

## IMPACT OF FINANCIAL GLOBALIZATION ON STOCK MARKET DEVELOPMENT IN NIGERIA

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### ABSTRACT

With the current wave of globalization, it will be difficult for a country's financial market to be insulated against the vagaries of the globalized financial system. This study therefore examined the impact of financial globalization on the development of the Nigerian stock market. The impact of financial globalization is captured in terms of degree of trade openness, foreign direct investment inflow, foreign portfolio investment inflow, external public debt, and exchange rate. Stock market development is measured in terms of stock market capitalization as a ratio of gross domestic product (GDP). Annual time-series data from 1981 to 2023 were used for the study. The data were obtained from secondary sources including the Central Bank of Nigeria (CBN) annual statistical bulletin for 2023, the CBN annual reports and statements of accounts (various years), and the World Bank Development Indicators (various years). The autoregressive distributed lag (ARDL) model, error correction model (ECM), and Granger causality test were used to estimate the data. The major findings from the study indicated that degree of trade openness has insignificant negative impact on stock market development; foreign direct investment inflow has insignificant positive impact on stock market development; foreign portfolio investment inflow has significant positive impact on stock market development while external public debt and exchange rate have significant negative impact on stock market development. The study concludes that financial globalization, especially when measured in terms of foreign portfolio investment, external public debt, and exchange rate, significantly affects the development of the Nigerian stock market. Among other things, it is recommended that innovative financial instruments should be introduced to the Nigerian stock market so as to increase its global competitiveness and to attract foreign investors.

***Keywords: Financial-Globalization, Stock-Market, Development***

### INTRODUCTION

A healthy financial market is a pre-requisite for sustainable economic growth and development. Financial markets play the role of mobilizing resources from surplus to deficit units of the economy. The capital market of both developed and developing countries contribute to economic development by providing funds for investment (Dabwor, *et al.*, 2020). As an important segment of the capital market, the stock market is the hub of interconnected transactions that create an avenue for buyers and sellers of securities and other financial instruments to meet at a certain price. The stock market therefore performs the function of facilitating the exchange of already existing securities as prices and economic conditions of an economy dictate (Onyele & Ikwuagwu, 2020).

In every economy, stock markets provide business entities with the facility for capital formation through trade in shares among both individual and corporate investors. This important function of the stock market took a new dimension following the financial liberalization policies adopted by most countries in the mid-1980s. In fact, since the 1980s, the global financial system has turned into an interconnected system. Meanwhile, globalization affects countries differently and within the same country, globalization has both positive and negative effects (Akpankpan, 1999; Rakhil, 2015; Onyele & Ikwuagwu, 2020).

On the positive side, with regards to the stock market, globalization, through improved information and communication technology, has reduced the problem associated with distance, leading to

reduction in transportation costs and a remarkable surge in cross-border investments. Financial globalization has therefore resulted in greater interconnectivity among stock markets around the world, and improved communication and awareness of business opportunities in far corners of the world. More investors can now access new investment opportunities and study new market at a greater distance than before. Potential risks and profit opportunities are now within easier reach than before due to financial globalization via improved information and communication technology (Tesega, 2022). For investors, these opportunities present a wider range of investment options and new ways to make profit. Investment in global markets is possible for the investing public through the purchase of stocks, as most brokerage firms are able to access international stock markets and provide their clients with the opportunity to purchase shares in companies around the globe (Schmukler, 2006). On the negative side, financial globalization increase the sensitivity and susceptibility of a country's domestic stock market to global financial events. Hence, with financial globalization and the adoption of pro-market (liberal) economic policies by most countries of the world, it has become increasingly difficult to insulate a country's financial market from global financial crisis. For instance, between 2004 and the second quarter of 2008, the Nigerian Stock Exchange witnessed unprecedented growth in total market capitalization and the value of shares traded. However, immediately the global financial meltdown was pronounced in July, 2008 in the United States of America, the Nigerian Stock market started experiencing serious downturn activities. Although both developed and developing countries faced negative consequences of the global financial crisis, Nigeria was undoubtedly one of the countries that was worse hit by the event through finance and trade. The crisis adversely affected inflows of foreign direct investment and exports from Nigeria. Consequently, net capital flows shrunk drastically. Market capitalization dropped from over N10.18 trillion to N5.2 trillion while the stock market index dropped from 31450.78 points to 23206.23 points by October, 2009. The ripple effects of the global financial crisis therefore had a remarkable negative effect on the performance of the Nigerian stock market (Osaze, 2009; Soludo, 2009; Igbal, 2010; Onuoha & Nwaiwu, 2016).

Another problem that has affected the development of the Nigerian capital market in general, and the stock market in particular, is capital flight. Capital flight is a phenomenon used to describe large-scale exodus of financial assets and capital from a country. It is the ease with which capital invested in a country's financial market can be easily withdrawn. It can be triggered by a country-specific event such as political or social unrest, or macroeconomic factors such as economic instability, currency devaluation, etc. which cause large-scale shift in investors' preferences (Gulati, 1988). The phenomenon of capital flight has been worsened by improvements in information and communication technology (ICT), which is a major precursor of financial globalization (Robinson, 2003). Foreign portfolio investment is more vulnerable to capital flight than foreign direct investment. With the application of ICT to banking and financial transactions, foreign portfolio and other assets invested in a country's financial market can be liquidated or withdrawn in a couple of minutes, leading to poor stock market and macroeconomic performance. The problem of capital flight is quite severe in Nigeria due to the country's poor macroeconomic environment such as high inflation rates, high unemployment rates, fluctuating oil prices, high exchange rates, etc. (Ajayi, 1996; Udo et al, 2022).

From the discussion so far, it is clear that financial globalization has both beneficial and negative effects on the performance of a country's stock market. It has equally been asserted that the domestic macroeconomic environment and the competitiveness of an economy in the global market, are important determinants of how a country's stock market can harness the potential benefits of globalization (Akpakpan, 1999). However, in the case of Nigeria, the stock market has been operating in an increasing unfavourable macroeconomic environment. It is also clear that the country's external sector variables, in terms of net foreign capital flows, exchange rate, balance of payments, external debt-GDP ratio, foreign reserves, etc. have not been encouraging (Emenuga, 2019). Given the above scenario, there is the need to examine the impact of financial globalization on the development of the Nigerian stock market.

## **Literature Review**

### **Conceptual Clarifications**

#### **Financial Globalization**

From the economic point of view, globalization refers to the increasing interdependence of world economies as a result of the growing magnitude of cross-border trade in goods and services, the flow of foreign capital, and the wide and rapid spread of technologies. It reflects the continuing expansion and mutual integration of market frontiers, and the rapid growing importance of information in all types of production and marketing of good and services.

On its part, financial globalization is a concept that refers to increasing global linkages created through cross-border financial flows. Basically, financial globalization is the integration of a country's local financial system with international financial markets and institutions. It describes the process through which financial institutions, markets, and services become more interconnected globally. For the purpose of this study, financial globalization is captured in terms of the degree of openness of the domestic economy to international transactions (i.e., trade openness), foreign direct investment inflow, foreign portfolio investment inflow, external public debt, and exchange rate.

#### **Stock Market Development**

The stock market, also called the equities market or shares market, is a place or any arrangement through which the shares of publicly owned companies can be bought and sold. It is essentially a free economy market where publicly listed companies can raise capital by offering part ownership to interested investors who are basically outsiders.

Stock market development refers to the improvement or otherwise in the performance of a stock market over time. It basically refers to the ability of the stock market to reach its expected goals. It is also the extent to which the stock market achieves its objectives and optimize its results. For this study, stock market development is defined in terms of the depth of the Nigerian stock market which is measured in terms of the Nigerian Stock Exchange (NSE) total market capitalization as a ratio of the gross domestic product (GDP). Market capitalization refers to the total monetary value of a company's outstanding shares or stocks. It is calculated by multiplying the number of outstanding shares by the current market value of one share. The stock market capitalization therefore is a measure of the sum of the market capitalization of all companies listed on the Nigerian Stock Exchange. The stock market capitalization – GDP ratio is obtained by dividing the total stock market capitalization by the GDP. In this sense, the stock market capitalization measures the depth of the Nigerian stock market.

## **Theoretical Literature Review**

### **The Theory of Financial Contagion**

Financial contagion refers to the spread of market disturbances – mostly on the downside – from one country to the other, a process observed through co-movements in exchange rates, stock prices, sovereign spreads, and capital flows (Dornbusch et al, 2000). Financial contagion can be a potential risk for countries that are trying to integrate their financial systems with international financial markets and institutions. It explains economic and financial crisis extending across countries and regions (Rigobon, 2002).

The term "Financial contagion" was first introduced in July 1997, when the currency crisis in Thailand quickly spread throughout East Asia and then on to Russia and Brazil. Even developed markets in North America and Europe were affected, as the relative prices of financial instruments shifted and caused the collapse of Long-Term Capital Management (LTCM), a large U.S. hedge fund. The financial crisis beginning from Thailand with the collapse of the Thai baht spread to Indonesia, the Philippines, Malaysia, South Korea and Hong Kong in less than two months. One of the contributors to the 1997 Asian financial crisis was excessive borrowing by national banks (Claessens & Forbes, 2001; Maroney et al, 2004).

There are several theoretical propositions with regard to the channels involved in the transmission of financial shocks from one country to another. These causes or channels of transmission are divided into four broad categories: fundamental, financial, investor behaviour and liquidity channels. The fundamental channels are the so-called real links between two countries. They include the transmission channels of trade, and monetary and fiscal policies. The financial channels focus on the links associated with the organisation and functioning of financial markets. For example, existing regulatory constraints may lead to significant co-movements of cross-border lending. Theoretical propositions about investor beliefs and expectations and how they drive contagion fall into the class of investor behaviour channels. The liquidity-based channels focus on the constraints on the activities of security market participants and how these constraints affect the pricing and overall functioning of the securities markets (Rigobon, 2002).

**The International Capital Asset Pricing Model (ICAPM)**

The international capital asset pricing model (ICAPM) is a financial model that extends the concept of capital asset pricing model (CAPM) to international investments. The standard capital asset pricing model was first developed by William Sharpe in 1970. In his book titled "Portfolio Theory and Capital Markets", Sharpe (1970) argues that any individual investment decision contains two types of risk: systematic risks and unsystematic risks. The systematic risks are general risks of the market, i.e., the risks which are independent of any specific investment decision. Systematic risks cannot be reduced or mitigated by diversification. Unsystematic risks, on the other hand, represent specific risks, i.e., the risk that relates to an individual stock. In other words, it represents the component of an investment's return that is not correlated with general market conditions. Modern portfolio theory advocates the idea that unsystematic risk can be reduce or mitigated by diversification (Lubatkin & Chatterjee, 1994). The CAPM provides a way to measure the systematic risk. Sharpe argued that the return on an investment/stock or portfolio of investments/stocks, should be equal to its cost of capital. The CAPM formula developed by Sharpe therefore describes the relationship between risk and expected return as follows:

$$ER_i = R_f + \beta_i (ER_m - R_f) \dots\dots\dots (1)$$

where  $ER_i$  = Expected Return on Investment

$ER_m$  = Expected Return of Market

$R_f$  = Risk-free Interest Rate

$\beta_i$  = Beta of the Investemnt

$(ER_m - R_f)$  = Market Risk Premium

Investors expect to be compensated for risk and time value of money. The risk-free rate in the CAPM formula accounts for the investor taking on additional risk. The goal of the CAPM formula therefore is to evaluate whether a stock is fairly valued when its risk and time value of money are compared with its expected return. In other words, by knowing the individual parts of the CAPM, it is possible to guage whether the current price of a stock is consistent with its likely return (Naderi et al, 2012).

When looking at investments in international financial markets, the international version of the CAPM is used to incorporate foreign exchange risks (typically with the addition of a foreign currency premium) when dealing with several currencies. The international capital asset pricing model (ICAPM) expands beyond the standard CAPM by compensating investors for their exposure to foreign currencies. In ICAPM, in addition to getting compensated for the time value of money and the premium for deciding to take on market risk, investors are also rewarded for direct and indirect exposure to foreign currency. The ICAPM therefore allows investors to account for the sensitivity to changes in foreign currency when investors hold an asset (Santis & Gerard, 1997). ICAPM therefore provides investors with a way of evaluating expected returns in local currency terms by accounting for variables as stated below:

$$ER_i = R_f + \beta_i (ER_m - R_f) + \beta_i(FCRP) \dots\dots\dots (2)$$

where  $ER_i$  = Expected Return

$\beta_i$  = Beta of Investment

$ER_m$  = Expected Return of Market

$R_f$  = Risk-free Rate

$(ER_m - R_f)$  = Premium for global market risk measured in local currency

FCRP = Foreign Currency Risk Premium

### Empirical Literature Review

Okoduwa (2024) examined the impact of financial globalization on financial development in Nigeria for the period 1981 to 2021 and found out that financial globalization and trade openness have significant positive impact on financial development; per capita GDP has insignificant positive impact on financial development while inflation has significant negative impact on financial development. Adaramola *et al* (2023) studied the impact of exchange rate on stock market price movement in Nigeria and established that exchange rate, GDP and inflation have significant negative impact on stock market index while interest rate has insignificant impact on stock market index. Kolapo (2023) investigated the impact of institutional quality and openness on stock market development in Nigeria. The findings showed that institutional quality, banking system development, stock market liquidity and openness have significant positive impact on stock market development while exchange rate has significant negative impact on stock market development. Zaher and Buics (2022) examined the role of financial globalization in stock market volatility in 24 countries of the European Union. The findings showed that the de facto financial globalization index has no significant effect on stock market volatility while the de jure financial globalisation index has significant negative impact on stock market volatility. Similarly, Tesega (2022) analysed the impact of financial globalisation on financial development of 33 African countries. The outcome of the study showed that lower level of financial globalization has negative impact on financial development while higher level of financial globalization has positive impact on financial development. Ajayi and Musyimi (2022) found that foreign direct investment, trade openness and government expenditure have significant positive impact on financial development while exchange rate, interest rate and inflation rate have significant negative impact on financial development in Nigeria. Obayagbona and Igbinovia (2021) examined the impact of financial openness and foreign portfolio investment on stock market development in Nigeria and found that financial openness and foreign portfolio investment have no significant impact on market capitalization. Onyele and Ikwuagwu (2020) analysed the impact of globalization on stock market return in a panel of five African countries including Egypt, Morocco, Namibia, Nigeria and South Africa. The findings showed that globalization index, foreign direct investment and exchange rate have significant positive impact on stock market return while trade openness has significant negative impact on stock market return.

Owoade and Ogunlowo (2020) examined the impact of trade openness and exchange rate on stock market capitalization in Nigeria and established that trade openness and balance of payments have significant positive impact on stock market capitalization growth while foreign direct investment and exchange rate have significant negative impact on stock market capitalization growth. Oyesiji *et al* (2020) found that foreign portfolio investment, exchange rate, and financial liberalization index have significant positive impact on stock market returns in Nigeria. Kadandani and Yusuf (2019) studied the impact of globalization on stock market growth in Nigeria. The findings showed that foreign direct investment and exchange rate have significant positive impact on stock market capitalization; trade openness have insignificant positive impact on stock market capitalization; foreign debt and inflation rate has insignificant negative impact on market capitalization while interest rate has significant negative impact on stock market capitalization. Chizoba *et al* (2019) found that net foreign direct investment flow has significant positive impact on market capitalization and market liquidity in Nigeria. Akinwale and Adekunle (2019) established that trade openness and foreign portfolio investment have significant positive impact on market capitalization while foreign direct investment has insignificant negative impact on market capitalization in Nigeria. Omorokunwa (2018) found that foreign direct investment and exchange rate have significant positive impact on

market capitalization while foreign portfolio investment and stock market liquidity have insignificant negative impact on market capitalization in Nigeria. Olaniyi *et al* (2016) found that balance of trade and foreign direct investment have significant positive impact on market capitalization; interest rate has significant negative impact on market capitalization while exchange rate and external reserves have no significant impact on market capitalization in Nigeria. Omojolaibi *et al* (2016) established significant negative impact of portfolio investment, exchange rate and interest rate on financial development, and significant positive impact of liquidity ratio and gross fixed capital formation on financial development in Nigeria.

From the empirical literature reviewed, it is observed that previous studies on the impact of globalization on stock market performance in Nigeria measured stock market performance in terms of stock market indicators such as market capitalization, stock market index, stock market liquidity, etc. However, none of the studies measured stock market performance in terms of stock market capitalization as a ratio of GDP. The argument here is that stock market capitalization – GDP ratio is a better measure of stock market performance than mere stock market capitalization. Market capitalization as a ratio of GDP indicates the size of the capital market relative to the size of the economy (i.e., the GDP). It therefore shows the depth of the capital market. The present study fill this gap by measuring stock market development in terms stock of market capitalization as a ratio of GDP.

It is also observed from the empirical literature reviewed that there is no consensus in the findings of previous studies on the topic in Nigeria. For example, Chizoba et al (2019), Kadandani and Yusuf (2019); Ajayi and Musyimi (2022), etc. found positive impact of foreign direct investment on stock market capitalization while Akinwale and Adekunle (2019), Owoade and Ogunlowo (2020), etc. found that foreign direct investment has negative impact on market capitalization. Similarly, Oyesiji et al (2020) found positive impact of foreign portfolio investment on market capitalization while Omorokunwa (2018) and Omojolaibi et al (2016) found negative impact of foreign portfolio investment on market capitalization.

## Method of Study

### Model Specification

The model used for this study is specified based on the theory of financial contagion and the analytical model used by Kadandani and Yusuf (2019) which is expressed in its functional form as follows:

$$MCAP = f(FDI, TOP, FDT, INF, INT, EXR) \dots\dots\dots (3)$$

- where MCAP = Market Capitalization  
 FDI = Foreign Direct Investment  
 TOP = Trade Openness  
 FDT = Foreign Debt  
 INF = Inflation Rate  
 INT = Interest Rate  
 EXR = Exchange Rate

The adopted model stated above was modified to allow for the inclusion of the variables of the present study. Hence, the functional model on which the econometric model used for this study is built is specified as follows:

$$MCAP/GDP = (DTOP, FDI, FPI, EXDT, EXR) \dots\dots\dots (4)$$

- where MCAP/GDP = Stock Market Capitalization as a ratio of GDP. It is a proxy for stock market development.  
 DTOP = Degree of Trade Openness  
 FDI = Foreign Direct Investment Inflow  
 FPI = Foreign Portfolio Investment Inflow  
 EXDT = External Public Debt  
 EXR = Exchange Rate

f = functionality Notation

MCAP/GDP is the dependent variable while DTOP, EDI, FPI, EXDT, and EXR are the explanatory variables. The ordinary least squares (OLS) regression equation based on the functional model above is expressed as follows:

$$\text{MCAP/GDP} = \beta_0 + \beta_1\text{DTOP} + \beta_2\text{FDI} + \beta_3\text{FPI} + \beta_4\text{EXDT} + \beta_5\text{EXR} + U \dots\dots\dots (5)$$

where  $\beta_0$  is the constant term,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$ , and  $\beta_5$  are the parameter estimates of the explanatory variables while U is the random variable. All other variables are as earlier defined.

Equation (5) can be transformed into a logarithmic equation as follows:

$$\text{MCAP/GDP} = \beta_0 + \beta_1\text{DTOP} + \beta_2\text{LOGFDI} + \beta_3\text{LOGFPI} + \beta_4\text{LOGEXDT} + \beta_5\text{LOGEXR} + U \dots\dots\dots (6)$$

where LOG is the natural logarithm of the variables. All other variables are as earlier defined.

### **Apriori Theoretical Expectations**

Based on economic theory the following signs of the parameter estimates are expected.

$$\beta_1 > 0, \beta_2 > 0, \beta_3 > 0, \beta_4 < 0, \beta_5 < 0$$

The economic implication of the above signs of the parameter estimates is that an increase in each of degree of trade openness, foreign direct investment inflow, and foreign portfolio investment inflow is expected to be associated with an improvement in stock market development. On the other hand, an increase in each of external public debt and naira-dollar exchange rate is expected to be associated with a deterioration in stock market development in Nigeria.

### **Description of Variables**

#### **Dependent Variable**

The dependent variable for this study is stock market development. It is proxied by total stock market capitalization as a ratio of the gross domestic product (GDP). The stock market capitalization – GDP ratio is the sum of the average annual market capitalization of all the companies listed on the Nigerian Stock Exchange divided by Nigeria’s annual gross domestic product. It is measured in percentage.

#### **Explanatory Variables**

The explanatory variable for this study is financial globalization. It is however measured in terms of the following variables.

##### **i. Degree of Trade Openness**

This refers to the extent to which the Nigerian domestic economy is opened to international trade transactions. It is measure as the sum of exports and imports expressed as percentage of Nigeria’s GDP.

##### **ii. Foreign Direct Investment Inflow**

Foreign Direct Investment refers to when foreign nationals acquire productive facilities located in another country (the host country) and manage it or take part in its management. Foreign direct investment inflow is therefore the total annual monetary value of direct investments in productive activities by foreign entities in the Nigerian economy. It is measured in billions of U.S. dollars.

##### **iii. Foreign Portfolio Investment Inflow**

Foreign portfolio investments are investments in purely financial assets. It is a type of capital flow under which foreign entities such as banks, insurance companies, mutual and pension funds management companies, private individuals, etc. acquire securities, bank deposits, and/or grant private loans in the financial markets of other countries. Foreign portfolio investment inflow therefore refers to the total annual monetary value of financial assets invested by foreigners in the Nigerian financial markets. It is measured in billions of U.S. dollars.

##### **iv. External Public Debt**

This refers to the total annual debt outstanding that the Nigerian Federal Government is owing to foreign creditors. It is measured in billions of naira.

**v. Exchange Rate**

This is the naira-dollar exchange rate. It is the average amount of naira that is exchanged for one U.S. dollar in a year.

**Nature and Sources of Data**

The study made use of annual time-series data covering the period 1981 to 2023. The data are secondary data obtained from the Central Bank of Nigeria (CBN) 2023 annual statistical bulletin, the CBN annual reports and statements of accounts (various years), and the World Bank Development Indicators (various years).

**Data Estimation Techniques**

This study made use of time-series data. It was therefore necessary to account for the peculiar characteristics of time-series data before the actual estimation. To this end, the estimation procedure was preceded by stationarity test. The essence of the stationarity test is to determine whether the various time-series data are stationary or not, and to determine their various order of integration. The stationarity test was conducted using the Augmented Dickey-Fuller (ADF) unit root test. Based on the result of the ADF unit root test, the autoregressive distributed lag (ARDL) bounds test approach to cointegration was used to check whether there exist long-run (equilibrium) relationships among the various time-series variables. Though the ARDL cointegration test established long-run (equilibrium) relationships among the variables, it was necessary to check if there is any disequilibrium in the short-run. Hence, the error correction mechanism (ECM) was used to estimate the short-run (dynamic) behaviour of the time-series variables. Particularly, the ECM was used to determine the speed with which any disequilibrium in the short-run is reconciled to long-run (equilibrium) trend. The Granger causality test was used to test the direction of causal relationships (if any) among the variables of the study.

**Presentation of Results and Discussion of Findings**

**Descriptive Statistics**

The descriptive statistics result is presented in table 1.

**Table 1: Descriptive Statistics Result**

| Variable     | MCAP/GDP | DTOP      | LOG(FDI)  | LOG(FPI) | LOG(EXDT) | LOG(EXR)  |
|--------------|----------|-----------|-----------|----------|-----------|-----------|
| Mean         | 11.59286 | 26.19738  | 0.316674  | 0.829194 | 6.535093  | 3.658386  |
| Median       | 7.520000 | 30.53500  | 0.463022  | 0.883460 | 6.505800  | 4.74733   |
| Maximum      | 38.01000 | 55.02000  | 2.147100  | 3.493077 | 9.836399  | 6.049498  |
| Minimum      | 3.100000 | 7.520000  | 1.660731  | 1.966113 | 0.845868  | 0.494296  |
| Std. Dev.    | 8.646949 | 11.36695  | 1.138729  | 1.519604 | 2.121301  | 2.015915  |
| Skewness     | 0.871650 | -0.061445 | -0.081930 | 0.182387 | -0.807101 | -0.818473 |
| Kurtosis     | 3.159368 | 2.352191  | 1.829438  | 2.084839 | 3.267900  | 2.427838  |
| Jarque-Bera  | 5.362863 | 0.760828  | 2.444863  | 1.698516 | 4.685481  | 5.262178  |
| Probability  | 0.068465 | 0.683578  | 0.294513  | 0.427732 | 0.096064  | 0.072000  |
| Sum          | 486.9000 | 1226.290  | 13.30029  | 34.82617 | 274.4739  | 153.6522  |
| Sum Sq. Dev. | 3065.559 | 5297.513  | 53.16482  | 94.67701 | 184.4966  | 166.6205  |
| Observations | 43       | 43        | 43        | 43       | 43        | 43        |

**Source: E-view Output**

From the descriptive statistics result in table 1, the mean values of the variables are 11.59286%, 26.19738%, USD 0.316674 billion, USD 0.829194 billion, N6.535093 billion and N3.658386 per dollar for MCAP/GDP, DTOP, LOG(FDI), LOG(FPI), LOG(EXDT), and LOG(EXR) respectively. The standard deviation statistic indicated that DTOP with a standard deviation value of 11.36695 percent is the most fluctuating variable while LOG(FDI) with a standard deviation value of USD 1.138729 billion is the most stable variable. The skewness statistic showed that MCAP/GDP and LOG(FPI) are

positively skewed while DTOP, LOG(FDI), LOG(EXR) and LOG(EXDT) are negatively skewed. The kurtosis statistic result showed that MCAP/GDP (3.159368 percent) and LOG(EXDT) (N3.267900 billion) are leptokurtic since their values are greater than 3. This suggests that they have heavier tails relative to normal distribution. On their part, DTOP (2.352191 percent), LOG(FDI) (USD 1.829438 billion), LOG(FPI) (USD 2.0848839 billion) and LOG(EXR) (N2.427838) are platykurtic since their values are less than 3. This is suggestive that they have lighter tails relative to normal distribution.

### Stationarity Test

The stationarity test was conducted using the Augmented Dickey-Fuller (ADF) unit root test. The result is presented in table 2.

**Table 2: ADF Unit Root Test Result**

| Variable  | ADF Test Statistic (At Levels) | Critical Values |           | Prob.  | ADF Test Statistic (At 1 <sup>st</sup> Diff.) | Critical Values |           | Prob.  | Order of Integration |
|-----------|--------------------------------|-----------------|-----------|--------|-----------------------------------------------|-----------------|-----------|--------|----------------------|
|           |                                | 1%              | 5%        |        |                                               | 1%              | 5%        |        |                      |
| MCAP/GDP  | -1.508637                      | -3.600987       | -2.935001 | 0.5193 | -7.207970*                                    | -3.605593       | -2.936942 | 0.0000 | I(1)                 |
| DTOP      | -2.555955                      | -3.600987       | -2.935001 | 0.1103 | -8.430170*                                    | -3.605593       | -2.936942 | 0.0000 | I(1)                 |
| LOG(FDI)  | -2.094003                      | -3.600987       | -2.935001 | 0.2480 | -8.482041*                                    | -3.605593       | -2.936942 | 0.0000 | I(1)                 |
| LOG(FPI)  | -2.964349**                    | -3.600987       | -2.935001 | 0.0468 |                                               |                 |           |        | I(0)                 |
| LOG(EXDT) | -1.471337                      | -3.605593       | -2.936942 | 0.5376 | -4.929148*                                    | -3.605593       | -2.936942 | 0.0002 | I(1)                 |
| LOG(EXR)  | -2.195742                      | -3.600987       | -2.935001 | 0.2108 | -5.416910*                                    | -3.605593       | -2.936942 | 0.0001 | I(1)                 |

**Source: E-view Output**

**Note:** \* and \*\* denote rejection of the null hypothesis of unit root at the 1% and 5% significant levels respectively.

From the ADF unit root test result in table2, LOG(FPI) is stationary at levels (i.e., I(0)) at the 5% level of significance while MCAP/GDP, DTOP, LOG (FDI), LOG(EXDT) and LOG(EXR) are stationary at first difference (i.e., I(1)) at the 1% level of significance.

### 4.3 Cointegration Test

The result of the autoregressive distributed lag (ARDL) bounds test approach to cointegration is presented in table 3.

**Table 3: ARDL Bounds Test Result**

| F-Bounds Test  |          | Null Hypothesis: No Long-Run Relationships |      |      |
|----------------|----------|--------------------------------------------|------|------|
| Test Statistic | Value    | Significance                               | I(0) | I(1) |
| F-Statistic    | 8.172960 | 10%                                        | 2.08 | 3    |
| K              | 5        | 5%                                         | 2.39 | 3.38 |
|                |          | 2.5%                                       | 2.7  | 3.73 |
|                |          | 1%                                         | 3.06 | 4.15 |

**Source: E-view Output**

From the result of the ARDL bounds test approach to cointegration in table 3, since the computed F-statistic of 8.172960 is greater than the upper bound (I(1)) critical value of 3.38 at the 5% level of significance, the null hypothesis of no log-run relationships is rejected. Therefore, the ARDL

bounds test approach to cointegration indicated that there exist long-run (equilibrium) relationships among the variables in the ARDL model.

### Long-Run Regression Result

The ARDL estimated long-run regression result is reported in table 4.

**Table 4: Estimated Long-Run Regression Result**

| Levels Equation                          |             |            |             |        |
|------------------------------------------|-------------|------------|-------------|--------|
| Case 2: Restricted Constant and No Trend |             |            |             |        |
| Variable                                 | Coefficient | Std. Error | t-Statistic | Prob.  |
| DTOP                                     | -0.158114   | 0.097265   | -1.625589   | 0.1177 |
| LOG(FDI)                                 | 0.736143    | 0.984838   | 0.747476    | 0.4624 |
| LOG(FPI)                                 | 5.348545    | 1.499686   | 3.566443    | 0.0016 |
| LOG(EXDT)                                | -4.004449   | 1.448110   | -2.765293   | 0.0110 |
| LOG(EXR)                                 | -4.177079   | 1.708366   | -2.445072   | 0.0226 |
| C                                        | 24.23118    | 4.405963   | 5.499633    | 0.0000 |

$$EC = \text{MCAP/GDP} - (-0.1581 \cdot \text{DTOP} + 0.7361 \cdot \text{LOG(FDI)} + 5.3485 \cdot \text{LOG(FPI)} - 4.0044 \cdot \text{LOG(EXDT)} + 4.1771 \cdot \text{LOG(EXR)} + 24.2312)$$

### Source: E-view Output

The long-run regression result in table 4 showed that external public debt and exchange rate have significant negative impact on market capitalization – GDP ratio while degree of trade openness has insignificant negative impact on market capitalization – GDP ratio. On the other hand, foreign direct investment inflow has insignificant positive impact on market capitalization –GDP ratio while foreign portfolio investment inflow has significant positive impact on market capitalization – GDP ratio.

### Short-Run Regression Result

The estimated short-run regression result is presented in table 5.

**Table 5: Short-Run Regression Result**

| ECM Regression                           |             |                       |             |          |
|------------------------------------------|-------------|-----------------------|-------------|----------|
| Case 2: Restricted Constant and No Trend |             |                       |             |          |
| Variable                                 | Coefficient | Std. Error            | t-Statistic | Prob.    |
| D(DTOP)                                  | 0.076192    | 0.05545               | 1.374191    | 0.1826   |
| D(DTOP(-1))                              | 0.139038    | 0.066021              | 2.105956    | 0.0463   |
| DLOG(FPI)                                | 0.688980    | 0.358970              | 1.919326    | 0.0674   |
| DLOG(FPI(-1))                            | -1.717141   | 0.552566              | -3.107576   | 0.0050   |
| DLOG(FPI(-2))                            | -0.740175   | 0.347900              | -2.127549   | 0.0443   |
| DLOG(EXDT)                               | -0.334628   | 1.294578              | -0.258484   | 0.7983   |
| DLOG(EXDT(-1))                           | -10.86310   | 1.231374              | -8.821933   | 0.0000   |
| DLOG(EXR)                                | -0.104873   | 1.726159              | -0.060755   | 0.9521   |
| DLOG(EXR(-1))                            | 8.993379    | 1.692285              | 5.314342    | 0.0000   |
| Coint Eq(-1)                             | -0.700790   | 0.082511              | -8.493248   | 0.0000   |
| R-squared                                | 0.851007    | Mean dependent var.   |             | 0.556410 |
| Adjusted squared                         | R- 0.804767 | S.D. dependent var.   |             | 4.778721 |
| S.E of regression                        | 2.111485    | Akaike info criterion |             | 4.549214 |
| Sum squared resid                        | 129.2927    | Schwarz criterion     |             | 4.975769 |
| Log likelihood                           | -78.70968   | Hannan-Quinn Criter   |             | 4.702258 |
| Durbin-Watson stat.                      | 2.089162    |                       |             |          |

### Source: E-view Output

The estimated short-run regression result in table 5 revealed that the error correction term (i.e., Coint Eq(-1)) displayed a correct negative coefficient. It is also statistically significant at the 0.05 level of significance. The economic implication is that market capitalization – GDP ratio is adjusted to changes in the explanatory variables in a year in the current period. In terms of magnitude, the coefficient of the error correction term is -0.700790 indicating a speed of adjustment of about 70 percent. Hence, about 70 percent of any disequilibrium in the short-run is reconciled to the long-run (equilibrium) trend of the model within a year.

### Granger Causality Test Result

The result of the pairwise Granger causality test is presented in table 6.

**Table 6: Pairwise Granger Causality Test Result**

Sample: 1981–2023

Lags: 2

| Null Hypothesis                           | Obs | F-Statistic | Prob.  |
|-------------------------------------------|-----|-------------|--------|
| DTOP does not Granger Cause MCAP/GDP      | 41  | 0.45983     | 0.6351 |
| MCAP/GDP does not Granger Cause DTOP      |     | 0.60725     | 0.5505 |
| LOG(FDI) does not Granger Cause MCAP/GDP  | 41  | 2.39216     | 0.1062 |
| MCAP/GDP does not Granger Cause LOG(FDI)  |     | 0.18842     | 0.8291 |
| LOG(FPI) does not Granger Cause MCAP/GDP  | 41  | 1.35335     | 0.2716 |
| MCAP/GDP does not Granger Cause LOG(FPI)  |     | 0.19516     | 0.8236 |
| LOG(EXDT) does not Granger Cause MCAP/GDP | 41  | 10.3137     | 0.0003 |
| MCAP/GDP does not Granger Cause LOG(EXDT) |     | 0.15943     | 0.8532 |
| LOG(EXR) does not Granger Cause MCAP/GDP  | 41  | 3.32269     | 0.0477 |
| MCAP/GDP does not Granger Cause LOG(EXR)  |     | 0.47707     | 0.6246 |

### Source: E-view Output

The Granger causality test result in table 6 indicated unidirectional causalities from exchange rate to market capitalization – GDP ratio and from external public debt to market capitalization – GDP ratio.

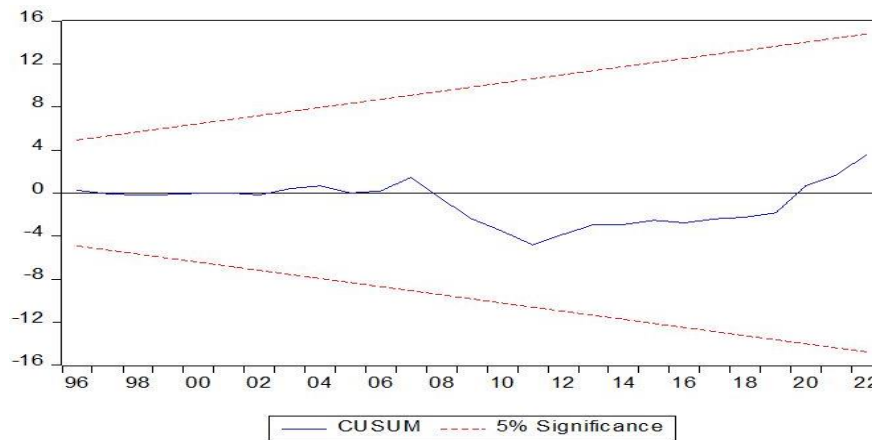
### Post-Estimation Tests

The ARDL model is a linear regression model and there are certain assumptions underlying the classical linear regression model (CLRM). These assumptions need to be tested and satisfied for the estimated ARDL regression model to be valid. The assumptions include linearity, no serial correlation, homoscedasticity, normality and stability. The results and decisions for these post-estimation tests are presented in table 7 and figure 1.

**Table 7: Post Estimation Tests Results**

| Test                                          | Value    | Prob.    | Decision                                                              |
|-----------------------------------------------|----------|----------|-----------------------------------------------------------------------|
| Linearity (Romsey Reset) Test                 |          |          | Accept Ho: (model correctly specified)                                |
| t-Statistic                                   | 4.347357 | 0.0702   |                                                                       |
| F-statistic                                   | 2.189951 | 0.0702   |                                                                       |
| Breusch-Godfrey Serial Correlation LM Test    |          |          | Accept Ho: (No serial correlation)                                    |
| F-statistic                                   | 0.269846 | 0.7662   |                                                                       |
| Breusch-Pagan-Godfrey Heteroskedasticity Test |          |          | Accept Ho: (model is homoscedastic. Residuals have constant variance) |
| F-statistic                                   | 0.506846 | 0.8919   |                                                                       |
| Normality (Jarque-Bera) Test                  |          |          | Accept Ho: (Data normally distributed)                                |
| F-statistic                                   | 4.495055 | 0.105660 |                                                                       |

Source: E-view Output



**Figure 1: Cumulative Sum Test for Stability**

Source: E-view Output

**Note:** For each of the tests in table 7, if the estimated probability value is greater than 0.05, the null hypothesis is accepted while for the stability test in figure 1, since the plot lies within the 5 percent critical bounds, the estimated ARDL model is considered stable.

### Discussion of Findings

#### Long-Run Regression Result

From the estimated long-run regression result, degree of trade openness has insignificant negative impact on market capitalization – GDP ratio. In terms of magnitude, one percent increase in the degree of trade openness is associated with 0.158114 percent average reduction in market capitalization – GDP ratio. Foreign direct investment inflow has insignificant positive impact on market capitalization – GDP ratio. One percent increase in foreign direct investment inflow is associated with an average increase of 0.00736143 percent in market capitalization – GDP ratio. Foreign portfolio investment inflow has significant positive impact on market capitalization – GDP ratio. Thus, one percent increase in foreign portfolio investment inflow is associated with an average increase of 0.05348545 percent in market capitalization – GDP ratio. External public debt has significant negative impact on market capitalization – GDP ratio. In terms of size, one percent increase in external public debt outstanding is associated with an average decrease of 0.0400449 percent in market capitalization – GDP ratio. Similarly, exchange rate has significant negative impact on market capitalization – GDP ratio. Thus, one percent increase in exchange rate is associated with an average decrease of 0.04177079 percent in market capitalization – GDP ratio.

#### Short-Run Regression Result

From the estimated short-run regression result, degree of trade openness in the current period has insignificant positive impact on market capitalization – GDP ratio while the value of trade openness lagged by one period has significant positive impact on market capitalization – GDP ratio. Foreign portfolio investment inflow in the current period has insignificant positive impact on market capitalization – GDP ratio while its lagged values in periods one and two have significant negative impact on market capitalization – GDP ratio. External public debt in the current period has insignificant negative impact on market capitalization – GDP ratio while its lagged value in period one has significant negative impact on market capitalization – GDP ratio. Exchange rate in the current period has insignificant negative impact on market capitalization – GDP ratio while the lagged value of exchange rate in period one has significant positive impact on market capitalization – GDP ratio.

The coefficient of the error correction term is -0.700790 and it is statistically significant at the 0.05 level of significance. The implication of the negative coefficient of the error correction term is that any disequilibrium in the short-run is reconciled to long-run (equilibrium) trend with a speed of adjustment of about 70 percent within a year.

The estimated short-run regression result also showed that the coefficient of multiple determination (R-squared) is 0.851007. This implies that the explanatory variables jointly account for about 85 percent of the total variations in the dependent variable. The adjusted R-squared measures the penalty for including irrelevant explanatory variables in the model. Hence, with an adjusted R-squared of 0.804769, the implication is that, with the addition of more explanatory variables in the model, all the explanatory variables will together explain about 80 percent of the total variations in the dependent variable. The Durbin-Watson statistic of 2.089162 is greater than 2. This means that the estimated short-run regression result is not affected by the problem of autocorrelation.

The pairwise Granger causality test result revealed two unidirectional causalities from external public debt to market capitalization – GDP ratio and from exchange rate to market capitalization – GDP ratio.

## **CONCLUSIONS AND RECOMMENDATIONS**

### **Conclusions**

Based on the findings of the study, the following conclusions are drawn:

- i. degree of trade openness negatively affects the development of the Nigerian stock market, though in an insignificant manner;
- ii. foreign direct investment inflow makes weak contribution to the development of the stock market in Nigeria;
- iii. foreign portfolio investment inflow contributes significantly to the development of the stock market in Nigeria;
- iv. external public debt adversely affects the development of Nigeria's stock market; and
- v. exchange rate significantly reduces the level of development of the stock market in Nigeria.

### **Policy Recommendations**

Based on the outcome of the study, the following policy measures are recommended.

- i. To reduce the negative impact of financial globalization on Nigeria's stock market development occasioned by the degree of trade openness, there is the need to formulate and implement policies that will stimulate export and discourage import. To this end, a diversification of the country's export basket to include more of non-oil export commodities, and an improvement in the quality of the non-oil export products will enhance the global competitiveness of the economy. This will help to reduce the negative impact of financial globalization while maximizing its beneficial effects on the stock market.
- ii. To improve the contribution of foreign direct investment inflow on the development of the stock market, policies that will improve the country's domestic macroeconomic environment should be put in place. An improvement in the macroeconomic environment and ease-of-doing business will not only attract the inflow of more FDI but also stabilize them for improved contribution to stock market development.
- iii. To sustain the positive contribution of foreign portfolio investment inflow to the development of the Nigerian stock market, there is the need to improve the performance of the Nigerian financial system in the global financial market. Also, an improvement in the country's macroeconomic environment will help to attract more foreign portfolio investment inflow and stabilize them. This will help to reduce the incidence of capital flight which is associated with foreign portfolio investment due to financial globalization.
- iv. There is the need to reduce the adverse effect of external public debt on the development of the stock market through improved debt management strategies such as debt-equity

- swap. The government should stop accumulating foreign debt by exploring other less harmful sources of revenue to finance its expenditure.
- v. The Central Bank of Nigeria should implement appropriate policies that will reduce the exchange rate. The adoption of a managed floating exchange regime will help to reduce the negative impact of the exchange rate on the country's stock market performance.
  - vi. There is the need to improve the global competitiveness of the Nigerian stock market. To this end, there is the need to operate on global stock market standards through the adoption of modern information and communication technology. Innovative financial instruments should also be introduced in the stock market for the purpose of attracting foreign investors.

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