



CAPITAL MARKET PERFORMANCE AND ECONOMIC GROWTH IN NIGERIA AND THE UNITED STATES OF AMERICA

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Abstract: *The study empirically investigates the link between capital market and economic growth in Nigeria and the US covering a period of 28 years (1990 to 2017). The rationale for the research is that capital markets have been arguably discussed in the empirical literature by several scholars as a veritable tool for stimulating economic growth in countries across the globe in which Nigeria and the US are inclusive. The cointegration econometric method and the error correction model (ECM) were utilized in the analysis of the data from Nigeria and the USA. Preliminary tests such as the unit root tests were done. The findings from the empirical analysis revealed that only gross fixed capital formation has a considerable impact on the growth of the economy in Nigeria in both the short and the long run. In the US case, market capitalization, market index and gross fixed capital formation are significant factors in the determination of the US economic growth in the long run. Value of stock traded has no impact on both the Nigerian and the US economies. The study recommends among others that, government should regulate the activities of the capital market as well as those of the operators through code of conduct, ethics and governance, to ensure investor protection and enhance market efficiency. This action will in future time impact positively on economic growth at large. Since improved market capitalization and higher economic performance will guarantee higher income for firms and individuals.*

Keywords: Capital Market, Economic Growth, Econometric and Statistical Methods.

1. Introduction

Across the globe, financial experts, policymakers, economists and other stakeholders have great expectations about the prospect of capital market performance and its contribution to economic growth in national economies. Thus, economies without capital markets will hardly grow as expected since the markets are basically responsible for long term growth capital formation and efficient allocation for development purposes (Osaze, 2000). Osaze (2007) notes that the major pillar of growth and development for any economy is the capital market which houses certain institutions for the creation, keeping, allocation and exchange of financial assets and long term debt management. In a

similar vein, Okereke-Onyiuke (2000) posits that the low-cost fund sources from the capital market or long-end of the financial market remain a significant factor for the sustainability of the economy.

In an earlier development, Bekaert and Harvey (1998) point out that the capital market is a mechanism for economic growth in any country in the modern era. Hence, the capital markets aid in boosting financial systems and increase the growth of the countries economies.

Modern economies desire growth for expansion and for advancing into sustainable capacity. The process of increase in national output or income is referred to as economic growth (Anyanwuocha, 2010). On the other hand, an economy is assumed developing where there

Academic Journal of Current Research

An official Publication of Center for International Research Development

Double Blind Peer and Editorial Review International Referred Journal; Globally index

Available www.cird.online/AJCR; E-mail: AJCR@CIRD.ONLINE



exists continued growth in real productivity of goods and services for individuals in the economy. Economic growth rate shows increases in real national income, at a particular time, usually a year. Economic growth results in a rise of a country's production possibility curve such that the potential output of the country is raised beyond the point it was before (Iyoha, Oyefusi, & Oriakhi, 1998). Iyoha (1996) maintains that with growth, comes development and there is no economic development without economic growth. Growth is, therefore "measurable and objective".

The argument for capital market and economic growth are supported by various theoretical and empirical researches both in the early and recent times (Goldsmith, 1969; King & Levine, 1993; Levine & Zervos, 1998a; Isenmila & Adewale, 2012; Sa'asdu, 2014; Arodoye & Edo, 2015 among others). However, some of these researches (studies) reported positive impact, negative impact or no significant impact at all, between the capital market and economic growth.

Although interest in identifying a formal link between the financial system and economic growth is fundamental, this is because the financial system (market) which constitutes money and capital markets with other sub-markets perform the foremost role in the development and growth of modern economies. The emphasis here in this research is on the capital market. Thus, one should expect that as the capital market develops and deepens, then, efficient allocation of the financial resources for investment is facilitated and thus, the frontier of production possibilities is increased (Adam & Sanni, 2005). From this perspective, it is an indisputable fact that capital market performs a critical task in economic growth by raising the flow of foreign capital either as foreign direct investment (FDI) or foreign portfolio investment (FPI) (Daniel, 1999).

Most recent literature concerning economic growth and the performance of capital market have focused on

emerging economies like Nigeria neglecting developed economies like the United States of America (USA). This necessitates gap to be filled in this study hence, the study, the performance of the capital market and growth of economies of Nigeria and the USA.

Following this introduction, the rest of the paper is structured as follows; section two focuses on the literature review, the methodology and model specification are contained in section three, section four addresses the empirical analysis of results. The final section covers policy recommendations and the conclusion.

2. Literature Review

2.1 Review of Concepts

Concept of Capital Market

Capital market is a vital element of the financial market which offers a mechanism efficient for fundraising and allocation, supply and management of capital funds for long term project (Alile & Anao, 1990). Thus, Greenwood and Smith (1994) demonstrate that strong and large capital markets can reduce the fees/charges for raising funds and make possible investment in technology firms that generate optimal returns. Erhabor (2002) explains that the capital market is that arm of the financial market that trades in long term financial instruments as well as provide avenue for raising capital for the real sector of the economy. Thus, the capital market encompasses network of institutions and individuals who are regulators and operators that together facilitate the smooth operation of the market. Furthermore, Sule and Momoh (2009) assert that the channel by which funds are raised and transmitted appropriately from surplus unit to deficit units is the capital market.

The concept of Capital Market Performance

Sa'adu (2014) posits that the impact of the performance of the capital market on the growth of an economy is a function of a series of factors, which include how financial assets are priced, the size of the stock market,



market capitalization, among others. Thus, according to Osaze (2007, 132)

How well a capital market performs in relation to other capital markets and primarily in relation to the role it is expected to play in facilitating economic growth and development depends on a number of factors.

He continued that certain key factors or proxies for measuring capital markets performance used often and accepted in literature must be included in such analysis of the performance of a market. He noted gross fixed capital formation and market capitalization.

However, in any capital market, there are several securities that are traded between long term fundraisers and investors acting through their stockbrokers and issuing houses. These securities traded could also form part of the indicators of capital market performance. Hence, Osaze (2007) categorized these securities traded into three major classes; Fixed income securities, variable income securities and other types of securities.

The performance index of exchanges is a major proxy of the stock (capital) market in its entirety or a specific stock. It affords investors patterns of future trends in the market. Since the financial sector performs an important function in economies, the performance of the capital market is taken as a proxy for the overall health of the economy. It acts as the gauge for trends in the entire economy.

Indicators of Capital Market Performance

There are a lot of factors serving as indicators of capital market performance however, the study would consider some of the key indicators commonly used in the literature which include – market capitalization, the value of stock traded, GFCF and index of the stock market.

i. **Market Capitalization:** Market capitalization is the overall amount of equity securities quoted in the stock market (Osaze, 2007). It is determined by the going value of all equities listed in the

market and their issued and paid-up capital. Adewoyin (2004) points out that market capitalization represents the cumulative value of common stock size in the market. Market capitalization is a very vital indicator for evaluating the size of a capital market. A rise in market capitalization guarantees boost in capital market performance and consequently increases economic growth (Osaze, 2007).

ii. **Value of Stock Traded:** Stock traded in the capital market majorly consists of variable income stock (such as common stock, right issues and bonus share) (Osaze, 2007).

The value of stocks traded is total shares traded, locally and internationally, multiplied by their prices. The value of stock traded in the market is also an essential factor in measuring the performance of the capital market. Hence, the rise in the amount of stock traded in the stock market guarantees an increase in performance of the capital market and thus, economic growth (Osaze, 2007). Hence, Levine (1991) and Bencivenga. Smith and Starr (1996) assert that vital for growth is the existence of facility for easily trading equity (liquidity of stock market). While many profitable investments demand capital in nature of long-run commitment, relinquishing control for a long period is difficult for savers. This problem of illiquidity is ameliorated by the liquid nature of the equity market and other access to capital provided through equity issues.

iii. **Gross Fixed Capital Formation (GFCF):** GFCF is considered as the whole investment in fixed assets in a national economy (Osaze, 2007). For any economy to have a long-run growth, the gross fixed capital formation must be financed significantly by the capital market. Thus, rising



GFCF reveals an increase in capital market performance and consequently economic growth (Osaze, 2007). However, Okafor and Arowoshegbe (2011) more surprisingly, asserts that GFCF is not well-financed by the capital market.

- iv. **Stock Market Index:** Stock market index or market development index measures the general movement of the capital market, representing the entire market or important segments thereof (Prasanna, 2012). The market index which is an average of equities' prices and the number of securities is an important gauge of stock or capital market performance and thus, economic growth (Osaze, 2007). No wonder, "Investing Answer-Financial Dictionary" noted that indices are also used to gauge activity in an economy.

However, the five (4) aforementioned are the key indicators and proxy of capital market performance in any country and for the purpose of the study.

The Concept of Economic Growth

Okpara (2006) ascertains that economic growth describes a rise in the volume of goods and services an economy produces and is evaluated by an upward direct fluctuation in a nation's gross domestic product (GDP). Anyanwu (1996) also note that economic growth reflects rising national income, as evidenced by the ability of production of goods and services despite changes in population growth rate (Thus, economic growth is always seen in the context of a continual rise in real per capita income of economies (Iyoha, Oyefusi & Oriakhi, 1998). However, the growth of economies is an upward direct fluctuation in the number of goods and services produced by an economy over a given time period, usually one year. Inevitably, increased economic growth thus result in economic development in the long run (Anyanwuocha, 2010).

Indicator of Economic Growth: Rise in GDP

Increase or positive change in gross domestic product measures the growth of an economy. The GDP is a crucial determinant of the volume of production of products and services by a nation in a given time, usually one year. That is, it's a fundamental measure of the total productivity of a nation (Sullivan & Sheffrin, 1996). Also, GDP is described as the financial worth of finished products and services manufactured in an economy in a within a given time. While Anyanwu (1996) states that GDP is by and large measured on an annual basis, it does also compiled overall private and government consumption, investment, government capital and exports/imports that transpire in a specific boundary. Thus, it is represented mathematically as:

$$GDP = C + I + G + (X - M)$$

Where:

C = All private and public consumption

I = All the country's business spending on business outlets

G = The sum of government spending

(X-M) = The nation's total net exports measured as total exports less total imports

However, an economy is proxied by GDP hence, economic growth implies by increase or positive change in GDP

Theories of Economic Growth

Here, we will consider some theories of economic growth which are: Solow-Swan Growth Theory, Harrod-Domar Growth Model, Paul Romer Growth Theory and finally, Arrow Kenneth Growth Theory which forms the theoretical basis or underpinning of this study.

Harrod-Domar Growth Model

Harrod-Domar (1946) theory assumes growth relies on the amount of labour capital and increased amount of investment results in greater capital accumulation, which



generates economic growth, in underdeveloped countries. Having labour services being in enough provision in these countries with less physical capital (cash and machinery), this reduces the growth process of the economy. This view expresses the views of early growth theory of post-Keynesian model. It describes economy's growth rate in the context of saving levels and capital productivity. However, the Harrod-Domar Model has some interesting mathematical postulations.

Solow-Swan Growth Theory

Neoclassical theory of growth called the exogenous growth theory or Solow-Swan theory of growth describes long-run growth of the economy via capital accumulation, population growth, technological progress and productivity (Solow & Swan, 1956). This model is set in continuous-period condition with no international trade or government (that is, set in a closed economy). The primary aim of the representation is the dynamics of the intensity of capital K, the capital stock per unit of effective labour. Its performance across periods is made known via major equation of Solow-Swan model. Thus, the model assumes from the start that the labour-capital split of income remains unchanged.

2.3.3 Paul Romer Growth Theory

Basically, the Romer (1986) theory shows a steady direct equilibrium growth rate derived from the endogenous build-up of knowledge and shows a vital divergence from existing perspectives where technological progress had mostly been taken as wholly exogenous.

Arrow Kenneth Growth Theory

This theory initiated by Arrow Kenneth (1962) in considering the contribution of knowledge and technology as major economic growth determinants improves on the works of past theories such as that propounded by "Harrod-Domar (1946) and Solow-Swan (1956). Kenneth (1962) opines that endogenous growth theory discusses investment in capital stock sizes, human capital, knowledge and innovation." These factors are key

suppliers to the growth of economies. The theory emphasizes positive consequence of a knowledge-based economy that result in the development of the economy. Endogenous growth possesses great effect on the economy's long-term growth rate.

THE NIGERIAN CAPITAL MARKET

The capital market in Nigeria is small put side by side with the National economy and major emerging markets; it provides few traditional mortgage instruments (plain Vanilla) with equities dominating and virtually lack derivatives, while cross-listing is insignificant (Osamwonyi, 2005a). Hence, some scholars referred to Nigerian capital market as a frontier market while many others referred to it as an emerging market but in a minor or lesser perspective (Edo, 1997; Isenmila & Adewale, 2012). However, we are of the opinion that because the Nigerian capital market is small relative to the national economy and other major emerging capital markets across the globe, the capital market in Nigeria should better be called the frontier market while the Nigerian economy should better called emerging (developing) economy.

From 1961, the Nigerian capital market has grown enormously, predominantly in the times of 1972 and 1977 indigenization decrees. In 1961 the securities rose from 8 to almost 301 in 2010 (Sa'adu, 2014). However, following the blow from global crisis in late 2007 and early 2008, which almost grumbled the world economy, the Nigerian capital market begins to gradually pick-up again from the effect in 2012 onward due to quick intervention by the government and the CBN through bail-out, Asset Management Company of Nigeria (AMCON) and other measures. From 2012 to 2015, there has been a relative stability growth in securities traded hence, the Capital Market in Nigeria has recorded a remarkable growth during the year. And this has a direct effect on the economy (Abdullahi, 2005). However, due to fears of 2015 general elections and unfavourable



position of the naira against the dollar, foreign investors moved away N116.56 billion from the Nigerian stock market (Arodoye & Edo, 2015). In the same vein, the NSE derives trading values from main custodians and market operators on the foreign portfolio investment (FPI), confirm that overall outflow is about N116.50 billion at the end of November transactions. By 2016 and 2017, the expectations of Nigerians for better capital market activities and economy were very high due to the prior electioneering campaign promises of the new change-government to tackle corruption headlong among others.

THE UNITED STATES OF AMERICA (US) CAPITAL MARKET

The US Capital Market has two largest stock exchanges which are also the largest in the World, are NYSE and NASDAQ system. The NYSE is the world's leading stock market with reference to market capitalization; it has fairly stringent listing requirements that seek to certify that only large, financially strong companies get quoted. Again, the NASDAQ is the largest exchange of the world with regards to turnover but the market capitalization of NASDAQ is less than that of NYSE. The success of NASDAQ is majorly a result of investor interest in technology stocks, most of which have listed on this exchange (Prasanna, 2012). For instance, technology heavyweights like Cisco, Intel, and Microsoft have their listing only on NASDAQ. However, there are numerous other small stock exchanges in America or USA capital market other than the largest two above and they include, American Stock Exchange, BATS (BATS Global Markets) Exchange, Chicago Board of Trade Exchange, Chicago Mercantile Exchange, Boston Exchange Market, Miami Stock Exchange, Chicago Exchange, International Securities Exchange, Philadelphia Stock Exchange, National Stock Exchange (New Jersey), among others.

Basically, in other to avoid complications and to ensure easy perception of the US capital market the study will concentrate on the popular NYSE (NYSE Euronext) that is the biggest stock exchange in the globe on 4th April 2007. It is not only the world's largest after the merger between the American (NYSE) group with their European counterpart, it is also the most liquid stock exchange, and even today changes are still on-going in relation to their relationship.

In the US capital market, public offerings of both stocks and bonds (that is, equities, government and corporate bonds) are majorly traded by investment bankers that act as underwriters. Generally lead investment banker structures an underwriting syndicate with other investment bankers to share the responsibility for the issue (Prasanna, 2012). The US capital market as an advanced and well-developed market is characterized by various securities including mortgage-backed securities (MBSs). MBSs will effectively link the mortgages market (characterized by excess demand due to lack of appropriate funds in terms of volume, tenor and rates) to compatible funds in the capital market (Osamwonyi, 2005a). The US capital market consists of US bond, derivative, and stock markets. The stock (equity) and bond (debt) market transit funds between savers and users of capital while the derivative market contains the opposite such as options, futures, foreign exchange swaps and interest rate. However, focus shall be on the stock market.

2.2 THEORETICAL FRAMEWORK

Kenneth (1962) opines that “endogenous growth theory presents investment in innovation, capital stock size, knowledge, and human capital in relation to economic growth. These are major recipes for the growth of the economy. Arrow Kenneth was one of the forerunners of endogenous growth theory that describes the technical change as a major source of economic growth. Before the popularity of this theory, technical change was assumed



to occur exogenously which means that, technological change was believed to occur different from economic activities, and was outside (exogenous) to common economic models. In a similar vein, there was no economic explanation for why it occurred. Endogenous growth theory provided standard economic reasons for why firms innovate, leading economists to think of innovation and technical change as determined by economic actors, that is endogenous to economic activities, and thus belong inside the model.

However, for this study, the endogenous growth theory has been seen appropriate and thus, adopted as the theoretical framework. Since the endogenous theory of growth connects the growth of the capital market, of human capital and of innovation (technological change) with the growth of economies different from the exogenous theory of growth that focuses singly on productivity rather than growth of economies.

2.3 Empirical Literature on Capital Market Performance and Economic Growth

Several empirical researches on capital market development (performance) and economic growth produce mixed results. These varied results include: “positive relationship between capital market performance and economic growth - Goldsmith, 1969; King & Levine, 1993; Demircug-Kunt & Levine, 1996; Shah & Thomas, 1997; La Porta, Lopez, Shleifer & Vishny, 2001; Arodoye and Edo, 2015; Sa’adu, 2014; Atje & Jovanovic, 1993; Acquah-Sam & Salami, 2014; Okpara, 2010; Odetayo & Sejuyigbe, 2012; Okafor & Arowoshegbe, 2011; among others”, negative relationship between capital market performance and economic growth – Akingunola, Adekunle & Hammed, 2012; Osamwonyi & Egbayiro-Osagie, 2012 and, no significant relationship between capital market performance and economic growth – Kwode (2015).

Goldsmith (1969) in his award-winning work in the UK looked into the effect of financial framework and

development on a nation’s economic growth between 1860 and 1963 using logit analysis. Thus, he tried to know if finance brings to bear a causal effect on economic growth or fusion of intermediaries and markets functional in an economy affects economic growth.

Kings and Levine (1993) in the US, build on Goldsmith’s work of the way financial system development affect economic growth. They studied data on 77 countries from 1960 to 1989 using cross - country regression analysis and systemically handling some factors determining long-run growth, they also considered the channels of productivity growth and capital accumulation, constructed more proxies for the amount of financial development, and study if the amount of financial development forecast capital accumulation, long-run economic growth, and productivity and growth. In the context of indicators of financial development, they first examine the debt of financial intermediaries that is a proxy of the size of financial development. However, King and Levine found constant output over the various financial development measures.

Demircug-Kung and Levine (1996) in the US find out interaction between financial intermediaries’ development and stock market empirically from forty-four (44) developing and industrial countries from 1986 to 1996. Applying the cross-country regression analysis, they contend that the stage of stock exchange development is directly related to the development of financial go-betweens and as a result growth of the economy.

Shah and Thomas (1997) in India, assert that “the role of stock market development and economic growth using data basically from India between the period 1990 to 1997. Employing the ordinary least square (OLS) techniques, they found that stock market in India is better efficient than the banking system on the account of the enabling government policies and that development in stock exchanges significantly contributes to reforms of



the banking system by generating competition for funds mobilization and allocation. Hence, noted that efficient capital market would add to long-term economic growth. The result of their study was positive and the study was confirmed basically to the India economy.”

Laporta et al (2001) in the US, use another gauge of financial development from the period of 1995 to 1997. They considered the level of public ownership of banks across the globe, up to a certain point that publicly owned banks perform at a reduce optimal level at getting data about companies, apply corporate governance, raise savings, managing risk and aid tradings, then this proxy shows positive indication on association between growth of economy and financial services of financial institutions. Using the cross-country growth regression, the authors prove that more of public ownership is linked with fewer degrees of bank development and a high degree of public ownership of banks are connected with delayed economic growth. Implying that markets are connected with reduced growth of the economy.

Arodoye and Edo (2015) conduct a study which attempts to analyze the dynamic responses, causality and interrelationship between the development of the capital market and growth of the Nigerian economy between 1981 and 2013. Applying both the VEC granger causality test and VECM the following results were established. The VEC causality test signifies bi-directional causality between growth economic and capital market development in Nigeria. The VEC model (estimation) revealed the swiftness of adjustment of the market relative to the economy is slow and unimpressive and market liquidity and power of the market to react to the unexpected changes is weak. However, the study then recommended an improved macroeconomic environment as well as instituting reform policies that will expand the size, range and network of the Nigerian capital market in and outside the nation.

Sa’adu (2014) in Nigeria, views effect of capital market performance on the growth of the economy from 1983 to 2010. Using OLS, he discovered capital market performance indicators (MCAP, total new issues, the volume of transaction and listed equities) have positive influence on the GDP and thus, resolves capital market performance strongly impact the economic growth of Nigeria.

Atje and Jovanovic (1993) in the US, examine if financial development (principally stock market development) impacts the level and/or the growth rate of economic activity from the period of 1973 to 1989. Using regression techniques they establish that there is a considerable impact of stock market development on both volume and growth rate of economic activity and that current wisdom opined that the growth impact of financial intermediation may be permanent or transitory.

Acquah-Sam and Salami (2014) interpret the consequence of capital market development on economic growth in Ghana from 1991 through 2011 using the Structural Equation Modelling (SEM) via path analysis to establish the likely causality between the growth of GDP and capital market development. They established a direct bi-directional connection between and economic growth and development of the capital market, still, a higher impact was noticed from the growth of the economy to the development of long end of the financial market.

In another development, Okpara (2010) in Nigeria, examines effect of capital market performance on the growth of the Nigerian economy with the aid of annual data from 1970 to 2007 employing the Johansen co-integration, parsimonious ECM and granger causality test. He discovered direct and strong connection between GDP and capital market proxies, and the causality test reveals that the value of shares traded and market capitalization granger causes growth of GDP.

Odetayo and Sejuyigbe (2012) investigate the effect of the Nigeria capital market on economic growth between



1990 to 2011. Using OLS estimation technique, their results revealed that the Nigerian capital market indices strongly impact on GDP, and thus, recommended that an enhanced investor's confidence on the stock market and provision of basic infrastructures may likely drive the investment in the market.

Okafor and Arowoshegbe (2011) investigate the effect of the Nigeria capital market performance on economic development from 1993 to 2007. They adopted two models (Ordinary Least Square Regression Models) with model 1 and 2 having GDP and GCFC as explained variables correspondingly and the independent variables were MCAP, ASI, Transaction value, transactions volume and number of quoted firms for individual models, the results indicated that MCAP, ASI and number of quoted firms were directly linked to and able to determine GDP; meanwhile, market capitalization and volume of transactions were directly connected to GCFC. The findings thus affirm that the performance of the capital market affects directly on the economic development of Nigeria.

Gibescu (2010) in Germany, examine the effect of GFCF on GDP from 2003 to 2009 using correlation and least square technique or correlation analysis. The study reveals a direct and strong connection between GFCF and GDP and thus economic growth in Romania, Bulgaria, Czech Republic, among others of which are Central and Eastern Europe (CEE) countries.

Bob (2015) in United States, investigated the relationship between value of stock traded and gross domestic product (GDP). He suggested that “the US GDP is currently at approximately \$ 17 trillion. The value of all stocks traded in the US is currently between \$ 21 trillion and 23 trillion. The value of S & P 500 stocks which represent 70% of all US stock values is now at percentage levels to GDP that they were at in 1999-2001 which led to a 50% market decline.”

However, some studies have also reveal negative relationship or causality as follows:

Akingunola, Adekunle and Hammed (2012) examine effect of interest rate on growth of capital market in Nigeria from 1985 to 2007 using the Augmented unit root, con-integration and the VEC Methodology. They yielded evidence for inverse link between interest rate and ASI and also that the Nigerian all share price index is impacted by economic shock and that it slowly and significantly adjust back to equilibrium..

Also, Osamwonyi and Evbayiro-Osagie (2012) analyze the connection between the capital market index and macroeconomic variables from the period of 1975 to 2005. Using VEC methodology, they suggested from their findings of inverse relation between the stock market index and money supply, interest rate and GDP that there is need for government to come up with policies that will assist in reducing rising growth in supply of money as well as create course of action which improve the national income of an economy.

But again, some studies, however, reveal no significant relationship such as:

Kwode (2015) which looks at the function of the capital market in financing the manufacturing sector in Nigeria between 1970 to 2012. Using the Ordinary Least Square, Co-integration test and ECM methods as the estimation techniques, he revealed from the study that growth in capital market activities did not affect majorly on the manufacturing sector (hence, the economy at large) during the period of 1970 through 2012. He further recommended that the capital market operators and regulators should encourage local manufacturing firms to be listed in the stock exchange market and also that the government should provide the necessary infrastructure to support the growth and development of the manufacturing sector.



GAPS IN THE EMPIRICAL LITERATURE

Despite decades of rigorous research, few authors agreed on some basic facts of capital market performance and economic growth. Thus, some of the research studies like “Goldsmith (1969), King and Levine (1993). Shah and Thomas (1997); Arodoye and Edo (2015); Sa’adu (2014); Atje and Jovanovic (1993); Acquah-Sam and Salami (2014); Okpara (2010); Odetayo and Sejuyigbe (2012); Okafor and Arowoshegbe (2011), among others; reveal positive relationship and some research studies like Akingunola, Adekunle and Hammed (2012), Osamwonyi and Evbeyiro-Osagie (2012), reveal negative relationship while some like Kwode (2015) reveals no significant relationship.

However, in all of these empirical literature mentioned above, failed to look at the link between market capitalization and economic growth in Nigeria and United States of America, the effect of value of stock traded on economic growth in Nigeria and United States of America, if there is strong relationship between GFCF and economic growth in Nigeria and United States of America, and of course connection between stock market index and economic growth in Nigeria and USA. Thus, the gaps the study, therefore, intend to fill is to investigate the performance of the capital market and growth of the economy in Nigeria and United States of America and also to reveal the possible differences and similarities that could exist between both economies in the light of capital market activities and operation. This became necessary because these empirical literature emphases have been on emerging economies such as Nigeria neglecting developed economies such as the USA.

3 Methodology and Model Specification

The dynamic nature of the study requires that a time series procedure be followed in the study. Thus, the cointegration and error correction methodology is used in the analysis in order to observe the short run dynamics of the relationships. Data used in the study is

annual time series data covering the period 1990 to 2017, from both Nigerian and the US countries.

The model is therefore specified as:

$$GDP_{it} = f(MCAP_{it}, VST_{it}, GFCF_{it}, SMI_{it}) \text{ ----- } 1$$

$$GDP_{it} = a_{oit} + a_{1it}MCAP_{it} + a_{2it}VST_{it} + a_{3it}GFCF_{it} + a_{4it}SMI_{it} + e_{it} \text{ ----- } 2$$

Where:

- GDP = Real Gross Domestic Product
- a_o = Regression constant
- $a_1 - a_4$ = Coefficients of Independent variables or structural coefficient
- MCAP = Market Capitalization
- VST = Value of Stock Traded
- GFCF = Gross Fixed Capital Formation
- SMI = Stock market index or market development index
- e = Stochastic Error Term (Residual Term)
- i = 1, 2 {1 is Nigeria and 2 is USA, the base economy}
- t = Time series

The *a priori* expectations are below:

$$a_1 > 0, a_2 > 0, a_3 > 0, a_4 > 0 .$$

These are confirmed in the above theoretical framework sub-section of the study.

Note: a_1 is the coefficient of the MCAP and it is greater than zero that is positive meaning that theoretically, MCAP has a direct positive impact on economic growth; a_2 is the coefficient of the VST and it is greater than zero that is positive meaning that theoretically, VST has a significant positive impact on growth of the economy; a_3 is the coefficient of GFCF and it is greater than zero that is positive meaning that theoretically, GFCF has a strong positive effect on economic growth; a_4 is the coefficient of SMI and it is greater than zero that is positive meaning that



theoretically, SMI has a strong positive influence on the growth of the economy.

The model specified above is an adaption of the models of some previous studies like Sa’adu (2014), Okafor and Arowoshegbe (2011), Bob (2015), and Gibescu (2010). These reveal the direct contributions of capital market on economic growth.

4. Empirical Analysis

The purpose of this section is to empirically investigate the long run (steady-state) effects of capital adjustments in capital market proxies in faces of dynamic changes in economic activities. Nevertheless, since a few of studies on macroeconomic variables in Nigeria put forward that time-series data on output and other macroeconomic aggregates are not stationary in their level form but that their first-order differences are (Akinlo and Folorunso, 1999; Nwaobi, 2000), hence the essence of finding out the stationarity of variables in our model and if there is any evidence of co-integration between economic growth and a linear permutation of the explanatory variables in the US and Nigerian economies. If the explanatory variables in their level forms are not stationary but their

first differences are stationary and these variables are co-integrated, then an ECM will be appropriate.

UNIT ROOT TESTING

Where the mean and variance of time series are related across time, then a time series can be adduced as non-stationary. Contrarily, data is stationary with constant mean and variance (Gordon, 1995). The Augmented Dickey-Fuller (ADF) test is utilized to interpret the unit root content of a series. In this study, the test is carried out at levels and first difference, taking the two countries together (Nigeria and US). This allows for comparison among the data and also to better differenced results. The outcome of the ADF test in levels in the absence of trend is presented in table 4.1. The table shows the variable’s ADF test statistic and the 95% critical ADF value. The result indicates that three of the variables (MCAP, VST and GFCF) have ADF values below the 95per cent critical value of -2.976263 (in absolute values), while other two variables (GDP and ASI) do not. This result implied that these data are not stationary at levels as employed here.

Table 4.1 Test of Unit Root Test Variables in Levels (Nigeria and the US)

Variable	ADF Test Statistic	95% Critical ADF Value	Remark
GDP	-6.006271	-2.976263	Stationary
MCAP	-1.786741	-2.976263	Non-stationary
VST	-2.309911	-2.976263	Non-stationary
GFCF	-0.054986	-2.976263	Non-stationary



ASI	-3.928128	-2.976263	Stationary
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Source: Author’s Computation 2018.

Box and Jenkins (1978) state that "non-stationary time series in levels may be made stationary by taking their first differences. A given series is said to be integrated of order d (denoted $I(d)$) if it attains stationarity after differencing d times. If the series is $I(1)$ it is deemed to have a unit root. This situation arises if the first difference of the series is $I(0)$." We conduct the 1st differences of individual variables and carry out unit root test on every series.

Reported in table 4.2 are the outcomes of the unit root test on these variables in 1st differences. The results revealed that ADF test statistic for individual variables is higher than 95% critical ADF values (in absolute values), except that of GDP. With these outcomes, these variables are taken to be stationary, meaning the variables were only stationary after differencing them. Hence, the series contains a unit-roots, implying that the variables are integrated of order one (i.e., $I[1]$).

Table 4.2 Test of Unit Root for Variables in 1st Difference (Nigeria and the US)

Variable	ADF Test Statistic	95% Critical ADF Value	Remark
Δ GDP	-2.100713	-2.981038	Non-stationary
Δ MCAP	-5.610134	-2.981038	Stationary
Δ VST	-4.782739	-2.986225	Stationary
Δ GFCF	-4.827619	-2.981038	Stationary
Δ ASI	-8.358217	-2.981038	Stationary

Source: Author’s Computation 2018.

COINTEGRATION ANALYSIS

The presence of cointegrating equations shows that some series must be moving almost at a similar rate (they are related or connected in linear long-run equilibrium). A preliminary clause for cointegration is being integrated of

a similar order (Engle & Granger 1987). Having established that at levels, the data are not stationary, we proceed to check whether they are integrated of any order. The test employs the Johansen system of cointegration method, and it was conducted separately for



the two countries (Nigeria and the USA). In Table 4.3 and table 4.4 below, the eigenvalue test (λ -max) and the trace test statistics show there is more than two cointegrating equation between economic growth and capital market performance variables for both countries. This implies

that a long-run relationship exists among these hypothesized variables. Hence, the outcome of the cointegration tests are abridged in Table 4.3 and Table 4.4 as follows:

Table 4.3: Johansen Multivariate Cointegration Tests Results. (For Nigeria)

<i>Trace Test</i>				<i>Maximum Eigenvalue Test</i>			
Null Hypothesis	Test Statistic	Critical Value	Prob.	Null Hypothesis	Test Statistic	Critical Value	Prob.
$r = 0^*$	83.06131	69.81889	0.0031	$r = 0^*$	39.36318	33.87687	0.0100
$r \leq 1$	43.69812	47.85613	0.1164	$r \leq 1$	23.29931	27.58434	0.1611
$r \leq 2$	20.39882	29.79707	0.3962	$r \leq 2$	12.76426	21.13162	0.4742
$r \leq 3$	7.634559	15.49471	0.5053	$r \leq 3$	6.819933	14.26460	0.5107
$r \leq 4$	0.814627	3.841466	0.3668	$r \leq 4$	0.814627	3.841466	0.3668

Source: Author's computations 2018.

Table 4.4: Johansen Multivariate Cointegration Tests Results. (For the USA)

<i>Trace Test</i>				<i>Maximum Eigenvalue Test</i>			
Null Hypothesis	Test Statistic	Critical Value	Prob.	Null Hypothesis	Test Statistic	Critical Value	Prob.
$r = 0^*$	125.7566	69.81889	0.0000	$r = 0^*$	53.84498	33.87687	0.0001
$r \leq 1$	71.91159	47.85613	0.0001	$r \leq 1$	44.18632	27.58434	0.0002
$r \leq 2$	27.72527	29.79707	0.0851	$r \leq 2$	15.76125	21.13162	0.2391
$r \leq 3$	11.96402	15.49471	0.1587	$r \leq 3$	11.94226	14.26460	0.1128
$r \leq 4$	0.021762	3.841466	0.8826	$r \leq 4$	0.021762	3.841466	0.8826



Source: Author’s computations 2018.

SHORT-RUN ANALYSIS USING THE ECM

The short-run dynamics of the behaviour of the economies in the instance of short term fluctuation in capital market performance variables in Nigeria and the USA are captured within an ECM. The Autoregressive Distributed Lags (ARDL) method is employed for ECM. Selection of parsimonious equation was done by using the R-Bar squared criterion.

The output for the estimated error correction representation for both Nigeria and the USA economic growth are shown together in table 4.5 far below. The results show a very impressive diagnostic outcome for both countries’ models. For instance, in Nigeria, the R-squared value of 0.650 is high and it reveals that above 65% of the systematic changes in economic growth (proxied by GDP) over the short term is explained by short term movements in the explanatory variables including the ECM. Even the R-Bar squared value of 0.527 is moderate. In the case of the USA economy, the R-squared value of 0.788 and the R-Bar squared value of 0.703 are very high and higher than those of Nigeria. However, the two models possess high predictive

abilities. The general goodness of fit for the two models is observed through the F-statistic. The F-values of 5.278 (for Nigeria) and 9.302 (for the USA), are very high and easily pass the significance test at the 1% levels. Thus, we accept the hypothesis of a strong linear link between economic growth and all the explanatory variables taken together for both countries. Indeed, these variables combined to exert significant effect on pattern and direction of economic growth in Nigeria and the USA.

In order to establish the individual roles of each of the capital market performance variables in the growth of the two countries’ economies, interest is given to the coefficients of each of the variables with regards to their level of significance and path of relationship through the signs. In the models, the results show that all the coefficients in the case of USA are correctly signed, and are in line with the a-priori determination in the specified models. But in the case of Nigeria, only the coefficients of DMCAP and DASI do not possess the expected (positive) a-priori sign.

Table 4.5: Short Run Capital Market Variables and Economic Growth Relationship

	NIGERIA			USA		
Variables	Coefficient	T-Ratio	Prob.	Coefficient	T-Ratio	Prob.
Constant	-41.53599	-2.229872	0.0395	618.1373	4.381561	0.0005
DMCAP	-0.001698	-1.232843	0.2344	0.016720	1.619165	0.1262
DVST	0.007957	1.413895	0.1754	0.001478	0.221144	0.8280
	0.005122	2.957473	0.0088**	0.084441	1.124287	0.2786



DGFCF						
DASI	-1.37E-05	-0.027359	0.9785	0.599283	3.712442	0.0021**
DGDP(-2)	0.300778	3.050478	0.0072	-0.026834	-2.483756	0.0253
ECM(-1)	-0.284854	-2.790475	0.0126*	-0.103519	-2.073344	0.0058**
$R^2 = 0.650$	$\bar{R}^2 = 0.527$	$F = 5.278$	$D.W. = 1.784$	$R^2 = 0.788;$ $\bar{R}^2 = 0.703$	$F = 9.302$	$D.W. = 1.66$

Source: Author’s computations 2018. Note: ** sig at 1% level; *sig at 5% level.

For the Nigeria Case:

A careful look at the variable’s coefficients in terms of their significance level reveals that only the coefficient of GFCF is considerably different from zero at the 1 per cent level of significance. This means that changes in the immediate run in economic growth (GDP) in Nigeria can only be effectively predicted by the level of GFCF.

All the other coefficients of market capitalization (MCAP), the value of stock traded (VST) and ASI failed the 5 per cent significance test level. Thus, the most important factors in the economic growth process in Nigeria are rather real sector issues. Noteworthy is the failure of the market capitalization (MCAP) coefficient which is a strong factor of the performance of any capital market across the globe. This reveals that in the immediate, the amount of economic activities is not influenced by stock market capitalization in Nigeria.

The coefficient of the ECM has the correct negative sign and is also significant at the 5 per cent level. This particularly revealed that any short-term deviation of the hypothesized capital market performance variables from point of convergence in short-run can be returned in the long run. The slightly low value (-0.284854) of error correction term implied that adjustment to point of convergence in the long run is with speed. The ECM term shows that about 28% of long-run modification to equilibrium is made during the initial period. The DW

statistic of 1.78 reveals no serial correlation problem in model employed.

For the USA Case:

Only the coefficient of all-share index (ASI) (proxied by S&P 500 index) is positive and passes the 1% level of significance. This means that, in the determination of the growth of the US economy, the all-share index (ASI) is a potent factor to be considered. This is true because a market index is a quick measure to the moderate total direction of the market and coverage of its trends. It is also a statistical parameter to show the combined value of market features. When the right market fundamentals exist in a market, it will definitely have a multiplying effect on the total economic activities in the country. This result is a true reflection of the responsibility of capital market performance in economic growth and development of a country.

The other variables (DMCAP, DVST and DGFCF) failed the 5 per cent significance level. This means that they do not have any impact on the growth of the US economy over time. The lag value of GDP is significant at the 5percent level; showing that previous values of GDP have more effect on economic in the USA than the current values. The same scenario also played out in the case of Nigeria above.

The coefficient of ECM has the correct inverse sign and is also significant at the 1percent level. This again shows



short-term deviation from equilibrium by the variables in the short-run, can be reinstated in the long run. The slightly low value (-0.103519) of the error correction term means that modification to equilibrium, in the long run, is quicker and faster than that of Nigeria. The ECM term shows that about 10% of long-run change to equilibrium is made during initial. The DW statistic value of 1.66 is an indication of no autocorrelation problem in the model. The repercussion of this is, the estimates in the short-run model become far more reliable for policy directions and structural analysis.

THE LONG RUN RELATIONSHIP

The long-run behaviour of the economies (Nigeria and USA) in terms of capital market performance variables, may be analysed by the OLS estimation of the GDP equation. The result has very impressive goodness of fit information. It is seen that, in the Nigerian case, the R squared value of the GDP equation is about 0.73 per cent showing that the explanatory variables in the model effectively tract the long run variations in the dependent variable. Even the adjusted R squared value of 0.66 is

also high, indicating that the model possesses a good predictive ability.

In the case of the USA equation, the R squared value of 0.996 per cent is very high, and it indicates that over 99 per cent of the systematic variation in economic growth (proxied by GDP) is explained by the long-run movements in the explanatory variables. That is to say, the explanatory variables in the model also effectively tract the long run variations in the dependent variable. The adjusted R squared value of 0.995 is also very high, indicating that the model possesses a higher predictive ability than those of Nigeria.

The F-values of 10.618 and 965.17 for both countries are also very high and are significant at the 1 per cent levels. Thus, we cannot reject the hypothesis of a significant linear link between the dependent variable economic growth (proxied by GDP) and all the respective explanatory variables (LMCAP, LVST, LGFCF and LASI) combined.

Table 4.6: The Long Run Model of Capital Market Variables and Economic Growth Relationship

	NIGERIA			USA		
Variables	Coefficient	T-Ratio	Prob.	Coefficient	T-Ratio	Prob.
Constant	104.6003	2.479511	0.0222	2536.792	5.452009	0.0000
LMCAP	0.000158	-0.074858	0.9411	0.031591	2.030054	0.0574*
LVST	0.001476	0.165941	0.8699	-0.005042	-0.583178	0.5670
LGFCF	0.002769	2.305689	0.0320*	0.459014	4.189429	0.0006**
LASI	3.42E-05	0.035660	0.9719	0.771323	3.578676	0.0021**



LGDP(-2)	0.315010	5.571836	0.0000**	GDP(-3)	14.84925	0.0000**
				0.713223		
R ² = 0.73	\bar{R}^2 = 0.66	F = 10.618	D.W.= 1.93	R ² = 0.996;	F = 965.17	D.W. = 2.13
				\bar{R}^2 = 0.995		

Source: Author’s computations 2018. Note: ** sig at 1% level; * sig at 5% level.

With respect to each of the coefficients of explanatory indicators, it is seen that in Nigeria, all the coefficients possess the expected positive a-priori signs. Unlike in the short run where most of the coefficients were negatively signed. It shows that the dependent variable has a positive relationship with independent variables in the long-run context. However, for the USA case, only the value of stock traded (LVST) is negative, while the other variables are positively signed in line with the a-priori determination in the model. Worthy of note is that short-run (ECM) result for the USA, all the coefficients were positively signed.

The particular relevance of each variable in the model can be considered by looking at the significance of each of the model coefficients.

For Nigeria; the results above show that coefficients of MCAP, the value of stock traded (VST) and ASI failed the 5% significance level. This implied that these capital market performance variables do not have any significant impact on the overall growth and development of the Nigerian economy in the long run. This is also an indication that the current state of the Nigerian capital market is not meeting up with its expected assistance to the growth of Nigerian economy. Rather, the only observable contribution in the result so far comes from the real sector of the economy GFCF. GFCF is the only variable that has a significant direct effect on economic growth in Nigeria. It was significant at the 5 per cent level. The lagged value of GDP is significant at the 1 per cent level. This is an indication that previous values of GDP actually have more effect on economic growth than

the current values. The DW statistic value of 1.93 reveals no multicollinearity in the model used.

For the USA case; the results from the analysis in table 4.6 above show that the model performed extremely better than those of the Nigerian case in all respect. For instance, market capitalization (MCAP), GFCF and ASI were significant at 5 per cent and 1 per cent levels respectively. This indicates that these three variables are the significant predictors of the performance of the USA economy in the long run. Unlike in Nigeria where GFCF was the sole determinant of economic growth, but in the US, both capital market performance variables and the real sector variable represented by the GFCF jointly affect the growth of the US economy over time. This result is appealing and reveals that the US capital market is more developed and performed better than that of the capital market in Nigerian. Also, the US capital market contributes more to economic growth than the Nigerian market. Only the value of stock traded (VST) failed the 5 per cent significance level. It does not have any effect on the growth of the USA economy.

The lagged value of GDP is significant at the 1 per cent level. This means that previous values of GDP have strong impact on the US economic growth than the current values. The overall results obtained from the model estimation are effectively acceptable because the D.W. statistic value of 2.13 is in order and implies that there is no autocorrelation in the model. Thus, the results are applicable for structural analysis as well as policy decisions.



Discussion of Findings

Using the cointegration econometric technique, **in the case of Nigeria**, the empirical finding reveals that, both in the short run and in the long run, only GFCF has a significant positive relationship with economic growth in Nigeria. This means that increases in the attainment of existing or new fixed assets by households, business sector, and governments significantly boost the overall economic activities in Nigeria both in the short run and in the long run. This result agrees with those of Okafor & Arowoshegbe (2011), Gibescu (2010) and Uwubanmwen & Obayagbona (2012) who find a strong major direct connection between GFCF and economic growth in their respective countries.

All the other capital market performance variables failed the 5% level of significance, in short-run and long run. This implies that the capital market in Nigeria does not affect the growth of the Nigerian economy (as represented by MCAP, VST, and ASI). While this findings agree with those of Arodoye & Edo (2015), Akingunola, Adekunle & Hammed (2012), Osamwonyi & Evbayiro-Osagie (2012) and Kwode (2015) who also submitted non-relationship and negative relationships with economic growth; it, however, disagreed with those of Sa'adu (2014), Acquah-Sam & Salami (2014), Okpara (2010) and Odetayo & Sejuyibe (2012) who respectively concluded direct link between economic growth and capital market both in the short run and in the long run. Thus, in a nutshell, capital market performance variables hypothesized in the model of this study have not impacted positively on the growth of the Nigerian economy in the period of investigation. Hence, appropriate policies to redirect this disappointing situation should be put in place by the relevant authorities.

With respect to the USA, it is seen that GFCF indicator strongly affect economic growth in the long run, it, however, failed the 5% significance level in the short

run. This was the opposite scenario observed in the Nigerian case. These results agree with those of Goldsmith (1969), Kings and Levine (1993); it, however, disagreed with those of Laporta et.al (2001), who submitted a negative relationship. Again, within the context of the short run, the only coefficient of the all-share index (ASI) was found to be significant at the 1% level. The same variable is also significant at the 5 per cent level in the long-run estimate. The proposition is that, market index (ASI) being a quick measure of judging all trend of the market and width of its activities over time, is a significant factor in the determination of the US economic growth both in the short run and in the long run. This finding agrees with those of Okafor & Arowoshegbe (2011) in Nigeria, Demircuc-Kung & Levine (1996) in the US, and Shah & Thomas (1997) in India respectively.

Furthermore, the value of stock traded (VST) does not have an impact on economic growth in the immediate and future. This result is seen to agree with the study of Uwubanmwen & Obayagbona (2012) in Nigeria, Arodoye & Edo (2015) and Akingunola, Adekunle & Hammed (2012) who did not find significant direct connection between values of stock traded (VST) and economic growth. It disagreed with those of Okafor & Arowoshegbe (2011) in Nigeria who found positive impact of values of stock traded (VST) on economic growth. Market capitalization (MCAP) was of no effect in the short run, it was observed to be very significant in the long run estimated model. This finding also agrees with those of Okafor & Arowoshegbe (2011) and Acquah-Sam & Salami (2014); but disagreed with the study of Obayagbona & Agbadudu (2012) in Nigeria who conclude that total market capitalization (MCAP) does not have significant effect on the growth of Nigerian economy.

Based on this analysis therefore, we conclude that capital market is more useful in encouraging economic growth in



the US than in the Nigerian economy, in short run and in long run.

5. Policy Recommendations and Conclusion

POLICY RECOMMENDATIONS

Very useful for the government for policy formulation are findings in this study from which we advance the following recommendations.

First, government should strictly control activities of the capital market as well as those of the operators through code of conduct, ethics and governance, to ensure investor protection and enhance market efficiency. This action does in long run impact positively on the overall growth of the economy at large.

Secondly, appropriate policies should be put in place by the regulatory authorities in the countries to enhance aggregate individual firm's value as reflected in the amount of total market capitalization. Since market capitalization is usually used as a gauge for appraising the volume of the economic performance of a country; and investors will only invest where higher income is guaranteed and allows for savings by individuals and households. Higher incomes thus imply higher economic growth, vice versa.

Thirdly, the decision by foreign direct investors to invest in a domestic market is also a function of the level of the market capitalization rate. Higher market capitalization attracts net positive inflows, affect the balance of payments and in turn, affect economic growth. Therefore, policies that would consistently improve and encourage higher market capitalization, should be vigorously pursued by the regulatory bodies.

Fourthly, policymakers should develop the right policy that will help reduce barriers to liquidity in the stock market, enhance awareness to potential investors, stimulates market confidence, encouraging saving among low-income households in the market. Doing these thus in the future raise the current level of value of stock traded, and by implication makes more funds available to

investors to engage more productive investment that will, in turn, contribute to the overall growth of the economy.

Finally, the government should also develop fundamental infrastructures like information and communication network. This will aid trading between market participants, reduce insider dealings and thus, ensure further development of the capital market and again, add to economic growth.

CONCLUSION

In emerging economies, the role of capital markets is likely to increase economic growth by giving enhanced domestic saving and raising the quality and amount of investments (Yartey & Adjasi, 2007). In view of the above, the study empirically considers the connection between Nigerian economic growth and capital market and the US for a time of 28 years (1990 to 2017). The cointegration method and the ECM were employed in the analysis of the data from Nigeria and the USA. Preliminary tests such as the unit root tests were done at levels and at 1st difference in order to ascertain the stationarity status of the data. The results from empirical analysis generally revealed that economic growth is not influenced by capital market performance variables in Nigeria. However, in the US, capital market plays a significant role in the determination of the growth of the US economy in the long run. The study concludes that governments should also develop basic infrastructures like information and communication network. This will improve trades between market participants, reduce insider dealings and thus, ensure further development of the capital market and in turn, contribute to the growth of the economy.

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