



AN EMPIRICAL ANALYSIS OF THE STOCK MARKET AND ECONOMIC GROWTH NEXUS IN NIGERIA AND SOUTH AFRICA

Sunny O. Temile (PhD)

Department of Accounting, Faculty of Management and Social Sciences.
Dennis Osadebay University, Asaba Delta State, Nigeria

Ayodeji B. Owoeye (PhD)

Royal Agricultural University, School of Business and Entrepreneurship,
Stroud Rd, Cirencester GL7 6JS, United Kingdom
dekkyus@yahoo.com

Dadang Prasetyo Jatmiko (PhD) 

Inspectorate Department at Badan Standardisasi Nasional, Indonesia
dadangprasetyojatmiko03@gmail.com

Abstract

The existing literature demonstrates an increasing interest in analysing the relationship between a country's stock exchange and its economic growth, as it is widely thought that the stock market is an essential component of any growing economy. Research projects on this matter have primarily been conducted in western countries and there is a scarcity of evidence from developing countries, particularly African countries. As a result, this research contributed to the area by examining the impact of the Nigerian and South African Stock Exchanges' activities on economic growth. The study relied on secondary data from the Central Bank of Nigeria's statistical bulletin, the databank of the Federal Reserve Bank of St. Louis, and the bulletin of the Nigerian Stock Exchange. This empirical study used both statistical and econometric methods and techniques, including Least Squares Regression and Johansen Co-integration test to span the years 1995 to 2016. Most stock market characteristics, such as stock market trade openness, stock market turnover, and stock market all-share index, were discovered to have an

encouraging impact on economic growth in both the short and long terms, according to the findings. A long-term link between the selected stock market indices and economic development was also indicated by the co-integration test. As a result, we might deduce that the stock market must play a substantial role in the growth of economies in less developed countries, such as those in Africa. This study, therefore, recommended that the relevant regulatory bodies in both countries should be empowered by their governments to enable the formulation of effective measures and policies that check malpractices, thereby boosting investor confidence in the Stock Market.

Keywords: Stock Market, Economic Growth, Nigerian Stock Exchange (NSE), Johannesburg Stock Exchange (JSE), Federal Reserve Bank of St. Louis Economic Division (FRED), Stock market trade openness, Stock market turnover, Stock market all-share index

INTRODUCTION

Over the last two decades, stock markets around the world have developed significantly, as more capital are required to match the rapid expansion of the business sector (Nazir et al., 2010). As a result, the stock market is a valuable tool for mobilising and allocating savings among competing purposes that are vital to the economy's growth and efficiency (Owolabi and Ajayi, 2013). In this case, the efficiency, with which the stock market performs its intermediary role in the economy, determines the economy's overall growth. As the stock market mobilises savings at the same time, it assigns a big percentage of it to companies that have a reasonably high chance of success, as measured by their rate of return and degree of risk (Koirala, 2011). Bouzid (2012), for example, has pointed out that capital markets can mobilise idle domestic money (i.e. savings) and then allocate them more efficiently, even in less developed countries. Stock markets in most Western emerging economies, such as Nigeria, play a role in stimulating economic growth by channelling investments to where they are required. The allocation of such resources to diverse sectors undoubtedly aids economic development and progress. Because of its impact on corporate finance and economic activity, stock market efficiency has taken on a significant role in global economics and finance.

Several research projects have been carried out to look into the impact of stock market development on economic growth. One example was provided by research that has been previously published (Popoola, 2014; Echekeba, Ezu, and Egbunike, 2013; Adefeso, Egbetunde, and Ally, 2013), indicating that stock market expansion contributes significantly to Nigeria's economic growth, especially prior to the financial crisis of 2012. However, other research projects (Okonkwo, Ogwuru, and Ajudua, 2014; Donwa and Odia, 2010; Ghazouani,

2007) found a negative association between the stock market and economic growth in Nigeria, especially during the financial crisis of 2012. This article further looked at the impact of stock market development on economic growth over a long period of time.

Capital markets have earned a strong reputation in South Africa over the years. South Africa's unique rate of development places it among Africa's fastest-developing nations. The stock market accounts for a considerable portion of the country's gross domestic product (GDP), which outperforms that of other developing countries with strong economies (Hassan, 2013). According to Kock (2009), the Johannesburg Stock Exchange (JSE) is one of the world's largest stock exchanges. This is due to the fact that it is the sixth largest stock market in the world compared to its equivalents in emerging countries, including South Korea, Taiwan, India, Brazil, and China, which is the fifth largest when it comes to their stock markets, they have a lot in common. Chipaumire and Ngirande (2014) further studied the impact of stock market liquidity on South African economic growth and discovered that stock market liquidity had an impact on the economic growth of South Africa. Supporting this result, Nowbutsing et al. (2011), Levine and Zerous (2010), and Dalsenius (2010) have all stressed this point (2007).

The impact of liberalisation, greater openness, and stock market operations on economic growth was explored by Udegbumam (2002). The empirical research demonstrated that global trade openness and stock market development are major determinants of economic growth. This was validated in another previous study done by Bekaert et al (2011).

There is a lot of evidence that the stock market is a good place to address long-term capital needs for individuals and businesses.

Despite its importance in the economy, there are major obstacles that restrict the smooth operation of the financial market. Poor regulation and anti-growth policies, for example, stifle the growth of the capital market in Nigeria, which has a negative impact on the economy (Adebiyi, 2005). Abina & Adedigba (2019) stressed the importance of a strong institutional framework and market laws in achieving effectiveness. In this case, when there is ineffective regulation in the stock market, it leads to stock price volatility and economic instability, both of which influence the stock market liquidity (Chipaumire and Ngirande, 2014).

A thriving capital market is one of the several variables that contribute to any country's long-term economic progress, particularly in emerging countries, according to the most traditional theoretical literature. South Africa and Nigeria, for example, are advised to concentrate on major economic objectives in order to improve their poor economic situations (Khetsi & Mongale, 2015).

Despite the fact that South Africa is one of Africa's and the world's fastest growing economies, empirical research demonstrates that a lack of infrastructure, such as

macroeconomic stability, established financial systems, and political stability, to name a few, stifles economic growth. Finally, financial markets have a longer-term favourable impact on industrialised countries than on developing countries (Khetsi & Mongale, 2015).

The stock market is intended to stimulate growth, but considering South Africa's and Nigeria's recent recessions despite flourishing and increasing capital markets, the question is what role the stock market really plays in economic growth. Is it necessary to compare and contrast developed and emerging economies when examining the impact of the capital market on a country's economy?

Because Nigeria and South Africa are Africa's largest economies, understanding the impact of stock market activity and economic growth is critical in this context. The resilience of these countries has a significant impact on Africa's economies. It will also assist policymakers in prioritising all initiatives that are important.

Given the aforementioned, the purpose of this study is to examine the impact of a rising stock market and an already established, one of the world's largest stock markets on their respective countries, given that both countries recently had a recession despite a thriving stock market. To do so, the emphasis was on stock market efficiency metrics such as market size (as measured by capitalization), all-share index, stock market turnover, and stock market openness. Furthermore, we used the gross domestic product (GDP) as our indicator of economic growth in both Nigeria and South Africa, which is consistent with the research conducted by Edame and Okoro (2013) and others. The suggested research period is twenty-two years, from 1995 to 2016.

We also further planned to use the Nigerian Stock Exchange (NSE) report (1995-2016), the Johannesburg Stock Exchange (JSE), the Federal Reserve Bank of St. Louis (Economic Division) databank, and the Central Bank of Nigeria (CBN) statistical bulletin to collect data on the selected variables for this study (2016).

Despite the fact that there have been previous research in this field, this one will add to the literature in the following ways:

Given that the economies of Nigeria and South Africa recently experienced a recession while maintaining a vibrant stock market, it will add to the existing research by looking at the relationship from a different perspective: economic recession.

Additionally, policymakers will benefit from the updated information and findings when deciding on short- and long-term developmental initiatives and stability policies.

This is also the first study to look into the impact of stock market activities on economic growth in Africa's two major economies (Nigeria and South Africa). According to Nurudeen (2009), efficient stock markets provide instructions for maintaining an adequate monetary policy by

allowing for the issuing and buyback of government assets in a liquid market, which is a crucial step towards financial deregulation.

Furthermore, examining two of Africa's major countries at the same time will provide a comprehensive picture of the stock market's impact on economic growth. Nigeria, on the one hand, is a developing nation with a burgeoning stock market and a somewhat struggling economy, while South Africa, on the other hand, has an established stock market and a recently crashed economy. The existing literatures suggested that these are contrary to hard realities. As a result, this research looked at both economies separately and as a whole, because the Johannesburg Stock Exchange is well-developed, while the Nigerian Stock Exchange is still developing, and there are lessons to be learned that will be beneficial to policymakers and future scholars.

Additionally, this study was also set to analyze the financial intermediation role of the capital market in the economy. This is evident in directing idle funds from the surplus economic units to the deficit economic units of the economy. The mechanisms surrounding this phenomenon of income distribution would also be critically explained through this study.

LITERATURE REVIEW

Donwa and Odia (2010) asserted the importance of the stock market in an economy, such as channelling resources, promoting reforms to modernise the financial sector, financial intermediation capacity to link the deficit and surplus sectors of the economy, and a veritable tool in the mobilisation and allocation of savings among competitive uses, all of which are critical to the growth and efficiency of the economy. As a result, the following section is devoted to a review of important theoretical and empirical literature.

Theoretical Literature

The theoretical framework of this study focused on the theories or the neoclassical explanations of stock market efficiency and the McKinnon hypothesis. These theories are reviewed subsequently in the paragraphs below;

The McKinnon-Shaw Hypothesis

Financial liberalisation and stock market efficiency, according to the McKinnon and Shaw hypothesis, would boost economic growth by influencing the rate of savings, investment, and thus economic growth. Furthermore, they claimed that repressed financial markets (as evidenced by low and administered interest rates, domestic credit controls, high reserve requirements, and concessional credit practises) discourage savings, impede efficient resource

allocation, support financial market segmentation, constrain investment, and ultimately lower economic growth.

According to McKinnon-research, Shaw's a low or negative real rate of interest discourages savings, reducing the availability of loanable funds, limiting investment, and thus lowering the rate of economic growth. On the other hand, an increase in the real interest rate may encourage savers to save more, allowing for more investment, and thus boosting economic growth. According to Bouzid (2012), large international institutions such as the International Monetary Fund (IMF) and the World Bank, among others, have adopted this approach.

The success of the financial liberalisation process, according to the McKinnon-Shaw hypothesis, is contingent on the following assumptions: effective deepening of the financial sector, a positive correlation between saving and real interest rate, and perfect complementarity between money demand and investment (Bouzid, 2012). Khetsi and Mongale (2015) discovered that the South African stock market indices and economic growth have a long-term link.

Based on the foregoing, the study's first hypothesis is as follows:

H₀₁: Stock market capitalization has no significant effect on the gross domestic product.

The Neoclassical Theory of Growth in Relation to Stock Market Efficiency

The Solow-Swan Growth Model, which involves a series of equations in showing the relationship between the importance of capital availability for labor-time, capital goods, output, and investment and economic growth, was categorised as a function of the increase in economic activities, according to neoclassical assumptions. As a result, technical advancements become increasingly important. The model, which was the first attempt to model long-run economic growth, is based on the availability of funding to meet enterprises' long-term capital needs.

The model posits that countries with strong financial institutions will have efficient stock markets; on the other hand, an efficient stock market will function as a recycling home for excess funds in the economy. Furthermore, the stock markets' intermediate position offers a link between surplus fund holders and investors willing to put such funds to economic use.

According to Afolabi (2015), the importance of the stock market's mechanism in relation to stock market efficiency and economic growth is broken down into several predictions, including increased capital relative to labour creates economic growth; poor countries with less capital per person will grow faster because each investment in capital will produce higher returns because diminishing capital returns will not eventually affect investors. This growth hypothesis is based on the notion that the efficiency of the stock market reflects the

effectiveness of the financial system, which influences the economy's overall growth rate (Popoola, 2014).

Empirical Literatures

There have been numerous disputes among researchers over the relationship between stock market efficiency and economic growth, with many emphases placed on either side with supporting evidence. However, we would evaluate empirical links between the indicators of stock market efficiency for the purpose of this study and economic growth in this part, in accordance with the study's objective and covered regions.

For the purposes of this study, stock market capitalization refers to the total value of all equity securities or stocks listed on the stock exchange. It is just the sum of the current quoted price of listed stocks and the number of stocks outstanding during a specified time period. The word frequently used is the stock market performance indicator. Popoola (2014) looked into the impact of the stock market on Nigeria's economic growth and development. The study used the Ordinary Least Squares regression (OLS) utilizing data from 1984 to 2008 to achieve this goal. The explanatory factors accounted for approximately 95.77 percent of the variation in economic growth, according to the estimation results.

The findings showed that at a 5% level of significance, market capitalization, total market turnover, all-share-index, and the openness of the Nigerian economy to foreign investment all had a substantial and beneficial effect on economic growth. This study supported earlier findings by Ewah et al. (2009), who looked at the role of stock market efficiency in Nigerian growth from 1961 to 2004. Ordinary Least Squares (OLS) analysis revealed that the Nigerian capital market had yet to contribute significantly to economic growth. However, it had potential that is contingent on a number of circumstances, including increased market capitalization, liquidity, and a reduction in fund theft.

As a result, the study presents the second hypothesis, thus;

H₀₂: Stock market all-shares index is not a significant determinant of the gross domestic product.

Between 1990 and 2012, Kolapo and Adaramola (2012) investigated the impact of the stock market on Nigerian economic growth. The Johansen cointegration test and the Granger causality test were used in their research. The findings demonstrated that stock market and economic growth indices were intertwined, and stock market activities (as measured by market capitalization, economic openness, and transaction volume) had a beneficial impact on the economy. This was not the case for the quantity of listed equities, which had a small but

negative influence. This finding was consistent with Shafii and Aziz's analysis, which found a positive long-term link between selected stock market factors and economic growth (2009).

For the period 1989 to 2006, they used Johansen's cointegration approach for 20 Organization of Islamic Cooperation (OIC) countries. The findings showed that market capitalization and turnover ratio had a beneficial impact on the economic growth of six (6) countries: Malaysia, the United Arab Emirates, Turkey, Egypt, Bahrain, and Uzbekistan.

The association between stock market indices and economic growth in Zimbabwe was further explored by Zivengwa et al (2011). For the period 1980 to 2008, the study used the Vector Auto-regression (VAR) technique and the Granger causality test. In this case, the control variable was investment. The findings further revealed a substantial link between stock market development and economic growth, as well as a causal linkage between the two, one flowing from stock market capitalization to economic growth and the other from economic growth to stock market turnover ratio. Similarly, Abu (2009) used an error correction model to experimentally analyse the association between stock market development and economic growth in Nigeria. According to the econometric finding, stock market development (as measured by market capitalization) added to economic growth.

Jibril et al. (2015) used time series data to examine the impact of Nigerian stock exchange market development on economic growth over a 20-year period, from 1990 to 2010. Ordinary least square (OLS) techniques were used in the analysis. As a proxy for market size, the stock market capitalization ratio was employed, while the value traded ratio and turnover ratio were used to represent market liquidity. Market capitalization and value traded ratio, in this case, had a negative link with economic growth, while turnover ratio had a substantial positive correlation with economic growth.

In addition, between 1979 and 2008, Olowe et al (2011) used the Ordinary Least Square (OLS) method to analyse the stock market's efficiency on the economy. According to the data, there was a negative association between economic growth as measured by GDP and market capitalization and market turnover ratio, however the all-share index was positively associated to economic growth.

Alajekwu and Achugbu (2010) discovered a similar result in their analysis of the stock market's impact on Nigerian economic growth from 1994 to 2008. Stock market capitalisation, volume of traded stocks or transactions, and market turnover ratio were the indices of stock market development used in this study. The results of the study, which used the Ordinary Least Square (OLS) estimate technique, revealed that market capitalization and the volume of traded stocks or transactions were adversely connected with economic growth, however the market turnover ratio was positively correlated.

Based on the above arguments, the study's third hypothesis is presented below;

H0₃: There is no significant relationship between stock market turnover and the gross domestic product.

To investigate the relationship between stock market development and sustainable economic growth in Ghana, Owusu and Odhiambo (2014) used the ARDL-bounds testing approach and multi-dimensional stock market development proxies such as the all-share index, financial openness, and listed securities, among others. Their research found that the aforementioned stock market development indexes had no short- or long-term favourable impact on economic growth. This is also visible in Donwa and Odia's research findings (2010). According to Mohammed and Nadeen (2008), there was a long-term link between stock market development and economic growth. They went on to say that financial openness, along with a few other characteristics, had a favourable link with economic growth. Augustine and Salami conducted research supporting this finding (2010).

In contrast, Afolabi (2015) found that the influence of the Nigerian Stock Market on the Nigerian economy from 1992 to 2011 was objectively determined. Market capitalization was used as a proxy for the Nigerian capital market against several economic factors such as GDP, foreign direct investment, inflation rates, total new issues, transaction value, economic openness, and total listing. Using multiple regression analysis, he discovered that the stock market (as measured by the economy's openness and total new issues) had a negligible impact on the economy during the study period.

Between 1971 and 2010, Owolabi and Ajayi (2013) investigated the relationship between the stock market and economic growth. They looked at new listed securities, all share indexes, and market capitalization, among other stock market indices. The Ordinary Least Square (OLS) approach was used in this investigation. According to the findings of their research, there was a link between new listed issues and economic growth in Nigeria. However, when it came to the economy's openness to international investors, there was a negative correlation.

Furthermore, Ben and Ghazouani (2007) conducted research on stock market development and economic growth utilising market capitalization, transaction volume, and economic openness as variables.

Their studies reported that economic openness had no significant effect on economic growth.

In light of these, the fourth hypothesis is presented below;

H0₄: Stock market trade openness has no significant relationship with the gross domestic product.

RESEARCH METHODOLOGY

The typical econometric ex-post research design was used in this study. In general, the approach for this study followed the McKinnon-Shaw hypothesis, and a growth in stock market capitalization, all-shares index, market turnover ratio, and market trade openness is projected to boost GDP. As a result, in both Nigeria and South Africa, a positive link between these variables and economic growth was projected.

Secondary data were drawn from the Nigerian Stock Exchange (NSE) report (1995-2016). The Nigerian Stock Exchange (NSE) was established in 1961 as the Lagos Stock Exchange but its name was late changes to the Nigerian Stock Exchange in 1977. Population of the companies were 161 listed companies with 8 domestic companies on the premium board, 144 companies on the mainboard, and 9 companies on the Alternative Securities Market (ASeM) board.

In addition, the Johannesburg Stock Exchange (JSE), the Federal Reserve Bank of St. Louis (FRED) databank, and the Central Bank of Nigeria (CBN) statistical bulletin (2016) were also used.

The model used for this study was further modified from those adopted in the studies of Obubu et al (2016), Afolabi (2015), Popoola (2014), Olowe et al (2011) and Ewah et al (2009) as stated below;

$$\text{GDP}_t = \alpha_0 + \beta_1 \text{MCAP}_t + \beta_2 \text{ASHI}_t + \beta_3 \text{SMTR}_t + \beta_4 \text{SMTO}_t + \varepsilon_t$$

Where:

GDP_t	=	the Gross Domestic Product of Nigeria in year t
β	=	coefficient of the independent variables
MCAP_t	=	the value of stock market total capitalization in year t.
ASHI_t	=	the value of stock market all-share index in year t.
SMTR_t	=	the value of stock market turnover ratio in year t.
SMTO_t	=	trade openness of the Nigerian stock market in year t.
ε_t	=	the error term

The ordinary least square (OLS) regression estimation approach was used using the Econometric views (Eviews) statistics software to estimate the above-mentioned model. To check the behaviour and relationships between the variables, descriptive statistics, Pearson's correlation, and Johansen's co-integration technique were further employed.

ANALYSIS AND DISCUSSION OF RESULTS

Descriptive Statistics

Table 1 Descriptive Statistics

	RGDP	MCAP	ASI	SMTR	SMT0
Mean	41290.34	6755.218	21694.34	74.62891	0.230227
Median	38735.23	4010.480	22335.84	78.38200	0.239000
Maximum	69023.93	19077.42	57990.20	175.5880	0.456000
Minimum	20353.20	180.4000	5092.200	14.22500	0.071000
Std. Dev.	17345.91	6817.660	13592.91	34.88395	0.123519
Skewness	0.290164	0.512043	0.705015	0.851392	0.216272
Kurtosis	1.626749	1.693679	3.382825	4.519972	1.733033
Jarque-Bera	2.037382	2.525624	1.956842	4.775637	1.642940
Probability	0.361067	0.282858	0.375904	0.091830	0.439785
Sum	908387.4	148614.8	477275.6	1641.836	5.065000
Sum Sq. Dev.	6.32E+09	9.76E+08	3.88E+09	25554.68	0.320394
Observations	22	22	22	22	22

Table 1 shows the behaviour as well as the distribution of the variables' statistical properties. During the 1995 to 2016 period, the highest mean value was recorded by the Real GDP (4129.34), followed by the All Shares Index with a mean value of 21694.34. Other variables also recorded positive mean values.

The median values followed similar trend with the RGDP also coming with highest values (38735.23) followed by all shares index (22335.8). Looking at the variables' deviation from their mean values, the RGDP deviated the most, while stock market trade openness had the least deviation. All the variables were positively skewed during the full sample period and the kurtosis coefficients for all variables were positive. The normality of the variables assessed by the Jarque-Bera statistic with a p-value above 10% level of significance for all the variables (except stock market turnover ratio) was an indication that the variables were not normally distributed over the period of study which was due to the nature of the data being used.

Next, we looked at the correlation matrix between the variables to get a preliminary observation of the relationship between the variables involved in this study.

Table 2 Pearson Correlation Matrix (Nigeria)

		RGDP	MCAP	ASI	SMTR	SMTO
RGDP	Pearson Correlation	1	0.9508	0.6865	0.3081	0.8466
	t-Statistic		13.7187	4.2223	1.4485	7.1131
	N	22	22	22	22	22
MCAP	Pearson Correlation	0.9508	1	0.7722	0.2803	0.8039
	t-Statistic	13.7187		5.4354	1.3057	.014
	N	22	22	22	22	22
ASI	Pearson Correlation	0.6865	0.7722	1	0.5396	0.7164
	t-Statistic	4.2223	5.4354		2.8663	4.5917
	N	22	22	22	22	22
SMTR	Pearson Correlation	0.3081	0.2803	0.5396	1	0.4792
	t-Statistic	1.4485	1.3057	2.8663		2.4414
	N	22	22	22	22	22
SMTO	Pearson Correlation	0.8466	0.8039	0.7164	0.4792	1
	t-Statistic	7.1131	.014	4.5917	2.4414	
	N	22	22	22	22	22

The correlation coefficients between the variables are shown in Table 2. A brief examination revealed that all of the factors were positively related. The strongest positive association was between market capitalization and real GDP. Studies by Popoola (2014), Koirala (2011), and Zivengwa, Mashika, Bokosi & Makosi showed that a highly robust stock market, typified by high market capitalization, had often propelled economic growth (2011). The second most powerful link was between RGDP and stock market trade openness; Nurudeen and Nadeen (2009) discovered a positive link between RGDP and stock market trade openness. The association between market capitalization and stock market turnover ratio, on the other hand, was the weakest.

Before estimating the model using least square regression, the study checked for long-term equilibrium relationship using the Johansen co-integration test below;

Table 3 Johansen Co-integration (Nigeria) E-views 9 output

No. of co-integrating Equation	Trace Statistic		Maximum Eigen Value	
	Statistic	P-value**	Statistic	P-value**
None*	146.9837	0.0000	53.78473	0.0001
At most 1*	93.19899	0.0000	44.36752	0.0002
At most 2*	48.83147	0.0001	31.57371	0.0012
At most 3*	17.25776	0.0269	16.73254	0.0200
At most 4	0.525222	0.4686	0.525222	0.4686

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

The Johansen co-integration test was predicated on the null hypothesis that no co-integrating equations existed, and as shown in table 3, both tests (Trace test and Max-eigenvalue

test) rejected the null hypothesis that "there is no co-integrating equation" at 5% level. At 5% significance level, the Trace and Max-eigenvalue tests showed that there were four co-integrating equations, showing that the variables were in a long-term equilibrium relationship.

In view of the foregoing, it was clear that the variables eventually converged in the long run, as shown in the table below.

Table 4 Normalized Co-integrating Coefficients (Nigeria) E-views 9 output

Variables	RGDP	MCAP	ASI	SMTR	SMT0
Coefficients	1.000000	11.75379	-2.094596	446.9379	-848228.4
Standard Error		(1.48305)	(0.59047)	(235.839)	(63070.3)
t-statistics		7.9254	-3.5473	1.8951	-13.4490

The t-statistics in the above table show that in the long run, market capitalization, all-shares index, and stock market trade openness had a considerable impact on real GDP. According to financial theories as well as studies by Popoola (2014) and Echekeba, Ezu, and Egbunike, market capitalisation had a long-term beneficial impact on real GDP (2013). In addition, the stock market turnover ratio also had a long-term positive impact on real GDP. In the long term, however, all-shares index and stock market trade openness had a detrimental influence on real GDP.

The regression model below examines the effects of market capitalization, all-share index, stock market turnover ratio, and stock market trade openness on economic growth in the short and medium term.

Table 5 Regression Model (1995– 2016)

Dependent Variable – Real Gross Domestic Product		Total Observations = 22	
Variables	Co-efficient	t-statistic	p-value
Intercept	21721.58*** (2756.413)	7.880380	0.0000
MCAP	2.294046*** (0.324717)	7.064748	0.0000
ASI	-0.281152* (0.143571)	-1.958279	0.0668
SMTR	26.06372 (39.99649)	0.651650	0.5233
SMT0	35731.13** (15981.07)	2.235841	0.0391
F-stat. (4, 17) = 63.81282		R-squared	= 0.937558
Prob (F-stat.) = 0.000000		Adj. R-squared	= 0.922865

Standard errors in parenthesis, Significance levels: *<0.10, **<0.05, ***<0.01.

The aforementioned regression result indicates that the model used for this investigation had a good overall estimate. The ability of the independent variables to account for 94 percent of the systematic fluctuations in the dependent variables, while the error term is responsible for the remaining 6%, was revealed by the R-squared value of about 94 percent. Meanwhile, the adjusted R-squared value of about 92 percent indicated that the model had a high predictive power, as the independent variables could predict for about 92 percent of the changes in the dependent variable, the F-statistics was high at 63.81, and the overall results were significant, as revealed by the P-value of the F-statistics at 0.0000, indicating the model's overall fitness.

The coefficients of the regression estimate showed that market capitalization had a positive and significant impact on economic growth, which was consistent with the findings of the research projects carried out by Popoola (2014), Echekoba, Ezu, and Egbunike (2013), Koirala (2011), Hossain and Kamal (2010), Ewah, Essang, and Bassey (2009), and Nurudeen (2009). However, contrary to the findings of Okonkwo, Ogwuru, and Ajudua (2014), Donwa and Odia (2010), and Alajekwu and Achugbu (2010), market capitalisation had a negligible impact on economic growth.

The all-share index, on the other hand, had a negative impact on economic growth, but only at a 10% level of importance. Such findings were also found by Owusu and Odhiambo (2014), Donwa and Odia (2010), and Nurudeen (2009). However, Adefeso, Egbetunde, and Ally (2013), and Edame, Okoro, and Anne (2013) came to different conclusions. As a result, we rejected the second null hypothesis.

The stock market turnover ratio had a favourable impact on economic growth, but the association was not statistically significant, hence the third null hypothesis was accepted.

Finally, the stock market trade openness had a positive and significant impact on economic growth, therefore we also failed to accept the fourth null hypothesis. This positive and significant impact coincided with the research findings discovered by Popoola (2014), Kolapo and Adaramola (2012) and Nurudeen and Nadeen (2009) but was directly opposite to the research findings discovered by Owusu and Odhiambo (2014), Owolabi and Ajayi (2013) and Ben and Ghazouani (2007).

Robustness Check (An Analysis of South Africa's Stock Market Indices on Economic Growth)

After examining the impact of selected Nigerian Stock Exchange variables on economic growth in Nigeria, this study conducted empirical tests to determine the impact of the selected

South African stock market variables on economic growth in order to compare the impact of stock markets on economic growth in both countries. The focus was on the short and long terms in particular.

The Johansen co-integration test, as shown in the table below, was used to find the long-term equilibrium connection.

Table 6 Johansen Co-integration (South Africa) E-views 9 output

No. of co-integrating equation	Trace Statistic		Maximum Eigen Value	
	Statistic	P-value**	Statistic	P-value**
None *	115.2818	0.0000	56.38733	0.0000
At most 1 *	58.89449	0.0033	34.24767	0.0060
At most 2	24.64682	0.1745	12.82966	0.4680
At most 3	11.81715	0.1659	9.541406	0.2438
At most 4	2.275748	0.0000	2.275748	0.1314

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

Unlike the co-integration test with Nigerian stock market variables which had four co-integrating equations, this co-integration test had two co-integrating equations which indicated a long-term convergence.

The long-term impacts of the stock market variables on economic growth in South Africa is considered below.

Table 7 Normalized Co-integrating Coefficients (South Africa) E-views 9 output

Variables	RGDP	MCAP	ASI	SMTR	SMTO
Coefficients	1.000000	-0.435713	-0.067888	0.698924	55.11933
Standard Error		(0.00932)	(0.05585)	(0.12413)	(4.69331)
t-statistics		-46.7503	-1.2155	5.6306	11.7442

In terms of similarity, the all-shares index and stock market turnover ratio had the same kind of impact on economic growth in the long run in both Nigeria and South Africa, while the impacts from market capitalization and stock market trade openness in the long-run were different in South Africa. Market capitalization and all-shares index showed negative long-term impacts on economic growth, while stock market turnover ratio and trade openness both exerted positive impact on economic growth.

Just like in the Nigeria analysis, for the short-term, we used the regression model below;

Table 8 Regression Model for South Africa (1995– 2016)

Variables	Dependent Variable – Gross Domestic Product		
	Co-efficient	t-statistic	p-value
Intercept	207.6485*** (23.67488)	8.770840	0.0000
MCAP	0.477156*** (0.023535)	20.27412	0.0000
ASI	0.218203 (0.126013)	1.731592	0.1015
SMTR	-0.126009 (0.378238)	-0.333146	0.7431
SMTO	-98.63297*** (16.08151)	-6.133317	0.0000
F-stat. (4, 17) = 363.1325		R-squared = 0.988432	
Prob (F-stat.) = 0.000000		Adj. R-squared = 0.985710	
Total Observations = 22			

Standard errors in parenthesis, Significance levels: * <0.10 , ** <0.05 , *** <0.01 .

According to the regression results, market capitalization had a positive and significant impact on economic growth, which was consistent with findings from research carried out by Koirala (2011), Hossain and Kamal (2010), Ewah, Essang and Bassey (2009), and Nurudeen (2009). Contrary to Nigerian findings, the all-shares index had a positive impact on economic growth. In contrast to Nigerian findings, both the stock market turnover ratio and trade openness had a negative impact on economic growth.

The model was good and could account for 98.8% of systematic variations in economic growth; additionally, the F-statistics highlighted the model's overall significance.

SUMMARY AND POLICY IMPLICATION OF FINDINGS

Given that South Africa has a well-developed stock market and Nigeria's stock market is rapidly rising, the findings of the empirical research above are highly intriguing and point to certain policy challenges.

In the short run, market capitalization has a positive and considerable impact on economic growth in both Nigeria and South Africa; the consequence is that as stock market capitalization rises, so does the value of gross domestic product (GDP). It is vital to remember that stock market capitalization is the total value of all publicly traded stocks; so, a growth in this value indicates a gain in economic activity and/or profitability. This backs with earlier findings discovered by Ewah, Essang, and Bassey (2009), who looked at the role of stock market efficiency on Nigerian growth from 1961 to 2004.

The long-term negative relationship between market capitalization and economic growth in South Africa should serve as a warning sign for a growing stock market like Nigeria because the result implies that if things are left the way they are with market capitalization in the short-term, it will eventually start to exert a negative influence on economic growth in the long-run. So, since the long-run is a total of different short-runs, effort must be put in place to ensure consistent improvement in the market capitalization variable in the short and medium-terms. The results from Ordinary Least Squares (OLS) reveal that the Nigerian capital market has not yet contributed much towards economic growth.

However, it has potential that is contingent on a number of circumstances, including increased market capitalization, liquidity, and a reduction in fund theft, among others. As a result, given the correct monetary and fiscal policies in Nigeria, market capitalisation can have a large positive impact on economic growth.

The all-share index, on the other hand, has a negative impact on economic growth in Nigeria while having a positive impact in South Africa, and according to studies by Owusu and Odhiambo (2014), Donwa and Odia (2010), a change in the types of shares allowed to be traded on the Nigerian stock exchange floor is required.

Stock market turnover, on the other hand, has a favourable impact on economic growth in Nigeria but has a negative impact in South Africa. Because stock market turnover measures the rate at which stock is exchanged between buyers and sellers over time, it is possible that stock market turnover might not actually result in any meaningful economic growth because stock sales may not be profitable at times. Stocks can sometimes be sold at a loss. According to Olowe, Mathew, and Fasina (2011), there is a negative association between economic growth as measured by GDP and market capitalization and market turnover ratio; however, the data show that the all-share index is positively associated to economic growth.

Finally, stock market trade openness has a beneficial impact on economic growth in Nigeria but a negative impact in South Africa, with both effects statistically significant. This demonstrates that, at a 5% level of relevance, an increase in stock market trade openness has a considerable impact on GDP growth. The consequence is that stock market trading openness can provide platforms for enterprises and individuals to raise funds for business finance, which will, in turn, encourage long-term economic growth.

Popoola (2014) found that market capitalization, total market turnover, all-share-index, and the openness of the Nigerian economy to foreign investment all have a significant positive effect on economic growth at the 5% level of significance; whereas Kolapo and Adaramola (2012) found that stock market indices and economic growth are correlated.

CONCLUSION AND RECOMMENDATIONS

Following the findings, it is important to note that overall stock market efficiency in both Nigeria and South Africa has a tendency to boost economic growth. However, due to Nigeria's current economic situation, the Nigerian stock market has yet to reach its full potential. Additionally, stock market capitalisation and trade openness are important markers of stock market efficiency, which leads to economic growth. As a result of this, the following recommendations are proffered:

Authorities in both countries should be watchful of its policy on the internationalization of the stock market through privatization and commercialization of government enterprise because doing so would further render key domestic policy variables ineffective in fine-tuning the behaviour of the stock market.

Both countries' monetary authorities should be cautious of regulating and maintaining the level of macroeconomic variables that are suitable for investment, as this has an impact not only on the economy's external sector but also on stock returns. To improve the confidence of prospectus investors abroad, both countries' governments must strengthen political and social stability in the economy.

Because there is an information asymmetry in terms of fully harnessing the stock market's potential, stock market authorities in both nations should continue to educate the general people about the benefits of investing in the stock market.

FURTHER STUDIES

Further studies can investigate the impact of macroeconomic variables on the performance of listed firms in various industries. Furthermore, a study can be carried out on the effect of government fiscal and monetary policies on the performance of the stock market in Nigeria, South Africa, and other African countries.

REFERENCES

- Abina, A.P, (2019). Capital Market and Performance of Nigeria Economy, *International Journal of Innovative Finance and Economics Research* 7(2) (2019), pp. 51-66.
- Abu N. (2009) Does Stock Market Development Raise Economic Growth? Evidence from Nigeria. *Journal of Banking and Finance*. 1(1), (2009), pp. 15-26.
- Adefeso, H.A.; Egbetunde, T. & Alley, I. (2013) Stock market development and growth in Nigeria: A causal analysis. *Arabian Journal of Business and Management Review*, 2, (2013), pp. 78–94,
- Afolabi, A. A. (2015) Impact of the Nigerian Capital Market on the Economy, *European Journal of Accounting Auditing and Finance Research*, Vol.3, No.2, (2015), pp.88-96.
- Alajekwu, U.B. & Achugbu A. A. (2012) The Role of Stock Market Development on Economic Growth in Nigeria: A Time Series analysis, *Africa Research Review*, 6(1), pp. 51-70, (2012).

- Ben, N. & Ghazouani, S. (2007) Stock Markets, Banks and Economic Growth: Empirical evidence from MENA Region. *Research in International Business Finance*, (2): (2007), pp. 297-315.
- Bekaert, G, Harvey,C.R, Lundblad,C, (2011) Financial Openness and Productivity, *World Development* Vol. 39, (2011) No. 1, pp. 1–19.
- Bouزيد, A. (2012) McKinnon's Complementarity Hypothesis: Empirical Evidence for the Arab Maghrebean Countries", *Romanian Economic Journal*, Vol.15, No.44, (2012), pp.23-36.
- Chipaumire, G, Ngirande, H (2014) How Stock Market Liquidity Impact Economic Growth in South Africa". *Journal of Economics*, 5(2): (2014), pp. 185-192.
- Donwa, P. & Odia, J. (2010) An Empirical Analysis of the Impact of Nigerian Capital Market on her Socio-Economic Development. *Journal of special science*, 24 (2): (2010), pp. 135-142.
- Echekoba, F. N., Ezu, G. K. & Egbunike, C. F. (2013) The Impact of Capital Market on the Growth of the Nigerian Economy under Democratic Rule, *Arabian Journal of Business and Management Review*, Vol. 3, No. 2, (2013), pp. 53-62.
- Edame, G. E. & Okoro, U. (2013) The Impact of Capital Market and Economic Growth in Nigeria, *Journal of Public Policy and Administration Research*, Vol.3, No.9, (2013), pp. 2-15. <http://www.iiste.org/Journals/index.php/PPAR/article/viewFile/7742/7968>.
- Ewah, S.O.E, Essang A.E, & Basse J.U, (2009) Appraisal of Capital Market Efficiency on Economic Growth in Nigeria". *International Journal of Business and Management*, 4(12), (2009), pp. 219-225.
- Ghazouani, S. & Naceur, B.S. (2007) Stock markets, banks, and economic growth: Empirical evidence from the MENA region. *Research in International Business and Finance*, 21: (2007), pp. 297–315.
- Hossain, S. & Kamal, M.D.K (2010) Does Stock Market Development Cause Economic Growth? A time series analysis for Bangladesh Economy". *International Conference on applied Economics*, (10)2, (2010).
- Jibril, S. R., Salihi, A. A., Wambai, U. S., Ibrahim, F. B., Muhammad, S. & Ahmad, T. H.(2015), An Assessment of Nigerian Stock Exchange Market Development to Economic Growth, *American International Journal of Social Science*, Vol.4, No.2, (2015), pp.51-58.
- Levine, R, Zervos, S (2010) Stock market development and long run growth, *Journal of World Bank Economic Review*, 10 (2): (2010), pp. 323-329,
- Khetsi, Q.S. & Mongale, I.P. (2015) The Impact of Capital Markets on the Economic Growth in South Africa", *Journal of Governance and Regulation* 4(1), (2015), pp.154-163.
- Koirala, J. (2011) The Effect of Stock Market Development on Economic Growth: An Empirical Analysis of UK", Electronic copy available at: <http://ssrn.com/abstract=2494640> (2011).
- Kolapo, F.T. & Adaramola A.O. (2012) The Impact of the Nigerian capital market on Economic Growth. *International Journal of Developing Societies*, 1(1), (2012), pp. 11-19.
- Muhammed, S, Nadeem, A & Liaquat. A. (2008) Stock Market Development and Economic Growth": ARDL causality in Pakistan". *International Research Journal of Finance and Economic Issues*, 14, (2008), pp.183 -195.
- Nazir, M.S., Nawaz, M.M.& Gilani, U.J. (2010) Relationship between economic growth and stock market development", *African Journal of Business Management*, 4(16), (2010), pp. 3473-3479.
- Nurudeen.A. (2009) Does stock market development raise economic growth? Evidence from Nigeria". *The Review of Finance and Banking*, (01)1: (2009), pp. 015-025.
- Nowbutsing, B.M, Odit, M.P (2011) Stock market development and economic growth: The case of Mauritius", *African Journal of Business Management*, 6(8): (2011), pp. 2985-2989.
- Udegbonam, R. (2002) Openness, Stock Market Development, and Industrial Growth in Nigeria". *The Pakistan Development Review*, 41(1), 69-92, (2002). Retrieved from <http://www.jstor.org/stable/41260413>.
- Obubu, M, Konwe, C.S, Nwabenu, D.C, Omokri P. A. & Chijioke, M. (2016) Evaluation of the Contribution of Nigerian Stock Market on Economic Growth; Regression Approach", *European Journal of Statistics and Probability*; Vol.4, No.5, pp.11-27, October 2016, PP 11-26. Published by *European Centre for Research Training and Development UK*
- Okonkwo, O.N.; Ogwuru, H.O. & Ajudua, E.I. (2014) Stock Market Performance and Economic Growth in Nigeria: An Empirical Appraisal. *European Journal of Business and Management*, (2014) 6, pp. 33–42.
- Osinubi T. S, (2007) Does the stock market promote economic growth in Nigeria? Selected for presentation at the *International conference on Business and Finance*. Hyderabad, India, December 15-16, 2007.

Olowe, O., Mathew, O. and Fasina F (2011) Nigerian Stock Exchange and Economic Development, knowledge Management", *Information Management Learning Management*, 14, (2011), pp. 14-37.

Owolabi, A. & Ajayi, N. O, (2013) Econometric Analysis of Impact of Capital Market on Economic Growth in Nigeria (1971-2010), *Asian Economic and Financial Review*, 3(1), (2013) pp. 99-111.

Owusu, E.L. & Odhiambo, N.M. (2014) Stock Market Developments and Economic Growth in Ghana: An ARDL-Bounds Testing Approach. *Appl. Economics Letter* 21, (2014) pp. 229–234.

Popoola, O. T. (2014) The Effects of Stock Market on Economic Growth and Development of Nigeria". *Journal of Economics and Sustainable Development* Vol.5, No.15 (2014).

Shafii Azlina. (2009) The Long Term Relationship between Economic Growth and Stock Market Development: A Causality Analysis for 20 OIC member countries". *Review of Islamic Economic*, 13(1) 2009) pp. 199-206.

Zivengwa.T. Mashika.J. Bokosi.F. & Makosi.T. (2011) Stock Market Development and Economic Growth in Zimbabwe, *International Journal of Economics and Finance*, Vol. 3, No. 5; (2011).