



GROWTH DISPARITY IN AFRICA: ARE FINANCIAL DEEPENING AND STOCK MARKET DEVELOPMENT RESPONSIBLE? A CASE STUDY OF NIGERIA AND SOUTH AFRICA

***ADENIJI ABDULGAFAR A.; **EGWU DAVID; **ABBARETT .F. MICCAH; & ***JOE BAKO GALADIMA**

*Department of Economics, University of Nigeria, Nsukka, Enugu State, Nigeria. **Department of Social Sciences and Humanities Federal Polytechnic Offa, Kwara State. ***Department of Business Administration, Federal Polytechnic Offa, Kwara State

ABSTRACT

This study investigates the dynamic relationship between stock market development, financial deepening, and economic growth in Nigeria and South Africa between the years 1990 and 2020. The study shows that long run relationship exist between stock market development (proxy by MCP, TVS, TURN), financial deepening (proxy by Domestic credit to private) and economic growth (proxy by gross domestic product) in Nigeria and South Africa. It is concluded that there is unidirectional causality between GDP and TVS in South

Introduction

The quest for financial system development and reasonable economic advancement are among the most significant macro-economic objective of many countries. Financial development mirrors the standard of living of the general population in many nations. It also represents a consistent increase in gross domestic product (GDP) which emanates from effective demand backed by purchasing power and availability of basic amenities and infrastructures. This state is usually anchored on the financial development of a country in that an effective financial system, complemented with the economic transformation role, gives the chance for better investment funds activation and assignment of same for development reasons. "Through the provision of wide range of accessible financial products and services, the adequacy of macroeconomic strategies are upgraded and financial development is additionally encouraged" (IMF, 2015).

The lack of growth witnessed in most emerging economies' stock markets, particularly Nigeria's, has resulted in underperformance of these countries' economy. The gains accruable to these kind of countries as a result of getting the world stock market have eluded Nigerian investors due to the country's regressive economic theory. A multitude of factors that impact stock market returns would have



Africa while a bi-directional causality exists in Nigeria. Also, there is a unidirectional causality between GDP and TURN, GDP and MCP, and GDP and DCP in South Africa while a bi-directional causality exists between GDP and TURN and no causality between GDP and DCP in Nigeria. Based on the findings of this study, the study recommends that the current ongoing reform in the financial market sector of both Nigeria and South Africa should be sustained and maintained, this will foster the achievement of the objective of rapid and long-term growth in the country. Other capital market reforms include cutting intermediation costs and issuing new securities, as well as applying methods and tactics to strengthen and improve institutional derivatives trading oversight to make securities more desirable assets.

Keywords: Stock Market, Financial Deepening, Economic Growth

been to blame for this issue which is not limited to, lack of savings by the general public which has a detrimental significant effect on stock market expansion. An average Nigerian spends money on products and services while simultaneously saving money from his low earnings. Borrowers will take money from this reserve fund when they have extra to give. Firms then take on these unspent / unutilized funds as loans and invest them back into their businesses. This means that as people and businesses save, capital is created. This revenue is either consumed with the remainder savings, or it is spent entirely on products and services. Borrowers will borrow from this pool of funds as they save in order to invest.

Nigeria's unemployment, low per capita income, poor infrastructures, corruption, job insecurity, underpayment and default of payments when due, high rate of inflation, low capacity utilization, and other factors describe the country as a developing country. The existence of all of these presents a significant challenge to the people's savings culture. In reality, more than 70% of the population is poor (Sanusi, 2010). The quantity of capital inflow to investment, use, and other purposes is determined by the amount of savings made by institutional and individual investors. The single most important social advantage of the capital market (particularly the equity market), according to Patrick (2005), is the chance it gives a wide spectrum of the people to participate in the ownership of corporate institutions. The efficiency with which the capital market allocates capital to locations where it is required, as well as the productivity with which that capital is utilised, determines an economy's growth rate. It's also worth noting that there have been a sparked debate among experts on linkage that exist among stock market development, financial deepening and economic expansion among countries.

Nigeria has a much larger population than South Africa, but South Africa has a higher per capita income. Nigeria has a population of over 150 million people in 2019, compared to 58 million in South Africa. Nonetheless, according to Fraren (2014), the Nigerian economy must be far larger than South Africa's before an ordinary Nigerian can be as affluent as a South African. Nigeria is a little more developed than South Africa. She is classified as a middle-income country with extensive economic structure analysts. As a result, the Nigerian GDP growth is projected faster even than



South Africa, due to the fact that Nigeria is still underdeveloped, as well as any marginal improvement might have a huge impact on the economy, as well as the fact that Nigeria's population is growing faster than that of South Africa, despite the country's current financial hardship (Fraren, 2014).

In Nigeria there still asymmetric and uneven education about the financial market among the investors. Buyers' lack of awareness of the capital market's potential has resulted in apprehension about participating in stock market operations. Because of the stringent requirements that must be met before the corporation can be launched on the market exchange, there is also the least amount of domestic support for them. Anyanwu (1993) identified obliviousness as one of the Nigerian Securities and Exchange Commission's (NSEC) concerns, which prevents financial inclusion on its own.

There still asymmetric of information as regards the understanding of the stock market in the country. "With a population of almost 150 million individuals, many individuals in Nigeria are completely unfamiliar with the concept of the stock market" (Ologunde et al 2006). Persons who are perfectly qualified to know a bit about the stock exchange and its standard operating procedure choose not to study the market, resulting in a decrease in investment behavior, which corresponds to a decrease in share market activities. They like to preserve their proposals as a "progressive proclamation" to widen or, more accurately, pass over to their people to come. There is a detrimental influence on the stock market's growth as a result of data mismatched.

The country's political turmoil and digital security difficulties have exacerbated the capital market's fragility, generating wobbly stock and security prices, which is risky and unusual for investors who execute the income in a country bloodflow. The high rate of volatility in the pricing of products and services (of which share market commodities are a component) has caused shareholders to lose faith in the government. As a result, capital flights are rather expensive.

In many developing nations, several studies have been undertaken on the link between financial sector development and economic growth; the bulk of these research have relied heavily on bank development as a proxy for financial development. In any event, there are few clear studies comparing the connection between financial depth, stock market development, and economic growth. The development of the stock market provides a foundation for financial inclusion. Financial deepening, in turn, means making financial services available to the general public. Nigeria's financial system appears to be weak, which has resulted in inefficient financial policies. In light of the foregoing, this study will contribute to the existing literature in three stance, firstly it will compared the relationship between stock market development, financial deepening and economic growth in Nigeria and South Africa. The vast majority of study only investigated either the relationship between financial deepening on economic growth or stock market development and economic growth in Nigeria and South Africa. Secondly, the study will confirm whether short run or long run relationship exist between stock market, financial deepening and economic growth in two countries and lastly the causality that exist between the two countries between the year 1990 and 2020.

In a similar context, the argument for this study is that it would support the efforts of the government and policymakers in regaining the trust of investors and other market players by allowing them to establish and implementing appropriate policies to promote financial



development. It would assist monetary authorities in making more effective and helpful judgments. This research is focused on Nigeria's and South Africa's monetary institutions as a whole. It entails a comparison of the influence of stock market development and financial depth on Nigerian and South African economic growth. The data will comprise annual time series data from 1990 through 2020.

Theoretical Literature Review

The significance of stock market development and financial depth has spawned a slew of hypotheses. These ideas explain why financial deepening exists, how the stock market is expanding, and how it has a trickle-down influence on the growth of different nations' economies. This review is divided into three sections: supply-leading hypothesis, demand-following hypothesis, and financial intermediation theory.

Supply - Leading Hypothesis

According to the supply-leading theory, "the presence of efficient financial markets boosts the supply of financial services ahead of demand in the real economy" (Onwumere et al. 2012). Financial depth, according to this idea, stimulates growth. According to this idea, the presence and improvement of monetary business sectors increases the amount of reserve funds (savings) and investments, which improves capital collecting efficiency. "This hypothesis contends that well-developed financial institutions have the capacity to promote general economic efficiency, creating and increasing liquidity, enhancing savings mobilization and capital accumulation, transferring productive factors from rural to modern use, where they will contribute better to manufacture and industry," writes Mckinnon (1973). Levine (2008) revealed compelling evidence that economic progress leads to growth. They believe that encouraging policymakers to arrange financial ways and devote awareness to key determinants of monetary progress as a tool for furthering growth is critical. The supply leading hypothesis assumes that the purpose of "shifting resources from traditional, low-growth sectors to contemporary, high-growth sectors, and to foster and stimulate an entrepreneurial response in these modern sectors" is the function of the supply leading hypothesis (Patrick, 1966). This implies that financial institutions must exist before true interest in them may develop. As a result, the availability of financial services encourages entrepreneurs in contemporary, growth-inducing areas to seek them out. According to the supply-leading theory, the presence of a strong financial market causes an upward rise in the supply of financial assets to match the demand for financial services. According to Darrat (1999), the government should focus on expanding arrangements that promote financial accessibility/deepening for a practicable financial turn of events.

Demand - Following Hypothesis

The demand-following strategy is predicated on the assumption that economic progress leads to financial development. According to Patrick (1966), the demand following strategy is linked to the financial system's demand side. This theory simply asserts that economic expansion leads to an increase in demand for financial goods. This implies that any early efforts to establish income company sectors may result in the misappropriation of assets that may be more beneficial to



various portions of the economy; as a result, economic progress contributes to economic development. The expansion of the economy results in an increase in demand for financial institutions, which contributes to the development of the financial sector. When the economy starts to improve, it produces additional and fresh demand for these financial services, causing the financial system to expand. Financial firms' absence in emerging economies demonstrates a lack of interest in financial services. As the actual economy grows, so does the need for extra financial solutions. "This hypothesis proposes a single-direction causation association between financial expansion and sustainable growth, alleging that the expansion of new financial markets and institutions enhances financial institutions and leads to increased growth in the economy" (Balago, 2014).

Theory of Financial Intermediation

This theory was propounded by Schumpeter (1911). Financial intermediaries, it is said, play a critical role in the growth process by shifting financial resources from net savers to net borrowers, impacting investment and hence economic growth. According to the hypothesis, financial intermediaries can solve the problem of market failure by altering the risky characteristics of financial assets. Schumpeter's (1911) work backs up the idea that well-functioning financial intermediaries may improve general economic efficiency. As a result, the greater the amount of financial intermediation, the greater the mobilization of savings and investments, which leads to increased economic growth. Also, Greenwood and Jovanovic (1990) contend that "financial intermediation promotes growth because it allows a higher rate of return to be earned on capital and growth in turn provides a means to implement costly financial structures". "Financial intermediaries mediate the flow of financial assets from traditional sector to modern sector, and stimulate economic growth by rapidly increasing credit facilities, deposits, financial liabilities and savings" (Patrick, 1966). It is a financial structure that brings the deficit and surplus economic units together for the goal of exchanging values, values that are critical for specialization, activation, and savings transfer. Financial intermediation, according to Schumpeter (1911), is the center of economic growth. He claims that monetary financial integration through the financial framework played a critical role in financial improvement by affecting private equity fund classification, hence boosting profitability, specialized change, and the rate of growth of the economy.

Empirical Review

Except for a few African countries with adequate market standards, the findings show that financial market activity in most African countries have had little influence on economic growth. Several studies have been conducted in Nigeria and South Africa, but others have also been conducted in other locations. This is summarized in the literature map below;

Table: Summary of Literature

Author's	Scope	Methodology	Findings
Odhiambo (2008)	South Africa	ARDL	Economic growth granger causes stock market development and vice versa.



	(1971-2007)		
Nurudeen (2009)	Nigeria 1981-2007	ECM	Stock market has positive statistical influence on economic growth.
Alajekwu and Achugbu (2012)	Nigeria 1994-2008	OLS	Liquidity and not stock market size is what is significant for growth.
Ohwofasa and Aiyedogbon (2013)	Nigeria 1986-2011	OLS	Financial deepening is positively related with the growth of the economy.
Alenoghena (2014)	Nigeria 1981-2012	OLS	The author concluded that financial market and the capital market are significant factors influence the country economic growth.
Osho (2014)	Nigeria 1980 to 2010	OLS	The relationship between economic growth and stock market development is positive and as such any increase in stock market will significantly increase the growth of the economy.
Safdar(2014)	Pakistan 1975-2012.	Vector Error Correction Model (VECM)	In Pakistan there is a short run and long run relationship between stock market and economic growth.
Bakang (2014)	Kenya 2000-2013	ECM & VAR	Positive significant effect on economic growth.
Oniore (2014)	Nigeria 1981-2012.	VECM	The study reveal that, GDP, broad money supply, private sector credit, liquidity ratio and FDI are significant factors influencing economic growth.
Ananwude and Osakwe (2015)	Nigeria &South Africa 1981-2015	ARDL	The study confirm that stock market development positively affect economic growth in Nigeria.
Igwe et al (2015)	Nigeria 1981-2012	ECM	Examined the nexus between financial deepening and economic growth in Nigeria, the study opined that financial development have no effect on economic growth in Nigeria.
Ghildiyal et al (2015)	India 1990-2014	ARDL bound testing	There is strong evidence for long run and short run equilibrium relationship



			between financial deepening and economic growth.
Muchaonyerwa and Choga (2015)	South Africa 2002-2009.	VECM	There is a positive association between stock market performance and business cycles.
Omoruyi et al (2015)	Nigeria 1980-2011	ECM	Stock market development has strong effect on economic growth.
Nwana and Chinwudu (2016)	Nigeria 1985-2014	OLS	Financial deepening positively affects economic growth
Tinavapi (2017)	South Africa 1975-2013	ARDL	Long run relationship exists between stock market development and economic growth.
Gezer(2018)	Eleven countries (1987-2015)	Panel granger causality approach	The study shows that there is a bidirectional causality between the variable in the selected countries Turkey, China, Algeria, Botswana, Costa Rica, Dominican, Ecuador, Gabon, Malaysia, Mauritius, Mexico, Thailand, Tunisia, and Turkey.
Nwaolisa and Ubesie (2018)	2007-2017	OLS	Financial deepening has positive significant effect on economic growth.
Owusu (2018)	South Africa 1975-2016	ARDL	The study confirm that there is no long run and short run relationship between financial deepening and economic growth in South Africa.
Nwakobiet al (2019)	Nigeria 1986-2018.	ARDL	The study also confirm that financial deepening and economic growth are not related in Nigeria.
Kolawole et al (2019)	Nigeria 1987-2016	ECM	The financial sector is a significant determinant of growth of the Nigerian economy.
Ugorji et al (2019)	Nigeria 1981-2017	OLS	The study conclude that financial deepening and economic growth are not significantly related.
Amaefula (2019)	Nigeria 1981-2016	ARDL and pooled additive predictor	No strong evidence to conclude that financial deepening affects economic growth



Ashamu and Soyobo (2020)	Nigeria 1985-2017	Ex-post facto research design	Financial deepening has a significant impact on economic growth.
---------------------------------	----------------------	----------------------------------	--

Note; ARDL, OLS, ECM, VECM and VAR mean auto regressive distributed lags, ordinary least square, error correction model, vector error correction model and vector autoregressive method respectively.

Model Specification

This study examines the impact of stock market development, financial deepening and economic growth, in Nigeria and South Africa; thus, the study utilizes five variables. The dependent variable is economic growth which is by gross domestic product while the main independent variable is stock market development proxy by market capitalization, total number of shares and turnover of shares while financial deepening is proxy by domestic private investment. The annual time series data of these variables are sourced from World Development Indicators (WDI) for the period of thirty years from 1990 to 2020. The study center of the model of Ananwude and Osakwe (2015) equally used GDP, market capitalization ratio, turnover ratio and stock of values traded as variables for their study. Also, Nwaolisa and Ubesie (2018) examined the assessment of financial deepening on the growth Nigeria economy, the study make used of GDP, private sector credit, market capitalization and money supply as variables for their study. Therefore, study is based on this model with an addition of turnover stock and the exclusion of money supply for Nigeria and South Africa.

$$GDP = f(MCAP, TVS, TURN, DCP)$$

$$GDP_t = \alpha + \partial MCAP_t + \lambda TVS_t + \Psi TURN_t + \beta DCP_t + \varepsilon_t \quad (1)$$

Where GDP is the gross domestic product, MCAP is the market capitalization, TURN is the turnover of share, TVS is the total number of shares, DCP is the domestic credit to private sector.

Specification (1) measures the long-run relationship between stock market development, financial deepening and economic growth $\alpha, \partial, \Psi, \beta$ & λ represent the long-run coefficient of intercept, MCAP, TURN, TVS and DCP, respectively while ε_t is the error term.

However, to estimate the cointegrating relationship between the explained and explanatory variables, the study adopts the autoregressive distributed lag model of Pesaran et al. (2001) by specifying the equation (1) is a bounds test cointegrating framework as:

$$\begin{aligned} \Delta GDP_t = & \alpha + \sum_{i=1}^{N1} \beta_i \Delta GDP_{t-i} + \sum_{j=0}^{N2} \gamma_j \Delta MCP_{t-j} + \sum_{j=0}^{N3} \varphi_j \Delta TVS_{t-j} + \sum_{j=0}^{N2} \Psi_j \Delta TURN_{t-j} \\ & + \sum_{j=0}^{N2} \partial_j \Delta DCP_{t-j} \rho GDP_{t-1} + \partial MCP_{t-1} + \lambda TVS_{t-1} + \Psi_j TURN_{t-1} + \partial DCP_{t-1} \\ & + \mu_t \end{aligned} \quad (2)$$

Additionally, the speed of adjustment to long-run equilibrium due to short-run dynamics is missing in the preceding specification. Thus, to include the error correction term in the ARDL specification, the study specifies the error correction mechanism framework as;



$$\Delta GDP_t = \phi v_{t-1} + \sum_{i=1}^{N1} \beta_i \Delta OOP_{t-i} + \sum_{j=0}^{N2} \gamma_j \Delta PHI_{t-j} + \sum_{j=0}^{N3} \varphi_j \Delta PCI_{t-j} + \sum_{j=0}^{N4} \gamma_j \Delta TURN_{t-j} + \sum_{j=0}^{N5} \gamma_j \Delta DCP_{t-j} + \mu_t \quad (3)$$

v_{t-1} is the lagged error correction term calculated. To assume here cointegration among the variables, ϕ which represent the speed of adjustment to long-run equilibrium must be negative and statistically significant, thus, the null hypothesis of $\phi = 0$ is tested against the alternative hypothesis of $\phi < 0$. This is complemented by the Bounds test to cointegration. To infer long-run cointegration, the F-statistic must be greater than the upper bounds critical values, however, if the F-statistic is less than the lower critical values, a short-run relationship exists while the test becomes inconclusive if the statistic value stands in-between the upper and lower bound critical values.

Analysis and Interpretation

Table 1: Descriptive Statistics

South African						Nigeria				
Variable	Mean	Median	Max	Min	Std. Dev	Mean	Median	Max	Min	Std. Dev
GDP	1.957278	2.485468	5.603806	-6.431975	2.506646	4.341822	4.631193	15.32916	-2.035119	4.081692
TVS	25.14090	25.43561	26.73873	22.70325	1.313566	9.100069	9.382024	10.23955	7.480007	0.716950
DCP	113.7264	117.0954	142.4220	73.25000	15.58000	10.16841	8.909485	19.62560	4.957522	3.546446
MCP	190.3986	172.2031	322.7110	108.8916	60.35674	12.57035	11.63312	30.80067	2.488777	6.203553
TUR	22.96642	25.73785	41.98000	3.645624	10.87381	8.194028	6.129214	34.785330	1.074680	6.819841

Table 1 above presents the main statistical features of the data under discussion, such as the average, minimal level, highest value, and standard variation. The large discrepancy between the minimum and maximum values for the variables under examination indicates that there is substantial variance. Between the years 1990 and 2020, the average value for GDP, TVS, DCP, MCP, and TURN are positive and it is 1.9572, 25.140, 113.72, 190.39, and 22.96642 respectively for South Africans while 4.341822, 9.100069, 10.16841, 12.57035, and 8.194028 respectively for Nigeria. Also, there is a big variation between the minimum and the maximum value for the variable in the countries.



Table 2: South African Unit Root Result

PP Test				ADF Test				
Variables	I(0)		I(1)		I(0)		I(1)	
	t-stat	Prob	t-stat	Prob	t-stat	Prob	t-stat	Prob
GDP	-1.3225	0.1680	-4.2307	0.0001***	-1.3745	0.1536	-4.5024	0.0001***
DCP	0.5673	0.8332	-5.65608	0.0000***	0.2358	0.7478	-5.5545	0.0000***
MCP	0.5673	0.8332	-7.9565	0.0000***	1.4875	0.9627	-7.4259	0.0000***
TURN	-0.1517	0.6230	-6.6531	0.0000***	-0.2856	0.5745	-6.6531	0.0000***
TVS	2.0291	0.8022	-4.0569	0.0002***	2.1789	0.9913	-3.9879	0.0000***

Note: *, **, and *** interpreted the level of significance of the series at 1, 5, and 10 percent respectively.

Table 3: Nigeria Unit Root Result

PP Test				ADF Test				
Variables	I(0)		I(1)		I(0)		I(1)	
	t-stat	Prob	t-stat	Prob	t-stat	Prob	t-stat	Prob
GDP	-2.2484	0.0147**	-----	-----	t-Stat	Prob	t-Stat	Prob
DCP	0.3488	0.7793	-4.3959	0.0001***	-2.5369	0.0130**	-----	-----
MCP	-0.9493	0.2978	-8.1894	0.0000***	-0.0702	0.6512	-4.8867	0.0000***
TURN	-1.4039	0.1459	-7.9767	0.0000***	-0.5337	0.4766	-5.8819	0.0000***
TVS	0.9566	0.9059	-5.5843	0.0000***	-1.4111	0.1441	-5.7633	0.0000***

Note: *, **, and *** interpreted the level of significance of the series at 1, 5, and 10 percent respectively.

Table 2 shows that there is large discrepancy between the minimum and maximum values for the variables under examination indicates that there is substantial variance. The result of the PP test shows that the series is stationary at the first difference the same as the test using the ADF. Therefore, in South Africa we reject the null hypothesis of no stationary and accept that there is a stationary among the variable that is accepting the alternative hypothesis.

Table 3 also, test the stationarity of the variable for Nigeria using the PP and the ADF test. All the variables in Nigeria context are stationary at the first difference using both the PP test and the ADF test for Nigeria except gross domestic product which is stationary at level. Therefore we can conclude that there exists a mixed integration in the variable for Nigeria as compared to South Africa.

The study, therefore, moves further test if long run relationship exist between the variable using the autoregressive distributed lag developed by Shin et al 2001 or using the Johansen



Cointegration test. Johansen cointegration test is used to confirm the long run evidence between the variables GDP, MCP, TVS, TURN and DCP.

Table 4: Johansen Cointegration Test

No of Cointegration	South African				Nigeria			
	Trace Stat	Prob	Max-Eigen Stat	Prob	Trace Stat	Prob	Max-Eigen Stat	Prob
None	85.14285	0.001**9	37.72676	0.0165**	95.08999	0.0001**	44.36430	0.002**0
At most 1	47.41609	0.0550*	20.91970	0.2811	50.72568	0.0262*	0.516814	0.2706

Note: *, ** and *** interpreted the level of significance of the series at 1, 5, and 10 percent respectively.

The table above, summarized the confirmation of the long run using Johansen cointegration test. The result reveals that there is a two cointegration equation for both South Africa and Nigeria using the trace test while the max-Eigen test shows a one cointegration test for South Africa and Nigeria. As such we can proceed to test the long-run and the short-run equation and determine the path of adjustment from the short run to the long run in the two countries.

Table 5: Short Run Analysis

Variables	South African			Nigeria		
	Coefficient	Std. Error	Prob	Coefficient	Std. Error	Prob
GDP(-1)	-0.621646	0.212499	0.0072**	-0.677766	0.183110	0.0011**
TVS	-0.313620	0.161686	0.0638*	-0.056371	0.308844	0.8566
DCP	0.119679	0.041176	0.0076**	0.083093	0.204726	0.6883
MCP	-0.018706	0.007401	0.0182**	0.060182	0.103224	0.5651
TURN	-0.044393	0.039859	0.2760	0.181146	0.110689	0.8566
ECM(-1)	-0.675408	0.154115	0.0002***	-0.677766	0.160470	0.0003***

Note: *, **, and *** interpreted the level of significance of the series at 1, 5, and 10 percent respectively.

Table 5 explains the short-run relationship between gross domestic product, financial deepening, and the stock market in Nigeria and South Africa using domestic credit to private, market capitalization, the total value of the share, and share turnover. The result for South Africa shows that there is a negative correlation between the lag period of GDP and the current period for South Africa. The total value of shares to the gross domestic product is negative in South Africa and as such, any unit increase in the total value of shares in South Africa the gross domestic product will fall by 0.3136. Also, the relationship between MCP, TURN, and GDP is negatively related and significant at 5 percent except for turnover of share which is not significant at any level of significance.

If there is any shock in the stock market and financial deepen proxy by DCP, TVS, MCP, and TURN in the South African economy the economy will adjust fastly from the short run to the long run this is interpreted using the error correction model (ECM) which must be significant, negative and less



than one for it to be significant. The result shows the economy will adjust by 67.54 and it is statistically significant at a 1 percent for South Africa.

In Nigeria's perspective, the short-run result shows that there is a negative relationship between the lag of GDP and the current GDP which is significant at a 5 percent level of significance. The relationship between DCP and GDP is also negative but not significant while there exists a positive relationship between DCP, MCP, and TURN in Nigeria. the time path of adjustment if there is any shock is fast and it is 67 percent less than one and significant at one percent.

Table 6: Long Run Analysis

South African				Nigeria		
Variables	Coefficient	Std. Error	Prob	Coefficient	Std. Error	Prob
TVS	0.969771	1.553431	0.5383	-0.083171	0.592337	0.8895
DCP	0.163641	0.065219	0.0193**	0.122598	0.268514	0.6519
MCP	-0.041962	0.017876	0.0275**	0.088795	0.191878	0.6475
TURN	-0.159447	0.121948	0.3537	0.122598	0.268514	0.6519

Note: *, **, and *** interpreted the level of significance of the series at 1, 5, and 10 percent respectively.

Table 6 shows the long-run result of the variable for Nigeria and South Africa, the result reveals that TVS, DCP, and GDP are positively related and significant at a 5 percent level of significance while a negative relationship exists between MCP, TURN, and GDP in the long run in South African. In the case of Nigeria, there is a negative relationship in the long run between TVS and GDP while a positive relationship between DCP, MCP, TURN, and GDP in Nigeria even though all the series are not significant at any level of significance.

Table 7: Granger Causality Test

Variables	South African			Nigeria		
	F-Stat	Prob	Causality	F-Stat	Prob	Causality
TVS ≠ GDP	1.14661	0.3345	No	3.50155	0.0722	Bi-Directional
GDP ≠ TVS	1.49799	0.2438	Causality	2.94265	0.0977	
MCP ≠ GDP	3.02861	0.0672	Uni-	3.00374	0.0945	Uni-
GDP ≠ MCP	0.40535	0.6712	Directional	0.22948	0.6358	Directional
TURN ≠ GDP	2.60790	0.0944	Uni-	3.25122	0.0825	Bi-Direction
GDP ≠ TURN	1.18900	0.3218	Directional	2.99236	0.0951	
DCP ≠ GDP	3.23053	0.0572	Uni-	0.76981	0.3880	No-Causality
GDP ≠ DCP	1.45441	0.2534	Directional	0.08370	0.7746	

Note, this table is computed by the author and it summarizes the causal relationship between the variables for the two countries (South Africa and Nigeria) between 1990 and 2020. Also, *, **, and *** denote 1, 5, and 10 percent levels of significant respective.

Table 7 interprets the causality between gross domestic product, turnover from share, the total value of shares, and domestic credit to private. The result of the granger causality shows that there is no causality between TVS and GDP for South Africa while a Bi-Directional for Nigeria. Furthermore, there is a unidirectional causality between market capitalization and gross domestic



product in Nigeria and South Africa. The causality between TURN and GDP is unidirectional for South Africa while Bi-directional for Nigeria and no causality exists between DCP and GDP in Nigeria while uni-directional exist for Nigeria.

Table 8: Post Estimation Test

	South African		Nigeria	
	F-statistics	Prob	F-Statistics	Prob
Serial Correlation	1.474128	0.2507	0.779025	0.4706
Homoscedasticity	0.711703	0.6206	1.113152	0.3797
Normality Test	4.275982	0.117891	28.19082	0.0000***
Ramsey Test	2.012879	0.1694	1.513450	0.1432
CUSUM	Stable		Stable	
CUSUM Square	Stable		Stable	

Note, this table summarizes the diagnostic test of the model for Nigeria and South Africa, also *** and ** indicate 1, 5, and 10 percent levels of significant respect.

To confirm the validity of the model we proceed in testing the post-estimation test such as testing if there is an autocorrelation if the model has a constant variance that is homoscedasticity. Testing the normality test using the JarqueBera test and the Ramsey Reset to confirm the linearity of the series and the CUSUM and CUSUM Square to determine if the model suffers from structural break or not.

The result of the serial correlation shows rejection of alternative and the acceptance of the null hypothesis that there is no serial correlation between the variables in both Nigeria and South Africa. In addition, the result of the Homoscedasticity shows that there is a constant variance within the variable and as such, we reject the null hypothesis that there is no constant variance which is heteroscedasticity in Nigeria and South Africa respectively. The result of the Jarque Bera test shows that the model for South Africa shows a normal distribution while otherwise for the Nigeria model, the reason been that it is significant at one percent level of significance and as such, we cannot reject the null hypothesis. To confirm the stability of the model the study makes use of the CUSUM test and the result for Nigeria and South Africa shows that the model is stable because it falls between the acceptable boundary and the CUSUM Square result shows that the model does not suffer from any structural break because it falls within the acceptable region.

Discussion of Findings

This study examined the link between the stock market, development, financial deepening, and economic growth in Nigeria and South Africa. The study reveals that there is a long-run and short-run relationship between the gross domestic product, market capitalization, the total value of the stock, domestic private investment, and turnover of shares in Nigeria and South Africa.

The result shows that stock market development proxied by a total number of shares (TVS), market capitalization (MCP), turnover of shares (TURN) is negatively related to economic growth proxy by gross domestic product while financial deepening proxy by domestic private investment is positively related to gross domestic product. There is an existence of a short-run and long-run



relationship and causality between the variables in South Africa. Also, to confirm the result of the existence of long run and short run in South Africa this is supported by Muchaonyerwa and Choga (2015), Tinavapi (2017), Owusu in 2018, Odhiambo in 2008, Safdar(2014) investigated the relationship between financial deepening and economic growth in Pakistan. Ananwude and Osakwe (2015) also discovered that a relationship abounds between stock market development and economic growth in Nigeria and South Africa but the relationship is insignificant. Bakang (2014). Ohwofasa and Aiyedogbon (2013), Omoruyiet *al* (2015) supported that there is a positive relationship between financial deepening and economic growth.

In Nigeria, the result shows that both the short run and the long run of TURN, TVS, and DCP are positively related to the GDP, this result is not farfetched as it is in line with Nwaolisa and Ubesie (2018), Kolawoleet *al* (2019), Ashamu and Soybo (2020) examined the activities of the stock market and growth of Nigeria economy, found out that there exist a significant relationship between both. That is, the activities of the stock market have a significant effect on economic growth.

Conclusion and Recommendation

This study investigate the dynamic relationship between stock market development, financial deepening, and economic growth in Nigeria and South Africa between the years 1990 and 2020. The study shows that long run relationship exist between stock market development (proxy by MCP, TVS, TURN), financial deepening (proxy by Domestic credit to private) and economic growth (proxy by gross domestic product) in Nigeria and South Africa. It is concluded that there is causality between GDP and TVS in South Africa while a bi-directional causality exists in Nigeria. Also, there is a unidirectional causality between GDP and TURN, GDP and MCP, and GDP and DCP in South Africa while a bi-directional causality exists between GDP and TURN and no causality between GDP and DCP in Nigeria.