Determinants of Financial Development in South Africa: The Role of Monetary Policy and Rule of Law

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ABSTRACT

The aim of the thesis is to investigate the determinants of financial development for the case of South Africa between the period of 1996-2017 by adopting quarterly data. Johansen Cointegration test results suggest that there is a long run relationship among financial development, monetary policy, foreign direct investments (FDI), stock market capitalization, economic growth, and rule of law. Fully modified ordinary least squares (FMOLS) regression results indicate that monetary policy, rule of law, economic growth, FDI, and stock market capitalization have positive impacts on financial development. Results of the thesis reveal that monetary policy, FDI, stock market capitalization, economic growth and rule of law are the long run determinants of financial development in South Africa. This thesis can be a guideline for other emerging countries to create effective policies around financial development.

Keywords: Financial development, rule of law, monetary policy, South Africa.

ÖZ

Bu tezin amacı 1996-2017 yılları arasında Güney Afrika'da üç aylık veriler kullanılarak finansal kalkınmanın belirleyicilerini incelemektir. Johansen eşbütünleşme testi sonuçları finansal gelişme, para politikası, doğrudan yabancı yatırımlar (DYY), borsa sermayesi, ekonomik büyüme ve hukukun üstünlüğü arasında uzun vadeli bir ilişki olduğunu göstermektedir. Tam düzeltilmiş en küçük kareler (FMOLS) regresyon sonuçları, para politikasının, hukukun üstünlüğünün, ekonomik büyümenin, DYY'nin ve borsa büyüklüğünün finansal kalkınma üzerinde olumlu etkileri olduğunu göstermektedir. Tezin sonuçları, para politikası, DYY, borsa kapitalizasyonu, ekonomik büyüme ve hukukun üstünlüğünün Güney Afrika'daki finansal kalkınmanın uzun vadeli belirleyicileri olduğunu ortaya koymaktadır. Bu tez, gelişmekte olan diğer ülkeler için finansal kalkınma konusunda etkili politikalar oluşturmak için bir rehber olabilir.

Anahtar Kelimeler: Finansal kalkınma, hukukun üstünlüğünü, para politikası, Güney Afrika.

DEDICATION

To my parents, siblings and grandmother

ACKNOWLEDGMENT

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LIST OF ABBREVIATIONS

ADF   Augmented Dickey Fuller

DCF   Domestic Credit by Financial sector

FD   Financial Development

FDI   Foreign Direct Investment

FMOLS   Fully Modified Ordinary Least Square

FRED   Federal Reserve Economic Data

GDP   Gross Domestic Product

IRR   Interest Rate spread

LAW   Rule of Law

PP   Phillips- Perron

SARB   South African Reserve Bank

WDI   World Development Indicator

WGI   World Governance Indicator

Chapter 1

INTRODUCTION

Financial development is a broad concept which entails the development of financial systems, financial institutions, and financial assets (Liu and Song, 2011). Financial development is related with improving functionality of the financial intermediary services and their effectiveness in easing transaction costs to enable smoother trade of goods and services (Choong and Chan, 2011; Öner, 2007; Arias and Wen, 1995). The World Bank emphasizes financial development being about overcoming "costs" incurred within a financial system. These costs include transaction costs and costs of acquiring information where reduction results in the emergence of financial markets and intermediaries.

Other studies use efficiency as a defining term for financial development (Choong and Chan, 2011; Öner, 2007). This approach is similar to the conclusions of several seminal studies. For instance, while researching the contribution of financial development in growth, Bagehot (1873) posited that large and efficient capital markets in England enhance and direct resource distribution towards investments that were deemed to be more productive. Another angle from which financial development can be viewed is through the perspective of financial liberalization policies and financial innovation (Öner, 2007). Also, some extant studies examine financial development from the perspective of bank profits, bank liquidity, as well as a number of non-performing loans (Maruta, 2019; Mlachila and Ouedraogo, 2019). Others view private

banking sector lending as one of the numerous indicators of financial development (Maruta, 2019; Mlachila and Ouedraogo, 2019).

Irrespective of the different approaches used in defining financial development in the extant literature, a consensus appears to exist across the board concerning the relevance of financial development. Financial development is looked at as a pivotal force in enhancing economic growth (Arias and Wen, 1995). A well-built financial sector leads to growth in technological inventions by reallocating resources from low growth industries to high growth industries (Ibrahim and Alagidede, 2018). A prominent attempt at elaborating on the mechanics of the causal relationship between fiscal progress and economic growth led to two models: demand and supply led (Patrick, 1966).

In the case of supply led, financial development results to economic growth while in demand led, high economic growth attracts more productive resources that leads to financial development (Patrick, 1966). Also some concluded that financial growth had a direct outcome on economic growth, while others found that financial development indirectly influenced (in a mediating manner) the effect of other variables (e.g., trade openness) on economic growth (Andreasen and Valenzuela, 2016; Shahbaz et al., 2017; Shahbaz et al., 2014; Shahbaz et al. 2013)

Furthermore, studies claim that financial development increases the quantity of money available for investment. thus, encouraging investments that lead to economic growth (Liu, 2011). With the increase in savings, financial development could provide a better buffer during economic shocks that can enhance economic stability. Since establishing

that financial development stimulates economic growth, certain scholars found that financial development contributed to the reduced gap between low-icome countries and high-income countries (Ranjbar and Rassekh,2017). On the other hand, there has been conflicting predictions on the effect of financial development on disparities. Some studies found that as financial markets develop, income inequality increases but as the economy develops and the financial structure is fully established, the distribution of income stabilizes (Greenwood and Jovanovic, 1990). Other scholars found that financial development tends to reduce gap between the rich and the poor in high middle- income countries only (Altunbas and Thornton, 2019).

There are other factors such as; transaction costs, information asymmetry, and moral hazard that financial development also contributes to. High levels of financial development lead to more financial intermediaries offering different services to customers. With increase in financial intermediaries, competition increases as well leading to reduction in transaction costs through economies of scale and specialization (Öner, 2007; Arias and Wen, 1995). Also, more financial intermediaries compete to reduce information asymmetry among their clients, thereby enabling these intermediaries to become better at screening good and bad credit risks (Öner, 2007). For instance, screening borrowers' assets to ascertain that they are eligible for loans as per their credit rating. Consequently, this reduction in information asymmetry also leads to a reduction in moral hazards, which encourages the development of expertise required to monitor the borrowers that financial institutions lend to (Öner, 2007). All in all, the position of the existing literature is that in addition to impacting economic growth, financial development also influences many other macroeconomic and financial variables.

Monetary policy is characterized as the means used by monetary authorities to impact the direction and speed of economic activities, including the level at which interest rates increase or decline (Friedman, 2000). The aim is for the monetary authorities to influence changes in macroeconomic factors (Bordo, 1999). In order to achieve these changes, the monetary authority uses different instruments. The main operating instrument is the short term interest rate for overnight loans (Clarida, 2002). The nominal interest rate policy instrument is used during inflation targeting regimes, where the main concern is price stability (Vinhado and Divino, 2019). Price stability then promotes economic growth (Zhang, Sun, and Tang, 2019).

The main objective of monetary policy is price stability. With financial development, the financial system becomes complicated, hence, needing stability which is offered by monetary policy. Monetary policy has added to the strength of the economy by enhancing the performance of the banking sector (Zaman, Arslan, Sohail, and Malik, 2014). This is by ensuring price stability which goes a long way to ensure the stability of the entire financial system from unforeseen shocks in the economy. However, some scholars contend that monetary policy could lead to the banking sector altering their risk appetites (Adrian and Shin, 2010). This happens when loose monetary policies are enforced which results in an increase in liquidity, as well as, it becomes an incentive for the banking sector to take up more risk (Rajan, 2005). Some researchers argue that monetary policy can improvement financial stability and financial development through inflation targeting (Woodford, 2012). Others view monetary policies like low inflation targets as boosters for financial development because Huybens and Smith (1999) observe that economies with high inflation experience low financial development.

It is unclear on the origins of the word "Rule of Law". However, the first record of the expression was by John Blount who translated it from Latin to English, the words in Latin were "Juris regula" and were translated to "Rewle of Lawe" according to the English spelling in 1500 (Fernandez, 2016). Studies argue that the definition of rule of law depends on the context as well as culture hence the definition is not the same internationally (Wang et al., 2019). Even though there is no specific definition of rule of law, it contains key features which include: equality before the law, impartiality of the law, government under the law as well as the respect for human rights (Gomes, 2017). Other authors define rule of law as the submission of all citizens to distinct laws (Gutmann and Voigt, 2018). In this thesis, rule of law is used as a indicator of government effectiveness. It is used as an measure of institutional quality that captures the judgement of people on the effectiveness of the judiciary and its enforcement on contracts (Yu, Beugelsdijk, and Haan, 2015).

Early scholars who assessed the determinants of financial development from the perspective of the rule of law focused on laws that protected shareholders as well as borrowers of funds (La Porta,et.al 1998). These laws are necessary to uphold the rights of shareholders and the working of the financial system (Fergusson, 2006). Failure to which the system could weaken leading to a drop in the stock market as was the Asian Crisis (Gazdar and Cherif, 2014). Most of the studies that analyze the importance of rule of law for financial development note that effective governance promotes financial development as it helps to allocate resources, specifically savings, efficiently (Eryigit, 2010).

Other intellectuals found that capital markets develop quicker in systems using common law rather than civil law (Horvath, Horvatova, and Siranova, 2017). With

evidence that countries using civil law, specifically the French civil law have the lowest investor protection as well as the least developed securities market (La Porta,et.al, 1997). Financial markets deal with the challenge of information asymmetry and moral hazard. Information asymmetry happens when one party in a transaction has greater material knowledge than another party. Rule of law enhances reduction of information asymmetry because laws are put in place to protect shareholders as well as creditors who would have otherwise lacked enough information on the loans they were partaking or the investment products purchased (Fergusson, 2006).

According to the IMF, FDI is taking up stake in businesses operating outside the investors' home country (Shah, 2016). Wurgler (2000) defines FDI, as an investor taking substantial control of business abroad. If the investor puts in 10% or more in the business, then it is termed as FDI. There are two ways in which an investor can invest abroad; by establishing a new firm or through mergers and acquisition (Desbordes and Wei, 2014). Many countries encourage FDI because they believe that employment is created by these multinational enterprises and it also enables technological transfer to the host country (Alfaro, et.al, 2010). FDI is believed to improve financial development in the host country (Sahin and Ege, 2015). The logic is that FDI helps develop financial markets (Levine, 1997). However, there are studies that see FDI as a negative aspect for financial development because FDI involves direct financing into the investment which could be interpreted as undermining financial markets (Desbordes and Wei, 2014).

Previous scholars have found a high correlation between stock market development and an efficient financial system (Demirguc-Kunt and Levine, 1996). Some scholars found that the size of the stock market had a positive correlation with development of

financial intermediaries. Furthermore, countries with international stock markets have larger financial systems than closed economies where their stock markets are not international (Demirguc-Kunt and Levine, 1996). Growth of the stock market stimulates financial development with diversification of investments as well as optimal allocation enhancing efficient capital allocation (Qamruzzaman and Wei, 2018). In addition, stock market growth adds to the innovation in the financial system through the inclusion of financial instruments in the capital market (Simiyu, 2014). Therefore, stock market growth is seen as a complementary to financial development.

South Africa being an emerging economy has had an upward trend in financial development from the early 1990s even though this has only been marked by one indicator which is the provision of credit by financial sector (Munyambiri and Odiambo, 2018). South Africa has witnessed impressive development of its financial sector compared to other countries in Africa. It has the oldest stock market in Sub-Saharan Africa (Allen, Otchere, and Senbet, 2011). The discovery of diamond mining propelled the growth of publicly listed companies which eventually led to the growth of stock market activities (Magombeyi and Odiambo, 2018). South Africa has the largest stock market by market capitalization in Sub Saharan Africa even though other African countries seem to be growing at a faster rate than South Africa's market (Allen, Otchere, and Senbet, 2011). In 1990, South Africa's stock market contributed a total of 123.19% of the GDP and it continues to grow as it is the 17th largest stock exchange in the world (Chee-Jiun and Ye, 2011). As for monetary policy, South Africa's monetary policy seems to have lost control over inflation because most it is cost driven (Meyer,et.al 2018). Other scholars noted that an increase in interest rates in South Africa did not lead to low inflation because of the influence of cost-push. South Africa's real interest rates are generally comparable with other countries but

their nominal interest rates are higher because the banks tend to demand high compensation for inflation. Considering that the thesis starts two years after South Africa's independence, it would be interesting to empirically investigate whether rule of law has had an influence on financial development. This is because before independence, rule of law had been completely disregarded and after independence, South Africa made strides to improve their judiciary and uphold rule of law even when crime continues to undermine it. In the past, South Africa attracted very little FDI because of political sanctions during the apartheid era (Arvanitis, 2005). FDI in South Africa is largely influenced by the export sector which is made up of gold or coal even though other sectors like the financial sector are gaining momentum (Sunde, 2017). South Africa has made attempts to boost FDI by entering into trade treaties within the region that is SADC as well as outside Africa. However, these efforts have been undermined by South Africa's volatile exchange rate as well as high crimate rate. Its financial sector has weathered global economic trurmoil even though it faces liquidity risk because of excess corporate deposits resulting from restrictions of cash outflows of corporates. Currently, South Africa has dominance in the banking sector for the Southern African region (Khomo and Aziakpono, 2016).

Over the years, there have been studies on elements of financial development in different countries. Not much has been done on South Africa as most studies focus on the region itself, that is, Southern of Africa. The aim of the thesis is to establish the determinants of financial development in South Africa in particular to assess the impact of monetary policy on financial development and relate the findings to policy outlines and recommendations. To this aim, this thesis uses time series analysis on quarterly data that can be adopted for an emerging economy that is a pioneer for economic growth in the continent of Africa.

The thesis contributes to the existing literature of financial development by establishing whether rule of law, monetary policy, FDI, and stock market growth have an impact on financial development. The period is from 1996 to 2017 which is the period after independence or post-apartheid regime.

In Africa specifically, improvement in the financial system is seen to be a factor that improves living standards for many. The inclusion of monetary policy as a variable makes the thesis unique because most researchers tend to focus on effect of financial development on monetary policy instead of impact of monetary policy on financial development which is the center of the thesis.

The thesis tests the following objectives to achieve its objectives:
   i.   Rule of law has a positive effect on financial development in South Africa.
   ii. Monetary policy has a positive effect on financial development in South Africa.
   iii. Economic growth has a positive effect on financial development in South Africa.
   iv. FDI has a positive effect on financial development in South Africa.
   v.   Stock market capitalization has a positive effect on financial development in South Africa.

Chapter 2

LITERATURE REVIEW

In the fourteenth and fifteenth century, Italian city-states of Genoa and Venice had developed basic financial markets which were later improved in the Dutch Republic (Atack and Neal, 2009). In fact, the Dutch Republic in Netherlands is recognized for having been where the first financial revolution took place in the 16th Century because of its strategic position at the North Sea (Van de Wee,2013). At the time, Amsterdam was attracting immigrants for trade purposes because it was a city of ethnic tolerance and so immigrants from other parts of Europe and the Eastern Mediterranean were drawn from it (Rousseau, 2002). It was at this time that the world's first modern securities market developed because Amsterdam merchants had started pooling resources together to sponsor individual voyages and they would later divide the profit they received (Rousseau, 2002). Before this, in the fourteenth and fifteenth century, Italian city-states of Genoa and Venice had developed basic financial markets which were later improved in the Dutch Republic (Atack and Neal, 2009).

Some of the elements of modern financial system grew during the early stages of entrepreneurial initiatives, the merchants of the medieval periods and the goldsmiths of the 17th Century in London (Fohlin, 2014). The financial systems at the time were characterized by activities such as payment clearing and settling, capital pooling, information aggregation, risk management, and asset pricing (Fohlin, 2014). As industrialization continued in England, so did financial system as they were seen to

progress together. However, research has shown that development of the financial system does not happen uniformly overtime given that most states were more financially developed in 1913 than they were in 1980 and only recently are they surpassing the 1913 level (Rajan and Zingales, 2003). Perhaps this could be as a result of different episodes that have been catastrophic therefore re-shaping the financial system.

This thesis dwells on the demand-following phenomenon of economic growth and financial development. Some researchers like Robinson (1952) observed that the desire for efficient financial services was created by economic growth. Ben Salem and Trabelsi (2012) adding that economic growth helps generate the necessary funds to be saved in financial institutions. Patrick (1966) emphasized that economies that lack financial development are a result of lack of demand for those services because there are no funds which could have been generated by a high rate of GDP. On the other hand, there are those that have found bidirectional causality between real GDP and financial development (Ben Salem and Trabelsi, 2012). Most scholars are in agreement that irrespective of the direction of causality between the two variables, there is a strong positive correlation (De Gregorio and Guidotti, 1995).

Monetary policy influences price levels through distinct channels like interest rate channel, bank loan channel, risk taking channel and asset price channels (Mishkin, 1995). Even though financial development is influenced by different variables, numerous studies over the years have highlighted that monetary policy is a key element in determining financial development by influencing the accessibility of funds (Kashyap and Stein, 1995). When an expansionary monetary policy is adopted, it increases the amount of funds available for borrowing, hence, lowering the cost of

financing which is in essence what financial development is about – that is lowering costs in the financial sector (Sanfilippo, et.al 2018). On the other hand, when using the bank loan channel for contractionary measures, bank enhanced credits decrease because of increase in costs of bank borrowing (Walsh, 2017).

However, the impact of monetary policy on financial development varies with different economies because the level of development varies (Carranza, et.al 2010). Some authors argue that for developing countries, the impact of monetary policy using the bank loan channel is more because these countries find it more difficult to raise money from other sources besides bank loans hence they monetary policy's impact (Archer 2006). However, some researchers oppose that argument by stating that in economies with less financial development, bank loans may be restricted as capital is scarce and many people don't bank their money (mattress banking) (Freedman and Click, 2006). Whereas the effect of monetary policy on fairly developed financial system is seen to be high because in such an economy, many people have access to funds (Oechslin, 2009). In addition, such economies have banks dominating the financial system. However, the effect of monetary policy on financial development is undermined by presence of a variety of financial systems because options to gain funds increase (Rybczynski, 1997).

In addition, certain scholars observe that effect of monetary policy on financial development depends on the strength of the banks in the economy, that is, their size, level of liquidation, and their balance sheet (Altunbas, Gambacorta, and Marques-Ibanez, 2010). Altunbas, Binici, and Gambacorta (2018) noted that the role of monetary policy is to offer resilience in the financial system and control the financial booms and bust.

Research on the role of rule of law in financial development has been of interest to many specifically the legal environment aspect and its effect on shareholders' rights (Huang, 2010). La Porta, Lopez-de-Silanes, and Vishny (1998) argued that the treatment of creditors and shareholders highly depended on the laws in place to protect them. Some authors have found that colonizers played a role on the kind of legal traditions adapted by their colonies in terms of protecting the rights of stockholders and creditors (Demirguc-Kunt and Levine, 1996). It followed that countries practicing common law cared more about rights of individual property while those practicing French civil law cared more for the rights of the country as a whole (La Porta, 1997). Furthermore, firms operating in common law economies had low working capital and so relied on banks for financing while firms operating in civil law economies had more working capital and relied on retained earnings as a source of financing their operations and investments (Troilo, Walkup, Abe, and Lee, 2019).

Other scholars pointed out that regulation on the financial system had substantial effect on the financial development of those economies (Mayer and Sussman, 2001). There are those that find the relationship between rule of law and financial development is positive in the event that the proxy used for financial development is stock market capitalization (Horváth, Horvatova, and Siranova, 2017). In addition, scholars have found that effective rule of law results to lower lending rates because better institutions means lower risk for banks to lend to different creditors (Demirguc-Kunt and Huizinga.H, 1999).

Furthermore, better rule of law has been associated with more financial stability (Horváth, Horvatova, and Siranova, 2017). This could be because, if the quality of contract enforcement is high, then chances of violating the contract agreement is low,

thus, avoiding actions that can cause financial instability. Put in another way, stronger regulations lead to less expropriation and more of investments (Acemoglu and Johnson, 2005). Effective rule of law has been seen to give entrepreneurs the confidence they need to surrender their money to financial institutions or give their funds in exchange for stocks in the market (Cherif and Dreger, 2016). Stronger rule of law is seen to encourage external financing from banks instead of companies relying on their retained earnings (Troilo, Walkup, Abe, and Lee, 2019). On the other hand, (Wurgler,2000) found that investors protection makes capital allocation more efficient. However, some argue that investor protection could only result to protecting the elite of the society, therefore, fail to have effect on financial depth (Perotti and Volpin, 2007). In societies where legal law is undermined, it becomes difficult to raise funds (Rajan and Zingales, 2003).

The world stock market has been increasing with the equity capitalization growing from $2 trillion to $10 trillion in between 1982 and 1993 (Levine and Demirguc-Kent, 1996). Stock market growth or lack of it has serious implications on financial development. For example, in cases where stock market's growth has not been sustainable and led to a crash, an impact on financial development is felt because of the sudden decline in liquidity causing a bank crisis.

Development of stock markets promotes a decrease in trading costs that helps boost financial growth, making the selling and acquisition of assets simple for investors to regularly purchase (Bencivenga, Smith, and Starr, 1996). Some scholars see the stock market crash as a trigger for financial development through financial innovation so as to prevent a crash in the future (Simiyu, 2014).

Some scholars find that stock market growth is a representation of the market based financial development and the other form of financial development being bank- based (Nyasha and Odhiambo, 2016). Most of the studies refer to bank-based financial development when they talk of financial development in general because banks are known to dominate the financial system particularly in developing countries. Few scholars have studied the relationship between the two but instead, most scholars have focused on how stock market growth and financial development affect economic growth (Adjasi and Biekpe, 2006).

Chapter 3

SOUTH AFRICA

South Africa's financial system was created in the 1800s as a result of the mining boom at the time (Gondo, 2009). In fact, it is one of the second oldest after Egypt in the continent (Fourie, Falkena, et al., 1992). Before South Africa's independence, their economy was basically a closed one that struggled with financial liberalization (Muyambiri and Odhiambo, 2014). The opening of the economy was marked by the de Kock commission report which was to do away with credit and interest rate ceiling as well as reduction in the cash expected in the reserve.

After South Africa's independence, many households that were alienated because of apartheid were able to take up credit therefore growing the credit-provision market (Hanival and Maia, 2008). However, this led to a drop in the household savings as many institutions had been encouraging borrowing instead. Currently, South Africa is an emerging market whose financial development has had an upward trend especially in providing credit by the financial sector (Muyambiri and Odhiambo, 2018). Specifically, domestic credit and private credit moved from 100% level to 120% level in 2014. The South African financial sector is comprised of South African Reserve Bank, insurance companies, commercial banks, micro-finance banks, unit trusts and post office saving bank (Nyasha and Odhiambo, 2016). Furthermore, South Africa's stock market is considered to be one of the most developed among emerging market

economies. The financial system in South Africa is highly regulated to ensure that banks lend to households responsibly (Erasmus, 2014).

Financial development in South Africa has shown an upward movement according to some scholars (Muyambiri and Odhiambo, 2018). South Africa's financial system is the most developed among countries in the sub-Saharan Africa and is closely related to the system in the United Kingdom. South Africa is focused on consistently improving its financial development which is evidenced by the signing of a $4.6 million-donor Trust program called South Africa Financial Sector Development and Reform Program (FSDRP). The aim of the program is to improve financial stability, as well as, increase access of financial services to the groups that lack access.

The system consists of the Central Bank known as South African Reserve Bank and depository institutions (Allen, Otchere, and Senbet, 2011). SARB is managed by a board of fourteen directors; half of them appointed by the government while the others are appointed by the retail banks. The Banking sector is largely dominated by the commercial banks with the top four being ABSA, Standard Bank, Nedbank and FirstRand Bank. South Africa's banking sector is well capitalized because of the crucial role that it plays for foreign investors who would like to access the entire African market while being situated in South Africa. In addition, the banking sector in South Africa diversifies to different African countries like Mozambique, Namibia, Botswana, and Zimbabwe (Nyasha and Odhiambo, 2016).

The role of SARB is price stability, to provide liquidity to depository institutions, make and issue South African Rand through its subsidiary. Even though South African's banking system is the most developed in the emerging markets, its service costs are

very high, and so it cannot be considered as effective in terms of access to the poor in South Africa. Notably, South Africa has been making steps towards digitalizing the banking system so as to ensure financial inclusion for all South Africans and a good example is Pay2 which is a digital banking application launched in South Africa recently (Gondo, 2009).

In addition, insurance sector is a major market player in the South African market with both life insurance and general insurance having large shares of investments. The services offered by the insurance companies include, property, life, health, casualty, and auto (Allen, Otchere, and Senbet, 2011). Some of the major insurance companies include Sanlam, Liberty, Old Mutual, Discovery, and Momentum Metropolitan Holdings Limited (MMI). The sector particularly benefits because of the social epidemics and diseases that have affected South Africa. In particular, the HIV and Aids epidemic affected a large population in South Africa. As for social epidemics, South Africa has a considerable amount of crime because of low police capacity even though funds were set aside to fight crime.

South Africa's stock exchange is the 17th largest by market capitalization. The stock market is Johannesburg Stock Exchange (JSE) which is also the largest in Africa. Some of the things that trade are stocks, futures, and currency derivatives (Miyajima and Yetman, 2018). JSE is responsible in ensuring that public listed companies comply with the stated rules and regulations and that they meet the disclosure requirements. Common law in South Africa is the Roman-Dutch law which was adopted as a result of colonial occupation at the cape. However, due to change of power to the British rulers, English law has had influence specifically in Criminal law, company law, and constitutional law. During the period of apartheid in South Africa, the government

completely disregarded the rule of law. Even after apartheid, South Africa still struggles with an ineffective judicial system, intimidation of citizens by those in power, as well as, equality within the law of the land. Furthermore, access to justice is hindered by the high costs of lawyers, provincial government's failure to comply with court orders without consequences. This is not to say that there is no difference between the apartheid era and post-apartheid. South Africa has achieved a lot in terms of their justice system and abolishing of the racist laws.

SARB's main role is to protect the value of the rand so as to achieve a sustainable economic growth for South Africa. South Africa's constitution guarantees the independence of SARB. The monetary committee sets monetary policy. This allows for smoothening of interest rates during different cycles. There have been different types of monetary policy regimes in South Africa since 1960s (Aron and Muellbauer, 2000). The first regime which ran till 1980s was on the control of interest rates and provision of credit. The second regime which was around 1985 was based on a cash reserve system. The third regime focused on more flexible monetary targets while the fourth was characterized by openness of the economy through financial liberalization.

South Africa is the most attractive country for investment in the continent. After South Africa's independence in 1994, the government opened up the economy of South Africa to allow for integration with other economies (National Development Plan, 2013). This was done in two stages: one being allowing the exchange rate to float and the second one was creating a conducive environment that attracted foreign investors (Munyambiri and Odhiambo, 2018). According to the 2018 World Investment Report, South Africa's FDI has declined largely because of decrease in domestic demand. The major foreign investors in South Africa are from the Netherlands, Luxemburg, and the

United Kingdom (Rossouw and Rossouw, 2017). Some of the major sectors that have benefitted from FDI are financial, insurance, and real estate businesses at 40.1%, mining at 15.9%, hospitality at 4%, and manufacturing at 28.9% (Rossouw and Rossouw, 2017).

JSE was formed in 1887 to provide a trading place for financial companies and mining companies in South Africa (Hassan, 2013). It is currently the 19th largest stock exchange in the world by market capitalization and it's the largest in Africa (Johannesburg Stock Exchange, 2013). JSE allows trade of currency, equity, commodity, (which is mostly agriculture) and interest rate derivatives (Hassan, 2013). The value of the securities market transaction in South Africa increased from 3% in 1979 to 93% in 2014 (Mitra, 2017). Compared to the rest of Africa, South Africa's stock market is more dependent on the stock market in advanced economies even though it still does not have a high risk of spill over from advanced markets (Mensah and Alagidede, 2017). South Africa is United Kingdom's largest trading partner.

Financial development in South Africa is highly bank-based instead of market-centered because the commercial banks in the country are more developed than the stock market even though it is the largest in Africa (Andrianaivo and Yartey, 2010). There are studies that found that financial development in South Africa is determined by trade openness, government intervention, and human capital; noting that human capital and trade openness are substitutes (Ibrahim and Sare, 2018). As a result, increasing either of the two has a positive impact on financial development Svaleryd and Vlachos (2002) add that trade openness enhances financial development because it increases exposure to external risks which leads to increase in demand of finance to curb the risk.

In addition, there are studies that have found that legal origin plays a role in determining financial development noting that Southern Africa's financial sector is more developed because of their practice of common law instead of the civil law that is found in French speaking nations (Ibrahim and Alagidede, 2017). In addition, Anchang (2016) found that democracy contributes to financial development, noting that South Africa's financial development is boosted by the strong democratic institutions whereas countries around South Africa with weak democratic institutions do not show any positive effect for financial development. Democratic institutions ensure that the right policies are implemented to curb operation of black markets that trade in foreign exchange hence protecting the intermediation role of banks (Glaeser,et.al. 2004). Apart from democracy and legal origin, there are scholars who found that FDI, school enrollment, inflation, and population had an effect on financial development (Anchang, 2016).

Chapter 4

METHODOLOGY

4.1 Introduction

This chapter aims to put a quantitative framework on the determinants of financial development in South Africa with specific interest on monetary policy and rule of law. Furthermore, it provides a description of the method used when executing the thesis.

4.2 Sample selection

The target population for this thesis is South Africa. This is because South Africa having the largest economy in the continent plays a pivotal role in influencing development of the entire continent via foreign direct investment. The thesis is from 1996 to 2017 and this was limited by the availability of data. To be precise, the proxy for rule of law had not existed prior so it was not possible to study pre-apartheid regime.

4.3 Data Selection

The data was obtained from the World Bank Database and the thesis adopted quarterly data.

4.4 Definition of Variables

Table 1: Definition of variables

Name	Indicator name	Measure	Source
FD	Domestic credit by financial sector (% of GDP)	Domestic credit being a measure that has been used in previous studies (Levine, 2003). It indicates the loans provided by financial institutions in South Africa	World Bank WDI
Economic Growth	GDP (constant 2010 US$)	Real GDP	World Bank WDI
Monetary Policy	Interest rate spread	Lending rate minus deposit rate	World Bank WDI
Rule of Law	Government effectiveness	Indicates the quality and efficiency of government policies	World Bank WGI
Stock market growth	Market capitalization of listed domestic companies	Stock market capitalization (% of GDP)	FRED Economic Data
FDI	Net inflows as a percentage of GDP	Foreign direct investment inflows (% of GDP)	World Bank WDI

Note: WDI= World development indicators, WGI= Worldwide Governance indicators, FRED= Federal Reserve Economic Data

4.5 Methodology and the model

This is based on thesis objectives with the variables that have been described above. The equation is as follows:

$$LNDCF_t = \beta_0 + \beta_1 LNGDP_t + \beta_2 SPREAD_t + \beta_3 LAW_t + \beta_4 LNCAP_t +$$

$$\beta_5 LNFDI_t + \varepsilon_t \tag{1}$$

β_0 is the constant parameter while $\beta_1, \beta_2, \dots \beta_5$ are the coefficients of each variable respectively and the stochastic error term is represented by ε_t. The natural log of the variables is taken to harmonize the unit of measurement, de-trend the series and control for the effect of outliers in the data. Equation 1 is an indication of the empirical model estimated in this paper using Fully Modified Ordinary Least Square (FMOLS).

The thesis carried out several time series econometric techniques that will be discussed below:

4.5.1 Unit Root Tests (ADF and PP tests)

In time series, unit root testing is done to test for stationarity or non-stationarity properties of the data. This is done by different tests like:

- Augmented Dicker-Fuller (ADF) (1979)

- Phillips-Perron (1988)

- Ng-Perron (2001)

- Residual Augmented Dicker-Fuller (2014)

For these tests, the null hypothesis is the existence of a unit root while the alternative hypothesis tests for no unit root. Presence of unit root indicates non-stationarity and therefore its variance is infinite while lack of unit root indicates that the series follows a deterministic path and tends to have a finite variance that is not dependent on time (Libanio, 2005). Unit root test is used for macroeconomic variables like GDP, real GNP, CPI, stock prices, dividends, and interest rates (Phillips and Perron, 1988). Hence the thesis applies unit root methods for the macro-variables available.

The reason the thesis carried out the test for unit root was because the presence or absence of it has implications on the regression. One of the implications of the unit root hypotheses is that in case of a random shock, the impact caused on the system is permanent (Perron, 1989). In addition, presence of a unit root implies that the mean and variances are not constant, hence violating properties of a regression equation (Kara, Azman, and Kodalak, 2018). This could cause non-stationary independent variables to have misleading linear relationships. Brooks (2004) states that R^2 may be high even though the independent variables are not even related.

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The thesis used ADF and PP tests. The difference between the two is that ADF uses parametric approach and lags of independent variables to get rid of autocorrelation and PP test uses nonparametric approach and puts emphasize on variance errors.

4.5.2 Augmented Dickey Fuller (ADF)

ADF was proposed by Dickey and Fuller (1981) to establish the stationary properties of time series variables. In view of time series Y_t, taking ADF test in its basic form, the coefficient on Y_{t-1} in a Y_t regression on a constant and Y_{t-1} is equal to one (Leybourne, 1995). The general equation is shown below:

$$\Delta y_t = \alpha y_{t-1} + \sum_{j=1}^{p} \beta_j \Delta y_{t-j} + \delta + \gamma t + \mu_t \tag{2}$$

In this case, Y_t is the time series variable to be tested. The variables in the thesis are financial development, monetary policy, FDI, stock market growth, rule of law, and economic growth. Δ denotes difference operator and μ_t is the error term. The idea for the addition of lagged values is to correct for serial correlation.

For the ADF test, the presence of a trend indicates that the null hypothesis is a unit root (H_0: $\alpha = 0$) while the alternative hypothesis is that the series Y_t has no unit root (Harris,1992). The test monitors α's negativity based on its t-ratio regression (Cheung and Lai, 1995). Hence if it is greater than the critical values, the null hypothesis can be rejected meaning that it is stationary. If not, then fail to reject the null hypothesis meaning that it is non-stationary.

4.5.3 Phillips-Perron (PP) unit root tests

The thesis continues with testing for unit root using a second non-parametric test which not only incorporates serial correlation but also heteroscedasticity in the error term using the model specified below:

$$Y_t = \alpha + \rho y_{t-1} + \varepsilon_t \tag{3}$$

The following equation demonstrates how the serial and heteroscedasticity is corrected:

$$Z_t = \sqrt{\frac{\hat{\sigma}^2}{\hat{\lambda}^2}} t_{\hat{\delta}} - \frac{1}{2}\left(\frac{\hat{\lambda}^2 - \hat{\sigma}^2}{\hat{\lambda}^2}\right)\left(\frac{n(s.e.(\hat{\delta}))}{\hat{\sigma}^2}\right) \tag{4}$$

$$Z_\delta = n\hat{\delta} - \frac{1}{2} \frac{n^2\left(s.e.(\hat{\hat{\delta}})\right)}{\hat{\sigma}^2}\left(\hat{\lambda}^2 - \hat{\sigma}^2\right) \tag{5}$$

The variance parameters, $\hat{\lambda}^2$ and $\hat{\sigma}^2$, are estimated using the following formulas

$$\sigma^2 = \lim_{n \to \infty} n^{-1} \sum_{t=1}^{Tn} E\left[a_t^2\right] \tag{6}$$

$$\lambda^2 = \lim_{n \to \infty} \sum_{t=1}^{n} E\left[\frac{1}{n}\sum_{t=1}^{n} a_t^2\right] \tag{7}$$

The null hypothesis shows unit root (H_0: $\delta=0$) while the alternative hypothesis is stationary (H_1: $\delta \neq 0$).

4.5.4 Johansen Cointegration Test

Following the stationarity test, the thesis established whether there was a long run relationship between the non-stationary economic variables (Christopoulos and Tsionas, 2004). For example, if GDP and FD are non-stationary, but there exists a vector β such that:

$$\beta' GDP_t = (\beta_1 \beta_2)\left(\frac{gdp}{fd}\right) = \beta_1 gdp + \beta_2 fd \sim I(0) \tag{8}$$

Then, GDP and FD are cointegrated with cointegration vector β. The above equation can be interpreted as, if the series is only stationary after differencing and their linear combination is also stationary, and then there exists cointegration among the variables (Cheung and Lai, 1993). The thesis carried out a test using Johansen procedure (Johansen,1988). This enabled it to obtain more than a single cointegrating relationship. Testing for cointegration requires a VAR approach as shown below:

$$x_t = A_1 x_{t-1} + u_t \tag{9}$$

$$\Delta x_t = (A_1 - I)x_{t-1} + u_t \tag{10}$$

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$$\Delta x_t = \pi x_{t-1} + u_t \tag{11}$$

Johansen procedure produced two test statistics that is trace test and maximal eigenvalue test whose formula is shown below:

$$\lambda_{trace}(r) = -T \sum_{i=r+1}^{n} ln(1 - \hat{\lambda}_i) \tag{12}$$

$$\lambda_{max}(r, r+1) = -T \, ln(1 - \hat{\lambda}_{r+1}) \tag{13}$$

The trace test is a joint test whose null hypothesis is that the number of cointegrating vectors are less than or equal to r while the alternative hypothesis is that they are more than r. As for the maximal eigenvalue test, it conducts separate tests on each eigenvalue. The null hypothesis in this case is that there are r cointegrating vectors available while the alternative hypothesis is that there are (r+1) present. Therefore, reject the null hypothesis when level of significance is 5% and value of Trace and Max statistics is greater than 5%.

4.5.5 Estimation of Long run coefficients (FMOLS regression)

After establishing that the variables in question have a long run relationship, then the thesis ran the Fully Modified OLS model. The model is preferred to OLS because it took care of the small sample bias and the endogeneity bias. Phillips and Hansen (1990) are credited for coming up with the FMOLS method. If the thesis was to use normal OLS, it would result in misleading results between the two variables that are non-stationary (Dursun and Ogunleye, 2016).

The FMOLS estimator is shown below:

$$\hat{\theta}_{fmols} = \begin{bmatrix} \hat{\beta} \\ \hat{\gamma}_1 \end{bmatrix} = \left(\sum_{t=2}^{T} Z_t^* Z_t^{*'} \right)^{-1} \sum_{t=2}^{T} Z_t^* y_t^+ - T \begin{bmatrix} \lambda_{12}^{+'} \\ 0 \end{bmatrix} \tag{14}$$

Where $Z_t = (X_t', D_t')'$.

The key to FMOLS estimation is the construction of a long run covariance matrix estimators Ω and Λ (Mehmood and Shahid, 2014).

4.5.6 Granger causality test

If the variables had been found to be cointegrated, there would have been high chances of causality as well (Apergis and Payne, 2009). Granger causality helps in forecasting for time series. The equations comprise a VAR because the thesis has more than one variable. Using a matrix notion, the first order VAR of two variables would be:

$$Yt = \alpha_1 + \varphi_{11}Y_{t-1} + \varphi_{12}X_{t-1} + \epsilon_{1t} \tag{15}$$

$$Xt = \alpha_2 + \varphi_{21}Y_{t-1} + \varphi_{22}X_{t-1} + \epsilon_{2t} \tag{16}$$

In this case ϵ_{1t} and ϵ_{2t} are white noise processes. If $\varphi_{12} \neq 0$, meaning X Granger causes Y, then the system can be written in matrix form as shown below:

$$\begin{pmatrix} Y_t \\ X_t \end{pmatrix} = \begin{pmatrix} \alpha_1 \\ \alpha_2 \end{pmatrix} + \begin{pmatrix} \varphi_{11} & \varphi_{12} \\ \varphi_{21} & \varphi_{22} \end{pmatrix} \begin{pmatrix} Y_{t-1} \\ X_{t-1} \end{pmatrix} + \begin{pmatrix} \epsilon_{1t} \\ \epsilon_{2t} \end{pmatrix} \tag{17}$$

The null hypotheses are X does not Granger cause. The test is conducted using F-statistic. The null hypothesis is rejected when the estimated F-statistic is greater than the critical value.

Chapter 5

DATA ANALYSIS

5.1 Introduction

In this chapter, the collected data is analyzed. Descriptive statistics were used. Unit Root Test (ADF and PP tests), Cointegration test (Johansen cointegration test), Estimation of Long Run Coefficients (FMOLS regression) and Granger Causality Test were all conducted and interpreted.

5.2 Unit Root Test (ADF and PP tests)

In time series analysis, the presence of unit root is a major concern because its presence implies that the data that is being used is non-stationary that is, the means and variances are not constant. Analyzing non-stationary data leads to spurious regression whose results could be misleading and questionable, thus, producing invalid conclusions. Thus the adoption of the two tests. For a variable to be said to be cointegrated at order zero or 1 (0), then it should be stationary at levels and without differencing.

Table 2: Unit root test (ADF and PP tests)

Variables	ADF Test H0: Has unit root Level		PP Test H0: Has unit root Level	
	Intercept (P Value)	Intercept and trend (P Value)	Intercept (P Value)	Intercept and trend (P value)
LDCF	0.0701	0.4625	0.2909	0.3912
D(LDCF)	0.0319	0.0409	0.0000	0.0000
LAW	0.7967	0.6716	0.1758	0.2491
D(LAW)	0.2696	0.4402	0.0000	0.0001
LCAP	0.8343	0.4739	0.4860	0.0713
D(LCAP)	0.0092	0.0442	0.0000	0.0000
LGDP	0.7193	0.9326	0.5830	0.9832
D(LGDP)	0.0050	0.1998	0.0042	0.0152
LTRADE	0.1443	0.1685	0.2455	0.4019
D(LTRADE)	0.0119	0.0402	0.0000	0.0002
RIR	0.2063	0.6099	0.2218	0.4232
D(RIR)	0.0643	0.0486	0.0000	0.0000

From the table above, it is clear that all the variables are non-stationary at level using both tests (ADF and PP). For example, LDCF is non-stationary at level because its P value is higher than 5% meaning that the thesis fails to reject the null hypothesis which states that there is unit root. However, after first difference, the p value is now less than 5% hence rejecting the null hypothesis.

5.3 Cointegration Test (Johansen Cointegration Test)

The test shows whether the variables at first difference are cointegrated. When the unit root was performed, the conclusion was that the series was integrated at order 1, that is, they are stationary after the first difference. One of the prominent cointegration test for I (1) is Johansen cointegration. The Johansen cointegration test results in two outputs: the Trace statistics and the Max-Eigen statistics. The null hypothesis states that there is no cointegrating equation among the five variables. The guideline for rejecting the null hypothesis is when the p value is less than 5% and the value of the trace statistic and the Max-Eigen statistic is greater than 5% critical value. Otherwise, fail to reject the null hypothesis. Table 3 shows the results of Johansen cointegration test.

Table 3: Johansen Cointegration test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	5 Percent Critical Value	1 Percent Critical Value
None **	0.415143	101.5711	68.52	76.07
At most 1 **	0.271327	55.97816	47.21	54.46
At most 2	0.182338	29.07310	29.68	35.65
At most 3	0.102335	11.96210	15.41	20.04
At most 4	0.032241	2.785605	3.76	6.65

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	5 Percent Critical Value	1 Percent Critical Value
None **	0.415143	45.59296	33.46	38.77
At most 1	0.271327	26.90506	27.07	32.24
At most 2	0.182338	17.11100	20.97	25.52
At most 3	0.102335	9.176495	14.07	18.63
At most 4	0.032241	2.785605	3.76	6.65

Table 3 shows five null hypothesis that we can either reject or fail to reject that is the hypothesized number of cointegrated equations (none, at most 1, at most 2, at most 3, at most 4). For the first null hypothesis that there is no cointegrated equation in this model, reject the null hypothesis since the trace statistic value is greater than the 5% and 1% critical values. The second null hypothesis that states that at most there is one cointegrating equation reject the null hypothesis because the trace statistic value is greater than the 5% and 1% critical values. As for the third null hypothesis that states that at most there are two cointegrating equations, fail to reject the hypothesis because the trace statistic value is less than the critical value at 5% level and also at 1% level. In addition, for the fourth null hypothesis that states that at most there are three cointegrating equations, fail to reject the hypothesis because the trace statistic value is less than the critical value at 5% level and also at 1% level. Finally, for the fifth null hypothesis that states that there are at most four cointegrating equations, fail to reject the null hypothesis because the trace statistic value is less than the critical values at 5% and 1% levels.

In Max-Eigen statistics the decisions are not as different except for the null hypothesis that states that there is at most one cointegrating equation. However, the general consensus for the two statistics is to reject the null hypothesis that states that there is no cointegrating equation is this model. Therefore, implying that the variables are related and can be combined in a linear form.

5.4 Estimation of Long Run Coefficients (FMOLS Regression)

Having established that the variables were cointegrated, using Ordinary Least Squares to regress will produce biased and inconsistent estimates, hence, the use of FMOLS as shown in Table 4.

Table 4: Fully Modified OLS

Variable	Coefficient	Std. Error	t-Statistic	Prob
LGDP	0.922451	0.154584	5.967306	0.0000
SPREAD	0.149279	0.051712	2.886724	0.0051
LAW	2.011962	0.284989	7.059793	0.0000
LCAP	0.059596	0.023997	2.483512	0.0152
LFDI	0.038488	0.005316	7.239849	0.0000
C	-19.71307	3.848473	-5.122310	0.0000
@TREND	-0.003029	0.001051	-2.881954	0.0052
R-squared	0.674714	Mean dependent var		3.746717
Adjusted R-squared	0.648691	S.D. dependent var		0.108837
S.E. of regression	0.064509	Sum squared resid		0.312108
Long-run variance	0.001397			

DCF a measure of financial development represents domestic credit by financial sector while IRR a proxy for monetary policy represents interest rate spread, LAW on the other hand is rule of law while CAP represents stock market capitalization and finally, FDI is foreign direct investment.

All the independent variables are statistically significant because the p values in all the cases are all less than 5%. Meaning that LGDP, SPREAD, LAW, LCAP, and LFDI are statistically significant to explain LDCF. In the case of GDP, if one percent of GDP increases it implies that 0.9224% of DCF proxy for financial development goes up. In addition, if one unit of interest rate (SPREAD) increases, then 0.1492% of DCF increases. As for LAW, if one unit of law increases, then 2.01% of DCF increases. In the case of market capitalization, if a percentage of CAP increases it results in 0.0596%

of DCF increasing. Finally, if a percentage of FDI increases, it leads to an increase of 0.038% of DCF.

Generally, all the five independent variables had a positive relationship with the dependent variable. In other words, financial development in South Africa is impacted positively by GDP, rule of law, FDI, market capitalization and interest rate spread. All the five variables explain 67.47% of the changes in financial development in South Africa. Previous studies have found that democratic institutions promote financial development at least in the upper middle income economies in the case of Southern African Development Community (SADC) (Anchang, 2016). In other studies, financial openness, institutional quality, and economic growth were found to determine financial development (Ndalu, 2017). However, for trade openness, it was found to be statistically irrelevant while Ibrahim and Sare (2018) found that trade openness only influenced financial development in the case of private credit and not domestic credit.

5.5 Granger Causality Test

Aim of the test was to determine the Granger causal relationship between the variables. In determining the optimum lags to be used, Schwarz information criterion was used. The Granger causality test was done on stationary variables, hence, there was need for the thesis to get the first difference of the variables since all the variables at level were non-stationary.

The null hypothesis states that there is no Granger causality while the alternative hypothesis stated that there is granger causality. Table 5 indicates the Granger causal relationships of the variables.

Table 5: Granger Causality test

Dependent variable D(LDCF)	Chi-sq	Prob.
D(LGDP)	4.729942	0.0296
D(LCAP)	1.533300	0.2156
D(LFDI)	1.599830	0.2059
D(RIR)	2.778910	0.0955
D(LTRADE)	1.004812	0.3161
All	7.303078	0.1991

Dependent variable: D(RIR)	Chi-sq	Prob.
D(LDCF)	2.525365	0.1120
D(LGDP)	9.918036	0.0016
D(LCAP)	0.243991	0.6213
D(LFDI)	4.213269	0.0401
D(LTRADE)	2.212021	0.1369
All	11.22689	0.0471

Dependent variable D(LCAP)	Chi-sq	Prob.
D(LDCF)	0.012593	0.9106
D(LGDP)	0.571917	0.4495
D(LFDI)	0.020355	0.8865
D(RIR)	0.671140	0.4127
D(LTRADE)	0.609290	0.4351
All	1.493681	0.9138

Dependent variable: D(LGDP)	Chi-sq	Prob.
D(LDCF)	1.679211	0.1950
D(LCAP)	1.611349	0.2043
D(LFDI)	0.353344	0.5522
D(RIR)	0.978544	0.3226
D(LTRADE)	0.082582	0.7738
All	3.626454	0.6043

Dependent variable D(LFDI)	Chi-sq	Prob.
D(LDCF)	0.373623	0.5410
D(LGDP)	0.245712	0.6201
D(LCAP)	0.542064	0.4616
D(RIR)	1.534573	0.2154
D(LTRADE)	0.054840	0.8148
All	2.034774	0.8443

Looking at the first variable DCF, reject the null hypothesis. That is, there is no Granger causality because the p value of the chi squared is less than 5%, therefore, concluding that there is a short run causal relationship from GDP to DCF. As for CAP, fail to reject the null hypothesis given that the p value of the chi squared statistic is greater than 5%. Hence, concluding that CAP does not have a short run Granger causal effect on DCF. When it comes to FDI, fail to reject the null hypothesis given that the p value of the chi squared statistic is greater than 5%. Thus, concluding that FDI does not have a Granger causal effect on DCF. In terms of RIR, fail to reject the null hypothesis given that the p value of the chi squared statistic is greater than 5%. Therefore, concluding that RIR does not have a Granger causal effect on DCF. Finally, for Trade, also reject the null hypothesis concluding that trade does not have a Granger causality on DCF. Finally, since the p value is 19.91% which is greater than 5%, it is not statistically significant, hence, there is no long run causality from all the independent variables to LDCF.

In the case of GDP being the dependent variable fail to reject the null hypothesis concluding that all the variables do not have a short run or a long run Granger causal relationship with GDP. In the case of CAP being the dependent variable, fail to reject the null hypothesis concluding that all the variables neither have a short run nor a long run Granger causal relationship with CAP. As for FDI being the dependent variable, fail to reject the null hypothesis concluding that all the variables neither have a short run nor a long run Granger causal relationship with FDI.

In the case of RIR being the dependent variable, GDP and FDI are statistically significant. This indicates that there is a short run causality from GDP to RIR and from FDI to RIR. What this means is that economic growth and Foreign Direct Investment

affect interest rate spread in the short run. As for all the independent variables, since the value is statistically significant, there is a long run causality from all the independent variables to the RIR. Finally, as for Trade being the dependent variable we fail to reject the null hypothesis concluding that all the variables neither have a short run nor a long run Granger causal relationship with FDI.

Chapter 6

CONCLUSION

This thesis investigates the long run relationship among monetary policy, rule of law, FDI, stock market capitalization, and financial development for the case of South Africa between 1996 -2017 by adopting time series analysis.

The thesis finds that rule of law, economic growth, FDI, stock market capitalization, and monetary policy are proximate determinants of financial development in South Africa. The thesis, therefore, rejects the null hypothesis that rule of law, FDI, economic growth, stock market capitalization, and monetary policy has no significant effect on financial development. The inclusion of rule of law as a variable makes the thesis unique because most scholars that have used institutional variables focus on democracy as a whole instead of rule of law (Marshall, Jaggers and Gurr, 2014).

In addition, most researchers that used monetary policy tend to focus on impact of financial development on monetary policy. This thesis centers on the vice versa. The findings are consistent with Woodford (2012), that monetary policy boosts financial development through inflation targeting using the primary tool which is interest rates. The conclusion is reasonable because monetary policy tends to promote price stability which results in enhancing the performance of the banking sector. In addition, South Africa's lenders tend to have high nominal rates as compensation for inflation (SARB,

2019). In the findings, an increase in one unit of interest rate resulted in an increase of 0.1493% of financial development proxied by DCF.

Furthermore, evidence from the FMOLS model shows that rule of law has high impact on financial development even compared to other variables. This evidence seems to corroborate with Eryigit (2010) who observed that rule of law boosts FD by ensuring efficient allocation of resources specifically savings. Results from the cointegration test performed on the variables suggest that there is a long run relationship among economic growth, stock market growth, FDI, DCF and rule of law which means that these variables are the long run determinants of financial development.

The thesis finds that GDP has a positive impact on financial development. These findings support the demand following hypothesis that has been proposed by some scholars. Previously, studies have come up with two camps explaining the causality of financial development and economic growth (Liu, 2011). The camps were supply-leading hypothesis which indicated that financial development precedes economic growth and demand-following hypothesis which indicated that economic growth preceded financial development (Patrick, 1966). The findings are consistent with previous studies carried out where it was found that financial development boosts economic growth and also that economic growth drives financial development (Liu, 2011). The latter is consistent with the findings of the thesis. The findings infer that as South Africa's economy continues to develop, demand for financial services arises. It is important to note, however, that according to Patrick (1966), supply-leading hypothesis could have preceded demand-following hypothesis. Meaning that the two are not mutually exclusive.

In addition, the thesis found that monetary policy had a positive impact on financial development. The thesis used one of the important channels of monetary policy which is the interest rate channel since its proxy is interest rate spread. Previous scholars have emphasized on the impact of financial development on monetary policy. Those that investigated the impact of monetary policy on the financial sector, focused on the banking sector with their proxies narrowed down to Return of Assets for specific banks instead of the general bank system as the thesis focused on (Zaman, Arslan, and Sohail, 2014). It is important to note that most studies have not specifically talked about financial development with regards to impact of monetary policy. Some scholars talked of impact of monetary policy on financial stability (Woodford, 2012). To be precise, Woodford (2012) proposed that interest rate policies should be enacted to reduce chances of financial crisis. We can argue that stability creates an environment for development making Woodford's work relevant for the thesis.

As for rule of law, the thesis finds that it has a positive impact on financial development. The finding is consistent with previous studies done on Southern African Countries where democracy, which is another aspect of rule of law, had a positive impact on financial development (Anchang, 2016). It is, therefore, worth concluding that with improved rule of law, proxied by government efficiency, financial development is enhanced.

Furthermore, financial development and FDI have a positive relationship indicating that the more direct investment that South Africa receives, the better its financial system. Specifically, the mining sector in South Africa attracts a lot of foreign investors who in turn bring with them advanced technology (Ghebrihiwet, 2019). FDI investment boosts economic growth and development (Chakrabarti and Ghosh, 2014).

Other researchers have, however, found a bilateral relationship between FDI and financial development has a negative impact on a country (Sahin and Ege, 2015).

Stock market growth and financial development have a positive relationship. Indicating that stock market growth boosts financial development. Indicating that market-based financial system and bank-based financial systems complement each other as indicated by Simiyu (2014). Some scholars find that stock market growth is necessary for the proper functioning of the financial system (Song and Thakor, 2010).

With regards to the findings on the Granger causality, the results obtained provide a generalized picture to policy makers concerning the relationship between the variables. Specifically, for monetary policy whose proxy is interest rate spread, it contains a long run causal relationship with GDP, DCF, CAP, LAW, and FDI. As for the short run causal relationships, it was found that there exists causal relationship from GDP to DCF, from GDP to RIR, and from FDI to RIR.

An important policy implication follows from the fact that the thesis finds that rule of law, monetary policy, economic growth, FDI, and stock market growth promote financial development in South Africa. Improving rule of law is important in promoting financial development. Specifically ensuring that factors that undermine government efficiency are dealt with would help in promoting financial development as observed in our findings. Since one of the factors undermining government efficiency is education level, South Africa should come up with policies that promote affordable and quality education specifically targeting the black community which is the largest group and the most affected by lack of skills and education. In addition, since rule of law has many aspects to it, for instance, respect of human rights, South

Africa should work towards eradicating Xenophobia. This could be done through programs that work to protect foreigners working in South Africa. It is important because South Africa has branches of its major banks in different countries in Africa. It is, therefore, important to maintain a proper relation since Xenophobia could result in sanctions by host countries as a way to retaliate.

Monetary policy compliments financial development in South Africa. Thus, an improvement or maintenance of monetary policy would lead to price stability in the region. This is because using monetary policy to maintain price stability reduces uncertainty, hence, reduces friction in the financial market (Mbulawa, 2015). Therefore, inflation levels in South Africa should be kept low in order to promote financial development. As of 2019, inflation is South Africa has been low with November 2019 having an inflation of 3.6%, the lowest it has been since December 2010 (Trading Economics , 2019).

Equally important, South Africa should be keen on ensuring real growth is attained. This could be by creating an environment that fosters growth in areas that relate to political stability, subsidies for local businesses, custom duties that encourage foreign investment, and security. As policy makers design policies that boost financial development, they focus on economic growth and rule of law in South Africa, even though the other variables are also significant. This is because, from the FMOLS, their coefficients were the highest indicating their influence on financial development. Policy makers should also pay attention to time and factor that their original assumptions could change overtime as the relationship of the variables adjust.

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