

FOREIGN PRIVATE INVESTMENT AND STOCK MARKET VOLATILITY IN NIGERIA

Ifuero Osad Osamwonyi and Nosakhare Ikponmwosa

Department of Banking and Finance, University of Benin, Nigeria

Abstract

This study investigates the dynamic relationship between Foreign Private Investment (FPRI) and Stock Market volatility in Nigeria, using quarterly time series data from 1985 to 2013. FPRI was decomposed into Foreign Portfolio Investment (FPI) and Foreign Direct Investment (FDI). After the preliminary stationarity test of the data series, the Granger causality test procedure was employed, and finally a GARCH process was used to determine the magnitude of impact of foreign capital flows on stock market volatility in Nigeria. The result from the Granger causality (dynamics) analysis reveals a unidirectional relationship running from FPI to stock market volatility, while FDI is found to have a feedback relationship with stock market volatility in Nigeria. The GARCH result reveals that FPI contributes to stock market volatility, while FDI helps to promote stability in the capital market. Against the backdrop of these findings, it is recommended that policy measures to stimulate and stabilize foreign private investment, particularly FPI be put in place in order to ensure the stability and growth of the stock market. Importantly, sound institutional and regulatory mechanisms, as well as stable macroeconomic policy environment are imperative to engendering market resilience during shocks, and the repositioning of the financial market as a pivot for domestic investment and rapid economic growth.

JEL classification: C32, F21, G12

1. Introduction

IN developing countries like Nigeria, domestic savings are seldom sufficient to meet the level of investment and capital accumulation required for economic growth. Such countries often rely significantly on foreign capital flows. According to Obadan (2004), foreign capital flows are transmitted through foreign direct investment (FDI), foreign portfolio investment (FPI), draw-down on foreign reserves, foreign loans and credits. FDI and FPI, which make up foreign private investment (FPRI), and their possible relationship with stock market volatility (risk) are the focus of this study. The theory of finance defines risk as the volatility of unexpected outcomes due to movements in financial variables. In light of the foregoing, Philippe (1997) argues that the volatility of unexpected outcomes

generally affects the value of assets or liabilities of interest, such that positive and negative variations must be viewed as the sources of risk.

The opening up of domestic financial markets to international capital inflows often exposes the domestic markets to certain risks and transfer of instability. This situation is aggravated when the recipient market is generally small with limited capacity to influence global prices and interest rates. Nigeria falls among this group of countries where the domestic markets often encounter deep fluctuations primarily because they are linked with capital from foreign markets. Indeed, the financial market crisis of 2007-2009 was primarily generated from vagaries in foreign financial positions. In addressing the nexus between foreign investment and volatilities in domestic financial markets, previous studies have assumed a direct linkage (see Mala and Reddy, 2007; Singh, 2009; Osaze, 2011). Though foreign capital directly influences domestic financial market prices, a strong channelling implication could also be determined, especially for a developing economy and in an era where there is increased financialization of commodity markets (UNCTAD, 2012; Obadan and Adegboye, 2016). Ignoring such channels for a country like Nigeria tends to obviate the secondary rounds of volatility effects that foreign investment could generate through domestic prices.

Moreover, it has been observed that different categories of foreign investment present different volatility potentials. For instance, FPI tends to be more flexible and volatility-prone than FDI, in relation to the capital market. Disaggregating these foreign investment components should offer a more reliable approach to obtaining their volatility implications to the stock market in Nigeria, with relevant policy directions. The pattern of volatility estimation also matters in empirical research. Previous studies did not investigate the nature of the relationship between foreign private capital and stock market volatility in the context of causality within a GARCH framework. This work therefore intends to fill this perceived gap in literature by empirically examining the direction of causality between private capital flows and stock market volatility, within a GARCH framework, as this aspect of analysis seems to be missing in the literature. The period of 1985 to 2013 is selected to accommodate the Structural Adjustment Programme (SAP) and subsequent financial markets liberalization in Nigeria. This study seeks to provide answers to the following questions: What is the direction of causation between foreign private investment (FPRI) and stock market volatility in Nigeria? What is the effect of FPRI flows in volatility presence in the Nigerian stock market?

The objectives of the study were a corollary to the above questions and included to: investigate the direction of causation between foreign private

investment (FPRI) and stock market volatility in Nigeria; and examine the effect of FPRI flows on stock market volatility in Nigeria. Following this introduction, the rest of the paper is structured as follows; section two consists of a review of related literature. Section three provides the methodology for the study, while section four contains the empirical results and analysis. The conclusion and recommendations are presented in section five.

2. Review of Related Literature

The World Bank (1996), cited in Ayanwale (2007) defines foreign direct investment (FDI) as an investment made to acquire a lasting management interest (normally 10% of voting stock) in a business enterprise operating in a country other than that of the investor. Such investments usually take the form of Greenfield investment (also known as mortar and brick investment) or mergers and acquisition (M&A), which involves the acquisition of existing interest instead of new investment. Graham (1995) defined foreign direct investment (FDI) as an increase in the book value of the net worth of investment in one country held by investors of another country where the investments are under the managerial control of the investor. To buttress the above definition, Todaro and Smith (2003) noted that most FDI are, in fact, subsidiaries of multinational corporations (MNCs) such that the investors are the parent organizations of firms. Thus, foreign direct investment flows largely represent the expansion of the international activities of multinational corporations. On the other hand, foreign portfolio investment (FPI) is money invested by foreigners (mainly institutional and other high net worth investors) in local stock markets. From the foregoing, we can safely assume that FPI can culminate or crystallize into FDI if it increases to the level where it engenders ownership and control of the firm. In other words, the single most important factor in drawing a line of distinction between FDI and FPI is ownership and control of the firm.

Though foreign private investment (FPRI) is made up of foreign direct investment (FDI) and foreign portfolio investment (FPI), FDI is usually preferred as a means of boosting the economy. According to Osinubi and Amaghionyeodiwe (2010) the reason for this preference is that FDI disseminates advanced technological and managerial practices through the host country and there by exhibits greater positive externalities, compared with FPI, which may not involve positive transfers. Similarly, the World Bank (1997) asserted that besides supplementing domestic savings, FDI is expected to facilitate transfer of technology, introduce new management and marketing skills, and helps expand

host country's markets and foreign trade. In addition, available data suggest that FDI flows tend to be more stable compared to FPI (Lipsey, 1999). This is because of the liquidity of FPI and short time horizon associated with such investments. In other words, FPI are amenable to escape at the earliest sign of trouble in the host country and sometimes, in the country of origin, as experienced in the Nigerian Stock Exchange (NSE) crash of 2008-2010. Portfolio investments supplement foreign exchange availability and domestic savings but are most often not project specific. FPI are welcomed by developing countries since these are non-debt creating. FPI, if involved in primary issues, provides critical risk capital for new projects. Given that most FPI takes the form of investment in securities in the secondary market, it may not directly contribute to the formation of new production capacities. To facilitate FPI flows which favour easy liquidity, multilateral bodies, led by the International Finance Corporation (IFC), have been encouraging formation and strengthening of stock exchanges in developing nations.

According to Rao, Murthy and Ranganathan (1999) FPI could help accomplish a higher level of liquidity in stock markets, increase price earnings ratios and subsequently decrease cost of capital for investments. FPI is also predicted to lead to enhancement in the functioning of the stock markets. This is because foreign portfolio investors are thought to invest on the strength of well-researched strategies and a realistic valuation of securities/assets. The portfolio investors usually have highly competent analysts with access to a huge data and analytical tools.

Rao et al. (1999) also asserted that portfolio investments help to diversify risk for foreign investors, and provide a chance to share the benefit of growth in developing countries. Investing in emerging/frontier markets is expected to provide a superior return on investments for high net worth and institutional investors (e.g. mutual funds, pension funds, insurance companies, etc.) of developed countries. One of the features that are critical to the growth of the capital market is foreign ownership of securities. Apart from generating higher demand for financial instruments in the market, foreign portfolio investment also enhances competition that leads to better efficiency and hence growth of the financial markets (Summers, 2000). For example, when a market is shallow and characterized by low level of transaction and competition, increase in foreign participation can engender significant growth and development. Conversely, decreasing level of foreign participation, according to Mishra, Mody and Murshid (2001), dampens stock market growth potentials.

Host countries seeking higher foreign portfolio investment are usually encouraged to improve their market microstructure systems. This also provides benefits to local investors. In Nigeria for example, the open-outcry system of trading have been replaced with the screen-based automated trading system. This was made possible by the incorporation of the Central Securities Clearing System (CSCS) Limited on the 1st of June 1992 and its commencement of operations on the 14th of April 1997. This has significantly improved the level of transactional and informational efficiency. For example, the transaction process or settlement period of the Nigeria Stock Exchange (NSE) has been reduced from several weeks to T+3. However, compared to developed stock exchanges, NSE requires significant structural development. Generally, foreign portfolio investment (FPI) has some macroeconomic implications. Rao et al. (1999) argued that, while contributing to the accumulation of foreign exchange reserves, FPI would impact on exchange rate which could result in artificial appreciation of a country's currency. This could hurt competitiveness. Portfolio investments are also amendable to sudden withdrawals and therefore these have the potential for destabilizing an economy. Osaze (2011: 6) made this point succinctly while shedding light on contagion effects, when he avowed that:

The world being a global village especially in the area of finance and economics where money moves around quite quickly, what happens is that hot money is rather fast and fluid in its movement while pursuing arbitrage driven investment opportunities. This is the unique quality of foreign portfolio investment (FPI) which is money invested by foreigners in local stock markets. Unfortunately, FPI is like a one-night stand with no long-term commitments. The moment the investment environment turns sour, the money flees, electronically. The underlying stocks are sold quickly and the proceeds moved out to other more clement climes.

It was noted that volatility of FPI is considerably influenced by global opportunities and flows from one country to another. Though it is sometimes argued that FDI and FPI are both equally volatile (Claessens and Sudarshan, 1993), the Mexican, East Asian crises (in the 1990s) and the Nigerian stock market crisis of 2008-2010 brought into focus the higher risk (volatility) involved in portfolio investment. Volatility is a measure of the dispersion of returns for a given security or market index. It is a measure of the gyrations, fluctuation or wide swings of security price or market index over time. It can be measured traditionally by simply using the standard deviation or variance between returns from that same security or market index. Also, researchers use autoregressive conditional heteroskedasticity

(ARCH) model developed by Engle (1982), the generalized ARCH model proposed by Bollerslev (1986) and their extensions to capture volatility. Beyond measuring volatility of time series, the GARCH framework is also used to model volatility if the objective of investigation is to explain the factors causing or driving volatility in the given series. This is of critical importance to this particular study. Usually, the higher the volatility, the higher the level of risk or uncertainty associated with the financial time series (security or index).

A number of commentators often express the view that stock markets are excessively volatile – price alter from day to day or week to week by large amounts that do not appear to reflect changes in ‘news’ about fundamentals. If true, this constitutes a rejection of the efficient market hypothesis (EMH). Of course, to say that stock prices are excessively volatile requires one to have a model based on rational behaviour that provides a ‘yard stick’ against which one can compare volatility. According to Cuthbertson and Nitzsche (2004) common sense tells us that we expect stock prices to exhibit some volatility. This is because of the arrival of ‘news’ or new information about companies. However, the position of this study is not whether stock prices and stock market index in Nigeria are volatile, but whether they are excessively volatile on account of foreign private investment.

Volatility may weaken the smooth working of the financial markets and adversely affect macroeconomic performance (Mala and Reddy, 2007; Osaze, 2011). High levels of volatility can adversely affect stock markets and undermine the financial system as a whole. Volatility also dampens the spirit of risk-averse investors and stock price fluctuations may increase the cost of capital to businesses. Volatility also have the tendency to discourage companies from seeking a stock exchange listing or attempting to raise capitals via new issues of securities. Thus, high level of capital market volatility can hinder investment and engender slow economic growth (De Long, Shleifer, Summers and Waldmann, 1989). Similarly, capital market volatility may also have an array of negative consequences. According to Campbell (1996), Starr-McCluer (1998) and Poterba (2000) one of the ways in which volatility may affect the macro economy is through its effects on consumption. The effect of capital market volatility on consumption expenditure is transmitted through the wealth effect. Increase in wealth will enhance consumer spending. However, a fall in capital market indices will undermine consumer confidence and hence dampen consumer spending. Market volatility may also impact corporate investment (Zuliu, 1995) and the growth of the economy directly (Levine and Zervos, 1996; Arestis, Demetriades and Luintel, 2001). For example, a rise in market volatility can be seen as a rise in risk of shareholders equity

investments, leading to a shift of funds to less risky instrument/assets. This move could result in increased cost of funds to businesses and thus small/medium and start-up firms might suffer this effect as fund providers will prefer to buy blue chip stocks.

There seem to be a general agreement on what constitute stock market volatility and, to a lesser extent, on how to measure it. However, there is far less consensus on the causes of changes in stock market volatility (Mala and Reddy, 2007). Some market analysts see the causes of volatility in arrival of new, unanticipated information that changes expected returns on a stock (Engle and Ng, 1993). Thus changes in market volatility would merely reflect changes in the global economic environment. Other analysts assert that volatility is engendered mainly by fluctuations in trading volume, practices or patterns, which in turn are driven by factors such as alterations in economic policies, shifts in investors' attitude or tolerance of risk and uncertainty.

The degree of capital market volatility can aid forecasters in predicting the path of growth of an economy and the structure of volatility can imply that investors may now need to hold more stocks in their portfolio investment to achieve diversification (*vide*, Krainer, 2002). Mala and Reddy (2007) asserted that the above case is more serious for developing economies which are attempting to deepen their financial sector by developing their stock market. Their study benefits from advances in measurement of volatility, especially through econometric techniques. They employed the ARCH model and its major variant, the GARCH model to estimate the conditional variance of Fiji's daily stock return from January 2001 to December 2005. These methods give room for a relatively objective determination of the presence of volatility.

3. Methodology

The focus of this study is to investigate the role of foreign capital flows in either perpetuating or mitigating stock market volatility in Nigeria. This therefore involves empirical methods that show causal-effect relationships as well as estimating a volatility relationship. The first line of action was to consider the time series properties of our data set, using the unit roots and autoregressive conditional heteroscedasticity (ARCH) tests. Quarterly time series data from 1985 to 2013 on FPI, FDI, and all-share index (ASI) of the Nigerian Stock Exchange (NSE) were sourced from the Central Bank of Nigeria (CBN) Annual Statistical Bulletin. The all-share index was used as a proxy for stock prices, from which stock market volatility was generated. This study employed the standard deviation to generate

historical volatility estimate from quarterly time series data of the Nigerian Stock Exchange all-share index (ASI). That is:

$$\sigma(ASI) = SMV = \sqrt{\frac{1}{K-1} \sum_{i=1}^k (\mu_i - \bar{\mu})^2} \quad 1$$

Where k is number of observation and μ is the mean value of ASI, defined by:

$$\bar{\mu} = 1/n \sum_{j=1}^k \mu_j \quad 2$$

Granger (1969) proposes that if causal relationship exists between pairs of variables, these variables can be used to predict each other. The causality test help to ascertain whether a unidirectional or bidirectional (feedback) relationship exists between foreign private investment and stock market volatility in Nigeria. To achieve this, we employed the Granger causality statistic to test the statistical causality between foreign private investment and stock market volatility as well as to determine the predictive content of one variable beyond that inherent in the explanatory variable itself. The choice for the granger procedure is because it consists of the more powerful and simpler way of testing causal relationship. In order to carry out the Granger causality test, the following multivariate model has been estimated:

$$Y_{it} = \beta_0 + \sum_{k=1}^m \beta_k Y_{it-k} + \sum_{l=1}^n \alpha_l X_{it-l} + u_t \quad 3$$

$$X_{it} = \gamma_0 + \sum_{k=1}^m \delta_k X_{it-k} + \sum_{l=1}^n \varphi_l Y_{it-l} + \vartheta_t \quad 4$$

Where:

Y_i = Stock Market Volatility (SMV) measure as represented by volatility of the Nigerian Stock Exchange (NSE) All-Share Index (ASI).

X_i = Foreign investment measure, represented by Foreign Portfolio Investment (FPI) inflow and Foreign Direct Investment (FDI) inflow.

u_t and ϑ_t = mutually uncorrelated error terms (i.e. zero mean white noise error terms) while 'k' and 'j' = the number of lags.

From the explanations of the variables X and Y, it is clear that four pairs of relationships will be determined from the Causality test. The second aim of the study is to determine the role of foreign investment in engendering instabilities or volatility in the stock market. In this regard, the GARCH modelling technique better captures the essence of this purported relationship. In developing an ARCH model, two distinct specifications are considered- one for the conditional mean and one for the conditional variance. Moreover, two variants of the GARCH methodology are adopted in this study. A model with a first-order GARCH term and a first-order ARCH term (i.e. GARCH [1,1]) is initially specified in this study in order to determine the general nature of volatility in the stock market, especially when foreign capital variables are included in the equation.

$$ASIV_t = X_t\gamma + \varepsilon_t \quad 5$$

$$\sigma_t^2 = \omega + \alpha\varepsilon_{t-1}^2 + \beta\sigma_{t-1}^2 \quad 6$$

Equation 5 is the mean, while equation 6 is the variance. The volatility of the all-share index (ASIV) in the Nigerian Stock Exchange (NSE) is used in the mean equation and was written as a function of exogenous variables (in this case, the major factors in stock prices) with an error term. σ_{t-1}^2 is the conditional variance because it is the one-period ahead forecast variance based on past information. The conditional variance equation specified in 6 is a function of three terms:

1. The mean was: ω
2. News about volatility from the previous period, measured as the lag of the squared residual from the mean equation was: ε_{t-1}^2 (the ARCH term).
3. Last period's forecast variance: σ_{t-1}^2 (the GARCH term).

In this study, the conditional variances or volatility over time in the capital market is hypothesised to be determined by foreign investment through liquidity or illiquidity of the market. Thus, the variance equation is re-specified as:

$$\sigma_t^2 = \omega + \alpha\varepsilon_{t-1}^2 + \beta\sigma_{t-1}^2 + \theta_1FPI_t + \theta_2FDI_t \quad 7$$

From the results to be obtained in the estimation of this GARCH model, the volatility of the stock market would be explained based on the foreign investment factors.

4. Empirical Results

The preliminary analysis, for the ARCH estimations involves considering the time series properties of the series in terms of stationarity and heteroskedasticity. In the result shown in table 1, all the series are integrated of order one and are stationary in first difference, apart from that of returns. This suggests time-invariant movement in the return series over time. For the ARCH test, the f -values test indicate presence of ARCH terms for each of the stock market variables, suggesting that volatility may be inherent in the Nigerian stock market.

Table 1: Unit root and ARCH test

	<i>ASI</i>	<i>Returns</i>	<i>SMV</i>	<i>FDI</i>	<i>FPI</i>
ADF	I[1]	I[0]	I[1]	I[1]	I[1]
PP	I[1]	I[0]	I[1]	I[1]	I[1]
<i>ARCH test (F-value)</i>	8.72	6.96	10.4	-	-

Source: Author's computation extracted from Eviews 7 output.

Granger causality test

The macroeconomic outlook of the variables used in the analysis may imply simultaneity among them. Hence, the Granger causality test is used to provide the background for estimating dynamic relationships. The results of the Granger causality tests are reported in table 2. As is generally the case, the F-test is conducted on the null hypotheses in order to determine the direction of causality between each pair of variables. The rejection of each of the null hypothesis is based on the significance of the f -value for the particular relationship.

The study focussed on the relationships that are of interest in the study. Beginning with causalities relating to stock market volatility, the result shows that only the hypotheses relating to the foreign capital inflow factors have significant f -values. The hypothesis of causality running from SMV to FPI is rejected but the reverse could not be rejected. This implies that FPI inflows Granger causes volatility in the capital market volatility and not the reverse. This finding clearly shows the destabilizing capacity of FPI inflows in precipitating instability in the stock market, particularly due to its short-term and unpredictable nature. Fluctuations in FPI therefore tend to generate unfavourable capacity which perpetuates persistent instability in the market. This finding is in line with the findings of Singh (2009) and Osaze (2011) who both find that short term capital inflows in form of FPI are highly susceptible to generating stock market bubbles given that the probability that an abrupt and sudden reversal is higher *vis-à-vis* FDI.

Foreign direct investment on the other hand is seen to have a feedback relationship with capital market volatility. This implies that changes in foreign direct investment may provoke stock market volatility and volatility in the stock market also responds to impulses from FDI inflows. Apparently, the ability of foreign capital inflows to exacerbate domestic market vacillations is underscored. However, unlike the case of FPI, such undesirable innovations in FDI inflows to the market could be tracked and adequate measures taken to absorb vagaries within the capital market framework. This is perhaps the case because, FDI inflows are often not easily reversible and the resources still remain in the capital market during periods of crises. Another important aspect of the result is the causality running from capital market volatility to foreign direct investment. The significance of the F-statistic for the SMV Granger causing FDI reveals that foreign direct investment responds quite well to rapid movements in the Nigerian capital market. Thus, while movement in FDI inflows could generate stock market volatility, volatility in the stock market itself could engender instability in FDI. This finding is plausible giving the emerging nature of the Nigerian stock market, with vast investment opportunities. The other significant relationship in the results in Table 4.2 is the feedback relationship between FDI FPI, implying that FDI inflows to Nigerian tend respond to the behaviour of FPI, *vice versa*.

Table 2: Causality test results

<i>Direction of Causality</i>	<i>F-statistics</i>	<i>Direction of Causality</i>	<i>F-statistics</i>
SMV → FPI	1.289	FPI → SMV	3.322*
SMV → FDI	3.168*	FDI → SMV	4.159**
FDI → FPI	4.244**	FPI → FDI	6.308**

*F-statistic significant at the 5% level.

**F-statistic significant at the 1% level. Source: Author's computation

Analysis of volatility

In this section, the nature and magnitude of the impact of foreign capital inflow on stock market volatility in Nigeria is examined. As mentioned earlier, GARCH methodology is used in this analysis. The result of the GARCH estimation is reported in table 3. The conditional variance section of the result reports the effects of variables on the volatility of the dependent variable. The adjusted R^2 value of indicates that over 95% of the net systematic variations in stock market volatility is explained by foreign private investment. The coefficients of the foreign capital variables are both significant at 5% level. The coefficients however possess different signs; FDI has a positive effect while FPI has a negative effect. This indicates that FPI has an outright destabilizing effect on the capital market in terms

of contributing significantly to its volatility, while FDI to help to promote stability in the market. These results corroborate those obtained in the dynamic analysis.

Table 3: The GARCH result

<i>Variable</i>	<i>Co-efficient</i>	<i>z-Statistic</i>
<i>Mean Equation</i>		
Constant	721.5	0.644
SMV(-1)	0.994	23.29
<i>Variance Equation</i>		
ω	9860160	2.376
α	-0.197	-1.548
β	0.623	2.716
FDI	119.6	2.524
FPI	-186.5	-3.399
Adj.R ² = 0.951 DW = 1.33		

Source: Author's computation extracted from Eviews 7 output

The conditional variance equation in table 3 shows that the ARCH term is negative and statistically not significant. This indicates that news about volatility in the market from previous periods is generally ineffective in deepening volatility in the market. However, the GARCH term is positive and significant at 5% level, showing that expectations are critical in generating volatility in the capital market. Evidence of volatility persistence is also seen in the results given. This is what makes the effect of foreign private investment on the volatility in the market more effective since the market may thrive on speculations. Apparently, conditional volatility tends to rise (fall) when the absolute value of the standardized residuals is larger (smaller) (Leon, 2007).

5. Conclusion and Recommendations

This study investigates the dynamic relationship between Foreign Private Investment (FPI) and stock market volatility in Nigeria, using quarterly data from 1985 to 2013. After, preliminary diagnostics test on the data set, the Granger causality test was used to examine the dynamic relationship between FPI, FDI and stock market volatility (SMV) in Nigeria. The generalized autoregressive conditional heteroscedasticity (GARCH) was subsequently used to determine the magnitude of impact of FPI and FDI on stock market volatility. The result from the granger causality (dynamics) analysis reveals a unidirectional relationship between FPI and SMV with the line of causation running from FPI to stock market volatility, implying that FPI generates volatility in the stock market. This result is substantiated by the results of the GARCH model estimation which showed that

FPI significantly contributes to stock market, while FDI helps to stabilize it. This finding is plausible since in theory and evidence, the volatility attributable to FDI inflows is minimal on account of its relative stability when compared to FPI. The empirical results also found evidence of a feedback relationship between FDI and stock market volatility in Nigeria, implying that FDI could provoke stock market volatility, vice versa. Based on the findings, the following policy recommendations are made:

1. Measures should be put in place to stabilize FPI inflow in order to mitigate stock market volatility. For instance, demutualization of the Nigerian stock market could imply greater confidence on the part of foreign investors regarding the efficiency of the market. This will help to limit rapid reversal of investment from the market when there are sunspots (extrinsic shocks).
2. The repositioning and development of the financial market is critical to stem the effect of destabilizing and short term volatile capital flows, which may subject the capital market to instability. A well-developed financial market with substantial domestic activities can provide absorptive capacity during periods of shocks.
3. Policies that will stabilize the macroeconomic environment in order to encourage private foreign private capital inflows, particularly FDI, which has been found to have stabilizing effect on the capital market should be implemented, giving the benefits inherent in a virile and stable stock market. This is because the critical role of the stock market in resource mobilization for investment and rapid economic growth is not in contention.
4. Strong institutional, regulatory and supervisory frameworks to enhance capital market operations, particularly those that will guarantee its stability in the efficient mobilisation of funds should be put in place.

References

- Arestis, P., Demetriades, P.O. and Luintel, K.B. (2001). Financial development and economic growth: The role of the stock markets. *Journal of Money, Credit and Banking*, 33(2):16-41.
- Ayanwale, A.B. (2007). FDI and economic growth: Evidence from Nigeria. The African Economic Research Consortium, Research Paper No.165.
- Bollerslev, T. (1986). Generalised autoregressive conditional heteroskedasticity. *Journal of Econometrics*, 31(3): 307-327.
- Campbell, J. (1996). Consumption and the stock market: Interpreting international experience. NBER Working Paper, 5610.
- Claessens, S. and Sudarshan, G. (1993). Portfolio investment in developing countries. World Bank Discussion Paper, 228.

- Cuthbertson, K. and Nitzsche, D. (2004). *Quantitative Financial Economics* (2nd ed.). West Sussex: John Wiley and Sons Limited.
- Delong, J., Shleifer A., Summers L. and Waldmann R. (1989). The size and incidence of the losses from noise trading. *Journal of Finance*, 44: 681-96.
- Engle, R.F. (1982). Autoregressive conditional heteroskedasticity with estimates of the variance of UK inflation. *Econometrica*, 50: 987-1008.
- Engle, R.F. and Ng, V.K. (1993). Measuring and testing the impact of news on volatility. *Journal of Finance*, 48: 1749-1778.
- Graham, E.M. (1995). Foreign direct investment in the world economy. *IMF World Economic and Financial Survey*, 120-135.
- Granger, C.W.J. (1969). Investigating causal relationships by economic models and cross-spectral methods. *Econometrica*, 37(3): 424-438.
- Krainer, J. (2002). Stock market volatility. *FRBSF Economic Letter, Western Banking*, 32:1-4.
- Léon, N.K. (2007). Stock market returns and volatility in the BRVM. *Finance and Banking Review*, 1(1): 34-45.
- Levine, R. and Zervos, S. (1996). Stock market development and long run growth. *World Bank Economic Review*, 10(10): 323-339.
- Lipse, R.E. (1999). The role of foreign direct investment in international capital flows. NBER Working Paper No. 7094.
- Mala, R. and Reddy, M. (2007). Measuring stock market volatility in an emerging economy. *International Research Journal of Finance and Economics*, 8: 127-133.
- Mishra, D., Mody, A. and Murshid, A.P. (2001). Private capital flows and growth. *Finance and Development*. June, 2-5.
- Obadan, M.I. (2004). *Foreign Capital Flows and External Debt: Perspectives on Nigeria and the LDC group*. Lagos: Broadway Press Limited.
- Obadan, M.I. and Adegboye, A.C. (2016). Globalization, financial sector dynamics and economic development. Paper presented at the annual conference of the Department of Finance, University of Lagos, 22-23 February.
- Osaze, B.E. (2011). The specificities of value melt-down in the Nigerian Stock Exchange 2008-2010: Some parallax snaps. First professorial endowed lecture series. University of Benin, Nigeria.
- Osinubi, T.S. and Amaghionyeodiwe, L.A. (2010). Foreign private investment and economic growth in Nigeria. *Review of Economic and Business Studies*, 3(1): 105-127.
- Philippe, J. (1997). *Value at Risk: The new benchmark for controlling derivatives risk*. New York: McGraw-Hill.
- Rao, K.S.C., Murthy M.R. and Ranganathan K.V.K. (1999). Foreign institutional investments and the Indian stock market. *Journal of Indian School of Political Economy*, 4: 622-647.
- Sims, C.A. (1981). An autoregressive index model for the US, 1948 – 1975. In: J. Kmenta and J.B. Ramsey (eds) *Large-scale Macroeconometric Models*. Amsterdam: North Holland. 283-327.
- Sims, C.A. (1989). Models and their uses. *American Journal of Agricultural Economics*, 71: 489-494.
- Singh, S. (2009). Foreign capital flows into India: Compositions, regulations, issues and policy options. *Journal of Economics and International Finance*, 1(1): 14-21.

- Starr-McCluer, M. (1998). Stock market wealth and consumer spending. Board of Governors of the Federal Reserve System, Finance and Economics Discussion Paper Series, 98/20.
- Summers, L. (2000). International financial crises: Causes, prevention and cures. *American Economic Review*, 90:1-16.
- Todaro, M.P. and Smith, S.C. (2003). *Economic Development* (8thed.). Asia: Pearson Education.
- UNCTAD (2012). *Globalization and Development: Facts and figures*. New York; UNCTAD.
- World Bank (1996). *World Debt Tables, External Finance for Developing Countries (1)*. Washington, DC: World Bank.
- World Bank (1997). *Global Development Finance (1)*. New York; World Bank.