bankruptcy. This represents 'the dark side of financial innovation' (Henderson and Pearson, 2011). More specifically, Beck, Chen et al. (2012) indicate several financial innovation effects on economic development. These are: (1) banks located in highly financially-innovative countries experience high volatilities in their profits and such banks are very fragile; (2) industries financed externally yet located in countries where financial markets are highly innovative tend to experience faster yet unstable growth; and (3) financial innovations promote per capita GDP.

3.5 Regional Financial Integration (RFI)

3.5.1 Reasons for Regional Financial Integration

Regional financial integration is a two dimensional process involving capital accounts openness caused by political institutionalisation and market forces, such as foreign banks' establishment in the local market (Frey and Volz, 2011). Regional financial integration results in monetary policy convergence since a group of neighbouring countries legally agree to open up their capital accounts and interlink their financial systems in order to harmonise, deepen and broaden their financial markets. At a higher level, over and above individual country markets, a set of countries can actually build regional markets and thus enhance developments of regional

institutions (Wakeman-Linn and Wagh, 2008; Frey and Volz, 2011). Regional financial integration is considered necessary because it:

(i) motivates countries to upgrade their financial reforms;
(ii) induces productivity and efficiency through competition with outside markets;
(iii) increases FDI inflows;
(iv) enables small regional markets to trade regionally and globally;
(v) fast tracks trading settlements through easy convertibility of currency and improved infrastructures of payment systems; and
(vi) improves domestic information and technology systems, thus providing greater opportunity for growth (Wakeman-Linn and Wagh, 2008; African Development Bank, 2010; Takagi, 2011).

Other explanations for regional integration are that financial integration leads to massive capital flows across borders. Developing countries then hope that these free movements of financial resources will enhance their economies through better returns on individual savings, increased investments through portfolio diversification and employment opportunities resulting in skills and knowledge enhancement and, ultimately, poverty reduction (Stiglitz, 2000; Baele, Ferrando et al. 2004; World Bank, 2006; Nicolò and Juvenal, 2010; Osada and Saito, 2010; Ahmed, 2011). Even though regional financial integration is believed to have contributed to financial crises across the globe, Kose and Prasad (2004) suggest that one of the reasons why financial liberalisation continues in developing countries is because financial integration is seen by investors as a signal that a country is committed to good economic policies. The lack thereof may lead to market volatilities that can cause the flight of both local and foreign investors, an activity that may result in negative consequences to the local economy. Several setbacks can transpire in the implementation of regional financial integration policies, as highlighted by Aziakpono, Burger et al. (2009). These are: (i) abnormal distribution of capital flows across the region; (ii) difficult access to capital flows by less developed economies within the region; (iii) capital misallocation within the local economy; and (iv) macroeconomic destabilisation. Thus the positive effects of financial integration may take a while to manifest, owing to adaptation to the local financial systems (Klein and Olivei, 1999; Volz, 2004).

3.5.2 Regional Financial Integration in Africa and Asia

There is a growing amount of literature focused on African financial integration, for example Draper, Halleson et al. (2007), Ahmed (2011), Frey and Volz (2011) and Wakeman-Linn and Wagh (2011). As discussed in the introductory chapter, emerging economies in the African continent have followed after industrialised nations, implementing financial integration in an effort to modernise their financial markets, grow their economies and alleviate poverty (Draper, Halleson et al., 2007). The 1991 agreement between the OAU and the UNECA, which created the AEC, consisting of 51 African countries and 14 economic regions, with only 9 nations that are not multi-tasked (Draper, Halleson et al., 2007). As already outlined, regional financial integration in Africa (African Development Bank, 2010; Ahmed, 2011) has been launched in the SADC, SACU, COMESA, UMA, CAEMC, EAC and ECOWAS. The extent of regional financial integration varies with some at the implementation level and others at policy development stage (Wakeman-Linn and Wagh, 2008).

Several researchers agree that regional financial integration can positively drive economic development in Africa (Wakeman-Linn and Wagh, 2008; Ahmed 2011). Nonetheless, researchers argue that the benefits of regional financial integration in Africa are mainly hampered by a 'spaghetti bowl effect' that results in lack of clarity, conflicts, multiple and overlapping commitments by member states (Draper, Halleson et al. 2007; Wakeman-Linn and Wagh, 2008). Multiple country memberships lead to double taxation standards and increased transaction costs as one financial product is subjected to various regulatory requirements across regional bodies. According to Wakeman-Linn and Wagh (2008) regional financial integration works best when member countries have common strengths and weaknesses, otherwise the strongest and most developed members of the region stand to benefit more from pooled resources. They further point out that while aiming for financial integration in Africa, authorities should mainly strive to enhance financial access by rural communities and the poor. To a large extent, African financial markets are bank-oriented and, as a result, investment in projects that need long-term financing is compromised (Wakeman-Linn and Wagh, 2008). Generally, government dominance in the African capital markets crowd out the private sector resulting in narrow and illiquid markets (Wakeman-Linn and Wagh, 2008). Thus, financial integration and

development in Africa is delayed by political instability, irregularity, poverty and lack of skilled labour, amongst other economic and social ills.

Asia on the other hand is subdivided into three main regions: newly-industrialised Asian economies (NIE); ASEAN; and developing Asia (Goldstein and Xie, 2009). Countries in the NIE region are Singapore, Korea, Taiwan and Hong Kong. The ASEAN region comprises Thailand, the Philippines, Vietnam, Malaysia and Indonesia. Developing Asia is made up of Bhutan, Bangladesh, China, Cambodia, Fiji, Indonesia, Kiribati, India, Laos, Myanmar, Maldives, Nepal, Papua New Guinea, Samoa, Pakistan, Solomon Islands, the Philippines, Sri Lanka, Tonga, Thailand, Vietnam and Vanuatu. In moving towards financially integrated markets, Asian regions intertwined to form the Emerging Asia Economic Community, which is made up of NIE, ASEAN, China and India. ASEAN countries also formed the ASEAN Economic Community, unified by common trade regulations and agreements. Generally, regional financial integration in Asia is challenged by different stages of development across countries in economic growth, capital regulations, politics and tax regimes.

In their paper, Alicia García-Herrero, Yang et al. (2008) used gravity model analysis and concluded that financial markets in Asia have poor liquidity and increased diversification risk, thus slowing down Asian regional financial integration. This situation is worsened by the fact that Asian markets export more capital to the rest of the world than within the Asian region, contrary to European portfolio investments, which are more concentrated within Europe than in other countries. Furthermore, lack of home bias within Asian financial trade in regard to portfolio investments, inefficient domestic capital markets, restricted capital account and tight financial regulations, make Asian financial integration more difficult since free capital flows across borders are disturbed (Pongsaparn and Unteroberdoerster, 2011; Takagi, 2011). Empirically, Pongsaparn and Unteroberdoerster (2011) proved that Asian financial integration is not efficient and they suggested the need for financial trade openness to enhance growth and help rebalance the economy for the long-term. On a positive note, they also argued that FDI inflows and outflows are circulated more within the Asian regions than with the rest of the world. The intraregional FDI flows are mainly promoted by industrialisation in Japan and Korea and trade dealings between Hong Kong and mainland China. In the wake of the 2008-2010 global financial

crises, exposures in the Asian banking sector were reduced in a bid to manage market risks. Better still, Asian economies are strengthening intraregional trade relations and lessening financial assets outflows to Europe and the US, and thus an improvement in the degree of regional financial integration in Asia is envisaged for the future (Gruenwald, 2012). In preparation for capital account liberalisation, China was advised to develop a deep and liquid bond market that could handle the envisaged massive capital inflows (Borst, 2012).

3.6 Summary of Literature Review

Returning to empirical studies on Botswana, it is argued that financial integration has no direct effect on financial developments (Meshach, 2007). Other studies on Botswana established a strong relationship in which financial developments led to economic growth (Akinboade, 1998; Eita and Jordaan, 2010). The limitation of these studies, however, is that they did not relate financial developments to financial integration. In comparison, it is argued that South Africa's economic growth has created financial developments (Odhiambo, 2004; Ahmed and Wahid, 2011). The results of studies on this country support the economic growth theory developed by Patrick (1966), who argues that the causal relationship depends on the level of economic growth of a nation at any given time. According to this theory, in the early stages of growth, financial developments lead to economic growth and the opposite holds true when growth is at an advanced stage. Clearly, the South African economy is more developed than Botswana's. In her earlier work, Joan (1952) concluded that financial development is actually caused by the demands that arise from economic growth. Clearly, the research literature indicates that financial integration is a dynamic phenomenon with effects that cannot be 'blanketed' over all economies. Countries risk financial exclusion and economic stagnation if they do not open up their capital accounts. Trade integration, macroeconomic policy convergence, and financial and capital market integration may stimulate domestic investments, enhance financial access and transfer best practices to the local market. Nonetheless, the need to achieve the required threshold may put pressure on some economies and overstretch limited capacities, resulting in high market volatility, macroeconomic instability and political distortions that may adversely affect growth in the long-term. Building high quality institutions may not suffice if human capital formation is weak and absorption capacity is insufficient.

Overall, financial development seems to positively relate to economic growth, even though too much financial innovation can destabilise the market and hinder growth. Technological development should therefore be monitored and contained within safe limits lest access to finance is constrained, productivity hampered and financial crises occur. Traditional expectations of large capital flows from industrialised to emerging economies diminishes over time and some researchers have recently argued that capital actually flows from less developed to more developed nations. Thus effects of financial integration change as world economies become more liberalised and international markets integrate more. Removal of capital account restrictions makes cross-border differences diminish and to a large extent, the competition platform is equalised such that competitive advantages and market dominance may not be sustained by any nation for a long time. Whilst an individual country has not much control over integrated market activities, each country still has the responsibility to ensure the prevalence of the rule of law that protects investors and political and economic stability. This lowers the risks associated with financial integration.

Debates regarding the impact of financial integration on economic growth are still ongoing internationally, regionally and nationally, implying that the topic needs more research to explore different locations, draw on experiences and lessons from the outcomes and strategically plan to achieve sustainable economic growth.

CHAPTER 4: METHODOLOGICAL FRAMEWORK AND RESEARCH DESIGN

4.1 Introduction

This chapter explains a specific methodology and research design that is applied in this study. Literature on Botswana barely records the influence of financial integration on financial market developments. There is a theoretical void about whether financial integration and financial development have a significant bearing on private sector access to finance in Botswana. This study seeks to fill this literature gap. The study discusses growth and finance at the country level, not in the international arena and does not focus on policy issues. Given that Botswana has the highest growth rate amongst SSA countries (Ahmed and Wahid, 2011), a strong and positive influence of financial integration on financial market development will advance Botswana's economic growth. However, some research indicates that financial integration and financial development do not automatically enhance access to finance. In his budget speech, the Minister of Finance in Botswana alluded to the notion that there is a need to reduce dominance by the government in the economy and create space for private sector investment and growth (Matambo, 2012). The creation of strategies is required to ensure that finance trickles down to the private sector, otherwise its contribution will be highly compromised. Financing the private sector will in turn boost the capital base of private firms, enhance productivity, increase employment opportunities and eradicate poverty amongst grassroots citizens of Botswana, hence achieving the envisaged economic diversification.

4.2 Theoretical Framework

The main interest of this study is to find the causal relationship between financial integration, capital market development and private sector access to finance in Botswana. Most importantly, knowing the causal directions and feedback between related variables helps authorities to make informed policy decisions regarding sustainable economic growth (Shahbaz, 2012). In determining these relationships, other elements that influence growth, such as institutional frameworks, politics, policy and infrastructure, will be treated as exogenous variables. In line

with current literature (Ahmed, 2011; Shahbaz, 2012), the augmented Solow growth theory is used in this study.

The mathematical expression of the long-run relationship between economic growth and other variables was developed by Solow (1956) in his neoclassical growth theory. This theory was later advanced by Romer (1986) through the endogenous growth theory. Both of these theories apply the Cobb-Douglass production function that displays aggregate output as a product of aggregate stock of physical capital and labour. The neoclassical growth theory shows a production model on the long-run relationship between output, physical capital, labour, savings and knowledge. According to this theory, economy reaches a 'steady state' where output and capital increase at the rate of labour force growth. With the introduction of technical progress, over time output grows even when inputs from labour and capital are not growing. Critics of this theory (Barro, 1991; King and Rebelo, 1993) argue that differences in international capital flows are not accounted for. They further note that the theory is not explicit regarding the rate of return on capital. The endogenous growth theory, in particular, advocates for the inclusion of other variables like human capital, trade and technology into the growth model. Incorporating human capital into the growth model will result in constant rates of return and therefore the economy will overcome the steady state. This model, unlike the neoclassical growth model, makes technological change endogenous. The economy's technological change (as measured by the total factor productivity variable) depends on innovation and absorption of new technology. Further developments in economic growth theory were made by Mankiw, Romer et al. (1992). They developed an augmented Solow growth theory that accounted for human capital but controlled for other variables that influence the diminishing returns. Unlike the endogenous growth theory, the augmented Solow growth theory concluded that convergence in per capita income still exists but happens at a much slower rate than predicted by Solow (1956). The point made by Mankiw, Romer et al. (1992) is that human capital inclusion enhances the impacts of population increase and the stock of physical capital on output. Thus economic growth is determined by the kind of capital accumulated, increased population and improved productivity.

Even though the role of the financial markets still remains an issue of debate (Levine and Zervos, 1996), the importance of the financial system in economic growth cannot be over-emphasised.

Financial markets are tasked with the serious role of financial intermediation and channelling of capital flows from savers to investors to finance high return projects (Peachey and Roe, 2004). Thus technological change, capital accumulation and growth can be predicted using the degree of financial development (Levine, 1997).

This study assumes that contribution by trained human capital, financial integration, financial development and financial access can be used to determine long-run technological dynamism in Botswana's economy. New and more efficient financial management technologies can be transferred into developing economies from advanced nations through FI. The use of technology enhances financial intermediary by financial markets and improves financial access by customers as service delivery becomes more efficient and effective. The use of technology may be labour or capital saving by allowing output to be produced with less labour or capital input or even both. Therefore, the total factor productivity (A) can be modelled as:

$$A_t = FI_t^{\varpi} FD_t^{\theta} FA_t^{\wp} \qquad \textbf{(4.1)}$$

where, FI stands for financial integration, FD represents financial development and FA is financial access. Parameters of the respective variables are ϖ, θ, and $\wp$. These parameters measure the change in output in response to changes in the inputs.

Utilising equation 4.1, the specific growth model for this study will be:

$$Y_t = FI_t^{\varpi} FD_t^{\theta} FA_t^{\wp} K_t^{\sigma} L_t^{\delta} X_t^{\mu} \qquad \textbf{(4.2)}$$

where, Y denotes output, K represents the stock of capital goods, L stands for labour and X is for exogenous variables. Economic freedom, trade openness and government burden are some of the exogenous variables investigated in this study. Coefficients for K, L and X are given by σ, δ and μ respectively. The exponents in equations 4.1 and 4.2 are elasticities.

Taking natural logarithms of both sides of the equation 4.2 above gives;

$$Y_t = \varpi FI_t + \theta FD_t + \wp FA_t + \sigma K_t + \delta L_t + \mu X_t + \varepsilon_t \qquad \textbf{(4.3)}$$

where ε_t is the error term.

4.3 Econometrics Methodology

Econometrics is a scientific methodology that uses secondary data to build and test mathematical models that display theoretical connections amongst economic variables (empirical analysis). This methodology helps authorities to make decisions that are not based on perceptions and assumptions but rather on empirical evidence. This reduces the chances of bias and subjective opinions.

Econometric models used in country level studies rely on time series data whilst regional or international studies use either panel data or cross country data. The time series data approach is adopted in this study because the study is specifically about Botswana. This approach has the advantage of focusing analysis on country-specific issues over a given time period without any dilution. Previous research using international asset pricing models (IAPMs) to measure the impact of financial integration on capital markets was found to be inconclusive (Errunza, Losq et al. 1992; Soofi, 2008). Furthermore, the less stringent methodologies that were meant to improve on the IAPMs have the shortcoming of assuming that financial time series have normal distributions at their levels (Soofi, 2008). Over and above methodological failures, measuring financial integration is made even more complicated by institutional framework issues and therefore any methodology adopted in analysing the impact of financial integration should take cognisance of the long and short-run dynamics of this phenomenon. The VECM is appropriate to capture both the long-run and short-run relationships regarding financial integration in emerging markets as observed by Soofi (2008). Therefore, the VECM is employed in this study. This model also allows causality amongst cointegrating variables to be established.

The first and prudent thing to do with any given time series is to plot a graph depicting the data pattern and then determine the order of integration. Using statistical inference is preferred over visual analysis since variables may appear cointegrated when they actually are not and vice versa. Time series data can either be stationary or non-stationary. Ensuring that the data is stationary is of uttermost importance because hypotheses tests of regression parameters are best

carried out on stationary rather than on non-stationary data (Brooks, 2008). A stationary series is integrated of order zero, I(0), has a linear trend and the error term has no serial correlation, hence a white noise with zero mean and a constant variance. Non-stationary data can either be a random walk or deterministic. Theoretically, at log-levels, economic data reflect stochastic non-stationary rather than a time trend stationary process (Brooks, 2008). In order to induce stationarity, either difference stationary process or trend stationary process can be used. The difference stationary process is preferred over the trend stationary process in case the data displays a stochastic trend. If so, the difference operators are applied to the data (Dickey and Fuller, 1981).

In order to test for stationarity, an ordinary least squares (OLS) regression is formulated and its coefficient significance is tested based on a t-statistic. These tests have an assumption of stationary data. Regressing non-stationary or unit root variables on another will result in spurious regressions with misleading test results, reflecting unrelated variables as having strong relationships, as observed by Granger and Newbold (1974) and later theorised by Phillips (1987). Relations among variables given by t-ratios (indicator of long-run relationship) and F-statistic (a measure of short causal effects) will not portray the usual 95% t-distribution and F-distribution respectively. It is now common knowledge and practice amongst econometricians that data be first differenced, correct test specifications be made and dependent variable lags be included in the regression before testing. Each test statistic is measured against its corresponding asymptotic statistic distribution. Thereafter, conclusions on hypotheses can be drawn. Most economic variables are stationary after their first difference and therefore are said to be integrated of order one, I(1). Once the order of integration has been identified, cointegration and causality amongst the variables can be tested.

The multiple variables used in this study are assumed to have dynamic interrelationships and therefore a VAR is used to display their linear combination and also allow simultaneous computations to be made. Assuming long-run associations exist amongst the variables, VAR is then transformed into a VECM to enable tests for cointegration and causality. Different methods of stationary test exist but only the most famous augmented Dickey-Fuller (ADF) test (Dickey and Fuller, 1981) and the Phillips-Perron (PP) (Phillips and Perron, 1988) are explained in detail.

On the otherhand, various methods to establish long-run relationships amongst variables are available, but the most popular Johansen cointegration test (Johansen and Juselius, 1990) and Pesaran cointegration test (Pesaran, Shin et al., 2001) are illustrated in this study. Cointegration causality in the short-run is measured using Granger causality test (Granger, 1969).

Using equation 4.3, at log-levels the following VAR with *d* lags was estimated for this study series;

$$GY_t = \gamma_0 + \xi_1 GY_{t-1} + \xi_2 GY_{t-2} + ... + \xi_d GY_{t-d} + \mu_i X_t + \varepsilon_t \qquad \textbf{(4.4)}$$

where,

gy_t is $n \times 1$ endogenous variables vector

ξ_i are $n \times n$ endogenous variables coefficient vector

μ_i represents $n \times n$ coefficient vector of exogenous variables

X_t denotes $n \times 1$ exogenous variables vector

ε_t stands for $n \times 1$ white noise vector having zero mean and a constant variance

d is the length of the lag

γ_0 gives the constant variables vector $n \times 1$.

In the above VAR, each variable is a product of its own lag and that of other variables in the system. According to Pfaff (2008), the drift variable (γ_0) signal and size are of paramount importance since they explain the movement and slope of the series respectively. That is, a negative drift will cause the series to move downwards and vice versa, whilst the larger the drift the steeper the slope. According to Ahmed (2007), using a small sample size and annual data, one lagged VAR may be acceptable. Specifically, at one lag, equation 4.4 can be expressed as;

$$Y_t = \gamma_0 + \psi_1 Y_{t-1} + \psi_2 FI_{t-1} + \psi_3 FD_{t-1} + \psi_4 FA_{t-1} + \psi_5 K_{t-1} + \psi_6 L_{t-1} + \mu_1 X_{1t} + \varepsilon_{1t} \qquad \textbf{(4.5)}$$

$$FI_t = \gamma_0 + \psi_{11} Y_{t-1} + \psi_{12} FI_{t-1} + \psi_{13} FD_{t-1} + \psi_{14} FA_{t-1} + \psi_{15} K_{t-1} + \psi_{16} L_{t-1} + \mu_2 X_{2t} + \varepsilon_{2t} \qquad \textbf{(4.6)}$$

$$FD_t = \gamma_0 + \psi_{21} Y_{t-1} + \psi_{22} FI_{t-1} + \psi_{23} FD_{t-1} + \psi_{24} FA_{t-1} + \psi_{25} K_{t-1} + \psi_{26} L_{t-1} + \mu_3 X_{3t} + \varepsilon_{3t} \qquad \textbf{(4.7)}$$

$$FA_t = \gamma_0 + \psi_{31}Y_{t-1} + \psi_{32}FI_{t-1} + \psi_{33}FD_{t-1} + \psi_{34}FA_{t-1} + \psi_{35}K_{t-1} + \psi_{36}L_{t-1} + \mu_4 X_{4t} + \varepsilon_{4t} \quad \textbf{(4.8)}$$

$$K_t = \gamma_0 + \psi_{41}Y_{t-1} + \psi_{42}FI_{t-1} + \psi_{43}FD_{t-1} + \psi_{44}FA_{t-1} + \psi_{45}K_{t-1} + \psi_{46}L_{t-1} + \mu_5 X_{5t} + \varepsilon_{5t} \quad \textbf{(4.9)}$$

$$L_{t-1} = \gamma_0 + \psi_{51}Y_{t-1} + \psi_{52}FI_{t-1} + \psi_{53}FD_{t-1} + \psi_{54}FA_{t-1} + \psi_{55}K_{t-1} + \psi_{56}L_{t-1} + \mu_6 X_{6t} + \varepsilon_{6t} \quad \textbf{(4.10)}$$

Compacting equations 4.5 to 4.10 above results in:

$$GY_t = \gamma_0 + \sum_{i=1}^{d} \xi_i GY_{t-1} + \mu_i X_t + \varepsilon_t \quad \textbf{(4.11)}$$

Common understanding is that economic variables are related and in the long-run market forces cause them to converge at a point of equilibrium. Based on this background, in applying cointegration techniques, a linear combination of cointegrated variables that are integrated of the same order can be formulated, resulting in the series being stationary I(0) even though the variables themselves are non-stationary. Since variables tend to move away from equilibrium in the short-run, adding their lags and first differences will capture the short-run disequilibrium, thus the VAR is modified into a VECM. The model can be used to establish: (i) long and short-run relationships in the series; (ii) the direction of influence amongst the variables; and (iii) the weight of influence of one variable on another (Harris, 1995). Causality amongst the variables is not guaranteed even when cointegration exists in the system (Hassan and Zaman, 2012). Therefore, following current country-specific studies (Ansari, 2002; Ahmed, 2007; Egbetunde and Mobolaji, 2010; Eita and Jordaan, 2010; Asari, Baharuddin et al. 2011; Hassan and Zaman, 2012; Khalid, Zeeshan et al. 2012; Ogboi and Oladipo, 2012; Shahbaz, 2012; Tiwari, 2012), causality tests will be carried out within the VECM. For the sake of its popularity in economics research, the Granger causality test (Granger, 1969) are applied in order to establish short-run causal directions on lagged pairs of cointegrating variables whereas t-statistic significance of the error correction term coefficient is used to indicate the direction of causality in the long-run.

Generally a VECM is specified as;

$$\Delta GY_t = \gamma_0 + \xi GY_{t-1} + \varpi_1 \Delta GY_{t-1} + \varpi_2 \Delta GY_{t-2} + ... + \varpi_{d-1} \Delta GY_{t-d+1} + \mu_i X_t + \varepsilon_t \quad \textbf{(4.12)}$$

where Δ denotes first difference operator and γ_0 is the unrestricted constant term.

In order to identify cointegrating vectors in this study, the preferred Johansen cointegration test (Johansen and Juselius, 1990) is applied. Assuming that the variables in this study are unit root and cointegrated, formula 4.12 is modified into a restricted VECM as displayed by equation 4.13. The VECM is restricted such that the system contained cointegrating vectors of I(1) variables only. Since the variables are I(1) and as a result cointegrated of order (1,1), the long-run coefficient matrix is stationary; $\Pi = \alpha\beta: \ I(0)$. Therefore the resulting error correction term (βgy_{t-d+1}) is also stationary I(0) regardless of the cointegrating variables being non-stationary I(1). The lag *(d-1)* of the error correction term, corrects the short-run disequilibrium, so that the variables adjust to the long-run relationship. The equilibrium adjustment speed is measured by the error correction term coefficient α, which also demonstrates the impact of previous movements of the regressors on the present value of the dependent variable. The heavier the impact of past errors from equilibrium on the recent dependent variable's value, the more the α. Statistically, the cointegrating vector coefficient is significant if found to be negative and its p-value equals zero. Short-run relationship changes between the independent and dependent variable are described by the short-run coefficients Γ_i.

Thus, the following restricted VECM is specified for this study:

$$\Delta GY_t = \gamma_0 + \Pi GY_{t-d+1} + \sum_{i=1}^{d} \Gamma_i \Delta GY_{t-i} + \mu_1 X_t + \varepsilon_t \qquad \textbf{(4.13)}$$

Π is the long-run coefficient matrix derived from the $(n \times r)$ matrix, where *n* is the number of endogenous variables and *r* is the rank of the matrix showing the number of cointegrating vectors. Thus,

$$\Pi = \alpha\hat{\beta} \qquad \textbf{(4.14)}$$

where α denotes coefficient vector and β refers to a variables vector. Following the work done by Brooks (2008), $n = 6$. If there is only one vector of variables found, a 6×1 cointegration matrix will exist as:

$$\Pi = \alpha\hat{\beta} = \begin{pmatrix} \alpha_{11} \\ \alpha_{12} \\ \alpha_{13} \\ \alpha_{14} \\ \alpha_{15} \\ \alpha_{16} \end{pmatrix} \begin{pmatrix} \beta_{11} & \beta_{12} & \beta_{13} & \beta_{14} & \beta_{15} & \beta_{16} \end{pmatrix} \qquad \textbf{(4.15)}$$

A 6×2 matrix will result from two cointegrating vectors and:

$$\Pi = \alpha\hat{\beta} = \begin{pmatrix} \alpha_{11}\ \alpha_{21} \\ \alpha_{12}\ \alpha_{22} \\ \alpha_{13}\ \alpha_{23} \\ \alpha_{14}\ \alpha_{24} \\ \alpha_{15}\ \alpha_{25} \\ \alpha_{16}\ \alpha_{26} \end{pmatrix} \begin{pmatrix} \beta_{11} & \beta_{12} & \beta_{13} & \beta_{14} & \beta_{15} & \beta_{16} \\ \beta_{21} & \beta_{22} & \beta_{23} & \beta_{24} & \beta_{25} & \beta_{26} \end{pmatrix} \qquad \textbf{(4.16)}$$

From equation 4.15, Π is of rank one. The Π rank is derived from eigenvalues following the Johansen cointegration test and is not so easily calculated.

Using formula 4.15 above, equation 4.13 can be specified as follows;

(4.17)

$$\Delta\begin{pmatrix} Y_t \\ FI_t \\ FD_t \\ FA_t \\ K_t \\ L_t \end{pmatrix} = \begin{pmatrix} \gamma_1 \\ \gamma_2 \\ \gamma_3 \\ \gamma_4 \\ \gamma_5 \\ \gamma_6 \end{pmatrix} + \begin{pmatrix} \alpha_{11} \\ \alpha_{12} \\ \alpha_{13} \\ \alpha_{14} \\ \alpha_{15} \\ \alpha_{16} \end{pmatrix} \begin{pmatrix} \beta_{11} & \beta_{12} & \beta_{13} & \beta_{14} & \beta_{15} & \beta_{16} \end{pmatrix} \begin{pmatrix} Y \\ FI \\ FD \\ FA \\ K \\ L \end{pmatrix}_{t-d+1} + \begin{pmatrix} \beta_{11i} & \beta_{12i} & \beta_{13i} & \beta_{14i} & \beta_{15i} & \beta_{16i} \\ \beta_{21i} & \beta_{22i} & \beta_{23i} & \beta_{24i} & \beta_{25i} & \beta_{26i} \\ \beta_{31i} & \beta_{32i} & \beta_{33i} & \beta_{34i} & \beta_{35i} & \beta_{36i} \\ \beta_{41i} & \beta_{42i} & \beta_{43i} & \beta_{44i} & \beta_{45i} & \beta_{46i} \\ \beta_{51i} & \beta_{52i} & \beta_{53i} & \beta_{54i} & \beta_{55i} & \beta_{56i} \\ \beta_{61i} & \beta_{62i} & \beta_{63i} & \beta_{64i} & \beta_{65i} & \beta_{66i} \end{pmatrix} \begin{pmatrix} \Delta Y_{t-i} \\ \Delta FI_{t-i} \\ \Delta FD_{t-i} \\ \Delta FA_{t-i} \\ \Delta K_{t-i} \\ \Delta L_{t-i} \end{pmatrix} + \begin{pmatrix} \mu_1 \\ \mu_2 \\ \mu_3 \\ \mu_4 \\ \mu_5 \\ \mu_6 \end{pmatrix} X_t + \begin{pmatrix} \varepsilon_{1t} \\ \varepsilon_{2t} \\ \varepsilon_{3t} \\ \varepsilon_{4t} \\ \varepsilon_{5t} \\ \varepsilon_{6t} \end{pmatrix}$$

4.4 Granger Causality Test

The Granger causality test was developed to show directions of causality and feedback amongst cointegrating variables (Granger, 1969) in the short-run. The test was popularised by Sims (1972). The simple F-test statistic is unreliable given cointegrated non-stationary I(1) variables; statistical significance based on the error correction model is the preferred measure (Engle and Granger, 1987; Toda and Yamamoto, 1995; Ahmed, 2007; Eita and Jordaan, 2010; Nasir, Rehman et al. 2012). Conclusions regarding the hypotheses are made after the computed F-statistic is compared to the corresponding critical value at 5% and the probability ratio or p-value. The Granger causality test assumes that all variables in the system are stationary and the residuals are white noise. In the absence of cointegration, causality is tested using the vector autoregression (Soofi, 2008).

Assuming cointegration between economic growth (Y) and financial access (FA), the following bivariate models can be extracted from model 4.13:

$$\Delta Y_t = \sum_{i=1}^{d} \partial_i \Delta Y_{t-i} + \sum_{i=1}^{d} \wp_i \Delta FA_{t-i} + \varepsilon_{1t} \qquad \textbf{(4.18)}$$

$$\Delta FA_t = \sum_{i=1}^{d} \gamma_i \Delta Y_{t-i} + \sum_{i=1}^{d} \delta_i \Delta FA_{t-i} + \varepsilon_{2t} \qquad \textbf{(4.19)}$$

Using equation 4.18, the statistical significance of the values of lagged FA regarding the values of Y in the future or vice versa can be measured using the F-statistic (Wald test):

$$F = \frac{\left(RSS_1 - RSS_2\right)/\mathrm{q}}{RSS_2/\left(\mathrm{T}-2\mathrm{q}-1\right)} \qquad \textbf{(4.20)}$$

where the sample size is given by T, lag length is indicated by q, residual sum of squares from the restricted model is represented by RSS_1 and the restricted model residual sum of squares is denoted by RSS_2.

The null hypotheses are:

$H_0: \wp_i = 0, i = 1,2....d$ financial access does not Granger cause economic growth **(4.21)**

$H_0: \gamma_i = 0, i = 1,2....d$ economic growth does not Granger cause financial access **(4.22)**

Alternatively,

$H_1: \wp_i \neq 0, i = 1,2....d$ financial access does Granger cause economic growth **(4.23)**

$H_1: \gamma_i \neq 0, i = 1,2....d$ economic growth does Granger cause financial access **(4.24)**

Rejecting the null hypothesis at equation 4.21 will mean that financial access Granger causes economic growth and the F-statistic will be more than the critical value ($F >$ critical value) and also the probability will be less than 5% (p-value $<$ 5%). Economic growth Granger does not

cause financial access if $\gamma = 0$, p-value $> 5\%$ and $F <$ critical value, hence the null hypothesis stated at *4.22* is accepted. Causality runs from both directions if the null hypotheses are both rejected. Financial access and economic growth are independent from each other and there is no causality between the two variables if both $\wp$ and γ equal zero, hence the null hypotheses are accepted.

Granger causality between financial market development and economic growth can be tested based on:

$$\Delta Y_t = \sum_{i=1}^{d} \partial_i \Delta Y_{t-i} + \sum_{i=1}^{d} \theta_i \Delta FD_{t-i} + \varphi_1 \omega_{1t-1} + \nu_t \qquad \textbf{(4.25)}$$

$$\Delta FD_t = \sum_{i=1}^{d} \mu_i \Delta Y_{t-i} + \sum_{i=1}^{d} \varsigma_i \Delta FD_{t-i} + \varphi_2 \omega_{2t-2} + \eta_t \qquad \textbf{(4.26)}$$

The null hypotheses are:

$H_0 : \theta_i = 0, i = 1,2....d$ financial market development does not Granger cause economic growth

(4.27)

$H_0 : \mu_i = 0, i = 1,2....d$ economic growth does not Granger cause financial market development.

(4.28)

Against

$H_1: \theta_i \neq 0, i = 1, 2....d$ financial market development does Granger cause economic growth

(4.29)

$H_1: \mu_i \neq 0, i = 1, 2....d$ economic growth does Granger cause financial market development

(4.30)

The null hypothesis is accepted if $F <$ critical value and the opposite is true.

4.5 Stationarity Tests

4.5.1 ADF Unit Root Test

The ADF technique for the stationarity test (Dickey and Fuller, 1981) is an extension of the Dickey-Fuller test (Dickey and Fuller, 1979). The ADF unit root test is premised on this autoregression:

$$\Delta GY_t = \gamma_0 + d_t + \psi GY_{t-1} + \sum_{i=1}^{d} \xi_i \Delta GY_{t-i} + \mu_i X_t + \varepsilon_t \qquad \textbf{(4.31)}$$

where Δ denotes first difference operator and (d_t) is the time trend. The t-statistic is only reliable when the error term is a white noise. The ADF test therefore parametrically (within the estimated regression) eliminates any serial correlation from the error term by adding *d* lags of ΔGY_t to the regression, establishing an error term ε_t with zero mean and constant variance, hence augmenting the ordinary Dickey-Fuller test. The number of lags must be estimated prudently because usage of few lags will not fully delete autocorrelation, and yet oversized lags lead to increased standard errors in the coefficient. The decision to reject or accept any of the

hypotheses will depend on the comparison between the calculated t-statistics and the given ADF test asymptotic distributions statistics.

Equation 4.31 can be re-written with three lags estimation as:

$$\Delta GY_t = \gamma_0 + d_t + \psi GY_{t-1} + \varsigma_1 \Delta GY_{t-1} + \varsigma_2 \Delta GY_{t-2} + \varsigma_3 \Delta GY_{t-3} + \mu_i X_t + \varepsilon_t \qquad \textbf{(4.32)}$$

In case the OLS measure proves that the residual has no serial correlation, a parsimonious equation can be derived by an orderly reduction of equation 4.32 as follows:

$$\Delta GY_t = \gamma_0 + d_t + \psi GY_{t-1} + \varsigma_1 \Delta GY_{t-1} + \varsigma_2 \Delta GY_{t-2} + \mu_i X_t + \varepsilon_t \qquad \textbf{(4.33)}$$

$$\Delta GY_t = \gamma_0 + d_t + \psi GY_{t-1} + \varsigma_1 \Delta GY_{t-1} + \mu_i X_t + \varepsilon_t \qquad \textbf{(4.34)}$$

$$\Delta GY_t = \gamma_0 + d_t + \psi GY_{t-1} + \mu_i X_t + \varepsilon_t \qquad \textbf{(4.35)}$$

Following the reduced model process, the unit root test can be made based on one lag model with or without time trend and drift. Thus, using equation 4.34, the following three specifications can be formulated:

i. without drift and trend

$$\Delta GY_t = \psi GY_{t-1} + \varsigma_1 \Delta GY_{t-1} + \mu_i X_t + \varepsilon_t \qquad \textbf{(4.36)}$$

ii. with drift, without trend

$$\Delta GY_t = \gamma_0 + \psi GY_{t-1} + \varsigma_1 \Delta GY_{t-1} + \mu_i X_t + \varepsilon_t \quad \textbf{(4.37)}$$

iii. with drift and trend

$$\Delta GY_t = \gamma_0 + d_t + \psi GY_{t-1} + \varsigma_1 \Delta GY_{t-1} + \mu_i X_t + \varepsilon_t \quad \textbf{(4.38)}$$

Using equation 4.38, the test statistic for ψ is computed as:

$$\tau_t = \frac{\hat{\psi}}{se(\hat{\psi})} \quad \textbf{(4.39)}$$

where $se(\hat{\psi})$ represents the coefficient standard error and $\hat{\psi}$ estimates ψ.

The null hypothesis is that the series is unit root:

$$H_0 : \psi = 0 \quad \textbf{(4.40)}$$

The alternative hypothesis is that the series is not unit root:

$$H_1 : \psi \neq 0 \quad \textbf{(4.41)}$$

All three specification tests (4.36, 4.37 and 4.38) must be carried out at levels and at differences before a conclusion regarding stationarity is made. If the calculated ADF t-statistic is more than the corresponding critical value ($\tau > \text{CV}$), the null hypothesis is rejected. If the relevant critical value is more than t-statistic ($\tau < \text{CV}$) then the null hypothesis is accepted meaning that the series is unit root. Alternatively, probability ratios (MacKinnon, 1996) or one-sided-p-values can be compared to the 5% significance level of the critical value and conclusions can be drawn regarding the hypotheses. If the probability is more than 5% (p-value $> 5\%$) then the series is non-stationary and therefore the null hypothesis cannot be rejected. When p-value $< 5\%$, the null hypothesis cannot be accepted meaning that the series is not a unit root. Stationary (where, $\psi < 0$) implies that the shock (ε_t) is absorbed over time, that is, a shock in time *t* will have a lesser influence on time *t+1*. If the series is non-stationary or unit root $\psi = 0$, then the process is a random walk, unpredictable and the shocks remain forever in the system. Worse still, if $\psi > 1$, it means that the shock becomes heavier every time and the series may even explode if lagged for a longer period. These tests have a shortcoming of 'near observation equivalence' in that they fail to differentiate near a unit root series from a pure unit root series.

4.5.2 The PP Unit Root Test

The PP test (Phillips and Perron, 1988) builds on the Dickey-Fuller test but unlike the ADF, the PP test non-parametrically eliminates serial correlation and heteroskedasticity from the error terms by adjusting the Dickey-Fuller test statistic. The PP unit root test statistics have been developed based on heteroskedasticity and autocorrelation model developed by (Newey and West, 1987). Since the PP test can deal with heteroskedasticity, it is more robust than the ADF test. Moreover, the test does not require specification for the regression lag length. Unlike the ADF test regression, the PP test does not employ the difference operator Δ but rather GY_t is regressed on its own lag.

The PP unit root test regression is expressed as:

$$GY_t = \alpha + \psi GY_{t-1} + \varepsilon_t \qquad \textbf{(4.42)}$$

The following autoregressive specifications can be made:

(i) without drift nor trend, $\psi < 1$

$$GY_t = \psi GY_{t-1} + \varepsilon_t \qquad \textbf{(4.43)}$$

(ii) with drift, $\psi < 1$

$$GY_t = \alpha + \psi GY_{t-1} + \varepsilon_t \qquad \textbf{(4.44)}$$

(iii) trend stationary, $\psi < 1$

$$GY_t = \alpha + d_t + \psi GY_{t-1} + \varepsilon_t \qquad \textbf{(4.45)}$$

There are two PP test statistics, $Z\rho$ and the adjusted t-statistic expressed as $Z\psi$:

$$Z_\rho = n(\hat{\rho}_n - 1) - \frac{1}{2}\frac{n^2\hat{\phi}^2}{S_n^2}(\hat{\lambda}_n^2 - \hat{\gamma}_0, n) \qquad \textbf{(4.46)}$$

$$Z_\psi = \sqrt{\frac{\hat{\gamma}_0, n}{\hat{\lambda}_n^2}}\frac{\hat{\rho}_n - 1}{\hat{\sigma}} - \frac{1}{2}(\hat{\lambda}_n^2 - \hat{\gamma}_0, n)\frac{1}{\hat{\lambda}_n}\frac{n\hat{\sigma}}{S_n} \qquad \textbf{(4.47)}$$

where,

$$\hat{\gamma}_j, n = \frac{1}{2}\sum_{i=j+1}^{n} \hat{u}_i, \hat{u}_{i-j} \qquad \textbf{(4.48)}$$

$$\hat{\lambda}_n^2 = \hat{\gamma}_0, n + 2\sum_{j=1}^{q}(1 - \frac{j}{q+1})\hat{\gamma}_j, n \qquad \textbf{(4.49)}$$

$$S_n^2 = \frac{1}{n-k}\sum_{i=1}^{n} \hat{u}_i^2 \qquad \textbf{(4.50)}$$

The OLSs are given by u_i, regression covariates are indicated by k, lag length is measured by q and the ρ standard error is represented by σ.

The null hypothesis is that unit root exists:

$$H_0 : \psi = 0 \qquad \textbf{(4.51)}$$

The alternative hypothesis is that unit root does not exist:

$$H_1 : \psi \neq 0 \qquad \textbf{(4.52)}$$

The computed test statistic is then compared to the PP critical values (which are the same as the Dickey-Fuller test distribution), in order to accept or reject any given hypothesis at 5% significance level.

4.5.3 Other Methods of Stationarity Test

There are several other methods of stationary test, such as the KPSS developed by Kwiatkowski, Phillips et al. (1992), the ERS test (Elliott, Rothenberg et al. 1996) and the Ng-Peron test (Ng and Perron, 2001). These are not used in this study due to space constraints, and because the tests selected were sufficient.

4.6 Cointegration Tests

4.6.1 Johansen Cointegration Test

The Johansen cointegration technique (Johansen, 1988; Johansen and Juselius, 1990) applies maximum likelihood eigenvalues to build a VECM. Several restrictions are imposed on the inclusion of constant parameters and trends in the series. This technique identifies the number of long-run relationships (*r*) amongst variables that are purely unit root I(1) using two specific tests: (i) the maximum likelihood test; and (ii) the trace statistics test. Thus the variables in the VECM (equation 4.53) are cointegrated of order one resulting in a stationary I(0) series. Furthermore, this technique is advantageous since it allows hypotheses testing on more than one cointegrating vector, unlike that of Engle and Granger (1987).

The Johansen cointegration test is premised on the following VECM with *d* lags:

$$\Delta GY_t = \gamma_0 + \Pi GY_{t-1} + \sum_{i=1}^{d-1} \Gamma_i \Delta GY_{t-i} + \mu_1 X_t + \varepsilon_t \qquad \textbf{(4.53)}$$

where $\Pi = \alpha\hat{\beta}$ and represents cointegrating vectors derived from $n \times r$ matrix.

The number of cointegrating vectors to be included in the system is given by *r*, being the rank of Π and it is calculated using trace statistics and maximum likelihood eigenvalues. A rank of zero will imply that all variables in GY_t are non-stationary at their first difference, hence no long-run relationships are present in the series. A full rank of $r = n$ is almost impossible because it will mean GY_t (that is all variables) was originally stationary. Therefore, a reduced rank is expected

in which r is more than zero but less than n. For the multivariate case, a maximum likelihood test has proven to be more robust and reliable and it is better used than a trace statistic test (Johansen and Juselius, 1990; Khalid, Zeeshan et al. 2012). In the existence of residuals with skewness and large kurtosis, the trace statistic is preferred (Cheung and Lai, 1993). These tests also give the number of trends common in the system. Both trace statistics and maximum likelihood tests are formulated on the assumption that the error term, ε_t has zero mean and constant variance and the variables involved are unit root I(1). Nevertheless, Johansen (1995) demonstrates that the presence of stationary variables I(0) does not pose any difficulty since the I(1) variables will automatically single themselves out in the resulting long-run coefficient matrix (Π). Therefore there is no need to pre-test the variables for unit root.

The Johansen cointegration test is very sensitive to the inclusion or exclusion of intercepts and deterministic trends in the system. In order to get the correct specification, various models are estimated and then tested for the reduced rank following the Pantula principle (Johansen, 1995; Sj¨o, 2008; Tiwari, 2012). Four models are formulated below in their order of restriction (from tight to loose) as demonstrated by Sj¨o (2008), but the two most commonly used are models 2 and 3 since they are more realistic, whilst model 4 is a last resort option as follows.

Model 1 has neither intercept nor trend, thus the restrictive model is given by:

$$\Delta GY_t = \alpha\hat{\beta}GY_{t-1} + \sum_{i=1}^{d-1}\Gamma_i\Delta GY_{t-i} + \mu_1 X_t + \varepsilon_t \qquad \textbf{(4.54)}$$

Model 2 is less restrictive allowing cointegrating vectors to have intercept but not the $GY's$:

$$\Delta GY_t = \alpha\left[\hat{\beta}, \beta_0\right]\left[GY_{t-1}, 1\right] + \sum_{i=1}^{d-1}\Gamma_i\Delta GY_{t-i} + \mu_1 X_t + \varepsilon_t \qquad \textbf{(4.55)}$$

Unrestricted model 3 is the standard model allowing $GY's$ with trends and cointegrating vectors with constants:

$$\Delta GY_t = \gamma_0 + \Pi GY_{t-1} + \sum_{i=1}^{d-1} \Gamma_i \Delta GY_{t-i} + \mu_1 X_t + \varepsilon_t \qquad \textbf{(4.56)}$$

Model 4 gives cointegrating vectors with both constant and trend but no trend in $GY's$:

$$\Delta GY_t = \gamma_0 + \alpha\left[\hat{\beta}, \beta_1, \beta_0\right]' \left[GY_{t-1}, t, 1\right] + \sum_{i=1}^{d-1} \Gamma_i \Delta GY_{t-i} + \mu_1 X_t + \varepsilon_t \qquad \textbf{(4.57)}$$

The maximum likelihood test is written as:

$$\lambda_{\max}(r, r+1) = -TIn(1-\hat{\lambda}_{r+1}) \qquad \textbf{(4.58)}$$

The trace statistics test is expressed as:

$$\lambda_{trace}(r) = -T \sum_{i=r+1}^{g} In(1-\hat{\lambda}) \qquad \textbf{(4.59)}$$

where,

- λ denotes the eigenvalues while T gives the size of the sample.

The null hypothesis for maximum likelihood test is:

$H_0 : r$ cointegrating vectors **(4.60)**

Against:

$H_1 : r+1$ cointegrating vectors **(4.61)**

Trace statistics test null hypothesis is that there are r cointegrating vectors:

$H_0 : r$ cointegrating vectors ***(4.62)***

The alternative hypothesis is:

$H_1 : n$ cointegrating vectors ***(4.63)***

The above hypotheses are tested by comparing trace and max statistics to their critical values (Johansen, 1995) at 5% significance levels. Alternatively, P-values generated by Mackinnon et al. (1999) are compared to the 5% level and the hypotheses can be rejected or accepted. A sequential analysis of the eigenvalues (biggest to smallest) is done until the null hypothesis cannot be rejected, meaning that there is at most one vector of cointegrating variables. Given any eigenvalue, if the probability is more than 5%, ($P > 5\%$) or the test statistic is less than the critical value ($\mathrm{t} < \mathrm{cv}$) then the null hypothesis cannot be rejected. However, when $P < 5\%$ or $\mathrm{t} > \mathrm{cv}$ then there is no long-run relationship amongst the variables, hence the null hypothesis is rejected.

4.6.2 The Pesaran Cointegration Approach

The autoregressive distributed lag model (ARDL) bounds testing approach to cointegration, as developed by Pesaran, Shin et al. (2001), has been found to be the best approach to modelling data with both I(1) and I(0) integration order. Besides imposing nil restrictions in the order of integration, the ARDL bounds technique has several other benefits: (i) both short and long-run relationships amongst variables can be estimated at their log-levels, which means no omission of any variable and no autocorrelation difficulties; (ii) it can separate independent variables from dependent variables; (iii) it is suitable for small a sample size; and (iv) it can be used to develop an unrestricted error correction model (UECM). This method has been recently applied by various researchers on similar studies (Narayan, 2004; Hassan and Zaman, 2012; Shahbaz, 2012).

The Pesaran cointegration approach estimates the following VECM:

$$\Delta GY_t = \gamma_0 + \varphi_t + \vartheta GY_{t-1} + \sum_{i=1}^{d-1} \varpi_i \Delta GY_{t-i} + \mu_1 X_t + \varepsilon_t \qquad \textbf{(4.64)}$$

where (φ_t) is a trend and (γ_0) is a constant. ϑ is the long-run multiplier matrix, as illustrated below:

$$\vartheta = \begin{pmatrix} \vartheta_{YY} & \vartheta_{YFI} & \vartheta_{YFD} & \vartheta_{YFA} & \vartheta_{YK} & \vartheta_{YL} \\ \vartheta_{FIY} & \vartheta_{FIFI} & \vartheta_{FIFD} & \vartheta_{FIFA} & \vartheta_{FIK} & \vartheta_{FIL} \\ \vartheta_{FDY} & \vartheta_{FDFI} & \vartheta_{FDFD} & \vartheta_{FAFA} & \vartheta_{FDK} & \vartheta_{FDL} \\ \vartheta_{FAY} & \vartheta_{FAFI} & \vartheta_{FAFD} & \vartheta_{FAFA} & \vartheta_{FAK} & \vartheta_{FAL} \\ \vartheta_{KY} & \vartheta_{KFI} & \vartheta_{KFD} & \vartheta_{KFA} & \vartheta_{KK} & \vartheta_{KL} \\ \vartheta_{LY} & \vartheta_{LFI} & \vartheta_{LFD} & \vartheta_{LFA} & \vartheta_{LK} & \vartheta_{LL} \end{pmatrix} \qquad \textbf{(4.65)}$$

The matrix contains unrestricted variables (YY, FIFI, FDFD, FAFA, KK and LL) that are integrated of order zero or of order one. If any of the diagonal elements: $\vartheta_{YY}, \vartheta_{FIFI}, \vartheta_{FDFD}, \vartheta_{FAFA}, \vartheta_{KK}, \vartheta_{LL}$ equal zero, then that particular variable is integrated of order one I(1) and if found to be less than zero, it is integrated of order zero I(0).

According to Pesaran, Shin et al. (2001), the coefficients of the cointegrating vectors can be restricted by the inclusion or exclusion of a trend (φ_t) and/or a constant (γ_0). This condition influences the Wald test (F-statistic) distribution. The F-statistic is also guided by the size of regressors and the order of integration amongst the variables included in the series.

Using equation 4.64 the following five cases are given:

Case 1 excludes both trend and constant giving:

$$\Delta GY_t = \vartheta GY_{t-1} + \sum_{i=1}^{d-1} \varpi_i \Delta GY_{t-i} + \mu_1 X_t + \varepsilon_t \qquad \textbf{(4.66)}$$

Case 2 excludes trends and restricts constants, thus:

$$\Delta GY_t = \vartheta GY_{t-1}(GY_{t-1} - \gamma_{GY}) + \sum_{i=1}^{d-1} \varpi_i \Delta GY_{t-i} + \mu_1 X_t + \varepsilon_t \qquad \textbf{(4.67)}$$

Case 3 excludes trends while constants are unrestricted:

$$\Delta GY_t = \gamma_0 + \vartheta GY_{t-1} + \sum_{i=1}^{d-1} \varpi_i \Delta GY_{t-i} + \mu_1 X_t + \varepsilon_t \qquad \textbf{(4.68)}$$

Case 4 restricts trends but constants are unrestricted:

$$\Delta GY_t = \gamma_0 + \vartheta GY_{t-1}(GY_{t-1} - \varphi_{GY} t) + \sum_{i=1}^{d-1} \varpi_i \Delta GY_{t-i} + \mu_1 X_t + \varepsilon_t \qquad \textbf{(4.69)}$$

Case 5 has both trends and constants unrestricted:

$$\Delta GY_t = \gamma_0 + \varphi_t + \vartheta GY_{t-1} + \sum_{i=1}^{d-1} \varpi_i \Delta GY_{t-i} + \mu_1 X_t + \varepsilon_t \qquad \textbf{(4.70)}$$

After the order of integration has been identified, modelling each variable in the system as a dependent variable allows the ARDL cointegration test to identify long-run relationships using the F-statistic. The dependent variable however, must be integrated of order 1 whilst the regressors are allowed to be I(1) or I(0) or mutual, hence an unrestrictive model results. Estimating growth *(Y)* and financial development *(FD)* as dependent variables, assuming that both variables are I(1) with unrestricted constants (case 3 above), the following UECM can be specified:

$$\Delta InY_t = \gamma_0 + \sum_{y=1}^{d} \partial_y \Delta InY_{t-y} + \sum_{d=1}^{e} \partial_d \Delta InFD_{t-d} + \sum_{i=1}^{f} \partial_i \Delta InFI_{t-i} + \sum_{a=1}^{g} \partial_a \Delta InFA_{t-a} + \sum_{k=1}^{h} \partial_k \Delta InK_{t-k} +$$

$$\sum_{l=1}^{j} \partial_l \Delta InL_{t-l} + \nu_1 InY_{t-1} + \nu_2 InFD_{t-1} + \nu_3 InFI_{t-1} + \nu_4 InFA_{t-1} + \nu_5 InK_{t-1} + \nu_6 InL_{t-1} + \mu_1 X_{1t} + \varepsilon_{1t}$$

(4.71)

$$\Delta InFD_t = \gamma_0 + \sum_{y=1}^{d} \varsigma_y \Delta InFD_{t-y} + \sum_{d=1}^{e} \varsigma_d \Delta InY_{t-d} + \sum_{i=1}^{f} \varsigma_i \Delta InFI_{t-i} + \sum_{a=1}^{g} \varsigma_a \Delta InFA_{t-a} + \sum_{k=1}^{h} \varsigma_k \Delta InK_{t-k} + \sum_{l=1}^{j} \varsigma_l \Delta InL_{t-l}$$
$$+\nu_1 InY_{t-1} + \nu_2 InFD_{t-1} + \nu_3 InFI_{t-1} + \nu_4 InFA_{t-1} + \nu_5 InK_{t-1} + \nu_6 InL_{t-1} + \mu_1 X_{1t} + \varepsilon_{1t}$$

(4.72)

The null hypothesis is that all coefficients equal zero, hence no cointegration in the series:

$$H_0 : \nu_1 = \nu_2 = \nu_3 = \nu_4 = \nu_5 = \nu_6 = 0 \qquad \textbf{(4.73)}$$

Against the alternative hypothesis that the coefficients do not equal zero, there is cointegration:

$$H_1 : \nu_1 \neq \nu_2 \neq \nu_3 \neq \nu_4 \neq \nu_5 \neq \nu_6 \neq 0 \qquad \textbf{(4.74)}$$

Hypotheses for Y and FD (equation 4.71 and 4.72 can be respectively expressed as:

$$F_Y = (Y \mid FD, FI, FA, K, L) \qquad \textbf{(4.75)}$$

and

$$F_{FD} = (FD \mid Y, FI, FA, K, L) \qquad \textbf{(4.76)}$$

The ARDL bounds testing for cointegration compares F-statistic values to critical bounds (Pesaran, Shin et al., 2001). The asymptotic critical values are given in two formats: (a) lower critical bounds (LCB); and (b) upper critical bounds otherwise known as UCB. The LCB makes an assumption that the independent variables are stationary I(0) and UCB treats the regressors as I(1). Following these values, cointegration exists if the upper critical bound is less than the F-statistic ($F >$ UCB) and there is no association amongst the variables in the long-run when LCB is bigger than the F-statistic ($F <$ LCB). The variable to be normalised is shown by the F-statistic if cointegration is found. In case the Wald test value ranges midway between the LCB and UCB, then inference cannot be made and other methods of cointegration testing should be applied.

4.6.3 Other Methods of Testing for Cointegration

The Johansen cointegration test has been strongly criticised (Hjalmarsson and Österholm, 2007) as unreliable when the variables are not integrated of order I(1). Hjalmarsson and Österholm (2007) suggested the application of Monte Carlo simulation (residual based tests of cointegration) when the series is near unit root. Nonetheless, the same authors discredited the Monte Carlo simulation approach for its unrealistic expectation of perfect prior knowledge of lag length and existence of normally distributed data. Therefore this method is not used in this study.

4.7 Data, Variables and Measures

Previous research on financial integration and its impact on growth have mostly used panel data frameworks (Table 3-1). The main limitation of such panel data methodologies includes the inability to capture country and economic-specific experiences in the growth dynamics. Therefore country-specific studies are preferred in order to account for heterogeneous factors that cannot be captured using cross-county studies. To the researcher's knowledge, this country-specific research is the first study to consider the interaction between financial integration and access to finance in the Southern African region. This study references secondary data obtained

from Barro and Lee (2010), World Development Indicators (WDI) generated by the World Bank, the Penn World Table (PWT Version 6.2), the IMF database, the Economic Freedom in the World Database (EFWD), the United Nations Conference on Trade and Development (UNCTAD), the Bank of Botswana (BoB), the BSE and from other relevant literature (books, journals, previous research papers and electronic sites). These sources of data are shown in a consolidated form under Appendix 1 and then separately in Tables 4-1, 4-2 and 4-3 in detail and with corresponding specific variables. The time series data used is for the period 1990 to 2011. E-Views version 7.1 econometric software provided by Quantitative Micro Software was used to estimate the relations.

In current studies (Ahmed, 2011; Aisen and Veiga, 2011), economic growth (Y) as the dependent variable is measured using real GDP per capita growth with adjusted purchasing power parity (PPP) and in 2000 prices. Using the per capita growth and PPP approach helps in establishing an average domestic consumer's or producer's relative purchasing power and reflects the living standards of the resident population in emerging economies at any given time. As reflected in Table 4-1, growth in this study is a function of population growth (n), capital inflows and outflows as a share of GDP (FLO), capital inflows as a share of GDP (IFLO), international financial integration (IFIA) and (IFIB), human capital (HC), economic freedom (EF), inflation (INF), trade openness (TO), investments (INV), liquid liabilities (LLY), bank deposits (BKD), government burden (GB).

Financial integration is implemented differently across the globe with countries applying their own controls or restrictions when opening up their capital accounts. The relationship between capital account restrictions and growth varies from one country to another and studies show that countries without restrictions are not really better off than those with (Kose and Prasad, 2004; Quinn and Toyoda, 2008). The population growth (n) variable is included to explain the effects of decrease or increase of population on economic growth. Increase in population results in decreased GDP per capita growth and vice versa. Since Botswana's population has been growing over the years, a negative correlation with growth is envisaged. Capital inflows and outflows as a share of GDP (FLO) demonstrate trade openness and liberalisation of business transactions between an economy and the outside world. Research provides conflicting conclusions on

whether this occurrence is good or bad, but generally, international ties are welcomed as they open up new investment opportunities that are good for growth. A positive sign of capital flows impact on growth is expected. Capital inflows as a share of GDP (IFLO) measure the impact of FDI on growth. Recently, Botswana has experienced an inflow of capital for investments mainly in the mining sector. It is a common assumption that FDI brings with it new technologies and other knowledge necessary for production (Hansen and Rand 2006) and therefore a positive correlation was expected. Two ratios are used to indicate the impact of international financial integration on growth (IFIA and IFIB). IFIA is measured by the ratio of aggregate stock of assets and liabilities to GDP whilst IFIB is measured by dividing the stock of liabilities by GDP. The benefits of financial integration generally outweigh the drawbacks, as evidenced by extensive literature on this variable worldwide. Financial integration is associated with increased completion, increased capital flows, increased technological innovations, diffusion of knowledge and many more advantages, all of which enhance economic growth. The results vary to a large extent based on institutional frameworks and political environments. A positive relationship is therefore expected.

HC is a measure of education indicated by enrolment at secondary school level, as used by Aisen and Veiga (2011). An educated nation is associated with high productivity, increased creativity and innovation (Mankiw, Romer et al. 1992). It is the driving force behind economic growth and therefore a positive signal is expected. The EF is measured by the index for political and economic freedom (PEF). A sound institutional framework comprises many elements that create a environment conducive to investment, such as an efficient and well-regulated financial market, protection of property and copyrights, international market trade exchange, sound labour practices and strong legal operations. Economic growth is expected to positively associate with a higher index for political and economic freedom. Theoretically, high inflation (INF) negatively associates with growth (Barro, 1996). This negative association is a result of negative consequences of inflation, like the eroded purchasing power of consumers, lower investment capacity and reduced productivity (Andrés and Hernando, 1997; Edison, Levine et al. 2002; Elder, 2004). Following this theory, a negative sign is expected. Trade openness (TO) and its effect on growth still remain debatable internationally (Yanikkaya, 2003) but, to a large extent, economies with open trade relations tend to perform better than those without. TO is measured

using exports and imports as a share of GDP. Trade openness implies increased market opportunities for any given economy. Botswana is a member of several trade groups both regionally and internationally and, as a result, a positive correlation is expected. The INV variable is measured by the ratio of gross domestic fixed capital formation to GDP. This element denotes the value of fixed assets useful for production, hence it is associated with increased production capacity, labour cost reduction, innovation and creativity as well as increased exports. Increased investments are assumed to enhance growth (Mankiw, Romer et al. 1992) and a positive relationship is therefore expected. LLY is an indicator of financial depth (Luca and Bassam, 2002) and it is measured by the ratio of liquid liabilities to GDP. Theoretically, deep financial markets facilitate growth, hence a positive relationship is expected. BKD are assets that can be transformed into profits when loaned to firms and other users as they finance productive projects and, in turn, grow the economy (Naceur, 2003). A positive signal is expected from this variable. Government expenditure (GEX) as a percentage of GDP shows government burden (GB) or responsibility in growing the economy. Dominance by government depresses the success of the private sector (Aisen and Veiga, 2011) and, as a result, lower innovations and creativity negatively impact growth. Botswana's economy is highly government-dominated and therefore a negative correlation is expected. The level of credit market activity in relation to the private sector was calculated using PRVY as a share of GDP. This ratio demonstrates a portion of the national wealth lent to the private sector as a resource for profitable projects that are believed to diversify the economy. A positive correlation of this variable is expected, since Botswana has a vision of an economy that is not government-dominated but of shared responsibility with the private sector.

Table 4-1: Economic Growth Variables

Variables sets	Variables	Measurements	Database
Dependent Variable	Economic growth *(Y)*	Real GDP per capita growth (2000 prices and PPP adjusted)	WDI and PWT v6.2
Explanatory variables			
	Population growth *(n)*	Population growth *(n)*	IFS and PWT v6.2
	Capital inflows and outflows as a share of GDP *(FLO)*	FDI flows/GDP	UNCTAD and IFS (lines 78bdd +78bed +78bfd +78bgd)
	Capital inflows as a share of GDP*(IFLO)*	FDI inflows / GDP	UNCTAD and IFS (lines 78bed and 78bgd)
	International financial integration *(IFIA)*	Aggregate stock of assets and liabilities as a share of GDP; $IFIGDP_{it} = (FA_{it} + FL_{it}) / GDP_{it}$	LMF 2006
	International financial integration *(IFIB)*	Stock of liabilities as a share of GDP $(FL_{it}) / GDP_{it}$	LMF 2006
	Human capital (HC)	Enrolment ratio at secondary school level	WDI
	Economic Freedom *(EF)*	Index for political and economic freedom	EFWD, FH 2004 and FI 2006
	Inflation *(INF)*	Consumption index (CPI) annual log difference	IFS (line 64)
	Trade openness *(TO)*	Exports + Imports/GDP	WDI
	Investments *(INV)*	Gross domestic fixed capital formation/GDP	WDI
	Liquid liabilities *(LLY)*	Liquid liabilities as a share of GDP $\frac{\left[LLY_t / CPI_{et} + LLY_{t-1} / CPI_{e(t-1)}\right] \times 0.5}{\left[GDP_t / CPI_{at}\right]}$ Where annual average is indicated by *a*, period of time is given by *t* and *e* is the period end	IFS (line 551, CPI – line 64 and GDP line-99b)
	Bank deposits *(BKD)*	Bank deposits as a share of GDP $\frac{\left[BKD_t / CPI_{et} + BKD_{t-1} / CPI_{e(t-1)}\right] \times 0.5}{\left[GDP_t / CPI_{at}\right]}$ Where annual average is indicated by *a*, period of time is given by *t* and *e* is the period end	IFS (lines 22a-f, CPI-line 64 and GDP- line 99b
	Government burden *(GB)*	GEX/GDP	WDI
	Private sector credit *(PRVY)*	Private sector credit as a share of GDP $\frac{\left[PRVY_t / CPI_{et} + PRVY_{t-1} / CPI_{e(t-1)}\right] \times 0.5}{\left[GDP_t / CPI_{at}\right]}$ Where annual average is indicated by *a*, period of time is given by *t* and *e* is the period end	IFS (lines 32d, CPI-line 64 and GDP-line 99b

Source: World Development Indicators (2012); Ahmed (2011)

As outlined in several studies (Demirguc-Kunt, Asli; et al. 1996; Levine and Zervos, 1996; Naceur, 2003; Mishra, Malla et al. 2010; Wong and Zhou, 2011), equity market size (MS) measured by market capitalisation (MCAP) as a share of GDP is used as proxy for capital market development (CMD). The size of the capital market is also associated with costs of transactions, levels of investments, risk diversification and capital mobility; the larger the better (Levine and Zervos, 1996; Mishra, Malla et al., 2010). Data for capital market development variables are obtained from the BoB and the BSE, as shown in Table 4-2. Explanatory variables for capital market development include MCAP, market liquidity (ML) and market turnover (MT). MCAP, in particular, indicates the growth and development of the capital market. MCAP is the total value of listed shares (TLS) and it is expected to positively correlate with market size. ML is given by total value of shares traded (VLT) as a share of GDP. This measure indicates the degree of market trading given the size of the market itself and the economy at large. Since investors prefer shorter periods of saving than firms do (as they need long-term capital commitments), a liquid capital market is less risky because it enables investors to easily sell their stocks (without any discount) to the next party and at the same time firms are assured of continuous flow of capital at low costs (Levine and Zervos, 1996). A liquid market therefore enhances growth because it enables firms to engage in highly profitable projects whilst, simultaneously, investors with high-risk appetites are rewarded with higher returns (Rousseau and Wachtel, 2000). Since an illiquid market unattractive to both domestic and international investors, a positive relationship between market liquidity and the dependent variable is therefore expected. Market turnover ratio (MT) is measured by total VLT divided by MCAP and it is also a supplementary measure of liquidity and market size. Financial integration implies innovation and creativity, such that the small size of the market relative to GDP does not translate into illiquidity. Positive correlation is expected.

Table 4-2: Capital Market Development Variables

Variables sets	Variables	Measurements	Database
Dependent Variable	Market size (MS)	Market capitalisation share (*MCAP*)/GDP	BoB and BSE
Explanatory variables	Market capitalisation (*MCAP*)	total listed shares value (TLS)	BoB and BSE
	Market liquidity (ML)	Total Value of shares traded (VLT)/GDP	BoB and BSE
	Market turnover (MT)	Total Value of shares traded (VLT)/Market capitalisation (MCAP)	BoB and BSE

Source: The BSE (2010); Mishra, Malla, et al. (2010)

Financial access in this study is measured using a combination of several elements, such as financial innovations, financial activities and financial structure, even though these elements are used separately in other studies (Becka and Levine, 2002; Rioja and Valev, 2005; Valverde, Paso et al. 2007; Ahmed and Wahid, 2011). Financial access is proxied by ATMS as an indicator of technical change and financial market activities (Becka and Levine, 2002; Rioja and Valev, 2005). Explanatory variables for financial access are selected from the study done by Valverde, Paso et al. (2007) and the variables are measured using data from the BoB and the BSE (as shown in Table 4-3). These variables are: intermediation costs and physical structure (MEDI), bankruptcy (BKRU), loan commitments (LOAN), bank security investments (BINV) and technological innovations (INNO). Technological advancement is of the utmost importance during the financial integration era to ensure speedy processing of withdrawals and payment transactions. Therefore, the distribution of bank ATMs across Botswana will enhance access to finance, hence a positive correlation between financial access and technological change is expected. Assorted financial services and products, including information costs, physical structures and any other intermediation costs, should be affordable and available for usage by the private sector without negatively impacting on the firm's profitability (World Bank, 2006). The MEDI variable is measured by the number of bank branches as a share of total loans and deposits; that is: number of bank branches / (total loans + deposits). Intermediation costs are expected to be low and a negative sign is expected to show less costly access to finance.

The quality and risk of financial transactions between the financial intermediaries and the private sector is measured using the number of bankruptcies (BKRU). This measure also indicates defaults in repayments by the private sector. Much as the private sector is in need of finance for

their projects, the financial providers should not make a loss in the process. Therefore financial services and products should be offered or made available to firms working on projects with high expected returns and not on personal connections and collateral or historical records only. This screening approach will safeguard the providers' profits and, at the same time, the users will have continuous access to financial resources (World Bank, 2006). Therefore, a negative correlation is expected, meaning that fewer cases of repayment defaults and bankruptcies will be recorded. Sustainability of the relationship between the firms and financial service providers is necessary for successful completion of viable projects, hence the inclusion of an explanatory variable referred to as LOAN. This variable is measured by total loan commitments as a share of total lending by the banks. The LOAN relationship, bound by a contractual obligation, reinforces issues of debt screening and monitoring by the bank to avoid profit losses and bad business partners within the private sector. Since LOAN demonstrates the depth of commitment to long period contractual agreements between the two parties, this variable should be positively related with the dependent variable.

Financial market integration is expected to bring with it some BINV since the local market taps into best practices from across the international markets. Attracting managerial 'know-how' to the local market is expected to result in improved and new diversified financial products that can act as a competitive advantage to the financial service providers, as well as bring easy financial access and options to the users. To measure product innovation, the volume of bank security investments (BINV) as a share of GDP is used. It is therefore expected that product innovation will have a positive correlation with financial access. Technological innovation (INNO) in the financial market is necessary since it shows financial service providers' commitment to stay in touch with the market needs and keep up with current best practices. Examples of best practices are ensuring finance is accessible when it is needed and products are tailor-made to various market users. In this study, INNO is measured by the total number of automated teller machines. INNO also help by reducing costs related to financial access, such as travelling and transaction costs, as well as waiting time. Therefore, a positive correlation is expected. Furthermore, financial market size and orientation can determine access as adopted by other researchers (Rioja and Valev, 2005; Ahmed and Wahid, 2011). Generally, the size of the financial market determines the extent to which finance is available and accessible by the users. A negative

correlation between market size and access to finance may be anticipated given Botswana's small market. The market structure as shown by market orientation, demonstrates the level of productivity and efficiency of the financial system and in turn its impact on growth. A financial system that is more market-oriented than it is bank-oriented is reflected by higher ratios. Botswana's market is very small and illiquid, therefore the private sector relies more on credit issued by banks to finance their business. Consequently, a negative association between market structure and financial access is envisaged given that the Botswana financial market is heavily bank-oriented.

Table 4-3: Financial Access Variables

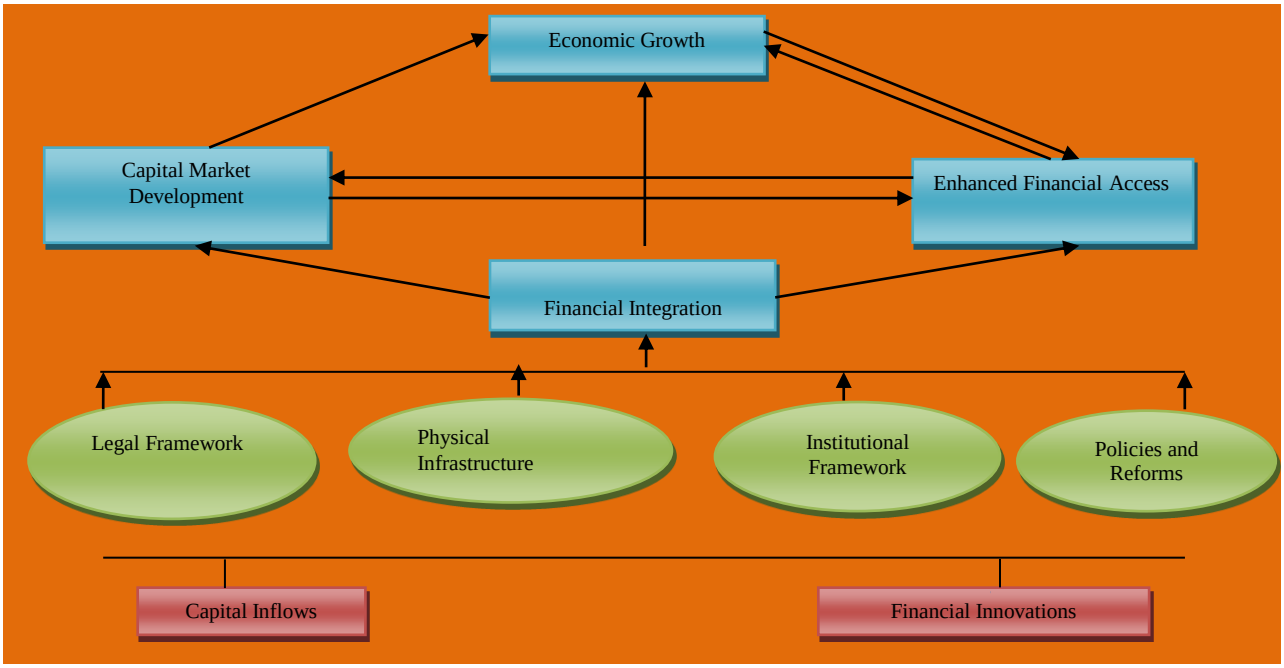
Variables sets	Variables	Measurement	Database
Dependent Variable	Automated teller machines *(ATMS)*	Number of automatic teller machines/Number of bank branches	BoB
Explanatory variables			
	Intermediation costs and physical structure *(MEDI)*	Number of bank branches /(Total loans + deposits)	BoB
	Bankruptcy *(BKRU)*	Number of Bankruptcies	BoB
	Loan commitments *(LOAN)*	Volume of loan commitments /total lending	BoB
	Bank security investments *(BINV)*	Volume of bank investments /GDP	BoB
	Technological innovation *(INNO)*	Number of automated teller machines	BoB

Source: Becka and Levine (2002); Rioja and Valev (2005); Valverde, Paso et al. (2007); Ahmed and Wahid (2011)

4.8 Conceptual Framework

The conceptual framework of this study is shown in Figure 4-1. The expected direction of causality amongst the variables is indicated by the arrows. Dual causality is demonstrated by two arrows whilst one-way causality is represented by one arrow. These envisaged relationships are explained in detail in the following sections.

Figure 4-1: Conceptual Framework



4.8.1 Financial Integration and Growth Causality

Benefits of financial integration include: more opportunities for risk sharing and risk diversification; better allocation of capital among investment opportunities; and potential for higher growth (Baele, Ferrando et al. 2004). Moreover, foreign capital inflows provide an alternative source of capital, promote knowledge transfer, enhance specialisation and uplift trade in the host country (Ahmed, 2011). Financial integration, therefore, enhances these benefits and gives them a cross-country dimension (Praet, 2012). Botswana as a member of SADC and SACU stands to benefit from regional financial integration. Thus, financial integration is expected to positively drive growth.

4.8.2 Financial Integration and Capital Market Development Causality

While FDI inflows can accelerate financial integration, capital market development can facilitate these inflows (African Development Bank, 2010). The report from the African Development Bank further notes that failure to develop capital markets in the implementation of financial integration may lead to misappropriation of FDIs. Therefore, regional financial integration in

Africa can be used as a tool to overcome the small size and illiquidity of the developing markets (Ahmed, 2011). Even though Botswana is part of the regional financial integration community (SADC), its capital market remains underdeveloped (small and very illiquid). Financial integration is expected to lead to capital market development as Botswana gains more international connections.

4.8.3 Capital Market Development and Financial Access Causality

Financial market operations should be smooth. The existence of financial market frictions generate persistent income inequality (World Bank, 2006). In order to develop the capital markets in Africa, the inclusion of institutional investors in the bond market chain has been advocated for (Dahou, Omar et al. 2009). Capital market costs, like information and transaction costs, hinder the growth of the private sector with its lack collateral, credit history and connections (World Bank, 2006). A stable and not so volatile market is preferred by investors and firms since it is less risky to both (Demirguc-Kunt, Asli, et al. 1996). A well-developed capital market channels the most needed funds to the private sector while, at the same time, demand from firms for capital drives innovation in the market. Thus access to finance and capital market development are expected to have dual causality.

4.8.4 Capital Market Development and Growth Causality

Bond financing can be a source of long-term finance for firms (World Bank, 2006). The capital market should therefore price assets optimally such that all players stand to benefit. Even though researchers argue about the relevance of capital market size, the larger the market size, the bigger the capital pool and therefore more projects can be funded. On the other hand, economic growth can influence developments in the capital market by attracting foreign investors who bring in not only capital but also technological ‘know-how’. Studies on correlations between capital market development and growth reveal different outcomes. However, in the causality view of Patrick (1966), capital market development is expected to influence growth in Botswana because of its small economy.

4.8.5 Financial Integration and Institutional Framework Causality

Financial integration prospers where there are sound institutions and good policies (Edison, Levine et al. 2002). Full capital account convertibility or liberalisation had been demonstrated to have adverse effects on emerging economies which are less diversified, have weak financial institutions and not so efficient regulatory frameworks (Stiglitz, 2000). Botswana's economy should benefit from technological innovations and capital inflows that result from financial integration since the country is politically stable, has good physical infrastructure, sound macroeconomic policies and reforms that create a good investment environment. Therefore, a positive association is expected.

CHAPTER 5: FINANCIAL INTEGRATION AND ECONOMIC GROWTH IN BOTSWANA[♣]

5.1 Introduction

This chapter investigates the effects of financial integration on economic growth in Botswana. Financial integration generally facilitates removal of stumbling blocks in the flow of capital across markets in various jurisdictions, creating an environment for economic growth. According to numerous researchers, integrated markets are expected to grow deeper and increase credit to the private sector, as foreign capital inflows increase and domestic savings are translated into profitable investments and to increase financial infrastructure developments. Enhanced innovation, skills transfer and competition, and therefore capital accumulation, are also expected. Furthermore, integrated markets promote risk diversification because various investment portfolios are offered to both the private sector and government (Wakeman-Linn and Wagh, 2008; Ahmed and Islam, 2009; Mougani, 2012; Klein and Olivei, 1999; Osada and Saito, 2010; Schularick and Steger, 2007; Mowatt, 2001). Financial integration therefore requires the abolition of policies that work to repress local markets through: (i) tough and rigid banking regulations that allow very little flexibility; (ii) ceilings and government controls on interest rates; and (iii) sectoral credit preferences that promote loan subsidies for certain industries only (Ahmed and Islam, 2009; Mowatt, 2001; TMSA, 2012). Financial integration is expected to benefit the local market and grow the economies of hosting countries. Liberalisation of financial markets has led to improved savings and investments in Botswana (Ahmed, 2006).

Financial integration at the regional level requires that the policies, institutions, regulatory and legal frameworks of signatory countries are harmonised to facilitate free flow of capital (Wakeman-Linn and Wagh, 2008). Botswana has long embraced the notion of financial integration, particularly since it became a member of the SACU. Over time, the country has proven its willingness to cooperate with other nations in order to develop both socially and economically. Besides being a member of SACU and the SADC at the regional level, the country's membership of the OAU stands as proof of Botswana's participation at the continental integration level. As discussed earlier, Botswana is also a member of international bodies like the

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WTO, the IMF and the UN. As a participant in regional financial integration, Botswana may benefit from the envisaged FTAs and EPAs established between Africa and the European Union. This regional and international economic integration is expected to enhance Botswana's financial markets and, ultimately, its economic growth. As indicated earlier, many researchers argue that the benefits of integration may be hindered by 'the spaghetti effect' that arise from overlapping commitments from multiple membership (Wakeman-Linn and Wagh, 2008). Thus while Botswana may benefit from its multiple integration agreements, the country's institutions and monetary regulations may be over-stretched in trying to comply with many requirements from different bodies.

Developments in the SADC regional integration are of the utmost importance to Botswana because the organisation encompasses neighbouring countries, including the SACU member states that share very close trade relations with Botswana. The SADC was mainly formulated to achieve economic freedom through regional integration, a rather different mission to the earlier Southern African Development Coordination Conference SADDC (which became SADC through the SADC treaty in 1992). This organisation aimed at political freedom for Southern Africa, especially from the apartheid rule. The SADC integration is expected, amongst other things, to promote economic growth and to raise the living standards of the citizens by alleviating poverty, ensuring financial and trade freedom, diversifying industry and increasing investment. This integration is guided by the SADC Common Agenda that spells out policies and guidelines towards economic freedom and sustainable growth. So far, strategic plans and several protocols have been developed to enable implementation of the agreed policies. Such instruments establish standardised legal as well as institutional frameworks for member states to operate within. For example, the Regional Indicative Strategic Development Plan was developed in 2003 to provide guidelines for the establishment of a SADC common market. This would be characterised by strong capital and financial markets, deeper monetary cooperation, high investment levels, increased market competition, macroeconomic convergence and integrated markets. Therefore a Finance and Investment Protocol (FIP) was developed in 2006 aimed at enhancing economic growth and investment through monetary, fiscal and macroeconomic policies that are coordinated and managed at regional level (SADC, 2013). Thus the protocol, if achieved, can lead to macroeconomic stability in the region. The FIP commits members to

develop policies that: (i) promote removal of any hindrance to the free flow of goods and services, labour and capital; (ii) ensure regional cooperation and enhance regional economic management; (iii) establish proper institutions and strategies that enable regional programmes to be implemented and coordinated smoothly; and (iv) encourage balanced intra-regional development. In the long-term the protocol seeks to establish a regional monetary union. To this end, a Memorandum of Understanding (MOU) on macroeconomic convergence was agreed and signed by member states in 2002. In the MOU, members committed themselves to building a stable regional macroeconomic environment with four main indicators: balanced current account, low fiscal deficits and public debt, as well as stable and low inflation rates. Achievement of the target indicators is measured by current account structure and balance, deficits as a share of GDP, share of public debt to GDP and inflation rate. An efficient and effective institutional framework and structure was then recognised to be a prerequisite for the MOU to be realised.

In 2011, four years after it signed the protocol, Botswana had achieved 62.5% of its FIP commitments placing the country at position five out of the fourteen SADC member states (TMSA, 2012). The report from TMSA further revealed that Botswana had an environment conducive for investment, characterised by: (i) established institutional agencies responsible for promoting and marketing investment opportunities in the country; (ii) sound legal protection for investors; (iii) prudent exchange controls; (iv) macroeconomic convergence; (v) efficient payment systems; and (vi) double taxation avoidance agreements, amongst others. Several obstacles identified in implementing the protocol, including the country's strict legislative controls regarding information sharing on bank taxation matters. The legislation does not allow Botswana Unified Revenue Services to disclose taxation issues of domestic banks to other tax authorities outside the country. There is also a need for coordinated and collective strategies that work to integrate various institutions affected by the protocol in order to avoid financial market instability and volatility. Other concerns related to the BoB's corporate governance strategy, supervision of banks, development of financial institution coordination and the country's payment systems. According to Wakeman-Linn and Wagh (2008), compliance by individual countries to regional financial integration agreements may, to a large extent, overcome the challenges associated with stand-alone financial markets. Nonetheless, the authors caution that

negative impacts may spill-over from other countries in the regional block and distress the local market, especially when the domestic market is less developed and small like that in Botswana.

5.2 Botswana's Economic Developments and Various Macroeconomic Issues

5.2.1 Institutions

Botswana's economic history is an amazing story of success punctuated by tremendous growth periods and prudent macroeconomic management. In his popular writings, Leith (2005) attributes the country's economic prosperity to a combination of sound institutions, effective policies and efficient shock-absorbers. Institutional tools used to guide and stabilise government expenditure in Botswana include NDPs, Vision 2016, MDGs, trade policy, fiscal policy and monetary policy amongst many others. Whilst NDPs are set for economic planning purposes, in order to accumulate capital the government uses two main mechanisms through both monetary and fiscal reforms, which also act as shock-absorbers: (i) cash balances held at the central bank; and (ii) foreign exchange reserves (Leith, 2005). NDPs are a strategic tool meant to achieve the national vision (i.e. Vision 2016). In the long-run, Vision 2016 aims at achieving prosperity for all by 2016 and it gives a broader picture of desired developments and a framework within which to achieve such economic developments. Therefore, the current NDP 10 focuses on specific projects that can accelerate achievement of Vision 2016. This is illustrated in Table 5-1. Botswana is also a signatory to the eight MDGs that had been agreed upon by international members of the UN. The country ensures that implementation of Vision 2016, NDPs and MDGs (to be achieved by 2015) is coordinated and achieved simultaneously. Thus, NDPs (i) demonstrate government's unfailing commitment and responsibility to sustainable socioeconomic developments; (ii) ensure that limited resources are not misappropriated and overspent but used according to priority for national benefit; and (iii) are motivated by pre-requirements from international aid donors.

Table 5-1: Botswana's Vision 2016, NDP 10 and MDGs – Goals Alignment

Vision 2016 Pillars	NDP 10 Goals	MDG
5. An open, democratic and accountable nation	12. Transparency & accountability in all public & private institutions 13. Enhanced & sustained participatory democracy 14. Rule of law	MDG 8: Develop a global partnership for development. The fifth pillar focuses on leadership, which is the main prerequisite for international development cooperation, especially FDI, and to a lesser extent aid and trade.
7. A united and proud nation	16. Strong national identity & unity	MDG 8: Develop a global partnership for development. Promotes nationhood based on shared values and aspirations. An important element of this Vision pillar, which is also essential to MDG 8, is good governance and participation

Source: Botswana Government (2014)

Botswana's government has always taken a position that all citizens be given an equal opportunity to benefit from the country's natural resources and endowments. Consequently, revenues from mining, agriculture, taxation and other sources are collected by government and used for the development of basic infrastructure for all. National development planning is therefore concerned with distributing funds that are under the government's control while ensuring that the government does not interfere with private sector planning. Nonetheless, basic infrastructure built by the government throughout the nation is for the benefit of individuals as well as the private sector. As a result of strategic planning, several outstanding developments have been made since independence. First, the country has a solid network of tarred roads that connect rural communities to the urban population, making movements of goods and services a simple and cheap task since no toll gates exist in Botswana. Furthermore, major roads that connect Botswana with its neighbouring countries easily facilitate trade in the region by lowering travelling and transportation costs. The fact that Botswana is in the centre of SADC region adds an advantage to private sector linkages and growth. Thus the country's development plans actually enrich the regional market community at large.

Second, government recognises the significant contribution made to economic growth by skilled human capital. Therefore, since independence, the government has developed a free education system to which the bulk of national revenues are directed. Primary, secondary and tertiary institutions have been built throughout the country and graduates from these institutions constitute the basic labour capacity necessary to deliver goods and services to the nation. The government's educational investment in its own people has therefore reduced unemployment, lowered poverty at the household level, provided a platform for innovation and creativity, increased market competition and enhanced private sector development; all inputs necessary for increased productivity.

Third, hospitals, clinics and mobile clinics are distributed throughout the country with a single mandate of delivery health services to the people free of charge. Botswana is a member of the World Health Organisation (WHO); therefore treatment offered to patients is of international standard. It is through this prudent health system that that government ensures that the workforce and the population at large are healthy and, as a result, more productive.

Fourth, water and electricity connections have been built throughout the country. Government has the sole social responsibility for providing clean water and electricity to its citizens and these factors of production are charged at much subsidised amounts. To ensure sustainable supply in the long-run and to avoid disruptions in output, the government entered into agreements with neighbouring countries to supply extra water and electricity. Supply of electricity has enabled the creation of a very sound information and telecommunication system that promotes market integration through knowledge and skills transfer within the shortest time possible. This creates savings for market players by lowering communication costs, enhancing competition, innovation and creativity.

Fifth, growth of the private sector has been experienced over the years. While government does not directly plan for the private sector, indirect private sector development is done by the government through basic infrastructure provision. Furthermore, in its effort to reduce heavy dependence on mining revenue, government offers opportunities for private sector contribution to economic diversification by providing a climate conducive for investment. This is

characterised by low tax, zero foreign exchange controls, low corruption, low labour costs, low inflation rates, political stability and respect for the rule of law.

Sixth, poverty eradication programmes have been successful and over the years, poverty levels have fallen dramatically. Botswana aims to reduce poverty significantly by the end of the current NDP (2015). Some schemes aimed at poverty eradication are the housing appeal, drought relief, food rationing, backyard gardening and tax exemptions, amongst others. Under the housing appeal programme, either individuals or corporate citizens are encouraged to provide basic shelter to less fortunate community members. Recently, many poor households benefitted from this national call and received houses from various donors. Since Botswana has poor rainfall, food production is very low and consequently many rural communities suffer from hunger. In addition, many of the rural poor are unemployed and cannot afford to purchase food stuffs. Drought relief programmes offer employment opportunities to rural community dwellers to build community projects for minimum wages. This helps to improve their purchasing power and contribute to community developments hence increasing output at rural level. Members of the community who are aged or orphans are given food baskets monthly under the food rationing programme. Through the backyard gardening programme, the government encourages the unemployed to participate in food production for local and national consumption. This is achieved by freely distributing cattle and goats to deserving individuals who are expected to manage and multiply the livestock. Some members are helped by the government to plant vegetable gardens in their backyards or fields. To some extent, backyard gardening supplements the government's efforts to ensure national food security. The government has also reduced unemployment and increased vocational training through a strategic planning approach.

5.2.2 Fiscal Policy

Prior to its independence, Botswana was a very poor and undeveloped nation with very limited infrastructure necessary for production. After 1966, the appointed government's vision was to set up infrastructure and provide a public service system that would deliver basic economic activities while leaving some room for private sector participation. Thus government began to build schools, roads, hospitals and accommodation. The government therefore became the largest

employer and investor. This situation necessitated the instigation of efficient and effective fiscal planning that would balance revenue and expenditure; conditions required for sustainable growth. Botswana therefore developed its fiscal policy to ensure that the limited available revenue resources were allocated prudently to deserving expenditure items for both social and economic infrastructure developments. This would promote diversification of exports and growth of the private sector. Further fiscal measures taken by government to monitor expenditure and grow the revenue base included setting government expenditure targets of 40% as a share of GDP annually and cutting off some expenditure items, like public officer travel. The policy position is documented and communicated to the nation and all stakeholders through the annual budget speech, which is presented in parliament by the Minister of Finance and Development Planning. The speech details monies to be drawn from the Consolidation Fund for estimated recurrent and development expenditures strictly approved by parliament through the Appropriation Act. The budget aims at ensuring that government expenditure is stabilised. The strength of Botswana's budget system lies in the connectivity between the country's NDPs and the annual budget. Whilst NDPs are strategic plans of six to seven years, the budget is only for one year. This phenomenon arises from the reasoning and approach that the government takes - that NDPs entail capital projects that, once completed, would give rise to recurrent maintenance and administration costs. This knowledge informs the budget.

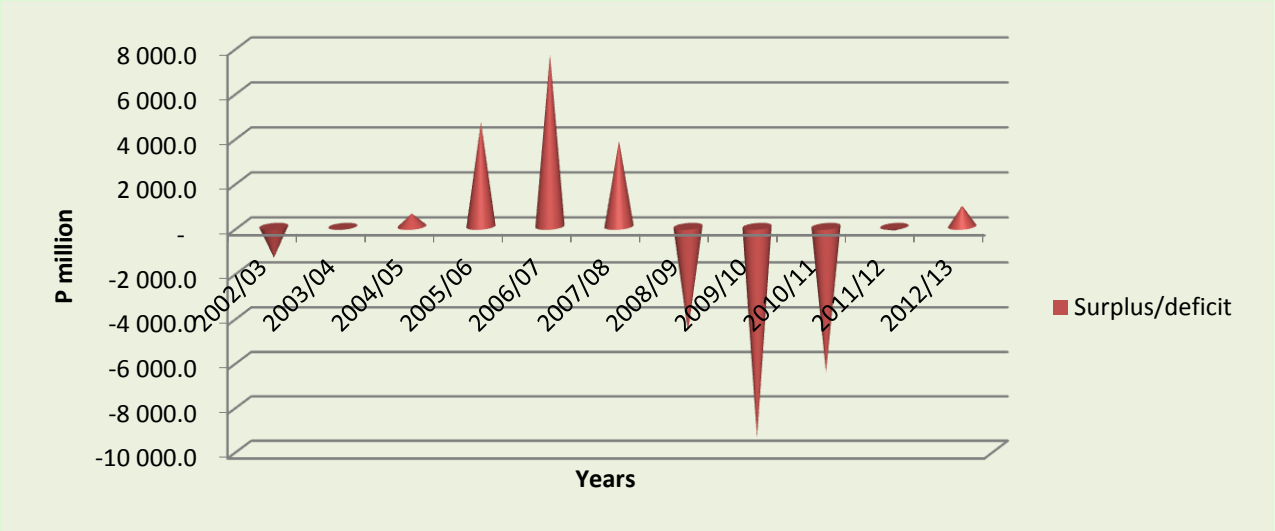
A trend of budget outcomes between 2003 and 2013, as illustrated in Figure 5-1, shows mixed results of surplus and deficit budgets (BoB, 2012a; BoB, 2014). The highest government budget surplus (P7,660.3 million) occurred during the financial year 2006/2007 at 11.2% of GDP, corresponding to the lowest debt ratio of 5.4% registered in the same year. The budget boom was negatively affected by the global economic meltdown in 2008, when only 4.8% surplus was recorded. Thereafter a continuous trend of budget deficit was recorded for three years (2008/2009, 2009/2010 and 2010/2011) hitting the lowest mark of P9,466.1 million in the 2009/2010 financial year before a balanced budget at the end of 2011/2012. The highest debt to GDP ratio was recorded in 2011 and stood at 17.8%. The current surplus realised during the 2012/2013 financial year reflects a quick recovery from the global financial crises period and shows a resilient economy, effectiveness and prudent fiscal management on the part of the Botswana government. Botswana's credit rating of A- as measured by, Standard & Poor's and

Moody's credit rating agencies, demonstrates the country's ability to pay back its debts and proves that Botswana belongs to a group of stable economies across the world with an upper medium grade. This credit rating gives Botswana an added advantage and attracts both domestic and foreign investments, which can positively affect growth. Prudent fiscal management schemes that avoid further deficits, which have negative impact on output, are therefore necessary to stabilise the government budget.

The accountability and regulatory frameworks within which the fiscal policy is carried out are of the utmost importance as they create the checks and controls necessary for efficient financial management. Whilst the Ministry of Finance and Development Planning (MFDP) develops plans and budgets through its Development and Budget Division, the Office of the Accountant General is responsible for procuring and distributing goods to various ministries and also ensuring the existence and operation of a sound and efficient financial and accounting system. In Botswana, an accounting and payment system known as GABS has been implemented and is integrated with other systems in the region to allow electronic funds transfers and cheque payments based on the Pula and other currencies to be easily converted to local currency and deposited in the BoB. Furthermore, the system has point of sales machines installed in various government collection points across the country and even at border gates to avoid delays and to enable timely transactions. This represents a modernisation of government payment procedures and promotion of production. In delivering its mandate, the Office of the Accountant General is guided by various regulations, including Financial Instructions and Procedures, the Finance and Audit Act, Supplies Regulations and Procedures, Procurement manual and PPADB Regulations. The Office of the Auditor General is the highest auditing institution established by the Botswana Constitution, with an assignment to audit all ministerial, local authority and parastatal accounts and provide proof that public funds were collected and distributed by those mandated to do so, according to guiding laws and regulations. Thus annually, the Auditor General submits an audit report which details the status quo of national accounts to the parliamentary Public Accounts Committee (PAC). Botswana's PAC is affiliated to the regional PAC and therefore works towards integration in ensuring that domestic accountability is of a high level and at regional expectations. All ministerial accounting officers (Permanent Secretaries) are answerable to the PAC public forum. This acts as a deterrent against corruption and illegal dealings by public

officers, which may compromise delivery of goods and services to the nation. Since the country implements, closely monitors and controls its fiscal policy, productivity is boosted and budget surpluses have been experienced, leading to the rapid growth of reserves.

Figure 5-1: Budget surplus and deficit



Source: BoB (2012a) and BoB (2014)

5.2.3 Monetary Policy

Unlike other SADC member states, Botswana has practiced prudent financial management policies since its independence. This explains, to a large extent, why Botswana has the fastest economic growth in SSA. The national central bank (the BoB) has been tasked with spearheading monetary policy. The BoB was legally established in 1975. This move was taken by the Botswana government after realising the need for a financial system independent from the Rand Monetary Area (RMA), which comprised South Africa, Botswana, Lesotho and Swaziland. From 1966, Botswana used South African currency, the Rand, and relied on South African financial institutions for trade. Whilst money was flowing freely amongst the RMA members, the situation posed many difficulties as Botswana and other smaller countries could not set up their own monetary policies. This meant that they had no control over interest rates and exchange rates, which were dictated by the South African monetary system. Upon the establishment the BoB, the country developed its own currency, the Pula, and an independent financial system. The

only two commercial banks that operated in Botswana before 1975 were foreign-owned but they were incorporated locally after the BoB was established. In that regard, financial stability in Botswana was promoted and credit to the domestic investors was enhanced. Exchange between the Rand and the Pula became the foundation of Botswana's foreign exchange reserves, which grew rapidly thereafter because of diamond sales. This resulted in a Sovereign Wealth Fund in 1994.

Unlike other SADC countries that have floating exchange rate policy regimes, Botswana operates a pegged currency exchange rate policy, with the Pula fixed to main trading partners' currencies. Whilst the pegging arrangement may give rise to speculation, it is preferred to lower exchange rate volatility in the short-term and also promotes adherence to partnership trading agreements by the local government. Since 1999, the country has abolished all controls on the exchange rate and converted its capital account fully, making the country more attractive to potential foreign investors. The growth of the reserves explains why Botswana has sustained periods of budget surplus. The banking regulatory framework therefore gives the central bank powers to manage the reserves through the exchange rate. It also gives them control to supervise, monitor and govern all banks and other financial institutions in the country, oversee monetary policy by controlling inflation and interest rates, as well as ensure a prudent payment and settlement system.

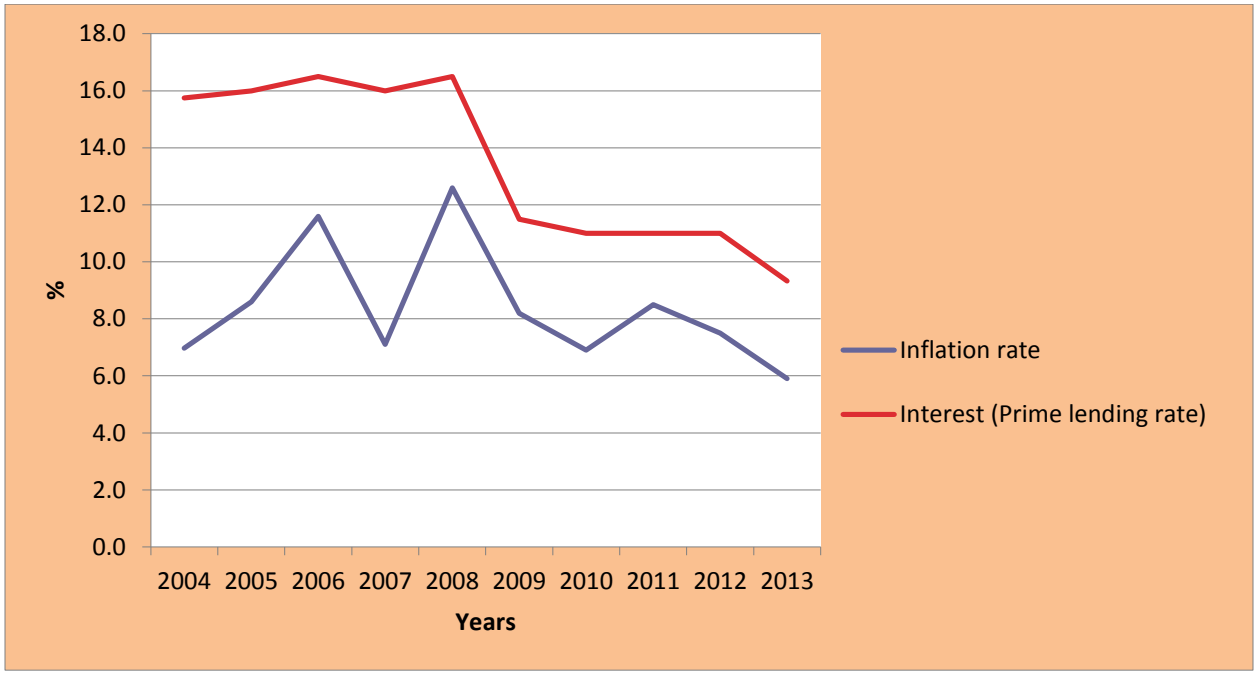
The monetary policy framework aims at achieving stable prices in the medium to long-term by creating a financial environment that aligns aggregate demand of goods and services to the economic supply capacity. This is achieved using import prices, external demand, indirect taxes, government burden, expectations on inflation, wages and salaries, interest rates, administered prices and exchange rates. The central bank takes a closer look at budget trends to ensure that fiscal policy does not affect the inflation target negatively. Over the years, Botswana has maintained a balanced account as a result of continuous budget surpluses and growth of foreign exchange reserves stock. Government debt in Botswana is managed by the central bank, which ensures that debt settlements and payments are done in a timely way. They also advise government on the best debt to GDP ratio that is to be adopted at any point in time in order to avoid budget deficits. Historically, domestic debt had been kept at lower rates because there was

no pressure on government to finance its expenditures through debt, given the prolonged period of budget surpluses. Government issued debt instruments in 2003 mainly to encourage local capital market activity and to set a risk-free yield curve as a benchmark for debt issuance by the private sector and parastatal organisations. A lower debt ratio is preferable since it indicates greater opportunities for government to honour its debt obligations when they fall due. An external debt ratio is set at 20% of GDP. Also, a value added tax system (VAT) was introduced in 2005 to enable collection of more revenue and in 2006 income tax was adjusted such that the taxation threshold was lifted from P25, 000 to P30, 000. Moreover, cash balances generated over surplus years and stored by the central bank are used to counterbalance deficit budgets. While deficits have been financed domestically, the 2009/2010 and 2010/2011 budget deficits of P9,466.1 million and P6,508 million respectively (see Figure 5-1), were mainly financed from foreign reserves and external loans (BoB, 2014). Of the P9,466.1 million 2009/2010 deficit, P6,442.3 million was from foreign accounts and P3,023.8 million was domestically financed (BoB, 2014). Thus financial integration helps the country to mobilise its capital smoothly in order to cover its fiscal obligations.

The monetary policy is not rigid in that the determinants of inflation are reviewed on a mid-term basis in order to capture any changes prevailing in the economy at the time and adjust the monetary policy accordingly. Thus, a forward looking system is applied by the BoB to forecast inflation. The BoB sets and works to achieve specific numerical inflation targets or objectives. Currently, the monetary policy framework in Botswana has a three-year term that targets annual inflation at three to six percentage changes based on the Consumer Price Index (CPI). In order to control inflation within the desired target, the central bank adjusts interest rates and exchange rates accordingly. The bank sets a prime rate (bank rate), which acts as a guide for market interest rates. Therefore any change in the prime rate affects interest rates offered by the market. The effect of the exchange rate on the rate of inflation in Botswana is mainly driven by change in the local currency exchange rate and not necessarily through interest rates. This situation is a result of the ‘crawling peg’ arrangement between Botswana and its main trading partners, which restricts movement of the Pula so that the local currency does not react too much to a change in interest rates. Nonetheless, increased exchange rates are monitored to ensure that the high inflation that results from import prices is brought down to target so as to achieve a balanced

current account. Inflation must be monitored very closely in order to avoid eroding consumers' purchasing power, which often follows an interest rates hike. So far, the spread between inflation and interest rates has reduced significantly, signifying increased competition and efficiency in Botswana's financial markets, as shown in Figure 5-2.

Figure 5-2: Inflation and Interest Rates in Botswana



Source: BoB (2012a) and BoB (2014)

5.2.4 Human Capital (Population, Education and Employment)

Human capital is more capable and productive when the basic needs of humanity (e.g. food, shelter, health, education) are met. As such, some studies argue that not only human capital but even better human development, especially in the areas of health and education, has the capacity to grow economies (Ranis et al. 2000; G.Kgakge-Tabengwa, 2014). Thus a healthier, well-nourished and educated human resource is more productive than the contrary and human development has the potential to alleviate poverty. A positive dual causality exists between human development and growth (Ranis et al. 2000).

In her study on several African countries, Kgakge-Tabengwa (2014) highlights the need for continuous and prudent investment strategies in human capital development. The author suggests that low public debt levels and high revenue collections are some of the ingredients necessary for sustainable government expenditure on human capital. Accordingly, Botswana invests heavily in human development, as evidenced by large yearly fiscal expenditure portions allocated to the education and health sectors. This arrangement has been sustained over the years by fiscal surpluses and high revenue collections from mineral trade. The country's investment in quality health facilities has enabled longer life spans for its citizens, thus ensuring that the population is preserved for more economic productivity. World Development Indicators (2013), as shown in Figure 5-3, suggest a ten year upward trend of population increase in Botswana from 1,700,000 to 2,000,000 between 2001 and 2011.

Botswana's small population brings both advantages and disadvantages to its growth. The small population is advantageous in that limited resources can be distributed fairly to the citizens. However, on the other hand, increased productivity by the mass is less likely and may result in high labour costs. In addition, country markets may suffer from a shortage of buyers, causing the exodus of businesses to neighbouring markets. Since the late 1980s, population growth in Botswana has been slowed by deaths related to the HIV-AIDS virus. Mortality rates for children under five years have grown from 48% in 1990 to 53% in 2012, according to UNICEF statistics (UNICEF, 2014). The UNICEF database also indicates that HIV amongst adults is prevalent at 23% as at 2012 and during the same year 340,000 people in the country were estimated to be living with the AIDS virus. Efforts by the country to combat the spread of the HIV-AIDS virus have been overwhelming (Botswana Government, 2014) and include free administration of anti-retro viral drugs to all infected citizens, prevention of mother-to-child infections during pregnancy and birth, free testing centres nationwide, a safe male circumcision programme, national institutions specifically established for AIDS related issues (National AIDS Council, National AIDS Coordinating Agency, Private Sector and International Funding Partners) and continuous education programmes to all age groups. Unlike the UNICEF data, local statistics show that HIV-AIDS prevalence has reduced, especially amongst pregnant women, from 36.2% in 2001 to 31.8% in 2009 (Botswana Government, 2014). Nonetheless, the country database reveals that prevalence during the same period is lowering amongst pregnant women in the 15 to

24 age group whilst an increase in AIDS virus infections is recorded for pregnant women aged between 25 and 49 years. Thus, efforts to fight the spread of the disease have borne positive results in that population decreases, increased child mortality and further loss of the labour workforce have been prevented. More effectual strategies to combat new infections are still needed in order to save the already small population of Botswana and the larger economy from the negative impacts of the disease.

Human capital with knowledge and skills creates productivity. Education is a weapon which can be used to fight and defeat hunger, ignorance and diseases (BFTU, 2007). Regarding the education of its citizens, Botswana's results are outstanding. It offers free education to the locals from primary school to tertiary level. The high primary school enrolment rate means that most of Botswana's population are literate, with primary education qualification or higher, creating an educated labour force. It is estimated that 82% of Botswana's labour force is literate and can speak and write English. This makes it easier to communicate with foreign investors who may not know the local Setswana language (BITC, 2014b). Botswana Central Statistics (Statistics Botswana, 2011) shows that as of 2011, there were 810 primary schools country-wide with 332,971 students compared to 66,100 pupils enrolled in schools at the time of independence in 1966 (Leith, 2005). Of the 810 schools recorded in 2011, only 60 were privately owned, with as few as 20,391 students. Primary school enrolments are not gender biased as the percentage of male and female students is almost equal at 48.1% and 45.8% respectively (in government schools) whilst 3% males and 3.1% females are enrolled in private primary schools. This gender balanced education system in Botswana explains the country's growth contribution by both female and male employees in high positions of governance, both in the public and private sectors. This scenario contrasts with most African economies, which are male dominated. Whilst Botswana has educated human capital, the challenge of a mismatch in existing skills and industry needs has been identified and blamed for an increasing unemployment rate in the country (BFTU, 2007). The mismatch emanates from the historical background of an education system that was made to produce a public labour force that could run government institutions for socioeconomic developments after independence. The public employment market is now saturated and fails to absorb all trained personnel. This is not helped by the limited space occupied by the private sector that exists in the country. A change or alignment of the education

system is of utmost importance in Botswana for sustainable economic growth. In one survey on poverty reduction in the country (Statistics Botswana, 2013), unemployment was estimated at 17.8% between 2009 and 2010, compared to the 36.9% recorded by the World Bank during the same period. Different methodologies in data collection and analysis may give rise to varying statistics. Overall, however, there seems to be an upward trend of unemployment rates from 14%, as reported in 1991 (Leith, 2005). The labour force aged between 15 and 19 recorded an unemployment rate of 41.4% (Maphorisa, 2012). The 15 to 24 years age group is made up of young people who should be engaged in their secondary and tertiary education, therefore the high unemployment level in this category may imply low levels of secondary school intakes, high drop-outs and increased failure levels. Thus, future productivity capacity is compromised and poverty statistics are likely to rise amongst the youth and negatively affect economic growth in Botswana. Whilst the government is the largest employer in Botswana, the IMF recently advised the Botswana government to lower its public wage bill as it is deemed unsustainable in the long-term and higher than other middle-income countries. In 2013, public sector employment was estimated at 131,033 employees. Between 2010 and 2013, public sector employment grew by only 3.6%, yet a high wage bill increase of 57% (equivalent to P14.55 billion) was recorded during the same period. The increase was mainly blamed on employee promotions and overtime allowances (Benza, 2014). In response to the IMF call, His Excellency the President, Ian Khama, was of the view that other means, excluding job cuts, may be pursued in order to sustain economic growth in Botswana. He argued that cutting the wage bill might have negative spill-over effects on the national economy; job losses may result in increased poverty which, in turn, becomes a government burden (Mokoka, 2014). The current government has committed its efforts to poverty eradication by 2016, so wage bill cuts may not be welcome.

Figure 5-3: Employment Levels in Botswana

Source: WDI (2013)

5.2.5 Investments

To a large extent, economic growth is determined by the amount and kind of capital stock accumulated by any given country (Saleh, 1997; Lange, 2004). Domestic investments in fixed assets over time help increase the national productive capacity of goods and services consumed locally and exported. This promotes trade and capital accumulation and economic growth is achieved in the long-term. Botswana's economy has been sustained by revenues from the natural capital of minerals and cattle farming, but prudent management of wealth and a policy of capital reinvestment were adopted early after independence to avoid the resource problems that plague most developing countries rich in natural endowments. An arrangement is made by Botswana such that some revenues from mineral and beef sales are re-invested into productive capital goods that in turn produce some socioeconomic benefits. Botswana is a shining example in Africa of how domestic fixed capital formation can accelerate growth (Leith, 2005). It is this re-investment strategy that enabled the country to develop solid infrastructure from scratch after years of being colonised by the British. Some of Botswana's fixed investments are tarred roads

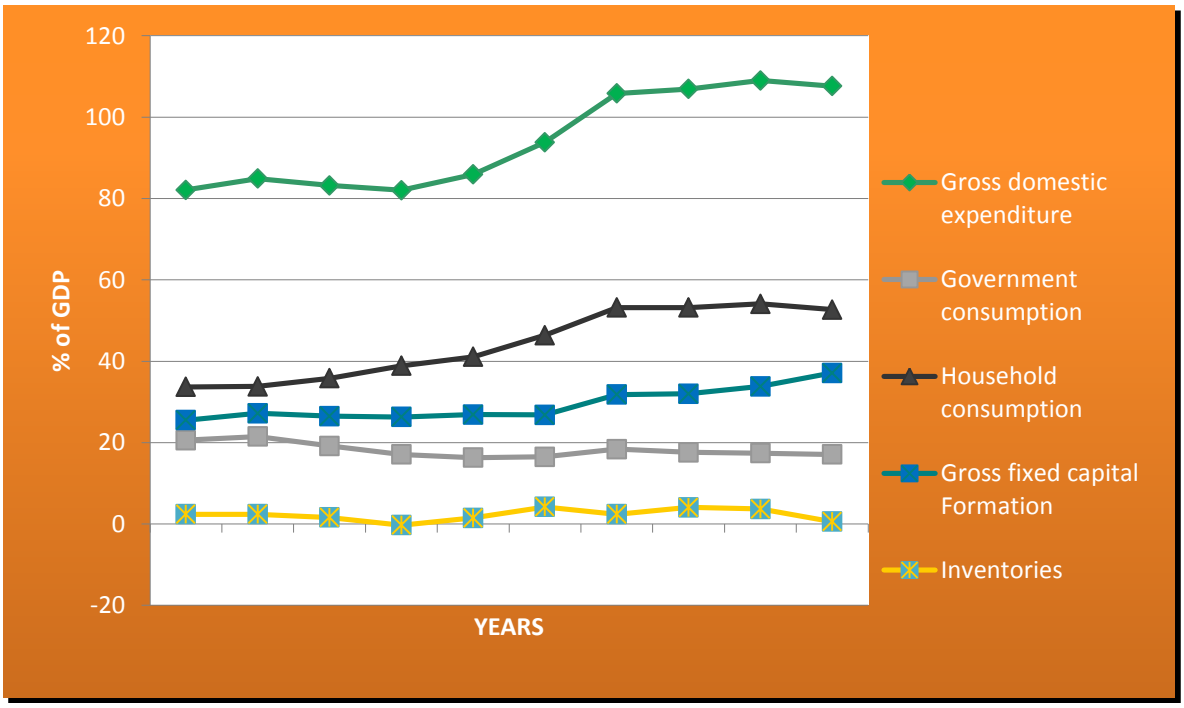
(that literally connect the entire country), accessible hospitals, clinics, health posts, schools, mines, residential and official buildings, electricity power stations, railway lines, a nation-wide clean water supply system and a widespread telecommunication system. One study attests to the positive impact of investment on growth by comparing Botswana and Namibia. Whilst the former's GDP per capita tripled within twenty years because of re-investment, the latter's income and per capita fell as Namibia did not re-invest its income in productive fixed assets (Lange, 2004).

Statistics from the Bob (2012b), as shown in Figure 5-4, indicate that Botswana's gross domestic expenditure has grown from 82.1% of GDP to a peak of 107.6% of GDP between 2003 and 2012. The growth has mainly been driven by domestic fixed capital formation and household consumption, whilst government expenditure and inventories had a downward trend over the ten years under observation. In anticipation of the global recession estimated for 2008, the government decided to lower expenditure from 2005 by stopping public servants remuneration increments until 2014 when public employees' salaries were increased by 4% across the board. Moreover, government had its labour establishment frozen and, as a result, no new recruitment occurred except for personnel with scarce skills, especially in the medical and engineer cadres. Gross domestic expenditure on inventories is mainly made up of livestock and minerals. Figure 5-4 shows that between 2005 and 2012, inventories decreased because mining production or mineral extraction was halted. This was because the market for luxurious goods in the European zone was in economic meltdown, so demand for diamonds and other minerals lowered. Minerals inventories fell from -0.8% to -2% of GDP between 2005 and 2006, before rising to 1.2% in 2008 but only to drop again to -1.7% in 2012. During the same period, as indicated in Chapter 2, the livestock inventory was slightly negatively affected by foot and mouth disease, which forced culling of the infected cattle and temporary closure of the national abattoir for inspection and treatment as required by international standards applied in beef markets. It was during the same period that the country experienced budget deficit, signifying an unhealthy dependence on revenue from minerals.

The gross fixed capital formation trend in Botswana in relation to its four major components of construction, mineral prospecting, machinery, transport and equipment is illustrated in Figure 5-

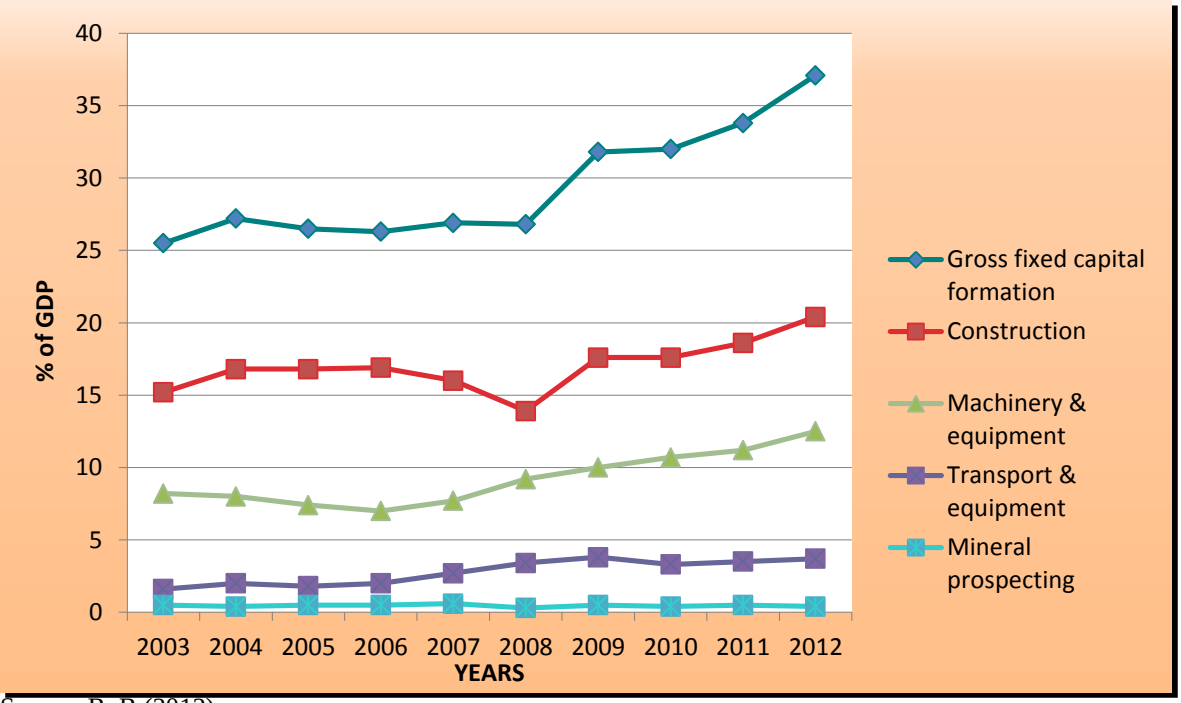
5. Over the decade, gross fixed capital formation expenditure more than doubled from P12,936 million to P27,145 million, which is equivalent to a 25.5% share of GDP to 37.1% GDP. Investment was mainly driven by construction, machinery, transport and equipment. Botswana has prioritised construction of roads, telecommunication networks, schools and hospitals in order to promote trade with the international markets and also offer social services to its citizens. Nonetheless, during the global financial crises period (2007 to 2008), gross fixed capital formation consumption lowered slightly from 26.9% to 26.8% and construction expenditure plunged from 16% to 13% during the same period before picking up momentum to 17.6% in 2009. Investments in mineral prospecting have been on an upward trend but they lowered from P355 million to P 232 million, representing a negative 0.3% growth. Thus the Botswana government prefers investment over consumption, as illustrated by the country's decrease in government expenditures whilst recording an increase in domestic gross fixed capital formation (see Figures 5-4 and 5-5). This approach apparently works positively and helps the Botswana economy to be resilient during tough economic times. The current budget surplus is clear proof of the prudent management of national resources prevailing in the country.

Figure 5-4: Gross Domestic Expenditure/GDP%



Source: BoB (2012)

Figure 5-5: Gross domestic fixed capital formation/GDP%



Source: BoB (2012)

5.3 Financial Integration, Financial Development and Growth

Researchers argue that financial market intergration encourages and enhances growth since a liberalised market tends to interact with and attract more market players from across the globe. Therefore, various financial instruments are accessed and offered, thus creating depth in the local market. According to Lane and Milesi-Ferretti (2001), benefits derived from financial integration depend largely on the amount of stocks of external assets and liabilities held by individual countries, even though most countries focus mainly on FDIs and portfolio flows. The same study argues that the composition and level of external financial assets and liablities accumulated by any given country is associated relatively with the magnitude of foreign shocks experienced by the country. Thus, external risk exposure can be measured based on the amount of stocks of foreign assets and liabilities. In their study of 67 developing and industrial countries, Lane and Milesi-Ferretti (2001) observed that Botswana was amongst the few countries that did not record continuous debt. Their updated database (Lane and Milesi-Ferretti, 2007) revealed that from 1974 to 1986, Botswana had more stocks of liabilities than assets but recorded positive net assets in the next 24 years (1987 to 2011). Historically, Botswana's external wealth position is founded

on its foreign exchange reserves, which have been growing over the years (as shown in Figure 5-6). This has enabled the country to invest in socioeconomic activities and honour its obligations when they are due, resulting in exceptional economic growth. Nonetheless, during the current global financial crises, the country's foreign reserves together with net foreign assets fell sharply between 2007 and 2008 showing the country's wealth vulnerability to external shocks.

The financial sector plays a very important role in building the sustainable economic growth of any country since it is through the financial market that capital accumulation and exchange takes place; savers and investors are connected through financial intermediation. Whilst the financial market basically consists of banks and non-banks, financial intermediation in developing countries is mainly carried out through banks since they have a larger community outreach. Financial market institutions contribute to growth through domestic investments and lending that promotes capital accumulation. Studies by Jefferis and Tacheba (2010) report that a total bank lending of P13.7 billion was recorded in 2007 and during the same year, local investments amounting to P13.8 billion were made by the pension funds in Botswana. Banks and pension funds account for 50% and 43% of the financial market assets respectively and the remaining 7% is shared by government, non-bank lenders and insurance companies (Jefferis and Tacheba, 2010). On the other hand, as depicted in Figure 5-7, deposits held by commercial banks in Botswana show that the market is domestically biased; total deposits have grown tremendously over the past decade but growth in foreign currency deposit accounts has been minimal. Total deposits grew from P11,875.9 million to P48,511.8 million between 2004 and 2013 whilst foreign currency deposits fluctuated from a low of P1,406.3 million in 2004 to a high of P10,231.8 million in 2008, before settling at P6,377 million in 2013. In contrast, the deposit trend, shown in Figure 5-7, reveals that foreign deposits increased significantly in 2007 and 2008 before a downfall in 2009, whilst foreign reserves (and net assets) fell and liability stocks increased sharply during the same period (see Figure 5-6). The increase in foreign currency deposits occurred after the Botswana government gave Debswana company (the main shareholder in Botswana's diamond mining) the permission to pay tax in US dollars instead of the local currency (Jefferis and Tacheba, 2010). Furthermore, Jefferis and Tacheba's study attributes the 21% average annual growth rate of the banking assets between 1997 and 2007 to

financial liberalisation policies established in the early 1990s, which included removal of exchange rate controls. Thus government interventions and reactions to external volatilities in the financial market may be playing a greater role in stabilising the economy. Figure 5-8 highlights that fact that out of the P6,377 million foreign currency deposits recorded in 2013, the US dollar contributed a larger share of 71% (P4,542.1 million equivalent to $US521 million), whilst neighbouring South Africa had a 12% portion (P791.7 million equivalent to R947.1 million). Therefore, internationally, Botswana's financial market deposit accounts are more exposed to changes in the US dollar than the British Pound and the Euro. Regionally, however, the local market may be affected by fluctuations in the South African Rand.

Generally, Botswana's reliance on foreign exchange reserves means that the economy is exposed to external shocks and, as a result, the country requires close monitoring in terms of exchange rate fluctuations followed by strategic adjustments of the monetary policy to sustain growth. Researchers argue that some structural adjustments need to be made by the host country in order to benefit from integration. On the other hand, Wakeman-Linn et al. (2008) argue that even in the existence of regional integration, the domestic market is limited in its capacity to regulate and supervise foreign financial institutions with cross-border associations. Thus financial integration does not guarantee market stability. Furthermore, Wakeman-Linn et al. (2008) are of the view that regional financial integration benefits mainly accrue to markets located in more developed countries within the group and thus underdeveloped markets face stiff competition for investors.

Botswana is a neighbour to South Africa, which is one of the largest economies in Africa with largely developed financial markets. South Africa has several advantages over Botswana, namely a huge diversified population, plenty of investment opportunities, tourist attractions, sound institutions and a strong legal framework. Botswana and South Africa are long-standing trade partners; most banks in Botswana are headquartered in South Africa, most of Botswana's imports are from South Africa, and Botswana's currency is pegged to the South African Rand. Therefore Botswana, like other countries in the region, has the huge task of aligning its financial market strategies with the South African market in order to achieve some stability. Previous research argues that regional integration may not suffice for small economies, as they do not have the connections to achieve the thresholds required to benefit from integration arrangements.

Therefore, there might be a need to integrate local markets to international markets beyond the region (Wakeman-Linn and Wagh, 2008; Honohan and Beck, 2007; Jansen and Vennes, 2006).

Empirical findings relating to financial integration, FD and growth from two notable studies on Botswana, drawn from Meshach (2007a) and Ahmed and Wahid (2011), are presented in Tables 5-2 and 5-3). These studies use various measures of FD: credit to private sector as a share of GDP; liquid liabilities as a percentage of GDP; financial activity; and financial structure denoted FDC, FDL, FA and FS respectively. International financial integration (IFI) is measured using foreign assets as a percentage of total assets, foreign liabilities as a share of total liabilities, foreign assets plus liabilities as a percentage of total assets plus liabilities and foreign assets and liabilities as a share of GDP, abbreviated as FIA, FIL, FIT and IFA. Growth is measured as per capita GDP. Accordingly, only two financial integration indicators (FIL and FIT) are associated with FDL in the long-run in Botswana, whilst three indicators (FIA, FIT and IFIA) are cointegrated with FDL in South Africa. On the other hand, growth and financial development depicts long-run relations through all the indicators in Botswana whilst South Africa only has FA and FS associated with growth in the long-run. Cointegration also exists between financial integration and growth in both countries. In the presence of cointegration, causality tests were conducted and the results are presented in Table 5-3. Granger causality is tested within the VECM model and the results reveal that for Botswana, one-way causality from financial development to financial integration exists, not the reverse, whereas financial integration strongly influences financial development in South Africa. In Botswana, financial development and growth causality tests show that FA and FS do not cause growth at 5% significance level, whilst FDC and FDL do cause growth but with a negative coefficient, meaning that financial development does not enhance growth in Botswana (Meshach, 2007a). In South Africa, neither cointegration nor causality is found between growth and FDC, as well as FDL. Nevertheless, growth is found to cause FD through financial activity. Apparently, negative cointegration coefficients are reported for all three measures of IFI in Botswana, showing that financial integration does not promote growth. South Africa has mixed financial integration impacts on growth given that FIA has a negative coefficient, whilst FIL shows a positive sign, as concluded by Meshach (2007a).

Table 5-2*:* Cointegration Test for Botswana and South Africa

			BOTSWANA								SOUTH AFRICA				
			Y and IFI								**Y and IFI**				
Indicator	λ_T	p-value	λ_{Max}	p-value	ADF	t-statistics	k	Indicator	λ_T	p-value	λ_{Max}	p-value	ADF	t-statistics	k
FIA	22.98	0.02	19.05	0.02	-	-	2	FIA	22.96	0.11	19.91	0.04	-	-	2
FIT	27.11	0	25.16	0	-	-	2	FIL	19.63	0.01	18	0.01	-	-	2
IFIA	33.82	0	27.86	0	-	-	2								
			Y and FD								**Y and FD**				
Indicator	λ_T	p-value	λ_{Max}	p-value	ADF	t-statistics	k	Indicator	λ_T	p-value	λ_{Max}	p-value	ADF	t-statistics	k
FDC	19.33	0.07	15.95	0.04	-	-	2	FA	-	-	-	-	1.2	-6.272	0
FDL	20.81	0.04	12.37	0.16	-	-	3	FS	-	-	-	-	1.079	-4.117	0
FA	-	-	-	-	-0.013	-2.221	1								
FS	-	-	-	-	-0.116	-3.493	4								
			IFI and FD (FDL)								**IFI and FD (FDL)**				
Indicator	λ_T	p-value	λ_{Max}	p-value	ADF	t-statistics	k	Indicator	λ_T	p-value	λ_{Max}	p-value	ADF	t-statistics	k
FIL	16.28	0.04	-	-	-	-	2	FIA	15.36	0.05	14.54	0.04	-	-	1
FIT	20.69	0.04	-	-	-	-	2	FIT	27.64	0.03	20.99	0.03	-	-	2
								IFIA	26.86	0.04	19.64	0.04	-	-	2

Source: Meshach, A. J. (2007) and Ahmed, A. D. (2011).

Note: Significance of the variables is as indicated by the p-values.

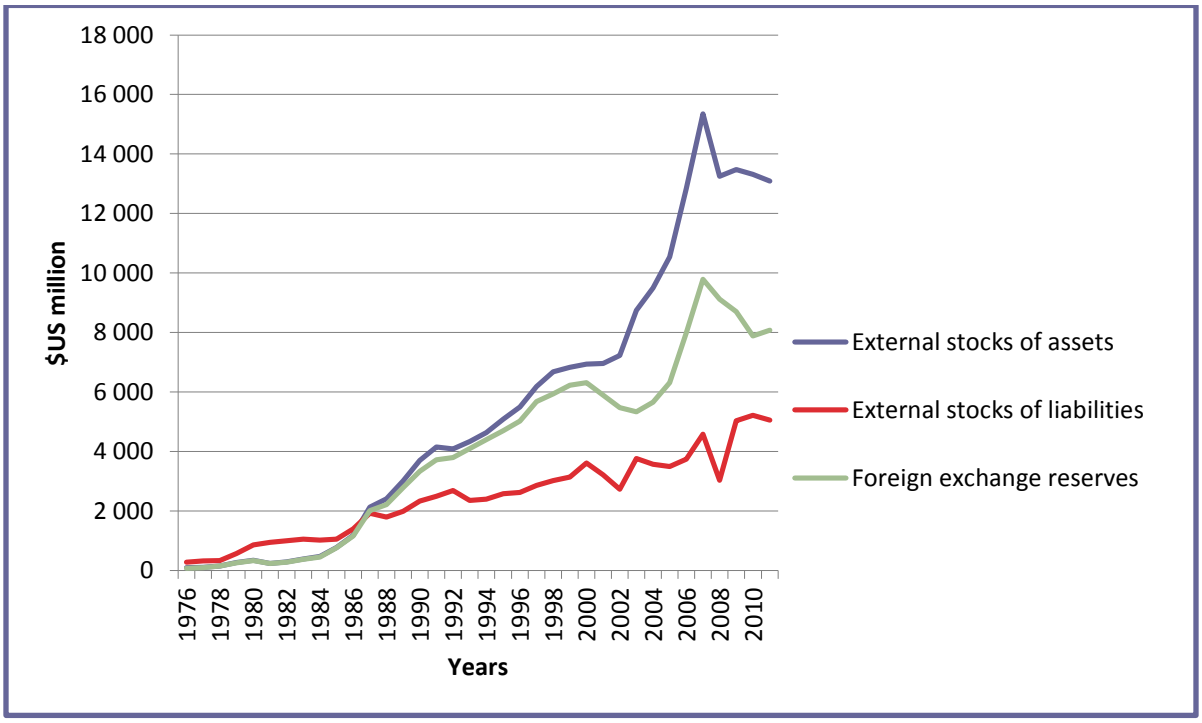
Table 5-3*:* Granger Causality Test for Botswana and South Africa

BOTSWANA							SOUTH AFRICA						
	Y does not cause IFI			**IFI does not cause Y**				**Y does not cause IFI**			**IFI does not cause Y**		
Indicator	F-statistics	p-value	*β*	F-statistics	p-value	ECM	Indicator	F-statistics	p-value	*β*	F-statistics	p-value	ECM
FIA	15.06	0	-2.93	0	0.99	-4.7	FIA	15.8	0	*-2.6*	1.72	0.19	-4.6
FIT	4.67	0.03	-4.41	18.73	0	-2.1	FIL	12.81	0	7.9	0.29	0.59	-3.8
IFIA	6.07	0.01	-3.92	15.65	0	-2.6							
	Y does not cause FD			**FD does not cause Y**				**Y does not cause FD**			**FD does not cause Y**		
Indicator	F-statistics	p-value	*β*	F-statistics	p-value	ECM	Indicator	F-statistics	p-value	*β*	F-statistics	p-value	ECM
FDC	11.99	0	-0.35	2.86	0.09	-4.1	FA	3.62	0.037	-1.173	4.358	0.128	-0.331
FDL	2.83	0.09	-1.74	1.078	0.29	-2.7	FS	2.954	0.191	-1.202	4.808	0.02	-0.53
FA	1.785	0.208	-1.251	0.203	0.892	-0.028							
FS	1.244	0.341	-0.927	1.658	0.195	-0.125							
	IFI does not cause FD			**FD does not cause IFI**				**IFI does not cause FD**			**FD does not cause IFI**		
Indicator	F-statistics	p-value	*β*	F-statistics	p-value	ECM	Indicator	F-statistics	p-value	*β*	F-statistics	p-value	ECM
FIL	10.27	0	2.09	0.33	0.57	-3.6	FIA	1.77	0.18	3.88	8.96	0	-3
FIT	5.74	0.02	0.35	0.8	0.37	-3	FIT	5.32	0.02	4.5	8.11	0	-3.33
							IFIA	2.79	0.09	0.62	8.28	0	-3.5

Source**:** Meshach, A. J. (2007) and Ahmed, A. D. (2011)

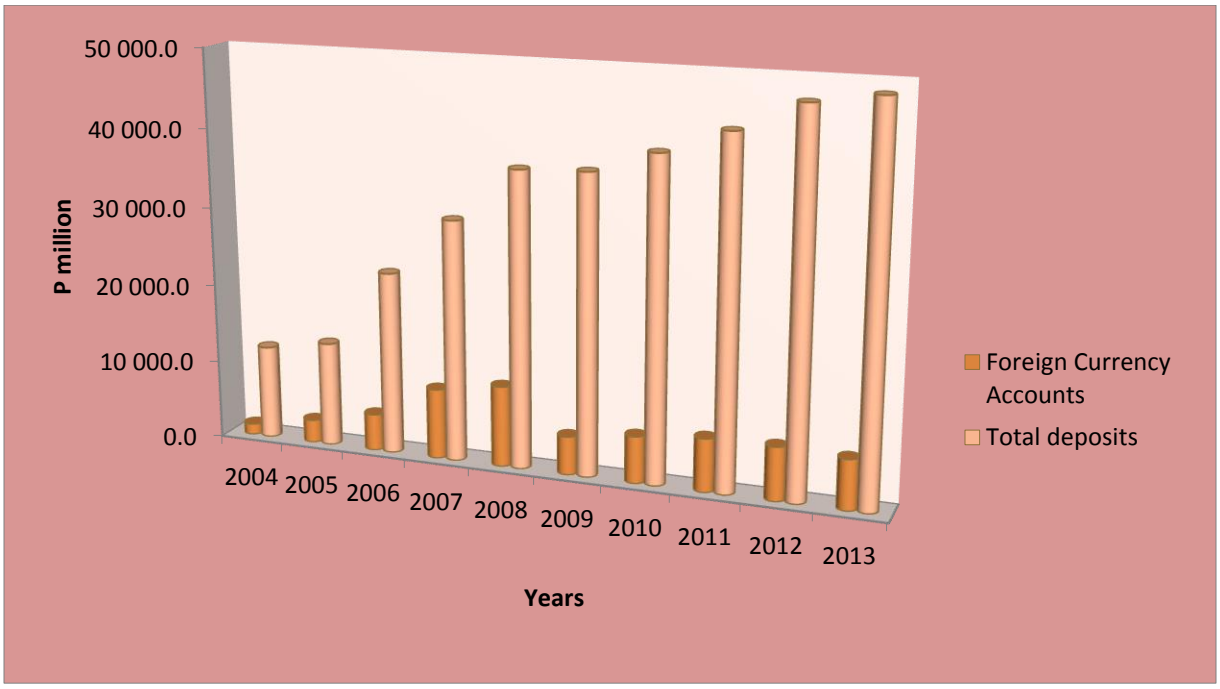
Note: Significance of the variables is as indicated by the p-values.

Figure 5-6: Botswana's External Wealth (Stocks of Foreign Assets and Liabilities)



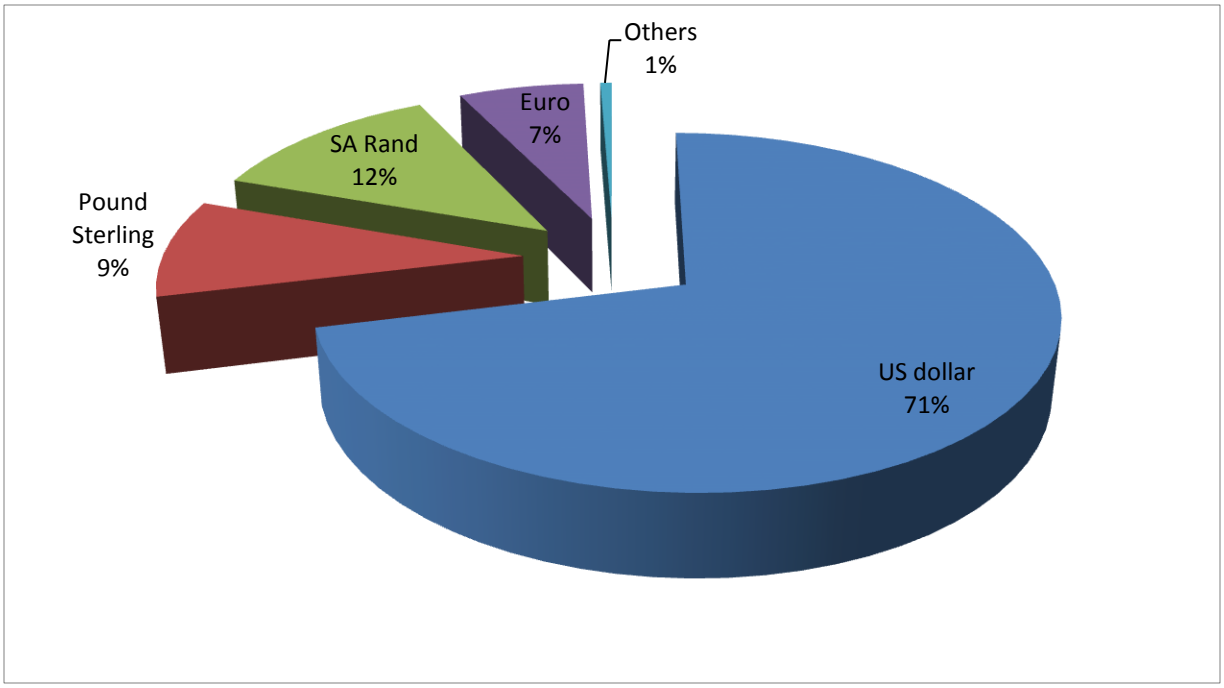
Source: Lane and Milesi-Ferretti (2007)

Figure 5-7: Commercial Banks Foreign Currency Deposits to Total Deposits



Source: BoB (2014) and CSO (2014)

Figure 5-8: Percentage Shares of Foreign Currency Deposits in 2013



Source: BoB (2014) and CSO (2014)

5.4 FDI Inflows and their Impact on Domestic Investments

In some popular studies (Borensztein et al. 1998; Alfaro et al. 2004; Carkovic and Levine, 2002; Romer, 1993), FDI is found to positively drive both domestic investment and economic growth through transfer of modern technologies and spill-overs from developed to developing nations. Borensztein et al. (1998) argue that the impact of FDI is experienced more on growth than on investment. Furthermore, their study concludes that the FDI effect on growth in any given country is mainly dependent on the level of human capacity to absorb the new technologies. In addition, Alfaro et al. (2004) argue that a certain threshold of domestic financial markets development should be achieved before the positive impact of FDI on growth can be witnessed. Nonetheless, Carkovic and Levine (2002) did not find a robust impact of FDI on growth. A classic study by Romer (1993) argues that poverty in nations can be attributed to 'object and idea gaps' both of which can be filled by object and idea flows from other rich countries through multinational corporations. Accordingly, the object gap refers to absence of capital assets like roads, factories and raw materials, whilst the idea gap is the lack of productive ideas that can promote economic growth. The study suggests that the gaps can be lessened by effective and

efficient legal, monetary and education institutions operating in the host country. Thus distortions existing in any country's investment environment can lower the opportunities of benefiting from the FDI phenomenon.

Botswana, unlike other countries in Africa, has made much development progress by adopting some valuable ideas from industrialised nations, as well as developing sound institutions, accumulating capital stock, and investing in human development. It continues to integrate with the global markets in order to build a sustainable economy. The government established specific institutions to attract FDI inflows, which are the IFSC and BEDIA created in 2003 and 1997 respectively (BITC, 2014a). In order to avoid overlap of activities, the two institutions were merged in 2012 to form the current Botswana Investment Trade Centre (BITC). Since its inception, BEDIA attracted FDI valued at P3.6 billion with a related 16,160 jobs, IFSC generated P13 billion with only 300 jobs and BITC raised P69,897 million and 1,206 jobs within a year of its establishment (BITC, 2014a). Thus a total of P17.3 billion and 17,666 jobs were generated from FDIs by Botswana between 1997 and 2012. According to the BITC (2014) report, there are still 47 FDI projects in the pipeline and these are envisaged to generate P4.7 billion and create employment for 4,075 locals. Even though Botswana seems to be benefiting from FDI, in 2012 the country was considered average in comparison to other states in Southern Africa, after recording only $293 million whilst Mozambique and South Africa collected $5.2 billion and $4.6 billion respectively. Challenges of land allocation, lack of factories and reluctant engagement of stakeholders are sited as major causes of poor inflows of FDIs to the local economy (BITC, 2014a). Botswana's geographical status, as a landlocked country, may also be a deterrent to investors who prefer near coast destinations that enable easier transportation of goods and services.

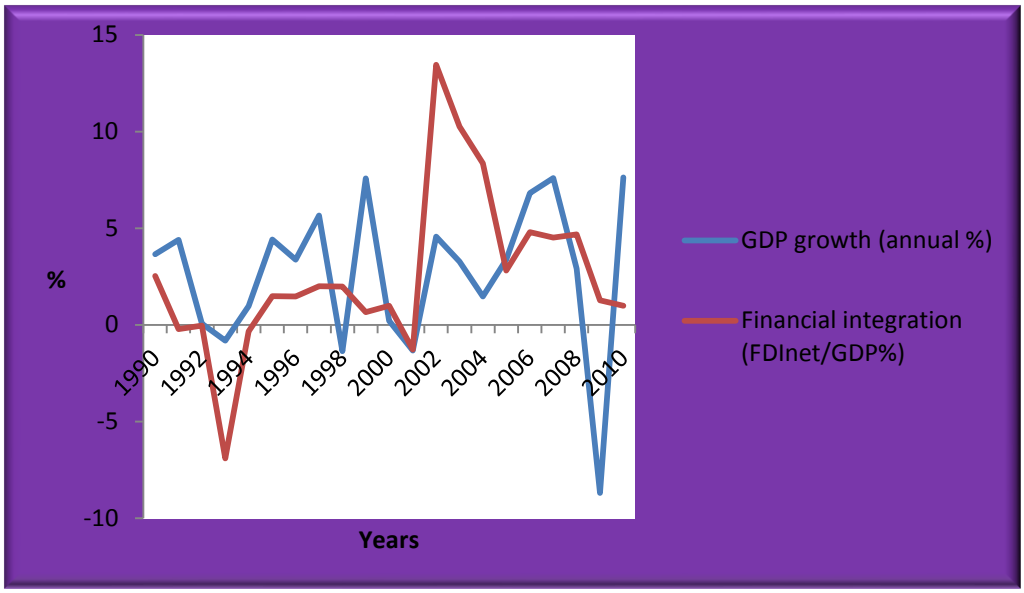
Notwithstanding, Botswana hosts several multinational companies and, in 2013, one of the world's biggest diamond trading hubs was established in the country when Diamond Trading Company (DTC) relocated its headquarters from London (UK) to Gaborone (Botswana). The company is mainly engaged in sorting and valuing Botswana's diamonds. The relocation of DTC resulted in the formation of a joint venture called the Diamond Trading Company Botswana (DTC Botswana) with the Botswana government and De Beers Group owning shares of 50%

each (DTCBotswana, 2014). The results of this partnership are that 21 local companies have been licensed to cut and polish rough diamonds sold to them by DTC Botswana. Since their discovery in the local soil, diamonds have been extracted and exported to European markets in their raw state to be polished and cut, creating large employment opportunities for citizens of the countries engaged. Through DTC Botswana, the raw material is processed locally and therefore many locals are employed to cut, polish and package diamonds for export sales. Training and education of employees and interactions between foreign investors and locals may also fill in the skills gap and bring in superior knowledge of new technologies and expert managerial skills that were absent in the local market. Furthermore domestic investments in air, rail and road transports have improved to facilitate transportation of the valuable gem. Construction of factories, purchase of advanced machinery, plant and equipment necessary for the diamond processing business have been undertaken and some more investments on capital goods are ongoing. In the long-term, diamond production and the export capacity of Botswana is expected to grow and increase savings. Other opportunities for investment have been created by DTC Botswana in the security business since there is need for tight guarding of diamonds as they move through the process and even securing the diamond factories themselves. Related jewellery businesses are expected to emerge, as well as the growth in hotel and retail businesses as foreign buyers arrive in the country. Financial markets are also expected to develop their payment and transaction systems to enable timely purchases of diamonds from Botswana, as well as creating systems to safeguard against money laundering and related financial crimes as the diamond trade intensifies (BITC, 2014b). Local markets are therefore expected to be more integrated to foreign markets and grow deeper in order to facilitate large transactions.

Thus FDI may contribute to economic growth in Botswana through increased capital accumulation, local productivity, skills transfer and new employment. Nonetheless, challenges arise in developing countries hosting FDIs of such magnitude as the DTC Botswana in that some of the red tape in government and local market procedures may have to be removed. Instead, new, flexible and accommodative management must be instituted in the country for sustainable investments and overall growth. The relationship between FDI and growth in Botswana is very interesting, as shown in Figure 5-9. Overall there seems to be some positive correlation between

variables in support of previous literature (Lane and Milesi-Ferretti, 2001). From 1990 to 2000, the growth rate is higher than net FDI flows but the opposite holds true for the last ten years.

Figure 5-9: FDI and GDP growth



Source: World Development Indicators (2012).

5.5 Empirical Findings and Analysis

5.5.1 Results from ADF unit root test

It is common practice that unit root tests be carried out in order to establish the statistical properties of time series data before undertaking cointegration tests and error correction models. Time series data may have a random walk or be stationary (refer section 4.3). Statistical inference may provide better results than visual analysis since variables may appear stationary when they are actually not and vice versa. Hypothesis tests about regression parameters are more reliable when using stationary data rather than data with unit root. Therefore, ensuring that data is stationary before conducting further tests is of the utmost importance (Brooks, 2008). This study employs the Augmented Dickey-Fuller (ADF) unit root test where the null hypothesis is that the series has unit root. The ADF test is commonly used as it corrects for higher order serial correlation (Dickey and Fuller 1981). Test results for both level and first difference data are reported in Table 5-4. It appears that some variables (Y, IFLO and FLO) are stationary at their

levels with constant, constant plus trend and none specifications. Therefore, the null hypothesis concerning these variables is rejected, meaning that the said variables are not unit root at their levels. An ADF test is then conducted for all variables at first difference. The results show that all variables are stationary at 5% significance level and above when using constant and constant plus trend specifications. Moreover, when using these specifications t-statistics for all variables are more than their critical values at first difference. Thus the null hypothesis can not be accepted for all variables at first difference since they all have no unit root. The results indicate that variables used in this system are integrated of order 1.

5.5.2 Outcomes from Johansen cointegration test

After conducting the unit root test, Johansen cointegration test is then used to establish the number of cointegrating vectors in the system. The first test is for cointegration amongst key economic indicators and the second test is on a series containing both economic and financial integration variables. However, the choice of lag length of the Vector Autoregressive model (VAR) is critical, as suggested by Ibrahim (2001). Following previous studies (Dutta and Ahmed, 2001) a lag order of 1 is used, considering that the sample size was small and also that annual data is used. The cointegration test results are displayed in Tables 5-5 (a) and (b) for the first and second series respectively. In the first series containing variables Y, HC, INV, N, GB and TO, there are three cointegrating vectors revealed by Max-Eigen statistics (λmax) whilst Trace statistics (Tr) reveal four vectors of cointegration. However, research suggests (Pentecost and Moore 2004) that Max-Eigen statistics are more reliable than Trace statistics. It is therefore concluded that r = 3 for the first series and the null hypothesis of no cointegrating vectors at 5% significance level is rejected. The second series containing variables Y, INV, HC, GB, TO, EF and IFIB, have three vectors of cointegration as per both Max-Eigen statistics and Trace statistics. Similarly, r = 3 for the second series and the null hypothesis for non-existence of cointegration is rejected. The significance of the results at 5% level is also confirmed by both the λmax and Tr test statistics, which are greater than their corresponding critical values. Overall, both Max-Eigen statistics and Trace statistics show the existence of a long-run relationship among the variables in the system.

Table 5-4: ADF Unit Root Test Results

Variables			Y	INV	HC	GB	EF	TO	INF	N	IFIA	IFIB	IFLO	FLO
Levels	(constant)													
		t-statistics	-6.218*	-3.817*	0.194	-2.477	-0.137	-2.377	-3.463*	-0.521	-1.151	-1.114	-4.471*	-4.492*
		p-value	0.000	0.006	0.968	0.129	0.937	0.156	0.015	0.875	0.685	0.700	0.001	0.001
	(constant plus trend)													
		t-statistics	-7.414*	-6.004*	-2.892	-2.623	-4.363*	-1.948	-3.087	-2.133	-0.574	-2.955	-5.137*	-5.226*
		p-value	0.000	0.000	0.177	0.273	0.007	0.609	0.126	0.508	0.975	0.159	0.001	0.001
	(none)													
		t-statistics	-1.851***	-0.121	3.31	-0.186	1.525	-2.050**	-0.9	-3.319*	-1.082	-0.873	-3.168*	-3.423*
		p-value	0.062	0.635	1.000	0.612	0.966	0.040	0.319	0.002	0.247	0.331	0.002	0.001
1st difference	(constant)													
		t-statistics	-5.248*	-4.856*	-6.834*	-6.608*	-5.638*	-4.428*	-5.956*	-4.837*	-3.696*	-6.637*	-7.554*	-8.256*
		p-value	0.000	0.000	0.000	0.000	0.000	0.001	0.000	0.000	0.009	0.000	0.000	0.000
	(constant plus trend)													
		t-statistics	-5.149*	-4.783*	-6.836*	-6.648*	-5.552*	-4.548*	-5.851*	-4.756*	-3.831**	-6.604*	-7.306*	-8.042*
		p-value	0.001	0.003	0.000	0.000	0.000	0.005	0.000	0.003	0.027	0.000	0.000	0.000
	(none)													
		t-statistics	-5.327*	-4.923*	-4.953*	-6.710*	-5.342*	-4.489*	-6.002*	-0.947	-3.594*	-6.635*	-7.695*	-8.400*
		p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.299	0.001	0.000	0.000	0.000

Note: 1. *, ** and *** indicate significance at the 1%, 5% and 10% levels respectively.

2. ADF unit root test applied; maxlag = 9, automatic SIC lag selections used.

Table 5-5: Johansen Cointegration Test Results

(a) Series: Y HC INV N GB TO

Hypothesised No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5% Critical Value	Prob.	Trace Statistic	5% Critical Value	Prob.
None	0.88	75.64*	40.08	0.00	176.56*	95.75	0.00
At most 1	0.69	41.29*	33.88	0.01	100.91*	69.82	0.00
At most 2	0.55	27.86*	27.58	0.05	59.63*	47.86	0.00
At most 3	0.42	19.00	21.13	0.10	31.77*	29.80	0.03
At most 4	0.21	8.33	14.26	0.35	12.77	15.49	0.12
At most 5	0.12	4.44	3.84	0.04	4.44	3.84	0.04

Note: 1. * denotes rejection of the hypothesis at the 0.05 level.

2. MacKinnon-Haug-Michelis (1999) p-values used.

3. Further tests conducted using EF instead of TO (results still significant at 5% level).

(b) Series: Y INV HC GB TO EF IFIB

Hypothesised No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5% Critical Value	Prob.	Trace Statistic	5% Critical Value	Prob.
None	0.82	60.71*	46.23	0.00	183.21*	125.62	0.00
At most 1	0.75	48.76*	40.08	0.00	122.51*	95.75	0.00
At most 2	0.63	34.89*	33.88	0.04	73.75*	69.82	0.02
At most 3	0.36	15.69	27.58	0.69	38.86	47.86	0.27
At most 4	0.28	11.37	21.13	0.61	23.17	29.80	0.24
At most 5	0.19	7.36	14.26	0.45	11.80	15.49	0.17
At most 6	0.12	4.44	3.84	0.04	4.44	3.84	0.04

Note: 1. * denotes rejection of the hypothesis at the 0.05 level.

2. MacKinnon-Haug-Michelis (1999) p-values used.

3. Further tests conducted using IFIA, IFLO and FLO instead of IFIB (results still significant at 5% level).

5.5.3 Relationships amongst key economic indicators

Having established cointegration in the system variables, the VECM models are tested. The first test is for a standard neoclassical growth model in order to measure the impact of several economic growth indicators. Table 5-6 displays the dynamic relationships between regression variables. Model 1 shows results for the regression equation that contains trade openness (TO) whilst model 2 shows the economic freedom (EF) variable. In both models, a long-run equilibrium relationship is established, as shown by negative and significant error correction terms (ECT) at 5% significance level. Whilst not significant in the short-term, a positive impact on growth from both TO and EF are observed. Long-term analysis reveals that TO positively and significantly influences economic growth locally whilst EF has a negative and significant impact on growth. A previous study (Yanikkaya, 2003) argues that TO promotes economic growth by expanding market opportunities beyond country borders and enabling trade integration amongst trading partners. In the results of this current study, the positive impact on growth from TO implies increased cross-border trade activities arising from open trade relations existing between Botswana and its trading partners. EF on the other hand signifies Botswana's economic freedom and institutional quality. Numerous earlier studies (King and Levine, 1993; Kose and Prasad, 2004; Osada and Saito, 2010; Frey and Volz, 2011) considered open economies and high quality domestic institutions as some of the main determinants of sustainable economic growth. As one of the thresholds, domestic institutions are required to reach certain levels in order to significantly impact economic growth (Kose, Prasad et al. 2009). Thus, Botswana may benefit significantly in the long-term if the local institutions are developed beyond their current status.

Inflation, on the other hand, significantly and negatively influences economic growth (at 10% significance level) and this outcome is expected. The negative association might be a result of the negative consequences of inflation discussed in previous studies, including issues such as the eroded purchasing power of consumers, lowering investment capacity and reducing productivity (Andrés and Hernando, 1997; Edison, Levine et al. 2002; Elder, 2004). In the long-run, the investment (INV) and human capital (HC) variables both positively and significantly impact economic growth in Botswana. This implies that INV and HC are associated with increased production capacity, labour cost reduction, innovation and creativity and therefore help grow the local economy for the long-term. On the other hand, the short-run dynamics reveal that HC has a

negative estimated coefficient, implying a shortage of highly skilled labour and the need for Botswana to develop a qualified, creative, innovative and productive workforce. Government expenditure (GB) positively and significantly impact economic growth in Botswana, implying that government expenditure promotes productivity in the local market. Botswana's strategic fiscal policy may be the reason for this outcome, showing that through its NDPs the country prudently invests its income in order to ensure sustainable economic growth.

5.5.4 Interactions between economic growth and financial integration indicators

Following the tests described above, the equilibrium relationships between economic growth and financial integration in Botswana are observed. As a result of cross-border trade associations and agreements between Botswana and other countries, both in the region and internationally, local financial institutions are now integrated to external markets. Financial integration is expected to promote growth in Botswana since foreign capital inflow for investment purposes is anticipated. Table 5-7 shows the estimation results. Long-term relationships exist amongst the variables in the system, as indicated by the negative and significant ECT terms, which are mostly statistically significant at the 5% confidence level and above. Four commonly used measures of financial integration are adopted: the aggregate stock of external asset and liabilities to GDP (IFIA); the stock of liabilities as a share of GDP (IFIB); the ratio of inflows and outflows of capital (foreign direct investment and portfolio inflows) to GDP (FLO); and the ratio of inflows of capital (foreign direct investment and portfolio inflows) to GDP (IFLO).

The results reveal that both capital flow indicators (IFLO and FLO) negatively and significantly impact growth in Botswana, whilst the IFIA and IFIB variables have no significant association with growth in the short-term. These findings support the view of Kose et al. (2006), who showed that the "adverse impact of macroeconomic volatility is further exacerbated in more financially integrated economies" (p. 190). The results also confirm findings from previous literature (Meshach, 2007), which argues that financial integration negatively influences growth in Botswana and that weak gains from integration may be a result of weak regulatory system as well as institutional and structural impediments in the country. However, testing for a non-linear relationship by adding a square of financial integration variable in the regression yield different

results as depicted in Appendix 2. The results reveal the existence of a U-shaped relationship as IFIB positively and significantly influences growth, yet previously the variable had a negative influence on economic growth. This outcome implies that financial integration below certain threshold might have a negative impact on economic growth and positive afterwards. Some studies (Das, 2010; Mougani, 2012; Schularick and Steger, 2007) argue that current financial integration is associated with macroeconomic volatility and does not mobilise as much capital investment to poor countries. Financial integration seems to benefit developed economies more, whilst capital flight and other negative impacts are experienced by emerging countries (Boyd and Smith, 1992; Klein and Olivei, 1999; Osada and Saito, 2010). In his study, Meshach (2007) argued that financial integration positively influences growth in South Africa (Botswana's neighbour and strongest trading partner) and the country has highly developed and integrated financial institutions compared to Botswana's market. Interestingly, in the presence of financial integration, INV and EF have a significant and positive impact on economic growth in the short-term, implying that foreign capital flows are related to investments and economic freedom in the country. Overall, an increased financial market and institutional development in the future may enable financial integration to promote growth in Botswana.

Table 5-6: Long-Run and Short-Run Dynamics of Macroeconomic Variables

$$\hat{y}_t = 274.78 + 1.68HC_t + 4.77INV_t + 50.92N_t - 17.65INF_t + 4.85GB_t + 0.21TO_t$$
$$(3.626)* \quad (12.314)* \quad (3.949)* \quad (19.325)* \quad (7.268)* \quad (2.572)**$$

$$\hat{y}_t = 766.07 + 5.54HC_t + 9.51INV_t + 50.92N_t - 132.92INF_t + 10.37GB_t - 19.81EF_t$$
$$(7.443)* \quad (10.097)* \quad (3.949)* \quad (5.989)* \quad (12.424)* \quad (2.047)**$$

Growth variable (*y*) Macroeconomic policies and institutional quality variables (INST)	Model 1 TO	Model 2 EF
ECT	-0.476	-0.249
	(3.342)*	(2.314)**
D(*y*(-1))	-0.387	-0.488
	(1.771)***	(2.036)**
D(HC(-1))	-2.099	-2.613
	(2.535)**	(2.421)**
D(INV(-1))	1.362	0.013
	(1.020)	(0.012)
D(N(-1))	-71.118	4.148
	(1.368)	(0.071)
D(INF(-1))	-3.424	-2.968
	(1.776)***	(1.837)***
D(GB(-1))	2.425	0.664
	(1.746)***	(0.444)
D(TO/EF(-1))	0.364	2.101
	(0.943)	(0.313)
Constant	14.319	17.254
	(2.789)*	(2.322)**
R-squared	0.783	0.737
Adj. R-squared	0.603	0.518
F-statistic	3.528*	3.896*
Prob(F-statistic)	0.007	0.004
# of Observations	37	37

Note: 1. *, ** and *** indicate significance at the 1%, 5% and 10% levels respectively.

2. The dependent variable is annual per capita real GDP growth.

3. t-statistics are in ( )

4. ECT stands for error correction term

5. Lag structure was selected using Akaike information and Schwarz Bayesian criteria (AIC/SIC).

Table 5-7: Short-Run Effect of Financial Integration in Botswana

Economic Growth (*y*)	Model 1	Model 2	Model 3	Model 4
FI Indicator	FLO	IFLO	IFIA	IFIB
ECT	-0.328	-0.667	-0.055	-1.022
	(0.021)**	(0.007)*	(0.131)	(0.002)*
D(Y(-1))	-0.393	-0.314	-0.581	-0.224
	(0.043)**	(0.122)	(0.009)*	(0.274)
D(INV(-1))	2.119	1.714	1.244	0.963
	(0.039)**	(0.073)***	(0.248)	(0.270)
D(HC(-1))	0.126	0.140	-0.262	0.210
	(0.807)	(0.788)	(0.698)	(0.691)
D(GB(-1))	-0.320	-0.693	-1.134	-1.705
	(0.740)	(0.482)	(0.371)	(0.097)***
D(TO(-1))	0.514	0.436	0.039	-0.450
	(0.126)	(0.193)	(0.929)	(0.229)
D(EF(-1))	7.140	8.654	5.406	7.615
	(0.159)	(0.095)***	(0.363)	(0.131)
D(FI(-1))	-0.740	-0.462	0.100	-0.193
	(0.019)**	(0.092)***	(0.652)	(0.387)
C	-0.735	-0.887	-0.105	-0.970
	(0.711)	(0.659)	(0.964)	(0.631)
R-squared	0.629	0.621	0.502	0.633
Adj. R-squared	0.515	0.505	0.348	0.520
F-statistic	5.517	5.331	3.271	5.607
Prob(F-statistic)	0.000	0.001	0.010	0.000
# of Observation	37	37	37	37

Note: 1. *, ** and *** indicate significance at the 1%, 5% and 10% levels respectively.

2. The dependent variable is annual per capita real GDP growth.

3. p-values are in ( )

5.6 Conclusion and Some Policy Implications

Financial integration was expected to positively relate to growth in Botswana, but the results of this study show this not to be the case. Using the VECM approach, this study finds a generally negative impact of financial integration on growth. However, a positive influence from macroeconomic and institutional variables is observed, implying the prevalence of sound and prudent supervisory structures and the rule of law in Botswana. The negative relationship between financial integration and growth found in this study further cements previous research

findings. From the Granger causality test (see Table 5-8), it is found that financial integration do not cause both growth and financial development implying a lower level of integration activities in the local market. Nonetheless, growth is found to cause financial integration and the causality may mean that generally, economic growth in Botswana is not really dependent on foreign capital inflows but rather on its foreign reserves. Therefore capital inflows from financial integration may not necessarily be the main reason for integrating the local economy. The Botswana economy is expected to benefit from integration given the country's stability socially, economically and even politically; reluctance to deliberately build frameworks that attract foreign investment may be blamed on the security and comfort that the country enjoys from its foreign reserves. Nonetheless, financial integration is expected to positively affect growth in the long-run as evidenced to a great extent by the literature.

Whilst empirical evidence gives negative associations, anecdotal data shows that FDIs are positively growing the local economy through the expansion of domestic investments, especially the current relocation of the DTC that has resulted in the boom of security companies and other related trades to cater for the influx of foreign buyers. Skills transfer and technological innovations from abroad have been absorbed into the economy, especially in the financial markets and telecommunication industry. Improved and skilled labour influenced by foreign competitors is increasing among the nation's workforce, a testimony to the positive impacts of integration.

The role of financial markets at large cannot be underestimated in growing Botswana's economy given their intermediation role. The mining sector has sustained Botswana's growth for such a long period, but the economy is very vulnerable to international market shifts, especially within countries that purchase Botswana's diamonds. Between 2007 and 2009 period, lower diamond sales resulted from financially depressed markets in Europe hence the negative record of GDP growth. This gives evidence to the unhealthy dependence on mining finance by Botswana. The move to diversify the economy from the mining sector is heightened by the fact that minerals are non-renewable sources of wealth (BSE, 2010). Policy wise, the following considerations should be addressed: (i) Botswana should strive to build better and open institutional frameworks and

develop its financial markets to play a bigger role in ensuring positive results from integration; (ii) in an attempt to attract FDIs in the non-mining sectors, issues of market legality and property rights are expected to be sound to protect investors; (iii) technological innovations should largely be embraced by both the public and private sectors in their day-to-day delivery of goods and services so as to achieve a market that is effective and efficient; and (iv) a financially stable environment should be pursued at all times to lower the chances of capital flight. All these activities should translate into the growth and development of Botswana's financial markets and, in turn, grow the economy further.

In conclusion, Botswana may need to re-assess its position regarding financial integration and find ways of creating a positive impact of financial integration on economic growth. Research has highlighted the various impacts of FI on local economies based on foreign investment type and purpose. The establishment of foreign companies generally reduces unemployment in the host country and enhances basic wage payments (Tomohara and Takii, 2011). However, Akinlo (2004) argued that growth is better promoted by FDIs aimed at manufacturing rather than extractive FDIs. The large amounts of foreign investments into Botswana are directed towards the mining industry, which may explain the negative impact of FI on growth. Therefore, deliberate, efficient and effective targeted marketing (at the national level) of the private sector's non-mining projects to international investors may be necessary to fill the specific financing gap that currently exists in Botswana. This policy suggestion is in line with previous literature that argued for the application of a selective approach in developing countries when accepting FDIs (Alfaro and Charlton, 2007; Adams, 2009). Thus not every foreign investment will benefit the local economy; there must be an alignment of capital inflows and local projects that can promote productivity.

Table 5-8: Granger Causality Results

Y causes FI		**Y causes FD**		**Y causes FA**	
Null Hypothesis:	Prob.	Null Hypothesis:	Prob.	Null Hypothesis:	Prob.
GB does not Granger Cause IFLO	0.0751	GB does not Granger Cause PRVY	0.0774	LOAN does not Granger Cause N	0.3498
IFLO does not Granger Cause GB	0.3732	PRVY does not Granger Cause GB	0.0579	N does not Granger Cause LOAN	0.0821
FI causes Y		**FI causes FD**		**FI causes FA**	
				Null Hypothesis:	Prob.
				IFLO does not Granger Cause BINV	0.0745
				SEC does not Granger Cause IFLO	0.3548
FD causes Y		**FD causes FI**		**FD causes FA**	
Null Hypothesis:	Prob.	Null Hypothesis:	Prob.	Null Hypothesis:	Prob.
PRVY does not Granger Cause Y1	0.0994	FLO does not Granger Cause LLY	0.8403	MS does not Granger Cause BINV	0.006
Y1 does not Granger Cause PRVY	0.1227	LLY does not Granger Cause FLO	0.0999	BINV does not Granger Cause MS	0.8032

CHAPTER 6: CAPITAL MARKET DEVELOPMENT AND INTERNATIONAL CAPITAL FLOWS IN BOTSWANA♦

6.1 Introduction

This chapter first establishes relationships between capital market development and economic growth in Bostwana and secondly analyses capital market development in relation to FDIs and portfolio flows in Botswana. Conclusions drawn from this chapter give more understanding and clarity on issues of financial access by the private sector in Botswana through the local stock exchange developments. Furthermore, some policy implications are drawn from the outcomes of the study.

Availability and accessibility of financial innovations from the stock market or the lack thereof may, to a large extent, explain the impact of capital market integration on local firms' financing. The BSE, as a national regulated market, was established in 1989 to trade financial instruments such as bonds and equities. In recent years the local market expanded to also offer exchange traded funds (ETFs). The local bourse listings have grown from five companies in 1989 to 35 in 2013 (as shown under Tables 6-1 and 6-2) and the listings correspond to market capitalisation of P254 million in 1989 and P416,590 million in 2013 (BSE, 2013). The BSE is a unique vehicle through which a resource pool is created from both domestic and foreign capital.

The value of capital accumulated through companies listed on the local exchange measured by market capitalisation in Pula terms is shown in Figure 6.1. There has been a general upward trend in total market capitalisation. Significant contribution to the market capitalisation by foreign listed companies cannot be denied. On the other hand, the value of the domestic listed companies is minimal compared to the total market capitalisation. Thus FDI and portfolio flows contribute a lot to capital accumulation in Botswana. Consequently, capital market integration and liberalisation grow the local economy. One caution though, the dominance of foreign equity in market capitalisation may result in high exposure to exchange rate risk. Foreign investors are

♦ Part of this chapter has been accepted and published in the *Journal of Economic Modelling*, 2014, *42*(0), 1-14.

sensitive to economic instabilities in host countries and therefore Botswana has a challenge to build a reputation and ensure stability in capital market trading in order to retain and attract more foreign investments. Generally stock markets are an important part of the financial market as they: (a) reflect economic health conditions through share price fluctuations; (b) assist in valuing securities; (c) provide secure market platform for both equity and debt; (d) create an avenue for capital accumulation; (e) educate and inform the public on capital market trading; (f) enable speculation that in turn promotes trading; (g) facilitate trading of both long and short-term securities to match various projects' duration; and (h) give information, data and trading statistics that help market players in decision-making. Finally, the stock exchange transfers savings into investments leading to a decrease in unemployment, more productivity and income increase, thereby growing the economy.

Table 6-1: BSE Foreign Equity

Company name	Abbreviations	ISIN	Year listed	Issued(million units)
African Copper	AFRICAN COPPER	GB00B03TH577	2005	1485
African Energy Resources	AFR	AU000000AF6	2011	434
Anglo American	ANGLO	GB00B1XZS820	2001	1405
Blue Financial Services	BLUE	ZAE000083655	2008	7663
Botswana Diamonds	BOD	GB00B5TFC825	2011	138
Discovery Metals	DISCOVERY METALS	AU000000DML0	2006	560
Galane Gold	GG	CA36316B1085	2012	48
Lucara Diamond Corp	LUC	CA54928Q1081	2011	377
Shumba Coal	SHUMBA	MU0397S900002	2013	171

Source: African Markets 2013 and BSE 2013

Table 6-2: BSE Domestic equity

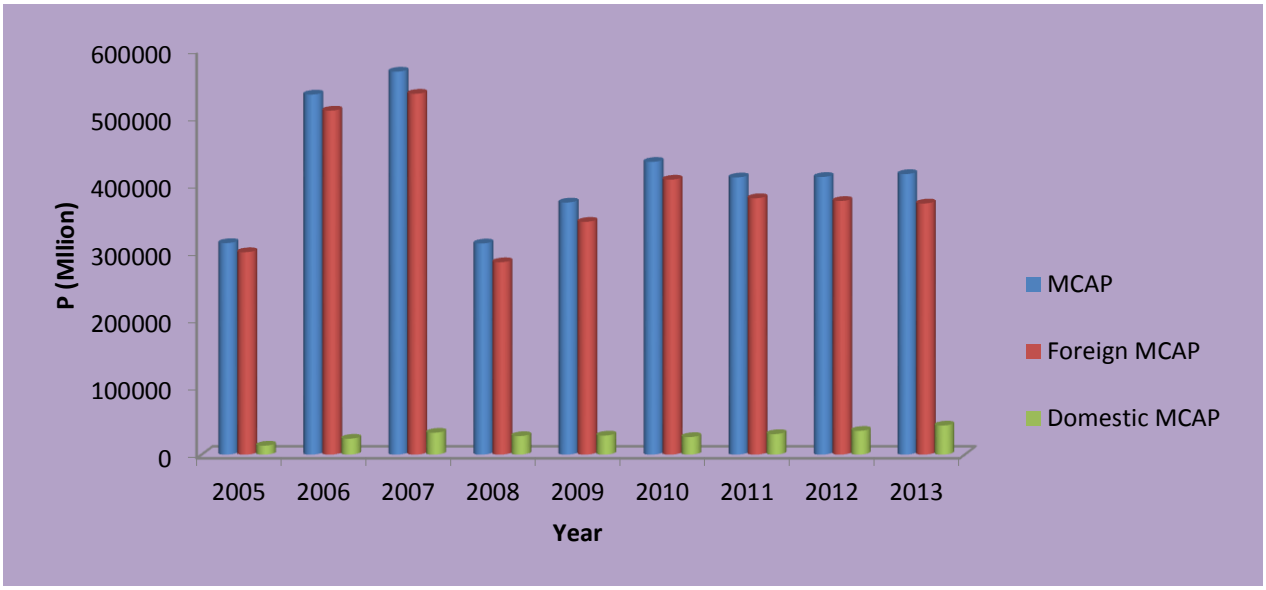
Company name	Abbreviation	ISIN	Year listed	Issued (million units)
ABC Holdings	ABCH	BW0000000017	2000	257
Barclays	BARCLAYS	BW0000000025	1989	852
Botswana Insurance	BIHC	BW0000000033	1991	281
Chobe Holdings	CHOBE	BW0000000041	1999	89
Choppies Enterprises	CHOPPIES	BW0000001072	2012	1174
Cresta Marakanelo	CRESTA	BW0000000892	2010	185
Engen Botswana	ENGEN	BW0000000058	1989	160
First National Bank	FNBB	BW0000000066	1990	2564
FSG	FSG	BW0000000793	2008	121
Furnmart	FURNMART	BW0000000074	1998	606
G4S Botswana	G4S	BW0000000397	1991	80
Imara Holdings	IMARA	BW0000000629	2006	59
Investec	INVESTEC	ZAE000081949	2008	283
Letlole La Rona	LETLOLE	BW0000001015	2011	280
Letshego	LETSHEGO	BW0000000322	2002	2168
New African Properties	NAP	BW0000001049	2011	604
Olympia Capital	OLYMPIA	BW0000000553	2005	29
Primetime	PRIMETIME	BW0000000603	2007	180
RDC	RDCP	BW0000000553	1996	220
Sechaba	SECHABA	BW0000000140	1989	133
Sefalana	SEFALANA	BW0000000157	1989	186
Standard Bank	STANCHART	BW0000000165	1989	299
Turnstar	TURNSTAR	BW0000000314	2002	572
Wilderness	WIL	BW0000000868	2010	231

Source: African Markets 2013 and BSE 2013

The BSE has expanded to offer various securities over the years necessitating the development of specific market indexes. Increase in market performance indices from one in 1989 (Botswana Share Market index) to three in 2014 (Domestic Companies Index, Foreign Companies Index and All Companies Index) testifies to the growth and diversification of the country's stock exchange over its 25-year existence. The Domestic Companies Index (DCI) and Foreign Companies Index (FCI) denote the co-existence of both local and foreign owned companies' stocks in the market and their availability to investors in and outside the country. Botswana has

long practiced integrated trade both within and beyond the regional borders and such trade liberalisation set the stage for local capital market integration.

Figure 6-1: BSE Market Capitalisation (Pula)



Source: BSE 2013

Global markets are now integrated in order to overcome shortcomings in local markets. Following this phenomenon, the BSE is a member of both regional and international bodies (BSE, 2013). Regionally, the BSE is a member of Southern African Stock Exchanges and internationally the market has membership with the Association of National Numbering Agencies (ANNA) and the African Securities Exchanges Association (ASEA). With the introduction of automated trading and central securities depository systems, the BSE stands to benefit from ANNA through its mandate of numbering and standardising securities. ANNA has since given the BSE issuance rights for an International Securities Identification Number (ISIN). All listed companies on the local exchange now have specific ISINs, as shown in Tables 6-1 and 6-2. The ISIN enhances the electronic trading system by giving a specific identity number to local securities and, as such, BSE products can be traded and mobilised globally without hindrance. International investors may be drawn to the security features of the Botswana market products hence integration is known to promote capital market growth. Notwithstanding, capital market integration is still an issue of debate as some authors argue that it leads to market

instability, capital flights, unfair competition, foreign companies' dominance and uneven distribution of income. However, supporters of capital market integration are of the view that intertwined markets help to: swiftly transfer capital from lenders to borrowers and thus distribute excess income to needy projects; improve competition and enhance less developed markets as new technologies and products are introduced from advanced markets; provide local investors access to finance from abroad whilst foreign investors are offered an opportunity to access local debt and equity markets so that competitive returns are realised by market players; and improve market liquidity as more instruments are offered to the investors. Finally, prudent management strategies are adopted through skills and knowledge transfer as players interact, thereby benefiting the larger community and national economy at large. Researchers also explain that malfunctioning and less developed markets are prone to illiquidity and costly trade, therefore becoming less attractive to both foreign and domestic investors (Bekaert and Harvey, 1998). Domestic investors may even prefer investing in markets abroad, thus leading to capital flight, which negatively impacts local productivity.

Whilst the BSE is well-regulated and functions prudently, research proves that the market is illiquid and highly dominated by commercial banks (Galebotswe and Tlhalefang, 2013). A shortage of products at the local exchange and limited alternative investment opportunities have led to the buy-hold tendency displayed by large institutional investors. The recently introduced ETFs may improve liquidity at BSE since ETFs are more attractive than a single company stock. ETFs are a collection of stocks from various companies from different industries and thus a diversified portfolio product is offered to investors. National population and the size of the stock market play a major role in attracting global investors. The population of Botswana is only two million people and the local exchange is much newer and smaller compared to the Johannesburg Stock Exchange (JSE) in South Africa. Investors may be more attracted to the advanced JSE, located in one of Africa's largest economies with bigger investments and a larger population. Nonetheless, the BSE is the second largest market in Southern Africa (BSE, 2013). Botswana, as the fastest developing economy in SSA, offers foreign investors great opportunities to invest in mining, manufacturing, agricultural, transport and the health sector, amongst others. The country has a strong record of good governance, market stability and upholds the rule of law; characteristics that offer a sound and secure investment environment.

6.2 Institutional Structure, Regulatory Framework and Economic Relations

6.2.1 Institutional structure and regulatory framework

The BSE was established in 1995 after operating informally for six years as the Botswana Share Market (from 1989) under a company named Stockbrokers Botswana Limited. The local exchange was legalised through the BSE Act of 1994 as the only capital market in the country. The legal formation of the local market was spearheaded by the MFDP, which benchmarked against neighboring South Africa and Zimbabwe since they had existing stock exchange legislation. Stockbrokers Botswana Limited was the sole exchange and broker from 1989 until 1998 when Investec Securities (Botswana) (Pty) Ltd entered the market as a registered stockbroker. At its inception, the Botswana Share Market was made up of only five companies: Sechaba Investment Trust Company Limited; BGI Limited; Barclays Bank of Botswana; Standard Chartered Bank Botswana; and IGI Botswana.

In seeking to be compliant with international best standards, the BSE engaged auditing firm Ernst & Young to be both the secretary and administrator of the market. Two decades later, the BSE has grown tremendously in its institutional structure. The MFDP continues to oversee the local exchange through the Non-Banking Financial Institutions Regulatory Authority (NBFIRA). Besides its strong management team, the BSE has a nine member committee that comprises three ministerial appointees and six others coming from different brokers. The committee selection criterion is to ensure fair representation of both the public and private sector interests. The exchange has grown from two to four brokers in 2014: Imara Capital Securities; Motswedi Securities; Stockbrokers Botswana; and African Alliance Botswana Securities. The growth in registered brokers testifies to the increased competition and market capitalisation of the BSE since its establishment. Brokers are the middlemen who connect savers to investors in the capital market; investors have no direct dealing with the exchange but they access market trade only through the registered members (brokers). Thus brokers carry out all the required paperwork on behalf of their clients and in compliance with the market requirements. In addition to the four brokers, there are four primary dealers operating in the market dealing specifically with government bonds. All the primary dealers are the top commercial banks in Botswana: Barclays Bank of Botswana; Standard Chartered; Stanbic Bank Botswana; and First National Bank

Botswana. Furthermore, all the primary dealers (except Barclays Bank) are custodians and trustees of securities. Custodial services offered to clients include, but are not limited to, income and dividend collection, proxy voting, settlements of securities and their safe keeping, tax support, compliance monitoring and timely information sharing. The market has also grown from one to six secretaries, demonstrating increased inclusion, transparency, efficiency and effectiveness of the BSE over the years.

In terms of law and regulations, the market is very sound, creating a secure environment within which securities are traded without fear or favor. A well-regulated market is attractive to investors and savers because the chances of corruption are low and property rights are promoted, amongst others. As already indicated, the main legal document guiding the market corporate governance, relationships and interactions is the BSE Act of 1994. The Act stipulates clearly the procedures to be followed by brokers, custodians, the main committee, members, the Ministry as well as the exchange itself. The rules proceeding from the Act are a set of instructions that govern the conduct of the market members or brokers. These rules seek to ensure that public interest in the market is safeguarded, investors are protected, and members' dealings are regulated to enable transparent, objective, effective and efficient securities trading. The BSE listing requirements guide securities issuers on what is required from them before and after listing. Issuers are expected to be liberal in information pertaining to their securities in order to help investors decide on best investment options. Poor or limited disclosure of information on any given stock might lead to misplaced expectations, unfair and unethical market competitions and lack of trust by investors, resulting in market instability. The exchange is a public property that should positively contribute to sustainable economic growth, hence transparency in market dealings is of utmost importance. The rules of the Act also provide guidance notes on submission of information to the BSE and the minimum information that should be included in the financial statements. Given that Botswana has an excellent judiciary system that ensures law and order are observed in all institutions, BSE laws and regulations can be enforced effectively. The growth of listed companies may also demonstrate the security and assurance felt by market players given the existing regulatory framework.

6.2.2 Relations between capital market development and other macroeconomic factors in Botswana

The stock market contribution to the national economy is measured by market capitalisation as a share of GDP. The local market has been pivotal to economic growth in Botswana as statistics illustrate an increase in the ratio of market capitalisation to GDP from 1991 to date (see Figure 6-2). A sharp increase in the ratio is observed between years 2005 and 2007, just before the global financial crises. After the financial crises, figures show a mixed trend as percentages of MCAP moved from 38, 33, 29, 31 to 34 in years 2009, 2010, 2011, 2012 and 2013. The downward trend during the recession signifies the market's vulnerability to external market forces. The local economy also experienced budget deficits during the same period showing some correlations between stock market performance and economic growth in Botswana. Nonetheless, the upward trend from years 2011 to 2013 signals recovery of the economy. The quick recovery of the local market demonstrates its resilience during difficult times and such characteristics may attract more investors to the BSE. There are ten sectors represented on the local stock exchange, as shown in Table 6-3. The mining and materials sector has been the top contributor to market capitalisation, financial services and insurance follow and then banking and the retail and wholesale sector. Since mining contributes a large share to Botswana's economic growth (22.4% in 2013), it is evident that the BSE's promotion of mining trade is of utmost importance to sustainable developments in the country. Of the P416,590 million total market capitalisation recorded in 2013, the mining and minerals sector contributed P355,342 million whilst the information and technology sector contributed zero. Anglo (Pty) Ltd has the largest share at P347,613 million out of the P355,242 million market capitalisation of the mining sector in 2013. Since, almost all mining companies listed on the exchange are foreign, their shares being traded on the exchange provides an investment opportunity for citizens to benefit from foreign investments. The poor market capitalisation by the information and technology sector represents a missed opportunity in this era of technological developments. There is a need for investments in information and technology since individuals, corporates and even governments trade globally outside their home countries, therefore technological connectivity is of utmost importance to their success.

Table 6-3: Market Capitalisation Per Industry

Industry	2008 MCAP (Pm)	2013 MCAP (Pm)
Banking	16563	19815
Financial services & insurance	19487	25959
Retailing & wholesaling	3533	8885
Property & property trust	908	3604
Mining & minerals	272110	355342
Security services	181	246
Information technology	16	0
Funeral services	132	297
Energy	703	1297
Tourism	334	1145
Totals	313966	416590

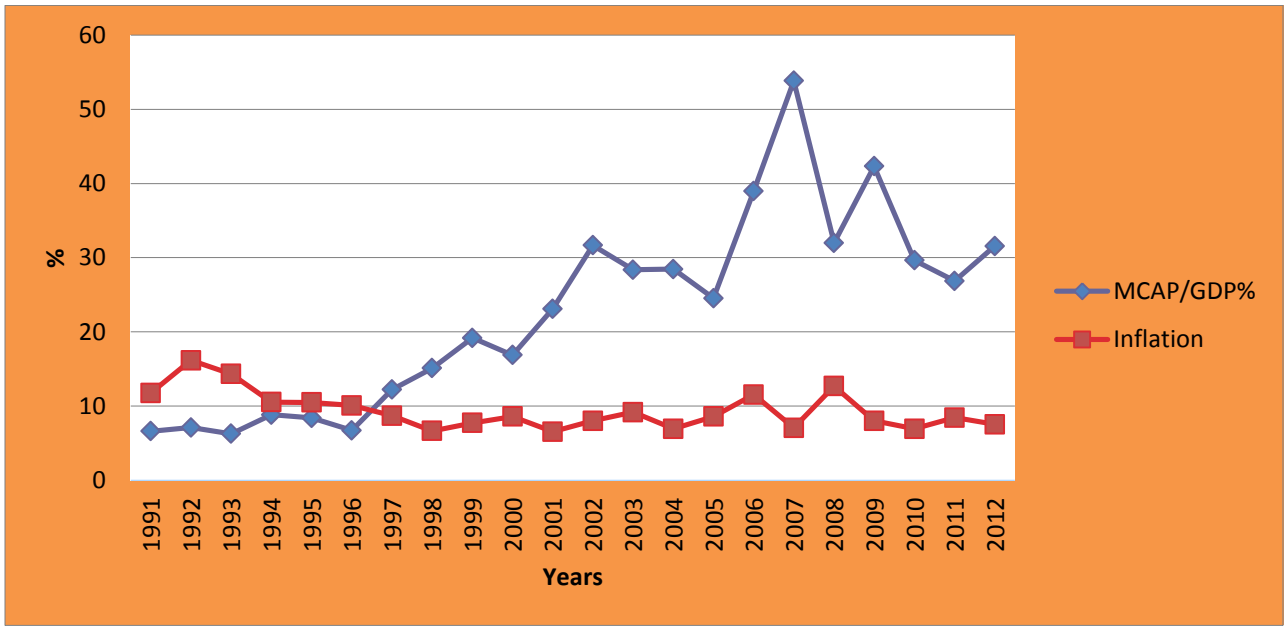
Source: BSE 2013

Capital market trading fluctuates up and down depending on other economic factors like inflation, interest rates, exchange rates and foreign markets movements. Nonetheless, the impact realised on any given company stock is largely dependent on specific company management, the industry within which the company operates and lastly, national economic waves. Thus the value of shares in the same industry varies depending on competitive advantages held by individual companies. Usually companies with good corporate governance and growth opportunities are considered viable and tend to be preferred by investors. On the other hand, investors' choices are also influenced by industry performances since some industries are riskier than others. Industries whose commodities, such as mining and minerals, are globally traded are heavily affected by changes in international markets, whereas the retail industry is less affected by external shifts. At a higher level, values of companies' stocks are affected by general movements in economic factors. Inflation erodes buyers' purchasing power as prices of goods and services continue to grow (when demand is more than supply). Investment generally is a tool that can be used to shield both governments and individuals from the negative effects of inflation. Through investing in infrastructure developments, government creates employment for individuals and thus increases money supply and empowers people against high inflation effects. Over time, government also profits since infrastructure like buildings and roads (if maintained well) have capital gains.

The Botswana government through the local stock exchange continues to raise funds for national developments in the form of bonds issuances. Thus government has a keen interest in controlling inflation rates in case the real value of capital gets eroded by high levels of inflation. Investors on the other hand expect return rates that are higher than inflation rates; in the banking market for example, fixed deposits earn fixed interests over time and they are considered safe investments, yet inflation rates can outgrow interest rates and diminish the real value of fixed deposits. Investing in shares and other securities may shield the shareholder against rising inflation rates as issuing companies strive to stay competitive enough to meet shareholders demands.

In their efforts to manage inflation, the BoB set an inflation target range between three and six percent. Historically, the inflation rate stood at 11% in 1990, dropped down to 8.6% in 2000, then 6.9% in 2010 and eventually lowered further to 4.1% in 2014, which was within target (BoB, 2012). Comparatively, the deposit interest rate was 6%, 9.4%, 5.6% and 2.5% in 1990, 2000, 2010 and 2014 respectively. Thus the inflation rate was higher than the deposit interest rate for 1990, 2010 and 2014. In 2000, the deposit interest rate was higher than inflation meaning that deposit investment was more profitable compared to other years. As of 2013, coupon rates on listed bonds (see Table 6-4) ranged between a high of 12% and a low of 7.25%, far beyond the prevailing inflation rate of 4.1%. Thus bond holders in the Botswana stock market have better real returns compared to deposit holders. The continued fall of deposit interest rates in Botswana may give rise to demand in bonds investment given the capital gains associated with such investments. Unfortunately, willing investors have limited access to the debt market since the bond market trading is at a standstill for all issuers except government. Nonetheless, in Botswana, equity market capitalisation as a share of GDP has been reported to be higher than the inflation rate since 1997, as shown in Figure 6-2. Whilst MCAP as a share of GDP has been rising over the years, the inflation rate has a downward trend and this movement is as expected because, when inflation is high, there is decreased purchasing power and therefore demands for securities lowers and market prices fall. In controlling inflation rates within low ranges, the Botswana government shields the local economy from the damaging effects of inflation and also encourages growth and stability of the local capital market, thus contributing to sustainable economic growth.

Figure 6-2: Market Capitalisation and Inflation



Source: BoB 2012 and BSE 2013

Table 6-4: BSE Bonds Listings

Bonds	Maturity Date	Issue Size (P Mn)	Coupon Rate %	Traded (P Mn)
Corporate				
BBB001	2014	100		
FML015	2015	50		
FML025	2025	150	8.20	
LHL005	2017	50	8.25	
LHL006	2023	200	10.50	
LHL007	2025	75	10.50	
LHL008	2027	25	11.00	
SBBL003	2017	100	10.50	
SBBL048	2015	175	10.70	
SBBL056	2021	50		
SCBB003	2020	50	10.50	
SCBB006	2021	70		
SCBB007	2022	50		
SCBB008	2022	127	8.20	
Government				
BW003	2015	1642	10.25	13
BW005	2018	1233	10.00	6
BW007	2025	1295	8.00	38
BW008	2020	858	7.75	19
BW009	2013		7.25	2
BW010	2017	618	7.75	17
BW011	2031	399		
Quasi				
DPCF004	2016	220	10.45	
DPCF005	2019	100	10.60	
DPCF006	2022	55	10.75	
DPCF007	2025	35	10.90	
Parastatals				
BBS002	2016	115	12.00	
BBS004	2019	75	11.10	
BBS005	2023	150	11.20	
BBS006	2018	110		
BHC017	2017	286		
BHC020	2020	103	10.10	
BVI001	2018	70	11.23	
BVI002	2015	50		
NDB001	2017	165	11.25	
WU001	2018	195	10.65	
WU002	2026	205	10.60	
Total		**9251**		**95**

Source: BSE 2013

Exchange rate is yet another economic factor that significantly affects trading at the Botswana stock market. The local currency value is determined by the exchange rate prevailing at any given time and thus the rate equates the Pula to other currencies internationally. Most important are the currencies to which Botswana Pula is pegged. This includes currencies of countries to which Botswana imports and exports goods and services (South Africa, Europe, the USA and the UK). Therefore, locally listed companies that deal in imports and exports from and to these nations may have their stock value fluctuate according to price movements in these foreign countries. Botswana imports most of its retail goods, especially food stuffs and electricity from South Africa whilst the nation exports its mineral products (especially diamonds) and beef to the European market. Since Botswana's revenue is mainly dependent on diamond trading, movements in the US Dollar, British Pound and the Euro heavily affect stock prices of locally listed companies in the mining and minerals industry. Exchange rate fluctuations may lead to appreciation or depreciation of the Pula, which may translate to local stock being more expensive or cheaper to foreign investors. An appreciation of the local currency means it will be more expensive for foreign investors to buy local stock and that may lead to low demand and low turnover at the market. On the other hand, Pula depreciation may lead to increased demand for local stock by foreign investors since it will be cheaper to buy local goods. However, if the supply remains constant, the price for the stock may increase leading to stock overvaluation. Depreciation of the Pula might also lead to capital flight as foreign investors sell their stock to avoid capital losses.

6.3 Types of Financial Services and Products Available at BSE

6.3.1 Equity

The BSE offers various products: shares, bonds, commercial papers and exchange traded funds, as shown in Figure 6-3. In an effort to deepen the market, there are ongoing arrangements regarding the introduction of securitised products, global depository receipts and derivatives (BSE, 2013). Equity financing commonly known as shares, occurs when investors purchase shares of a listed company, the investor then becomes a shareholder whilst the company is a

share issuer. Shareholders are therefore part-owners of the company and they have rights to vote for board members and rights to dividends. The local stock market thus creates a platform for both domestic and foreign companies to raise equity that helps in financing large capital projects. Research indicates that equity financing is usually less costly than bank financing, as the latter attracts high interest. Better still, equity is a long-term investment compared to bank borrowing that has a short span. Access to equity funds enables companies to reinvest and expand their businesses, which may lead to increased productivity and employment thereby growing the national economy. As a company's income increases, shareholders are also rewarded through dividends payouts. The presence of foreign companies on the local exchange proves the market's significant contribution to the larger economy through foreign exchange and FDIs. Furthermore foreign listings assist in share pricing of similar assets and enable international investors to compare and contrast prices.

Stock markets are considered efficient and effective if they mobilise savings, are liquid, help diversify risk, share information in a timely manner, encourage prudent corporate governance, attract foreign investors and promote privatisation. The Botswana stock market has been recognised and rated highly in African markets as it has grown rapidly in market capitalisation within its 25-year existence. Thus the market has attracted large numbers of savers and offered an alternative to the traditional bank savings, therefore expanding the country's financial market. In order to promote risk diversification, the BSE listed companies are from various sectors of financial services, retail and wholesaling, property, banking, information and technology, security services, tourism, energy, funeral services, mining and minerals. Thus investors can reduce their risk exposure by holding a diversified portfolio of shares. Botswana's government is committed to the economic empowerment of its citizens and economic diversification through privatisation of state-owned companies (like the National Development Bank and Botswana Telecommunications Corporation). The BSE, as one of the stakeholders in the privatisation process, has initiated an educational tour of the country, promoting privatisation and the benefits of buying shares offered by the companies being privatised. Besides individual benefits, the market itself stands to benefit from privatisation in two main ways: through market capitalisation growth, especially in the information and technology sector; and through improved liquidity, hence increased market depth.

The 2013 equity market listings have grown to a total of 35 companies, as shown in Tables 6-1 and 6-2 (domestic plus foreign listings) from the five listed companies in 1989. Twenty-three out of these 35 companies are domestic and 12 are foreign-owned. The growth in the equity market is also evident in the increase in market capitalisation which was recorded at P314,562 million in 2005 and P416,590 million in 2013; an increase of P102,028 million. Market capitalisation shared between domestic and foreign companies is shown in Figure 6-1. Market capitalisation reflects the value of listed stocks at a given time as measured using offer price multiplied by the number of shares issued. Historically, foreign companies' market capitalisation has been higher than that of domestic companies. The 2013 market capitalisation contributed by foreign listed companies stood at P373,132 million, which outweighed that of local firms, recorded at P43,457 million. Thus the market value of the BSE is heavily dependent on foreign firms and this scenario demonstrates the importance of financial integration in boosting financial and economic developments in Botswana. On the other hand, the BSE's heavy reliance on foreign firms means that the market's value is exposed to foreign exchange, creating risk in times of international financial hardship. Even more concerning is that almost all of the BSE foreign listed companies are in the mining and minerals sector (see Table 6-1). Of the P373,132 million market capitalisation of foreign companies recorded in 2013, 95% was contributed by the mining sector alone (BSE, 2013). In 2007, the BSE total market capitalisation stood at P568,027 million and went down sharply to P313,966 million in 2008 when the global financial crisis hit. During the same period, domestic market capitalisation dropped from P32,702 million to only P27,706 million (a 15% decrease) compared to the foreign market capitalisation that shifted from P535,325 million to P286,260 million, which translates as a 46.5% loss. As discussed previously, during the global financial crises, mineral trading was largely affected negatively as some of the commodities, like diamonds, were considered luxury goods and lost their international market. Diamonds are the country's major income earner and the loss of the market during the financial crises negatively impacted on production, employment, income and economic growth at large. Five years later, the domestic market recovered to P43,457 million (past the 2007 figure) whilst the foreign market capitalisation remained depressed and recorded P373,132 million. Thus in Botswana, domestic investments are more stable than foreign investments.

The BSE suffers from illiquidity, which is mainly blamed on fund managers who buy and hold securities (behaviour that is mainly driven by lack of alternative investment opportunities) for fear of losing position. Therefore, any initiative that improves market liquidity is a most welcome development. Liquidity is observed in a market where shares are bought and sold rapidly and stocks move from one holder to the other, instead of being bought and held by few investors. Liquid markets are not stagnant since they promote resource allocation and share price movements. BSE liquidity is indicated by volume of stocks traded, value of shares traded and turnover ratio. The turnover from 2005 to 2013 is shown in Table 6-5(a). The volume of shares traded increased from 44 million units in 2005 to 711 million units in 2013. However, the value of shares traded does not correspond with the market capitalisation figures. For example, in 2009 and 2013 turnover was only P764 million and P2,315 million respectively, compared to a total market capitalisation of P374,537 million and P416,590 million in the same years. Whilst market capitalisation as a share of GDP is significant over the five years from 2009 to 2013, the turnover ratio recorded very low percentages of 0.2 from 2009 to 2012 and only rose to 0.6 in 2013. The low value of traded securities compared to high market capitalisation means that the BSE contributes to economic growth mainly through capital accumulation but less financial resource allocation or distribution is done. Poor liquidity at the local market denies potential investors an opportunity to raise long-term capital necessary for productive investments. Nonetheless, on average, an upward trend in the turnover ratio is observed between 2005 and 2013, signalling increased activity, developments and growth in the local market liquidity.

Contribution to liquidity in the local market is further illustrated in Table 6-5(b), which shows the value traded by the top ten domestic and top ten foreign companies in 2012 and 2013. Out of the P895 million turnover recorded in 2012, the top ten companies contributed P826 million, the bulk of which was from the domestic board (P813 million). Similarly, in 2013, the foreign stock value traded was minimal (P8 million) compared to the domestic share. Interestingly, the mining and minerals sector, which recorded the highest market capitalisation over the years, had turnover ratios of zero percentage from 2011 to 2013 (BSE, 2013). The Anglo (Pty) Ltd was the highest contributor to the mining market capitalisation figure in 2013, yet the company traded zero shares during the same period. The market is therefore very illiquid on the foreign counter and only domestic companies promote the minimal liquidity at the BSE. Researchers argue that

mining and explorative FDIs may increase exports but such investments may not promote citizen empowerment. Botswana citizens do not own mining companies and the lack of trading in mining shares does not promote participation and ownership by locals in the most profitable industry in the land. On the domestic board (BSE, 2013), liquidity was mainly promoted by Letshego (from the financial services sector) and Choppies (from the retail and wholesale sector). Letshego increased sales volume from 224 million in 2012 to 238 million shares in 2013 and the corresponding value traded was P359 million and P551 million in 2012 and 2013 respectively. Choppies on the other hand traded 38 million shares in 2012 at a value of P115 million and increased trade significantly to 140 million shares valued at P415 million in 2013. Both Letshego and Choppies traded better than FNBB (from the banking sector), which had the highest market capitalisation in 2012 and 2013. This means that at the local exchange, high market capitalisation does not translate to high turnover.

Table 6-5: Value Traded

(a) Equity market liquidity

Year	2005	2006	2007	2008	2009	2010	2011	2012	2013
Value traded (Pm)	239	415	825	1166	764	963	1008	895	2315
Volume traded (million units)	44	87	125	193	168	309	459	410	711
Turnover ratio (%)	0.1	0.1	0.1	0.4	0.2	0.2	0.2	0.2	0.6

Source: BSE 2013

(b) Value traded by top ten domestic and foreign companies (Pm)

Year	2012	2013
Domestic value traded	813	2184
Foreign value traded	13	8
Total value traded	826	2192

Source: BSE 2013

The performance of the BSE is further measured using Domestic and Foreign Company Indexes (DCI and FCI). An index indicates movements in a given portfolio of shares and thus percentage change from the base year is most informative. The BSE equity indexes are calculated on a market capitalisation basis. In 2007, the DCI was 8,421.6 points and dropped down to 7,035.5 points in 2008, but had a record high of 9,053.4 points in 2013, which translates to a 20.5% increase (using 2007 as the base year). Therefore, a positive performance is observed from the domestic companies' portfolio, which shows the resilience of the local firms and their ability to quickly recover from financial crises. Comparatively, the FCI moved from 2,201 points in 2007 to 1,192 in 2008 before a rise to 1,703.9 points in 2011 but thereafter a downward trend is observed to 2013, where 1,583.5 points are recorded. Thus FCI had a percentage change of negative one (-1) at the end of 2013. The foreign company portfolio mixed movements might be a reflection of a slow recovery in the global market on mining resources.

6.3.2 Bonds

Bonds are debt instruments that allow holders to earn constant coupon rates over a specified time. An established, efficient and effective local bond market may benefit government, corporate and individual investors through providing reliable home-based currency debt. The Botswana debt market has grown from the three government listings in 2005 to 35 in 2013, as shown in Table 6-4. The debt market has grown from only attracting government to now listing corporate, quasi, and parastatal bonds. At the end of 2013, the numbers of outstanding bonds per sector were six, four, 11 and 14, belonging to government, quasi, parastatals and corporates respectively.

Government has been the dominating contributor to bond market capitalisation over the years and in 2014 it had a share of P6,045 million, followed by parastatals at P1,524 million, corporates at P1,272 million and, lastly, quasi bonds at P410 million. The initial three bonds registered in 2005 had maturity dates of 2, 5, and 12 years and they were worth P750 million, P850 million and P900 million respectively. Market capitalisation for the bond market in 2013 recorded a total of P9, 251.3 million; an increase of P6, 751 million since 2005. An increase in

market participants and number and value of bonds listed means that the Botswana debt market has grown deeper and broader over the years. The government spearheaded bond listings in order to help establish a formal local bond market and also to set a risk free yield curve. This was to be used later by other issuers as a benchmark for their long-term debt instruments. Liquidity is also poor in the bond market as evidenced by only P95 million debts traded in 2013. Interestingly, only government traded its bonds and other issuers traded zero bonds in 2013.

Coupon rates are used in the bond market to reflect a return on investment and they signal the amount of risk associated with a particular issue. Thus, the higher the risk the higher the return and it follows that investors choose debt instruments based on their risk appetite. Whilst government bonds commonly have the lowest coupon rates, they are considered less risky since their repayments are almost certain and therefore suitable for risk averse investors. In Botswana, the lowest coupon rate in 2013 was 7.25% for the government bond BW009 and the highest return on government bonds stands at 10.25, with the largest nominal value of P1, 642 million earned from bond BW003. Interestingly, corporate bonds in Botswana offer coupon rates lower than parastatals, yet it is usually assumed that corporates are riskier than parastatals and therefore a higher return is expected. In 2013, the highest coupon rate excluding government issuance was 12% for the Botswana Building Society (parastatal) BBS002 at a P115 million nominal value and the lowest rate was 8.2% for two bonds FML025 and SCBB008 (both corporate bonds). Thus coupon rates are recorded at 2% above the risk free rate. The corporate bond market in the country is dominated by commercial banks with good credit ratings, implying financial market stability and less risk. On the other hand, parastatals are characterised by political interferences and less competitive management, which may cause uncertainty among investors.

Government bonds also have the longest maturity periods, which attract investors since they earn returns over a longer period. The recent government bond BW011 issued in 2013 has a maturity period of 16 years, compared to a corporate bond LHL008 issued by Letshego Company with a 14 year maturity. Government bond issuances are oversubscribed hence nominal values of the affected bonds also increase. A high demand for government bonds may signal citizens' growth in knowledge and involvement in capital market trading. Traditionally, Botswana invested heavily in cattle farming but since the scourge of foot and mouth disease caused a decline in

sales of beef, nationals are now seeking safer alternatives for long-term investments. Government on the other hand benefits from the readily available market since debt can be raised locally and risks associated with cross border transactions are reduced. Unlike at its inception, when government had a surplus budget, the bond market now plays a larger role; it cushions the government deficit that arose out of the global financial crises. Thus the contribution of Botswana's capital market to sustainable economic growth cannot be undervalued.

6.3.3 Exchange Traded Funds (ETFs)

The BSE recently introduced unique asset based securities in the form of ETFs (BSE, 2013). An ETF is a security that represents a group of several securities in a given market sector like retail, financial, minerals and fund management. The value of an ETF is largely dependent on the underlying securities in the specific portfolio and therefore the exchange traded fund movements tend to track the commodity or market sector index. A change in the value of one of the securities included in the group directly impacts on the ETF value. Through an ETF security, an investor has the benefit of owning a diversified portfolio of securities in one. ETFs are also well known for their low management and operation costs compared to other funds. Whilst ETFs are bought and sold just like shares, they do not give their holders a right to vote. BSE has only two ETFs: NewGold and BettaBeta. The NewGold ETF is primarily listed on the JSE and is issued by Absa Capital, which is one of the biggest investment banks in South Africa. The NewGold ETF is rated the largest in South Africa, while worldwide it is the third largest amongst ETFs based on the gold commodity. Initially, the volume of the NewGold ETF listed on the local bourse was 1.6 million units in 2010 and it increased to 2.3 million units in 2013. Turnover on NewGold has been significant over its short existence at the local market; in 2012, 223,026 units were traded at a value of P27.6 million. The following year, 1.2 million units valued at P131.2 million of NewGold ETF were traded at BSE. The high demand for the new security demonstrates investors' willingness to invest in capital market securities. Furthermore, the speed at which the exchange traded shows the limited availability of securities at the BSE. Unlike other exchange traded funds, NewGold ETF is purely based on one commodity: gold. Gold is very valuable and stable so it is preferred in hedging currency. Therefore, investors in a gold-based ETF have direct access to gold investment and they may benefit in the long-run without

physically owning gold. NewGold was the first ETF to be listed on the BSE, followed by BettaBeta, which is also primarily listed on the JSE. BettaBeta ETF was listed on the local exchange in 2011 and it was issued by Nedbank Capital. The BettaBeta ETF is backed by a group of securities from 40 top JSE-listed companies. Unlike NewGold, which is based on a singular commodity, BettaBeta is based on assets of companies from various industries. Contribution to the BettaBeta ETF value by companies is weighted equally but, at the industry level, contributions vary as the resources sector contributes 35%, the financial sector 30% and the industrial sector, 35% (BSE, 2013). Statistics indicate that in 2013, 20,519 units of BettaBeta, valued at P774, 890, were traded on the BSE. Investors in the BettaBeta security stand to gain the benefits of holding a portfolio of the included company stocks instead of purchasing the individual shares of such companies. Thus a gain from one of the company's stocks can actually mitigate the loss in another and therefore risk is diversified and average returns from such investment can be obtained. Furthermore, several of the companies that are included in the BettaBeta portfolio have operations in Botswana.

Prices for the two ETFs vary largely as NewGold trades between P100.50 and P130.30 per unit whilst BettaBeta is priced between P33.55 and P40.60 per unit. Interestingly, the more expensive ETF is selling more units and adding more value than the cheaper BettaBeta, indicating that investor preferences are based not only on the price factor, but also on other characteristics. Through the introduction of ETFs, the BSE increased its market depth and enhanced investors' choice of securities offered at the local market. Since both the ETFs are categorised as 'local assets', fund managers are allowed to allocate such investments to the local portfolio and this may attract local investors. ETF investors can also benefit from exchange rate fluctuations between the Pula and the Rand. Moreover, trades in ETFs will enhance liquidity at the BSE, which will in turn promote investment and productivity.

6.4 Current Developments at the BSE

The local Botswana Stock Exchange has matured significantly in terms of its administration, regulatory and monitoring frameworks, as well as its infrastructure development. This is depicted in Figure 6-3. Nonetheless, BSE developments were realised slowly. Even in 2003, almost ten years after its establishment, the market still operated with an outdated trading Act, a minimally qualified workforce, no central securities depository (CSD), no automated trading system (ATS), limited membership, and no clearance and settlement functions (CARANA-Corporation, 2003). The need for an updated trading Act cannot be overemphasised, as the Act forms the foundation for rules that guide securities' trading in a transparent and efficient manner. There is a need therefore for such rules to be abreast of current international best practices in order to enable the local market to attract global investors. Trained personnel are also a prerequisite for the success of an exchange. Knowledgeable staff members are not only needed to market products and services but, more importantly, to enhance the performance of the exchange through investment skills transfer and adaption from their counterparts worldwide. Botswana, like many other African countries, suffers from a lack of local skilled labour in finance and related areas and therefore the country relies on foreigners to provide most services in these fields, especially in top management posts. The use of a CSD is standard practice in developed markets and the arrangement helps to fast track the transfer of shares between investors, as book entries are applied instead of manual transfers. Furthermore, through the CSD system, information between investors and brokers can be shared online in real time and trading can be done anytime at the convenience of the players without need for physical contact (BSE, 2013). Thus, the application of a CSD enhances access to the capital market. In the absence of a CSD, the physical transfer of share certificates delays the conclusion of trading, increases settlement risk (since fraud is more likely to occur) and the practice may detract investors from developed markets, thus compromising growth of the local exchange. An ATS allows for transparent and quicker trading whilst promoting volumes of securities traded compared to the manual system. The BSE can leverage on the advantages of electronic trading and increase its market scope and participants and thus grow the local economy through increased capital inflows.

Currently, several developments can be witnessed at the exchange (BSE, 2013). The market now operates in its own physical buildings making it easily identified and accessible to interested players. The buildings have the modern equipment necessary for trading, particularly electronics. Furthermore, an increase in local skilled people holding managerial positions shows growth in market capacity and skills transfer from previous foreign managers to Botswana. The continuous in-job training programme applied by the exchange (BSE, 2013) will further create a strong knowledge resource that the market can tap into for comparative and competitive advantage in the future. The need for trained and skilled staff, with currency in trading technology, cannot be overemphasised in this era where markets worldwide are integrated and competition for investors is intense. In 2008, the local market started operating CSD, which necessitated dematerialisation of shares, a process which is ongoing. It is not compulsory for companies listed on the local exchange to dematerialises, so there is often delay in the process. Statistics show an increase of 10.4% in domestic companies' dematerialisation between 2012 and 2013, with 48.9% and 59.3% recorded respectively. Foreign companies dematerialised 94.4% and 78% between 2012 and 2013 respectively. The decline in foreign companies' recordings was a result of the delisting of two companies, Aviva and Hana, in 2013. The two companies had 86.7% (Aviva) and 100% (Hana) dematerialisation in 2012. Actual figures demonstrate that out of the 11,331,694,913 domestic shares issued on the market, 6,724,659,754 shares have been deposited into the CSD as of 2013. Of the 199,416,850 issued foreign companies' shares, 155,534,986 shares were deposited into the CSD in the same year (BSE, 2013). Foreign companies listed on the local market are mainly from developed and advanced economies, such as the US and UK, and this may explain their keener interest in dematerialisation than local firms. Furthermore, the reluctance of local companies may be a result of local shareholders who are not knowledgeable of the CSD system and are more comfortable with the manual procedure. There is therefore a need for change management in the local capital market.

According to the CSD rules, investors through their brokers can open accounts in the depository, similar to bank accounts. Every transaction regarding security held is detailed in the account and monthly statements are sent out to the investor. Thus the settlement and clearing process is quickened through the CSD and service to the clients is enhanced. Accounts opened were recorded at 17,638 and 20,027 in 2012 and 2013 respectively. Interestingly, local individuals

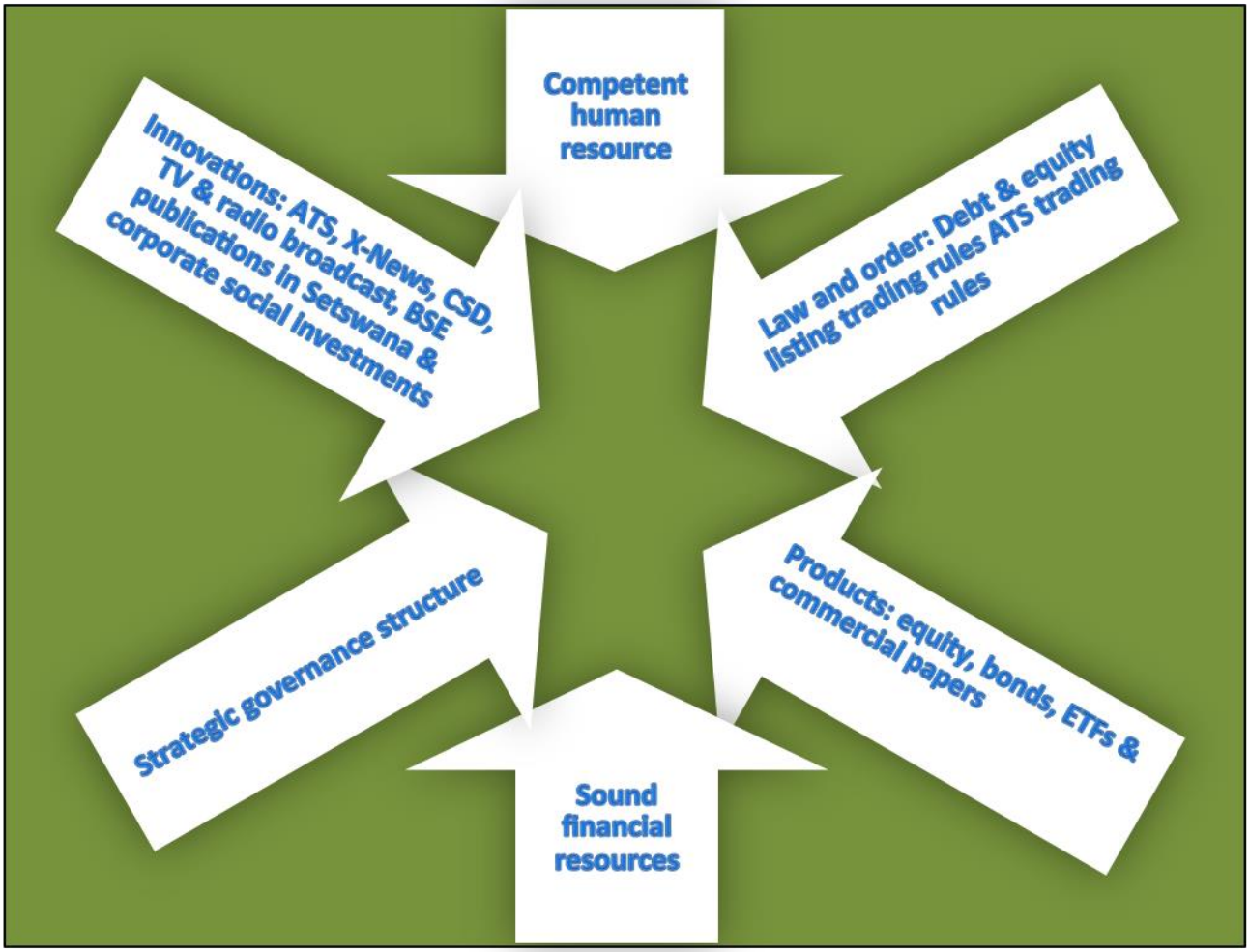
opened more accounts (14,213) than local companies (1,452) and foreign companies (2,006). Local companies and institutional investors may be experiencing a challenge in trying to cope with, and adapt to, new developments in the exchange. A serious knowledge gap has been identified as a major setback in the participation of locals. This ignorance by citizens might slow the growth of and hinder the private sector, especially the SMMEs, from accessing long-term finance available in the market. Nonetheless, in his 2013 annual review (BSE, 2013), the Chief Executive Officer of the BSE highlighted that a record high turnover was experienced in 2013 following the implementation of an ATS towards the end of 2012. In 2013, for the first time since 1989, the market recorded P9.3 million turnover per day, more than double the 2012 turnover of P3.6 million. The recorded turnover corresponded with 710.5 million and 409.9 million shares traded in 2013 and 2012 respectively. Research proves that ATS improves the liquidity of securities and this observation is supported by the Botswana market experience. The ATS is fairly new to the local exchange and it remains to be seen if its positive impact on liquidity will be sustainable in the long-run.

In their efforts to broadcast information on listed companies to the public in a timely manner, the BSE implemented an Exchange News Service known as 'X-News'. The news system was only introduced in 2014 and therefore its impact and contributions to the growth of the market are still to be determined (BSE, 2013). Nonetheless, the system is a positive innovation that is expected to help in disseminating information on listed companies on a real-time basis. Company news disseminated through X-News comprises prelisting statements, prospectuses, regulatory publications and circulars. X-News is operated electronically; companies subscribe to the use of the facility, submit their updates and news to the BSE desk which then evaluates and publishes the information on the exchange website. For control purposes, publication of X-News information on other media outlets is only allowed after the news is published on the BSE website. Companies that are secondary listed on the local exchange are required to publish information on X-News at the very same time as such information is broadcast in their primary market, to avoid unequal updates. Even though companies are charged for the use of X-News, they should not be deterred from its use since the system will enhance communication and enable companies to reach out to a wider community, both locally and internationally. X-News optimises the availability of internet connectivity and mobile network usage across the country

and it is expected to inform and educate the nation on market activities especially the young generation and non-urban dwellers, thus attracting new investors.

From a legal perspective, the BSE and its stakeholders continue to upgrade the regulatory framework through updating the old and creating new legislation to suit current developments in the market (BSE, 2013). For example, in 2013, an amendment to the Equity and Debt Listing Rules was submitted to the BSE Board Committee for review. The amended rules were designed to ensure currency and be more effective and efficient than the original rules. In addition, the Securities Bill was passed by the cabinet early in 2014 and now awaits parliamentary approval. In recognising the growth and large amounts of changes in the local exchange, a BSE Transition Bill has been drafted and is in the process of being enacted. A solid legal and regulatory framework that safeguards the interests of all stakeholders in the capital market is a necessity for success and contribution to sustainable economic growth.

Figure 6-3: Overview of the BSE



6.5 Major Empirical Findings and Analysis

It is common practice to test time series variables for unit root before carrying out cointegration tests. Therefore ADF tests are used to prove stationarity in the variables. ADF tests are conducted at both levels and first differences. The outcomes of the tests are presented in Table 6-6 and they reveal that besides Y, FLO and ML (economic growth, net FDI flows and market liquidity, respectively), all other variables in the system have unit root at levels. Thus Y, FLO and ML are stationary at their levels but IFLO, MS, TO, GB and EF are integrated of order 1 since they are only stationary after their first difference. The null hypothesis that there is unit

root in all the variables at their levels except for Y, FLO and ML therefore cannot be rejected. Nonetheless, the null hypothesis is rejected for all variables at first difference (5% significance level) since their t-values are more than their critical values and p-values are less than 5%.

Variables are then tested for cointegration since they are stationary and integrated. The popular Johansen technique is applied to establish the number of cointegrating vectors in the system (Johansen and Juselius, 1990). Cointegration test results are presented in Table 6-7. The test is based on eigenvalues and MacKinnon p-values are also used (Mackinnon et al. 1999). In this chapter, long-run relationships between capital market development, financial integration and growth have been studied. In Table 6-7 (a), two cointegration tests are run in order to capture the impact of two indicators of capital market development (MS and ML). Results from the tests show that there is one cointegrating equation under both Trace and Max-Eigen statistics. Furthermore, a combination of capital market development and FDI variables is tested for cointegration, as displayed in Table 6-7 (b). The results are: in the presence of MS there is only one cointegrating vector but two vectors of cointegration are identified when ML is used in the system. IFLO and FLO indicate FDI and these variables are used interchangeably in the tests. Thus, at 5% significance level, the null hypothesis that there is at least one vector of cointegration in the system is accepted. The dataset is based on annual observations but the sample size is small. To avoid problems of autocorrelation and bias related to lag choice, approaches from previous literature are adopted and only one lag interval is estimated (Dutta and Ahmed, 2001; Ahmed, 2007).

Table 6-6: ADF Unit Root tests

Variables		Y	TO	IFLO	FLO	GB	EF	MS	ML	HC
Levels	(constant)									
	t-statistics	-7.165*	-1.193	-2.587	-3.645*	-1.348	-0.244	-1.643	-3.027**	-0.566
	p-value	0.000	0.656	0.112	0.014	0.586	0.915	0.444	0.049	0.858
	(constant plus trend)									
	t-statistics	-7.019*	-1.728	-2.998	-4.481*	-3.202	-3.497***	-2.859	-2.96	-2.517
	p-value	0.000	0.700	0.157	0.010	0.112	0.070	0.199	0.166	0.317
	(none)									
	t-statistics	-4.774*	-1.139	-2.038**	-3.313*	-0.563	0.701	-0.391	-0.403	2.177
	p-value	0.000	0.223	0.042	0.002	0.461	0.857	0.530	0.526	0.990
1st difference	(constant)									
	t-statistics	-4.018*	-3.647**	-5.540*	-7.595*	-5.675*	-4.953*	-3.695**	-4.747*	-5.243*
	p-value	0.009	0.015	0.000	0.000	0.000	0.001	0.015	0.002	0.001
	(constant plus trend)									
	t-statistics	-3.808**	-3.758**	-5.391*	-7.373*	-5.512*	-5.143*	-3.671***	-4.708*	-5.067*
	p-value	0.046	0.043	0.002	0.000	0.002	0.004	0.056	0.007	0.004
	(none)									
	t-statistics	-4.240*	-3.714*	-5.694*	-7.806*	-5.718*	-5.063*	-5.809*	-4.830*	-3.959*
	p-value	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.001

Note: 1. *, ** and *** indicate significance at the 1%, 5% and 10% levels respectively.

2. ADF unit root test applied; maxlag = 4, automatic SIC lag selections used.

Table 6-7: Johansen Cointegration Tests

(a) Series: Y GB MS EF

Hypothesised No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5% Critical Value	Prob.	Trace Statistic	5% Critical Value	Prob.
None	0.87	39.45*	27.58	0.00	65.69*	47.86	0.00
At most 1	0.53	14.29	21.13	0.34	26.24	29.80	0.12
At most 2	0.42	10.38	14.26	0.19	11.94	15.49	0.16
At most 3	0.08	1.56	3.84	0.21	1.56	3.84	0.21

Note: 1. * denotes rejection of the hypothesis at the 0.05 level.

2. MacKinnon-Haug-Michelis (1999) p-values used.

3. Further tests conducted using ML instead of MS as an indicator of capital market development (results still significant at 5% level).

4. More tests conducted using other EF instead of HC (results still significant at 5% level).

(b) Series: MS TO IFLO EF

Hypothesised No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5% Critical Value	Prob.	Trace Statistic	5% Critical Value	Prob.
None	0.79	29.34*	27.58	0.03	57.95*	47.86	0.00
At most 1	0.67	20.88	21.13	0.05	28.61	29.80	0.07
At most 2	0.33	7.53	14.26	0.43	7.74	15.49	0.49
At most 3	0.01	0.21	3.84	0.65	0.21	3.84	0.65

Note: 1. * denotes rejection of the hypothesis at the 0.05 level.

2. Further tests conducted using FLO instead of IFLO as an indicator of FDI(s) and the results still significant at 5% level.

Having confirmed the existence of cointegration amongst the variables, the impact of one variable on another is established. First, the impact of capital market development on economic growth in Botswana is investigated. The research literature suggests that capital market development is one of the engines of productivity since the market channels savings into investments, which in turn create employment and increase income thereby alleviating poverty. Capital market development is measured using two indicators: MS based on market capitalisation as a share of GDP and ML measured by value of stock traded as a percentage of GDP. An increase in market capitalisation demonstrates market expansion and depth and it is therefore expected to positively influence growth. Similarly, market liquidity is the turnover ratio that displays the market trading pattern. A liquid market is preferred since investors can build up and change their portfolios within reasonable times without much delay. Illiquid markets are stagnant and do not enhance productivity. GB is another variable used in the model to display government burden in growing the economy. The impact of institutional environment on growth is indicated by the economic freedom (EF) variable.

The VECM results are displayed in Table 6-8. The error correction term is negative and significant, meaning that an equilibrium relationship exists amongst the variables. In the short-run, both capital market development indicators have a positive impact on growth and ML is significant at 5% level. Thus, 1% upward change in market liquidity translates to a 16.7% increase in growth. Liquidity mobilises resources from one hand to another and may enable investment in productive projects and therefore grow the economy. Previous researchers (Levine and Zervos, 1996) also found a positive and significant association between capital market development and growth. Botswana should therefore continue to develop and prudently market the local bourse to promote trading of its securities internationally. The institutional variable of EF has a positive and significant impact on economic growth in Botswana. Thus sound institutions play a great role in promoting growth; Botswana has a continuous history of economic freedom backed by prudent law and regulation authorities. The trading environment is stable and less corrupt compared to other countries in Africa. The Botswana government should therefore continue to sustain and improve its institutional framework and uphold the rule of law and order so that both local and foreign traders may be attracted to its capital market. The research literature predominantly highlights that where the trading environment is unstable and

characterised by political confusion, corruption, lack of property rights and economic uncertainties, capital flight occurs and economic growth is negatively affected.

The impact of financial integration through FDI and portfolio flows on capital market development in Botswana is also investigated. Two measures of FDI flows are used: inflows and net flows as a percentage of GDP (IFLO and FLO). Foreign direct investment inflows not only bring in the needed capital but the flows also promote skills and knowledge transfers. One macroeconomic variable (TO) is introduced in the system. TO is the sum of exports and imports as a share of GDP. Integrated economic trading in the region and beyond is expected to drive the local capital market development. It is evident from the results that there is a long-term relationship between the variables in the system as substantiated by significant and negative error correction terms (see Table 6-9). Overall it is observed that FDI flows have a positive impact on the development of the local exchange even though the impact is not significant at the 5% level. The results may imply that FDI flows have not reached a threshold level to actually significantly affect movements on the Botswana stock market. The local economy has a sound history of surplus budgets and therefore there has been less enthusiasm in attracting foreign capital. Nonetheless, with the change of the financial landscape globally, Botswana has the challenge of promoting its investment opportunities internationally in order to attract foreign flows. Strategic and proactive management at the BSE is necessary to innovate and formulate ways in which to grow the market internationally both in products and services offered. Management should be more open to introducing new trading practices and new instruments that have been adopted elsewhere in the region or the world. This will ensure that the local market remains relevant, competitive and profitable in the larger economy.

Table 6-8: Capital Market Development and Economic Performance

Economic relationship between capital market development and economic performance in Botswana**:** macroeconomic variables used

	MS	ML
ECT_{t-1}	-0.829	-0.886
	(0.451)***	(0.405)**
D(Y(-1))	-0.180	-0.484
	(0.419)	(0.309)
D(GB(-1))	-0.511	-1.525
	(1.816)	(1.467)
D(MS(-1))	0.485	-
	(0.306)	
D(ML(-1))	-	16.710
		(6.385)**
D(EF(-1))	14.442	15.971
	(5.797)**	(5.006)*
C	-1.010	-1.277
	(2.207)	(1.887)
R-squared	0.743	0.813
Adj. R-squared	0.644	0.741
F-statistic	7.501	11.295
Prob(F-statistic)	0.002	0.000
Obs.	21	21

Note: 1. *, ** and *** indicate significance at the 1%, 5% and 10% levels respectively.

2. Real per capita GDP growth is the dependent variable

3. Another regression which includes the macro-economic indicator of human capital was estimated and the results are consistent with those in this table (see Appendix 3)

4. Standard errors are in ( )

Table 6-9: Capital Market Development and FDIs

FDI flows and macroeconomic variables used

CMD/FDI indicator used	(1) IFLO		(2) FLO	
	MS	ML	MS	ML
ECT_{t-1}	-0.442	-0.599	-0.267	-0.465
	(0.149)*	(0.314)***	(0.097)**	(0.239)***
D(CMD(-1))	-0.504	0.113	-0.566	0.030
	(0.207)**	(0.244)	(0.223)**	(0.224)
D(TO(-1))	-0.717	0.001	-0.697	-0.004
	(0.516)	(0.017)	(0.556)	(0.018)
D(FDI(-1))	-0.093	0.013	0.112	0.023
	(0.603)	(0.025)	(0.431)	(0.018)
D(EF(-1))	3.089	0.142	4.481	0.179
	(5.146)	(0.207)	(5.438)	(0.207)
C	0.998	0.022	1.062	0.021
	(1.626)	(0.067)	(1.676)	(0.066)
R-squared	0.539	0.397	0.510	0.410
Adj. R-squared	0.361	0.164	0.322	0.183
F-statistic	3.037	1.709	2.709	1.809
Prob(F-statistic)	0.049	0.202	0.069	0.180
Obs.	21	21	21	21

Note: 1. *, ** and *** indicate significance at the 1%, 5% and 10% levels respectively.

2. Capital market development (CMD) indicator is the dependent variable

3. Estimates above included a labour force indicator, however, it is not reported here due to insignificance of the variable and space constraints.

4. ECT stands for error correction term

5. Standard errors are in ( )

6.6 Conclusions and Policy Implications

6.6.1 Conclusions

This chapter uses annual data for a period of 21 years (1991-2011) to observe interrelationships between capital market development, growth and FDI flows. Capital market growth contributes a great deal towards financial market development across the globe, as demonstrated by previous literature. Large amounts of capital flow are channeled through capital markets for various and productive investments at individual, corporate and government levels. Thus resource allocation, diversification, risk sharing and technological transfers are promoted by capital market transactions. Nonetheless, integrated markets have proven to impact more on economic growth compared to their standalone counterparts. The BSE has membership in both regional and international capital market bodies hence operations at the local bourse are performed at international standards.

The market has grown steadfastly over its existence and its contribution to economic growth cannot be denied. Government and corporate companies have been offered a platform to raise both long and short-term funds through issuance of bonds, equity and exchange traded funds, amongst others. The co-existence of domestic and foreign companies on the BSE board gives evidence of capital market integration, financial liberalisation and trade openness. Growth in foreign listings on the local market shows the captivating investment environment prevailing in Botswana, which is characterised by sound institutions, growth opportunities and political stability. Botswana has outstanding credit ratings in Africa and is considered one of the less corrupt economies in the continent, hence trading in Botswana listed securities is considered less risky. Anecdotal data shows that market capitalisation has increased significantly since 1989 to date but this growth is not without trends downwards.

Most significantly, market capitalisation decreased in 2008 when the world experienced financial crises. The impact was seriously felt in the local market because the mining sector contributes the largest share to BSE market capitalisation; demand for minerals, especially diamonds, was very low during the global recession. Nonetheless, signs of quick recovery were seen in market capitalisation from 2011 onwards, proving the resilience of the local exchange. The market faces

challenges of illiquidity. Whilst there is some movement on the equity board, bonds trading is almost at a standstill. In 2013, only government bonds were traded and other issuers contributed nothing to the turnover ratio. Empirical data analysis based on a VECM shows both long and short-run cointegrations. Results from the unit root test prove that variables are I(1); mean and variance stationary at their first differences. The Johansen cointegration test reveals the existence of at least one cointegrating vector. VECM interrogations on the system variables further reveal significant long-run equilibriums. In the first equation testing the impact of capital market development on growth, it is seen that capital market development has a positive impact on economic growth in Botswana. The results are as expected in the conceptual framework and concur with previous literature (Levine and Zervos, 1996). ML in particular has significant outcomes. Thus, turnover from the equity market as measured by the value of stocks traded contributes significantly to productivity. When an error correction model on the cointegrating vector of variables showing the impact of FDI flows on capital market development is tested, the outcomes are that the ECT is negative and significant, indicating the existence of equilibrium relationships in the model. Even though a positive impact is observed from the FDI flow indicators to capital market development, the results are not significant in the short-run. The non-significant impact might be because FDI flows had not reached the required threshold. The Botswana economy has substantial foreign reserves and a history of surplus budgets, hence attracting foreign investment flows may not be a priority. The results give evidence that increased flows may grow the local capital market and, in turn, uplift growth.

Institutional soundness is measured using the EF variable. Results show that EF positively and significantly influences growth in Botswana. The variable also has a positive relationship with capital market development showing the importance of sound institutions to the growth of the local market. The results confirm the findings of previous literature that concluded that sound, efficient and effective institutions are a necessity for increased growth and capital market development. Furthermore, sound institutions are seen by foreign investors as indicators of the country's adherence to international trading standards and a commitment to open and fair trading. Botswana's institutions are very sound (physical structures, governance, technology and legally) and are aligned to protocols signed with member states at both regional and international

bodies. This stable platform creates a good environment for the expansion of the Botswana capital market and its contribution to the larger economy.

6.6.2 Policy implications

Several policy implications can be drawn from the outcomes of this study. Firstly, Botswana should continue to develop and strengthen its capital market, since the market positively and significantly promotes economic growth. Capital market integration should be embraced because it adds depth and breadth to the local market. Nonetheless, integration requires a given country to upgrade its workforce, trading facilities, policies and regulations. In this era of technological 'know-how', Botswana is faced with a huge task of overhauling its manual operations at the exchange and replace them with the current state-of-the-art automated trading systems. In order to remain competitive, technology implemented at the local bourse should match and even outperform that of its competitors. Furthermore, staff engaged at the exchange should be kept abreast of current global trading patterns, be open-minded and willing to implement change. Management should be innovative and create strategic approaches that can give the local market a competitive advantage against its peers. Institutions positively influence both growth and capital market development and therefore institutional frameworks should be strengthened further in order to benefit from integration. Policies and regulations that govern the BSE should also be conversant with global developments and be seen to promote international trade openness. Barriers, inflexibility and red tape often associated with trading policies in developing nations should be avoided in an effort to grow the local market. Botswana should continue to uphold its good record on human and property rights since this position attracts foreign investors.

Secondly, there is need for increased participation at the exchange to enhance market capitalisation. Introduction of new securities, marketing and increased education campaigns are some of the ways to enhance market participation. To date, the market trades on very few securities; other instruments like derivatives and hedges are still lacking at the BSE. Foreign direct investments and portfolio flows may add to varieties of instruments offered at the exchange, attracting investors from different spheres and therefore enhancing market depth and breadth. Intensive and strategic marketing of the local exchange at the international level might

also enhance the growth of the market. Botswana should take advantage of its favourable economic conditions, build up its image and demonstrate its unique investment opportunities to the world. Given the country's very small population, the BSE's reliance on local clientele may not be profitable in the long-run. National educational campaigns regarding stock market trading should be mounted with vigour in order to promote participation by citizens. Currently, very few citizen-owned companies and individual citizens participate in the stock exchange business mainly because of lack of knowledge in the subject area. Ongoing efforts by the BSE to educate the nation on the importance and benefits of capital market trading should be encouraged and strengthened.

Thirdly, a privatisation strategy implemented by the government should be encouraged since privatisation grows the private sector, promotes economic diversification and empowers citizens. The ongoing privatisation of the telecommunication company may actually improve contributions to market capitalisation by the information and technology sector, which recorded a zero in 2013. Through privatisation, private sector and individuals are given an opportunity to buy shares and partly own previously government owned companies. The capital market then provides an avenue through which privatised stock can be traded and thereby grow. Thus privatisation is one of the vehicles that can be used for economic diversification, citizen empowerment, as well as reduction of government dominance at the capital market. Private sector participation in economic productivity should be encouraged through financial inclusion and therefore in the process of privatisation, the capital market acts as the middleman between governments and the corporate sector. Therefore, its development should not be ignored.

Lastly, market liquidity especially on bonds and foreign equity trading should be promoted in order to encourage turnover at the BSE. The market is very illiquid on the foreign counter and mainly the domestic companies and government listings promote the minimal liquidity at the BSE. The research literature argues that mining and explorative FDIs may increase exports but such investments may not promote citizen empowerment. Botswana citizens do not own mining companies and the lack of trading in mining shares does not promote participation and ownership by locals in the most profitable industry in the land. Stock trading (not only listing) enables price movements and the values of securities can be gauged accordingly. Currently, government bonds

are those trading and other bonds have zero turnovers. This practice is counteractive to the purpose of capital market growth. To a large extent, illiquidity signals lack of resource mobilisation, meaning that capital may not be accessible to the companies that need it. The research literature demonstrates that illiquid markets deter would-be investors, and especially foreign investors. In Botswana, institutional investors dominate ownership of stock yet they have a trend of buy-hold. The BSE should regulate trading such that stock can move from one hand to another and resources are allocated accordingly to enhance investment and productivity.

In conclusion, Botswana should continue to promote law and order, encourage economic freedom and trade openness in order to attract FDIs. The BSE has come a long way and its developments cannot be denied. With its ongoing reengineering efforts the author believes the market will continue to promote resource allocation, encourage investments in strategic and productive projects and therefore positively and significantly influence economic growth in Botswana.

CHAPTER 7: FINANCIAL INTEGRATION AND ACCESS TO FINANCE BY THE PRIVATE SECTOR IN BOTSWANA[*]

7.1 Introduction

This chapter first discusses the contributions of the private sector to Botswana's economic development. It then presents findings from empirical tests to understand the relationship between financial integration and financial access by the private sector in Botswana based on the availability and accessibility of financial innovations.

In their work, Beck, Chen et al. (2012) have highlighted the dearth of empirical studies in relation to financial innovations. Assumptions, perceptions and descriptive information currently available on financial innovations in Botswana may not provide a clear guide to policy-makers who need to understand interactions between innovations and other economic variables as the local market integrates with global markets. Financial integration commonly results in capital inflows, which deepen local markets (financial market developments), new knowledge, skills, innovation and technology. Notwithstanding, one particular research work by Zaman et al. (2012) argued that it is not guaranteed that capital accumulated will trickle down to either firms or households. Another study by O'Toole (2012) gives evidence that in SSA, financial liberalisation did not decrease financial constraints faced by firms in the region despite many existing policies on liberalisation. Financial markets should therefore develop open financial channels or funnels to facilitate capital flows. Such channels can be created through embracing new and advanced financial innovations transferred or learnt from similar and successful markets across the globe. Financial developments coupled with innovative activities grow stronger economies than financial developments alone (Beck, Chen et al. 2012). They further argue that financial innovations enhance systems of resource allocation, make the market whole, lower agency charges and enable risk distribution. Financial access therefore entails both usage and financial market depth in that products should be made available as and when they are needed by the users (World Bank, 2006). Types of financial innovations used in this study are classified

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into: (i) business innovations; and (ii) technological innovations, in line with the work of Valverde, Paso et al. (2007). Business innovations entail creation of tailor-made financial products like bank investment securities, loans and mutual funds whereas technological innovations include ATMs, e-money, debit and credit cards, amongst others.

Other studies argue that the use of financial innovations promotes access to finance and lowers intermediary costs that are traditionally passed on to customers, who can then invest those savings into profitable projects (Jefferis, 2009; Valverde, Paso et al. 2007). From the growth model, capital accumulation can be enhanced through savings and investments, which are promoted by financial developments. Over the years, Botswana's investment strategy has been largely driven through fiscal policy in that development expenditure is financed by state revenue and less through FDIs (BoB, 2012a). Currently the country is actively engaged in various strategies to attract FDIs. Therefore, over and above diamond revenue, capital inflows from FDIs and savings can be used to fund private investment projects that may increase production and employment and therefore improve economic growth and poverty reduction (Dullien, 2009). Banks in Botswana are mainly foreign-owned and they record high profits, yet these banks offer basic loans and transactions that are not tailor-made to the needs of local firms (GenesisAnalytics, 2003). A prudent financial system is therefore pivotal to ensure that pooled resources are funneled out in the form of loans to local firms with profitable investment plans.

The research literature highlights that, given different economic growth theories, countries pursue different ways of promoting growth. Certain countries apply the savings-investment approach, whereas other economies follow the investment-savings approach (Solow, 1956; Schumpeter, 1939; Dullien, 2009; Schumpeter, 1934; King and Levine, 1993). Under the savings-investment approach, local households reduce their consumption expenditure and the resulting savings are invested (Solow, 1956). The investment-savings approach argues that firms' productive investment plans should actually be financed through credit and the resulting profits can then be retained creating capital accumulation (Schumpeter, 1934). If followed, the investment-savings approach suggests that the financial system must deliberately increase the supply of money to firms for start-ups or expansions. The approach also assumes an existence of capital reserves in a given economy like Botswana. On the other-hand, the savings-investment

approach assumes households have enough money to spend and save. Either way, the theory highlights the need for financial innovations that can be used to enhance access to finance by the private sector in order for firms to contribute to sustainable economic growth.

Various researchers provide evidence that in Botswana, firms have less access to financial products and services and this situation is mainly driven by the fact that most SMMEs (which make up a large portion of the private sector) are located in rural areas (Jefferis, 2007; Jefferis and Tacheba, 2010; Gabaraane, 2003; GenesisAnalytics, 2003; BoB, 2013; Lisenda, 1997). Furthermore, SMMEs in Botswana provide the highest private employment to the rural population yet these businesses have less banking access. In 1997, a study investigating 2,665 SMMEs found that banks financed only 2% of the firms, 33.5% were government funded and 64.5% of the SMMEs were funded informally (Lisenda, 1997). A survey carried out in 2012 revealed that credit was actually expensive and difficult to obtain from the local financiers mainly because of high interest rate charges (BoB, 2013) and, as a result, local firms opted to seize foreign opportunities to access debt financing. According to the survey, only 1.1% of local borrowing by firms was expected compared to 17.1% borrowing from the international market. Another study (Genesis Analytics, 2003) revealed that loans for firms' investments lowered from 70% to 45% between 1990 and 2001, whilst loans for household consumption increased, implying that households in Botswana have lower levels of savings. In 2007, the volume of corporate loans was estimated to be much lower than personal loans and bank investments (World Bank, 2008). The findings might also explain the general perception that Botswana has a culture of consumption and less of saving. Thus the theory of savings-investment may not be viable for the country. The financial market should make credit available and accessible to firms for productive investments and eventually a diversified economy may be realised for Botswana. Even though old commercial banks in Botswana have recently developed to provide service to sectors with minimal incomes including SMMEs, new commercial banks entered the market and advanced competition and technological innovation. New service delivery products like ATMs, electronic cards, bureaux de change, smart switch phones, rural bank branches, bank agencies and point of sales machines have been introduced by commercial banks in the country, as illustrated in Tables 7-1 and 7-2. Bank branches have expanded from 44 in 1996 to 105 in 2012,

with a network growth of ATMs from 62 to 379 during the same period (BoB, 2012c, BoB, 1996).

Besides the stable economic environment that prevails in Botswana, several incentives for private sector investment exist in the country. These are: zero tolerance policy on corruption; respect for the rule of law; protection of private property ownership rights; well-developed transport infrastructure; a well-educated workforce; reasonable labour costs; well-established industrial relationships; free entrance of Botswana manufactured goods into the US and Euro zone markets without quotas and duty charges; low inflation and tax rates (15% corporate tax charge for financial and manufacturing companies whilst other companies are charged 25% tax; maximum income tax stands at 25%); no foreign exchange controls; and dividends, capital and profits can be repatriated freely from Botswana (BITC, 2014). Given that mineral resources get depleted over time, there is extensive pressure on the government to diversify the economy into non-mining sectors. Currently, in Botswana, various investment opportunities are provided to the private sector in financial services, tourism, manufacturing, information and technology.

Table 7-1: Banking Innovations, Financial Products and Services in Botswana

Institution	Barclays	StanChart	FNBB	Stanbic	Baroda	Investec	Banc ABC	Bank Gaborone	Capital Bank
Year started operations	1950	1950	1991	1992	2000	2000			
Year of local incorporation	1975	1975	1991	1992	2000	2000			
Products									
SMME banking solution (Express Credit Loan, working capital, capital Investment, expansion, transactional and financial education)	√	√	√	√	√	√	√	√	√
Investments (securities)	√	√	√	√	√	√	√	√	√
Group savers (example; motshelo, tema and peo)	√	√	√	√	√	√	√	√	√
Services									
Loans	√	√	√	√	√	√	√	√	√
Transactions (examples; new accounts, statement and balance enquiries)	√	√	√	√	√	√	√	√	√
Payments	√	√	√	√	√	√	√	√	√
Savings (call and fixed deposits)	√	√	√	√	√	√	√	√	√
Foreign exchange	√	√	√	√	√	√	√	√	√
Innovations									
Branches	√	√	√	√	√	√	√	√	√
ATMS	√	√	√	√	√	√	√	√	√
Mobile banking (online and cellphone banking)	√	√	√	√	√	√	√	√	√
Portable banks			√						
POS	√	√	√	√	√	√	√	√	√
Credits and debits cards	√	√	√	√	√	√	√	√	√
Rural branches	√	√	√	√					
Rural ATMS	√	√	√	√					
Business Internet Banking (local and international payments, foreign currency payments, inter-account and credit transfers)	√	√	√	√	√	√	√	√	√
Toll free line (customers call center)	√	√	√	√	√	√	√	√	√

Table 7-2: Botswana Banking Physical Structure Growth

Year	Number of banks	Number of branches	Number of ATMS	Number of bureaux de change
2000	6	58	112	18
2001	7	64	115	21
2002	7	65	123	25
2003	7	65	155	29
2004	7	60	174	34
2005	7	60	181	37
2006	7	66	222	42
2007	7	82	389	46
2008	9	87	360	51
2009	11	90	352	53
2010	11	94	381	63
2011	11	96	357	68
2012	13	105	379	61

7.2 Development of the Private Sector in Botswana

Economic growth in Botswana is mainly driven by government expenditure rather than private sector productivity. The scenario in the country comes from post-independence years of government dominance in infrastructure investments aimed at growing the economy and providing social services to the entire nation. Thus the government in Botswana is the main investor and employer. The private sector, based on its entrepreneurial activities, has the potential to engage resources in productive projects and increase employment, as well as help poverty reduction and economic growth (Mukras, 2003). Therefore private sector growth implies a change in the economic landscape (BIDPA, 2013). The private sector comprises SMMEs. Financial access is not as acute a problem for large corporations as it is for SMMEs. Large enterprises have sufficient asset bases, international links and even headquarters in developed foreign markets; advantages that make finance easily accessible from different financiers. Since SMMEs are mainly citizen-owned and they provide employment to a large population of rural dwellers, government economic empowerment policies aimed at developing the private sector are strategically packaged for the SMMEs. In Botswana, the labour force has grown beyond the formal sector employment growth rate and large enterprises can no longer absorb as many employees (Lisenda, 1997). This situation motivates the government to develop initiatives for growing the private sector for sustainable economic growth and reduction in the unemployment rate.

In its 2009-2016 NDP 10, the Botswana government strongly focuses on an Economic Diversification Strategy in which the country seeks to encourage the private sector to take a lead in sustainable economic growth through investments in non-mining sectors. The government uses its large institutions, such as the Botswana Confederation of Commerce Industry and Manpower, the Botswana Institute of Development Policy Agency, the Botswana Economic Diversification and Investment Authority, and the Local Enterprise Authority and Citizen Development Enterprise Authority (BOCCIM, BIDPA, BEDIA, LEA and CEDA, respectively) to provide market research, mentoring and training, financial assistance, as well as development of product strategies to the private sector in order to enhance the sector's growth (BOCCIM and

MTI, 2008). Thus private sector regulations and policies are mainly set by the government. This strategy may not promote competition, innovation and creativity in the sector but rather the private sector is trained to rely on government provisions. Consequently, there is minimal private sector growth. Nonetheless, NDP 10 requires significant input from the private sector on regulations and policy formulation.

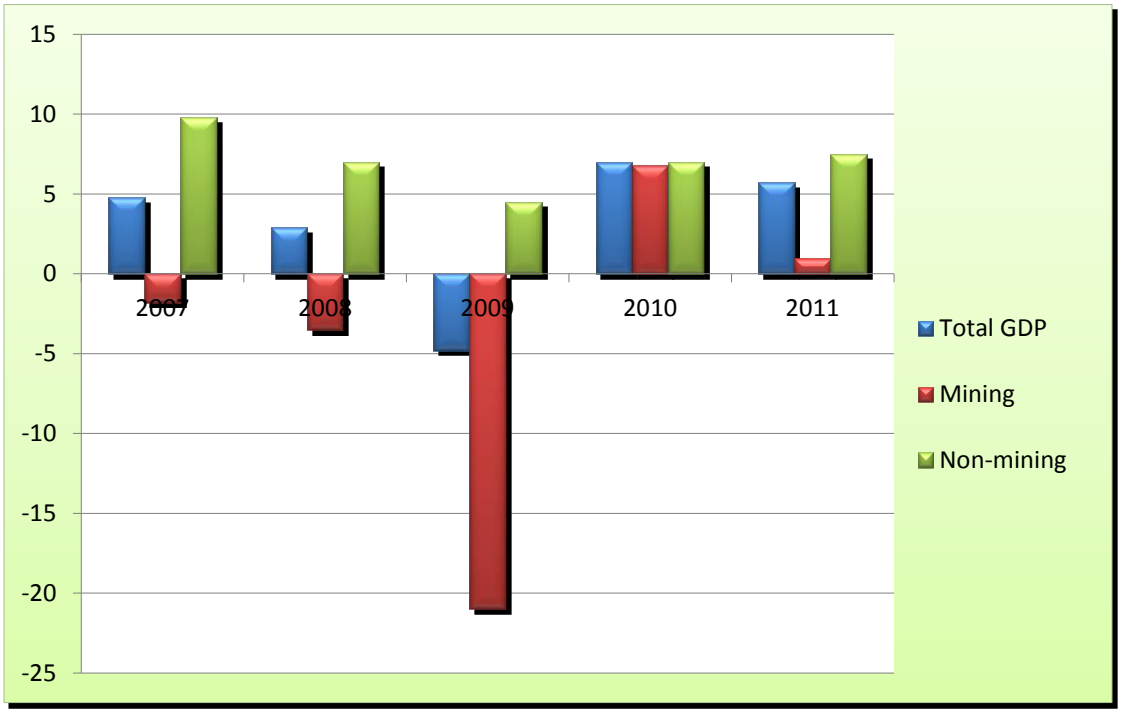
The Botswana government continues to build a conducive investment environment with great opportunities for private sector growth through multilateral and bilateral trade agreements both internationally and regionally (AGOA, SADC and SACU). Increased cross-border market access that results from the agreements expands trade opportunities for the local firms as well as foreign firms, thus promoting competition in the sector. Furthermore, in its pursuit to help private sector growth and development, Botswana has set specific policies giving priority to local suppliers of goods and services. The local firms' preference scheme is mainly applicable under the Poverty Eradication Programme (PEP) that aims at encouraging business activities amongst poor households in Botswana, especially in rural and remote areas. Projects under PEP are fully funded by government and they include backyard gardening, small stock farming, manufacturing and construction. Therefore, the government prefers to deal with local SMMEs that can supply products and services to the households' start-up businesses, thus promoting the contribution of SMMEs to economic growth and poverty alleviation. Another government initiative is the Economic Diversification Drive (EDD), which promotes local procurement and consumption (Botswana Government, 2011). EDD is currently driven by PPPs under which firms are offered yet another investment opportunity to build major projects that were traditionally completed by the government, such as road construction and office buildings. Projects carried under the PPPs are awarded to local firms through a very competitive government tender process and this practice requires the private sector to be accountable and responsible to deliver high quality projects. EDD also has a long-term vision of promoting a private sector that comprises very strong firms that can compete locally and internationally without government intervention or back-up. Such globally competitive firms should promote exports to the international market while also supplying the local market, thus lowering the country's import expenditure, which has been estimated at P20 billion annually between 2006 and 2011 (BotswanaGovernment, 2011). Training and mentorship of the private sector is freely offered by the government through LEA,

which has offices throughout the country for easy reach (LEA, 2007). There are private companies offering training and mentoring services but the associated charges are very high, especially for small firms.

The growth of the private sector and its contribution to the local economy cannot be denied. From 1966 up to the late 1990s, the sector's employment growth rate was estimated at 10% annually and the developments were mainly from the mining industry. As discussed previously, the global recession in the following years lowered demand for luxury goods in the international commodity market and therefore mining production was slowed, resulting in poor sales and job losses. Statistically (BoB, 2012b), contribution to economic growth by the non-mining sector stood at 9.8% in 2007 compared to -1.8% contributed by mining. Strong impacts of the global economic crises were realised in Botswana when real GDP growth fell from 2.9% in 2008 to -4.8% in 2009. During the same period, the mining contribution reduced significantly from -3.5% to -21% whilst the non-mining sector was resilient and increased growth by 7% and 4.5% in 2008 and 2009 respectively (see Figure 7-1). Out of the total private sector contribution to growth in 2007, 42% was contributed by SMMEs, indicating the dominant position of the small enterprises in the local economy (LEA, 2007). As the local economy recovered from the recession in 2012, economic growth was estimated at 3.7%, mainly attributed to the 5.8% expansion of the non-mining sector as opposed to the 8.1% decrease in contribution by the mining sector (BoB, 2013). Thus, if invested into, the non-mining sector can sustain the local economy. Even though the local private sector is mainly characterised by small enterprises, foreign investments and franchise arrangements have enabled some large international companies like Coca-Cola, Kentucky Fried Chicken, Nandoes and Heinz to build establishments in the country. As shown in Figure 7-2, trade and service businesses are in the majority within the non-mining private sector, followed by manufacturing and construction (Mukras, 2003). More than two decades ago, 48,000 SMMEs existed in the country, employing 6.7% of the national population (Daniels and Fisseha, 1992). Of these SMMEs, only 31% were based in urban areas, which hosted only 24% of the population. Interestingly, SMMEs in rural areas employed an average of only two people (Daniels and Fisseha, 1992) compared to an average of six employees for urban SMMEs (Briscoe, 1995). Another study (Lisenda, 1997) gives further evidence that most of the private sector businesses are located outside urban areas even though

the most successful enterprises are mainly based in towns and larger villages. Previous studies argue that increased productivity and employment, as well as poverty reduction, in Botswana may be achieved through development of the small enterprises (Mukras, 2003; Nkwe, 2012; Okurut et al. 2011). Research shows that in 2006 the private sector employed 64% of the population and the government employed only 36% (see Figure 7-3). Of the private sector employment portion, half was contributed by SMMEs and the other half by large firms (Nkwe, 2012).

Figure 7-1: Real GDP Growth Contribution 2007-2011 (%)

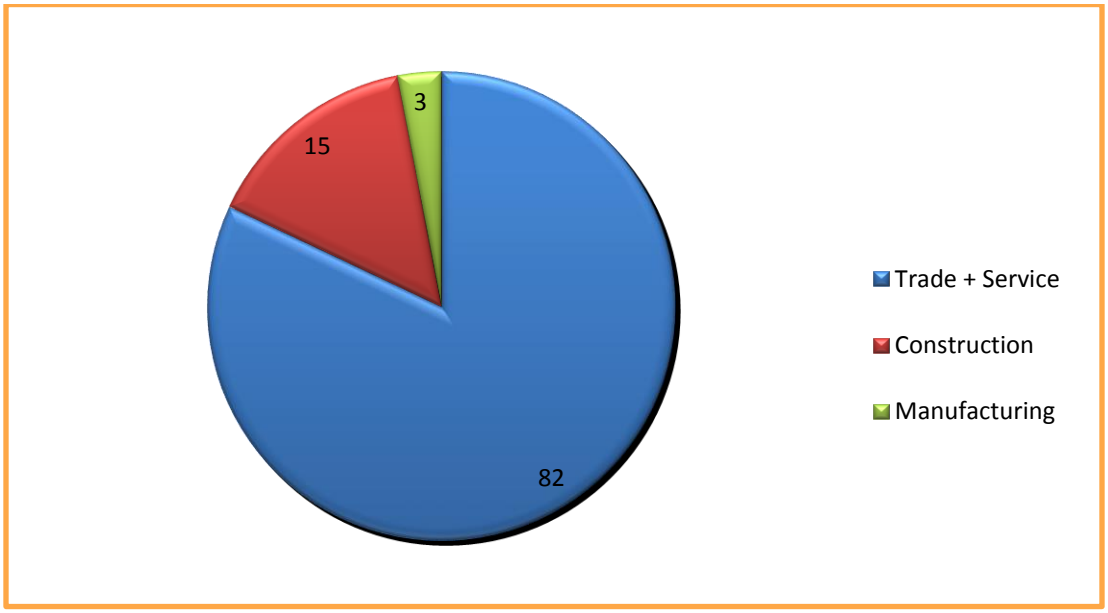


Source: BoB (2012)

Surprisingly, challenges faced by the sector in 1992 still persist today. These are: lack of skilled manpower; lack of finance; poor information broadcasting; shortage of utilities; lack of infrastructure, especially in rural areas; lack of product diversification; and unfair market competition (Daniels and Fisseha, 1992; BOCCIM and MTI, 2008; Botswana Government, 2013; Lisenda, 1997; Mukras, 2003; Nkwe, 2012). Given that business management and financial transactions require certain skills and knowledge, a lack of entrepreneurial skills may hinder the growth of the private sector in the country. In fact, 88% of the SMME owners had a primary or lower education level in 1997 and 26% of these owners had zero formal education

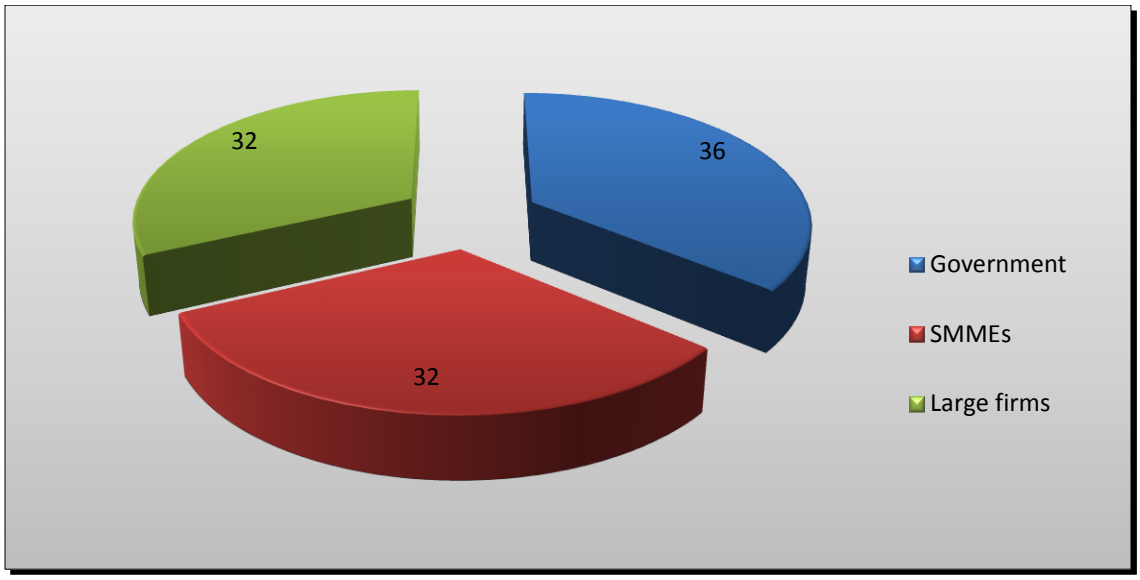
(Lisenda, 1997). Inputs costs related to water, wages, fuel and electricity have increased sharply in recent years because of drought, global recession and supply shortfall, especially for fuel and electricity, creating financial concerns (BoB, 2013). Whilst government regulations do not constrain the growth of the private sector (Daniels and Fisseha, 1992), other research suggests that better policies and regulations are needed to deal with corruption in tender awards, escalating crime, poor administration and a weak legal system (BOCCIM and MTI, 2008). SMME slow growth is also attributed to the sector's failure to form associations that can advocate for larger groupings of entrepreneurs in similar businesses as opposed to isolated operations (Lisenda, 1997). Furthermore, associations are better placed to attract suppliers on a larger scale and such an arrangement can help to lower the costs of production incurred by SMMEs. Overall, activities indicate that cooperation between government and the private sector can significantly contribute to the development of the sector in order to build sustainable economic growth through enhanced productivity, job creation and poverty reduction in Botswana.

Figure 7-2: SMME Distribution by Sector (%)



Source: Mukras (2003)

Figure 7-3: Local Employment by Sector (%)



Source: Nkwe (2012)

7.3 A Brief History of Botswana's Financial Market Development in Relation to Private Sector Access to Finance

Historically, Botswana's financial market is strongly linked to that of South Africa. This is because pre-independence, Botswana used the South African Rand and so South Africa's financial policies regarding interest and exchange rates were applied in Botswana. Since then capital has been flowing freely between the two countries. In the 1960s, only foreign banks operated in Botswana, resulting in low credit offered to the local market, yet those foreign banks had large local deposits. Whilst the Botswana government did not interfere with the private banking operations at that time, there was a growing need for infrastructure development in the country. Consequently, the government established statutory non-bank financial institutions: the National Development Bank (NDB); the Botswana Development Corporation (BDC); the Botswana Savings Bank (BSB); the Botswana Building Society (BBS); and CEDA. These institutions were formed mainly to provide credit for both economic and social development projects. NDB was given responsibility for financing long-term developmental projects and investing in agricultural projects, BDC was mandated to oversee public developmental investments of high magnitude, BSB was established to be a savings bank to the non-bankable

and rural population, BBS was established to provide housing finance, and CEDA was formed to finance private sector investments that promoted productivity and growth.

Conflicting views exist regarding the extent to which government financing through statutory banks impacts on financial deepening of the market in Botswana (World Bank, 2008; GenesisAnalytics, 2003; Daniels and Fisseha, 1992). In the 1980s, after the establishment of the BoB and an independent monetary system, Botswana financial market activities remained dominated by statutory institutions. The government accumulated money from diamond sales and surplus budgets post-independence, therefore there was freedom from foreign aid and resources were allocated according to national needs as guided by NDPs. The private financial sector's perceived failure to provide access to finance and other services to SMMEs and households motivated the government to undertake financial sector interventions and establish its statutory banks. Such interventions are thought to improve financial access and financial deepening and ultimately economic development and social welfare. For example, the BSB has great potential in enhancing financial access to rural area dwellers through its network of 119 branches country-wide and its connection to post offices located in very remote areas. Nonetheless, the BSB has been under-utilised owing to shortage of skilled manpower, lack of strategic lending methodologies, as well as poor coordination with post offices. As a result, BSB collect large deposits from rural settings only to provide credit to urban dwellers in the two cities of Francistown and Gaborone, where it has large branches (World Bank, 2008). The NDB on the other hand provides financial access to long-term investments, as well as financing the agricultural sector; areas that are not well serviced by commercial banks. Unfortunately, the NDB provides limited service to SMMEs and the non-banking sector, resulting in financial exclusion.

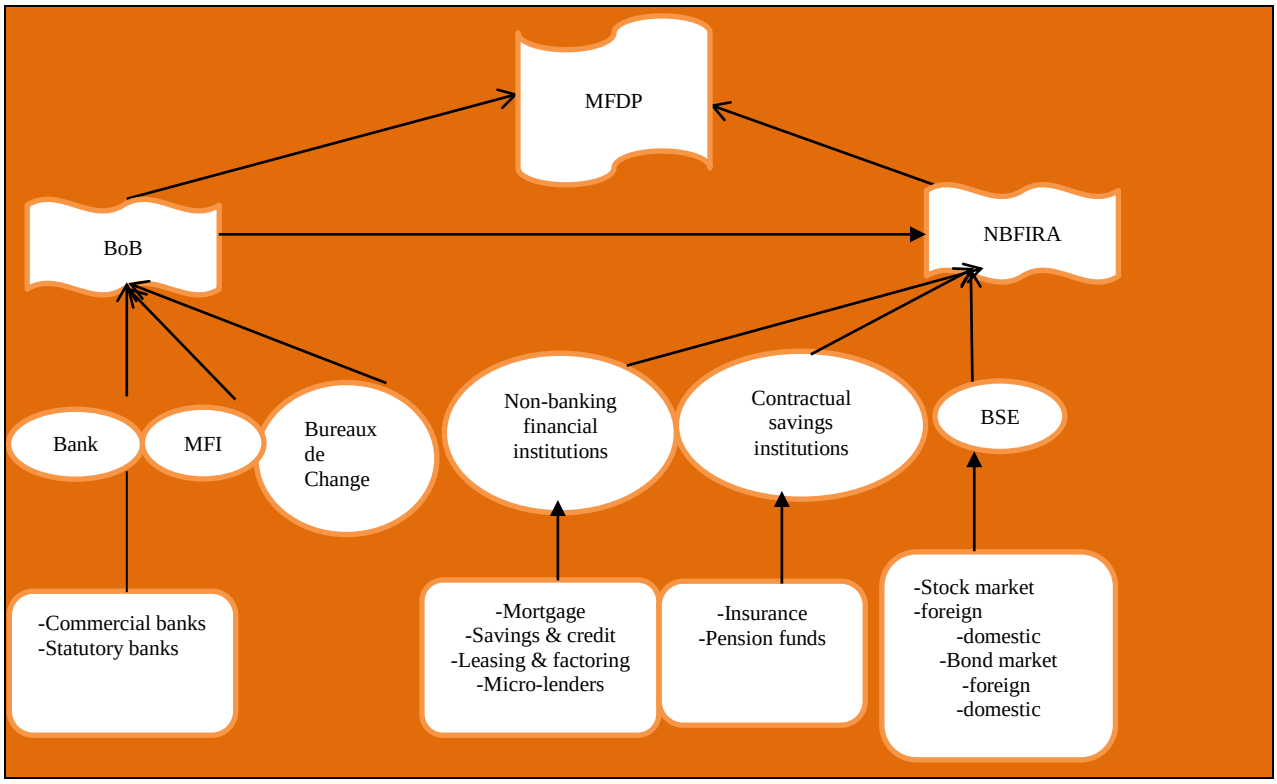
However, research argues that government interventions in the financial sector quite often tend to thwart financial sector development, market activity, competition and product innovation. Government interventions are also prone to political machinations and abuse; less efficient and more costly to society in the long-run. A detailed assessment of the local financial sector by the World Bank (2008) reveals that CEDA has been shifting from its major role of offering financial assistance to SMME start-ups to issuing huge credits to capable companies. Big companies

currently assisted by CEDA also qualify to be financed by commercial banks and therefore an overlap of service and products is observed between the state institutes and the commercial banks, disadvantaging small and needy enterprises. Huge sums of money have been written-off as bad debts from CEDA's loan portfolio and other accounts are long overdue or are non-performing because beneficiaries failed to repay the loans. As a result, CEDA is heavily subsidised by government and this negatively impacts on growth and production. In the past, when government acted as the major financial intermediary, commercial banks were under no pressure to finance the private sector as well as large developmental projects, therefore banks had few products to offer to the market (Genesis Analytics, 2003). Meanwhile, bank deposits grew larger as a result of financial flows from the mining sector. Opportunities still existed for commercial banks to create innovative products for the private sector, since government only focused on investing in basic infrastructure developments and fundamental services. The situation resulted in excess liquidity and low credit and therefore less financial deepening. The BoB then issued certificates in 1991 in an effort to increase market activity and absorb liquidity (World Bank, 2008).

There have been dramatic and notable improvements in Botswana's financial markets over the past four decades with important developments in respect to geographical and product availability, an exercise which is still ongoing (Jefferis, 2007). These developments are demonstrated by an increase in the number of financial institutions and instruments (see Tables 7-1 and 7-2), as well as an improved regulatory framework that protects consumer rights; characteristics which are necessary for financial stability. According to the country's financial market structure, all commercial banks report to and are supervised by the national bank, the BoB whilst the NBFIRA oversees non-banking financial institutions, including the BSE (as illustrated in Figure 7-4). Both the BoB and the NBFIRA report to the MFDP. This structure aims to promote accountability, efficiency and effectiveness by ensuring that whilst the local market players are integrated, their roles and objectives do not overlap. To reinforce the existence of a sound regulatory framework regarding market policies, Botswana's financial markets are integrated to global and regional bodies. The BoB is a member of IMF, the World Bank and the Eastern and Southern African Banking Supervisory group, amongst others, while the BSE is a member of the SADC Stock Exchanges. To date, NBFIRA supervises 39

institutions that were previously regulated by different bodies and 13 commercial banks operate in Botswana compared to only two that served at independence in 1966.

Figure 7-4: Financial Market Structure in Botswana



Source: Adopted from FSDS and BoB (2012).

Other institutions that supplement commercial banks' efforts in enhancing financial access and financial integration are development finance institutions, non-bank financial institutions, postal services, some government agencies (BHC, TPS and SHHA), e-money and mobile money providers. The extensive coverage recorded in 2012 by the three main mobile network operators (Mascom, Orange and Bemobile), through their innovative products, provides an advantage for banks to deliver mobile money and e-money products, especially to rural dwellers and the 'unbanked'. The high coverage, at over 100%, however, is mainly a result of dual sim-card subscriptions by some users and some rural settlements have no telecommunications and electrical network supplies. Furthermore, Botswana has one of the lowest fixed broadband internet access tariffs at US$29.63 per month, compared to the average SSA rate of US$100 per month, and the country's tariffs are almost at a par with high income countries' charges of

US$29.84 in 2012 (World Bank, 2012). Currently, commercial banks in Botswana facilitate transactions like opening new accounts, deposit-taking, transfers and even granting loans through the use of e-money and mobile transactions.

The research literature suggests that whilst new bank entrants and expansions can enhance competition, product innovation and eventually access to finance, overcrowding of banks (especially those that are foreign-owned) may lead to unfair market practices that are undesirable to consumers (Volz, 2004). The Botswana banking market is mainly foreign-owned, nonetheless it is considered oligopolistic (Kapunda and Molosiwa, 2012) and, as a result, it is recommended that more new bank entrants should be promoted in order to increase competition and lower costs of borrowing. High market concentration of an average HHI index of 0.2 recorded between 2006 and 2012 implies great banking market power that may lead to high profit margins and low domestic credit to the private sector. Estimates indicate that only 8.49% of the GDP was attributed to domestic credit towards the private sector in 1976 and the ratio plunged down to -73% in 1998 and stood at -11.2% in 2008 during the global recession (World Bank, 2012). While the country's financial market has made significant technological advances, access to credit still remains very low. As at 2013, only 13% of small enterprises received start-up loans from banks, 9% were government financed and the rest were either personally financed or through relatives and well-wishers (BotswanaGovernment, 2013). Nevertheless, the 2013 statistics show enhanced access to credit compared to the 1992 figures which indicate that access to credit by small firms was nil, thus families and friends financed 100% of the SMMEs in Botswana (Daniels and Fisseha, 1992).

Several barriers to financial access have been identified in Botswana (Botswana Government, 2013; Jefferis, 2007); these are described as follows. (a) Commercial banks have less interest in SMMEs, agricultural business and poor households. As a result, there is a lack of product innovation tailor-made to this sector and, worse still, credit provision to the same group is nil, so productivity and growth is negatively affected. (b) All local commercial banks in Botswana have foreign majority ownership. This lowers access to finance by locals as foreign-owners are not very conscious of local market needs. Major banking management and service delivery decisions are made abroad by parent banks and, as a result, product innovation and credit issuance to local

investors is compromised. Furthermore, foreign owners are more interested in risk management, especially country and market risk that can affect profitability and lead to capital flight during a period of financial market crisis. This kind of market ownership therefore gives rise to financial market instability. (c) Poor commercial banks' geographical coverage of rural settings means that financial services and products are only made accessible to city dwellers at the expense of rural communities. High costs of access to financial services are experienced by rural communities since bank branches are mainly located in towns. Such costs include, but are not limited to, travelling, communication, transactional, administrative, as well as time costs. Commercial banks consider it non-profitable and very expensive to establish bank branches or agencies to serve lower income communities based away from cities. Therefore, low rural investments lead to poor productivity and unemployment, which escalates poverty and negative growth is experienced. (d) Where commercial bank branches are accessible, customers complain of high charges made by the banks to provide services and this results in closure or non-active accounts and customers preferring to use alternative informal financial services. (e) Commercial banks in Botswana lack an integrated database that can provide consumer detailed credit information. Such information is critical to banks to assess creditworthiness of customers before approving the loan, thus assessing risk and setting charges accordingly. There is no legal requirement for banks to provide their customers' credit information to other banks. As a result, banks have high loan transactional and maintenance charges and low loan denominations in order to guard against bad debts. (f) Most potential users of financial services and products in Botswana are not in possession of financial market information, as a result, they do not access available financial products for which they qualify and which could enhance their standards of living and productivity (Daniels and Fisseha, 1992). The youth, the elderly and rural settlers are most prone to this scenario, having poor financial literacy. (g) While the government seeks to encourage economic and social developmental investments through its state bodies, the private financial market remains less motivated to provide similar products to the public. This leads to slow market developments and unclear regulations that disadvantage potential players. (h) In Botswana there are no non-financial banking sectors, such as micro-financing institutions (MFIs), which are focused on financing grass-roots businesses. The two MFIs that exist in the country (Blue and Letshego), finance customers that are salaried and already use bank. Thus, access to micro-financing services and products is denied to the non-banked sector of the

economy. According to 2009 Finscope research, 74% of the rural adult population is non-banked, whilst 59% of the national adult population do not have access to commercial banking; representing a large market that can be serviced through the non-banking financial sector. (i) Commercial bank establishment and entrance in the Botswana market is discouraged by the small national population. Whilst new entrants and expansions can enhance competition, product innovation and eventually access to finance, overcrowding of banks may lead to unfair market practices which are undesirable to consumers.

Thus the Botswana financial market is faced with the challenges of innovation and creativity to overcome barriers to financial access by domestic clients. Nonetheless, reforms like the current 2012-2016 Financial Sector Development Strategy (FSDS) certainly recognise the challenges. Several initiatives and innovations aim to enhance access to finance (Botswana Government, 2013). Some of these innovations are: (i) enhancing the contribution of commercial banks' to financial access by improving regulatory frameworks that require banks to have agencies in rural areas; (ii) catalysing the establishment of an MFI subsector focusing on small clients; (iii) commercialising the operations of relevant government financial institutions to increase their effectiveness and impact (e.g. CEDA loans to large borrowers will be discontinued and commercial banks will be left to provide such services); (iv) supervising large micro-lenders effectively; (v) establishing a robust cellphone 'banking' system by formalising and regularising e-money and mobile money operations; (vi) establishing an effective credit information system; (vii) combining LEA and CEDA efforts in providing financial literacy to the SMMEs; (viii) merging BSB and BPS services to enhance access to financial services by rural communities; and (viiii) enhancing housing finance.

As discussed earlier, in the wake of the global financial crises of 2008, Botswana experienced its first budget deficit and a downfall in its foreign reserves because of poor diamond sales to the European market. Thus, financing of the private sector through government grants and loans may not be sustainable in the long-run given the recession impacts and depletion of diamond deposits. There is need and scope for greater financial integration and financial access, which could contribute to national development goals of sustainable economic growth, diversification, employment creation and poverty reduction. Furthermore, an efficient and effective financial

market system is necessary to provide resilient innovative products that are tailor-made to the local market and encourage private sector participation.

7.4 Banking Innovations: Financial Products and Services in Botswana

The Botswana banking sector is made up of 11 commercial banks: Bank of Baroda (Botswana) Limited; African Banking Corporation of Botswana Limited (BancABC); ABN AMRO BANK; Barclays Bank of Botswana Limited; Kingdom Bank Africa Limited; Stanbic Bank Botswana Limited; Standard Chartered Bank Botswana Limited; State Bank of India (Botswana) Limited; Bank Gaborone Limited; Capital Bank Limited; First National Bank of Botswana Limited; and Bank of India (Botswana) Limited (see Tables 7-1 and 7-2). Statistics show a huge growth of the sector from only two commercial banks that existed in the country pre-independence to 11 banks in 2014. Barclays and the Standard Chartered Bank started operations in the country in 1950, making them the oldest banking service providers in Botswana. Both banks were then incorporated in 1975, together with the national bank, the BoB. For decades, these commercial banks offered minimal products to the market and their foreign origins and foreign majority shareholders meant that they were not familiar with the needs of the local market. Thus, whilst collecting deposits, the banks did not encourage local investments and their overall contribution to productivity was low.

The banking landscape in Botswana has now developed to provide innovative products and services, which are mainly technological (see Table 7-1). In relation to the private sector, three major products are offered by different banks in the form of: (i) SMME banking solutions; (ii) treasury; and (iii) group savers. SMME banking solutions comprise a package of products aimed at issuing loans to businesses at various levels and for different needs. The loans are issued to firms based mainly on their projected cash flow. The loan package includes express credit, mainly for start-ups, overdrafts, working capital, expansion, capital investment, as well as transactional and financial education. Treasury products and services are mainly aimed at helping businesses with international transactions, providing updates on markets and investment opportunities. The banks offer advice regarding international market performance and connect

customers to international markets. They also provide foreign currency exchange, mainly for the US Dollar, EURO, Rand, British Pound, Australian Dollar and Japanese Yen and help businesses on insurance matters and risk management. Group savers, on the other hand, are packages aimed at encouraging small businesses and groups of individuals with a business vision to accumulate capital in the form of savings from minimal denominations whilst earning interest over time. Group savers accounts include, but are not limited to Motshelo, Tema and Peo. The name Motshelo is derived from a vernacular noun 'motshelo', which means collections. Traditionally, through some collective efforts in their villages and wards, communities in Botswana would help each other build houses, plough fields and even harvest crops. This tradition evolved into financial collections by co-employees, friends and relatives for common goals, such as weddings and other celebrations, such as Christmas holidays. Current developments regarding motshelo mean that collections are now done for investment purposes and, as such, banks intervene to create deposit accounts (without the requirements of formal constitutions) for such collections. Savers with a motshelo account benefit from bank security and also earn interest over time, thus banks promote a culture of saving to invest. The Motshelo account under Barclays Bank is similar to the Tema and Peo accounts administered by the Standard Chartered Bank (Tema means a ploughing field and Peo means seed). These accounts require a minimum of only P100 monthly deposit, which is equivalent to US$12, and they earn monthly interest.

Influence from financial integration is increasingly being experienced in the Botswana financial market, as different and innovative banking technologies are introduced to offer an efficient and effective service to the clientele. In 2014, two banks (FNBB and Barclays) introduced advanced ATMs that not only facilitate cash withdrawals but also accept cash deposits. This new advancement in local financial innovations means that customers, especially firms, that have 24-hour businesses can deposit their cash any time of the day beyond physical banking hours, thus enhancing access to financial services. Besides bank branches and ATMs, banks in Botswana have embraced and engaged new telecommunication systems, such that mobile banking is offered by all banks in the country. Mobile banking entails the use of the internet for online and cellphone banking purposes. Thus customers anywhere in Botswana can comfortably use their own computers and cellphones to process transactions instead of traveling distances to access a bank branch or ATM. One cellphone banking innovation created by Barclays bank is called

'Hello Money'. Customers with any brand of mobile phones can freely register with the nearest bank branch and start using the 'Hello Money' service to transfer funds, pay bills, view and order bank statements, and even recharge their mobile phones. The other advantage of the 'Hello Money' service is that it is offered in the local language (Setswana) and English so that a larger population can understand and use it without middle-man interference.

Furthermore, banks have specifically introduced business internet banking to cater for firms' transactions, which may include local and international payments, foreign currency payments and inter-account and credit transfers. Thus firms with internet access can carry on business beyond banking hours at their own convenience giving them both control and privacy over their bank accounts. Access to financial services is also enhanced through the use of point of sales machines, credit and debit cards, meaning that customers no longer have to carry large sums of cash for purchases or do several withdrawals from the ATMs. In order to increase the availability and accessibility of financial products and services, banks are extending their presence to the rural population through rural bank branches and building portable bank structures, thereby lowering travel costs for customers. Toll-free lines and 24-hour customer call centres are also offered by the local banks in order to enhance communication with their clients. Specific bank call centres have been dedicated to firms, in order to provide feedback to the sector as fast as possible with the aim of enhancing productivity.

7.5 Empirical Findings and Analysis

7.5.1 Outcomes from unit root and cointegration tests

In order to avoid regressing non-stationary variables on stationary variables, a unit root test (ADF) is conducted, showing the dynamic properties of the data. The results are displayed in Table 7-3. It appears that no variables are stationary at their constant levels except for Y, INV, FLO, BINV, BKRU, and MEDI. Nonetheless, the system variables are stationary at first difference and therefore the null hypothesis is rejected, meaning that the variables have no unit root and are I(1) variables. A cointegration test is then conducted in order to know the number of cointegrating vectors in the systems. In this chapter, four relationships are investigated: (a)

economic growth and financial development; (b) financial development and financial integration; (c) growth and financial access; and (d) financial access and financial integration. Cointegration test results for these relationships are displayed in Tables 7-4 (a), (b), (c) and (d) respectively. At the 5% significance level, two vectors of cointegration under both Max-Eigen and Trace statistics are identified for the first series, as shown in Table 7-4 (a). The series shown Table 7-4 (b) has three cointegration vectors under Max-Eigen statistic, whereas four vectors of cointegration are observed under Trace statistic. Finally, the test results shown in Tables 7-4 (c) and (d) indicate one cointegrating vector from both statistics.

Table 7-3: ADF Unit Root tests

Variables			Y	INV	HC	GB	EF	TO	IFIA	IFIB	FLO	IFLO
Levels	(constant)											
		t-statistics	-6.335*	-3.364**	-0.845	-2.008	-0.894	-1.055	-2.599	-1.695	-4.135*	-2.415
		p-value	0.000	0.031	0.778	0.281	0.756	0.706	0.115	0.415	0.007	0.153
	(constant plus trend)											
		t-statistics	-6.259*	-3.319	-2.220	-2.592	-6.167*	-1.767	-2.911	-3.483***	-4.182**	-2.320
		p-value	0.001	0.104	0.448	0.287	0.001	0.672	0.186	0.076	0.023	0.401
	(none)											
		t-statistics	-4.434*	0.540	1.865	-1.099	1.705	-1.283	-0.337	-1.110	-2.779*	-1.202
		p-value	0.000	0.821	0.980	0.234	0.971	0.176	0.548	0.230	0.009	0.200
1st difference	(constant)											
		t-statistics	-8.626*	-3.562**	-4.194*	-5.414*	-4.946*	-3.436**	-2.357	-6.492*	-7.255*	-4.145*
		p-value	0.000	0.025	0.007	0.001	0.003	0.026	0.169	0.000	0.000	0.007
	(constant plus trend)											
		t-statistics	-8.305*	-3.661***	-4.023**	-3.815***	-5.193*	-3.287	-2.461	-6.264*	-6.982*	-3.402***
		p-value	0.000	0.068	0.032	0.055	0.008	0.106	0.339	0.001	0.000	0.094
	(none)											
		t-statistics	-8.956*	-3.819*	-3.327*	-5.303*	-4.932*	-3.394*	-2.451**	-6.446*	-7.529*	-4.311*
		p-value	0.000	0.001	0.003	0.000	0.000	0.002	0.018	0.000	0.000	0.000

Table 7-3: Cont'd

Variables			BINV	LOAN	BKRU	MEDI	ATMS	INNO	PRVY	LLY	BKD
Levels	(constant)										
		t-statistics	-3.140**	-1.679	-3.445**	-3.608**	-2.402	-0.923	-0.619	-2.172	-1.210
		p-value	0.045	0.422	0.025	0.018	0.157	0.753	0.854	0.220	0.659
	(constant plus trend)										
		t-statistics	-3.529***	-1.820	-3.283	-2.010	-3.066	-2.130	-2.495	-2.247	-2.200
		p-value	0.075	0.647	0.104	0.553	0.154	0.493	0.329	0.450	0.475
	(none)										
		t-statistics	-1.812**	0.267	-3.464*	-5.502*	0.614	1.061	0.195	0.480	0.591
		p-value	0.068	0.751	0.002	0.000	0.838	0.916	0.737	0.814	0.839
1st difference	(constant)										
		t-statistics	-4.073*	-1.679	-5.278*	-2.327	-4.071*	-4.039*	-5.040*	-6.014*	-4.286*
		p-value	0.011	0.422	0.001	0.177	0.008	0.009	0.000	0.000	0.002
	(constant plus trend)										
		t-statistics	-3.827**	-1.820	-5.418**	-9.509*	-3.940**	-3.886*	-5.814*	-5.966*	-5.164*
		p-value	0.054	0.647	0.003	0.000	0.037	0.041	0.000	0.000	0.001
	(none)										
		t-statistics	-3.524*	0.267	-5.292*	-1.945**	-4.040*	-3.514*	-5.104*	-6.152*	-4.289*
		p-value	0.002	0.751	0.000	0.052	0.001	0.002	0.000	0.000	0.000

Note: 1. *, ** and *** indicate significance at the 1%, 5% and 10% levels respectively.

2. ADF unit root test applied; maxlag = 3, automatic SIC lag selections used.

Table 7-4: Johansen Cointegration Tests

(a) Series: Y INV HC GB EF TO LLY

Hypothesised No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5% Critical Value	Prob.	Trace Statistic	5% Critical Value	Prob.
None	0.82	60.55*	46.23	0.00	173.90*	125.62	0.00
At most 1	0.72	45.03*	40.08	0.01	113.35*	95.75	0.00
At most 2	0.54	27.28	33.88	0.25	68.32	69.82	0.07
At most 3	0.42	19.18	27.58	0.40	41.04	47.86	0.19
At most 4	0.31	12.96	21.13	0.46	21.86	29.80	0.31
At most 5	0.18	6.81	14.26	0.51	8.90	15.49	0.37
At most 6	0.06	2.09	3.84	0.15	2.09	3.84	0.15

Note: 1. * denotes rejection of the hypothesis at the 0.05 level.
2. MacKinnon-Haug-Michelis (1999) p-values used.
3. Further tests conducted using PRVY and BKD instead of LLY (results still significant at 5% level).

(b) Series: PRVY Y INV TO EF GB IFIA

Hypothesised No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5% Critical Value	Prob.	Trace Statistic	5% Critical Value	Prob.
None	0.92	88.19*	46.23	0.00	239.61*	125.62	0.00
At most 1	0.77	52.07*	40.08	0.00	151.43*	95.75	0.00
At most 2	0.73	45.88*	33.88	0.00	99.36*	69.82	0.00
At most 3	0.50	24.56	27.58	0.12	53.48*	47.86	0.01
At most 4	0.37	16.30	21.13	0.21	28.92	29.80	0.06
At most 5	0.23	9.21	14.26	0.27	12.62	15.49	0.13
At most 6	0.09	3.41	3.84	0.06	3.41	3.84	0.06

Note: 1. * denotes rejection of the hypothesis at the 0.05 level.
2. MacKinnon-Haug-Michelis (1999) p-values used.
3. Further tests conducted using IFIB, IFLO and FLO instead of IFIA (results still significant at 5% level).

Table 7-4: Cont'd

(c) Series: Y INV HC BINV

Hypothesised No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5% Critical Value	Prob.	Trace Statistic	5% Critical Value	Prob.
None	0.94	41.06*	27.58	0.00	67.38	47.86*	0.00
At most 1	0.68	16.92	21.13	0.18	26.33	29.80	0.12
At most 2	0.34	6.33	14.26	0.57	9.41	15.49	0.33
At most 3	0.19	3.08	3.84	0.08	3.08	3.84	0.08

Note: 1. * denotes rejection of the hypothesis at the 0.05 level.

2. MacKinnon-Haug-Michelis (1999) p-values used.
3. Further tests conducted using other FA indicators instead of BINV (results still significant at 5% level).
4. More tests conducted using other EF instead of HC (results still significant at 5% level).

(d) Series: INNO INV EF IFIA

Hypothesised No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5% Critical Value	Prob.	Trace Statistic	5% Critical Value	Prob.
None	0.89	33.74*	27.58	0.01	62.52	47.86*	0.00
At most 1	0.68	17.15	21.13	0.17	28.78	29.80	0.07
At most 2	0.45	9.08	14.26	0.28	11.63	15.49	0.18
At most 3	0.16	2.55	3.84	0.11	2.55	3.84	0.11

Note: 1. * denotes rejection of the hypothesis at the 0.05 level.

2. MacKinnon-Haug-Michelis (1999) p-values used.
3. Further tests conducted using other FA indicators instead of INNO (results still significant at 5% level).
4. Further tests conducted using IFIB, IFLO and FLO instead of IFIA (results still significant at 5% level).

7.5.2 Economic growth and financial development relationships

The financial development and economic growth relationship is widely researched in financial economics literature. However, the outcomes vary from one study to another mainly because of the different economies investigated. Having established cointegration between financial development and economic growth variables, VECM is tested for these variables in order to understand whether financial development determines economic growth in Botswana. The results are shown in Table 7-5; each of the three growth models use a different proxy of financial development. All error correction terms are negative and significant revealing the existence of long-term associations amongst the regression variables. Investigations on short-run dynamics indicate that bank deposits (BKD) and liquid liabilities (LLY) are positive and significant at the 10% and 5% levels respectively. This outcome implies that deep and profitable financial markets exist in Botswana and help enhance growth. The results give emphasis to evidence from previous studies on Botswana (Akinboade, 1998; Eita and Jordaan, 2010; Luca and Bassam, 2002) that found a strong and positive influence of financial development on economic growth. The results are also in line with some international studies (Levine, 1997; Luca and Bassam, 2002).

Under short-run dynamics, credit to the private sector (PRVY) has a negative coefficient which is not statistically significant. Nonetheless, a positive and significant association between this indicator of financial intermediation and growth in the long-run is observed. These results are consistent with Loayza and Rancière (2006) who used a similar modelling approach and reported a positive and robust link between similar indicators of financial intermediation and growth, but a negative association in the short-run. Credit offered to the private sector is expected to promote investment and grow the local economy in the long-run. However, the negative impact from the PRVY indicator in the short-run might be an indication that the private sector in Botswana does not have sufficient access to credit finance, which is much needed for productive and profitable projects. The results further support Lisenda (1997) who showed that banks in Botswana finance only 2% of the 2,665 SMMEs in the country, suggesting low supply of credit to the private sector. Furthermore, other researchers (Dahou, Omar et al. 2009; Okurut, Olalekan et al. 2011) argue that high interest rate spreads make credit expensive and the BoB (2013) specifically gives evidence that firms in Botswana are constrained from accessing credit from local banks because

interest charges on loans are very high. Lack of access to finance by households and firms due to high transaction costs may adversely impact interactions between savings and investment and negatively affect economic growth in developing countries (Jefferis, 2009; Peachey and Roe, 2004; Torre, Gozzi et al. 2006). The financial sector appears to have a strong influence on economic growth in Botswana but local banks need to be more robust and contribute more to the development of the private sector in order to promote sustainable growth.

7.5.3 Financial development and financial integration interactions

Next, the dynamic interactions between financial integration and financial development indicators are investigated. VECM results are displayed in Table 7-6. It is observed that in all four models, error correction terms are significant at the 90% or greater confidence level, confirming the existence of long-term relationships between FI and FD variables. The economic growth variable (Y) is also included in the regressions in order to establish the influence of growth on financial development in Botswana. The results reveal that growth does positively drive FD through bank deposits and liquid liabilities and the impact on BKD is significant.

Unlike Eita and Jordaan (2007), who found only one way causality from financial development to growth, this study's results give evidence of dual causality between growth and financial development in Botswana in support of previous studies (Akinboade, 1998; Eita and Jordaan, 2010; Luca and Bassam, 2002). The results may imply that the country's economic policies promote liberalisation of financial market trade and that increased economic activities enhance market depth and profitability. It is also observed that TO and government budget promotes financial development in Botswana; these results are as expected. TO promotes cross-border trading, and this may result in foreign exchange and capital gains (Lane and Milesi-Ferretti. 2003). Government expenditure may promote financial market depth and profitability as financial transactions increase between government and its trading partners. The institutional quality variable (EF) has mixed impact on financial development in Botswana implying the need for more institutional developments, as suggested in literature (Borst, 2012; Demirguc-Kunt, Asli et al. 1996; King and Levine, 1993; Osada and Saito, 2010).

Most evidently, investigations reveal that financial integration negatively influences financial development. Meshach (2007) concluded that in Botswana, financial integration has no direct effect on financial development but, interestingly, in this current study, a negative and significant impact of FI on FD through credit to the private sector variable is observed. These results suggest that in Botswana, financial integration does not enhance credit to the private sector as expected. This outcome supports Volz (2004) who argued that in Europe, financial integration did not improve financing conditions for firms. Unfortunately, Botswana's financial market is bank-oriented with low credit issuance and the country's capital market is underdeveloped, narrow and illiquid. This situation makes it difficult for firms to invest in projects that need long-term financing (Wakeman-Linn and Wagh, 2011). As suggested by other researchers (Mendoza, Quadrini et al. 2009; Frey and Volz, 2011), Botswana may benefit from financial integration if the country can develop its financial market to a higher level than the current one.

Table 7-5: Impact of Financial Development in Botswana

Growth model/ Financial development indicator	Model 1 LLY	Model 2 PRVY	Model 3 BKD
ECT1	-1.794	-0.769	-1.062
	(5.521)*	(2.112)**	(1.985)***
ECT2	2.533	3.630	-0.507
	(4.506)*	(3.034)*	(2.079)**
D(Y(-1))	0.3702	0.114	0.118
	(1.942)***	(0.508)	(0.335)
D(INV(-1))	2.955	4.127	1.604
	(3.034)*	(2.254)**	(1.091)
D(HC(-1))	-0.549	-0.027	0.893
	(1.255)	(0.052)	(1.307)
D(GB(-1))	0.852	3.165	1.587
	(0.979)	(1.798)***	(1.362)
D(EF(-1))	10.678	-1.654	5.825
	(1.656)	(0.132)	(0.587)
D(TO(-1))	0.219	0.790	0.707
	(0.803)	(1.699)***	(1.286)
D(FD(-1))	0.681	-0.839	1.757
	(2.052)**	(0.725)	(1.738)***
Constant	-5.327	-0.091	-5.708
	(1.783)***	(-0.322)	(-1.566)
R-squared	0.873	0.778	0.718
Adj. R-squared	0.668	0.593	0.551
F-statistic	3.549*	4.781*	5.219*
Prob (F-statistic)	0.007	0.001	0.001
# of Observations	37	37	37

Note: 1. *, ** and *** indicate significance at the 1%, 5% and 10% levels respectively.

2. Annual per capita real GDP growth is the dependent variable.

3. t-statistics are in ( )

4. Lag structure was selected using Akaike information and Schwarz Bayesian criteria (AIC/SIC).

Table 7-6: Financial Integration and Financial Development Associations

FI Indicator	FLO			IFLO			IFIA			IFIB		
FD Indicator	PRVY	LLY	BKD	PRVY	LLY	BKD	PRVY	LLY	BKD	PRVY	LLY	BKD
ECT	-0.286	-0.132	-0.097	-0.193	-0.033	-0.046	-0.491	-0.073	-0.067	-0.308	-0.126	-0.081
	(0.003)*	(0.000)*	(0.003)*	(0.011)*	(0.002)*	(0.002)*	(0.000)*	(0.076)***	(0.038)**	(0.029)**	(0.003)*	(0.002)*
D(FD(-1))	0.346	0.355	0.510	0.320	0.375	0.574	0.066	0.307	0.636	0.266	0.264	0.531
	(0.087)***	(0.010)*	(0.004)*	(0.117)	(0.015)**	(0.001)*	(0.639)	(0.041)**	(0.003)*	(0.231)	(0.055)***	(0.002)*
D(Y(-1))	-0.014	0.001	0.111	-0.024	0.046	0.161	-0.006	0.040	0.163	-0.019	0.017	0.130
	(0.667)	(0.980)	(0.088)***	(0.485)	(0.455)	(0.009)*	(0.803)	(0.586)	(0.020)**	(0.626)	(0.800)	(0.048)**
D(INV(-1))	-0.052	-0.195	-0.217	-0.061	-0.490	-0.439	-0.404	-0.199	-0.171	-0.033	0.154	-0.124
	(0.752)	(0.461)	(0.397)	(0.716)	(0.115)	(0.111)	(0.003)*	(0.534)	(0.561)	(0.860)	(0.611)	(0.625)
D(TO(-1))	-0.010	0.064	0.043	-0.024	-0.004	-0.017	0.071	0.173	0.262	-0.059	0.161	0.167
	(0.878)	(0.480)	(0.626)	(0.721)	(0.964)	(0.848)	(0.168)	(0.206)	(0.058)***	(0.420)	(0.118)	(0.071)***
D(EF(-1))	-1.632	-1.575	1.022	-1.335	-0.482	2.192	-0.511	-0.227	3.032	-1.366	-2.360	1.212
	(0.097)***	(0.343)	(0.535)	(0.172)	(0.784)	(0.155)	(0.434)	(0.908)	(0.077)***	(0.221)	(0.230)	(0.451)
D(GB(-1))	-0.222	-0.018	0.440	-0.317	-0.104	0.484	0.388	0.136	0.668	-0.177	-0.064	0.611
	(0.256)	(0.951)	(0.108)	(0.111)	(0.747)	(0.077)***	(0.033)**	(0.733)	(0.058)***	(0.467)	(0.854)	(0.045)**
D(FI(-1))	-0.148	-0.137	-0.018	-0.178	-0.065	0.037	-0.038	0.043	-0.008	-0.030	0.070	0.058
	(0.013)*	(0.214)	(0.840)	(0.008)*	(0.604)	(0.686)	(0.061)***	(0.447)	(0.866)	(0.464)	(0.282)	(0.290)
C	0.205	0.142	0.129	0.221	0.083	0.044	0.185	-0.087	-0.102	0.138	0.220	0.091
	(0.469)	(0.772)	(0.777)	(0.446)	(0.876)	(0.923)	(0.380)	(0.887)	(0.840)	(0.669)	(0.689)	(0.842)
R-squared	0.520	0.590	0.627	0.499	0.512	0.632	0.752	0.393	0.540	0.377	0.494	0.626
Adj. R-squared	0.372	0.464	0.512	0.345	0.362	0.519	0.676	0.206	0.399	0.185	0.339	0.511
F-statistic	3.516	4.686	5.465	3.241	3.407	5.592	9.877	2.101	3.817	1.965	3.178	5.433
Prob(F-statistic)	0.007	0.001	0.000	0.011	0.008	0.000	0.000	0.073	0.004	0.092	0.012	0.000
# of Obs.	37	37	37	37	37	37	37	37	37	37	37	37

Note: 1. *, ** and *** indicate significance at the 1%, 5% and 10% levels respectively.

2. The dependent variable is the indicator of financial development.

3. p-values are in ( )

7.5.4 Economic growth and financial access regression

Next, long and short-term relationships between financial access (based on financial innovations) and growth in Botswana are investigated. Internationally there are ongoing debates regarding this relationship, with indications of both positive and negative effects of financial innovations on growth (Beck, Chen et al. 2012). From the literature (for example Valverde, Paso et al. (2007) and Dahou et al. (2009)), it is easy to assume that financial integration causes financial developments that enhance financial access and thereby promote economic growth. Dahou et al. (2009) argue that lack of innovative financial instruments leads to inadequate financial services and causes local firms to remain too often confined to the informal sector. Furthermore, Valverde, Paso et al. (2007) observed that growth and savings are promoted by prudent financial service delivery and product innovations. Thus improved financial service is associated with financial innovation. Financial integration is known for increasing the transfer of technological and managerial 'know how' from developed to less developed markets and therefore the phenomena is expected to enhance firms' access to finance. Other researchers (Beck, Chen et al. 2012) argue that benefits from financial innovations do not necessarily depend on the size of financial developments but economies grow more when financial markets engage in efficient and effective innovative activities. Innovative credit products may enhance access to credit by small businesses and households (Torre et al. 2006).

Following a previous study by Valverde, Paso et al. (2007), six indicators of financial access are used in this current study (intermediation, financial innovations, loans, bankruptcies, product innovation and technical change). Overall, financial innovations may increase productivity since financial services may be more inclusive, efficient and effective. The regression results shown in Table 7-7 indicate both long-run and short-run impacts of financial access on growth. Results of a further regression that included the macroeconomic indicator of human capital are given in Appendix 4; the results are consistent with those shown in Table 7-7. All error correction terms haveee negative coefficients, however significant ECT terms are observed for bankruptcies, intermediation and technical change (BKRU, MEDI and ATMS respectively). This implies the existence of long-term relationships in the system. Financial innovations in this study positively influence growth in the long-term and bankruptcy has a negative impact. This supports the

previous findings of Beck, Chen et al. (2012) and Valverde, Paso et al. (2007). Furthermore, the results represent a good sign that the local market has significant innovations, affordable products and services, as well as prudent quality risk measures that promote productivity. The number of bankruptcies measures the quality and risk of the local financial market. A significant long-run impact of BKRU indicates the existence of prudent banking regulations and practices as well as the prevalence of a stable investment environment. Short-term dynamics show that the coefficients of product innovation (BINV), technical change (ATMS) and intermediation (MEDI) variables are positive but insignificant. Product innovation is measured by the volume of bank investments or securities as a share of GDP. Therefore more BINV implies banks' interest in the growth of the private sector through injecting some funds into businesses; the higher the share the better. The technical change variable measures the distribution of automated teller machines over a number of bank branches in the country. The higher the ratio the better, as this implies that over time, with less branches, more machines are installed in strategic places, reducing travelling and intermediation costs for the customer while increasing access to financial services.

MEDI as measured by the number of bank branches divided by total loans and deposits indicates the cost of middle-man services rendered per banking physical structure. Thus intermediation costs increase in countries where there are more physical structures and less transactions because fixed overhead costs are distributed to a small number of clientele. Alternatively, high demand for intermediation services, given a limited number of physical structures, may result in higher bank charges. Increased intermediation costs therefore lower access to finance. The lack of significance in these variables (BINV, ATMS and MEDI) may signal the need for the local financial market to increase investments in firms, to be more open to change, to innovate and create more financial products that can be accessed by the private sector. Technological innovation can be promoted by banks that fund firms dealing with innovative projects with the potential to promote economic growth (Awdeh, 2012). Intermediation costs are said to be high in Botswana because of high interest rate charges and the limited number of bank branches, making costs even higher for rural dwellers who have to travel to access a bank branch (BotswanaGovernment, 2013). Nonetheless, banks in Botswana have recently increased non-

branch services through mobile technology and this move might lower intermediation costs hence enhance access to finance in the long-run.

The banks' loan commitment variable (LOAN) is significantly positive both in the short and long-run, implying general access to loans. However, this result should be interpreted with caution since descriptive studies give evidence of the acute shortage of credit to small enterprises in the country. LOAN is an indicator for long-run relationships between banks and their customers and the variable is measured by the ratio of the volume of loan commitments to total lending. This ratio reflects the level of banks' trust in, and commitment to, their clientele over a longer period. A higher ratio is preferred and indicates that customers have more access to the credit products necessary for production. INNO also significantly promotes economic growth in Botswana and the result is expected because the number of automated teller machines has been increasing in the country over the years. Automated teller machines provide efficient and effective service to customers even outside working hours, thus promoting productivity. These computerised machines are usually conveniently located in public places like train and bus stations, airports and shopping centres. Therefore growth in the number of automated teller machines implies more access to financial services.

Other researchers argue that in this era in which financial innovations are used as marketing tools by financiers, there is a need to balance transaction oriented banking with relationship banking activities (Boot, 2011). Human relationships between financiers and their clientele cannot be fully replaced by automated teller machines and other related technologies because personal feedback or advice provides a clearer view of the banking options available. Researchers (Beck, Chen et al. 2012; Levine, 2009; Michalopoulos, Laeven et al. 2009) argue that financial innovation can be very costly to financiers. As such, there should be some incentives to innovate and prudent management of associated risks should be established by financiers. On the other hand, banks may be unwilling to take the risk of investing their hard-earned profits into innovations that the private sector may not embrace. Banks also need to innovate and develop better risk management strategies (Merton, 1995), which may enable them to finance risky projects with potential high returns. Moreover, the results of this study revealed that the institutional quality indicator of economic freedom (EF) was positive and significant in all the

models. This implies that in the presence of financial innovations, economic freedom promotes growth to a larger extent. Thus Botswana should continue to develop prudent market regulations that do not hinder profitable innovations. Financial managers on the other hand should strive to be more innovative and embrace more technological change in their intermediary role. This may promote access to finance and sustainable economic growth.

7.5.5 Interactions between financial access and financial integration indicators

Finally, the impact of financial integration on financial access in Botswana is investigated in order to establish an indirect influence of financial integration on growth through financial innovations. Financial markets are channels for capital flows (Alfaro, Chanda et al. 2000), therefore, weak and non-efficient channels may result in misallocation of capital and disadvantage potential beneficiaries. In this era of financial integration, domestic markets should open up and broaden their customer scope so that they may channel more capital to investors (Dullien, 2009; Gregorio, 1998). Researchers argue that the more intensified the market integration, the more firms' access to finance should be realised (O'Toole, 2012), implying that financial integration enhances access to finance by firms. The VECM model estimation results are displayed in Table 7-8 and show evidence of long-term associations amongst system variables, as indicated by significant error correction terms at the 10% significance level. The effects of financial integration on financial access are mixed.[1] A positive and significant impact of financial integration (IFIB and IFLO) on financial access (ATMS and INNO) is observed. This means that the stock of liabilities and foreign capital inflows as a share of GDP promote financial access by encouraging technical change and innovations in Botswana.

Accordingly, financial integration increases financial innovation in the country, as measured by the growing numbers of ATMs and technological adoption in the banking sector. These results align with those in previous literature in that technological development, knowledge, skills transfer and innovation are some of the benefits of integration to developing markets. The results of this current study, to some extent, suggest an indirect, positive and significant influence of

[1] However, it should be acknowledged here that the absence of robust quantitative evidence in these relationships could be due to poor quality data and a short time period.

financial integration on growth through financial innovations (INNO). Nonetheless, financial integration (IFIA) negatively and significantly relates to the financial access variables of bank investments and loans to the private sector (BINV and LOAN). The findings in this study support O'Toole (2012) who provided evidence that financial liberalisation in SSA actually increased the financial limitations faced by firms in the region, especially SMMEs, and the study suggests the need for 'credit allocation mechanisms'. Interestingly, other research (Volz, 2004) shows that even in developed economies financial integration does not lessen the financial constraints experienced by firms. Another previous study suggested that the benefits from financial integration can be hindered by lack of innovative financial instruments (Dahou et al. 2009). It is therefore strongly argued that the current study results indicate a greater need for more innovative financial products in the Botswana market.

The institutional quality indicator is negative and statistically significant in most of the cases. These results imply that in the presence of good institutions, the detrimental effect of financial integration in developing countries is mitigated and therefore private access to finance is enhanced. Botswana's institutions might have to increase their investment efforts in financial innovations to certain thresholds in order to enhance private sector access to finance and build sustainable growth. In a previous study Miller (1986) argues that taxes and regulations motivate successful financial innovations. Foreign investors may be more attracted to countries with current financial innovations, since such innovations may signal commitment to international trade, access to finance, as well as prudent and timely service delivery. In this era of financial integration, Botswana might have to review its institutional regulations and governance structure in order to remove hindrances to successful development and implementation of financial innovations.

Table 7-7: Effect of Financial Access on Economic Growth in Botswana

$$\hat{y}_t = 163.75 + 8.17INV_t - 8.17EF_t + 12.83BINV_t \qquad \hat{y}_t = 35.86 + 2.48INV_t - 8.75EF_t + 5.82LOAN_t$$
$$(9.738)^* \quad (3.816)^* \quad (11.835)^* \qquad (0.685) \quad (6.707)^* \quad (4.517)^*$$

$$\hat{y}_t = 74.31 + 1.61INV_t - 5.73EF_t - 11.09BKRU_t \qquad \hat{y}_t = 13.89 + 0.49INV_t - 4.89EF_t + 0.64MEDI_t$$
$$(2.223)^{**} \quad (2.943)^* \quad (6.183)^* \qquad (0.791) \quad (2.164)^{**} \quad (2.566)^{**}$$

Dependent Variable (*y*)	Model 1 BINV	Model 2 LOAN	Model 3 BKRU	Model 4 MEDI	Model 5 ATMS	Model 6 INNO
ECT	-0.012	-0.487	-0.713	-0.787	-0.567	-0.389
	(0.050)	(0.820)	(1.724)***	(1.747)***	(1.917)***	(0.974)
D(Y(-1))	-0.485	-0.262	-0.159	-0.065	-0.227	-0.435
	(1.775)***	(0.601)	(0.384)	(0.138)	(0.553)***	(1.843)***
D(INV(-1))	2.092	1.456	2.241	1.718	1.232	0.023
	(0.062)	(0.550)	(0.912)	(0.659)	(0.456)	(0.008)
D(EF(-1))	19.646	15.216***	21.483	13.332	14.302	17.039
	(2.337)**	(1.908)	(2.834)*	(1.769)***	(1.883)***	(2.425)**
D(FA(-1))	1.203	10.828	4.171	2.212	4.895	0.117
	(0.343)	(1.881)***	(0.546)	(0.482)	(0.873)	(1.857)***
C	-1.445	-1.738	-1.988	-0.031	-0.253	-4.097
	(0.798)	(0.560)	(0.678)	(0.007)	(0.748)	(1.237)
R-squared	0.694	0.732	0.764	0.736	0.737	0.767
Adj. R-squared	0.525	0.583	0.634	0.590	0.592	0.636
F-statistic	3.458	6.227	3.913	6.725	7.030	4.671
Prob(F-statistic)	0.051	0.009	0.037	0.007	0.006	0.022
# Observation	17	17	17	17	17	17

Note: 1. *, ** and *** indicate significance at the 1%, 5% and 10% levels respectively.

2. Real per capita GDP growth is the dependent variable

3. Another regression which includes the macro-economic indicator of human capital was estimated and the results are consistent with those in this table (see Appendix 4).

4. t-statistics are in ( )

Table 7-8: Financial Integration and Financial Access Relationship in Botswana

FI indicator used/	Model (1) FLO						Model (2) IFLO					
FA variable utilised	BINV	LOAN	BKRU	MEDI	ATMS	INNO	BINV	LOAN	BKRU	MEDI	ATMS	INNO
ECT	-0.804	-0.016	-0.732	-0.100	-0.317	-0.253	-0.933	-0.003	-0.783	-0.187	-0.307	-0.318
	(0.004)*	(0.894)	(0.088)***	(0.173)	(0.063)***	(0.078)***	(0.006)*	(0.990)	(0.063)***	(0.059)***	(0.159)	(0.084)***
D(FA(-1))	0.148	-0.311	-0.039	0.539	-0.094	-0.244	0.200	-0.306	-0.087	0.438	-0.057	-0.280
	(0.473)	(0.375)	(0.903)	(0.074)***	(0.690)	(0.401)	(0.342)	(0.416)	(0.775)	(0.100)***	(0.818)	(0.342)
D(INV(-1))	0.357	-0.009	0.063	-0.174	0.034	1.975	0.363	-0.012	0.065	-0.171	0.027	1.922
	(0.020)**	(0.742)	(0.336)	(0.134)	(0.623)	(0.765)	(0.018)**	(0.663)	(0.313)	(0.074)***	(0.715)	(0.765)
D(EF(-1))	0.391	0.025	0.100	-0.229	-0.268	-31.075	-0.088	0.013	0.140	-0.246	-0.415	-64.217
	(0.435)	(0.866)	(0.782)	(0.632)	(0.438)	(0.387)	(0.870)	(0.925)	(0.694)	(0.555)	(0.376)	(0.201)
D(FI(-1))	0.066	-0.004	-0.004	-0.027	-0.007	0.095	0.094	-0.010	-0.068	0.029	0.012	0.188
	(0.197)	(0.840)	(0.901)	(0.575)	(0.838)	(0.977)	(0.392)	(0.787)	(0.302)	(0.771)	(0.067)***	(0.089)***
C	-0.056	0.051	-0.081	-0.182	0.189	27.253	-0.026	0.051	-0.093	-0.235	0.189	29.870
	(0.763)	(0.377)	(0.504)	(0.463)	(0.192)	(0.076)***	(0.884)	(0.381)	(0.429)	(0.294)	(0.217)	(0.057)***
R-squared	0.717	0.131	0.422	0.424	0.399	0.378	0.740	0.140	0.463	0.548	0.334	0.395
Adj. R-squared	0.559	-0.351	0.100	0.105	0.065	0.033	0.595	-0.338	0.165	0.296	-0.036	0.058
F-statistic	4.552	0.272	1.312	1.327	1.195	1.095	5.118	0.293	1.553	2.179	0.903	1.174
Prob(F-statistic)	0.024	0.917	0.340	0.335	0.384	0.426	0.017	0.905	0.266	0.146	0.519	0.392
# of Obs.	17	17	17	17	17	17	17	17	17	17	17	17

Table 7-8: Cont'd

FI indicator used/	Model (3) IFIA						Model (4) IFIB					
FA variable utilised	BINV	LOAN	BKRU	MEDI	ATMS	INNO	BINV	LOAN	BKRU	MEDI	ATMS	INNO
ECT	-1.790	-0.296	-0.916	-0.102	-0.189	-0.536	-0.839	0.006	-0.140	-0.015	-0.352	-0.290
	(0.004)*	(0.062)***	(0.016)*	(0.241)	(0.664)	(0.097)***	(0.003)*	(0.927)	(0.428)	(0.693)	(0.054)**	(0.019)**
D(FA(-1))	0.471	-0.370	-0.054	0.730	-0.079	-0.283	0.078	-0.365	-0.493	0.545	-0.102	-0.347
	(0.050)**	(0.187)	(0.830)	(0.067)	(0.772)	(0.240)	(0.691)	(0.310)	(0.201)	(0.118)	(0.627)	(0.091)***
D(INV(-1))	0.457	0.103	0.076	-0.379	-0.050	-12.973	0.314	-0.026	0.092	-0.094	-0.087	-13.076
	(0.008)*	(0.109)	(0.164)	(0.164)	(0.536)	(0.110)	(0.122)	(0.593)	(0.443)	(0.572)	(0.343)	(0.064)***
D(EF(-1))	0.863	0.192	-0.043	-0.891	0.062	-50.531	-0.074	0.015	0.273	-0.159	-0.708	-70.159
	(0.048)**	(0.187)	(0.864)	(0.087)***	(0.838)	(0.236)	(0.882)	(0.925)	(0.590)	(0.840)	(0.096)***	(0.028)**
D(FI(-1))	-0.061	-0.018	-0.013	0.035	0.013	-0.264	-0.006	0.005	-0.019	0.007	0.027	4.011
	(0.104)***	(0.046)**	(0.132)	(0.424)	(0.666)	(0.886)	(0.860)	(0.667)	(0.527)	(0.858)	(0.086)***	(0.013)*
C	-0.070	0.040	-0.071	-0.039	0.172	30.859	-0.037	0.061	-0.144	-0.181	0.256	37.821
	(0.645)	(0.380)	(0.458)	(0.894)	(0.243)	(0.022)**	(0.842)	(0.315)	(0.313)	(0.539)	(0.072)***	(0.003)*
R-squared	0.807	0.455	0.644	0.410	0.367	0.598	0.735	0.148	0.368	0.277	0.520	0.737
Adj. R-squared	0.700	0.151	0.446	0.083	0.015	0.374	0.587	-0.326	0.017	-0.125	0.254	0.591
F-statistic	7.523	1.500	3.254	1.252	1.043	2.676	4.987	0.312	1.050	0.688	1.953	5.046
Prob(F-statistic)	0.005	0.281	0.059	0.362	0.449	0.095	0.018	0.893	0.446	0.645	0.181	0.018
# of Obs.	17	17	17	17	17	17	17	17	17	17	17	17

Note: 1. *, ** and *** indicate significance at the 1%, 5% and 10% levels respectively.

2. The dependent variable is the indicator of financial access (FA).

3. p-values are in ( )

4. Due to data limitation on financial access variables, model estimated under Tables 7-7 and 7-8 have utilised time series data covering the period from 1992 to 2011.

7.6 Suggested Policy Implications and Conclusion

The absence of empirical studies in Botswana has meant that policy makers have not had a clear guide to help them understand the interactions of innovations with other economic variables as the local market integrates with global markets. Biased policy decisions may result from assumptions, perceptions and the descriptive, anecdotal information currently available on financial innovations in the country.

This study applied VECM to examine the interrelationships between financial integration, financial access, financial development and economic growth in Botswana. First, evidence of bi-directional causality between financial development and growth was established, in support of the existing literature (Akinboade, 1998; Meshach, 2007; Eita and Jordaan, 2010) but contrary to the idea of one-way causality as established by Eita and Jordaan (2007). This outcome might suggest that stronger inter-linkages and feedback exist in Botswana between financial institutions and the larger economy. Secondly, the results showed a negative and significant impact of FI on FD, unlike one previous study, which found no significant association between FI and FD (Meshach, 2007). Small and under-developed financial institutions lack absorption capacity and may not significantly benefit from financial integration. Thirdly, a positive and significant impact of financial access variables on growth was observed. Financial access, as measured by financial innovations, promotes economic growth in Botswana, implying that financial innovations stimulate economic performance through enhanced financial service delivery and productivity.

Finally, the research examined the interactions between financial access and financial integration in order to establish the possibility of an indirect transmission channel from financial integration to growth. It was observed that financial integration had mixed effects on financial access. Nonetheless, it was found that financial integration increases financial innovations in the country and therefore FI indirectly and positively influences growth. This outcome concurs with the majority of the literature that argues that financial integration enhances technological developments in local markets and hence improves access through enhanced service delivery. The positive influence of macroeconomic and institutional variables on growth was observed,

implying the prevalence of a sound and prudent supervisory structure and the rule of law in Botswana.

From the study results, several policy implications are suggested:
(1) There seems to be a need for more credit innovations geared towards private sector funding in Botswana since credit to the private sector as a measure of FD, negatively impacts growth. Botswana might benefit from benchmarking from other countries like Malaysia, which instituted a one stop SME Bank specifically for small enterprises. Through SME Bank both financial and advisory needs of the sector are attended to, which is unlike the set up in Botswana where efforts are scattered across the local banks making it difficult to coordinate and measure impacts.

(2) A detailed database on financial access by the private sector in Botswana is needed. Data availability and quality may affect policy decisions to a larger extent; disaggregated data is needed from BoB (as the overseer of financial institutions) demonstrating banking innovations per district and thus show case financial access and inclusion beyond urban centres. Data that indicates funding specifically to the small business sector and not generalised in the 'private sector funding' may help ascertain credit needs of small players in the private sector. Currently, reported data on credit to the private sector may give rise to assumptions that sufficient finance is trickling down to the small entrepreneurs whilst the bulk of financing is actually consumed by large enterprises.

(3) Bank deposits on the other hand should be diversified from being home biased; banks may need to develop their strategies to attract more foreign deposits and build a bigger pool from which loans to the private sector may be issued. Financial depth without sufficient innovative credit instruments issued to the private sector especially the SMMEs may have resulted in a financial market which is profitable amidst financially starved enterprises. Banks in Botswana should continue to embrace more technological developments from abroad with an aim to improve their intermediation business and create unique loan packages tailor made for the local firms.

(4) In Botswana, less bureaucratic and visionary financial market managers are needed that can assess private sector's project plans based on productivity potential and viability instead of a company's collateral as is currently the case; most small enterprises are not asset backed because they are youth oriented. Also, open management styles that can innovatively, strategically inspire and train local entrepreneurs to align their projects to envisaged foreign investments may help to build absorption capacity that may enhance sustainable growth. With the same emphasis, the private sector should develop their absorption capacity by making efforts to learn and be informed on issues of financial integration and integrate new technologies into their businesses in order to benefit from financial integration. Adams (2009) argues that the amount of technological transfers from abroad is largely determined by the citizens' capacity to absorb such hence human capital formation is an important factor in benefiting from foreign investments. Other researchers (Meshach, 2007) have suggested the need for Botswana to target achieving certain thresholds in economic building in order to benefit from financial integration. Nonetheless, some negative shocks from FI may be hard to avoid when they arise from implementing regional monetary policies since such policies are beyond one country's control as argued by Klein and Olivei (1999).

In conclusion, the results of this study strongly indicate that in Botswana collaboration between the private sector and financial markets is needed in order to attract more foreign investment and ultimately benefit the overall economy. To enhance financial inclusion and access by the private sector, supervisory institutions and related regulatory bodies may need to formulate strategies that encourage financiers to invest in financial innovations. There is still a need and scope for greater financial integration, financial development and financial access. This will contribute to the national development goals of sustainable economic growth, diversification, employment creation and poverty reduction in Botswana. Financial development with less credit to the private sector, inadequate financial services and insufficient innovative products, constrains the growth of the private sector, disadvantages households and limits the growth of the general economy. Financial integration arrangements may be used by the country as a platform to tap into best practices across the globe and improve financial access by local firms in order to improve productivity in the long-term.

CHAPTER 8: CONCLUSION AND POLICY IMPLICATIONS

8.1 Introduction

This chapter summarises the outcomes of the research, provides an oversight of new discoveries, suggests some policy implications, identifies study limitations and highlights areas for future research and development.

This study aims to investigate the impact of financial integration on economic growth in Botswana; the main emphasis being its impact on capital market development and private sector access to finance in the country. Financial integration is commonly known for its beneficial effects on capital accumulation, risk diversification, knowledge and skills transfer, and financial market development amongst others factors. Nonetheless, some writers argue that financial integration may benefit developed nations more than poor nations since can promote capital flight and increase market and economic instability. Financial integration is seen to bring positive results where the economic environment is stable and characterised by sound, efficient and effective institutions, prevalence of law and order, political stability, trained human capital, developed and open financial markets. Therefore, developed nations with greater absorptive capacity may benefit more from financial integration than developing nations. Botswana is one of the developing countries in Africa, with an economy that is steadily growing. Its unique democratic governance principles have led to significant investments in public welfare and substantive capital reserves accumulated in foreign markets. Botswana has trade liberalisation policies and reforms that have facilitated integration of its institutions within the international community. Nonetheless, the country still faces the challenges of a less diversified economy, a small population, less developed financial markets, prevalence of HIV and the lack of a skilled labour force.

This study empirically analyses several relationships: (a) the impact of macroeconomic variables on economic growth; (b) the impact of financial integration on growth, capital market development and financial access; and (c) the impact of financial access on growth. Descriptive evidence for the relationships is discussed in order to show the extent of the impact of financial

integration in Botswana. Financial integration does not seem to directly influence economic growth and capital market development in Botswana, but financial access (based on financial innovations) and capital market development were found to increase productivity in the local economy. However, this study establishes that financial integration promotes financial innovation, and there is an indirect positive transmission channel from financial integration to growth.

8.2 Financial Development, Human Capital and the Role of Technological Development

Prudent financial systems promote technological innovation (Schumpeter, 1939) and support economic diversification through efficient and effective capital allocation that maximises investment opportunities. Financial development that upholds technological developments and financial innovation stimulates productivity through enhanced mobilisation of capital and risk diversification (Tadesse, 2007). The research literature further indicates that the level of financial development determines the choice of technology in any given economy (Saint-Paul, 1992). Saint-Paul (1992) argues that less developed financial systems are characterised by less technological and financial diversification, and therefore risk is limited since the chosen technologies are not specialised and are less productive. Thus financial developments promote growth through the application of efficient technology. Moreover, economies benefit from technological developments according to their technological base and technological progress rates (Tadesse, 2007; Zagorchev, Vasconcellos et al., 2011).

Compared to its neighbour and the region's more developed market of South Africa, Botswana's financial system is less technologically developed. However, the local market has recently embraced technology in order to improve its intermediation business. Comin and Nanda (2014) argue that, unfortunately, 'late adopters' of technology tend to benefit less from technology diffusion. They conclude that open financial markets,which allow initial experiments of commercial technologies in their systems, benefit as 'early birds', with technology enhancing production. Deeper markets facilitate the quicker spread, adoption and implementation of technologies. Banking sector developments determine the technological change rate experienced by industries, with small firms that are financed externally (Tadesse, 2007); under-developed

banking sectors are associated with lower rates of technological change and vice-versa. Therefore financial developments affect firms' abilities to access finance externally. Thus ongoing financial developments in Botswana and adaption of new financial technologies have great potential to enhance firms' access to finance and productivity, thereby promoting economic growth in the long-run. On the other hand, the transfer of technological knowledge and skills that results from financial integration lessens the competition gaps between firms and quickly erases the technological benefits derived from the competitive advantages enjoyed by early entrants. Firms grow fast and allocate resources prudently over different asset types in countries which enforce property rights (Claessens and Laeven, 2003). Botswana upholds the rule of law and protects investors' property rights. Therefore the country may benefit from technological investments that promote sustainable economic growth.

Botswana has a growing skilled labour force as a result of the free and quality education offered to its citizens. Whilst human capital has been productive over the years, building the local economy based on manual labour, infusing technological developments may increase output and accelerate economic growth (Cosar, 2011). Historically, the education system in Botswana, as in most less developed nations, was not technologically enhanced; learners were only exposed to computer usage at tertiary level. On the other hand, developed economies invest heavily in technology education at early stages of learning and, as a result, human capital in developed nations is more advanced and technologically innovative.

A technologically developed economy benefits more from its education investment (Nelson and Phelps, 1966) since its workers' skills are enhanced through incorporating technology into productivity. Innovations and entrepreneurship are some of the main factors of economic growth (Schumpeter, 1939) and they must be encouraged by any given economy. Evidently, most SMMEs in Botswana are in rural areas and these enterprises are operated and managed by lower skilled workers, who are less knowledgeable about current technological innovations. Therefore, the production potential of local entrepreneurs is not maximised. Botswana should strive to build the capacity of its skilled labourforce to absorb technology, especially in this era where integrated markets are operated through online systems. The local market need not only adopt or imitate world knowledge, they should adapt it to local conditions through innovation and

creativity (Messinis and Ahmed, 2009). This could make foreign technology user-friendly to the local market.

The use of technology may overcome delays related to business transactions caused by manual processing systems; electronic transactions move with accelerated speed and settlements are done in the fastest time possible. Furthermore, human errors associated with manual entries are lessened when using automated systems since there is less human interference. Adapting technological knowledge and skills may also enhance the competitiveness of local entrepreneurs within and outside the country borders, as technology may assist firms in accessing foreign markets and even source finance from outside Botswana. Research demonstrates that industries that invest more in technological developments have greater access to foreign finance and grow faster than their counterparts (Ilyina and Samaniego, 2011). It is further argued that financial markets tend to resource firms that are research-intensive. Similarly, FDIs are attracted by technologically developed markets since the availability and usage of technology signals a commitment to transparency and prompt service delivery. Botswana's local financiers, firms and the general public have now embraced technological developments and this may promote competitiveness, quality service and product delivery, thereby enhancing the local economy in the long-term.

8.3 Potential Impact of Financial Development on Other Economic Sectors

Financial development has great potential to grow other sectors of the economy, such as agriculture, manufacturing and tourism. Previous studies have implied that financial market expansion and agricultural investments are good strategies for building sustainable economic growth. The agricultural sector used to be the main contributor to Botswana's GDP but the sector's efforts were frustrated by long periods of drought and outbreaks of foot and mouth disease. Moreover, economic efforts and focus shifted from agriculture to mining when large deposits of copper, nickel and diamonds were discovered in the country around 1966. Revenues from mining exports accelerated growth of the local economy and transformed Botswana from a poor nation to a thriving African economy. However, concentrated investments in the mining sector led to a less diversified economy.

On realising that mineral deposits get depleted over time, the government has now initiated economic diversification strategies that seek to promote investments into non-mining sectors of the economy, ensuring sustainable growth. Local financial markets, especially the banking sector, have since diversified their investments into agriculture to assist investors through the establishment of drought resistant strategies such as livestock restocking, irrigation systems, artificial inseminations, genetically modified foods and feed lots. Productivity growth in the agricultural sector may in turn increase demand for financial services and promote financial development (Parivash and Torkamani, 2008). Furthermore, operations of agricultural cooperatives in Botswana provide financial intermediation services to rural dwellers and non-banked farmers. There is a need to incorporate the cooperatives into the financial system structure in order to promote their efficiency and effectiveness in service delivery. Financial innovations used by bankers may be extended to cooperatives such that members may also use mobile and electronic transactions without having to travel long distances to access services. Botswana currently imports most food stuffs from South Africa and therefore investment in the agricultural sector may promote local food production, increase food security, increase employment, lower food costs and alleviate poverty in the country. Moreover, investments into non-mining sectors promote local economic diversification and citizen empowerment.

Financial diversification into the tourism industry may also promote economic growth in Botswana. The country boasts a natural unpolluted environment, abundant native flora and fauna, and hosts some rare species of wildlife and huge populations of elephants. Some tourist sites in Botswana, such as the Okavango Delta, have recently been listed as world heritage sites, which may attract more tourists internationally. The tourism industry has been diversified into cultural activities and arts, in order to celebrate Botswana's uniqueness across the world. Other businesses in the tourism sector, including accommodation, security, transport, the beauty industry and safaris, are growing rapidly, especially since the transfer of the DTC from the UK to Botswana in 2012. Historically, businesses in the tourism sector were viewed as luxury endeavours, with few economic benefits. Consequently, they were privately financed and operated on a small scale. In recent years, the government and large investors have realised the potential economic benefits of tourism and have vested interest in the sector, resulting in policy

reforms that regulate trading in the tourism sector. Local financiers have also created new financing packages for investors in tourism. Businesses that were traditionally not qualified for loan financing are now resourced by banks, implying the expansion and increased depth of financial markets in Botswana. The tourism sector expansion may also increase foreign capital flows from international tourists and Botswana may benefit from capital accumulation and exchange rates. Thus, local financial markets should be ready to efficiently and effectively offer excellent service to tourists, set up automated systems that allow prompt financial transactions without barriers and unnecessary delays, provide open and timely management decisions without bureaucracy, and ensure availability and accessibility of ATMs and point of sales outlets country-wide. Poor financial service delivery may deter potential tourists and negatively impact on the growth of tourism industry in Botswana.

The growth of the tourism sector has also led to increased employment, productivity, rural developments, increased revenue and national exposure. However, the poor contribution of the tourism sector to market capitalisation is of great concern, especially given that the sector attracts foreigners with stronger currencies than the local Pula. The sector only contributed P334 million out of P313,966 million in market capitalisation in 2008 and P1145 million out of P416,590 million in 2013 (BSE, 2013). Strengthening the institutional and structural framework of the tourism industry may enhance development and contribution of the sector to market capitalisation. Furthermore, strategic international promotion of existing and envisaged investment opportunities in local tourism may attract foreign capital inflows.

Financing the manufacturing industry in Botswana may also contribute to sustainable economic growth. Currently the country imports most of its goods from South Africa and other countries and very few manufacturing firms exist in Botswana. The country's small population, lack of skilled labour force and lack of financial resources are some of the disadvantages associated with its poor performance in the manufacturing sector. Nonetheless, increased employment, productivity and income are potential benefits from an efficient and effective manufacturing sector. Akinlo (2004) argues that in the long-run, manufacturing FDIs are more profitable than extractive FDIs. Whilst manufacturing industries can continue production for many years and

provide sustainable employment to citizens, mineral deposits are a limited resource and therefore mining closure may result in unemployment and less productivity.

Botswana is geographically located in the central position in the region and therefore the country networks with other countries in SADC. The country also has well-established airline services, tarred roads plus railway lines that run from one border to the other. Therefore, goods manufactured in Botswana can easily be transported to other markets in the region. Furthermore, the country is rich in mineral deposits; however, currently minerals are exported to the world as raw products. Investments in mineral processing, cutting, polishing and production of finished goods within the country may enhance infrastructure developments, increase mineral revenue, create job opportunities and thereby lower unemployment in Botswana. Further investments into the manufacturing of other goods like clothing, furniture and building materials may lower the costs associated with importation of these goods. There is a need to finance local training institutions that promote manufacturing in order to build the necessary workforce capacity. However, the manufacturing sector must ensure the existence of an efficient industrial structure and the technological skills that would attract investors (Pavitt, 1984). Financial development can promote citizen empowerment through allocating capital resources towards the manufacturing industry. A well-resourced manufacturing sector may increase productivity and help raise the standard of living in Botswana, ensuring sustainable economic growth.

8.4 Main Findings

8.4.1 Macroeconomic variables and economic growth in Botswana

The impact on economic growth caused by several macroeconomic variables is measured in this study. It is found that human capital, investment, trade openness and economic freedom promote local growth whilst inflation shrinks productivity. These results are as conceptualised and concur with findings from previous literature. Economic growth is largely dependent on the kind and amount of capital accumulated by any given country (Saleh, 1997; Lange, 2004). Unlike other African countries, Botswana re-invests its income in national developments and invests heavily in the health and education of its people. This represents a visible contribution of capital to local

growth. Investment in infrastructure and human capital has great potential to accelerate productivity, reduce labour costs, and promote innovation and creativity, thereby encouraging the growth of the local economy.

The significant impact of the trade openness variable on growth implies that liberal and cordial trade relationships exist between Botswana and other countries. This result supports the existing literature (Lane and Milesi-Ferretti, 2003). Trade openness promotes economic growth in several ways: (1) sales in foreign markets may result in capital gains and foreign exchange; (2) insurance, transportation and credit account transactions created between partners across borders may promote cordial relations between nations; (3) unfair gains from asset sales in integrated markets are mitigated since expensive local assets can be substituted with cheaper foreign assets; and (4) increased market opportunities can encourage competition, productivity and innovation. Yanikkaya (2003) argues that open economies usually grow faster than their counterparts. Botswana has a history of trade liberalisation and the country has one of the fastest GDP per capita growth records on the continent.

Institutional soundness (as measured using the economic freedom variable) determines growth and signifies the existence of sound and prudent institutions in Botswana. Both public and private institutions deliver goods and services and therefore promote economic activities. The institutional framework quality indicator can be measured by structure, management procedures, infrastructure development, credibility, operational systems and compliance to the rule of law and order. An extensive amount of literature shows that a lack of sound institutions inhibits growth because it leads to economic instability and insecurity. Investors prefer a safe environment that protects investors' rights and upholds the rule of law and order. Amongst the African countries, Botswana's democratic rule, respect for human rights, rule of law and investor confidence are outstanding. The country's institutions are independent and well-established, despite the need for further developments to align service delivery to international standards. However, inflation negatively impacts growth and the results support previous conclusions that inflation erodes the purchasing power of consumers, lowers investment capacity and reduces productivity (Andrés and Hernando, 1997; Edison, Levine et al. 2002; Elder, 2004).

8.4.2 Financial integration impact on Botswana's economic growth

Financial integration agreements are based on expectations that economies will grow from the envisaged foreign capital. In this study, both direct and indirect transmission channels from financial integration to growth were investigated. Financial integration does not seem to directly promote economic growth in Botswana; the empirical analysis shows negative feedback from financial integration to growth. The results are not as expected as, according to previous research, countries with stable economic environments like Botswana stand to benefit from financial integration. Furthermore, Botswana is a member of both regional and international bodies and this membership is expected to increase the country's economic growth, as advocated by the literature. Foreign capital is expected to flow in from the developed nations as Botswana's trade partners and significantly grow the local economy. However, the results support previous studies (Boyd and Smith, 1992; Klein and Olivei, 1999; Osada and Saito, 2010) that concluded that integration benefits are accrued by developed nations while emerging economies experience negative impacts. Moreover, the results resonate with the earlier findings of Meshach (2007).

It is concluded that structural and institutional impediments combined with a weak regulatory framework have led to the negative contribution of financial integration in Botswana. Wakeman-Linn et al. (2008) supported Meshach (2007), arguing that whilst regional financial integration may promote resource distribution amongst member countries, harmonised institutions are a prerequisite. Wakeman-Linn et al. (2008) further blamed poor benefits from integration on the 'spaghetti effect', which results from countries' overlapping commitments to multiple memberships. Botswana's integration efforts may be overstretched by its commitment to several bodies, both inside and outside the region. Nonetheless, the ongoing efforts by Botswana to comply with regional and international protocols may help to integrate local institutions and instil macroeconomic discipline. Consequently, financial integration may benefit the local economy in the long-run.

Interestingly, this study establishes an indirect, positive transmission channel from financial integration to growth through financial innovations (financial access). These empirical findings are new to the research literature relating to Botswana. Financial integration encourages financial innovations in the country (as measured by the number of ATMs), which in turn promotes local

economic growth. Botswana has experienced a significant increase in the number of ATMs over the years, demonstrating increased financial market development and its associated important role in local economic growth. Thus financial integration promotes growth in Botswana through increased efficiency in financial service delivery.

Other related studies (Valverde, Paso et al. 2007; Beck, Chen et al. 2012) also found that financial innovations positively influence growth by enabling affordable products and services as well as prudent quality risk measures. Furthermore, previous studies argue that financial integration promotes technological developments, and transfer of knowledge and skills from rich to less developed countries. The results of this current study agree with those of Ahmed (2011), who concluded that financial integration indirectly drives growth in SSA countries through developing domestic financial markets.

8.4.3 Influence of capital and financial market development on growth

Capital market development is found to be one of the drivers of economic growth in the country and this finding supports earlier conclusions (Levine and Zervos, 1996). In particular, market liquidity (measured by the value of stocks traded) is significant, implying that local productivity is promoted by equity market turnover. The growth of market capitalisation as a share of GDP shows increased income accumulated through the local capital market over the years. The BSE has grown to offer various financial securities and has attracted an increased number of investors from within and outside the region. BSE's corporate governance and institutional framework is compliant with international standards, emanating from the country's membership in both regional and international capital market bodies. Nonetheless, the market has several challenges, as follows: (a) an illiquid bond market; (b) minerals and mining listings dominance; (c) less-informed potential investors; and (d) limited financial instruments. Most notably, private sector bonds listed at the local bourse are hardly traded, meaning that debt capital is not efficiently distributed. Market dominance by the mining sector makes market capitalisation more vulnerable to external forces as the sector contributes the largest share to market capitalisation but minerals are mainly exported to foreign markets. Financial crises and lower demands for minerals from

external markets may lead to low productivity, loss of income and unemployment, thus negatively impacting economic growth in the country.

Financial market development determines economic growth in Botswana. The study results generally confirm the previous findings of Akinboade (1998), Meshach (2007) and Eita and Jordaan (2007). However, unlike Eita and Jordaan (2007), who document one-way causality from financial development to growth, this study supports the findings of Meshach (2007) and Akinboade (1998), with dual positive feedback between growth and financial development. Patrick (1966) argued that at its advanced stage, economic growth causes financial developments, but the opposite holds true when the economy is still young. The study results suggest that Botswana's economy is more advanced than some developing nations and financial markets are integrated into local economic building.

Botswana's banking sector has grown both in depth and breadth over the years and this growth is supported by financial trade liberalisation policies upheld by the country. Notwithstanding, in analysing the financial market development determinates of bank deposits, liquid liability and credit to the private sector, the impact of private sector credit on economic growth is not significant. Anecdotal data gives evidence that local firms opt to seize foreign opportunities to access debt financing and most SMMEs receive loans from relatives, informal sectors and well-wishers. The results seem to support existing conclusions (BoB, 2013) that it is difficult and expensive to obtain credit from local banks because of high interest rates. Therefore, local project investments that require long-term financing may be disadvantaged by a shortage of bank credit and an illiquid debt market. This scenario does not support productivity.

8.4.4 Financial integration impact on capital and financial market development in Botswana

Benefits from financial integration may be compromised by local markets that are not integrated amongst them. According to Raghavan and Sarwono (2012), bank lending may slow the development of the corporate bond market. Thus the local market structure should be seen to promote integration of both financial and capital markets. In Botswana, market regulation is divided into banking and non-banking institutions, which are both coordinated by the MFDP.

Thus Botswans's local market structure seems to support integration. Empirically, this study reveals that financial integration promotes capital market development even though the impact is not significant. Historically, Botswana has accumulated large foreign reserves and recorded budget surpluses. Consequently, attracting FDIs and portfolio flows for economic growth might not have been a priority. Nonetheless, the results show that FDIs can drive developments at the local exchange once certain thresholds are achieved. Earlier research indicates that integration of local markets beyond the regional community may help small markets to grow their connections and achieve required thresholds to benefit from international financial integration (Wakeman-Linn and Wagh, 2008; Honohan and Beck, 2007; Jansen and Vennes, 2006). Botswana's continued efforts to attract international investors may yield positive returns for sustainable economic growth.

However, this study reveals that financial integration negatively impacts on financial developments (bank deposits, liquid liability and private sector credit). Whilst Meshach (2007) argued that in Botswana, financial development causes financial integration and not vice-versa, the anecdotal data of this study provides evidence that since Botswana initiated financial trade liberalisations and reforms, financial institutions have increased in number and bank deposits have shown an upward trend. An extensive literature advocates for the operation of effective and efficient financial markets before host countries will experience the benefits of integration (King and Levine, 1993; Demirguc-Kunt, Asli et al. 1996; Osada and Saito, 2010; Borst, 2012). Botswana's financial market is small and is still implementing technological developments that already exist in neighbouring markets. Wakeman-Linn et al. (2008) argued that regional financial integration deepens markets in developed countries more than others within the group. Botswana's local market therefore faces competition from more advanced economies in the region, such as South Africa. Volz (2004) concluded that financial integration may lead to unfair competition since the phenomenon may result in concentrated financial services and the heavy presence of foreign-owned institutions. Botswana's financial market is dominated by foreign-owned banks, which are regulated and supervised mainly from their home country. Thus, in promoting financial integration, the local authorities may have limited capacity to control the banking business.

8.4.5 Financial integration's contribution to financial access in Botswana

Policy decisions regarding financial access (measured using financial innovation) in Botswana are based mainly on assumptions and perceptions since there is limited empirical evidence in this field (Beck, Chen et al. 2012). Available descriptive information about financial innovation in the country does not demonstrate innovative interactions with economic growth and its related variables. Financial innovation may enhance private sector access to finance by overcoming challenges related to financial physical access, eligibility and affordability. In line with Valverde, Paso et al. (2007), this study categorises financial innovations into two: business innovations and technological innovations. Innovations like ATMs, e-money, debit and credit cards are technological innovations that enable customers to process transactions (deposits, insurance, payments and credit) at their own convenience without human interference, thus promoting productivity. Business innovations are financial packages like mutual funds, bank investment securities and loans to the private sector. Financial innovations are growing in Botswana and developments are embraced by the nation. Financial access promotes economic growth and the findings of this study support earlier conclusions (Valverde, Paso et al. 2007). Nonetheless, the analysis highlights some mixed effects of financial integration on financial access. Whilst integration promotes access through technological innovations, a negative impact is observed through business innovations (loans and bank investments to the private sector).

The results partly support previous literature (Menon, 2012), which argues that financial integration attracts foreign institutions to the host country, bringing in new technologies and innovation which promote competition. The financial landscape in Botswana has recently improved, offering effective and efficient services to clients and new products to provide customers with more options. In an effort to attract and retain its customers, the local financial market has created channels of service delivery that are faster and less costly than the traditional means. Local banks have opened more branches country-wide, increased ATM numbers in rural areas and offered mobile money services. Thus, through financial innovations, businesses and individuals avoid costs associated with traditional banking systems.

However, financial integration does not seem to encourage loans and bank investments to the private sector in Botswana. This study outcome supports that of O'Toole (2012), which concluded that financial liberalisation policies in SSA did not help private firms in the region to overcome financial constraints. Furthermore, the results support conclusions from previous studies that the current financial integration does not mobilise as much capital investment to the less developed countries as it had done previously (Schularick and Steger, 2007; Das, 2010; Mougani, 2012). Notwithstanding, Botswana's financial markets have accumulated significant capital in the form of bank deposits and it is expected that such capital will be distributed into productive investments through loans to the private sector. The findings also support studies by Khalid, Zeeshan et al (2012), which argued that there is no guarantee that capital accumulated will trickle down to the poor. Dahou, Omar et al. (2009) further argued that lack of innovative financial instruments may hinder the positives of financial integration. The results of this study imply that the local financial market invests more in technological innovations and less in business innovations. Nonetheless, anecdotal data shows that old banks have been challenged by new market entrants, led by more open-minded managers with innovative credit packages that are particularly suited to SMMEs. As a consequence, the old banks have lowered their credit restrictions and requirements, and they now finance small enterprises more than previously. Continued efforts to offer various credit products to the private sector may promote private sector investments, encourage economic diversification, increase productivity, income and employment, thus alleviating poverty. Financial integration promotes access to finance through technological innovations, which drive economic growth in Botswana.

8.5 Policy Implications

This study's results have several policy implications as described and detailed below.

(1) Financial integration should be understood as a phenomenon with mixed outcomes that depend largely on an individual country's economic conditions. Even though regional financial integration is expected to enhance the economic growth of member states, Botswana should continue to develop and strengthen its rule of law, governance, political landscape, labour force and institutions in order to increase the country's absorption capacity. The country should uphold

its trade openness and liberalisation policy to promote the international relationships necessary for increasing market opportunities and enhancing profitable investments.

(2) The country's financial market development should be encouraged since it significantly drives economic growth. Nonetheless, there is a need to reassess the local financial market operations and identify impediments and operations that do not promote resource allocation to the private sector. Adequate private sector funding is necessary to sustain the country's ongoing efforts in economic diversification and citizen empowerment. Financial markets should help to finance local economic projects and therefore the country's financial flow channels should be open enough to transfer savings into investments, rather than accumulating deposits. Moreover, bank deposits are home-biased; there is need for banks to find strategies that may attract more foreign deposits to build a bigger resource pool from which the needy private sector can be funded.

(3) Botswana's economy benefits from its stock market growth, therefore the country should continue to develop its capital market to achieve international standards and attract more investors. Specifically, the country should continue to strengthen its current strategies to enable significant contributions from equity turnover. Market capitalisation determines productivity but is not yet sufficient to influence growth significantly. There is a need therefore to increase market depth and breadth through the introduction of new securities, more strategic public awareness campaigns and international marketing of investment opportunities available at the local exchange. Botswana should devise strategies to encourage bond market trading in order to overcome the existing illiquidity problem in this particular sector of the local capital market. The ongoing privatisation strategy should be encouraged since it might help to increase local bond listings, offer new investment opportunities, diversify the economy and empower citizens. Poor trading, especially in privately listed bonds, does not promote resource allocation and may compromise productive investments that require long-term financing.

(4) Botswana should continue to strengthen its institutions to achieve required thresholds in FDI and portfolio flows that can significantly impact on capital market development. Nonetheless, there is a need for the country to reassess the contribution of FDIs and portfolio flows to the

larger economy because there seems to be a concentration of capital into the mining industry. Foreign flows directed towards extractive businesses are often seen as providing few rewards to citizens, as compared to foreign investments in the manufacturing industry. Moreover, economic over-dependence on the mining sector has proven to be risky in times of financial crises. Authorities may need to strategically and deliberately market profitable non-mining private sector projects to foreign investors. Thus the country should apply a selective approach to foreign investments since it is not guaranteed that every FDI will benefit its citizens. Investment diversification away from minerals may ensure local economic growth stability in the long-term.

(5) Financial access by the private sector in Botswana can be empirically measured using availability and accessibility of financial innovations. The country should continue to encourage investments into financial innovations since they promote economic growth. Internet connectivity should be made affordable to small enterprises, ordinary citizens and rural dwellers, since financial innovations are internet-based and a lack of connectivity may imply financial exclusion of the affected communities.

(6) Botswana should be more open, receptive and adaptive to the financial integration element of technological and skills transfer since access to finance in the country is enhanced by such knowledge. Various business innovations aimed at increasing private sector funding should also be embraced by local financiers in order to grow and support private sector productivity. Financial depth with less innovative private sector funding packages might explain the prevailing local scenario of a profitable financial market with financially-starved enterprises. Thus, financial institutions in the country require open-minded, visionary management that can compete in this technological era and improve intermediation services to enhance access to finance by the private sector. Benchmarking private sector funding innovations against other similar and more developed economies might also assist Botswana in improving resource distribution to the local private sector.

(7) The private sector should build absorption capacity that will enable it to benefit from financial integration. Entrepreneurs should be aware of and be informed about financial market activities, FDIs and other business opportunities that arise from integration agreements and seek

to align their businesses accordingly. Furthermore, the local private sector should be abreast of new technological developments and integrate their business systems to financial market innovations.

(8) Finally, Botswana should re-evaluate its financial integration policies and reforms and seek more opportunities to benefit from both regional and international financial integration.

8.6 Study Limitations

Like other research work, this study is not without limitations caused by both internal and external factors beyond the control of the researcher. Such limitations might have influenced the research outcomes to some extent.

First, there were some issues with data, as follows: (a) the limited data available on regional developments has led to aggregate analysis, which tends to generalise results at the national level and does not interrogate activities at the regional level - cross-section analysis was preferred; (b) the short period data available on financial access and capital market development might have affected the related empirical analysis; (c) the data on financial access was not consolidated and sothe study collected data from various resources, hence the quality of the data might have been compromised and affected the results; and (d) inadequate regional data on financial integration led the study to focus only on Botswana. Secondly, the lack of previous empirical analysis on financial access in the country hindered comparison and further interrogation of the results. Lastly, the empirical analysis was informed by secondary data and, as a result, some important primary data could have been missed, which might have affected the conclusions of this study.

8.7 Possible Areas for Future Research

This study implies that financial integration has even more potential to benefit economic growth in Botswana if financial institutions become more innovative and achieve required thresholds. Four areas of future research are suggested, as follows.

(1) Thorough investigation of the local financial market structure and its relationship to financial integration is necessary. Such research may explore whether the country's financial institutions are integrated amongst themselves, since standalone institutions might not promote the efficient resource allocation necessary for sustainable economic growth.

(2) The current problem of bond market illiquidity needs to be addressed; a study investigating causes of the poor turnover and possible solutions should be carried out. Results from such a study may help inform policy-makers on capital market development.

(3) Research investigating feedback between bank lending and debt market in relation to private sector investments is necessary to help establish private sector access to finance in Botswana.

(4) Lastly, cross-section research on financial access in Botswana may establish the extent of financial access by enterprises country-wide, especially among small and rural-based firms. Such research may also help to build a consolidated database on financial innovations available in the country.

In conclusion, this study achievs its objectives. Unlike previous research that concluded that financial integration does not promote economic growth in Botswana, this study establishes an indirect, positive and significant impact from financial integration to growth through financial access (technological innovations). Thus the study results support financial integration theories that consider it as promoting technological and skills transfer from developed to less developed markets and thereby encouraging economic growth. Moreover, the research finds dual positive feedback between financial market development and growth. Capital market development also drives economic growth in Botswana. Financial integration's impact on capital market development is positive but not significant, implying the need to reach certain thresholds. Financial access does promote economic growth in the country. Nonetheless, the study establishes indications of insufficient financial access by the private sector in Botswana, as shown by non-significant private sector credit and illiquid debt market variables, as well as negative association of financial integration and bank investments into the private sector. The major policy implication drawn from this study is that in an era of financial integration,

Botswana needs to strengthen and further develop its financial institutions in order to increase the country's absorption and distribution capacity. This will enable sustainable economic growth.

APPENDICES

Appendix 1 Variables and sources of data table

Variables	Measurements	Database
Economic growth *(Y)*	Real GDP per capita growth (2000 prices and PPP adjusted)	WDI and PWT v6.2
Population growth *(n)*	Population growth *(n)*	IFS and PWT v6.2
Capital inflows and outflows as a share of GDP *(FLO)*	FDI flows/GDP	UNCTAD and IFS (lines 78bdd +78bed +78bfd +78bgd)
Capital inflows as a share of GDP*(IFLO)*	FDI inflows / GDP	UNCTAD and IFS (lines 78bed and 78bgd)
International financial integration *(IFIA)*	Aggregate stock of assets and liabilities as a share of GDP; $IFIGDP_{it} = (FA_{it} + FL_{it}) / GDP_{it}$	LMF 2006
International financial integration *(IFIB)*	Stock of liabilities as a share of GDP $(FL_{it}) / GDP_{it}$	LMF 2006
Human capital (HC)	Enrolment ratio at secondary school level	WDI
Economic Freedom *(EF)*	Index for political and economic freedom	EFWD, FH 2004 and FI 2006
Inflation *(INF)*	Consumption index (CPI) annual log difference	IFS (line 64)
Trade openness *(TO)*	Exports + Imports/GDP	WDI
Investments *(INV)*	Gross domestic fixed capital formation/GDP	WDI
Liquid liabilities *(LLY)*	Liquid liabilities as a share of GDP $\frac{\left[LLY_t / CPI_{et} + LLY_{t-1} / CPI_{e(t-1)}\right] \times 0.5}{\left[GDP_t / CPI_{at}\right]}$ Where annual average is indicated by *a*, period of time is given by *t* and *e* is the period end	IFS (line 551, CPI – line 64 and GDP line-99b)
Bank deposits *(BKD)*	Bank deposits as a share of GDP $\frac{\left[BKD_t / CPI_{et} + BKD_{t-1} / CPI_{e(t-1)}\right] \times 0.5}{\left[GDP_t / CPI_{at}\right]}$ Where annual average is indicated by *a*, period of time is given by *t* and *e* is the period end	IFS (lines 22a-f, CPI-line 64 and GDP- line 99b
Government burden *(GB)*	GEX/GDP	WDI
Private sector credit *(PRVY)*	Private sector credit as a share of GDP $\frac{\left[PRVY_t / CPI_{et} + PRVY_{t-1} / CPI_{e(t-1)}\right] \times 0.5}{\left[GDP_t / CPI_{at}\right]}$ Where annual average is indicated by *a*, period of time is given by *t* and *e* is the period end	IFS (lines 32d, CPI-line 64 and GDP-line 99b
Market size (MS)	Market capitalisation share (*MCAP*)/GDP	BoB and BSE
Market capitalisation (*MCAP*)	total listed shares value (TLS)	BoB and BSE
Market liquidity (ML)	Total Value of shares traded (VLT)/GDP	BoB and BSE
Market turnover (MT)	Total Value of shares traded (VLT)/Market capitalisation (MCAP)	BoB and BSE

Automated teller machines *(ATMS)*	Number of automatic teller machines/Number of bank branches	BoB
Intermediation costs and physical structure *(MEDI)*	Number of bank branches /(Total loans + deposits)	BoB
Bankruptcy *(BKRU)*	Number of Bankruptcies	BoB
Loan commitments *(LOAN)*	Volume of loan commitments /total lending	BoB
Bank security investments *(BINV)*	Volume of bank investments /GDP	BoB
Technological innovation *(INNO)*	Number of automated teller machines	BoB

Appendix 2 Testing for a non-linear relationship by adding a square of financial integration variable in the regression

Economic Growth (y)	Model 1	Model 2	Model 3	Model 4
FI Indicator	FLO2	IFLO2	IFIA2	IFIB2
ECT	-0.210	-0.195	-0.747	-0.432
	(0.149)	(0.234)	(0.001)*	(0.018)**
D(Y(-1))	-0.477	-0.542	-0.335	-0.200
	(0.031)**	(0.021)**	(0.092)***	(0.234)
D(INV(-1))	1.741	1.528	1.358	0.125
	(0.101)***	(0.155)	(0.127)	(0.871)
D(HC(-1))	0.020	0.085	-0.124	-0.615
	(0.971)	(0.884)	(0.823)	(0.187)
D(GB(-1))	-0.799	-1.212	-2.199	-1.167
	(0.499)	(0.320)	(0.053)**	(0.245)
D(TO(-1))	0.455	0.389	-0.203	-0.302
	(0.198)	(0.288)	(0.611)	(0.339)
D(EF(-1))	6.871	7.023	5.028	8.854
	(0.202)	(0.211)	(0.311)	(0.045)**
D(FI(-1))	-0.695	-0.467	0.141	2.725
	(0.049)**	(0.239)	(0.467)	(0.000)*
D(FI2(-1))	-0.005	-0.016	0.002	-0.019
	(0.830)	(0.548)	(0.252)	(0.000)*
C	-0.467	-0.716	-0.489	1.558
	(0.827)	(0.750)	(0.802)	(0.374)
R-squared	0.597	0.561	0.658	0.750
Adjusted R-squared	0.452	0.402	0.535	0.660
F-statistic	4.112	3.544	5.344	8.330
Prob(F-statistic)	0.002	0.006	0.000	0.000
# of observations	37	37	37	37

Note: 1. *, ** and *** indicate significance at the 1%, 5% and 10% levels respectively.

2. The dependent variable is annual per capita real GDP growth.

3. FI2 is FI squared.

4. p-values are in ( )

Appendix 3 Economic relationship between capital market development and economic performance in Botswana**:** human capital variable used

	MS	ML
ECT_{t-1}	-1.383**	-1.330*
	[-2.631]	[-5.635]
D(Y(-1))	-0.584	-0.372
	[-1.687]	[-1.652]
D(GB(-1))	-4.156***	-3.220**
	[-1.812]	[-2.547]
D(CMD(-1))	0.076	22.392*
	[0.227]	[4.348]
D(HC(-1))	1.860**	0.230
	[2.221]	[0.588]
C	-5.405	-2.149
	[-1.715]	[-1.192]
R-squared	0.717	0.887
Adj. R-squared	0.608	0.844
F-statistic	6.586	20.445
Prob(F-statistic)	0.003	0.000
Obs.	21	21

Note: 1. *, ** and *** indicate significance at the 1%, 5% and 10% levels respectively.

2. Real per capita GDP growth is the dependent variable

3. t-statistics are in [ ]

Appendix 4 Results of a further regression that included the macroeconomic indicator of human capital

Dependent Variable (*y*)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	BINV	LOAN	BKRU	MEDI	ATMS	INNO
ECT	-0.938**	-0.766	-1.413)***	-1.795**	-0.318	-1.031**
	[-2.703]	[-1.624]	[-1.881]	[-2.429]	[-1.035]	[-2.548]
D(Y(-1))	0.072	-0.055	0.156	0.110	-0.470	0.139
	[0.161]	[-0.104]	[0.263]	[0.210]	[-0.955]	[0.269]
D(INV(-1))	6.123	2.072	2.243	4.516	1.503	3.312
	[1.546]	[0.527]	[0.553]	[0.943]	[0.334]	[0.823]
D(HC(-1))	-0.086	0.430	-0.121	-0.719	-0.022	-0.273
	[-0.091]	[0.400]	[-0.114]	[-0.534]	[-0.018]	[-0.270]
D(BINV(-1))	5.530	8.492	9.113	-3.835	9.854	0.165**
	[1.329]	[0.376]	[0.982]	[-0.544]	[1.089]	[2.122]
C	-0.944	-2.061	0.134	-1.353	-2.999	-4.376
	[-0.256]	[-0.498]	[0.032]	[-0.317]	[-0.552]	[-0.991]
R-squared	0.730	0.668	0.643	0.714	0.570	0.746
Adj. R-squared	0.580	0.483	0.444	0.555	0.331	0.605
F-statistic	4.869	3.615	3.239	4.495	2.388	5.282
Prob(F-statistic)	0.020	0.045	0.060	0.025	0.121	0.015
# Observation	17	17	17	17	17	17

Note: 1. *, ** and *** indicate significance at the 1%, 5% and 10% levels respectively.

2. Real per capita GDP growth is the dependent variable

3. t-statistics are in [ ]

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