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Effect of Financial Structure and Economic Growth in Sub-Sahara Africa Economies. A Comparative Study of South Africa and Kenya

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Abstract: *This study examined financial structure and economic growth of developing Sub-Saharan African economies; comparative study of Kenya and South Africa. The specific objective of this study is to investigate the relationship between financial structure in bank credit to the private sector ratio (BC), market capitalization ratio (MC), liquid liability ratio (LLR), turnover ratio (TR) and value of traded share (VTS) and economic growth variable in Gross Domestic Product (GDP), anchored on bank based and market-based theory. The study used secondary data from World Bank Data Atlas and subjected them to Error Correction Model and Co-integration to ascertain the short run and long run relationships between BC, MC, LLR, TR and VTSand GDP at the 5% level of significance. The findings show that financial structure in BCPS, MC, LLR and TR except VTShad no significant relationship with GDP in Kenyawhile only BCPS and LRR had no significant relationship with GDP in South Africa thereby showing that MC, TR and VTS all had significant relationship in South Africa. The result however, discovered that there was presence of long run relationship in Kenyaand South Africa. Thus, the study concludes that financial structure does not have significant impact on economic growth of Kenya while showing robust impact on the economic growth of South Africa. Hence, the study recommends thatthe regulatory authorities of the two (2) countries should continuously encourage transactions in the capital market so as to boost market capitalization and funds raised via the capital market which will enhance availability and redirection of resources to key sectors of the economy thereby improving economic growth in both Kenya and South Africa.*

Keywords: *Financial structure, Bank Credit, Market Capitalization, Economic Growth, Gross Domestic Product*

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I. Introduction

Financial structure across the globe comes in different sizes and shapes. The importance of financial structure, whether by banks or stock markets to economic growth of a country is very important to policy makers for economic decision (Oima&Ojwang, 2013). Financial structure is broadly defined as the mix of financial instruments, financial markets, and financial institutions in a country (Naomi &Eftychia, 2018). Financial system with more reliance on the banking system is characterised as bank-based, while one that relies more on the stock market is characterised as market-based (Guei, 2018). Financial structure performs the function of mobilizing savings, allocating capital, providing an efficient payment system, monitoring and exerting corporate governance as well as ameliorating risk and the creation of money in the economy to enable businesses and economies harness their human, materials and management resources for optimal productivity through stock markets and banks, hence stimulating economic growth. This research seeks to answer the questions; What is the relationship between bank credit to the private sector and economic growth? How does variation in liquid liabilities ratio, market capitalization ratio, turnover ratio, value of traded shares ratio and government expenditure affect economic growth?

The linkage between financial structure and economic growth is an important virtue for economic enhancement, especially considering the wide consensus among investors as well as economic managers. The

role of the financial structure in the mobilization and efficient allocation of scarce resources to different sectors of the economy is sacrosanct to guaranteeing sustainable economic growth. This is because finance is aptly considered as the life wire of every economy. Thus, efforts have always been committed to improving the financial structure of the Sub-Saharan Africa (SSA) economies too, given its relevance to economic growth. However, the seemingly non-performance of the SSA economies in the wake of concerted efforts in evolving the financial structure of these countries with the expectation of enhancing growth is worrisome. For instance, in South Africa's GDP growth rate as at 1990 stood at -0.3 percent and 0.8 percent in 2018 and Kenya GDP in 1990 was 4.1 percent and 6.3 in 2018 respectively. Could it be that financial structure (i.e. comprising of bank-based and market-based intermediation) in driving the much-needed growth were inadequate? This also brings to reflect the debate that exist both in theoretical and empirical literatures as regards the relationship between the various components of the financial structure and economic growth. Existing theories (bank-based, market-based, financial services and law and finance) suggest superiority over each other.

The bank-based theorists argue that banks can finance growth more effectively than markets in developing economies (Gerschenkron, 1962). Proponents of the market-based theory are of the view that big, liquid and well-functioning markets foster growth better than banks (Levine, 2002, Beck & Levine, 2002). Furthermore, the financial services theory opines that the source of finance does not matter but instead what matters is the availability and the efficient provision of financial services (Arestis et al. 2004; Levine 2002b). Also, the law and finance theory posit that quality of financial services as determined by the legal system is what improves the efficient allocation of resources and economic growth (Laporta, Lopez-de-Silanes, Shleifer, and Vishny, 1997, 1998, 1999a, 1999b). Empirical studies also showed lack of consistency in their findings. For instance, studies by Naomi and Eftychia (2018), Guei (2018), Nikolaidou (2018), as well as Nyasha and Ojah (2014) indicate that financial structure is not significant in explaining growth in the Sub-Saharan African economies. Contrastingly, Bist and Bista (2018), Aristis, Ambika andLuintel (2016), OimaandOjwang (2015) show that financial structure is significant in explaining growth in SSA. More so the study by Demirgüç-Kunt, Feyenand Levine, (2011) found that financial structure depends on the level of economic growth and financial development. What is lacking in the earlier studies to the best of our knowledge as far as developing countries are concern is the influence of government expenditure on economic growth. It is against this backdrop that, this study considers examining the relationship between financial structure and economic growth in Sub-Saharan African economies, specifically, South Africa and Kenya.

Test of Hypothesis

H_{01} There is no significant relationship between financial structure and economic growth of selected Sub-Saharan African countries?

H_1 There is a significant relationship between financial structure and economic growth of selected Sub-Saharan African countries?

II. Review of Theoretical and Empirical Literature

2.1 Theoretical Literature

Theoretically, different models indicated that banks provide different services to the economy from those provided by securities markets. For example, Sackey, Nkrumah andAhenkro (2018), KhetsiandMongale (2015), Simatele (2015) OimaandOjwang (2013), Boot andThakor (1997, 2000), DewatripontandMaskin (1995) suggest that banks have a comparative advantage in reducing the market frictions associated with financing standardized, shorter-run, lower-risk, well-collateralized endeavours, while decentralized securities markets are relatively more effective in custom-designing arrangements to finance more novel, longer-run, higher-risk projects that rely more on intangible inputs. Financial structure is commonly evaluated on the basis of the main competingtheories, which include the bank-based theory, market-based theory, financialservices theory, and the law and finance view (Levine 2002b; Arestis *etal*. 2004; Luintel *et al*. 2008; Naomi and Eftychia, 2018). We explain each theory below.

Bank Based Theory

The bank-based theory lays emphasis on the positive role of banks in development and growth, and also, stresses the shortcomings of market-based financial structures. It argues that banks can finance growth more effectively than markets in developing economies, and, in the case of state-owned banks, market failures can be overcome and allocation of savings can be undertaken strategically. Those banks that are unhampered by regulatory restrictions, can exploit economies of scale and scope in information gathering and processing (Levine, 2002; Beck & Levine, 2002). The bank-based theory emphasises the importance of banks in identifying good projects, mobilising resources, monitoring managers and managing risk, while stressing the deficiency of market-based economies. According to the bank-based theory, bank-based financial structures, especially in countries at an early stage of economic growth, are more effective at fostering growth than market-based

financial structures. In particular, advocates of the bank-based view argue that well-functioning markets instantly reveal information in public markets, which provides individual investors with less incentive to acquire information.

Market-Based Theory

The market-based theory highlights the advantages of well-functioning markets, and stresses the problems of bank-based financial systems. The market-based theory argues that big, liquid and well-functioning markets foster growth and profit incentives, enhance corporate governance and facilitate risk management (Levine, 2002, Beck & Levine, 2002). The inherent inefficiencies of powerful banks are also stressed, for they 'can stymie innovation by extracting informational rents and protecting firms with close bank-firm ties from competition may collude with firm managers against other creditors and impede efficient corporate governance' (Levine, 2002). Market-based financial systems reduce the inherent inefficiencies associated with banks and are, thus, better at enhancing economic development and growth.

The market-based theory essentially counter-attacks the bank-based theory by concentrating on the problems generated by powerful banks. First, in the process of financing firms, banks get access to information that is not available to other lenders. Banks can use such inside information to extract rents from firms. More concretely, at the time of new investments or debt renegotiations, banks can have bargaining power over a firm's expected future profits. Powerful banks can obtain disproportionately large share of the profits, so that firms will have fewer incentives to undertake high risk and profitable projects (Rajan, 2012). Secondly, powerful banks can collude with managers against outsiders, which in turn impedes competition, corporate controls, the creation of new firms, and long-run economic growth (Hellwig, 1998). Wenger andKaserer (1998) provide evidence from Germany where banks misrepresent balance sheet of firms to the public and encourage firm managers to misbehave.

Financial Services Theory

The financial services theory (Merton & Bodie, 1995; Levine, 1997), is actually consistent with both the bank-based and the market-based theory. It embraces both, but minimizes their importance in the sense that the distinction between bank-based and market-based financial systems matters less than was previously thought; it is the financial services provided that are by far more important, than the form of their delivery (World Bank, 2016). According to the financial services theory, the issue is not the source of finance. Rather it is the creation of an environment where financial services are soundly and efficiently provided. The emphasis is therefore on the creation of better functioning banks and markets rather than on the specific type of financial structure in place.The financial services theory is based on the premise that the source of finance does not matter but instead what matters is the availability and the efficient provision of financial services (Arestis,*et al.* 2004; Levine, 2002b). This minimizes the importance of the role of banks and financial markets.

Law and Finance Theory

The legal-based theory of financial structure espoused by Laporta, Lopez-de-Silanes, Shleifer, and Vishny (1997, 1998, 1999a, 1999b) extends the financial services theory and unconditionally rejects the bank-based versus market-based debate. The legal-based theory argues that finance comprises a set of contracts. These contracts are defined and made more or less effective by legal rights and enforcement mechanisms. From this perspective, a well-functioning legal system facilitates the operation of both markets and intermediaries. It is the overall level and quality of financial services as determined by the legal system that improves the efficient allocation of resources and economic growth. According to the legal-based theory, the century long debate concerning bank-based versus market-based financial systems is analytically vacuous.

Kenya Banking System

The Kenyan banking sector includes the Central Bank of Kenya (CBK) the primary regulator of the banking industry; twenty eight domestic and fourteen foreign commercial banks with branches, agencies, and other outlets throughout the country; one mortgage finance company; eight representative offices of foreign banks; eleven licensed deposit taking microfinance institutions; 49 insurance companies; the Post Office Savings Bank with a large network of branches around the country; 79 foreign exchange (forex) bureaus; three licensed credit reference bureaus, 14 money remittance providers and about 200 deposit-taking licensed savings and credit cooperative organizations (SACCOs) with a membership of over three million Kenyans. However, the banking sector is essentially dominated by four major commercial banks, namely Equity Bank, Kenya Commercial Bank, Barclays Bank of Kenya and Standard Chartered. In addition, smaller banks have emerged and experienced tremendous growth in recent year. More than ten Kenyan banks including Kenya Commercial Bank, Commercial Bank of Africa, Equity Bank and Bank of Africa have subsidiaries operating in the East Africa Community and South Sudan. Increasing access to finance has been abridged with the use of innovation such as agent banking, which allows commercial banks and Deposit Taking Microfinance (DTM) institutions to

engage the services of third party outlets to deliver specified financial services on their behalf for the efficiency of their operations.

With the advent of mobile money and its recent linkages to the formal banking system, however, the number of Kenyans with access to electronic financial services has grown rapidly. Customers have also increased the use of bank platforms through a wide array of services. Mobile money platforms have been used to offer medical insurance, microloans, transfer money to a pre-paid credit card, and even to pay parking, electricity, and water bills. Kenya is one of the world leader in mobile money technology. Innovations such as agent banking, which allows commercial banks and deposit-taking Micro Finance Institutions to engage the services of third party outlets to deliver specified financial services on their behalf, have improved financial inclusion in rural and urban areas. A study by Nielsen on Kenyan Retailers and Technology revealed that while the uptake in mobile usage in Kenya, where mobile penetration has reached 96%, has been significant, there still is significant scope for growth in the market, particularly in the retail environment.

Economic and regulatory challenges are reflected in the decline in growth of the financial services sector to 4.3% in the second quarter of 2018 compared to 8.1% in the same period in 2017. There are concerns that the financial services system could be jeopardised if fraud allegations against officials of the Central Bank of Kenya are substantiated. Meanwhile the running costs of banks are increasing. IT expenditure continues to grow in order for banks to keep up with regulatory requirements, improve efficiencies, and to increase digital products that will make banking cheaper for customers and improve banking inclusion.

The Nairobi Securities Exchange (NSE)

Nairobi securities exchange formally Nairobi stock exchange is the institution that is tasked with the responsibility to oversee listing, delisting and regulation of trading of financial securities such as shares (Barasa, 2014). The Nairobi Securities (stock) Exchange (NSE) was established in 1954 as the Nairobi Stock Exchange, based in Nairobi the capital of Kenya. It was a voluntary association of stockbrokers in the European community registered under the Societies Act in British Kenya.

The Nairobi Stock Exchange (NSE) has a long history that can be traced to the 1920's when it started trading in shares while Kenya was still a British colony (IFC/CBK, 1984). While share trading was initially conducted in an informal market, there was a growing desire to have a formal market that would facilitate access to long-term capital by private enterprises and also allow commencement of floating of local registered Government loans. The NSE was constituted in 1954 as a voluntary association of stockbrokers registered under the Societies Act (NSE, 1997a). The newly established stock exchange was charged with the responsibility of developing the stock market and regulating trading activities. The Nairobi Stock Exchange improved to automated trading in government bonds through the Automated Trading System (ATS) in November 2009 and evolves into a full-service securities exchange which supports trading, clearing and settlement of equities, debt, derivatives and other associated instruments. In the same year, the equity settlement cycle moved from the previous T+4 settlement cycle to the T+3 settlement cycle. This allowed investors who sell their shares, to get their money three (3) days after the sale of their shares. Despite its history, however, the stock market is yet to make significant contribution in the development process. The question of interest to research is what is the extent of financial structure influence to the growth path of the stock market? Does it mimic financial structure framework of other developed or emerging markets?

The development path of stock markets in both the emerging and developed world indicates an evolutionary process where changes in institutional infrastructure and the policy environment are witnessed as efforts are made to facilitate the growth of the stock market. The evolutionary process indicates graduation from non-formal markets to formal organizations without a regulatory body and then establishment of a statutory body in the reform/restructuring process. The establishment of a statutory body is aimed at enhancing the confidence of investors. While statutory regulatory bodies in most developed markets are set up to resolve the conflict of interest in the self-regulation framework, most of the emerging markets are establishing such bodies as part of the revitalization reform process.

According to Singh (2014), the NSE 20-Share Index (NSE 20) is the long-standing benchmark index used for equities traded on Kenya's Nairobi Stock Exchange (NSE) and represents the geometric mean of share prices of the NSE's 20 top stocks. The NSE 20-Share Index was introduced in 1964, one year after African natives were first allowed to trade on the NSE. It was joined in February 2006 by the NSE All Share Index (NASI), aimed at reflecting the total market value of all stocks traded on the NSE in one day rather than just the price changes of the 20 best performers captured by the NSE 20.

Stocks (2014) in Waithaka (2013) states that the members are selected based on a weighted market performance for a 12 month period as follows: Market Capitalization is 40%, shares traded are 30%, number of deals is 20% and turnover is 10%. Index is updated only at the end of the day. Companies included in the index are Mumias Sugar, Express Kenya, Reavipingo, Sasini Tea, CMC Holdings, Kenya Airways, Safaricom, Nation Media Group, Barclays bank of Kenya, Equity Bank, Kenya Commercial Bank, Standard Chartered Bank, Bamburi Cement, British American Tobacco, Kengen, Centum Investment Company, East African Breweries,

EA Cables, Kenya Power and Lighting Company Limited and Athi River Mining. This index primarily focuses on price changes amongst those 20 companies.

Osoro and Ambrose (2013) notes that there have been complaints about the computation of the NSE 20 SHARE Index, the feeling has been that it is not reflective of the market performance. He adds that this is partly because the index is equally weighted. For instance, this meant that KenGen, which has a market capitalization of about Sh57 billion carries the same weight as Express Kenya, under market capitalization which is only SH814 million or a seventh of its size as at February 2008. Assigning equal weights to two companies with such a huge difference in their market capitalization is obviously unrealistic.

South Africa Banking System

The banking system in South Africa is regulated by the South African Reserve Bank, which is the primary monetary authority and custodian of the country's gold and foreign exchange reserves. The Reserve Bank is managed by a board of fourteen directors, seven representing major commercial and financial institutions, industry, and agriculture, and seven appointed by the government. Of the latter, one serves as governor, and three serve as deputy governors of the Reserve Bank.

The Reserve Bank's primary functions are to protect the value of the rand and to control inflation. The Reserve Bank regulates the money supply by influencing its cost, i.e., interest charged on loans to other institutions. It is technically independent of government control, but in practice it works closely with the Treasury and helps to formulate and to implement macroeconomic policy. The Reserve Bank issues banknotes and is responsible for the sale and purchase of foreign exchange for the government, as well as for the administration of the treasury-bill tender system. Its major customers are government agencies, private banks, and discount houses, although it also performs clearinghouse functions for private banks and assists banks that experience liquidity problems. Finally, the Reserve Bank is the authorized buyer of gold bullion, thereby acting as agent for the gold-mining industry in effecting sales on their behalf in the private market.

The Reserve Bank uses monetary policy to control inflation, primarily by adjusting the liquid-asset requirements of private banking institutions and by restricting bank credit in order to control consumer demand. Until 1975 the bank enforced fixed interest rates on long-term government securities, but thereafter it allowed transactions at market-related prices. Direct control over deposit interest rates quoted by banking institutions was abolished in 1980; nevertheless, the Reserve Bank still exercises considerable indirect control through its own bank rate.

The private banking sector was controlled by commercial banks until the 1950s when banking services began to diversify. Until then, commercial banks had avoided services such as personal loans, property leasing, and credit-card facilities. New institutions including discount houses, merchant banks, and general banks emerged to meet this demand, and in reaction to these changes in the banking sector, commercial banks increasingly entered into medium-term credit arrangements with commerce and industry and acquired interests in hire-purchase firms and leasing activities. In addition, they expanded their operations into insurance and even invested in manufacturing and commercial enterprises.

During the late 1980s, the "big five" commercial banks, First National Bank (formerly Barclays), Standard Bank of South Africa, Nedbank, Volkskas, and Trust Bank were increasingly challenged by building societies, which had listed holding companies on the Johannesburg Stock Exchange (JSE) and had set up commercial and/or general banking arms. The Deposit Taking Institutions Act of 1991 formalized the overlapping of functions between the banks and the building societies that had existed for more than a decade. The act brought South Africa into line with internationally recognized standards for capital requirements.

In February 1991, four of the country's leading financial institutions--Allied Bank, United Bank, Volkskas, and Sage Banks merged to create the largest banking group in the country, the Amalgamated Banks of South Africa (ABSA), with assets of R56 billion. ABSA, which merged with a fifth bank in 1992, is jointly controlled by the Rembrandt tobacco group and the South African National Life Assurance Company (Sanlam), the country's second-largest insurance group. The banking industry is undergoing further reorganization in the mid-1990s, in part to establish banking services in poor communities that were neglected under apartheid.

International banks in the country have focused on offshore lending (where they have a competitive advantage as a result of their low overheads and their ability to raise funds at comparatively favourable rates), as well as treasury activities for corporate clients and government.

All banks offer a comprehensive range of products and services through extensive branch and electronic banking infrastructures, serve a wide customer base, and have the characteristics of universal banks. Based on population numbers, South Africa does not appear to be over-banked, as one branch exists for approximately every 9,500 persons. However, a large portion of the population does not have access to normal banking services and uses only a few products. Many Black South Africans tend to save outside the formal banking sectors, and choose to save in cooperative savings institutions called "*stokvels*." Excluding the non-banked segment of the population, it is estimated that there is one branch for every 3,200 persons. Electronic banking has become commonplace. The banking sector is overshadowed by the four largest retail banks that set

cost and service standards. Attempts by authorities to make the banking sector more cost-effective and service orientated, especially to new entry-level clients, have met with limited success.

The Johannesburg Stock Exchange (JSE)

The JSE was formed in 1887 during the first South African gold rush. The Johannesburg Stock Exchange (JSE) is the oldest existing and largest Stock Exchange in Africa founded in 1887, one year after the discovery of gold on the Witwatersrand area, in response to the need for capital to fund burgeoning investments in the mining sector. It grew rapidly. Following the first legislation covering financial markets in 1947, the JSE joined the World Federation of Exchanges in 1963 and upgraded to an electronic trading system in the early 1990s.

The Johannesburg stock exchange introduced corporate and qualified membership in 1985 via the amendment of Stock Exchange Control Act of 1985 approved by the parliament. Corporate broking membership with limited liability was introduced (supplementing sole traders, partnerships and unlimited liability corporate membership). However, member firms were to be the trading entity and not the individual. Foreign members were allowed to also operate. In 1993, the JSE became a founder member of the African Stock Exchanges Association (ASEA). By May 1996, the Bond market was passed from the JSE to the Bond Exchange of South Africa and the latter was licensed as a financial market in terms of the Financial Markets Act.

The open outcry trading floor different from the rough of the miner's tent where the bourse started primarily in scale was closed in 1996, and replaced by an automated trading system known as the Johannesburg Equities Trading (JET) system. On June 10 of 1996, all trade conducted on the JET system. Dual trading and negotiated brokerage commissions were introduced. In 1997, the electronic clearing and settlement concept, Shares Transactions Totally Electronic (Strate) was introduced. On 18 August, real-time news service for the dissemination of company announcements and price sensitive information known as the Stock Exchange News Service (SENS) was introduced. The JSE Listings Requirements were amended to accommodate the introduction of SENS. Warrants were introduced on the JSE by Deutsche Bank. The Securities Services Act was promulgated, replacing the Stock Exchanges Control Act and the Financial Markets Control Act in 2004.

In 2013, the Financial Markets Act, No 19 of 2012, replaced the Securities Services Act, No 34 of 2004. The JSE launched its public online virtual trading game in June. Phase one of the move to T+3 was implemented in July 2013.

South Africa has mature capital markets that serve the domestic economy and the wider continent. As one of the world's 20 largest exchanges by market capitalization ($1,007bn at end-2013) and the largest exchange in Africa, the Johannesburg Stock Exchange strives to offer secure, efficient primary and secondary capital markets across a diverse range of instruments, supported by cost-effective services (JSE, 2016).

While a number of heavyweights like British American Tobacco (BAT), SABMiller, Glencore Xstrata and BHP Billiton account for a large share of the market, The Exchangecaters for a diverse variety of offerings. There are almost 400 companies listed on The Exchange across the Main Board and AltX.

South African bond market

South Africa's interest rate market is the largest on the continent. The majority of South African bonds are issued government and state-owned entities but the number of corporate bonds issued is growing. The JSE also offers a variety of Bond-based Derivatives, including Bond futures, Forward-rate Agreements, Vanilla Swaps and standard bond options. The Exchange hopes to attract new bond issuers to the bourse, seeking to partner with other African exchanges with a dual-issuance model. In November 2012, the Namibian government floated a R850m ($78m) 10-year bond priced at 8.26%, the first tranche of a R3bn ($275.2m) programme, and the JSE hopes to encourage other African countries to list debt on The Exchange.

Derivatives

The JSE offers trading of a variety of Derivatives, including Futures and Options on Equities, Bonds, Indices, Interest Rates, Currencies and Commodities. The JSE was ranked the 6th largest exchange by number of Single Stock Futures traded and 9th by the number of Currency Derivatives traded in 2012 in the World Federation of Exchanges Annual Derivatives Market Survey.

Membership

There are 62 equities members, 120 Equity Derivatives members, 92 Commodity Derivatives members and 102 Interest Rate and Currency Derivatives members licensed in South Africa, a mix of local and international operations.

Technology

The JSE has undertaken major technological upgrades over the past few years on a consistent drive to upgrade trading, clearing and settlement which is still continuing. In July 2013, the JSE implemented a new trading platform the Millennium Exchange in the Equity Market, while at the same time moving the trading

system from London to Johannesburg. Following this successful transition, trades can now be executed up to 400 times faster than under the previous TradElect system. The change allows for increased liquidity and more algorithmic traders.

Regulation

The JSE is the frontline regulator for the exchange, setting and enforcing listing and membership requirements and trading rules. The Financial Services Board (FSB) supervises the JSE in the performance of its regulatory duties.

The regulatory landscape is set to change significantly in the future, as South Africa looks to implement a twin peaks model of oversight. Under the new system, prudential supervision will be transferred to the South African Reserve Bank (SARB) and market conduct regulation will be led by a bolstered FSB.

South Africa is currently ranked 1st in the world in terms of regulation of securities exchanges in the World Economic Forum's Global Competitiveness Survey for 2013-2014. This is an accolade for both the JSE and its regulators.

Foreign listings

Another regulatory change that could have widespread implications is the 2011 decision to alter South Africa's inward listing rules, allowing foreign domiciled companies to be treated as domestic listings. While foreign firms had been allowed to list on the JSE since 2004, they were previously subject to foreign exchange rules, which limited the amount of these equities that local investors could hold. The lifting of these restrictions has been an important regulatory shift for The Exchange and makes the JSE a more attractive listings destination (JSE, 2017).

It is consistently one of the world's twenty largest stock markets; the sixth largest among developing economies (after China, Brazil, India, Taiwan and South Korea); and by far the largest in Africa, with market capitalization in excess of 900 billion US dollars in early 2013 Markets index, the fifth largest country weight), and its aggregate value is therefore rapidly affected by the global flow of funds, to and from, emerging markets. The JSEs significance in the South African economy, measured, admittedly crudely, by the ratio of market capitalization to Gross Domestic Product, is close to 190%. This is unusually large, and only exceeded by Hong Kong, where the ratio is a staggering 914%, and Singapore, at 224%, and suggests that sustained movements in the aggregate valuation of the stock market can have significant effects on aggregate spending and the share of consumption in domestic output. The JSE provides a market where securities can be traded freely under a regulated procedure. It does not only channel funds into the economy, but also provides investors with returns on investments in the form of dividends.

2.2 Empirical literature

Several studies on financial structure and economic growth in the Sub-Saharan Africa economies has been investigated. Meanwhile, results from these studies are still conflicting and inconclusive, some of which are reviewed below:

Naomi and Eftychia (2018) examines the effect of financial structure on economic growth in Sub Saharan Africa. The sample consists of both low- and middle-income countries whose financial systems range from poorly developed to relatively well-developed in the context of developing countries. Using dynamic panel estimation techniques, the study investigates both the short and long-run effects of financial structure on growth, focusing on 14 SSA countries over the period 1980-2014. The results indicate that financial structure is not significant in explaining growth in the region. The study is robust to sample groupings, and the results do not change when they exclude countries with better developed financial systems relative to other countries in the sample.

Rateiwa and Aziakpono (2016) investigate financial structure and economic performance in selected African countries, the long-debated question of whether or not a country's financial structure matters for economic performance and, if so, how exactly it matters. The study uses the Johansen cointegration and vector error correction modelling framework within a country-specific setting to examine empirically the existence of a long-run equilibrium relationship between the financial structure of a country and per capita GDP and the causality thereof. The empirical assessment is based on evidence from selected African countries over the period 1971-2013, notably Egypt, Nigeria and South Africa. Firstly, cointegration test results reported in this paper show that there exists a strong relationship between the financial structure of Egypt and South Africa, and per capita GDP in these countries. However, such a relationship is weak in Nigeria, mainly attributable to its low level of financial development and the possibility of the natural resource curse emanating from the oil industry. Secondly, the evidence also strongly suggests that the nature of the relationship between the financial structure of Egypt and South Africa and per capita GDP is positive, albeit based on different measures of financial structure. In Egypt, financial structure is measured by the S-Size ratio, while, in South Africa, it is proxied by the S-Activity ratio. In Nigeria, there is no evidence suggesting that the country's financial structure influences

per capita GDP. Lastly, coefficients of the error correction term for all three countries are low, suggesting inefficiencies in the financial system and possible rigidities within the economies.

Demirguc-Kunt, Feyen and Levine (2011) investigates the evolving importance of banks and financial markets during the process of economic development and the association between financial structure, the mixture of banks and markets operating in an economy and economic development using Quantile regressions model. They find that as economies develop, the services provided by financial markets become comparatively more important than those provided by banks. Moreover, deviations of a country's actual financial structure from the estimated optimal structure are associated with lower levels of economic activity. Financial structure matters.

Arestis, Ambika and Luintel (2005) investigate whether financial structure influences economic growth. Three competing views of financial structure exist in the literature: the bank-based, the market-based and the financial services view. Recent empirical studies examine their relevance by utilising panel and cross-section approaches. This paper for the first time ever utilises time series data and methods, along with the Dynamic Heterogeneous Panel approach, essentially on developing countries. They found significant cross-country heterogeneity in the dynamics of financial structure and economic growth, and conclude that it is invalid to pool data across our sample countries. They found significant effects of financial structure on real per capita output, which is in sharp contrast to some of the recent findings. Panel estimates, in most cases, do not correspond to country specific estimates, and hence may proffer incorrect inferences for several countries of the panel.

Levine (2000) examine Bank-Based or Market-Based Financial Systems using ordinary least squares estimation with heteroscedasticity-consistent standard errors. For over a century, economists and policy makers have debated the relative merits of bank-based versus market-based financial systems. Recently, however, proponents of the legal-based view of financial development have argued that the century long debate concerning bank based versus market-based financial systems is analytically vacuous. According to this view, the critical issue is establishing a legal environment in which both banks and markets can operate effectively. This paper represents the first broad, cross-country examination of which view of financial structure and economic growth is most consistent with the data.

Beck, Demirgüç-Kunt, Levine and Vojislav (2000) explores the relationship between financial structure the degree to which financial system is market or bank-based and economic development. Cross-country regressions, industry panel estimations, and firm-level analyses provide remarkably consistent conclusions. Financial structure is not an analytically useful way to distinguish among financial systems. More precisely, countries do not grow faster, financially dependent industries do not expand at higher rates, new firms are not created more easily, firms' access to external finance is not easier, and firms do not grow faster in either market-based or bank-based financial systems. They found that economies grow faster, industries depending heavily on external finance expand at faster rates, new firms form more easily, firms' access to external financing is easier, and firms grow more rapidly in economies with a higher levels of overall financial sector development. Further, they found that countries with legal systems that more effectively protect the rights of outside investors enjoy greater financial development and economic growth. Thus, it is overall financial development and not financial structure per se that is critical for economic progress.

3.0 Model specification and methodology

Adopting the Beck, Demir-guc-Kunt, Levine, and Maksimovic, (2001) stated thus;

$Growth_{i} = \grave{a}X_{i} + \beta FD_{i} + \gamma FS_{i} + \varepsilon_{i.}$,

This study is slightly modified to accommodate the researcher's variables structure as follows;

$$Y_{it} = \alpha X_{it} + \beta FS_{it} + \varepsilon_{it} \text{ ---------- (1)}$$

Where *Y* is real gross domestic product, a proxy for economic growth, *FS* is the financial structure indicators, *X* is control variable for economic growth and ε is the error term. By decomposing financial structure into; bank credit to the private sector, liquid liabilities ratio, market capitalization, turnover ratio, value of traded shares and the control variable government expenditure, the stochastic form of the model is specified as;

$$RGDP = \alpha_0 + \alpha_1 BCPS + \alpha_2 LLR + \alpha_3 MC + \alpha_4 TR + \alpha_5 VTS + GE_6 + \varepsilon_1 \text{ ---------- (2)}$$

Where: RGDP is real gross domestic product, $BCPS$ is bank credit to the private sector ratio, LLR is liquidity liabilities ratio, MC is market capitalization ratio, TR is turnover ratio, VTS is Value traded shares ratio, *GE* is government expenditure, α_0 is the constant or the intercept term, α_1 - α_6 are the parameter estimates. The study coverage is South Africa and Kenya in the Sub-Saharan African Study.

III. Results and Discussions

The comparative study looks at the stationarity of the financial structure variables for the two countries first using Augmented Dickey Fuller Unit root test.

Table 1: Unit Root Tests for Kenya Data

Variables	ADF Test Statistics	Critical Values @5%	P-value	Order of Integration
D(BCPS)	-6.133812	-2.976263	0.0000	I(1)
D(GDP)	-4.089803	-3.587527	0.0174	I(2)
D(GE)	-5.128501	-2.981038	0.0003	I(1)
D(LLR)	-6.467246	-2.976263	0.0000	I(1)
D(MC)	-4.013014	-2.976263	0.0047	I(1)
D(TR)	-5.838591	-2.976263	0.0000	I(1)
D(VTS)	-5.521984	-2.976263	0.0001	I(1)

Source: Computation by researcher using E-view 10.0

The summarized unit root test from Table 1 for Kenya display the tests for stationarity properties of the series following the Augmented Dickey Fuller (ADF) statistics. All the variables were found to be stationery at order one (1) except GDP which was stationary at order 2. At both first and second difference as reported, the ADF Statistics for all the respective variables were all negative as well as the critical values at 5% significance level. The reported ADF test statistics showed higher components than the critical values at 5% significance level and the reported P-values were all less than 0.05 chosen level of significance for which cause, the Null Hypothesis of the presence of unit root in all the variables is convincingly rejected.

Table 2: Unit Root Tests for South Africa Data

Variables	ADF Test Statistics	Critical Values @5%	P-value	Order of Integration
D(BCPS)	-7.740255	-2.976263	0.0000	I(1)
D(GDP)	-5.603606	-2.981038	0.0001	I(1)
D(GE)	-3.609199	-2.976263	0.0124	I(1)
D(LLR)	-5.858425	-2.976263	0.0000	I(1)
D(MC)	-6.369064	-2.976263	0.0000	I(1)
D(TR)	-6.437292	-2.976263	0.0000	I(1)
D(VTS)	-4.835787	-2.976263	0.0006	I(1)

Source: Computation by researcher using E-view 10.0

The summarized unit root test from table 2 for South Africa reports display the tests for stationarity properties of the series following the Augmented Dickey Fuller (ADF) statistics. All the variables were found to be stationery at order one. At first difference as reported, the ADF statistics for all the respective variables were all negative as well as the critical values at 5% significance level. The reported ADF test statistics showed higher components than the critical values at 5% significance level and the reported P-values were all less than 0.05 chosen level of significance for which cause, the Null Hypothesis of the presence of unit root in all the variables is convincingly rejected.

Tests for Co-integration

According to Brooks (2014), co-integration is a long-run equilibrium relationship used in Finance models (Woolbridge, 2006). Previous researches established the presence of long-run equilibrium relationship using Johansen co-integration technique (Levine &Zervos, 1998; Soumare&Tchana, 2015). These form the basis for our adoption of co-integration method to test for the existence of long-run equilibrium relationship before we can proceed with our regression analysis.

Table 3: Co-integration Test Result for Kenya @ 5% level (Trace and Max-Eigen Statistics)

Date: 11/28/19 Time: 21:47
Sample (adjusted): 1992 2018

Series: GDP BCPS GE LLR MC TR VTS
Unrestricted Cointegration Rank Test (Trace & Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.965486	244.2671	134.6780	0.0000	90.89290	47.07897	0.0000
At most 1 *	0.847217	153.3742	103.8473	0.0000	50.72593	40.95680	0.0030
At most 2 *	0.809775	102.6483	76.97277	0.0002	44.80777	34.80587	0.0023
At most 3 *	0.599647	57.84050	54.07904	0.0222	24.71601	28.58808	0.1446
At most 4	0.457236	33.12449	35.19275	0.0822	16.49917	22.29962	0.2643
At most 5	0.327955	16.62532	20.26184	0.1471	10.73060	15.89210	0.2724
At most 6	0.196134	5.894723	9.164546	0.1990	5.894723	9.164546	0.1990

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level and Max-eigenvalue test indicates 3 cointegrating eqn(s) at the

0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: Computation by researcher using E-view 10.0

The co-integration result for Kenya in table 3 of the trace and maximum Eigen-value tests shows the existence of seven (7) co-integrating vectors with four (4) for trace statistics and three for maximum Eigen statistics (p-value of 0.0000, 0.0000, 0.0002 and 0.0222 for trace test and 0.0000, 0.0030 and 0.0023 for maximum Eigen-value) betweenGDP, BCPS, GE, LLR, MC, TR and VTSat the 5% level of significance. This thus confirms the existence of long-run equilibrium (cointegrating) effect of BCPS, GE, LLR, MC, TR and VTS on GDP in Kenya.

Table 4: Co-integration Test Result for South Africa @ 5% level (Trace & Max-Eigen Statistics)

Date: 11/28/19 Time: 21:47
Sample (adjusted): 1992 2018

Series: GDP BCPS GE LLR MC TR VTS
Unrestricted Cointegration Rank Test (Trace & Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.988504	313.5299	134.6780	0.0000	120.5756	47.07897	0.0000
At most 1 *	0.967430	192.9543	103.8473	0.0000	92.45744	40.95680	0.0000
At most 2 *	0.822575	100.4969	76.97277	0.0003	46.68866	34.80587	0.0012
At most 3	0.545533	53.80821	54.07904	0.0529	21.29300	28.58808	0.3197
At most 4	0.459272	32.51521	35.19275	0.0946	16.60067	22.29962	0.2577
At most 5	0.312733	15.91454	20.26184	0.1784	10.12589	15.89210	0.3230
At most 6	0.192970	5.788652	9.164546	0.2077	5.788652	9.164546	0.2077

Trace test indicates 4 cointegrating eqn(s) at the 0.05 level and Max-eigenvalue test indicates 3 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: Computation by researcher using E-view 10.0

The co-integration result for South Africa in table 4of the trace and maximum Eigen-value tests shows the existence of Seven (7) co-integrating vectors with four (4) for trace statistics and three for maximum Eigen statistics (p-value of 0.0000, 0.0000, 0.0003 and 0.0529 for trace test and 0.0000, 0.0000 and 0.0012 for maximum Eigen-value) betweenGDP, BCPS, GE, LLR, MC, TR and VTSat the 5% level of significance. This thus confirms the existence of long-run equilibrium (cointegrating) effect of BCPS, GE, LLR, MC, TR and VTS on GDP.

IV. Regression Results

The regression of the study are done using the error correction model to capture the presence differences in the stationarity of the study. This is to address the inefficiency that would have been reflected should ordinary multiple regression have been used for the study.

Table 5: ECM Regression Result for Kenya

Variable	**t-Statistic**	**Prob.**		
BCPS	0.232510	0.8185	R-squared	0.994869
GE	32.76333	0.0000	Adjusted R-squared	0.993074
LRR	2.008146	0.0583	F-statistic	554.0216
MC	1.864655	0.0770	Prob(F-statistic)	0.000000
TR	1.742245	0.0968		
VTS	3.877475	0.0009		
ECM(-1)	2.744211	0.0125	Durbin-Watson stat	2.100213
C	14.33824	0.0000		

Source: Computation by researcher using E-view 10.0

The result in table 5 shows R^2 and Adjusted R^2 of 99.49 and 99.31% respectively. This shows that the chosen regression model best fits the data. Hence, the goodness of fit in the regression model of 99.49% implies that chosen explanatory variables of financial structure in Kenya explain variations in the dependent variables (GDP) to the tune of 99.49%. Also, with a high Adjusted R^2 (99.31%) implies that the model can take on more variables conveniently without the R^2 falling beyond 99.49%. The overall impact of the variable is shown in the

F-statistics of 554.0216, which is considered acceptable being positive and it shows that there is significant positive relationship between the dependent and explanatory variables showing that all the financial structure variable in BCPS, GE, LRR, MC, TR, VTS and the control variable have significant relationship with GDP in the study for Kenya. The overall probability (F-statistics) of 0.00000 is rightly signed and very significant and displays a Durbin-Watson of 2.100213, showing the absence of autocorrelation on the chosen data.

The individual relationship in T-test of the components of financial structure showed that GE and VTS has positive and significant relationship with GDP in table 5 in Kenya. The high components of the T-test for the financial structure further proved that the market-based financial structure in VTS is a major determinant of the economic growth of the Kenya economic growth.However, the insignificant components of other variables like BCPS, LRR, MC and TR are unable to further the necessary growth of Kenya significantly. Therefore, we accept the null hypothesis thus stating that there is no significant relationship between financial structure and Gross Domestic Product in Kenya.

Table 6: ECM Regression Result for South Africa

Variable	t-Statistic	Prob.		
BCPS	0.602000	0.5539	R-squared	0.986538
GE	8.258711	0.0000	Adjusted R-squared	0.981826
LRR	0.751537	0.4611		
MC	3.341818	0.0032	F-statistic	209.3828
TR	3.700145	0.0014	Prob(F-statistic)	0.000000
VTS	-2.152047	0.0438		
ECM(-1)	2.231794	0.0372	Durbin-Watson stat	1.829243
C	16.96340	0.0000		

Source: Computation by researcher using E-view 10.0

The result in table 6 shows R^2 and Adjusted R^2 of 98.65 and 98.18% respectively. This shows that the chosen regression model best fits the data. Hence, the goodness of fit regression model of 98.65% implies that chosen explanatory variables explain variations in the dependent variables to the tune of 98.65%. Also, with a high Adjusted R^2 (98.18%) implies that the model can take on more variables conveniently without the R^2 falling beyond 98.65%. The overall impact of the variable is shown in the F-statistics of 209.3828, which is considered acceptable being positive and it shows that there is significant positive relationship between the dependent and explanatory variables showing that all the financial structure variable in BCPS, GE, LRR, MC, TR, VTS and the control variable have significant relationship with GDP in the study for South Africa. The overall probability (F-statistics) of 0.00000 is rightly signed and very significant and displays a Durbin-Watson of 1.829243, showing the presence of non-autocorrelation on the chosen data.

The individual relationship in T-test showed that GE, MC, TR and VTS has positive and significant relationship with GDP since the probability values are less than the critical value of 0.05 significance level in table 6 in South Africa. The high t-test result for the financial structure variables in GE, MC, TR, VTS which are mostly market-based variables are major determinants of economic growth in South Africa. Therefore, we reject the null hypothesis that state that there is no significant relationship between financial structure and Gross Domestic Product to accept the alternative which state that there is a significant relationship between financial structure and Gross Domestic Product in South Africa.

V. Comparative Discussion of Findings and Conclusion and Recommendation

The result of the error correction regression model revealed that financial structure has an insignificant relationship with gross domestic product in Kenya while the South African position showed that financial structure has a significant relationship with economic growth. The study showed that BCPS, LLR, MC and TR have a t-statistic value of 0.232510, 2.008146, 1.8646655 and 1.742245 with p-value of 0.8185, 0.0583, 0.0770 and 0.0968 was found to have a positive but insignificant relationship with GDP at 5% significance level since its p-values is more than 5%. However, only GE and VTS have a t-statistics value of 32.76333 and 3.877475 with p-values of 0.0000 and 0.0009 which was found to have both positive and significant relationship with GDP at 5% significance level since its p-values are way less than the 5% critical value. This generally showed that financial structure with higher variables showing insignificant relationship does no facilitate economic growth in Kenya. While the South Africa position showed that BCPS and LLR have a t-statistics value of 0.602000 and 0.751537 with p-values of 0.5539 and 0.4611 which was found to have a positive but insignificant relationship. However, the greater part of the financial structure variables in GE, MC, TR and VTS all have high t-statistics of 8.258711, 3.341818, 3.700145 and -2.152047 with p-values of 0.0000, 0.0032, 0.0014 and 0.0438 showed significant relationship between financial structure and economic growth of South Africa. Thus, the position of financial structure in Kenya is insignificant while significant in South Africa. The result of this study in Kenya is supported by the findings of Nikolaidou (2018), Naomi and Eftychia (2018), Guei (2018) and

Ngugi, Amanja and Maana(2016) who found insignificant effect of financial structure on economic growth. This result contradicts the position of our theory, the bank-based theory and market-based theory in financial structure and our *apriori* expectations of a positive significant effect/impact. However, the result of this study in Kenya was contradicted by the findings of Rateiwa and Aziakpono (2016), Kagochi (2016) and Arestis, Ambika and Luintel (2016) which supported the position in South Africa.

The implication of this result is that the financial structure in Kenya have overtime been ineffective on economy growth as the manipulation and direction of financial structure have not efficiently improve economic activities while having efficient impact on the economic growth of South Africa.

The long run relationship revealed that financial structure for both countries contributed immensely to the economic position of both countries in Kenya and South Africa significantly and that their economic activities are reactive to the financial evolvement of the financial authorities over a longer period.

From the result of the error correction model in the study, the study reveal and make the decision that financial structure does not facilitate necessary and required effectively significant change in the economic growth of Kenya, while the South Africa position revealed that financial structure are important components that facilitate necessary and required change in its economic growth.

Hence, the regulatory authorities are advised to continuously encourage transactions in the capital market so as to boost market capitalization and funds raised via the capital market which will enhance economic growth in both Kenya and South Africa. These can be done through sustained vital capital market information dissemination among the investors and general public; promoting transparency and accountability which will boost confidence for investors' participation; improving the facilities in the Exchanges to ensure optimal operations especially in the areas of product development and transaction completion time; and allowing for more trading floors as demutualization practice is promoted and encouraged in the Exchanges.

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Appendix

Kenya

Dependent Variable: GDP
Method: Least Squares
Date: 02/24/20 Time: 08:20
Sample (adjusted): 1991 2018
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BCPS	0.982833	4.227063	0.232510	0.8185
GE	0.842208	0.025706	32.76333	0.0000
LRR	6.443815	3.208838	2.008146	0.0583
MC	5.992086	3.213510	1.864655	0.0770
TR	7.827508	4.492771	1.742245	0.0968
VTS	0.107093	0.027619	3.877475	0.0009
ECM(-1)	0.599021	0.218285	2.744211	0.0125
C	1417.891	98.88879	14.33824	0.0000

R-squared	0.994869	Mean dependent var	2129.353
Adjusted R-squared	0.993074	S.D. dependent var	597.7948
S.E. of regression	49.75132	Akaike info criterion	10.88691
Sum squared resid	49503.89	Schwarz criterion	11.26754
Log likelihood	-144.4167	Hannan-Quinn criter.	11.00327
F-statistic	554.0216	Durbin-Watson stat	2.100213
Prob(F-statistic)	0.000000		

South Africa

Dependent Variable: GDP
Method: Least Squares
Date: 02/24/20 Time: 08:18
Sample (adjusted): 1991 2018
Included observations: 28 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
BCPS	1.808251	3.003739	0.602000	0.5539
GE	3.523743	0.426670	8.258711	0.0000
LRR	29.00723	38.59723	0.751537	0.4611
MC	3.221575	0.964019	3.341818	0.0032
TR	47.96158	12.96208	3.700145	0.0014
VTS	-0.006223	0.002892	-2.152047	0.0438
ECM(-1)	0.513263	0.229978	2.231794	0.0372
C	5326.993	314.0286	16.96340	0.0000

R-squared	0.986538	Mean dependent var	9510.949
Adjusted R-squared	0.981826	S.D. dependent var	2615.158
S.E. of regression	352.5473	Akaike info criterion	14.80320
Sum squared resid	2485792.	Schwarz criterion	15.18383
Log likelihood	-199.2448	Hannan-Quinn criter.	14.91957
F-statistic	209.3828	Durbin-Watson stat	1.829243
Prob(F-statistic)	0.000000		