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Financial deepening and economic growth: A comparative analysis of Nigeria and South Africa

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Abstract

This study examined the effects of financial deepening on economic growth. The objective was to compare the effects of financial deepening on Nigeria's and South Africa's economic growth. Time series data were sourced from Central Bank of Nigeria Statistical Bulletin and World Data Base. Nigeria's and South Africa's real gross domestic products were modeled as the function of private sector credit, broad money supply, market capitalization and interest rate spread. The study adopted the Vector Error Correction mechanism to compare the effect of financial deepening on economic growth. The study found that that South Africa have higher speed of adjustment than Nigeria, that financial deepening variables as formulated in the model explained more in variation of south African real gross domestic product than Nigeria. Private sector credit added more to South African real gross domestic product than Nigeria. Market Capitalization Ratio added more to South African real gross domestic product than Nigeria broad money supply added more to South African real gross domestic product than Nigeria. From the findings we conclude that financial sector deepening has more effect on South African economic growth than Nigeria. We recommend the need for further reforms in the Nigeria financial market to deepen the operational efficiency of the financial institutions for effective financial intermediation enhancing economic growth in Nigeria like South Africa. The monetary authorities should ensure adequate money supply in the economy such that will reduce cost of borrowing, enhance investment borrowings to achieve higher level output for the growth of Nigeria's economy. Like the capital market of South Africa,

Nigeria's capital market should further be internationalized; this will enhance inflow of foreign portfolio and real investment to Nigeria economy for better economic growth and the monetary authorities should formulate policies such as reduced interest rate policy for investment borrowing and policy to increase deposit rates to enhance fund mobilization and increase lending to key sectors of the economy.

Keywords: Financial deepening, economic growth, Comparative Analysis, Nigeria, South Africa.

INTRODUCTION

The wisdom that financial sector is important in the realization of macroeconomic goals could be accredited to the classical monetary policy theories such as Milton Friedman and later deepened by the 20th century economists such as Schumpeter in 1911 who argued that the creation of credit through the banking system was an essential source of entrepreneurial capacity to drive real growth. Financial intermediaries emerge to lower costs of reaching potential investment corporations, controls and manage risks, mobilize savings and conducts exchange. Reforms in the financial system have always been to reposition the financial intermediation of the financial institution (Odior, 2013).

The quest for financial sector deepening engineers series of financial sector reforms since the late 1980s among African countries. A comprehensive financial sector reform was initiated in 1987 as a key element of structural adjustment program. Financial sector has witnessed tremendous development in the midst of numerous challenges. The developmental drives and policies implemented in the sector over the years include, deregulation of interest rate, establishments aimed at strengthening the regulatory and supervisory institution such as Central Bank of Nigeria, Deposit Insurance Cooperation and Asset management company of Nigeria, upward review of capital adequacy, introduction of indirect monetary policy instruments, capital market deregulation, Bureau-de-Change guidelines, privatization of government owned banks, the establishment of the second and third tier security markets, Credit check bureau, increase in range and type of bank accounts. The deregulation and adoption of the market- led financial system did not only trigger increased financial deepening, it equally led to improved participants and access to financial services through increase in number of banks branch network (Yousuo & Ekiou, 2020).

The policy aim of the financial sector reforms such as the banking sector consolidation and recapitalization was to reposition the Nigerian banking sector for effective and efficient intermediation that will enhance the realization of macroeconomic goals. The essence of the liberalization was to abolish interest rate ceiling, high reserve requirements and qualitative restrictions in the credit allocation mechanism but the effect of the liberation on the access to external finance to economic development remain a knowledge gap. Owing to widespread over-regulation of the financial systems, the country continues to experience high levels of capital flight and financial intermediation bottlenecks (Odior, 2013). Significant proportion of Nigerians are financially excluded as financial services are lacking in rural area of Nigerian communities. The consequences are the continuous existence of financial dualism and financial leakages in the economy. Significant proportion of the money supply is outside the banking sector making it difficult for the monetary authorities to control the volume of money in circulation. The over-regulation and control of the financial system restrict the ability of the financial system to efficiently fund investment. Financial intermediation is ineffective as evidence have shown that significant proportion of Nigerians have no access to financial services. In addition, informal savings channels are prevalent in view of the grossly inadequate formal financial systems and leading to capital flight, low level of domestic resource mobilization and untapped resources in the informal sectors with considerable

financing gap, which adversely affected development and poverty alleviation in African countries (Anyanwu, 2014).

The South African financial system contains a highly developed and well-capitalized banking and financial sector which, however, caters mainly to the advanced segment of the South African economy. This first-world financial sector is highly concentrated – relying on competition among four large banks – and exists side by side with a developing economy very similar to those found throughout Sub-Saharan Africa, which is severely under-serviced. The challenge is therefore how the financial sector can promote economic growth, and expand products and services to meet the needs of the population that make little use of the financial system and the small and medium sized enterprises (SMEs) that do not utilize the banking system and capital markets to obtain funds for growth, while at the same time safeguarding financial stability. To address this challenge, the South Africa Financial Sector Development and Reform Program (FSDRP) were launched in July 2014 with an initial contribution from the Swiss State Secretariat for Economic Affairs (SECO) and are scheduled to complete in June 2018(Nwabeke, 2024). The objective of the FSDRP is to assist the Government in strengthening financial stability and improving financial inclusion, through analytical and advisory services Furthermore, despite the widespread financial sector reforms that have taken place, the South African financial sector still exhibits some level of inefficiency, illiquidity, thinness and limited range of financial instruments and investment opportunities. There are series of studies on financial sector deepening and economic growth; however, this study compared the effect of financial sector deepening on economic growth of Nigeria and South Africa.

LITERATURE REVIEW

Financial Deepening

Financial deepening refers to enlarged delivery of financial facilities by financial institutions to all people in a society (Nnenna *et al.,* 2012). Kromtit and Tsenkwo (2014) posit that financial deepening means expanding ventures through organized markets. It is expanding the size of financial organization, assimilating the casual market into the official economic system in order to improve effectiveness of intermediation, and efficiency of economic policy. Ndebbio (2004), asserts that it is expanding provision of financial assets hence economic growth. The main aim of expanding the financial system is to raise domestic savings; to deepen the size of monetary system, to reinforce the procedure of gathering savings .Expanding financial ventures allows placement of saving by increasing and differentiating money and capital fairs which strive for savings streams. Investors are thus provided with a wider choice of different financial instrument (Raman &Mustafa, 2014). Financial markets are deep if they provide investors with different financial assets which differ in terms of gains, risks and maturity. It entails a range of sub-markets, undertaking various financial assets that are assimilated in the foreign market that is connected to a financial organization (Popiel, 1990). Financial deepening implies the level of development and innovation of traditional and non-traditional financial services in a free-market economy (Valverde, *et al.* 2004 in Chiawa & Abur, 2013). While Nzotta and Okereke (2009) ascertain that financial deepening is the ability of financial institutions in an economy to effectively mobilize savings for investment purposes. The financial deepening vigorously attracts (Nwabeke, 2024).

There is a financial Sector Deepening Trust (FSD) in Nigeria which was created in 2015 as an independent trust supervised by audit firm KPMG. It uses policy guidance from a Programme Investment Committee (PIC). Current funders include the UK's Department for International Development (DFID), the Swedish International Development Agency (SIDA) and the Bill and Melinda Gates Foundation. Their focus areas include; financial landscape, consumer insights, savings groups, social protection, digital finance, payments, SME finance, risk &insurance and credit market development. According to the financial development Annual

report, (2023), financial deepening includes financial inclusion which is the delivery of financial services at affordable costs to sections of disadvantaged and low-income segments of society. From 2020 to 2023 there has been a 9% increase driven by mobile banking services. Financial exclusion, which is now down to 17.4%, has more than halved since 2023. Financial deepening in Nigeria has been experienced in the banking sector through the following; Mobile banking, online banking, agency banking, relationship banking, increase in number of banks and number of branches countrywide. There have also been developments of investment banking services which have provided financial services to all levels of society.

Measures of Financial Development

Market Capitalization Ratio

Capital Market capitalization refers to the total naira market value of a company's outstanding shares. Commonly referred to as market capitalization, is calculated by multiplying a company's shares outstanding by the current market price of one share, the investment community uses this figure to determine a company's size, as opposed to using sales or total asset figures (Osinubi, 2004). Capital market capitalization is measured in relationship to Broad Money Supply which signifies percentage of Broad Money Supply that is invested in the Nigeria capital market. Beck and Levine (2004) showed that with market capitalization, there is no theory suggesting that mere listing of shares will influence resource allocation and economic growth. Levine & Zervos (1998) also indicate that market capitalization is not a good predictor of economic growth. However, (Yartey, 2008) differs on this issue and opined that the assumption behind this measure is that overall market size is positively correlated with the ability to mobilize capital and diversify risk on an economy-wide basis. For these unsettled discussions, we shall use market capitalization as a ratio of GDP, total value of shares traded ratio and turnover ratio, each at a time to determine the performance of each of them, and avoid multi-collinearity in the model since (Demiguc-Kunt & Levine, 1996) has observed that different measures of stock market development are highly correlated.

In Nigeria, the capital market was a major beneficiary of structural reforms to the economy, which began in 1999, as a result of which the trend growth rate of the economy rose from 3% to 4% per annum before the turn of the last century, to around 7% per annum since 2003. Additional reforms to the financial services sector, including the 2004/2005 increase in banks' minimum capital base saw further inflows of investment into the capital market. The cashless policy of the Nigerian economy has also further improved the competitiveness of the economy cum ease of funds into the capital market to compete with improved capital market like the South African capital market. The market witnessed a steep decline in trading volumes and overall market capitalization, with the value index dropping from 33,358.3 points in 2006 to 20,730.6 points in 2014, and the value of approved new issues dropping precipitously to N2.03 billion in 2014 from N1,410 trillion in 2006. According to NSE (2014), the listed equities of Nigeria capital market was 190 with 48 listed bonds (including one exchange traded fund), and an average daily turnover this year of US$17 million, the market capitalization of equities on the NSE currently stands at N6.54trn, while that of bonds is slightly lower at N3.74 trillion, (Nigerian Stock Exchange, 2014). Figure 1 below shows the trend of Nigeria capital market capitalization as percentage of gross domestic product from 2008-2023

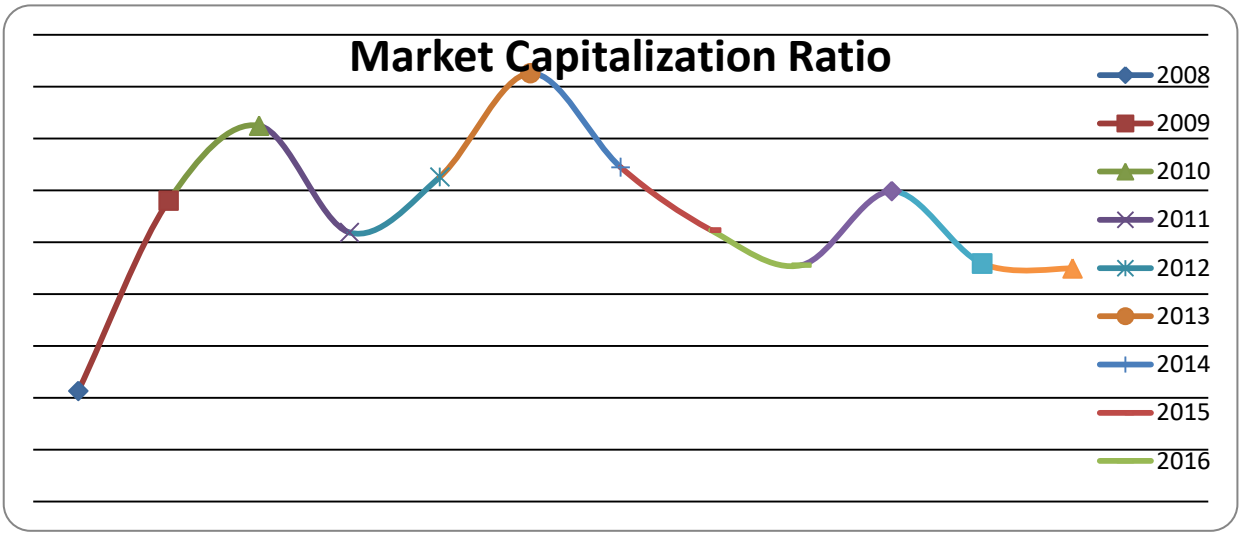


Figure 1: Nigeria capital market capitalization as percentage of gross domestic product from 2008-2023.
Source: Nwabeke, 2024

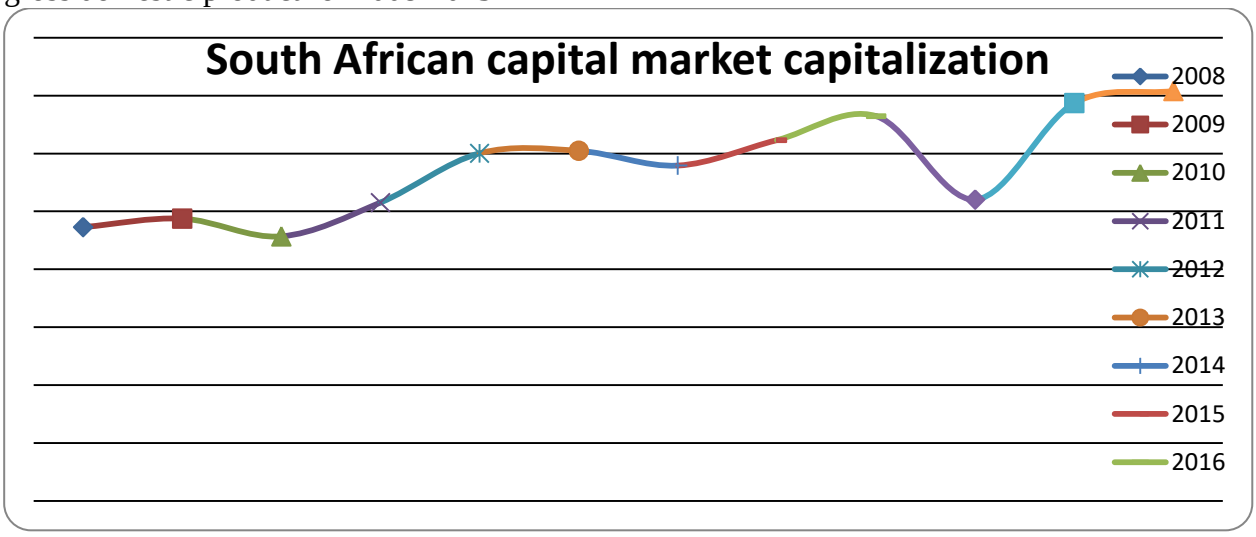
Between 2008-2019 Nigeria capital market capitalization was 14.26 in 2008, 11.6 in 2009 14.4 in 2010, 10.3in 2011 and 8.9 in 2019. Johannesburg Securities Exchange was renamed JSE Securities Exchange, which provided a market for securities trading with a regulated procedure. The JSE's market capitalization stood at USD614 billion as at end May 2009 and the market turnover was USD300 billion in 2008 calendar year SARB (2009) cited in Uyaebo et al (2015). Between 1995 and first quarter 2013, JSE averaged 15,656 Index points reaching an all-time high of 40,984 index points in March of 2013 and a record low of 4,308 Index points in September of 1998. The FTSE/JSE All Share Index has a base value of 10,815.083 as of June 21, 2002 (Uyaebo et al., 2015). The JSE plays a key role in the commercial and economic development of South Africa. It is a strong driver of the South African economy and the companies listed on the JSE represent a sizeable part of South Africa's economic activity. Companies across the range of industry and commerce meet to raise the public capital needed to expand their businesses and in doing so; they create new jobs, products, services, wealth and economic opportunities (Mkhize & Mswell-Mbanga, 2006).

It has about 400 companies listed with a market capitalization of R6, 633.6 billion as of March 25, 2011, the strongest performance in SSA (World Development Indicators, 2011). According to a press release by the African Capital Markets news, in 2010, JSE revenues increased 9% per year over- year to R1, 255 million in 2010 (2009: R1, 156 million) despite a challenging environment. Moreover, South Africa's Johannesburg Stock Exchange (JSE) led African exchanges in Initial Public Offerings (IPO) transactions and capital raised in the past five years, amounting to $2.7 billion. In the period under review, there were 105 IPOs, raising $6.1 billion by African companies on exchanges worldwide and non-African companies on African exchanges, with the top 10 African IPOs by value in 2015 taking place in South Africa and North Africa, namely Egypt and Morocco. In 2015, capital raised from IPOs by companies on the JSE in dollar terms decreased by 11 percent as compared with 2014, largely due to the weakening of the South African rand during the year, while capital raised from IPOs by companies on other African exchanges in dollar terms increased slightly by 3 percent as compared with 2014 (Oputa, 2016).

However, recent periods before the recent recession set in Nigeria and indeed South Africa capital markets witnessed a sporadic growth in their economies. Output growth in the Nigeria averaged 6 to 7 percent yearly, which within the context of global output growth was very impressive performance (Nigeria Bureau of Statistics, 2015). According to the report before this period, the oil sector has remained the major driver of growth recording a 7.50 per cent increase in contrast to the non-oil sector. This scenario is different with the South African

economy which although has equally witnessed an impressive performance in economic growth, the capital market performance indicators have not transformed their economies to the desired level (Oputa, 2016).

Figure 2 illustrate movement of South African capital market capitalization as percentage of gross domestic product for 2008-2023



Source: Nwabeke, 2024

Figure 2: South African capital market capitalization as percentage of gross domestic product for 2008-2019. Between 2008-2019 South African capital market capitalization was 236.4 in 2008, 243.7 in 2009 228.4 in 2010, 257.6 in 2011 and 353.9 in 2019

Credit to Private Sector

The credit to private sectoris said to be the engine of economic growth for a country, especially, for developing economies (William, Zehou, & Hazimi, 2019). The private sector remains the nucleus that drives economic growth. Private sector funding (credit) is no doubt a driver of the real economy, particularly in developing economies like Nigeria where the financial markets are porous and near well developed to mobilize the needed resources to accelerate the desired level of economic development. The credit to private sector is the part of the economy that is run by individuals and companies for profit and is not state controlled. Therefore, it encompasses all for-profit businesses that are not owned or operated by the government. Companies and corporations that are government run are part of what is known as the public sector, while charities and other non-profitable organization are part of the voluntary sector. From the above, private sector funding refers to various sources of fund to private investors.

Credit to private sector entails the ways and means by which private firms and households (individuals) readily have access to fund to finance their investment and promote economic growth. It involves the pros and cons through which individuals and statutory firms' gains access to the availability of credit (fund) to finance and promote their investment drive. Credit to private sector involves credit extended by the banking and financial institutions to the private sector of the economy alone and basically include firms and households excluding loans disbursed to the government. According to the global economic report (2019), domestic credit to private sector by banks refers to financial resources provided to the credit to private sector by other depository corporations (deposit taking corporations except central banks), such as through loans, purchases of non-equity securities, and trade credits and other accounts receivable, that establish a claim for repayment.

Financial resources by way of credit extension are an essential lubricant that oils the wheels upon which the economy strives. It enables the funding of new investments and allows individuals to buy houses, cars, and make other investment plans. Though, excessive credit

usually leads to financial crises as witness in the 2008 - 2009 global financial crises but, in essence, credit availability remains the hallmark for the promotion of investment and economic development.

The availability of credit is essential in driving economic and monetary policies transmission and enable firms and households to finance investments and consumption spending. A low rate of credit expansion is not only a symptom of weak economic growth, but can also be one of its causes. This implies that channeling additional resources to strategic areas, such as the private sector, is essential in poverty eradication and promoting economic growth in emerging and developing economies (Fountas, Karanasos, Kim, 2006 and Katusiime2018). As a vital engine for economic growth in developing economies, the private sector relies on the financial sector as a source of funds in advancing growth (Katusiime, 2018).

According to global economy report, if the banking industry credit to the private sector is about 70 percent of GDP and more, then the country has a relatively well developed financial system. However, in developed and advanced economies the amount (rate) of credit to the private sector can hover above 200 percent of GDP. Conversely, in some developing and poor countries (economies), the amount of credit disbursed to the private sector could be less than 15 percent of GDP. Thus, private sector funding remains a financial bane in poor economies as this constitutes major challenges confronting private sector investment and economic growth. Asefa (2014) opined that these countries, firms and households essentially do not have access to credit for investment and various purchases. The private sector represents the productive sector of the economy and should be fueled with sufficient funds so as to enhance the growth of the sector (Abdullahi, 2014). Hence, credit to the core private sector which provides credit to private sector adequately captures the credit channel of monetary policy transmission mechanism

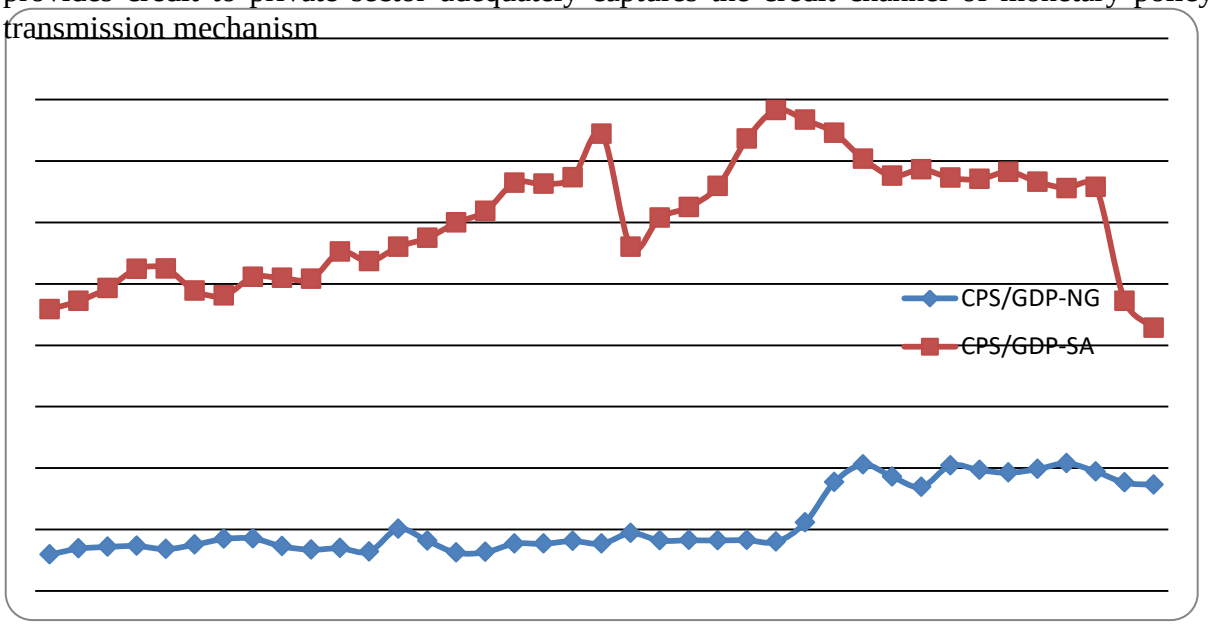


Figure 3: Trend showing fluctuation of percentage of private sector credit to gross domestic products for Nigeria and South Africa. The trend shows that South Africa has higher private sector credit than Nigeria.

Money Supply

Monetary Policy refers to the specific deliberate actions taken by the Central Bank to regulate the value, supply and cost of money in the economy with a view to achieving Government's macroeconomic objectives. The objectives of monetary policy vary amongst various countries. While the objective of monetary policy is predicated on achieving price stability in a country, other countries seeks to achieve price stability and other diverse macroeconomic objectives. The Central Bank of Nigeria, like other central banks in developing countries, achieves the monetary policy objective via the volume of money supply. The total volume

(stock) of money in circulation among the public at a particular point of time is called money supply. Money supply is the entire stock of currency and other liquid instruments in circulation in an economy at a particular time. The money supply can include cash, coins, and balances held in checking and savings account, and other near money substitutes. Economists are of the view that detailed analysis of money supply remains key variable towards understanding macroeconomic paradigm and a tonic that guides macroeconomic policy. Whereas monetization ratio includes money-based indicators or liquid liabilities like broad money supply to GDP ratio, intermediation ratio consists of indicators concerning bank-based measures like bank credit to the private sector and capital market-based measures such as capitalization ratio of stock market (Ndebbio, 2004).

The World Bank (1989) defines it as an increase in the stock of asset. According to Fisher (2001), financial deepening refers to the greater financial resource mobilization in the formal financial sector and the ease in liquidity constraints of banks and enlargement of funds available to finance projects. Shaw (1973) saw it as a process involving specialization in financial functions and institutions through which organized domestic institution and markets relate to foreign markets. The rise in the communication of financial assets vis-à-vis the monetary policy system will enhance smooth and profitable operation of other institutions. Nzotta and Okereke (2009) ascertained that financial deepening is the ability of financial institutions in an economy to effectively mobilize savings for investment purposes. Nnanna and Dogo (1998) stressed that financial deepening often refers to a state of an atomized financial system, meaning a financial system that is largely free from financial repression.

Financial deepening thus is the outcome of accepting appropriate real finance policy such as relating real rate of return to real stock of finance. Financial deepening generally entails an increased ratio of money supply to Gross Domestic product (Nnanna & Dogo, 1998 and Nzotta, 2004). Financial deepening is thus measured by relating monetary and financial aggregates such as M1, M2 and M3 to the Gross Domestic Product (GDP). Thus, the definition of financial deepening in literature reflects the share of money supply in GDP. The most classic and practical indicator related to financial deepening is the ratio of M2/GDP which means the share or M I + all time-related deposits and non-institutional money market funds to GDP in a certain year. M1, M2, M3 are all measures of money supply, that is the amount of money in circulation at a given time. The logic here is that the more liquid money is available to an economy, the more opportunities exist for continued growth of the economy.

Interest Rate

Interest rate spread (IRS) in an economy is crucial for growth and development, as numerous authors suggest a critical link between efficient intermediation and economic growth. Efficient intermediation benefits real economy by allowing higher expected return to a saver and providing more opportunity by cheap investable funds (Quaden, 2004). Higher interest rate spread discourages a potential saver and is a barrier for a potential investor, since the cost of intermediating between a saver and an investor has strong implication for effective mobilization of funds. Inefficiency of financial intermediary causes high intermediation cost and increases loss of productive funds in intermediary process. This leads to a reduction in lending, investment and economic growth. The interest rate spreads (measured as the difference between deposit and lending rates) not only indicate the level of inefficiency of the banking sector but show the level of development of the financial system. Bank interest rate spreads have several important implications for growth and development of any economy. Specifically high interest rate spreads tend to discourage potential savers and thus limiting the quantum of funds available to potentials investors. A reduction in lending arising from low savings often leads to low investment and thus the economic growth rate. Incidentally, interest rate spreads in Nigeria increased by a large amount over the study period.

The interest rate spreads was low at 2.5 in 1986. It increased to 5.2 in 1987 following governments' liberalization of the entering requirements into the banking business and the total removal of interest rate control. The spreads experienced a fall in 1988 which could be linked to the establishment of the Nigerian De-posit Insurance Corporation and relaxation of bank port-folio restrictions. It rose to 8.2 and 8.9 in 1989 and 1990. This was the period when banks were permitted to pay interest on demand deposits. Auction markets for government securities were introduced; capital adequacy standards were reviewed upward and the extension of credit based on foreign exchange deposits was banned. All these might have in one way or the other influenced the interest rate spreads. It dropped to 6.51 in 1991 when embargo was placed on bank licensing. The Central Bank was to regulate and supervise all financial institutions and interest rate re-administered. Interest rate spreads became double-digit from in 1992 and 1993 standing at 15.1 and 19.43 respectively. This was the period when government once again removed interest rate control, commenced the privatization of government-owned banks, deregulated the capital market and removed the credit controls. Moreover, in 1993, the monetary authority introduced the indirect monetary instruments and took over five banks for restructuring. The interest rate spreads decelerated to a single-digit value between 1994 and 1996 following government re-imposed control of interest and exchange rate. However, spreads maintained double digit value through the period 1997 and 2007 attaining a peak of 24.62 in 2002. On the average over the study period, interest rate spreads maintained upward trends.

The economy of South Africa is fabricated by a large financial sector that is greatly sophisticated, well developed and highly regulated. The total market value of the assets within the financial sector, in December 2016, averaged 298% of GDP (South African Reserve Bank [SARB], 2016), surpassing those of other nations in the region and other developing countries. Kganyago (2016) maintained that the biggest portion of the South African financial system is consumed by the commercial banks, with assets of around 112% of GDP. However, rapid growth in nonbank financial sector, for instance insurance companies and pension funds, has seen the share of commercial banks assets declining since 2008. At the end of 2016, the share of total financial assets of commercial banks in South Africa dropped by 72% between 2009 and 2016 (SARB,2016). The majority of banking assets are domestic, with a share of 95% and most major banks in South Africa contracted their operations to developed economies and non-African emerging market economies (Banking Association of South Africa [BASA], 2016**).** This segment consumes about 46% of the total financial sector assets in South Africa (SARB, 2016). The second largest financial sector that occupies the financial assets in South Africa is the private banking sector with 37% portion of the total assets. Unit trusts that are institutions that pool money from various investors to invest in assets such as shares, property and bonds, consume 14% of the total financial assets in South Africa, other segments consume only 3% of the total financial sector assets (SARB, 2016).

Kganyago (2016) asserted that South Africa has a world class banking system because of its observance to the international banking regulation frameworks. This has seen a steadily increasing number of foreign players acquiring stakes in major banks in South Africa. Furthermore, Kganyago (2016) argued that the South African banking sector is highly concentrated and compares favorably to the developed economies. The South African banking sector comprises 15 branches of foreign banks, 36 foreign bank representatives, 6 foreign controlled banks, 10 locally controlled banks and 3 mutual banks (SARB, 2016). The last quarter of 2016 reviewed that about 91% of the total banking sector assets was represented by the five major banks, also known as the "Big Five," in South Africa, namely Standard bank, Capitec bank, FirstRand bank (FNB), ABSA and Nedbank (BASA, 2016). Generally, the number of banks in South Africa has been declining over the years. Locally controlled banks sorely decreased from 18 to 10 between 2010 and 2016, with branches of foreign banks

increasing to 15 in 2016, from 13 in 2009 (SARB,2016). This trend could be attributable to factors such as liquidations, mergers or amalgamations of financial institutions.

Previous studies on the impact of interest rate spread on the banking system efficiency are very few not only in the context of South Africa but across all the developing economies. Majority of the available studies put more emphasis on the determination of productivity and competition within the banking system. In a study conducted by Okeahalam (2016) for the 61 banking branches in South Africa, the results indicated that the productive efficiency of these banks was 83%. These results implied that financial institutions could reduce their costs by 17% without significant changes of their output mix. Similarly, using the parametric stochastic frontier, Ncube (2009) concluded that the cost and profit efficiencies of the major four banks in South Africa averaged 55% and 92%, respectively. In another study, Kumbirai and Webb (2010) used financial ratios to analyze the profitability, credit quality and liquidity of the five major banks in South Africa and concluded that the South African financial system successfully weathered the effects of the 2008 financial crisis because of adequate capitalization and profitability. Similar results were obtained by Chauveau & Couppey (2000) for the five major banks in South Africa using the data envelopment analysis techniques. Their study examined the technical efficiency of the selected banks and their results show the lack of significant problems of productive inefficiency.

Economic Growth

Economic growth represents the expansion of a country's potential GDP or output. For instance, if the social rate of return on investment exceeds the private return, then tax policies that encourage can raise the growth rate and levels of utility. Growth models that incorporate public services, the optimal tax policy lingers on the characteristic of services (Olopade & Olopade, 2010). Economic growth has provided insight into why states grow at different rates over time; and this influence government in her choice of tax rates and expenditure levels that will influence the growth rates. Gross domestic product represents the market value for all final products a single nation produces within its borders. In terms of macroeconomic growth, gross domestic product needs to increase at a respectable pace each year. In many cases, five to six percent annually is good, stable growth for an annual period. Increases in a nation's gross domestic product allow its citizens to enjoy a stable or better standard of living. A country can also strengthen its economy as constant growth in the national economy can lead to better exports and the ability to increase income naturally in the domestic economy. Most countries measure their gross domestic products over each quarter in an annual period. The gross domestic product in a nation needs continual growth over multiple business cycles in order to have a positive effect on an economy. It is fairly difficult to declare when a business cycle starts and stops, though it can be somewhat easier to determine when the cycle shifts from one stage to the next. Gross domestic product figures that show constant quarterly increases can indicate some level of economic growth.

The Gross Domestic Product (GDP) is the total value of final goods and services produced in the country during a given period. The estimation of the gross domestic product is done in stages, with estimates generated at each stage being dependent on source data available. The different stages generate estimates which are sequentially designated as projected, provisional, revised or final. It is only the final estimates that are not subject to further changes (Ghana statistical service, 2014) gross domestic product measures the monetary value of final goods and services that is, those that are bought by the final user produced in a country in a given period of time (say a quarter or a year). It counts all the output generated within the borders of a country. Gross domestic product is composed of goods and services produced for sale in the market and also include some nonmarket production, such as defense or education services provided by the government (Callen, 2008).

THEORETICAL REVIEW

Supply Leading Hypothesis

This theory was authored by Schumpeter (1911) and later adopted by scholars such as McKinnon (1973); Shaw (1973); Gupta (1984); Fry (1988); Greenwood and Jovanovich (1990) and Bencivenga and Smith (1991). This theory postulates that financial development in any country causes economic growth. In an economy with no friction in the transaction, information and monitoring costs, no financial intermediaries are needed. According to the theory, if transaction, information and monitoring costs are sufficiently high, then, no exchange among economic agents is necessary. These desires led to the emergence of financial institutions and markets that make up the financial sector. According to this theory, a well-developed financial sector will ensure reduced transaction, information and monitoring costs thereby increasing the efficiency of intermediation. The theory postulates that a well-developed financial intermediary facilitates the development of the economy through mobilization of savings, facilitation of trading and the diversification of risks among others. These important services lead to efficient allocation of resources; a more rapid accumulation of physical and human capital; and a faster technological innovation which eventually leads to a faster and long-term economic growth (Schumpeter, 1911). This theory fits this study since it provides one of the possible explanations of how development in the financial sector affects economic growth.

Demand Following Hypothesis

Moving away from the neo-classical state equilibrium analysis, to a highly developed financial system, consisting of financial intermediaries, leads to a demand following phenomena (Patrick, 1960). Under this, in response to the demand from real economy, there are the development of modern financial institutions, their financial assets and liabilities, and related financial services. This model postulates that the developments of the real economy will in itself induce increase in demand for financial services. The increase demand for financial services will spontaneously generate or lead to the introduction of new financial institutions and markets which will satisfy that increased demand for financial services. This Theory is important to this study as it provides a different view that the developments in financial deepening does not necessarily lead to economic growth. It also provides an alternative explanation suggesting that economic growth drives deepening of the financial sector.

The evolutionary development of the financial system is a continuous result of the pervasive, widespread process of economic development. The financial system is influenced by economic environment, institutional framework and also by individual motivations, attitudes, tastes and preferences. The demand for financial services is a function of growth of real output, commercialization, monetization of agriculture and other traditional subsistence sectors. The faster the growth in real national income, the greater will be the demand for external funds by enterprises. According to this theory, financial intermediation therefore plays a vital role, as internal funds generated are not sufficient for firms to finance expansion. The theory is thus applicable in this study since it postulates that finance intermediaries are important but only as a passive and permissive to growth process. The demand-following view of the deepening of the financial markets is merely a lagged response to economic growth (growth generates demand for financial products). This implies that any early efforts to develop financial markets might lead to a waste of resources which could be allocated to more useful purposes in the early stages of growth. As the economy advances, this triggers an increased demand for more financial services and thus leads to greater financial deepening. The demand-following pattern should be expected to establish a causality that runs from growth to finance at a later stage of development. More advanced economies may accordingly be expected to exhibit this direction of causality (Agu & Chukwu, 2008).

Keynesian Theory on Financial Deepening

According to this theory, rising government spending is essential for the financial deepening phenomenon. As such, the theory asserts that the government needs to increase government spending so to stimulate the economy and achieve full employment. According to Keynes, government spending is a factor that may be used as a tool for policy to encourage economic growth. He asserts that a change in expenditure has a multiplier effect on the national income. The literature on finance and development is referenced in the theoretical formulation of the financial deepening equation which asserts that the development of the real economy, as well as the development of the financial system, are mutually reinforcing. It explains how government influences financial intermediation to set financial prices. This is seen in the postulations of the Keynesian theory of financial deepening. The Keynesian hypothesis of financial deepening which is based on the theoretical work of Keynes (1936), argued that there is a need for government intervention in the financial markets (Orji et al., 2015). According to the theory, rising government spending is essential for the financial deepening phenomenon. As such, the theory asserts that the government needs to increase government spending so as to stimulate the economy and achieve full employment. According to Keynes, government spending is a factor that may be used as a tool for policy to encourage economic growth. He asserts that a change in expenditure has a multiplier effect on the national income (Ajudua, 2018).

Neo-Classical Growth

Neoclassical growth theory, pioneered by economists like Robert Solow, emphasizes the role of technology and productivity growth in driving long-term economic growth. According to this theory, increases in capital and labor inputs eventually lead to diminishing returns, while technological progress is the primary driver of sustained economic growth. This was first propounded by Robert Solow over 40 years ago. The model believes that a sustained increase in capital investments increased the growth rate only temporarily, because the ratio of capital to labour goes up. The marginal product of additional units is assumed to decline and thus an economy eventually moves back to a long term growth-path with the real GDP growing at the same rate as the growth of the workforce plus factor to reflect improving productivity. Neo-classical economists who subscribe to the Solow model believes that to raise an economy long term trend rate of growth requires an increase in labour supply and also a higher level of productivity of labour and capital. Differences in the rate of technological change between countries are said to explain much of the variation in growth rates. The neo-classical models treat productivity improvements as an exogenous variable which means that productivity improvements are assumed to be independent of the amount of capital investment.

Endogenous Growth Theory

Endogenous growth theory was developed by economists like Paul Romer and Robert Lucas. Endogenous growth theory argues that technological innovation and knowledge accumulation are endogenous to the economic system and can be influenced by factors such as investment in research and development, human capital accumulation, and institutional quality. To them, they believe that improvements in productivity can be attributed directly to a faster pace of innovation and extra investment in human capital. They stress the need for government and private sector institutions to encourage innovation and provide incentives for individual and business to be inventive. There is also central role of the accumulation of knowledge as a determinant of growth i.e. knowledge industries such as telecommunication, electronics, software or biotechnology are becoming increasingly important in developed countries. The proponent of endogenous growth theory believes that there are positive externalities to be exploited from the development of a high value-added knowledge economy which is able to developed and maintain a competitive advantage in growth within the global economy. They are of the opinion that the rate of technological progress should not be taken as a constant in a

growth model- g0overnment policies can permanently raise a country growth rate if they lead to more intense competition in markets and help to stimulate product and process innovation. That there are increasing returns to scale from new capital investment and also private sector investment is a key source of technical progress and that investment in human capital is an essential ingredient of long-term growth.

Harrod – Domar Growth Model

Harrod-Domar opined that economic growth is achieved when more investment leads to more growth. The theory is based on linear production function with output given by capital stock (K) times a constant. Investment according to the theory generates income and also augments the productive capacity of the economy by increasing the capital stock. In as much as there is net investment, real income and output continue to expend. And, for full employment equilibrium level of income and output to be maintained, both real income and output should expand at the same rate with the productive capacity of the capital stock.

Empirical Review

Omiete (2023) investigated the influence of financial sector development on the economic growth of Nigeria. It examined how financial access, financial depth, financial stability, and financial efficiency affect Nigeria's gross domestic product using annual series data from 1986 to 2021, and sourced from the Central Bank of Nigeria data bank. The descriptive, unit root, co-integration and Parsimonious error correction as well as the Granger Causality test were adopted at the 95% confidence level. From the analysis, all variables are integrated at order one; and presented of long run cointegration. The Parsimonious error correction model confirmed that financial access and its depth are both positive and significant to gross domestic product, whereas financial stability and efficiency are both positive but insignificant to gross domestic product. The Granger causality test demonstrated a one-way movement from to gross domestic product to financial access, and a two-way causality between financial depth and gross domestic product only. In conclusion, the expansion of Nigeria's financial industry has a substantial impact on the growth of her economy.

Nkamnebe Oladipo and Ezenwobi (2023) investigated the impact of financial development on economic growth in Nigeria utilising annual data from 1985 to 2022 sourced from the Central Bank of Nigeria Statistical Bulletins and World Bank indicators. The variables used in this study were real gross domestic product (RGDP), a proxy for economic growth as the dependent variable while credit to the private sector, a proxy for financial deepening, all share index (ASI), nominal exchange rate (ER), gross savings (GS), remittances (REM) and financial technology (Fin-Tech) were all used as financial development indicators which are the independent variables. The method of analysis employed was the Auto-regressive Distributed Lag (ARDL) and the pairwise granger casualty test. The ARDL long run results show that all share index, exchange rate and financial technology positively and significantly affects economic growth; credit to the private sector and gross savings positively but insignificantly impacts on economic growth. However, remittances reveal a negative and insignificant impact on economic growth in Nigeria. The Pairwise causality test shows that there are three unidirectional causality which runs from economic growth to credit to private sector, financial technology and gross savings in Nigeria. In conclusion, the findings of the study validate the demand-following theory in Nigeria.

Albert et al. (2022) studied the impact of financial development on economic growth in Nigeria (1980-2019) using Ordinary Least Squares. They explored four equations with GDP as the dependent variable. Results showed positive relations between economic growth and paired variables (real interest rate, gross domestic savings), (real interest rate, private sector credit), and (savings, private sector credit). However, combining all 3 variables, real interest rate and savings had an insignificant negative impact, while private sector credit had a significant positive impact on Nigeria's growth.

Okafor et al (2021) examined financial deepening and economic growth in Nigeria The study employed the Johannsen Cointegration, error correction and granger causality as estimation techniques to determine the nexus between financial deepening and economic growth. The variables contained in the model include the ratio of credit to the private sector to gross domestic product which proxy bank-based financial deepening, the proportion of market capitalization to gross domestic product which proxy for stock market development. The result of the analysis revealed that the Nigerian economic growth is influenced by financial deepening positively and significantly, especially the bank-based financial depth.

Akintola et al. (2020) studied the impact of financial sector development on economic growth in Nigeria using quarterly data between 2000Q1 and 2019Q4 using the Autoregressive Distributed Lag technique. The results indicated that while financial deepening, banking system liquidity and all share index had positive and significant impact on the growth of real output in the long run, the behaviour of exchange rate spread was consistent with falling levels of real output growth. Alenoghena et al. (2020) studied the impact of financial development on economic growth from 1980 to 2018. They used the NARDL approach to analyze their connection, finding a U-shaped asymmetrical relationship. The research determined that the financial development variables and economic growth are cointegrated in the long run. Threshold regression indicated that when broad money falls below 17.73% of GDP or credit to the private sector drops below 6.03% of GDP, Nigeria's economic growth declines.

Chen et al. (2020) examined the asymmetric influence of financial development on economic growth in Kenya from 1972 to 2017 using Non-linear Autoregressive Distributed Lag (NARDL). The results posit that positive shocks in financial development in the short run and its negative shocks in the long run increase and decrease economic growth respectively. Regarding inflation, its positive (negative) shocks in both runs, respectively, reduce (increase) economic growth. In comparison, positive shocks in financial development that spur growth in the short run and negative shocks in financial development (government expenditure) that increase (reduce) growth are the most domineering effects as the rest of the shocks insignificantly affect growth. Okunlola et al. (2020) investigated the causal relationship between financial development indicators and economic growth using the Toda and Yamamoto approach for the period 1985 to 2015. The Toda and Yamamoto approach is based on an augmented VAR modeling and the findings include that a bi-directional causality was found between financial markets indicators and economic growth while unilateral causality running from stock market indicators to GDP was established. Most of the existing studies reviewed examined the transmission effect vis-à-vis the aggregate economy using only one country, hence creating a gap in the frontiers of knowledge regarding to explain the effect of financial deepening and economic growth in Nigeria.

METHODOLOGY

The study adopted the ex-post facto research design to study the effect of financial sector deepening on the economic growth of Nigeria and South Africa; data were collected from Central Bank of Nigeria and World Bank Data Base.

Model Specification

NRGDP = f (NM3/GDP, NMCR, NPSC, IRS) (1)

SRGDP = f (SAM3/GDP, SAMCR, SAPSC, IRS) (2)

Transforming equation 1 and 2 to econometric forms:

$$NRGDP = \beta_0 + \beta_1 NM3/GDP + \beta_2 NMCR + \beta_3 NPSC + \beta_4 IRS + \mu \quad (3)$$

$$SRGDP = \beta_0 + \beta_1 SAM3/GDP + \beta_2 SAMCR + \beta_3 SAPSC + \beta_4 IRS + \mu \quad (4)$$

Where
NRGDP = Nigeria Real gross domestic product
NM3/GDP = Nigeria broad money supply as percentage of gross domestic product
NMCR = Nigeria market capitalization as percentage of gross domestic product
NPSC = Nigeria private sector credit as percentage of gross domestic product
IRS = Interest rate spread
SRGDP = South Africa Real gross domestic product
SAM3/GDP = South Africa broad money supply as percentage of gross domestic product
SAMCR = South Africa market capitalization as percentage of gross domestic product
SAPSC = South Africa private sector credit as percentage of gross domestic product
IRS = Interest rate spread

β_0	=	Regression Intercept
β_1 - β_4	=	Coefficient of the independent variables to the Dependent variable
μ	=	Error term

Data Analysis Procedure

The main tool of analysis is the Ordinary Least Squares (OLS) using the multiple regression method for a period of 32 years, annual data covering 1990- 2023. Statistical evaluation of the global utility of the analytical model, so as to determine the reliability of the results obtained were carried out using the coefficient of correlation (r) of the regression, the coefficient of determination (r^2), the student T-test and F-test. Justification of Methods and Techniques the technique deployed for this study is based on the parametric tool. A multiple regression tool has been preferred because it assists the researcher in ascertaining the effect of financial sector deepening on economic. Overall the technique is appropriate for achieving the set objectives of the study. One of the merits of the model is because it produces optimal results in predicting numeric output when properly structured.

Stationary and Unit Root Test

By using the Augmented Dickey Fuller (ADF) test to examine each of the variables for the presence of stationarity or non-stationarity, this study carries out the unit root test. Based on the regression equation in the form:

$$\Delta y_t = \alpha_0 + \alpha_1 \beta y_{t-1} + T + \sum_{i=1}^{m} \beta_i \Delta Y_{t-k} + \varepsilon_t \quad (5)$$

Where Y_t is the time series, Δ is the first difference operator, T is the linear trend, α is a constant and ε_t is the error term. The null hypothesis of existence of unit root is β is 0. The significance of ρ will be tested against the null (ρ=0) based on t-stat on ρ obtained from the OLS estimates of the above two equations. Thus, if the null hypothesis of non-stationarity is not reject, the variables are differenced until they become stationary

In order to test for the determination and analysis of long run relationships among economic time series variables, co-integration is used. In equation (6), the co-integration test of the variable implies that in the short-run they deviate from the equilibrium value, and in the long run return to this value. Over the Engel Granger approach, the Johansen method is preferable as a test for co-integration because the Engel Granger approach is limited when analyzing a multivariate model (Enders, 2003). The study employed the Johansen Co-integration test and the starting point of the Johansen Co-integration methodology begins with a VAR order of p given by:

$$\Delta Y_t = \mu + A1Y_{t-1} + \cdots + ApY_{t-p} + \beta X_t + \epsilon_t \quad (6)$$

Johansen proposes two different likelihood ratio tests of significance of theses economical correlations and thereby the reduced ranks of the Π matrix. These are the trace tests and the maximum Eigen value tests.

Stationarity Test in VAR Model

A VAR is stationary if all the roots of $|\Phi(z)|=0$ lies outside the unit circle (Hamilton, 1994). Given P[th] –order VAR in the first order of VAR and the matrix of lag coefficients in the order representation is referred to as the companion matrix as shown below. The companion matrix is a convenient way to express any higher-order polynomial scalar or matrix, with lag operations or not as a first order polynomial. Many proofs are more convenient in terms of the companion matrix than in the original, higher order form.

$$y_t = \mu + \Phi_1 y_{t-1} + ... + \Phi_p y_{t-p} + \varepsilon_t \quad (7)$$

In the equation y_t is the n-element vector of endogenous variables.

By transformation to a first order VAR, the transformation process is done by subtracting μ (the vector of constant), from y_t, then stacking the current and $p-1$ lags of this vector difference into an np-element vector. Finally, the first order VAR can be written as:

$$\tilde{y}_t = \tilde{\Phi}\tilde{y}_{t-1} + \tilde{\varepsilon}_t \quad (8)$$

From this equation the stationarity test is perform. The VAR is stationary if all the eigenvalues of the companion matrix lie inside the unit circle. VARS table will display a table of the eigenvalues.

Hamilton (1994) specified the SVAR as follows;

$$\beta_0 x_t = k + \beta_1 x_{t-1} + \beta_2 x_{t-2} + ... + \beta_p x_{t-p} + \mu_t \quad (9)$$

In equation (9), x_t is the endogenous variable, the error terms are white noise, by this, it means that the structural disturbance are serially uncorrelated. That is; $E|\mu_t \mu_t^{\prime}| = D$, note that D is a diagonal matrix. Multiplying equation (9) by β_1^{-1} gives;

$$x_t = \beta_0^{-1}(k + \beta_1 x_{t-1} + \beta_2 x_{t-2} + ... + \beta_p x_{t-p} + \mu_t) \quad (10)$$

Equation 9 is rewritten as;

$$x_t = c + \phi_1 x_{t-1} + \phi_2 x_{t-2} + ... + \phi_p x_{t-p} + \varepsilon_t \quad (11)$$

Where $\phi_s = \beta_0^{-1}\beta_2$ Where $s = \{1, 2, ..., P\}$, $C = \beta_o^{-1}k$, $\varepsilon_t = \beta_0^{-1}\mu_t$. The variance –covariance matrix can be written as;

$$E|\varepsilon_t \varepsilon_t^{\prime}| = \beta_0^{-1} E|\mu_t \mu_t^{\prime}|(\beta_0^{-1})^{\prime} = \beta_0^{-1} D(\beta_0^{-1})^1 = \Omega \quad (12)$$

Therefore, to generate the structural shocks, the Choleski Decomposition of the variance-covariance of the reduced form VAR residuals $\hat{\Omega}$ was used. Hence, the Vector auto regression model of order P (or simply Var (P)) to be adopted for this study is specified below;

The pair-wise granger causality test is mathematically expressed as:

$$Y_t \pi_o + \sum_{i=1}^{n} x_1^{\ y}\ Y_{t-1} \sum_{i=1}^{n} \pi_1^{\ x}\ x_{t-1} + u_1 \quad (13)$$

and

$$\mathrm{x_t dp_o} + \sum_{\mathrm{i=1}}^{\mathrm{n}} \mathrm{dp_1^y\ Yt-1} \sum_{\mathrm{i=1}}^{\mathrm{n}} \mathrm{dp1^x x_{y-1}} + \mathrm{V_1} \quad (14)$$

Where x_t and y_t are the variables to be tested white u_t and v_t are the white noise disturbance terms. The null hypothesis $\pi_1^y = dp_1^y = 0$, for all I's is tested against the alternative hypothesis $\pi_1^x \neq 0$ and $dp_1^y \neq 0$. if the co-efficient of π_1^x are statistically significant but that of $dp1y$ are not, then x causes y. If the reverse is true then y causes x. however, where both co-efficient of π_1^x and dp_1^y are significant then causality is bi – directional. Imposing the restriction suggested by the theoretical model, the matrix below show the relationship between the error terms of the reduced form and the structural disturbances.

$$\varepsilon_t = \beta_0^{-1}\mu_t \quad (15)$$

RESULT ANALYSIS AND DISCUSSION OF FINDINGS

Table 1

Unit Root Test

Variables	ADF stat	MacKinnon @ 1%	MacKinnon @ 5%	MacKinnon @ 10%	Prob.	Order of integration
Nigeria						
NRGDP	-4.319288	-3.646342	-2.954021	-2.615817	0.0220	1(I)
NPSC	-6.490001	-3.639407	-2.951125	-2.614300	0.0000	1(I)
NMCR	-5.772422	-3.661661	-2.960411	-2.619160	0.0277	1(I)
NM3_GDP	-5.390287	-3.639407	-2.951125	-2.614300	0.0001	1(I)
IRS	-8.104125	-3.639407	-2.951125	-2.614300	0.0000	1(I)
South Africa						
SRGDP	4.068427	-3.646342	-2.954021	-2.615817	0.0034	1(I)
SAPSC	-6.883982	-3.653730	-2.957110	-2.617434	0.0000	1(I)
SAMCR	-5.309592	-3.661661	-2.960411	-2.619160	0.0001	1(I)
SAM3/GDP	-6.310544	-3.653730	-2.957110	-2.617434	0.0000	1(I)
ISR	-4.059792	-3.646342	-2.954021	-2.615817	0.0035	1(I)

Source: E-view 12.0

Following Granger and Newbold (1974) and Engel and Granger (1987) assertion that many of the variables that appear in time series econometric models are non-stationary (or are integrated variables), we therefore perform unit root test on the univarite time series to ascertain the stationarity or otherwise of the series. The null hypothesis in these tests is that the underlying process which generated the time series is non-stationary. This was tested against the alternative hypothesis that the time-series information of interest is stationary. If the null hypothesis is rejected, it means that the series is stationary i.e. it is integrated to order zero. If, on the other hand, the series is non-stationary, it is integrated to a higher order and must be differenced till it becomes stationary. As can be seen from the results given in table 1 all the variables are not stationary in levels. This implies that the null hypothesis cannot be rejected and that the time-series has to be differenced. We then conduct the same tests on the first difference of the time series. As can be seen from the test results on the first difference, the null hypothesis has been rejected for all the variables indicating that all variables become stationary at their first difference and are thus integrated of order zero I(1) as the variables do not require further differencing (Gujarati, 2003). In both countries that data were stationary at difference and integrated in the order of 1(I), this enables us to test for Johansson Cointegration.

Table 2

Co-integration Test:

Unrestricted Cointegration Rank Test (Trace)				
Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
	Nigeria			
None *	0.821620	97.80045	69.81889	0.0001
At most 1*	0.540776	62.63756	47.85613	0.0316

At most 2	0.338111	17.73464	29.79707	0.5857
At most 3	0.124273	4.529612	15.49471	0.8565
At most 4	0.008810	0.283176	3.841466	0.5946
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.821620	55.16289	33.87687	0.0000
At most 1*	0.540776	54.90292	27.58434	0.0061
At most 2	0.338111	13.20503	21.13162	0.4336
At most 3	0.124273	4.246436	14.26460	0.8325
At most 4	0.008810	0.283176	3.841466	0.5946
South Africa				
Unrestricted Cointegration Rank Test (Trace)				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.718901	78.49680	69.81889	0.0086
At most 1*	0.411102	67.88720	47.85613	0.0369
At most 2*	0.370990	50.94315	29.79707	0.0312
At most 3	0.173186	6.107715	15.49471	0.6828
At most 4	0.000690	0.022080	3.841466	0.8818
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.718901	40.60959	33.87687	0.0068
At most 1*	0.411102	46.94405	27.58434	0.0348
At most 2*	0.370990	34.83544	21.13162	0.0306
At most 3	0.173186	6.085635	14.26460	0.6022
At most 4	0.000690	0.022080	3.841466	0.8818

Source: E-view 12.0

The summary of the co-integration equation result is presented in table (2). The null hypothesis in each case is rejected in favour of the alternative hypothesis, as the T-statistic of the variables are greater than 2, thus implying that all the variables are statistically significant in influencing growth in the long run. However, Nigeria has one cointegrating equation while South Africa has two cointegrating equations

Table 3

VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
		Nigeria				
0	-493.7580	NA	3795789.	29.33870	29.56317	29.41525
1	-413.1194	132.8164*	146551.7	26.06585	27.41264*	26.52514*
2	-385.3523	37.56734	137893.6*	25.90308*	28.37219	26.74511
South Africa						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-511.6711	NA	27346722	31.31340	31.54014	31.38969
1	-438.7798	119.2767	1531797.	28.41090	29.77136*	28.86865*
2	-408.9614	39.75784*	1279384.*	28.11887	30.61305	28.95809
3	-382.4965	27.26684	1599588.	28.03009*	31.65799	29.25077

Source: E-view 12.0

Optimal lag length of one (1) out of a maximum of 2 lag structure as selected by four different criteria was observed in table 3 above, Final Prediction Error (FPE), Akaike information criteria (AIC), Schwarz Information Criterion (SIC) and Hannan-Quinn Information Criterion (HOIC) recorded the least values at two lag lengths.

Table 4
Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
Nigeria			
NPSC does not Granger Cause NRGDP	32	1.21868	0.3114
NRGDP does not Granger Cause NPSC		0.51923	0.6008
NMCR does not Granger Cause NRGDP	32	0.46393	0.6337
NRGDP does not Granger Cause NMCR		0.07399	0.9289
NM3_GDP does not Granger Cause NRGDP	32	4.03268	0.0293
NRGDP does not Granger Cause NM3_GDP		2.61735	0.0914
IRS does not Granger Cause NRGDP	32	0.54692	0.5850
NRGDP does not Granger Cause IRS		3.53317	0.0434
South Africa			
SAPSC does not Granger Cause SRGDP	32	0.40647	0.6700
SRGDP does not Granger Cause SAPSC		1.11740	0.3418
SAMCR does not Granger Cause SRGDP	32	0.90922	0.4148
SRGDP does not Granger Cause SAMCR		0.34987	0.7079
SAM3_GDP does not Granger Cause SRGDP	32	2.28669	0.1209
SRGDP does not Granger Cause SAM3_GDP		0.33911	0.7154
IRS does not Granger Cause SRGDP	32	0.14065	0.8694
SRGDP does not Granger Cause IRS		0.43561	0.6513

Source: E-view 12.0

Following the pioneering work of Granger (1969), a number of other scholars have attempted to measure the direction of causality between variables in a functional relationship. These include Sims (1972), William et al (1976), Feize and Pearce (1979), Toda and Yamamoto (1995). It is noteworthy that most of these studies were either on the USA or the UK. Recently, some studies on Nigeria have been undertaken, Ajayi, (1983) and Adegbite at al (2008). They separately tested the direction of causality between monetary policy and economic growth nexus in Nigeria, In this study the variables of interest whose functional relationship and direction of causality between financial deepening and economic growth of Nigeria and South Africa. From the results, the study found that there is a uni-directional causality from broad money supply to Nigeria real gross domestic product and from Nigeria real gross domestic product to interest rate spread while there is no causal relationship among the variables in South Africa.

Table 5
Error Correction Mechanism

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Nigeria				
NRGDP(-1)	0.136551	0.210891	0.647495	0.5235
NPSC(-1)	0.759325	0.111297	2.883788	0.0339
NMCR(-1)	0.381228	0.068054	2.113357	0.0473
NM3_GDP	0.734341	0.158299	0.216941	0.8301
NM3_GDP(-1)	0.770237	0.176210	2.398600	0.0437
IRS(-1)	0.028986	0.136367	0.212557	0.8335
ECM (-1)	-0.863553	4.474393	-0.192999	0.0086
C	0.265360	0.306935	0.864549	0.3958
R-squared	0.533208	Mean dependent var		-8.11816
Adjusted R-squared	0.509056	S.D. dependent var		2.305449
S.E. of regression	2.617528	Akaike info criterion		4.989338
Sum squared resid	164.4348	Schwarz criterion		5.397477
Log likelihood	-73.32408	Hannan-Quinn criter.		5.126665
F-statistic	8.103047	Durbin-Watson stat		1.983683
Prob(F-statistic)	0.000063			
South Africa				
SRGDP(-1)	0.259445	0.433327	0.598729	0.5564

SAPSC	0.516552	0.074387	0.222514	0.8263
SAPSC(-1)	1.012812	0.072311	3.177172	0.0012
SAPSC(-2)	0.952649	0.062817	2.842174	0.9668
SAMCR	0.714004	0.066960	0.209131	0.0366
SAMCR(-1)	0.916895	0.092738	2.882181	0.0374
SAMCR(-2)	0.009597	0.088765	0.108119	0.9150
SAM3_GDP	0.678283	0.114856	0.072117	0.9433
SAM3_GDP(-1)	0.834538	0.126652	2.872697	0.0380
IRS	0.159497	0.649735	0.245480	0.8087
ECM (-1)	-1.519348	12.88285	0.117936	0.0000
C	-0.366640	0.506801	-0.723441	0.4782
				-
R-squared	0.725035	Mean dependent var		1.074214
Adjusted R-squared	0.627575	S.D. dependent var		1.692402
S.E. of regression	2.022102	Akaike info criterion		4.537355
Sum squared resid	77.68901	Schwarz criterion		5.132810
Log likelihood	-59.59768	Hannan-Quinn criter.		4.734731
F-statistic	9.226263	Durbin-Watson stat		2.025597
Prob(F-statistic)	0.000009			

Source: E-view 12.0

Table 5 presents the Error Correction results from the two countries under study.

ECM (-1): In both countries the error correction models were well signed which implies that there was movement of the variables beyond equilibrium with the time scope of the study. However, the study found that the ECM (-1) for Nigeria was -0.863553 with probability of 0.0086 while that South Africa was -1.519348 with probability of 0.0000 which implies that Nigeria speed of adjustment was 86.3% while South Africa was 151.9%. This implies that South Africa has higher speed of adjustment than Nigeria.

Adjusted R-Square: Nigeria has 50.9 % explained variations while South African has 62.7% explained variation within the time scope of the study. This implies that financial deepening variables as formulated in the model explained more in variation of south African real gross domestic product than Nigeria. This could be traced to macroeconomic differences between the two countries.

Private Sector Credit: The estimated model found that private sector credit was positive and significant effect on the growth of both economies. However, in Nigeria private sector credit has a coefficient of 0.759325 and probability of 0.0339 while in South Africa private sector credit had a coefficient of 1.012812 and 0.0012. This implies that private sector credit added 0.75% to Nigeria real gross domestic product while the variable added 1.0 % to South African real gross domestic product. The variable added more to South African real gross domestic product than Nigeria.

Market Capitalization Ratio: The estimated model found that market capitalization ratio was positive and significant effect on the growth of both economies. However, in Nigeria market capitalization ratio has a coefficient of 0.381228 and probability of 0.0473 while in South Africa private sector credit had a coefficient of 0.916895 and 0.0374. This implies that market capitalization ratio added 0.38% to Nigeria real gross domestic product while the variable added 0.91 % to South African real gross domestic product. The variable added more to South African real gross domestic product than Nigeria.

Broad Money Supply: The model found that broad money supply was also positive and significant effect on the growth of both economies. However, in Nigeria broad money supply has a coefficient of 0.770237 and probability of 0.0437 while in South Africa private sector credit had a coefficient of 0.834538 and 0.0380. This implies that broad money supply added 0.77% to Nigeria real gross domestic product while the variable added 0.83 % to South African real gross domestic product. The variable added more to South African real gross domestic product than Nigeria.

Interest Rate Spread: The model found that interest rate spread was negative and not significant effect on the growth of both economies. However, in Nigeria interest rate spread has a coefficient of 0.028986 and probability of 0.8335 while in South Africa interest rate spread have a coefficient of 0.159497 and 0.8087. This implies that interest rate spread added 0.02% to Nigeria real gross domestic product while the variable added 0.15 % to South African real gross domestic product. The variable added more to South African real gross domestic product than Nigeria.

CONCLUSION AND RECOMMENDATIONS

Concluding Remarks

This study examined the effect of financial deepening and economic growth of Nigeria and South Africa using time series data sourced from Central Bank of Nigeria Statistical Bulletin and World Bank Data Base. The study formulated real gross domestic products of the countries as the function of private sector credit, broad money supply, market capitalization ratio and interest rate spread. The study adopted the vector error correction methods, granger causality test, cointegration test and unit root test. The study found that South Africa has higher speed of adjustment than Nigeria, that financial deepening variables as formulated in the model explained more in variation of south African real gross domestic product than Nigeria. Private sector credit added more to South African real gross domestic product than Nigeria. Market Capitalization Ratio added more to South African real gross domestic product than Nigeria**,** broad money supply added more to South African real gross domestic product than Nigeria.

Policy Recommendations

i. There is need for further reforms in the Nigeria financial market to deepen the operational efficiency of the financial institutions for effective financial intermediation enhances economic growth in Nigeria like South Africa.
ii. The monetary authorities should ensure adequate money supply in the economy such that will reduce cost of borrowing, enhance investment borrowings to achieve higher level output for the growth of Nigeria economy.
iii. Like the capital market of South Africa, Nigeria capital market should further be internationalized; this will enhance inflow of foreign portfolio and real investment to Nigeria economy for better economic growth.
iv. The monetary authorities should formulate policies such as reduced interest rate policy for investment borrowing and policy to increase deposit rates to enhance fund mobilization and increase lending to key sectors of the economy.

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