Effect of Government Expenditure on Human Capital on Stock Market Growth a Study of Nigeria and South Africa

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Abstract: This study examined the effect of government expenditure on "human capital on stock market growth in Nigeria and South Africa, from 1990 to 2018. The specific objectives of this study were to: examine the effect of government education expenditure, government health expenditure, government social service expenditure, government human capital expenditure on market capitalization in Nigeria and South Africa. Central Bank of Nigeria and South Africa Statistical Bulletin were used as secondary source. ARDL technique was adopted in the study. It was revealed that government education expenditure had no significant effect on the Stock Market capitalization in Nigeria and South Africa both in the long run and short run. Also, government health expenditure had no significant effect on the Stock Market capitalization in Nigeria and South Africa both in the long run and short run and lastly, it was discovered that government social services expenditure had no significant effect on the Stock Market capitalization in Nigeria and South Africa both in the long run and short run". The study on the bases of these findings recommended among others that governments of should increase the financial allocation to education, health and other human capital development sectors and activities to improve skills and the income generation capacity of human capital towards enhancing investment and by extension the development of the Nigeria Stock Market.

Keywords: Human capital expenditure, stock market growth, education expenditure, health expenditure, social service expenditure, market capitalization.

1. INTRODUCTION

In all nations around the world, wealth creation is widely acknowledged as an engine of national growth. The provision of educational services is a significant means of generating human resources. One of the main strategies for raising the calibre of human resources is to provide people with educational services. Education not only addresses social issues but also supplies an economy with the skilled labour force needed for expansion and development. Before the Second World War (1939–1945), there was little academic discussion of the connection between schools and the economy.

Contrary to popular belief, the economic system is predicated on schooling to encourage economic progress, as demonstrated by Denison (1962) and a host of other economists. As a result, there appears to be a strong consensus among economists who study socioeconomic growth and progress also that expansion of a country's human capital is a key component in defining its wealth, the standard of living of its people, and even its financial strength. In fact, current methods to economic development place a high value on intentional development of a country's labour force in order to achieve wide economic growth and development, boost production, achieve full participation, reduce poverty, and raise investment.

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Oluwatobi and Ogunrinola (2011) defined human capital as the learned and beneficial skills of all residents or citizens of a society, drawing on Adam Smith's 1776 treaty on the wealth of nations. Ilegbinosa (2013) defined human resources as the innate and learned labour skills, with education and health becoming the main avenues for attaining these skills. Learning, skills, and healthcare are crucial tools in the development of any country's human capital pool, it follows. Knowledge, health, and other human aptitudes that can increase productivity are all considered to be components of human capital from the perspective of development economists. In a reference to the link between healthcare and education,

Health and education together increase each individual member of society's production, according to Lawanson (2009). Similar to this, Ijaiya and Ijaiya (2004) reference Schultz (1961) who asserts that there are five approaches to develop human resources. Healthcare system and amenities, on-the-job education, formally organized basic, intermediate, and higher education, adult programs of study, and movement of individuals and households to adapt to shifting employment prospects are a few of these. In order to emphasize the crucial role that education plays in the development of human capital, Jhingan (2005) contended that, while in a narrow sense, spending on human capital development is an investment in education, it also broadly covers spending on health and social services.

The health sector's spending keeps the workplace in good shape so that workers can put the information they have learned via education into practice, whereas spending on education increases the skills, technical competence, and experience of the general population. Hence, education and medical care are two of the most crucial aspects that determine the calibre of wealth generation and are essential for investment and economic expansion. According to the aforementioned, a consensus among researchers has emerged that public spending in humanitarian, health, and educational services is a social benefit whose demand and supply could be left to the whims of invisible forces or those who only have their own financial gain in mind (Edeme *et al.*, 2017). Thus, the government must take a leading role in providing the teeming population with high-quality, cheap, and accessible medical and educational services. Examining how government spending on human capital affects stock market growth in South Africa and Nigeria is the major goal of this study.

2. LITERATURE REVIEW

2.1. Human Capital Theory

Adam Smith first proposed the human capital idea in 1776, but Schultz Theodore subsequently improved it and Becker Garg made it widely known. The notion is predicated on the premise that a population's ability to produce can be increased with the help of formal education and proper health care. According to the thesis, investing in people has financial advantages for both individuals and society as a whole. The current study, which looks at the applicability of making investments in human assets, is theoretically grounded in the early economists' human capital theory.

In essence, proponents of the human capital theory contend that a society that has access to education is one that is industrious (Sweetland, 1996). According to persons, the human capital theory stresses how education boosts workers' efficacy and productivity by raising the level of their intellectual stock, which is a result of their intrinsic abilities and investments in them as people (Olaniyan & Okemakinde, 2008). Offering formal schooling is viewed as a fruitful investment in human capital, which the theory's supporters have deemed to be just as valuable as that of physical capital.

Three categories of categorizing human capital were mentioned by Dae-Bong (2009), according to the person's aspect, the capital itself as well as its accumulating process, and the viewpoint just on capital that is manufacturing. Accordingly, "the reservoir of abilities and expertise reflected in the ability to execute labour to generate revenue is what human capital is from a production-oriented perspective. so that human

Knowledge, education, expertise, and skills are referred to as assets and are the main sources of an employee's productivity for both personal and organizational growth. This reference ensures a foundation for the examination and analysis of human resource department in the banking sector and the economy as a whole.

2.2. Wagner's Law of Increasing State Activity

The concept of growing state activity is known as Wagner's Law after German political economist Adolph Wagner, who created it after doing empirical research on Western Europe at the end of the 19th century. He maintained that rising industrialization and economic expansion are related to the growth of the government. According to Wagner, the proportion of public spending in overall spending rises as a country's real per capita earnings rises during the industrialization. According to the law, the emergence of a contemporary industrial society would lead to increased governmental pressures for social improvement and enhanced industry tolerance for social consideration.

Three focal bases were created by Wagner in 1835 for the rise in state spending. First, as a result of industrialization, public service work will take the place of private sector work. Administrative and preventive state responsibilities will become more important. Second, governments had to offer social and cultural services including public health care, retired insurance, food subsidies, emergency relief for natural disasters, environmental preservation initiatives, and other welfare benefits. Thirdly, rising industrialization will result in technological advancements and the emergence of monopolistic huge corporations. Governments will need to use financial resources to provide social and merit goods in order to counteract these consequences.

Adolf Wagner emphasised that the growth of government revenue is an endogenous factor that affects governmental spending. As a result, public spending is determined by national revenue. The Wagner's Law is typically a long-run occurrence: the stronger the economic and statistical judgements, the longer the time series. It was noticed that these trends will emerge after 50 to 100 years of the growth of modern industrial civilization.

2.3. The Concept of Investing in Education

Investing in education is relevant for a nation's macroeconomic activities as well as for the organization as a whole. Education refers to the act of enabling a group of people's learning, information, skills, values, beliefs, and behaviors to be transmitted to other individuals through instruction, debate, training, or study. By acquiring the abilities and understanding necessary to foster good social conduct, education helps us lead more comfortable and satisfying lives.

Alade (2006) asserts that education gives community people the skills they need to contribute to the overall economic development of their country. Any firm's quality and design depend on the caliber of its workforce. The development of a broad intellectual capacity and the acquisition of technical knowledge are the goals of education. The globe over, education is universally recognized as being crucial to both social and economic progress. According to Okebukola (2000), schooling as a whole and higher schooling specifically are crucial for the development of a knowledge economy and society across all countries.

Education, according to John (2012), is a structured procedure by which a youngster or adults gains information, experience, abilities, and a sound attitude. It is impossible to overstate the importance of education for a staff because it prepares them for bigger tasks. It prepares the workforce for productive performance. One significant factor determining production is education quality organization. Any organiza-

tion's ability to succeed is primarily dependent on how many of its employees have received a good education. Organizations should hire intelligent workers and provide them with the required training as needed if they want to keep good employees. Employees are helped by internal education to develop the abilities that ensure their success on tasks carried out in the organization at home and in society.

2.4. Characteristics of the Nigerian Capital Market

The capital market's most powerful component is the stock exchange. According to Demirgüç-Kunt and Levine (1996), stock market growth can be divided into three categories: traditional, institutions, and asset pricing. Traditional traits are focused on the stock market's fundamental growth indicators. The number of listed firms and market capitalization are two examples of these metrics. The organizational characteristic indicators are another option. The legal and regulating roles that may affect how the market operates, the criteria for information sharing and openness, as well as market barriers and trading costs, are examples of these organizational characteristic measures. Finally, the asset pricing characteristics metrics place particular emphasis on the market's effectiveness with regard to the pricing of risk.

Market capitalization is frequently used to gauge the magnitude of the stock market. The overall market value of all shares that are listed is known as market capitalization. The claim is that there is a positive correlation between market size and the capacity to raise capital and diversify risk in terms of economic significance. The Nigerian capital market is still considered to be tiny despite having 253 stocks listed and a market capitalization of roughly N16875.1 billion at the close of 2014. Adeyemi (1998) outlined a few potential explanations for the market's modest size. One of the causes is that local business owners were reluctant to go public out of a fear of losing control.

In agreement with Adeyemi (1998), it was noted that the elevated cost of public quotation, reticence to water down ownership and control through general populace quotation, the historical interest rate framework that favoured financial leverage over equity capital, and the onerous listing requirements are all reasons why domestic businesses have little interest in trading on the Nigerian Stock Market. Yet, the stock market made a novel decision to address this issue by establishing a second-tier securities market (SSM).

The government's actions and those of the exchange itself are anticipated to strengthen the Nigerian stock market's resource basis. The exchange launched its intranets system (CAPNET) and switched from a manual telephone trading platform to an automated system (ATS) in April 1999, among other actions. These actions include the privatization of public companies, linking the exchange with reuters electronic commenters system for online world stock disseminating information, and privatizing public enterprises. Also, it is anticipated that the current democratic system will have a good effect on the exchange's turnover. Investors' confidence in brokers and other capital market intermediaries and stakeholders is thought to be increased by regulation. It guarantees openness and fairness in the marketplace, which in turn promotes stock market trading and investment.

By creating the Capital Issue Commission (though it had no legal standing at the time), which later changed its name to Nigeria Securities and Exchange Commission in 1979 to serve as the apex regulating agency of the Nigerian stock market, regulatory authorities of the country's capital market made sure that a solid organizational framework was in place from the start. The fact that the Nigerian Stock Exchange is a self-regulatory organization is also significant (Inanga & Emenuga, 1997). This topic relates to the securities market's asset pricing mechanism' effectiveness.

The informational content that is built into market pricing is the main metric for gauging efficiency. If a market price accurately and sufficiently represents all data (past, present, and future) accessible to all market players concurrently and instantly, it is believed to reflect an extremely efficient market (Pandey, 2008). When current stock prices represent all information that is publicly accessible as well as the data found in past prices, it is considered to be semi-strong. The market is considered weak when current prices solely reflect historical data with minimal forecasting potential (Inanga & Emenuga, 1997).

2.5. Government Spending

Spending is the final method a government may use to influence growth. Several fiscal policy tools could have long-term consequences, but only contemporary models of endogenous expansion have made public spending the primary driver of growth in the economy (Zagler & Durnecker, 2003). The government's primary goal in fostering economic growth is to raise the physical assets and labour's marginal efficiency in the private sector. According to Afonso *et al.*, (2005), public funding on research and development can boost human capital, promote innovation, and advance technology. Public investment in research and development (innovation) and schooling (human capital) therefore increases growth and worker productivity.

Growth is impacted by more expenses through additional channels. For instance, basic social safety nets boost the capacity to accept risks and decrease the demand for precautionary savings. On the other side, spending on redistribution can lessen incentives for people to work, invest in human capital, or develop creative skills, which would undermine growth. Even early retirement benefits or extensive social assistance, according to Afonso et al., (2005), are thought to lower the labour force and the desire to protect one's human capital.

2.6. Empirical Review

A plethora of empirical work abound on the effect of the stock market on human capital investment exist. Abu and Abdullahi (2010) used total capital expenditure, total recurrent expenditure, total education expenditure, transport & interaction, wellness, defense, and agricultural production as variables to analyze government spending and Nigeria's economic expansion from 1970 to 2007. Linear regression revealed that total capital spending, total recurrent spending, and education spending were negatively correlated with productivity expansion, whereas transport and interaction as well as health have a positive correlation.

Agbonkhese and Asekhome (2014) evaluated the effect of public spending on the performance of the Nigerian share market using the Ordinary least square method of econometric methodology. The outcome of their analysis revealed a favourable and significant correlation between public spending on health and education and the success of the Nigerian capital market. According to the report, the government should spend more money on the education and health industries in order to improve the functioning of the capital market.

Akpan and Abang (2013) used time series data covering the years 1970 to 2010 to examine the effect of government spending on the Nigerian economy. The ARDL model was used in the study to determine how aggregate government expenditure affected growth in the economy. Their results indicated that government expenditure in Nigeria promotes growth, albeit with a very little and less than unity (0.16%) influence. Additionally, their study shown that only recurring spending is substantially and favourably associated to growth at the different quantiles, but the influence of capital expenditure is small and negative. To boost economy, the government should concentrate on exciting capital projects.

Despite varied results, Anyanwu and Erhijakpor (2007) investigated the relationship between newborn mortality and under-five mortality between 1999 and 2004 and the per capita total of African countries (grouped into distinct geographical areas) as well as federal health expenditures. According to their findings, total healthcare expenditure are undoubtedly considerable for African countries, based on the unique characteristics of each region, and they have a statistically significant impact on baby and under-five mortality. They come to the conclusion that Sub-Saharan Africa is both positively and significantly linked with both newborn and under-five mortality, whereas the opposite is true for North Africa. The report proposed that spending in the health sector should be increased.

There is no long-term correlation among government spending and economic growth in Nigeria, according to Awomuse *et al.*, (2013) examination of the impacts of federal government size on economic growth in Nigeria (1961 to 2011). Their investigation showed that the Wagner's law is invalid during the investigated time period. They discovered a weak empirical foundation for Keynes' claim that public spending is an exposure and a tool for policymakers to boost short-term output growth using the VAR Granger casualty test. According to the report, the government should make improvements to its spending policies in order to boost economic growth.

Using the Johansen co-integration approach, Babatunde and Adefabi (2005) looked at the long-term connection between schooling and economic growth in Nigeria. According to their study's findings, there may be a long-term connection between enrollment in elementary and postsecondary education and the typical number of years spent in school along with weekly output. Using a panel data set for 120 developing nations between 1975 and 2000, Baldacci (2004) investigated the association between healthcare expenditure and clinical outcomes. He found that whereas lagged healthcare expenditure seems to have little effect on growth, health care spending within a time affects growth during that same time. From this finding, he deduced that the direct impact of health spending on growth is a flow effect rather than a stock effect. using panels of yearly and time-averaged data for 22 OECD nations from 1970 to 1995.

In their study, Bleaney *et al.*, (2001) examined how government spending affects economic expansion. They discovered using OLS and GLS methodologies that while non-productive public spending has no impact on growth in the economy, productive government investment does. Bol and Willy (2016) used a random effect model to examine the relationship between governmental expenditure and growth in the economy in South Sudan from 2006 to 2014 utilizing variables such as infrastructure, production, social services, and security. Government spending on social services was found to be negatively correlated with economic expansion.

In an effort to study the chain of causation, Chaabouni and Abednnadher (2010) looked at the factors that influenced Tunisia's health spending from 1961 to 2008. They used the autoregressive distributed lag (ARDL) method. The findings of the limits test demonstrated that, among other things, the per capita healthcare spending, GDP, populations ageing, and healthcare density have a stable strong partnership. Yet, the consequences of the causation

A test revealed that, both in the short and long terms, there is a causal flow from healthcare expenditure to revenue in both directions. They suggested that in order to create a society that is healthier and more productive and to promote Tunisia's economic growth and development, policies aimed at promoting health expenses be implemented.

Chandra (2010) used annual time series data spanning from 1951 to 2009 to use both linear and non-linear Granger causality tests to assess the relationship between Indian education spending and economic growth. The analysis revealed a two-way causal relationship among education spending and economic expansion. Chioma *et al.*, (2016) used correlation analysis to examine the link between public spending and GDP, capital spending, community and social spending, and gross domestic product in Nigeria from 1986 to 2005. The outcome demonstrates that social and community programs have a favourable and considerable effect on the overall income of Nigeria.

Chude and Chude (2013) used a differentiated and sectoral analysis of expenditure to analyze the influence of education spending by the government on the growth of the Nigerian economy from 1977 to 2012. According to the findings, there was a long-term, very positive, and statically relevant association between overall education spending and the expansion of the Nigerian economy. Thus, they argued that the government should allocate less money for recurrent education spending and instead concentrate primarily on capital spending to support Nigeria's economic growth.

The relationship between both the dependent variable and the independent factors was determined to be significant and optimistic in Ojong *et al.*, (2016) study of government spending and its effects on the Nigerian economy between 1980 and 2012. They used linear regression with the gross domestic product, recurrent expenditure, and capital spending as their dependent variables.

3. RESEARCH METHODOLOGY

An exploratory design was employed to gain access to the pertinent literature and theories required to give the study's empirical and theoretical foundation. On the opposite hand, the information on the study's variables were collected, examined, and tested using the ex-post facto design. The use of the ex-post facto approach was made appropriate by the fact that the variables under study are auxiliary and could be subject to the researcher's control. Because time series data provide details about the numerical values associated with the variables, they were used in this study. To ascertain the effects of human capital development expenditure variables, such as government spending on education, health, and social services on stock market development in Nigeria, annual time-series data from 1990 to 2018 were gathered.

The availability of data played a significant role in the selection of these factors. Stock market growth indices, which were calculated using market capitalization, are among the endogenous factors (MCAP). government spending on education (GEOE), government spending on Healthcare (GEOH), and government spending on social services (GEOSS) would serve as proxies for the exogenous variables related to human capital development index. The Central Bank of Nigeria's statistics bulletin and the Bank of South Africa's statistical bulletin, in different volumes, provided the data for this study.

3.1. Model Specification

The study suggested and adopted in this research is a version of the human capital investment theory suggested by Carl (1980). According to the theory, government spending in human capital induced the productive capacity of the nation. However, government must source long term funds from the stock market to fund this investment. Therefore, the relationship suggested by this theory can be expressed functionally thus: This study, however, considers human capital investment in terms of government expenditure on education, health and social services as exogenous variables against stock market development indices market capitalization, as exogenous variables. This relationship is stated thus:

MCAP = f (GEOE, GEOH, GEOSS)

Where

GEOE = Expenditure on Education Government

GEOH = Expenditure on Health Government

GEOSS = Expenditure Social Services

MCAP = Market Capitalization

$MCAP = a_0 + b_1\ GEOE + b_2\ GEOH + b_3\ GEOSS + e_t$

Where

a_0 = Regression constant

b_1 _b_3= Regression parameters

3.2 Estimation Techniques

In the study, descriptive statistics were used to analyze the time series' structure utilizing descriptive-analytical tools including straightforward tables, charts, and percentages. The study will be able to understand the pattern and trend of the time - series data over the course of this study thanks to descriptive statistic.

4. RESULTS

Since time series data typically follow a specific trend and because economic theory dictates that they be made subject to contrasting or de-trending processes to avoid spurious results, the study used the Augmented Dickey-Fuller (ADF) unit root test to determine whether the time series were static. All the variables were integrated at first difference or levels and their coefficients were negative when using the Augmented Dickey-Fuller (ADF) tests for the unit root test. Alternatively put, the time series data of orders I (1) and I (0). As a result, it was indicated that the Auto Regressive Distributive Lag (ARDL) technique was the best option for estimation.

Table 1. Augmented Dickey-Fuller (ADF) and Phillip Peron Unit Root Test.

Nigeria			
Variables	**ADF Test Statistics**		**Order of Integration**
	Level	**1st Difference**	
LMCAP	-2.164822	-3.992840	I (1)
LGEOE	-4.183075		I(0)
LGEOH	-3.803606		I(0)
LGEOSS	-0.893022	-7.742903	I(1)
Test critical values at level: 1% = --3.689194, 5% = -2.971853, 10% = -2.625121 Test critical values at 1st Diff: 1% = -3.699871, 5% = -2.976263, 10% = -2.627420			
Phillips-Peron (PP) Test			
Variables	**PP Test Statistics**		**Order of integration**
	Level	**1st Difference**	

LMCAP	-0.853769	-7.522796	I (1)
LGEOE	-3.972669		I(0)
LGEOH	-3.846416		I(0)
LGEOSS	-2.036930	-6.576211	I(1)
Test critical values at level: 1% = -3.689194, 5% = -2.971853, 10% = -2.625121			
Test critical values at 1st Diff: 1% = -3.699871, 5% = -2.976263, 10% = -2.627420			

Source: Researchers' E-views 10 Computation.

Table 2. Augmented Dickey-Fuller (ADF).

South Africa			
Variables	**ADF Test Statistics**		**Order of integration**
	Level	**1st Difference**	
LMCAP	-2.164822	-3.992840	I (1)
LGEOE	-4.183075		I(0)
LGEOH	-3.803606		I(0)
LGEOSS	-0.893022	-7.742903	I(1)
Test critical values at level: 1% = --3.689194, 5% = -2.971853, 10% = -2.625121			
Test critical values at 1st Diff: 1% = -3.699871, 5% = -2.976263, 10% = -2.627420			
Pillips-Peron Test (PP)			
Variables	**PP Test Statistics**		**Order of integration**
	Level	**1st Difference**	
LMCAP	-2.697114	-3.925643	I (1)
LGEOE	-1.260401	-9.194939	I(1)
LGEOH	-3.413669		I(0)
LGEOSS	-1.060018	-7.742903	I(1)
Test critical values at level: 1% = -3.689194, 5% = -2.971853, 10% = -2.625121			
Test critical values at 1st Diff: 1% = -3.699871, 5% = -2.976263, 10% = -2.627420			

Source: Researchers' E-views 10 Computation.

According to the tables above, Nigeria's market capitalization and government spending on other social assistance both had unit roots for both the ADF and PP tests at their current levels, but after differing once, they became stationary. This was the case because the test statistics for the two test procedures at levels, taken as their actual values, were lower than their critical values at 5%. The test figures for market capitalization and government spending on some other social services in Nigeria, taking their absolute values, however, became higher than their critical values at the 5 percent level after differencing one time.

Also, the outcome unmistakably demonstrated that neither the government's spending on health nor education had a unit root at levels for either test statistic. Since their test statistics at levels, taking their relative values into account, were higher than its essential value at 5 percent level, this was demonstrated. Given that the two testing methods for the Nigerian data revealed that the country's variables were integrated in distinct orders, specifically, order I(1) and order I(0) it was clear that the autoregressive distributive lag (ARDL) approach was used to estimate the variables. Comparatively speaking, the aforementioned table demonstrated that market capitalization and government spending on other societal services in South Africa both have had unit root at levels, yet after differing once, they remained stationary for both test methods, namely for the ADF test methods. This was the case due to the test statistics at levels with absolute values that were lower than their 5 percent essential values. The test figures, though, for the market capitalization and public spending on other societal services in South Africa, taken as absolute numbers, exceeded their critical values at the 5% level after contrasting one time.

Also, the outcome unmistakably demonstrated that government spending on education and health care had no unit roots at levels. Since their test statistics at levels, considering their absolute values into account, were higher than their critical value at the 5 percent level for the ADF test, this was demonstrated. Market capitalization, government spending

Table 3. VAR lag Order Selection Criteria.

Endogenous Variables: LMCAP LGEOE LGEOH LGEOSS						
Nigeria						
Lag	**LogL**	**LR**	**FPE**	**AIC**	**SC**	**HQ**
0	-142.7115	NA	3.60e-07	9.419470	9.785904	9.540932
1	39.23550	261.5488	2.71e-10	2.047781	5.345687*	3.140943
2	65.77634	204.6180	1.82e-12	1.643105	5.523412	2.488532
3	150.0689	103.9063*	1.51e-10*	-0.879308*	5.350069	1.185554*
South Africa						
Lag	LogL	LR	FPE	AIC	SC	HQ
0	-107.8908	NA	7.39e-07	8.584503	8.968455	8.698672
1	44.79694	203.5837	3.82e-13	2.015041	3.946833*	3.042562
2	170.8347	120.2352	1.28e-09	1.542315	5.470606	1.837218
3	204.1845	93.36127*	6.20e-11*	-2.580345*	5.513278	-0.639473*

* indicates lag order selected by the criterion.
LR: sequential modified LR test statistic (each test at 5% level).
FPE: Final prediction error.
AIC: Akaike information criterion.
SC: Schwarz information criterion.
HQ: Hannan-Quinn information criterion.
Source: Researchers' E-views 10 Computation, 2020.

on education, and government spending on other social services all had unit roots at levels in the PP-test results for South Africa, but after differing once, they became stationary for the both testing methods, that is, for the ADF testing methods.

This was the case due to the test statistics at levels having absolute values that were lower than their 5% critical values. The test statistics for that market capitalization, government spending on education, and government spending on other social services in South Africa, taking their absolute values, however, became bigger than their critical values at the 5% level after differencing one time. Also, it was evident that levels of government health spending lacked a unit root. This was demonstrated by its test statistics at levels where, when expressed as an absolute value, it exceeded its critical value at the 5% level. The fact that the South Africa variables were also integrated in different orders, specifically, that the South Africa variable was of both order I(1) and I(0) indicates that the autoregressive distributive lag (ARDL) technique was used to estimate the South Africa equation. As a result, the ARDL approach was adopted to estimate the Nigeria and South Africa equations.

4.1. VAR Lag Order Selection Criteria

For this investigation, the VAR lag order selection criteria were used to determine the ideal lag length. The outcome was displayed below. Except for the Schwarz information criterion, which chose lag one as its ideal lag for both countries' data, all criteria in both Nigeria and South Africa indicated that lag three was the most appropriate lag duration for this study. Lag three was the ideal lag duration for this investigation because the bulk of the criteria favoured it.

4.2. Long-Run ARDL Bound Test Analysis of Market Capitalization Equation in Nigeria and South Africa

The study evaluated the estimations of the parameters using the ARDL bound testing approach because the variables were integrated of orders I (1) and I (0). The table below is an excerpt of the long-run estimation of the market capitalization equation's parameters for both Nigeria and South Africa:

Table 4. Long Run ARDL Estimates of Market Capitalization Equation in Nigeria.

Dependent Variable: D(LMCAP)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	3.207964	0.974853	3.290714	0.0110
D(LMCAP(-1))	0.093354	0.257237	0.362909	0.7261
D(LMCAP(-2))	-0.417522	0.201977	-2.067180	0.0725
D(LMCAP(-3))	-0.011043	0.192360	-0.057407	0.9556
D(LGEOE(-1))	1.298300	0.396808	3.271858	0.0113
D(LGEOE(-2))	0.840015	0.384091	2.187020	0.0602
D(LGEOE(-3))	0.828406	0.276923	2.991469	0.0173
D(LGEOH(-1))	-1.569973	0.505048	-3.108562	0.0145
D(LGEOH(-2))	-1.066948	0.499566	-2.135751	0.0652

D(LGEOH(-3))	-0.948778	0.329261	-2.881539	0.0205
D(LGEOSS(-1))	0.073359	0.120506	0.608756	0.5596
D(LGEOSS(-2))	0.161585	0.110699	1.459681	0.1825
D(LGEOSS(-3))	0.136566	0.084106	1.623727	0.1431
LMCAP(-1)	-0.570827	0.183535	-3.110181	0.0144
LGEOE(-1)	-0.720211	0.401925	-1.791906	0.1109
LGEOH(-1)	1.664574	0.478116	3.481530	0.0083
LGEOSS(-1)	-0.396834	0.152558	-2.601202	0.0316
R-squared	0.876521			
Adjusted R-squared	0.629564			
F-statistic	3.549281	Durbin-Watson stat		2.368831
Prob(F-statistic)	0.037447			

Source: Researchers' E-views 10 Computation.

Table 5. Long Run ARDL Estimates of Market Capitalization Equation in South Africa.

Dependent Variable: D(LMCAP)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	2.392520	2.889914	0.827886	0.4317
D(LMCAP(-1))	-0.587440	0.378758	-1.550961	0.1595
D(LMCAP(-2))	-0.275699	0.327320	-0.842294	0.4241
D(LMCAP(-3))	-0.033504	0.275875	-0.121448	0.9063
D(LGEOE(-1))	0.109456	1.037606	0.105489	0.9186
D(LGEOE(-2))	0.047594	0.999082	0.047638	0.9632
D(LGEOE(-3))	0.536122	0.934593	0.573642	0.5820
D(LGEOH(-1))	0.662907	0.914930	0.724544	0.4894
D(LGEOH(-2))	1.251836	0.903448	1.385620	0.2033
D(LGEOH(-3))	0.289251	0.899686	0.321502	0.7561
D(LGEOSS(-1))	-0.054392	1.060809	-0.051274	0.9604
D(LGEOSS(-2))	-0.626409	0.672462	-0.931517	0.3788
D(LGEOSS(-3))	-0.403193	0.522707	-0.771355	0.4627
LMCAP(-1)	0.165239	0.196119	0.842542	0.4240
LGEOE(-1)	-0.084875	1.386457	-0.061217	0.9527
LGEOH(-1)	0.384669	0.882275	0.435997	0.6744
LGEOSS(-1)	-1.499306	1.129062	-1.327922	0.2208
R-squared	0.762063			
Adjusted R-squared	0.586189			
F-statistic	1.601396	Durbin-Watson stat		1.611216
Prob(F-statistic)	0.254062			

Source: Researchers' E-views 10 Computation.

The Autoregressive distributed lag long-run estimates of the impact of public investment in human capital on market capitalization in Nigeria and South Africa, respectively, are shown in Table 5 above. The signs and magnitude of this finding were used for analysis and comparison. When the estimations' parameters' signs were taken into account, the market capitalization of South Africa during the three lag periods was negative, while the market capitalization of Nigeria was positive during the first lag period but negative during the second and third lag periods.

To put it another way, while a 1% increase in the market capitalization of the first, second, and third lagged periods in South Africa caused respective decreases in the current period market capitalization of about 58.74%, 27.56%, and 3.35%, a 1% increase in the market capitalization of the first period lagged in Nigeria caused an increase in the current period market capitalization of about 9.33%, 1% increases in the second and third lagged periods, and 1% increases in the current

While the parameters of the three lags of government expenditure on education in Nigeria had positive values of, respectively, 129 percent, 84 percent, and 82.84 percent, the first, second, and third lagged periods of government expenditure in South Africa had positive values of 10.94 percent, 4.75 percent, and 53.61 percent. According to this, a 1% rise in government spending on education during the three lag periods was associated with long-term increases of 10.94%, 4.75%, and 53.61% in South Africa's market capitalization and 129.0%, 84.0%, and 82.84% in Nigeria's market capitalization.

Again, the first, second, and third lagged periods of government health spending in South Africa had parameters with positive values of 66.29 percent, 125.18 percent, and 28.92 percent, respectively, while the three lagged periods of government spending on health in Nigeria had parameters with negative values of 156.99 percent, 106.69 percent, and 94.87 percent. This implied that a 1% increase in government spending on health throughout the three lag periods would result in Long-term market capitalization trends point to increases of about 66.29 percent, 125.18 percent, and 28.92 percent in South Africa and declines of about 156.99 percent, 106.69 percent, and 94.87 percent in Nigeria.

Finally, while the parameters of the three lags of government expenditure on other social services in Nigeria had positive values of 7.33 percent, 16.15 percent, and 13.65 percent, respectively, in South Africa, the first, second, and third lagged periods of government expenditure on other social services in South Africa had negative values of 5.43 percent, 62.64 percent, and 40.31 percent. This implied that over the course of the three lag periods, a 1% increase in government spending on other social services caused the market capitalization of South Africa to fall by 5.43, 62.64, and 40.31 percent, respectively, and the market capitalization of Nigeria to rise by 7.33, 16.15, and 13.65 percent.

The R2 and R2 adjusted values of 0.7620 and 0.586189, respectively, indicated from the outcome that the independent variables had well explained the South Africa market capitalization equation. The R2 adjusted value of 0.5861, or 58.61 percent, specifically demonstrated that variations in govern-

ment spending on health care, education, and other social services together accounted for 58.61 percent of changes in market capitalization in South Africa. On the other hand, the R2 and R2 adjusted values of 0.876521 and 0.629564 respectively demonstrated that the independent variables had well explained the Nigeria market capitalization equation.

The R2 adjusted value of 0.6295, or 62.95 percent, specifically demonstrated that variations in government spending on health care, education, and other social services together accounted for 62.95 percent of changes in market capitalization in Nigeria. On the other hand, the overall significance of the long-run market capitalization estimates in Nigeria, as shown by its F-statistics value of 3.549 with its corresponding P-value of 3.74 percent, was statistically robust. This contrasts with the overall significance of the long-run market capitalization estimates in South Africa, which was not statistically robust as indicated by its F-statistics value of 1.601 with its corresponding P-value of 25.40 percent.

4.3. Short-run Dynamic Analysis Market Capitalization Equation

The study also assessed the short-run dynamics of the estimates of the parameters using the ARDL approach. Extract of the results of the parameters was presented below:

Table 6. Short Run Dynamics of MCAP Equation in South Africa.

Dependent Variable: D(LMCAP)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.333486	0.127389	2.617851	0.0239
D(LMCAP(-1))	-0.855214	0.312525	-2.736462	0.0194
D(LMCAP(-2))	-0.409924	0.255284	-1.605754	0.1366
D(LMCAP(-3))	-0.210794	0.221856	-0.950138	0.3625
D(LGEOE(-1))	1.125821	0.626470	1.797087	0.0998
D(LGEOE(-2))	0.576251	0.588810	0.978671	0.3488
D(LGEOE(-3))	1.257702	0.606018	2.075355	0.0622
D(LGEOH(-1))	1.259239	0.605392	2.080039	0.0617
D(LGEOH(-2))	1.624603	0.699849	2.321363	0.0405
D(LGEOH(-3))	0.851590	0.621495	1.370229	0.1979
D(LGEOSS(-1))	-0.531838	0.594294	-0.894906	0.3900
D(LGEOSS(-2))	-1.068635	0.568727	-1.878994	0.0870
D(LGEOSS(-3))	-0.403726	0.498728	-0.809512	0.4354
ECM(-1)	0.286506	0.171837	1.667308	0.1236
R-squared	0.679325			
Adjusted R-squared	0.500346			
F-statistic	1.792514	Durbin-Watson stat		1.200434
Prob(F-statistic)	0.169553			

Source: Researchers' E-views 10 Computation.

Table 7. Short Run Dynamics of MCAP Equation in Nigeria.

Dependent Variable: D(LMCAP)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.118093	0.130275	0.906489	0.3841
D(LMCAP(-1))	0.366579	0.313284	1.170118	0.2667
D(LMCAP(-2))	-0.095324	0.234560	-0.406395	0.6922
D(LMCAP(-3))	0.262107	0.211745	1.237838	0.2415
D(LGEOE(-1))	0.288522	0.330263	0.873615	0.4010
D(LGEOE(-2))	-0.064793	0.353876	-0.183096	0.8581
D(LGEOE(-3))	0.346289	0.307154	1.127413	0.2836
D(LGEOH(-1))	-0.208192	0.414282	-0.502537	0.6252
D(LGEOH(-2))	0.153815	0.467051	0.329333	0.7481
D(LGEOH(-3))	-0.366310	0.366447	-0.999625	0.3390
D(LGEOSS(-1))	-0.226397	0.112746	-2.008022	0.0698
D(LGEOSS(-2))	-0.030519	0.126180	-0.241865	0.8133
D(LGEOSS(-3))	0.085155	0.109864	0.775098	0.4546
ECM(-1)	-0.248388	0.207062	-1.199587	0.2555
R-squared	0.685089			
Adjusted R-squared	0.512922			
F-statistic	1.840809	Durbin-Watson stat		1.683865
Prob(F-statistic)	0.158839			

Source: Researchers' E-views 10 Computation.

Table 7 were the ARDL short-run estimates of the effect of government human capital expenditure on market capitalization in Nigeria and South Africa respectively. This result was analyzed/compared using two dimensions namely, the signs and magnitude. Considering the signs of the parameters of the estimates, the parameter of the three lagged period of market capitalization in South Africa were negative; the first and third lags of market capitalization for Nigeria were positive while the second lag period of Nigerian capital market was negative.

In other words, while a one percent increase in the first, second and third lagged periods of market capitalization in South Africa led respectively to about 85.52 percent, 40.99 percent and 21.07 percent decrease in the current period market capitalization in South Africa; on the other hand, a one percent increase in the first and third period lagged market capitalization in Nigeria resulted in about 36.65 percent and 26.21 percent increase in the current period market capitalization, however, a one percent increase in the second lagged period market capitalization led to about 9.53 percent decrease in the current period market capitalization in Nigeria.

The parameter of the first, second and third lagged period of government education expenditure in South Africa had a positive value of 112.58 percent, 57.62 percent and 125.77 percent while the parameters of the first and third lagged of

government expenditure on education in Nigeria had positive values of respectively 28.85 percent and 34.62 percent; that of the second lag was negative with about 6.47 percent. This implied that one percent increase in the three lag periods government expenditure on education led to about 112.58 percent, 57.62 percent and 125.77 percent increase in market capitalization in South Africa and about 28.85 percent and 34.62 percent increase of the first and third lag periods and 6.47 percent decrease of the second lag in the market capitalization of Nigeria in the short run

Again, the short-run parameters of the first, second and third lagged periods of government health expenditure in South Africa had a positive value of 125.92 percent, 162.46 percent and 85.15 percent while the parameters of the first and third lag periods of government expenditure on health in Nigeria had negative values respectively of 20.18 percent, and 36.63 percent however the second lag period of government expenditure on health had a positive value of 15.38 percent. This implied that one percent increase in the three lag periods government expenditure on health led to about 125.92 percent, 162.46 percent and 85.15 percent increase in market capitalization in South Africa and about 20.18 percent, and 36.63 percent increase of the first and third lag periods and 15.38 percent decrease of the second lag period of government health expenditure in the market capitalization of Nigeria in the short run.

Lastly, the parameter of the first, second and third lagged period of government expenditure on other social services in South Africa had a negative value of 53.18 percent, 106.86 percent and 40.37 percent while the parameters of the first and second lag periods of government expenditure on other social services in Nigeria had negative values of respectively 22.63 percent and 3.05 percent and 13.65 percent; however, the third lag period of government expenditure on other social services in Nigeria had a positive value of 8.51 percent. This implied that one percent increase in the three lag periods government expenditure on other social services led to about 53.18 percent, 106.86 percent and 40.37 percent decrease in market capitalization in South Africa; similarly, a one percent increase in the first and second lagged periods of government expenditure on other social services had a negative effect of 22.63 percent and 3.05 percent on market capitalization in the current period. However, the third lag period of government expenditure on other social services ha a negative impact of 8.51 percent on the current year market capitalization in Nigeria.

The coefficient of the error term of the South Africa market capitalization had a positive value of 28.65 and the probability of its t-statistics was 12.36 greater than 5 percent. In other words, the market capitalization equation error term of South Africa was not significant. Similarly, the coefficient of the error term in Nigeria had a negative value of 0.2483 and the probability of its t-statistics was 25.55 percent, meaning that the Nigeria capital market error was also not significant. In other words, there was no adjustment from short-run disequilibrium to long-run equilibrium both in South Africa and Nigeria capital market equations.

From the result, the R^2 and R^2 adjusted values of 0.6793 and 0.5003 respectively showed that the South Africa market capitalization equation had been explained by the independent variables. Specifically, the R^2 adjusted value of 0.5003 or 50.03 percent showed that about 50.03 percent of the changes in the market capitalization in South Africa had been explained by the joint variations in government education expenditure, government health expenditure and government expenditure on other social services in the short run. On the other hand, the R^2 and R^2 adjusted values of 0.6850 and 0.5129 respectively showed that the Nigeria market capitalization equation had been well explained by the independent variables. Specifically, the R^2 adjusted value of 0.5129 or 51.29 percent showed that about 51.29 percent of the changes in the market capitalization in Nigeria had been explained by the joint variations in government education expenditure, government health expenditure and government expenditure on other social services in the short run.

The overall significance of the long-run market capitalization estimates in South Africa as shown by its F-statistics value of 1.7925 with its corresponding P-value of 16.95 percent was not robust on the other hand, the overall significance of the long-run market capitalization estimates in Nigeria as shown by its F-statistics value of 1.8408 with its corresponding P-value of 15.88 percent was not statistically robust. To test for the significance of short-run estimates, the study applied the Wald statistics. The result was as presented in table below:

Table 8. Long Run ARDL Estimates of all Share Index Equation in South Africa.

Dependent Variable: D(LASI)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	0.730642	3.952851	0.184839	0.8580
D(LASI(-1))	-0.171083	0.422234	-0.405186	0.6960
D(LASI(-2))	0.502271	0.584585	0.859193	0.4152
D(LASI(-3))	0.255652	0.441023	0.579680	0.5781
D(LGEOE(-1))	-1.050514	0.804575	-1.305676	0.2280
D(LGEOE(-2))	-0.002029	0.855369	-0.002372	0.9982
D(LGEOE(-3))	-0.059995	0.792022	-0.075750	0.9415
D(LGEOH(-1))	0.902994	0.955474	0.945074	0.3723
D(LGEOH(-2))	1.457848	0.637934	2.285265	0.0516
D(LGEOH(-3))	1.128526	0.566221	1.993084	0.0814
D(LGEOSS(-1))	-1.333389	1.724350	-0.773271	0.4616
D(LGEOSS(-2))	-2.181980	1.313473	-1.661230	0.1352
D(LGEOSS(-3))	-1.427456	0.578250	-2.468580	0.0388
LASI(-1)	-0.441479	0.223271	-1.977325	0.0834
LGEOE(-1)	1.467793	0.828540	1.771540	0.1144
LGEOH(-1)	-0.818845	1.621868	-0.504878	0.6273
LGEOSS(-1)	-0.035628	1.399411	-0.025459	0.9803
R-squared	0.802945			

Adjusted R-squared	0.608834			
F-statistic	2.037360	Durbin-Watson stat		2.583756
Prob(F-statistic)	0.154678			

Source: Researchers' E-views 10 Computation.

Table 9. Long Run ARDL Estimates of all Share Index Equation in Nigeria.

Dependent Variable: D(LASI)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	8.579516	3.374911	2.542145	0.0346
D(LASI(-1))	0.463845	0.335320	1.383291	0.2040
D(LASI(-2))	-0.232251	0.211957	-1.095746	0.3051
D(LASI(-3))	0.169606	0.243759	0.695794	0.5063
D(LGEOE(-1))	0.314094	0.292002	1.075655	0.3134
D(LGEOE(-2))	0.060360	0.336424	0.179416	0.8621
D(LGEOE(-3))	0.168907	0.269235	0.627357	0.5479
D(LGEOH(-1))	-1.012813	0.514338	-1.969158	0.0845
D(LGEOH(-2))	-0.465048	0.539190	-0.862493	0.4135
D(LGEOH(-3))	-0.305661	0.343177	-0.890682	0.3991
D(LGEOSS(-1))	0.298923	0.249734	1.196962	0.2656
D(LGEOSS(-2))	0.234505	0.196807	1.191548	0.2676
D(LGEOSS(-3))	0.110593	0.117211	0.943539	0.3730
LASI(-1)	-1.129903	0.474008	-2.383720	0.0443
LGEOE(-1)	-0.008247	0.392028	-0.021036	0.9837
LGEOH(-1)	1.230509	0.566645	2.171567	0.0617
LGEOSS(-1)	-0.604537	0.262184	-2.305775	0.0500
R-squared	0.891548			
Adjusted R-squared	0.674643			
F-statistic	4.110322	Durbin-Watson stat		2.148366
Prob(F-statistic)	0.024384			

Source: Researchers' E-views 10 Computation.

Table **9** was the ARDL long run estimates of the effect of government human capital expenditure on all share index in South Africa and Nigeria. This result was analyzed using two dimensions namely, the signs and magnitude. Considering the signs of the parameters of the estimates, the parameter of the first lagged period of all share index in South Africa had a negative value of 0.1710 or 17.1 percent. This implied that a one percent increase in the immediate past period all share index in South Africa led to a 17.1 percent decrease in the long run all share index in the current period of South Africa. Relating this to the first lag period of all share index in Nigeria with a positive value of 0.4638, a one percent increase in the first lag period all share index led to about 46.38 percent increase in the current period all share index in Nigeria. While the parameter of the second and lagged period of all share index in South Africa had a positive value of 50.22 percent and 25.56 percent respectively, the second lagged period of all share index in Nigeria had a negative value of about 23.22 percent while the third lagged period had a positive value of 16.96 percent. In effect while a one percent in the second and third lagged periods of all share index in the long run led to about 50.22 percent and 25.56 percent respectively increases in the current periods all share index; a one percent increase in the second and third lag period of all share index led to a 23.22 percent decrease and a 16.96 percent increase respectively in the current period all share index in Nigeria.

Again, the parameter of the first, second and third lag of government expenditure on education in South Africa had negative values of 105.05 percent, 0.20 percent and 5.99 percent respectively while the parameter of the first, second and third lagged period of government education expenditure in Nigeria had positive values of 31.40 percent, 6.03 percent and 16.89 percent respectively. This implied that while a one percent increase in the past first second and third periods government expenditure in education reduced long run current period all share index in South Africa, a one percent increase in the past first, second and third lagged periods of government education expenditure in Nigeria increased current periods long term all share index.

More so, the parameter of the first, second and third lag of government expenditure on health in South Africa had positive values of 90.29 percent, 145.78 percent and 112.85 percent respectively while the parameter of the first, second and third lagged period of government expenditure on health in Nigeria had negative values of 101.28 percent, 46.50 percent and 30.56 percent respectively. This implied that while a one percent increase in the past first second and third periods government expenditure on health increased long run current period all share index in South Africa, a one percent increase in the past first, second and third lagged periods of government health expenditure in Nigeria decreased current periods long term all share index

Lastly, the parameter of the first, second and third lag of government expenditure on other social services in South Africa had negative values of 133.33 percent, 218.19 percent and 142.74 percent respectively while the parameter of the first, second and third lagged period of government other social services expenditure in Nigeria had positive values of 29.89 percent, 23.45 percent and 11.05 percent respectively. This implied that while a one percent increase in the past first second and third periods government expenditure on other social services expenditure reduced long run current period all share index in South Africa, a one percent increase in the past first, second and third lagged periods of government other social service expenditure in Nigeria increased current periods long term all share index

While the R^2 adjusted value of 0.4088 or 40.88 percent of the South Africa equation showed that the equation had not been well explained by the independent variables, the R^2 adjusted value of 0.6746 or 67.46 percent of the Nigeria equation showed that the equation had been well explained by the independent variables. In other words, while the R^2 adjusted value of South Africa equation of 40.88 percent showed that

about 40.88 percent of the changes in the long run all share index had not been explained by the joint variations in government education expenditure, government health expenditure and government expenditure on other social services in South Africa, the R^2 adjusted value of Nigeria equation of 67.46 percent showed that about 67.46 percent of the changes in the long run all share index had been explained by the joint variations in government education expenditure, government health expenditure and government expenditure on other social services in Nigeria.

While, the F-Statistic value of 2.037 of the South Africa equation with it corresponding p-value of 0.1546 or 15.46 percent showed that the model equation was statistically insignificant at 5 percent level, the F-Statistic value of 4.1103 of the Nigeria equation with it corresponding p-value of 0.0243 or 2.43 percent showed that the model equation was statistically significant at 5 percent level. To test for the significance of long run estimates of the ASI equation, the study applied the Wald statistics. The result was as presented in table 4.2.10 below:

4.4. Long-run ARDL Co-integration Analysis of Value of Transaction

Presented in this section is the long run extract of the effect of government human expenditure on the value of transaction of the Nigerian stock market.

Table 10. Long Run ARDL Estimates of the Value of Transaction Equation for South Africa.

Dependent Variable: D(LVAT)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	1.227842	3.673013	0.334287	0.7468
D(LVAT(-1))	-0.165419	0.586857	-0.281873	0.7852
D(LVAT(-2))	-0.656380	0.748265	-0.877203	0.4059
D(LVAT(-3))	0.190190	0.400371	0.475035	0.6475
D(LGEOE(-1))	-1.434874	1.509952	-0.950278	0.3698
D(LGEOE(-2))	-1.224015	2.193654	-0.557980	0.5921
D(LGEOE(-3))	-1.514938	2.583768	-0.586329	0.5738
D(LGEOH(-1))	-0.717045	1.308877	-0.547832	0.5988
D(LGEOH(-2))	-0.143552	1.222675	-0.117408	0.9094
D(LGEOH(-3))	-0.130322	1.127758	-0.115558	0.9109
D(LGEOSS(-1))	1.043536	2.502791	0.416949	0.6877
D(LGEOSS(-2))	0.685463	1.459337	0.469709	0.6511
D(LGEOSS(-3))	-1.237587	0.918929	-1.346770	0.2150
LVAT(-1)	-0.180675	0.550327	-0.328304	0.7511
LGEOE(-1)	1.901514	2.962596	0.641841	0.5389
LGEOH(-1)	-0.581075	1.710169	-0.339776	0.7428
LGEOSS(-1)	-3.132228	2.530419	-1.237830	0.2509
R-squared	0.754380			
Adjusted R-squared	0.263140			
F-statistic	1.535664	Durbin-Watson stat		2.146953
Prob(F-statistic)	0.274710			

Source: Researchers' E-views 10 Computation.

Table 11. Long run ARDL Estimates of Value of Transaction Equation for Nigeria

Dependent Variable: D(LVAT)				
Variable	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	3.221818	2.907457	1.108122	0.3000
D(LVAT(-1))	-0.129093	0.393822	-0.327795	0.7515
D(LVAT(-2))	-0.110841	0.305830	-0.362428	0.7264
D(LVAT(-3))	-0.172626	0.333102	-0.518237	0.6183
D(LGEOE(-1))	0.368300	0.750271	0.490890	0.6367
D(LGEOE(-2))	-0.049328	0.717937	-0.068708	0.9469
D(LGEOE(-3))	0.157325	0.535002	0.294064	0.7762
D(LGEOH(-1))	-1.076826	1.102139	-0.977033	0.3572
D(LGEOH(-2))	-0.194618	1.081068	-0.180023	0.8616
D(LGEOH(-3))	-0.098042	0.650866	-0.150633	0.8840
D(LGEOSS(-1))	0.377926	0.428281	0.882425	0.4033
D(LGEOSS(-2))	0.312002	0.383236	0.814124	0.4391
D(LGEOSS(-3))	0.162976	0.273809	0.595217	0.5681
LVAT(-1)	-0.537286	0.484275	-1.109465	0.2995
LGEOE(-1)	0.517543	0.951128	0.544136	0.6012
LGEOH(-1)	1.031870	1.275650	0.808898	0.4420
LGEOSS(-1)	-0.765826	0.416401	-1.839152	0.1032
R-squared	0.757068			
Adjusted R-squared	0.271203			
F-statistic	1.558187	Durbin-Watson stat		2.327550
Prob(F-statistic)	0.267429			

Source: Researchers' E-views 10 Computation.

Table **11** were the ARDL long-run estimates of the effect of government human capital expenditure on value of transaction in South Africa and Nigeria. This result was analyzed using two dimensions namely, the signs and magnitude. Considering the signs of the parameters of the estimates, the parameter of the first and second lagged period of value of transaction in South Africa had a negative value of 16.54 per cent and 65.63 per cent respectively.

This implied that a one per cent increase in the immediate past period value of transaction in South Africa led to about 16.54 per cent and 65.63 per cent respectively decrease in the long-run value of transaction in the current period of South Africa; the third lag period of value of transaction of

South Africa had a positive value of 19.01 per cent, implying that a one per cent increase in the third lag period value of transaction led to about 19.01 per cent increase in the current period long-run value of transaction in South Africa. Relating this to the first, second and third lag period of value of transaction in Nigeria with a positive value of about 12.90 per cent, 11.08 per cent and 17.26 per cent; a one per cent increase in the first, second and third lag period value of transaction led to about 12.90 per cent, 11.08 per cent and 17.26 per cent respectively decrease in the current period long-run value of transaction in Nigeria.

Again, the parameter of the first, second and third lags of government expenditure on education in South Africa had negative values of 143.48 per cent, 122.40 per cent and 151.49 per cent respectively while the parameter of the first and third lagged period of government education expenditure in Nigeria had positive values of 36.83 per cent and 15.73 per cent, that of the second lagged period was negative at 4.93 per cent. This implied that while a one per cent increase in the past first second and third periods government expenditure on education reduced long-run current period value of transaction in South Africa, a one per cent increase in the past first and third lagged periods of government education expenditure in Nigeria increased current periods long term value of transaction; a one per cent increase in government expenditure on education in the second lagged period led to about 4.93 per cent decrease in the current period value of transaction in Nigeria.

More so, the parameter of the first, second and third lags of government expenditure on health in South Africa had negative values of 71.70 per cent, 14.35 per cent and 13.03 per cent respectively. This is similar to the first, second and third lagged period of government health expenditure in Nigeria which had negative values of 107.68 per cent, 19.46 per cent and 9.80 per cent respectively. This implied that a one per cent increase in the past first, second and third periods government expenditure on health in South Africa and Nigeria led to about 71.70 per cent, 14.35 per cent and 13.03 per cent respectively reduction in the long run current period value of transaction in South Africa and about 107.68 per cent, 19.46 per cent and 9.80 per cent respectively decrease in the long run current period value of transaction in Nigeria.

Lastly, the parameter of the first, second and third lags of government expenditure on other social services in South Africa had positive values of 104.35 per cent, 68.54 per cent and 123.75 per cent respectively. This is similar to the first, second and third lagged period of government expenditure on other social services in Nigeria which had positive values of 37.79 per cent, 31.20 per cent and 16.29 per cent respectively. This implied that a one per cent increase in the past first, second and third periods government expenditure on other social services in South Africa and Nigeria led to about 104.35 per cent, 68.54 per cent and 123.75 per cent respectively increase in the long run current period value of transaction in South Africa and about 37.79 per cent, 31.20 per cent and 16.29 per cent respectively increase in the long run current period value of transaction in Nigeria.

While the R^2 adjusted value of 0.6631 or 66.31 per cent of the South Africa equation showed that the equation had been well explained by the independent variables, the R^2 adjusted value of 0.6712 or 67.12 per cent of the Nigeria equation showed that the equation had been well explained by the independent variables. In other words, while the R^2 adjusted value of South Africa equation of 66.31 per cent showed that about 66.31 per cent of the changes in the long-run value of transaction had been well explained by the joint variations in government education expenditure, government health expenditure and government expenditure on other social services in South Africa in the long run, the R^2 adjusted value of Nigeria equation of 67.12 per cent showed that about 67.12 per cent of the changes in the long-run value of transaction had been explained by the joint variations in government education expenditure, government health expenditure and government expenditure on other social services in Nigeria.

While the F-statistic value of 1.5356 of the South Africa equation with it corresponding p-value of 0.2747 or 27.47 per cent showed that the model equation was statistically insignificant at 5 per cent level, the F-Statistic value of 1.5581 of the Nigeria equation with it corresponding p-value of 0.2674 or 26.74 per cent showed that the model equation was not statistically significant at 5 per cent level. To test for the significance of long-run estimates, the study applied the Wald statistics.

5. SUMMARY OF FINDINGS

This study examined the effect of human capital expenditure on stock market growth in South Africa and Nigeria using government expenditure on education, health and other social services as measures of human capital expenditure and market capitalization as the surrogate for stock market performance. The study applied the Auto Regressive Distributive Lag (ARDL) approach to estimate the parameters of the model. Consequently, the following major findings were made consequently.

I. Government education expenditure had no significant effect on the Stock Market capitalization in Nigeria and South Africa both in the long run and short run.

II. Government health expenditure had no significant effect on the stock market capitalization in Nigeria and South Africa both in the long run and short run.

III. Government social services expenditure had no significant effect on the stock market capitalization in Nigeria and South Africa both in the long run and short run

IV. Government education, health and other social services expenditure had no significant effect on market capitalization in the stock market of Nigeria and South Africa both in the long run and short run.

5.1. Conclusion/Recommendations

Going by the above analyses and findings, the study deduced that human capital development expenditure in Nigeria and South Africa is yet to sufficiently cause growth in South Africa and Nigeria Stock Markets. In comparative terms, both in the short run and long run, South Africa's government human capital expenditure had attracted better gains to the

South Africa stock market than to Nigeria. It followed from the above, therefore, that, the quantum of expenditure on human capacity building and development by the governments of South Africa and Nigeria has been too low to generate sufficient capital for investment in both the South Africa and Nigeria stock market especially and by extension promote growth. Given the above findings, the following recommendations were made:

I. Governments of South Africa and Nigeria should increase the financial allocation to education, health and other human capital development sectors and activities to improve skills and the income generation capacity of human capital towards enhancing investment and by extension the development of the Nigeria stock market.

II. Frequent trainings for the health and education sectors' workers are encouraged to boost their productivity, increase the health of the masses, enhance the skill and job delivery of labour, boost investment and trigger the performance of the stock market in Nigeria and South Africa.

III. Governments of Nigeria and South Africa should invest in infrastructures such as roads, water, and hospitals, and renovate available equipment and apparatuses required by the education sector and health sector for effective human capital training and treatment respectively.

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Received: June 20, 2023 Revised: June 22, 2023 Accepted: June 25, 2023