

Determinants of Stock Market Development: Role of Globalization

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ABSTRACT

The importance of understanding the determinants of stock market capitalization take the attention of researchers and policymakers around the world. Nonetheless, there is no consent in the literature about the description of the relationship between globalization along with chosen important macroeconomic factors and stock market capitalization. Hence, this thesis contributes to the argument by assessing the effect of globalization and several macroeconomic factors on stock market capitalization in South Africa. Using yearly data from 1975 to 2017, the thesis adopted Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) unit root tests, Johansen cointegration test, Granger causality and fully modified OLS (FMOLS) regression techniques. FMOLS regression results indicate that trade openness, economic growth and money supply have positive impacts on stock market capitalization. However, globalization and domestic savings have negative association with stock market capitalization. Therefore, this thesis concludes that globalization and the other macroeconomic variables are significant determinants. It is thus recommended that decision makers in South Africa and mostly other developing countries should adopt stock market regulations to protect the domestic stock market against the negative effect of globalization. Results of this thesis can be a guideline for other developing countries to create effective policies around stock market capitalization.

Keywords: Stock market capitalization; Globalization; Economic Growth; Trade openness.

ÖZ

Borsa kapitalizasyonunun belirleyicilerinin araştırılması dünya genelindeki araştırmacılar ve politikacılar tarafından önem arz etmektedir. Bununla birlikte, literatürde küreselleşme, makro ekonomik faktörler ve borsa kapitalizasyonu arasındaki ilişkiyi inceleyen bir çalışma bulunmamaktadır. Bu nedenle, bu tez küreselleşmenin ve makroekonomik faktörlerin Güney Afrika'daki borsa kapitalizasyonu üzerindeki etkisini araştırmaktadır. Bu tezde, 1975 ve 2017 yılları arasındaki yıllık veriler kullanılarak, Artırılmış Dickey Fuller (ADF) ve Phillips-Peron (PP) birim kök testleri, Johansen eşbütünleşme testi, Granger nedensellik ve tamamen değiştirilmiş OLS (FMOLS) regresyon teknikleri kullanılmıştır. FMOLS regresyon sonuçları ticaret açığının, ekonomik büyümenin ve para talebinin borsa kapitalizasyonunu pozitif etkilediğini göstermektedir. Bununla birlikte, küreselleşme ve yurtiçi tasarrufların, borsa kapitalizasyonu ile negatif ilişkisi vardır. Dolayısıyla bu tez, küreselleşme ve diğer makroekonomik faktörlerin borsa kapitalizasyonunun önemli belirleyicileri olduğu sonucuna varmıştır. Bu tezden elde edilen sonuçlar, diğer gelişmekte olan ülkelerde de borsa kapitalizasyonu üzerine düzenlemeler yapılabilmesi için örnek olarak kullanılabilir.

Anahtar Kelimeler: Borsa kapitalizasyonu; Küreselleşme; Ekonomik Büyüme; Ticari Açıklık.

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LIST OF ABBREVAITIONS

ADF	Augmented Dickey-Fuller
EG	Economic Growth
FMOLS	Fully Modified Ordinary Least Square
IMF	International Monetary Fund
OLS	Ordinary Least Square
PP	Pillips-perron
SA	South Africa
SMD	Stock Market Development
WB	World Bank
WTO	World Trade Organization

Chapter 1

INTRODUCTION

Market capitalization and the number of listed companies are used to determine the size of the stock market. The market Capitalization/GDP used widely to assess the size of the stock market by dividing the market value of all listed shares by the relevant GDP. There are two reasons for widely use of this indicator in extant studies to represent the stock market development (SMD). First, it includes future growth prospects and past-retained earnings of a company so that a greater ratio to the gross domestic products can benefit the market and growth prospects. Second, it is directly associated with the capability for risk diversification and capital mobilization (Rajan and Zingales, 2003; Levin and Zervos, 1998; Bekaert et al., 2001).

Countries have been working on developing stock markets for decades. The debt and stock markets are vital sources of capital for businesses. Also, the SMD of a country works as an important indicator of its growth. The market plays integral role in affecting countries' economy. Weak and under-developed stock market does not provide many options for businesses but to borrow money as a source of capital with high interest payments. Fortunately, companies in developing and developed countries can issue their shares to the public. This will allow the companies to raise a huge amount of cash avoiding the costs associated with loans. As a result, the companies will have enough cash to run the business and develop their operations, offering more employment opportunities (Comincioli and Wesleyan, 1996). This will lower the rates

of unemployment allowing the government to generate more money through business taxes (Shabbir, Anwar, Hussain and Imran, 2012). A well-developed stock market will encourage investment. Whether the investment is in the financial market or a product market, those investments are a key driver for economic growth (EG), trade and prosperity. As efforts are made by governments to drive a reduction in interest rates to encourage investments, stock markets are becoming more attractive to investors. Developed stock markets attract foreign companies to invest. Stock markets also provide the government with a trading platform (Yartey, 2008). Sometimes, governments might need extra money to do public projects. As an alternative of raising this money by increasing taxes, they can issue bonds for the public. The bonds bought by the investors generate money to the government to complete the projects, which creates more jobs (Mayers, 1998). Countries with established stock markets are regarded as strong economies, while countries with rising stock markets are regarded as emerging economies. These views drive multiple business operations, including foreign investment. For example, emerging countries are promising foundations for both foreign and local investments. In conclusion, when the stock market of a country is healthy, the economy of this country will be healthy too (Mun, Siong and Thing, 2008).

Many studies examined the drivers of market capitalization in the last few decades focusing on understanding the impacts of the main determinants. Factors including EG, savings, trade, inflation and FDI, FD (financial development), liquidity and exchange rates were found to be the main factors impacting SMD (Nowbutsing and Odit, 2009; Argrawalla and Tuteja, 2007; Deb and Mukherjee, 2008). The best way to measure EG is GDP. According to the investigation on the causes of the development of the Sri Lanka's stock market conducted by Pushpakumara and Anthony (2009), EG

affect SMD positively. EG increases the need for financial facilities and thus enhances the SMD. Trade openness is equally important for SMD. It reflects a country's total exports and imports to GDP ratio. (Huang and Temple, 2005) proved that trade openness attracts domestic and foreign investment which in turn spurs SMD. The supply of money has also proved to be a main factor in determining the SMD. Money supply refers to the whole stock of currency, which include coins, cash and balances in saving and checking accounts. Money supply has a positive effect on SMD according to El-Nader and Alraimony (2014) who evaluated the macroeconomic determinants of the SMD in Jordan.

Another main factor is gross domestic savings, which is the gross domestic products minus consumption expenditure, and it's expressed as percent of GDP. Saving rate was also found to have positive effect on SMD as proved by Naceur and Ghazouani (2007) and Owiredu (2016). Studies proved that globalization has positive effect on the stock markets development as proven by Kandil, Shahbaz and Nasreen (2015) who made an investigation about the role of globalization in SMD for 32 economies.

Generally, globalization is defined as an overall network of social, cultural, political and economic interactions and operations, which goes further than national borders (Al-Rodhan, 2006). Nevertheless, globalization is a fact that policy makers should adopt, not only a policy option. Many perspectives on the appearance of globalization discussed it has been viewed as an outcome of technological development and resulted from market economy. There is also a theory that globalization is a result of capitalist progress (Glazter and Rueschemeyer, 2005). Globalization is the world shrinkage process making distances shorter and things closer. It is related to the ability of people to interact and cooperate across the globe to attain common benefits. There are many

dimensions of globalization; the first dimension is economic globalization. This is the major form of globalization. It contributes immensely to the developed countries such as Japan and USA. The economic globalization described as the assemblage of three factors (Bottery, 2003). First factor is the growing movement of capital all over the world, through technology and information, inside and outside a country. The second factor is the existence of some super national organizations, WB (WB), WTO and IMF. These bodies have taken part in helping capital flows in the free market. They are limited with some terms, and these terms for some countries are an overburden. The last factor is the growing impact of transactional companies. The second dimension is the political dimension. To understand political globalization, the difference between politics in the past and present should be considered. A few decades ago, before the globalization existed, states were the dominant actors in the international field (politics were more dependent on force), and the security of military politics took priority over politics of social or economic affairs. Nowadays, states and military are no longer the only main actor, and using force as an effective tool is not a solution to deal with conditions. The era of states is over, and the influence of political leaders over citizens is over (Giddens, 1999). The third dimension is social globalization, and it reflects the influence of globalization on the work and life of people, their social life and their families (Gunter and Hoeven, 2004). The social globalization contains culture, security and identity, exclusion or inclusion from the society and interconnection of communities and families. Generally, the role of globalization has confirmed to be major to a country's ability to generate the maximum effort from its available properties and resources. The supreme of these properties and resources will drive the improvement of economic development. The successful development in the economy that grown because of the linkage and openness between nations generally will causes

better living standards, and better quality of life. The effective development in economy depends on the ability of a country to globalize. The incorporation of national economies has a deep result, globalization acts as an important aspect in shaping the future of the world. Before the world became globalized, countries' trades decreased because of barriers. A developing country with plenty of labors cannot benefit from their labor force if they cannot export their products to the other countries. The rich developed countries would have access to lower cost of production. Developed nations would not have to dedicate as many resources to produce. As an alternative, developed countries will spend their human capital on innovation and science. The manufacturing measured by the share of GDP and employment shrinks in Europe and North America since the 1960's (Gerber, 2011). Globalization allows productive countries to improve by rising exports. Growing population has many advantages regarding the prosperity of nations. The most important advantage of population growth is a larger labor pool. For example, China's economy benefited from the huge population. Because of globalization, China was able to develop their economy positively. The output per laborer in China has tripled during 24 years from 1980 to 2004. The only competitor to China in productivity is India (Brandt and Rawski, 2008). The growth of trade uncertainty allowed China to benefit from the large population and harvest the benefit of globalization. There are uncountable benefits of globalization to the economic development. For example, the more money supply to the developing country, the people in these countries will have more opportunity to success and improve the overall quality of living. International competition boosts innovation and creativity and keeps prices of services and goods in check. Developing countries can take the advantages of present technology without going through many of the growing difficulties related with developing these technologies. Globalization allows countries

to work together on the way to achieve mutual goals, so there is benefit in cooperation, coordinate and interact.

Despite the plethora of studies, none of the studies concerning South Africa has properly captures the role of globalization in driving SMD in the country. Currently, the South African stock market is the largest in Africa and among the largest 20 stock markets in the world by market capitalization (WDI, 2017).

Given the strategic position South Africa occupies in the African stock market in particular and the world capital market in general, and the current wave of globalization in all facets of the economy, it is imperative to provide a pragmatic explanation on the nexus between globalization and SMD in the country. Therefore, this study examines the role of globalization and macroeconomic factors in shaping SMD in South Africa using appropriate econometric techniques. Chapter 2 provides the literature review on SMD and its relation to GDP, trade openness, money supply, savings and globalization. Chapter 3 discusses the methodology, followed by empirical results in chapter 4, and the concluding remarks and recommendations in chapter 5.

Chapter 2

LITERATURE REVIEW

2.1 Brief History and Evolution of SMD

Today, the stock markets constitute an integral part of the global economy. Countries around the world largely depend on the SMD for economic progress. However, until of recent, stock markets do not play such important role in the global economy. Although, there were early forms markets similar to stock market, the debut of genuine stock market came up around 1500s in Belgium, Brudges, Flanders, Ghent and Rotterdam in the Netherlands. Amsterdam Beurs became the first stock exchange market which continuously traded on debt-equity swaps, merchant banking, unit trusts, and other speculative instruments. Since then, stock markets sprang around the world and today almost all economies have stock markets.

In Africa, Egyptian Exchange, established in 1883, is the first stock market in Africa followed by the Johannesburg Stock Exchange founded in 1887. Now, almost all African countries have functional stock market. However, small size and illiquidity due to low economic activities continues to hamper efficiency of the African stock market. Most of the markets record low turnover and high price volatility (WDI, 2006). Nonetheless, the Johannesburg Stock Exchange distinguishes itself and currently among the largest 20 stock markets in the world by market capitalization standing at \$1,007bn in 2013. This shows clearly that the South African stock market has developed over time. The evolution and SMDs across the globe thus attracted the

attention researches and policymakers alike. Therefore, a number of studies were carried out on the determinants of the SMD in various regions, countries and continents. This thesis reviewed the previous studies in thematic categories as discussed in the subsequent sections.

2.2 Relationship between EG and SMD

The study of the nexus between SMD and EG is traceable to the early works of Schumpeter (1912) and Goldsmith (1969) who respectively linked SMD and financial development to growth. Schumpeter (1912) submits that the stock market enhances EG by mobilizing savings and routing capital to entrepreneurs with higher returns on investment. In the same vein, Goldsmith (1969) emphasized the importance of financial structure and development in enhancing EG via capital accumulation. Equally, large and efficient stock markets facilitate investment in productive technologies by reducing the cost of savings mobilization and increasing the flow of vital information to firms (Bencivenga, Smith and Starr, 1998; Greenwood and Smith, 1997). In addition, stock market provides a viable capital-raising platform for companies to meet up with investment and capital expenditure (Levine and Zervos, 1998). On the other hand, EG and other macroeconomic variables affects the development of efficient stock market (Seetanah, 2008).

Therefore, recent studies on the relationship between SMD and EG is categorized supply-leading, demand-leading hypotheses and feedback hypothesis. The supply-leading hypothesis exposit the existence of unidirectional causal relationship running from SMD to EG (Bencivenga and Smith, 1991; Greenwood and Jovanovic, 1990). On the other hand, demand-leading hypothesis proposes unidirectional causality running from EG to SMD (Demetriades and Hussein, 1996; Ireland 1994) while the

feedback hypothesis submits the prevalence of bidirectional causality running both ways. Yet, some studies holds the neutrality hypothesis submitting that the SMD and growth have no significant association. (Luca 1988; Khalifa, 2002).

Among the studies, that supports the supply leading, Ngare, Nyamongo and Misati (2014) investigated the relationship between the SMD and the EG of 36 African economies. Using panel data econometric techniques from 1980 to 2010, the study finds that SMD positively affects EG in the continent. In the same vein, Balogun, Dahalan and Hassan (2016) evaluate the impact of market capitalization on the growth of the economy in Sub-Sahara Africa. The study conclude that SMD have positive impact on EG. Naik and Padhi (2015) examined the linkage between SMD on the growth of the economy in emerging market economies using dynamic panel analysis. The study submits that SMD positively contributes to EG. The study further affirms that there is a unidirectional causality running from SMD to EG of the emerging economies. Considering the case of BRICS with the use of panel least square technique, Osaseri and Osamwonyi (2019) reveals a positive relationship between SMD and EG. Furthermore, Pan and Mishra (2018), Zivengwa et al. (2011), Enisan and Olufisayo (2009), Deb and Mukherjee (2008), Argrawalla and Tuteja (2007), Nowbutsing and Odit (2009), Van Nieuwerburgh et al. (2006) and Levine and Zervos (1998) contend that the SMD drives GDP. The studies submit that vibrant stock market is a precondition for economic progress. The view holds that SMD facilitates savings and capital accumulation and thereby induces EG.

There are also studies regarding demand-leading hypothesis. In line with this, few studies (Pan and Mishra, 2018; Fufa and Kim, 2018; Pradhan, Arvin, Norman and Hall, 2014; Peia and Roszbach, 2015; Odhiambo, 2008; Dritsaki and Dritsaki-

Bargiota, 2005) suggest that causality runs from GDP to market capitalization. The central idea of these studies is that SMD is an outcome of EG. Advancement in economic activities creates greater demand for financial services that necessitates additional stock market coverage and its consequent development.

The feedback hypothesis also gains some support in the literature. Studies in this respect evinced mutual causality between EG and SMD. This suggests bidirectional causality in which the SMD, EG reinforce, and complement each other. The SMD is inevitable for EG that is in turn indispensable for SMD advancement. The studies supporting the view include Nishat and Saghir (1991), Huang, Yang and Hu (2000), Wongbangpo and Sharma (2002), Caporale, Howells and Soliman (2004), Hou and Cheng (2010), and Marques, Fuinhas and Marques (2013) Pan and Mishra (2018), Fufa and Kim (2018) among others.

Under the neutrality hypothesis, Lucas (1988), Peia and Roszbach (2015), and Vo, Nguyen and Pham (2016), Hoque and Yakob (2017) and Ho and Odhiambo, (2018) support the view that EG and SMD are independent of each other. These scholars maintain that neither EG nor does SMD play significant role in driving each other.

2.3 Relationship between Trade and SMD

There is divergent view on the nexus between trade openness and SMD. Some studies find negative relationship while others submit direct association between trade and market capitalization. Therefore, a number of studies considered trade openness to be a fundamental driver of financial development (Niroomand, Hajilee and Al Nasser, 2014; Braun and Raddatz, 2005; Newbery and Stiglitz, 1984; Svaleryd and Vlachos, 2002).

These studies posit that trade openness is instrumental to the development of financial sector (stock market inclusive) and it benefits the financial markets via “supply side” and “demand side” of the market. Rajan and Zingales (2003) support the supply side view by demonstrating that trade positively affects financial markets. The study explains that trade openness prevents the existing financial intermediaries from adopting entry barriers strategies which slows down the development of the financial sector. Trade openness induces investment via bank lending and facilitates competition that propel the progress of the financial market. Braun held similar view as Raddatz (2005) who find that trade liberalization enhances the development of financial system. Liberalizing the trade sector whittles down the powers of interest groups which benefits from underdevelopment of the financial market.

On the other hand, proponents of the demand side role of trade openness in fostering financial development argue that trade openness increases the demand for financial services by creating price elasticities, uncertainties and income volatility (Newbery and Stiglitz, 1984). Trade openness also exposes countries to external shocks and brings foreign competitors. The exposure to foreign competition and the associated increase in risk necessitate risk diversification. (Svaleryd and Vlachos, 2002). Thus, these studies argue that openness impacts on stock market particularly via the demand side of the market. Meanwhile, Niroomand *et al* (2014) investigate the relationship between financial market advancement and trade openness in emerging economies. The study found that SMD has significant positive impact on trade openness. However, some studies argue that trade negatively affects SMD. In this strand, Levchenko (2007), Lim and Kim (2011), Ho (2017), Baltagi, Demetriades and Law (2009) reveal that openness hinders the SMD. The studies underscored the argument on the premise that comparative advantage in trade will exert negative effect on the

SMD by slowing down the market especially when the main export does not heavily depend on external finance.

2.4 Relationship between Money Supply and SMD

Another macroeconomic variable linked to SMD is money supply. The monetarists posit that changes in money supply (M2) alters money balances in the economy and thus change demand for equities. This in turns translates to positive /negative effect on the SMD. Also, increase in M2 results to decrease in interest rate. Consequently, savings, investments and stock prices are affected (Tiryaki, Erdoğan and Ceylan, 2017). Meanwhile, the findings of the studies in that regards are mixed. While some found positive relationship (Kwon and Shin, 1999; Ratanapakorn and Sharma, 2007; Kumar and Puja, 2012; Hu, Han and Zhang, 2018; Tiryaki, Ceylan and Erdoğan, 2019) others (Mohammed and Abu Rumman, 2018; Parab and Reddy; 2019) evinced negative relationship between SMD and money supply. For instance, Hu, Han and Zhang (2018) evaluated the effect of monetary and fiscal policies on the development of Chinese stock market. The study submits that monetary policy, indicated by money supply, have significant direct positive contemporaneous impact on SMD of the country. It shows that the monetary policy is important in promoting the SMD over the years. Contrarily, Mohammed and Abu Rumman (2018) conducted a comparatively analyzed the effect of macro-economic variables on Qatar stock exchange using Qatar exchange index and Al Rayyan Islamic index. The study used correlation and regression techniques. The findings indicate that money supply inversely affect SMD. In a similar development, Parab and Reddy (2019) examines the dynamics of the SMD in India in relation to various macroeconomic indicators. Using econometric techniques with structural breaks, the study provides evidence of inverse effect of broad money on SMD.

2.5 Relationship between Savings and SMD

Level of savings is linked to the SMD because savings are channel to investment via the stock market. Therefore, several studies considered savings rate as a driver of the SMD. For instance, Garcia and Lin (1999) used pooled data for fifteen developed and developing economies to examine the determinants of SMD. The study expressed that savings is one of the significant drivers of the SMD progress. It finds a direct impact of savings on SMD. Furthermore, Quartey and Gaddah (2007) examined the long-run determinants of SMD in Ghana. Using data from 1991 to 2004, the study reveals that among other macroeconomic variables, domestic savings have significant positive impact on SMD in the country. Likewise, Naceur and Ghazouani (2007) and Cherif and Gazdar (2010) evaluated the role of macro-economic indicators on the SMD of MENA countries using panel data instrumental variable techniques. Their findings demonstrate that saving rate propels SMD. Recently, Abdelbaki (2013) and Şükrüoğlu and Nalin (2014) employed the use of dynamic panel models to assess the effect of macroeconomic indicators (savings inclusive) on market capitalization in selected European nations. The study affirms the hypothesis that higher savings implies more funds for investment to be traded in the stock market. Hence, savings positively affects SMD. On the other hand, Matadeen (2017) identified the macroeconomic determinants of SMD using dynamic Panel VECM with a sample of Sub Saharan African countries. The study submits that savings have detrimental effect on the SMD in the region. However, Kurach (2010) claims that savings rate does not have significant impact on SMD in Central and Eastern European (CCE) countries. In the same way, Megaravalli and Sampagnaro (2018) studied the influence of macroeconomic variables on stock markets of India, China and Japan. The study reveals that macroeconomic variables

(including savings) do not significantly affect stock markets of the countries considered.

2.6 Relationship between Globalization and SMD

Globalization does not only involve the interdependence of economies in trade and services but integration of the global financial market. It enables the flow of financial resources and diffusion of technology across borders. The globalization of capital market creates a platform for the association of domestic capital market to the world market. Thus, globalization may influence the SMD because several countries embraced stock market liberalization over the years. Few studies have considered the linkage between globalization and SMD in various countries. Schmukler, Gozzi and Torre (2007) find out the impact reforms leading to financial globalization on SMD. The study finds that increase in stock market capitalization and trading in the domestic market resulted from the reforms. Nevertheless, the study envisages negative spillover effects because of observed increase in the share of activity in the international equity market that follows the reforms as well. Goel and Gupta (2011) examine the impact of globalization on stock market in India. It was shown that globalization leads to increase in turnover and value traded ratios and decline in stock market volatility. Hence, globalization resulted to the improvement in development and professional efficiency of the stock market. In a related development, Kandil, Shahbaz and Nasreen (2015) studied the interaction between globalization and financial development in a sample of 32 both developed and developing for the period 1989-2012. It assesses the impact of globalization on three indicators of stock market and three indicators of banking services for panel estimations methods. The findings hold that globalization enhances external financial access and as a result have adverse effect on domestic financial market. Furthermore, Shevchenko (2015) analyzed the effect of stock market

globalization trends on the Security market of Ukraine. The study conclude that financial globalization exposed the domestic stock market to unfair competition and thus deters its development. Moreover, Haghi, Mostafavi and Behname (2015) surveys globalization and stock markets in selected Asian economies. The study evinced that economic globalization spurs SMD in the region. Meanwhile, the study observed that the positive effect of the economic globalization depends on political globalization. Elsewhere in Africa, Nwadike and Inwibo (2014) and Oluwole (2014) explored the effect of globalization on Nigerian stock market. The studies submit that globalization positively affected the SMD. Most recently, Akinwale and Adekunle (2019) evaluated the effect of globalization on SMD in Nigeria. The study employed ARDL and finds that globalization, through trade openness and the inflow of foreign capital, positively have significant positive effect on SMD in both short run and long run. Contrarily, Onuoha and Nwaiwu (2016) concludes that global financial crisis negatively affects the SMD in Nigeria.

2.7 Empirical Literature on Determinants of SMD in South Africa

South Africa take a central position in the African stock market. It is the second oldest stock market and the largest in terms of market capitalization which is 13 times and 14 times larger than that of Egypt (second largest in the continent) and Nigeria respectively (third largest) (WDI, 2017). The stock market in South Africa is also globally recognized and ranked 25th largest in the world by capitalization in 2015 (WDI, 2017). The South African stock market was ranked second in the World in 2015 (WDI, 2017). This implies that the performance of the South African stock market has been impressive over the years. Despite playing a leading role in Africa, only few studies focused attention on the empirical analysis of the determinants of SMD in South Africa. Here, the few studies are reviewed. Yartey (2008) examines the

institutional determinants of SMD in emerging markets including South Africa over the period 1990-2004. The study finds that macroeconomic indicators such as income level, investment, private credit, banking sector development and stock market liquidity are the significant drivers of SMD. It also demonstrated that political institutions, political risk and other regulatory qualities, play a key role in shape SMD. Naik and Padhi (2015) constructed a composite index of SMD using PCA evaluates the linkage between SMD, and EG in selected emerging economies (South Africa inclusive). The study employed second generation panel techniques and System GMM estimator and finds that the SMD boosts economic activities. Ngare, Nyamongo and Misati (2014) also investigated the relationship between SMD and EG in 36 African countries and found positive relationship. In addition, Ntshangase, Mingiri and Palesa (2016) empirically examines the interaction between stock market and macroeconomic policy variables in South Africa. The findings of the study reveals the existence of long-run relationship between SMD and selected macroeconomic variables in the country. In his recent study, Ho (2018) analyzed the macroeconomic determinants of SMD in South Africa. He employed Autoregressive Distributed Lagged model to examine the short-run and long-run nexus among SMD and its drivers considered. The findings of the investigation show that EG and banking sector development accentuate SMD while inflation and high interest rates are detrimental to the SMD in South Africa. Beside these aforementioned studies, several studies have included South Africa in a panel sample of countries and can be found *passim*. The summary of literature review shown in the table 2.1

Table 2.1: Summary of Literature Review

Author (Year)	Topic	Variables	Method	Findings
Ngare, Nyamongo and Misati (2014)	Stock market development and economic growth in Africa	Market capitalisation, GDP, Primary school enrolment rate, Inflation, Control of Corruption index, M2 and Gross private investment	Panel data econometrics technique is used in data analysis.	SMD positively affects EG in the continent.
Balogun, Dahalan and Hassan (2016)	Stock market development, liberalization and financial development in the selected sub-Saharan African countries	Stock market liberalization, domestic credit to the private sector, real GDP and adjustment mechanism	The technique of Pooled Mean Group (PMG).	SMD have positive impact on EG.
Naik and Padhi. (2015)	On the linkage between stock market development and economic growth in emerging market economies: Dynamic panel evidence	GDP, Initial Growth rate, Stock market development, FDI, Trade Openness, Exchange Rate, Inflation and Investment	Dynamic panel “system GMM” estimator	SMD positively contributes to EG.
Pan and Mishra. (2018)	Stock market development and economic growth: Empirical evidence from China	Market capitalisation, Liquidity, Industrial Production index, Automobile, Bank, Consumer Goods, Consumer Service, Health Care, Mining, Real Estate, Technology, Telecommunication and Utility	Unit root testing in the presence of structural breaks and the Autoregressive distributed lag (ARDL) model.	Findings suggest that causality runs from GDP to market capitalization.
Vazakidis, A., & Adamopoulos, A. (2009).	Stock market development and economic growth.	Stock market development, gdp, interest rate and trade openness	Vector Error Correction Model (VECM).	Trade openness impacts on stock market particularly via the demand side of the market.

Table 2.1 (continued)

Lim and Kim (2011)	Trade openness and the informational efficiency of emerging stock markets	Trade openness, Trade volume, stock market openness, capital account openness and The volatility of market returns	Panel regression methods	Results reveal that openness hinders the SMD.
Tiryaki, A., Ceylan, R., & Erdoğan, L. (2019).	Asymmetric effects of industrial production, money supply and exchange rate changes on stock returns in Turkey.	Istanbul share price index, , IPI, money supply (M3) and real broad effective exchange rate (RER)	The non-linear autoregressive distributed lag (NARDL) model	There is positive relationship between stock market and money supply.
Mohammed, H. Y., & Abu Rumman, A. A. (2018).	The impact of macroeconomic indicators on Qatar stock exchange: A comparative study between Qatar exchange index and Al Rayyan Islamic index.	Oil price, gas price, money supply, interest rate, producer price index and Qatar stock exchange.	Correlation and Multiple Regression tests	Results evinced negative relationship between SMD and money supply.
Quartey, P., & Gaddah, M. (2007).	Long run determinants of stock market development in Ghana.	Stock market capitalization, GDP, doestic credit, treasury bills, exchange rate, gross domestic saving and inflation rate	The Johansen's cointegration procedure.	Domestic savings have significant positive impact on SMD.
Matadeen, S. J. (2017).	The Macroeconomic determinants of stock market development from an African perspective.	Economic growth, banking development, stock market liquidity, investment and macroeconomic stability and domestic savings	Dynamic Panel Vector Error Correction Model	Savings have detrimental effect on the SMD.
Kandil, M., Shahbaz, M., & Nasreen, S. (2015)	The interaction between globalization and financial development: new evidence from panel cointegration and causality analysis.	Private sector credit, domestic credit, liquid liabilities, value traded, turnover ratio and stock market capitalization	Panel cointegration and panel VAR.	Globalization enhances external financial access and as a result have adverse effect on domestic financial market.

Chapter 3

METHODOLOGY

3.1 Data and Sample Selection

To achieve the objectives of this study, data on selected macroeconomic variables including market capitalization, real GDP, trade openness, savings, money supply and index of globalization are used. Annual data on these variables for South Africa over the period 1975 to 2017 were employed. The choice of this period is informed by the availability of data and significant changes in stock market performance and globalization within the period. The data on the macroeconomic variables (market capitalization, real GDP, trade openness, savings, and money supply) are obtained from WB World development indicators (WDI) while globalization index is found from KOF Index of Globalization. The market capitalization is the dependent variable used as a measure of SMD while other variables serve as the independent variable. The selection of these variables is on the basis of previous studies which indicates that such variables significantly affect SMD.

3.2 Model Specification

The empirical model of this study is specified as follows;

$$\ln SMC_t = \beta_0 + \beta_1 \ln GDP_t + \beta_2 \ln SAV_t + \beta_3 \ln M2_t + \beta_4 \ln TOP_t + \beta_5 \ln GLOB_t + \varepsilon_t \quad (1)$$

Where $\ln$ = natural logarithm, SMC= Stock market capitalization, SAV = gross domestic Savings, M2= Money supply, TOP= trade openness, GLOB= globalization index. 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 . This model is estimated using Fully Modified OLS.

3.3 Description of Variables

The variables used in this study are define in the table below.

Table 3.1: Definition of variables

Name	Indicator name	Long definition	Source
M2	Money supply	Money supply includes cash and checking deposits.	WDI
RGDP	GDP (constant 2010 USD)	GDP at constant 2010 U.S. dollars.	WDI
SAV	Gross domestic savings (USD)	Gross domestic savings in current U.S. Dollars.	WDI
SMC	Market capitalization	Market capitalization in USD.	WDI
TOP	Trade (% of GDP)	Total trade as percentage of GDP	WDI
GLOB	KOF Index of Globalization	Composite index of Globalization.	KOF

WDI= World development indicators

3.4 Methods of Data Analysis

The study employed time-series econometric techniques, which include Augmented Dickey Fuller (ADF) and Phillips-Perron (PP) unit root tests, Johansen cointegration test, Granger causality and fully modified OLS (FMOLS) regression techniques.

These techniques are briefly discussed as follows;

3.4.1 Unit Root Tests (ADF and PP tests)

Nelson and Plosser (1982) argued that most macroeconomic time series have stochastic trends and often nonstationary. The series is stationary when it variance and mean are time invariant. Such series are mean reverting. That is, they return to their mean in the long run after a shock and the effect of the shock disappears. On the other hand, if the mean and the variance changes over time the series is nonstationary and effect of shock on such series is permanent. A regression of nonstationary variable on

another nonstationary variable (s) leads to spurious (nonsensical) results (Granger, 1988). In addition, Granger causality test is considered sensitive to the stationarity of the series. It is, therefore, imperative to test stationarity of the variables before proceeding to the estimation of regression models. Therefore, Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) unit root tests are used for the test of the stationarity of all the variables in this study.

3.4.2 Augmented Dickey-Fuller (ADF) Test

The ADF test was proposed by Dickey and Fuller (1981) and the general equation for the test is specified as follows;

$$\Delta y_t = \alpha + \beta T + \rho y_{t-1} + \sum_{i=1}^k \gamma_i y_{t-i} + \varepsilon_t \quad (2)$$

The y_t is the variable to be tested (SMD, real GDP, trade openness, savings, money supply and Index of Globalization). The ADF test accounts for serial correlation by including the lags differences of the dependent variable y_{t-1} . T Denotes time trend, α is constant, $i = 1, \dots, k$ is the lags, Δ stands for differenced symbol and ε_t is the stochastic error term. The null hypothesis of the test is $H_0: \rho = 0$, that is, y_t has unit root (not stationary) while the alternative hypothesis is $H_1: \rho \neq 0$. is y_t does not have unit root (stationary). The series, y_t , is considered to be nonstationary if we failed to reject the H_0 otherwise, it is stationary.

3.4.3 Phillips-Perron (PP) Unit Root Tests

The Phillips-Perron (PP) unit root test developed by Phillips and Perron (1988) is one of the most used tests in time-series analyses. The test differs from the ADF tests mainly on the procedure used in accounting for serial correlation and heteroscedasticity in the error term. The test regression is given as;

$$\Delta y_t = \beta' D_t + \pi y_{t-1} + \mu_t \quad (3)$$

μ_t is stochastic error term which is stationary at level, $I(0)$ and probably heteroscedastic. The PP test corrects for heteroscedasticity and autocorrelation in the error term. The statistics, Z_t and Z_π are given by the following formulas.

$$Z_t = \left(\frac{\hat{\sigma}^2}{\hat{\lambda}^2}\right)^{\frac{1}{2}} \cdot t_{\pi=0} - \frac{1}{2} \left(\frac{\hat{\lambda}^2 - \hat{\sigma}^2}{\hat{\lambda}^2}\right) \cdot \left(\frac{T \cdot SE(\hat{\pi})}{\hat{\sigma}^2}\right) \quad (4)$$

$$Z_\pi = T\hat{\pi} - \frac{1}{2} \left(\frac{T \cdot SE(\hat{\pi})}{\hat{\sigma}^2}\right) (\hat{\lambda}^2 - \hat{\sigma}^2) \quad (5)$$

$\hat{\lambda}^2$ and $\hat{\sigma}^2$ are estimates of the variance parameter defined as;

$$\hat{\sigma}^2 = \lim_{T \rightarrow \infty} T^{-1} \sum_{t=1}^T E [\mu_t^2] \quad (6)$$

$$\hat{\lambda}^2 = \lim_{T \rightarrow \infty} \sum_{t=1}^T E [T^{-1} S_T^2] \quad (7)$$

Where $S_T = \sum_{t=1}^T \mu_t$. The μ_t , is consistent with the estimate of $\hat{\sigma}^2$ while its Newey-West long-run variance is consistent with the estimate of $\hat{\lambda}^2$. Under the null hypothesis $\hat{\pi} = 0$, the Z_t and Z_π statistics have same asymptotic distribution as the ADF statistic. However, the PP tests are robust to general form of heteroscedasticity and automatically select lag length.

3.4.4 Cointegration Test

The Johansen cointegration test is applied in this thesis to examine the existence of long-run nexus between the variables in the model. It is a compact maximum likelihood test used for the examination of long-run relationship in a system of equation. If there are more than two variables in a model, like in this study, there could be more cointegrating vector than one. In this case, the Johansen cointegration test becomes appropriate (Johansen and Juselius, 1990; Juselius, 2006; Kasa, 1992). Trace and maximum Eigenvalue statistics specified below are used for the Johansen rank test of cointegration.

$$J_{trace} = -T \sum_{i=r+1}^n \ln(1 - \hat{\lambda}_i) \quad (8)$$

$$J_{max} = -T \ln(1 - \hat{\lambda}_{r+1}) \quad (9)$$

The r denotes cointegrating vectors; T is the sample size and $\hat{\lambda}_i$ is the i th largest canonical correlation. The null hypothesis of the trace statistics is r cointegrating vectors tested against the alternative hypothesis of n cointegrating vectors. On the other hand, the maximum eigenvalue test tests the H_0 of r cointegrating vectors against the alternative of $r+1$ cointegrating vectors. If the test statistic is greater than the critical values of the Johansen (1998), we reject the null hypothesis. The test is conducted in sequence of the null hypothesis.

3.5 Estimation of the Fully Modified OLS (FMOLS)

In the presence of cointegration, the FMOLS proposed by Phillips and Hansen (1990) becomes most appropriate. It employs semi-parametric correction to eliminate the problem associated by long-run correlation between cointegrating regressions.

The estimator is specified as follows;

$$\hat{\theta}_{fmols} = \begin{bmatrix} \hat{\beta} \\ \hat{\gamma}_1 \end{bmatrix} = (\sum_{t=2}^T Z_t^* Z_t^{*'})^{-1} \sum_{t=2}^T Z_t^* y_t^+ - T \begin{bmatrix} \lambda_{12}^+ \\ 0 \end{bmatrix} \quad (10)$$

Where $Z_t^* = (X_t', D_t')$. The Z_t^* and y_t^+ represent the transformed data. In the presence of cointegration, Fully Modified OLS (FMOLS) has smaller bias than the OLS and thus performs better than the OLS. So, it is adopted in this study for the estimation of equation (1) concerning the impact of globalization on SMD.

3.4.5 Granger Causality

Granger (1969) proposed a test for the examination of causal association between a pair of variables. To test causality between SMD and all other variables, the Granger causality approach was used. The equation of the test in the form of the simple

Vector Autoregressive (VAR) model shown as follows;

$$Y_t = \sum_{i=1}^n \alpha_i X_{t-i} + \sum_{j=1}^n \beta_j Y_{t-j} + \mu_{1t} \quad (11)$$

$$X_t = \sum_{i=1}^m \lambda_i Y_{t-i} + \sum_{j=1}^m \delta_j X_{t-j} + \mu_{2t} \quad (12)$$

Y_t and X_t are the pair of variables and the μ_{1t} and μ_{2t} are error terms assumed to be uncorrelated. Granger causality means lagged Y significantly influences X and/or lagged X significantly influences Y . that is, the estimated lagged coefficients $\sum_{i=1}^n \alpha_i$ and $\sum_{i=1}^m \lambda_i$ statistically significant (different from zero). The null hypotheses are Y does not granger causes X ($\sum_{i=1}^m \lambda_i = 0$), The null hypotheses are X does not granger causes Y ($\sum_{i=1}^n \alpha_i = 0$). The test is conducted using F-statistic. The H_0 is rejected when the estimated F-statistic is greater than the critical its critical value.

Chapter 4

PRESENTATION AND ANALYSES OF RESULTS

4.1 Results of Stationarity Tests

The prominent characteristic of macroeconomic and financial time series is trend leading to nonstationarity. A series is said to be nonstationary if its mean and variance varies over time. The major problem of such series is that the application of standard OLS regression procedure on the variables produces inconsistent and spurious regression estimates leading to invalid statistical inference. Such regression results may provide appealing but intuitively nonsensical estimates. To circumvent this problem, it becomes necessary to examine the stationarity properties of the variables prior to estimation. This study used Augmented Dickey Fuller and Philips-Perron unit root tests to examine the stationarity of the variables. The tests were conducted for the variables at different specifications. This is to provide comprehensive estimates of the unit root tests. The results are presented in table 4.1. The results indicate that all the variables are stationary at first difference when the 5% and 1% levels of significance are considered. The variables LSTOCK, LTRADE, LGLOB, LGDPCO, LSAVINGS and LM2 are convincingly $I(1)$ in all models. So, the variables are nonstationary at levels but becomes stationary when the first difference is taken. This intuitively implies that the effect of shock on the variables is persistent over time. In other words, when there is a shock in the model, the means of the variables do not revert to the original levels before the shock. Hence, the effect of any policy on the variables tends to remain permanently or at least, persistent in shaping the trend of the variables.

Table 4.1: Results of Unit root test

Statistics (At Level)	LSTOCK	LTRADE	LGLOB	LGDPCO	LSAVINGS	LM2
τ_{μ} (ADF)	-0.7881	-1.6853	-1.0167	-0.0514	-1.4872	-2.9320*
τ_T (ADF)	-2.8070	-2.0655	-2.3407	-1.8631	-1.1582	-0.0219
τ (ADF)	3.1238	0.0062	1.2707	3.1067	-1.2241	2.6217
τ_{μ} (PP)	0.2886	-1.6105	-0.2285	0.2465	-1.4898	-2.5839
τ_T (PP)	-3.0670	-1.9444	-1.8977	-1.4985	-1.2313	0.6815
τ (PP)	7.6056	0.0363	1.6657	6.7819	-1.2283	8.9782
Statistics (At First Difference)						
τ_{μ} (ADF)	- 7.9069***	- 5.8032***	-3.2310**	- 4.3396***	-5.6664***	-3.3596**
τ_T (ADF)	- 7.8113***	- 5.7585***	-3.2022**	- 4.2980***	-5.6989***	-4.7494***
τ (ADF)	- 2.9772***	- 5.8758***	-1.7970*	- 2.7465***	-5.5967***	-1.4394
τ_{μ} (PP)	- 9.9315***	- 5.8826***	-3.2310**	- 4.2192***	-5.6406***	-3.3290**
τ_T (PP)	- 9.6620***	- 6.2236***	- 3.0171***	-4.1662**	-5.6672***	-3.5734**
τ (PP)	- 5.0018***	- 5.9718***	- 2.9293***	- 2.7094***	-5.5888***	-1.2080

τ_{μ} , τ_T and τ denote models with constant, with constant and trend, and without constant & trend respectively, while ***, ** and * are 1%, 5% and 10% level of significance respectively

4.2 Result of Johansen Cointegration Test

The result of the stationary test reveals that all the series are stationary at first difference which mean that they are integrated of order one i.e. I(1). Although the regression of nonstationary series provides spurious estimates, as suggested by Engle and Granger (1989), the linear combination of the series could be stationary. This is referred to cointegration. It means there could be a form of long run relationship amongst variables in the model, even though they are first difference-stationary. This possibility informs the need to conduct the co-integration test.

Table 4.2: Result of Johansen cointegration test

Hypothesized		Trace statistics	5%	1%
No of CE(s)	Eigenvalues		Critical Value	Critical Value
None **	0.668599	136.3894	102.14	111.01
At most 1 **	0.511307	92.21236	76.07	84.45
At most 2 **	0.407067	63.57156	53.12	60.16
At most 3 **	0.354480	42.66458	34.91	41.07
At most 4 **	0.317855	25.15664	19.96	24.60
At most 5 *	0.218392	9.856096	9.24	12.97

*(**) denotes rejection of the hypothesis at the 5%(1%) level

Therefore, to detect cointegration, Johansen cointegration test is used in this study. The result is presented in table 4.2. The Johansen cointegration provides the trace and maximum Eigen statistics. However, in most cases, the two statistics do not contradict regarding the existence or nonexistence of cointegration. Hence, for brevity, only the result of the trace statistics is presented in this study. The trace statistics of all the hypotheses are more than the 5 percent critical values. This indicates that all the six null hypotheses are rejected at 5% level of significance. The first 5 hypotheses are even rejected at 1% level of significance. This shows that there are six cointegrating vectors in the model. Therefore, there is long-run relationship among the variables in the model. In short, there is equilibrium relationship between SMD and all the independent variables (globalization, EG, money supply, savings and trade openness) considered in this study.

4.3 Interpretation and Discussion of Regression Result

Since the cointegration test reveals the existence of cointegration, the use of estimation techniques that takes care of the long run relationship becomes vital. Thus, the FMOLS is used to estimate the model concerning the impact of globalization on SMD. The dependent variable is stock market capitalization while the independent variables are trade openness, globalization index, real GDP and M2. The use of the FMOLS is to

properly account for the cointegration. The result of the regression is contained in table 4.4.

Table 4.3: Results of Fully Modified Least Squares (FMOLS)

Variable	Dependent Variable: LSTOCK			
	Coefficient	Std. Error	t-Statistic	Prob.
(LTRADE)	0.221594	0.045277	4.894161	0.0000
(LGLOB)	-0.504629	0.037904	-13.31322	0.0000
(LGDPCO)	0.515805	0.080307	6.422916	0.0000
(LSAVINGS)	-0.549223	0.054667	-10.04664	0.0000
(LM2)	0.186761	0.018153	10.28827	0.0000
Constant	-10.75266	1.536576	-6.997807	0.0000
R-squared	0.937015	Mean dependent variable		4.886195
Adjusted R-squared	0.928018	S.D. dependent variable		0.479060
S.E. of regression	0.128530	Sum squared residual		0.578195
Long-run variance	0.000272			

The result shows that trade openness, EG and money supply have positive relationship with the SMD. This indicates that the higher the level of trade openness, EG and money supply, the higher the level of SMD and vice versa. In other words, trade liberalization, increase in economic activities and circulation of more money in the economic improve the South African stock market capitalization. Moreover, the findings shows that the coefficient of trade openness, Real GDP (LGDPCO) and Broad money supply (LM2) are 0.221594, 0.515805 and 0.186761 with t-statistics 4.894161, 6.422916 and 10.28827 respectively. This indicates that the coefficients are highly significant at 1% level of significance. The significance is shown by the P-values of the coefficients, which are less than 0.01 for all the variables. In addition, the t-statistics of all coefficients are largely greater than 1.96. Holding other variables constant at a time, a percentage increase (decrease) in trade openness, Real GDP (LGDPCO) and Broad

money supply (LM2) will lead to 0.221594, 0.515805 and 0.186761 percentage increase (decrease) in stock market capitalization respectively. Thus, trade openness, Real GDP (LGDP_{CO}) and Broad money supply (LM2) have huge and significant positive impact on the South African SMD.

Regarding the trade openness, the result reveals that trade liberalization enhances the SMD. This finding conforms to the findings of Niroomand, Hajilee and Al Nasser (2014), Newbery and Stiglitz, (1984), and Svaleryd and Vlachos, (2002) who posits that trade openness has a fundamental role enhancing stock market capitalization via both the “supply side” and “demand side” of the market. Trade openness foster the SMD by eliminating the entry barriers strategies that deters the development of the financial sector. However, the finding opposed the findings of Levchenko (2007), Baltagi, Demetriades and Law (2009), Kim et al (2011), and Ho (2017) who reveal trade inhibits the SMD.

Nonetheless, the result shows that EG is fundamental driver of SMD. This collaborates the findings of Pradhan et al (2014), Mishra (2018) Peia and Roszbach (2015), and Osaseri and Osamwonyi (2019) who argued that advancement in economic activities creates greater demand for financial services which necessitates additional stock market coverage and its consequent development.

For the money supply, the results indicate the monetarists’ position that changes in money supply changes money balances in the economy and consequently promotes the SMD via change demand for equities and decrease in interest rate. This collaborates the findings of Kumar and Padhi (2012), Hu, Han and Zhang (2018) as

well as Tiryaki, Ceylan and Erdoğan (2019) evinced positive relationship between SMD and M2.

Conversely, globalization index and gross domestic savings are negatively related to the SMD. This implies that higher levels of globalization and domestic savings lead to decline in SMD in the country. The parameter estimates of Globalization index and Gross domestic Savings are -0.504629 and -0.549223 while the t-statistics are -13.31322 and -10.04664. This indicates that the coefficients are statistically significant at 1% level of significance. The P-values are also less than 1% and the t-statistics are greater than 2.54 confirming the 1% statistical significance of the parameter estimates. In addition, the magnitudes of the coefficients show that 1% increase (decrease) in Globalization index and Gross domestic Savings results to about 0.50% and 0.55% decrease (increase) in stock market capitalization respectively. Therefore, Globalization index and Gross domestic Savings are significant drivers of the SMD in South Africa. This is in line with the conclusion of Onuoha and Nwaiwu (2016) that globalization negatively affects the SMD in Nigeria. The reason behind this negative relationship is that, high globalization will attract investors to invest in the international market instead of domestic market, and since South Africa is a developing country, international market activities exceed the domestic market activities (Torre, Gozzi and Schmukler, 2007). Likewise, the result on the effect of savings conforms to the finding of Matadeen (2017) that savings have a detrimental effect on the SMD in Sub Saharan African countries.

Using the fitness statistics, the adjusted R² indicates that about 92.8% of the changes in the SMD is explained by changes in trade openness, real GDP, broad money supply,

globalization and domestic savings in South Africa. In addition, the long-run variance 0.000272 implies that there is long-run relationship among the variables.

4.4 Results of VEC Granger Causality/Block Exogeneity Tests

This study used the VEC Granger causality (block exogeneity) test to examine the causal relationship among the variables. This shows the potential predictability power of one variable on the other. The test is conducted for all the variables in the model. But the results of the models in which globalization index and domestic savings serve as dependent variables are not reported. This is because the statistics are insignificant. The results of other models are reported in table 4.3.

Table 4.4: VEC Granger Causality/Block Exogeneity Wald Tests

Dependent variable: D(LSTOCK)		
Excluded	Chi-sq	Prob.
D(LTRADE)	0.098942	0.7531
D(LGLOB)	1.782415	0.1819
D(LGDPCO)	2.910442	0.0880
D(LSAVINGS)	1.579069	0.2089
D(LM2)	6.626104	0.0100
All	11.27693	0.0462
Dependent variable: D(LTRADE)		
Excluded	Chi-sq	Prob.
D(LSTOCK)	0.620671	0.4308
D(LGLOB)	0.067974	0.7943
D(LGDPCO)	5.300351	0.0213
D(LSAVINGS)	2.190836	0.1388
D(LM2)	9.055667	0.0026
All	12.71813	0.0262
Dependent variable: D(LGDPCO)		
Excluded	Chi-sq	Prob.
D(LSTOCK)	2.685758	0.1012
D(LTRADE)	2.106418	0.1467
D(LGLOB)	0.336242	0.5620
D(LSAVINGS)	7.555137	0.0060
D(LM2)	0.584474	0.4446
All	12.79859	0.0253
Dependent variable: D(LM2)		
Excluded	Chi-sq	Prob.
D(LSTOCK)	0.998560	0.3177
D(LTRADE)	0.009192	0.9236
D(LGLOB)	0.218247	0.6404
D(LGDPCO)	4.718074	0.0298
D(LSAVINGS)	0.416306	0.5188
All	9.693795	0.0844

When stock market capitalization is used as the dependent variable, the overall Chi-square statistics that of money supply are significant at 5% while the Chi-square statistic of real GDP is significant at 10%. This indicates joint causal association between the independent variables and market capitalization. Individually, money supply and EG Granger causes market capitalization. This means, past values of money supply and EG are likely to drive the SMD. The statistic of the stock market capitalization is insignificant in all the models. This indicates a one-way causality from the independent variables to stock market capitalization. This confirms the demand-leading hypothesis which posits a unidirectional causality running from EG and money supply to SMD. In addition, the results indicate unidirectional causality running from real GDP and money supply to trade openness, from savings to real GDP and from real GDP to M2. This implies that EG and money supply are potential predictors of trade openness while savings is likely to drive EG which in turn serves as potential determinant of money supply. Obviously, the results indicate one-way causality among the variables. Therefore, the model has a good fit and its estimates are valid for drawing tenable conclusions as presented in chapter 5.

Chapter 5

CONCLUSION

5.1 Summary and Discussion of Findings

This study mainly examines the role of globalization in shaping the SMD in South Africa. Globalization involves the interdependence of economies in trade and services, integration of the global financial market by enabling the flow of financial resources and diffusion of technology across borders. Hence, globalization could be an important determinant of the SMD. Therefore, the study evaluates the determinants of SMD in South Africa with a specific focus on the role of globalization. The study uses annual time series data on market capitalization, real GDP, trade openness, savings, money supply and index of globalization for South Africa over the period 1975 to 2017. It employs times series econometric techniques to analyze the data. The econometric methods used include ADF and PP unit root tests, Johansen cointegration test, FMOLS and Granger causality test.

Starting with the unit-root tests, the results reaveals that all the variables are first differenced stationary in all the models. This implies that the effect of shock on the variables is persistent over time. In other words, when there is a shock in the model, the means of the variables do not revert to the original long-run average before the shock. . Hence, the effect of any shock on the variables tends to persistent. The cointegration test reveals the existence of long-run (equilibrium) relationship between

the SMD, globalization, GDP, money supply, savings and trade openness. This implies that these variables tend to affect SMD in the long run.

Given the existence of long-run relationship, the FMOLS is used to find out the effect of the globalization and other independent factors on the SMD. The result shows that trade openness, EG and money supply have positive relationship with the SMD. This implies that the higher the level of trade openness, EG and money supply are associated with greater SMD and vice versa. The possible explanation could be that trade liberalization, economic activities and increases in the circulation of money in the economy propel stock market development in South Africa. Specifically, regarding the trade openness, the result reveals that trade liberalization enhances the SMD. This finding conforms to the findings of Niroomand, Hajilee and Al Nasser (2014), Newbery and Stiglitz (1984) and Svaleryd and Vlachos (2002) who posit that trade openness has a fundamental role enhancing stock market capitalization via both the “demand side” and “supply side” of the market. Trade openness fosters the SMD by eliminating the entry barriers strategies which deter the development of the financial sector. However, the finding opposes the findings of Levchenko (2007), Baltagi, Demetriades and Law (2009), Kim et al (2011), and Ho (2017) who reveal that trade openness hinders the SMD by exposing the economy to unhealthy competition.

Furthermore, the finding shows that EG promotes SMD in South Africa. This corroborates the findings of Pradhan, et al (2014), Mishra (2018) and Osaseri and Osamwonyi, (2019) who argued that advancement in economic activities creates greater demand for financial services, which necessitates additional stock market coverage and its consequent development.

In addition, the study confirms the monetarists' postulation that changes in money supply changes result to change demand for equities and interest rate in the economy and consequently promotes the SMD. This collaborates the findings of Kumar and Padhi (2012), Hu, Han and Zhang (2018) as well as Tiryaki, Ceylan and Erdoğan (2019) evinced positive relationship between SMD and money supply. Finally, the study reveals that globalization and domestic savings have negative association with stock market capitalization in South Africa.

5.2 Recommendation

SMD has been of utmost concern of researchers and policymakers. Thus, in line with the findings, this study provides practical policy inferences for possible implementation and further investigation. The recommendations include;

First, the country should adopt stock market restrictions to protect the domestic stock market against the negative effect of globalization. Two different classes of stocks should be adopted for foreigners and citizens with different price discounts respectively. This will minimize integration of the South African stock market to the global capital market. Hence, it will reduce the spillover effect of global stock market crisis on the SMD in South Africa.

Second, liberal trade policies should be adopted. Free trade agreements and open markets should be adopted to increase intensive and extensive margins of exports and import of the country. This will improve the welfare of the citizens spur economic activities, which in turn promote SMD.

Third, EG promoting policies should be embraced. For instance, policies that provides credits to small and medium scale enterprises, skill acquisition

training, greater participation of women and the poor as well as financial inclusion should be encouraged to promote EG and ensure the SMD.

Fourth, encourage domestic investment rather than savings. Excessive domestic savings slows down economic activities and negatively affect the SMD. Therefore, domestic investment can be encouraged by providing loans at low interest rate to alleviate the negative effect of domestic savings on the SMD.

Finally, expansionary monetary policies should be used to revive the economy whenever recession occurs. The increase in money supply via expansionary monetary policies increases money balances, increases the need for financial services and promotes SMD. Therefore, the right mix of the above policy recommendations can ensure the SMD in South Africa.

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