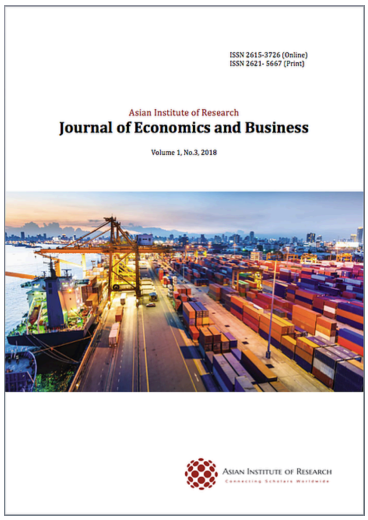

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Financial Contagion and Its Impact on the Nigerian Stock Market

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Abstract
The integration between markets is becoming tighter due to increased international financial transactions among countries. Following the emergence of globalization and integration of market, researchers have observed that during the periods of market turmoil the correlation between international stock markets increased significantly, while some countries reap from the transient turmoil, the LDCs have suffered adverse loses in their investment portfolios. The paper aimed at determining the effect of the expansion of selected foreign stock markets on the Nigerian Stock market using the Bayesian VAR model. The result of the study showed a negative effect of contagion from the American and Chinese market on the Nigeria market, with the effect being magnified following the drift in currency exchange rate. The analysis of the impulse response function of the British economy and exchange rates revealed that there were the major causes of contagion in the Nigerian stock market. Nigerian economy is susceptible to the dynamics of fluctuation arising from the British and Chinese currency exchange. To hedge against contagion effects, adequate trade balance must be pursued between Nigeria and Britain while focusing on/taking advantage of the openness of trade with the Chinese economy, as their market seems fairly stable compared to the British economy.

Key Words: Financial Contagion, Exchange Rate, Impulse Response Function, Market Capitalization, Variance Decomposition

INTRODUCTION

In any economy, the essence of the stock market is adjudged through its role in evaluating and facilitating economic activities. Essentially, the stock market around the globe is concerned with the act of mobilizing and channeling scarce resources to potential funds users. The fundamental basis for the establishment of stock markets is primarily for developmental purposes and a window for business organizations to access the required funds in order to promote the effective and efficient allocation of funds for investment and expansion. Stock markets also help in investment risks reduction through trade in equity and its critical role in facilitating economic activities in most countries (Yartey & Adjasi, 2007).

In some developing countries, financial markets have rapidly grown over the past decades as a result of innovations such as market integration, information technology advancement, globalization, and deregulation. During this time the world over, they have been growing integration witnessed amongst financial markets and

this has necessitated the debate regarding the linkages between stock market returns and macroeconomic variables.

Market integration is seen as a situation where the existence of obstructions such as tariffs, transaction costs, taxes and legal restrictions against the trade in equity portfolio and foreign assets are eliminated. Though market integration has not fully been achieved, the global economic convergence has caused economies over the world to be sensitive to the happenings in other economies (the contagious effect). As claimed by many authors, the existence of policy coordination and strong economic ties within economies can link their stock prices indirectly over time. Also, stock markets development is purported to enhance the degree of integration among them (Masih & Masih, 2002).

Dimitriou, Kenourgios, and Simos (2013) revealed that the global financial crisis had the most damaging effect on economies, worse than that of the great depression of 1929 because of cross-market linkages. One remarkable distinguishing outcome of these predicaments was how a shock in one country was swiftly transferred from one financial market to another around the world (Forbes & Rigobon, 2002). The connections between the stock market and financial markets, in general, resulted in an increase in systemic risk between countries as correlations significantly increased between markets beyond any fundamental linkages and phenomena generally known as market contagion (Kenourgios, Samitas & Paltalidis, 2011).

According to Forbes and Rigobon (2002), market contagion is a critical increase in cross-market linkages after a shock to an individual country or more has taken place. Recently financial markets research has refocused their efforts to understanding the nature of linkages across markets, especially after the financial turmoil. The recent global financial crisis that had its origin from United States of America (USA) was adjudged to have affected with varying spill-over impacts on capital markets across the globe with pervasive and intensive financial turbulence between 2007-2009.

Forbes and Rigobon (2001) argued that the answer to whether linkages between financial markets in different regions have grown stronger between financial markets is critical in proffering answers to the concerns of international and financial economies in three major areas: the effective diversification of global portfolio in order to attain risk reduction, the micro-prudential effectiveness in the regulation of banks and the pragmatic significance of contagion models that depended upon the adjustment in the behavior of investor behavior. Theoretically, the volatility in consumption through huge opportunities to diversify risks as a result of the integration of financial markets revealed contrary evidence.

The expected benefits from risk diversification could be minimal or eroded as a result of the correlated increases in asset prices in turbulent periods; as such, the scenario portrays a critical policy implication in the form of increased interdependence during crises and stronger global financial institutions coordinated intervention in such times. This is what causes the scenario often regarded as "shift contagion," hence, contagion is viewed as an extraordinary event that causes a departure from the linear correlation that was considered stable. On this basis, this study will focus on a framework that complements standard contagion spillover effects by examining how selected external stock markets affect stock market performance in Nigeria.

The growing rate of international financial markets and the presence of exchange rate regimes and monetary policy flexibility sort to explain an in-depth study on the association between the behavior of stock markets and macroeconomic variables. Couple with the global financial crisis, economies have witnessed an increase in the global transmission of stock prices, and invariably this may have affected the real economy of most remote countries.

Given the relationship of Nigeria with some countries in Europe, America and Asia through exports, imports, portfolio investments and foreign direct investment the global financial crises may have caused contagion in the Nigerian economy. This paper, therefore, seeks to examine interlinkages among stock markets and cross-market volatility transmission. Hence, the desire of this study to investigate the effect of financial contagion on the Nigerian stock market performance.

LITERATURE AND THEORETICAL ISSUES

This section will attempt to elucidate on the theoretical issues surrounding financial development, market integration and financial contagion.

FINANCE DEVELOPMENT THEORY

The integration of the stock market plays a fundamental part in the development of economies world over. The theory of finance development holds that a stock market that is considered as being integrated is more efficient than stock markets that are segmented. According to Errunza and Losq (1985), although the reverse could be the outcome, the models of asset-pricing could determine market integration in responding less to local factor than global events. Empirically, undoing restrictions on investment, global risk sharing is allowed via integration which would have a long-term effect on the growth of the economy by altering savings rates and the allocation of resources (Obstfeld, 1995). Several economies have experienced global downturn, especially in developing countries. The 1997-1998 financial crisis badly hit the Asian economies after decades of high growth. Government effective and active policies in tune with foreign trade openness and significant technological investments aided the Asian economies to overcome the crisis successfully. Unlike the Asian crisis of 97/98 and the 1980s Latin American debt crises, the 2007-2009 global financial crisis started in the advanced economies, and the advanced economies were worse hit than the developing ones. However, the extent of the financial crisis raises the concerns about the possible twin impact of the crisis on developing economies.

LITERATURE ISSUE

Empirical studies such as Riman, Offiong and Ibi (2014) and Ncube (2012) examined financial integration and its possible effects on the economies of developing countries in order to ascertain if which aspects are more exposed to risk and the extent to which risk is spread out to developing markets from the developed ones. According to Forbes and Rigobon (2002), to measure the possible effect of financial integration, there must be the adaptation of extant literature on volatility contagion and transmission.

In order to establish the financial linkages between the EU and US and the Middle East and North Africa region (MENA oil or non-oil producing countries) financial markets, Neaime (2012) employed the GARCH-family models (ARCHM and T-ARCH) and VAR analysis so as to model the conditional volatilities within the respective stock markets. In a related study, Agyei-Ampomah (2011) investigated the association between ten (10) African stock markets from 1998–2007 using decomposing volatility index of the domestic stock market and found that African stock markets are separated and segmented and separated from international markets even in the presence of the recent structural adjustments.

Due to contagion associations, it is no longer strange how American and European market shocks may have influenced the performance of the Nigerian stock market. The issues of contagion are linked with the transmission of the movement of financial variables from one market to another (Tella, 2009). According to Dornbusch, Park, and Claessens (2000), contagion is seen as a substantial increase in cross-market linkages after an individual economy or group of economies stock. Tella (2009) held that increased financial market international integration, including the capital market, has made available a cogent reason for the suspicion that in both developing and developed stock markets, there exist both positive and negative influences.

The integration between markets is becoming tighter due to increased international financial transactions amongst different countries (Rezayat & Yavas, 2006). The opening up of financial markets as a result of financial liberalization coupled with the re-emergence of the stock market and forex crises caused the question of global integration of the financial markets' especially in the context of risk management and asset allocation (Bakar & Masih, 2014). The foundation of this investigation is the theory of investments portfolio diversification and financial market contagion/integration. The financial market contagion/integration is defined by Menezes, Andreia Dionísio and Hassanic (2010) as the extent to which price and returns are closely related and the causality between them over time. There are many theories trying to model and enlighten the causes of the association in international financial market returns over time.

Kaminsky, Reinhart, and Vegh (2003) proposed a couple of scenarios that try to explain the integration between markets. They believe that the issue of irrational exuberance by investors was the main factor that will affect how money and capital markets operate and thereby increasing volatility. Other models which were emphasized on were through trade or finance. The more appealing theory is one in which they suggest that the way in which this phenomenon is transmitted is a consequence of global diversification of investments within a context of limited information.

The essence of global diversification has been demonstrated theoretically and recognized empirically for decades. The pioneering work on the theory of portfolio diversification was done by Markowitz (1959). This theory suggests that risk can be significantly reduced through proper asset allocation, where unsystematic risk can be eliminated through diversification. Unsystematic risk can be reduced significantly by formulating a portfolio of securities with negative correlation. This means that to maximize return for every unit of risk you need to combine assets in a portfolio which are not highly correlated with each other. Recently, the analysis of correlations within the international market context has been of great importance regarding cross-country diversification and allocation of the optimal portfolio.

There are various studies that were carried out on financial markets contagion (Aloui, Aissa, & Nguyen, 2011, Samarakoon, 2011, Bakar & Masih, 2014). Some of these researchers investigated the process of time-varying correlations amongst different financial markets during the period of crisis emanating from a shock from other markets. Dooley and Hutchison (2009) in their study found out that the United States of America (US) financial crisis has no aftermath effect on developing economies. Yiu, Alex, and Choi (2010) investigated the dynamics of cross-market correlations in developed markets and developing markets. They revealed that there was significant evidence of contagion between the US and the Asian markets during the 2007/9 global crisis. Yiu et al. (2010) further indicate that there is no integration between the American financial markets and Asian financial markets in crisis periods.

More recently, Loh (2013) indicates that markets have become more integrated particularly the stock markets. In line with Loh (2013), Ding and Pu (2012) report that contagion increased in line with the increase in volatility coupled with deteriorating capacity on owners' obligations as they fall due. The correlations were found to be persistent in both upward and downward trending markets. In the study by Kenourgios, Semitas, and Paltalidis (2011) where they examined the BRIC countries, they also found the effects of contagion from countries that were in turmoil to fairly stable markets during periods of financial market crisis. Among the other recent study on stock market contagion are Horvath and Petrovski (2013), Kenourgios (2014), Luchtenberg and Vu (2015). These researchers observed that during the periods of market turmoil the correlation between international stock markets increased significantly. The more interesting revelation was proposed by Ding and Pu (2012) who pointed out that there has been a dramatic change in the correlation structure before and after the crisis leading to a suggestion that financial market integration should be conceptualized differently after the 2007/9 global financial crisis. Substantial cross-market inter-linkages among international stocks will inevitably result in spillover effect to other markets.

Chiang, Jeon, and Li (2012) asserts that it is financial market liberalization that allowed for the connection of the Chinese markets to the whole world and these reforms will allow spillovers from China to the international markets. In their study of emerging and developed market, Ahlgren and Antell (2010) found no evidence of contagion rather they found evidence of short-term linkages during times of crisis. Contrary to the existence of short-term interlinkages, Awokuse, Chopra, and Bessler (2009) show that the substantial surge in market connections due to globalization and liberalization of financial markets came to a halt, in fact, there was some structural decrease in some of the markets during the Asian financial crisis of 1997.

Xu and Hamori (2012) suggest that the stock market inter-connection between the BRICs and the US sapped in both the average return and the volatility in times of market turmoil. Horvath and Petrovski (2013) confirm the same findings suggesting that the deterioration in stock market correlations during trending and prolonged bearish markets could be a consequence of decreased market capitalization.

In the analysis of US financial shocks, Samarakoon (2011) reports the existence of bi-directional, yet contagion, interdependency and asymmetric effect on emerging markets. Specifically, the study indicates the interdependence and contagion between the US and developing financial markets while the frontier markets and the American markets are also cointegrated. Kenourgios and Padhi (2012) employed the vector error correction analysis to examine the contagion effects on emerging markets during the Russian and Asian crises as well as the subprime crisis. Their findings show that there is both short and long run specifics only amongst emerging markets during Russia and the Asian crises. They then indicate that financial markets tend to be significantly integrated in times of trouble.

With the immediate pronouncement of the USA financial crisis in July 2008, the activities of the stock market in Nigeria began declining drastically. It became obvious that investors began to withdraw their investments and cause the stock price to drop continually and the net capital inflows dropped massively as the crisis began. Using the ordinary least squares method, Yakubu and Akerela (2012) found out from their study of the impact of the global financial crisis on the performance of the Nigerian stock exchange and submitted that there exists no significant effect on the Nigerian stock exchange.

Informed by literature reviewed in this study, one can conclude that there is almost a conclusive determination of the nexus between emerging and developed markets. However, studies that examine contagion in African markets are still rare. The analysis of inter-connection between African stock markets is meager despite the importance of understanding how financial markets are integrated particularly in a generation where the crisis in financial markets is persistent.

The mixed results in the study of financial markets contagion were dictated by the ever-changing correlation between financial markets through time. Mandeleno and Pinho (2012) indicate that the correlation between markets changes over time as the financial crisis occurred at different time periods. There are time variation and scale variation in correlation across the different times of the financial crises (Loh, 2013). Ozdemir and Cakan (2007) found that there is a significant two-way non-linear cointegrating association between the American markets and other markets. There is a plethora of evidence that indicates to the fact that stock markets, in general, are correlated in terms of price level and returns. The linkages have been shown to change over time where strong correlations are reported in times of crises.

In related studies in Nigeria, Olowe (2009) using the EGARCH model assessed the response of stock volatility and its return in Nigerian stock market and discovered that they are free from the severity of financial crisis as a result of the country being less exposed to the international community. According to Mobolaji (2008), while the banking industry in Nigeria is said to have less exposure to global markets, many banks with off-shore credit lines started enjoying outright cancellation or reduction credit lines in that most international banks were badly hit by the crisis already, hence, causing a weak bank credit portfolio.

SUMMARY OF LITERATURE AND STUDY GAP

Most studies that attempted to analyze the relationship between financial contagion and stock market performance from the empirical review were biased towards the adoption of the GARCH-family models to determine the conditional volatilities within the respective stock markets. This approach, therefore, failed to address the effect of techniques used in determining the contagious effect (economic shock transmission) since the GARCH is best suitable in assessing the effect of information in the markets. Based on this gap, this study adopted the Bayesian VAR model in order to capture the contagion effects between changes in foreign stock markets and their effects on the Nigerian stock market. The Bayesian VAR model is considered relevant in the use of innovations technique (impulse response function) in measuring market responses to a given shock. In summary, others studies have tested economic shock transmission by employing the commonly used ARCH-GARCH approaches. However, this study decided to adopt and use the impulse response function in measuring the transmission shocks. Besides, this study decided to use two developed economies and an emerging economy to see its influence on the Nigerian stock market.

METHODOLOGY

This study employed the autoregressive (AR) model in order to accommodate the contagion effect from economies like U.S.A, Britain, and China on the Nigerian stock market before, during and after the 2007-2009 global financial crises. The AR methodology makes room for flexible in evaluating the association between variables between and within financial markets. This study builds a Bayesian VAR (BVAR) model which incorporate small open economy assumptions. The rationale for adopting the Bayesian VAR (BVAR) is that the BVAR model is to solve the problem of the degrees of freedom which is mostly associated with the conventional AR approaches. In this study, a BVAR model of the Nigerian stock market was developed with block exogenous foreign stock markets with a number of restrictions on the contemporaneous relationships in the model. In particular, the model seeks to capture the contagion effects between changes in foreign stock markets and their effects on the Nigerian stock market.

$$MCAP = F(BDOW, ADOW, CDOW, EXCR) \quad (1)$$

Where: MCAP (Nigerian stock market capitalization), BDOW (British stock market index), ADOW (American stock market index), CDOW (Chinese stock market index), EXCR (nominal exchange rate).
From the model in equation (1), the vector ordering of our variables are:

$$\log MCAP = a_0 + a_1 \log BDOW_{t-i} + a_2 \log ADOW_{t-i} + a_3 \log CDOW_{t-i} + a_4 \log EXCR_{t-i} + U_t \quad (2)$$

Given our vector variables in equation (2), the structural identification model of 4 by 4 variable case are specified with matrix A being a lower matrix:

$$A = \begin{bmatrix} 1 & 0 & 0 & 0 \\ a_{21} & 1 & 0 & 0 \\ a_{31} & a_{32} & 1 & 0 \\ a_{41} & a_{42} & a_{43} & 1 \end{bmatrix} \begin{bmatrix} lnbdow \\ lnadow \\ lncdow \\ lnexcr \end{bmatrix} = \sum \epsilon_t = \begin{bmatrix} \epsilon_{1t}^{lnbdow} \\ \epsilon_{2t}^{lnadow} \\ \epsilon_{3t}^{lncdow} \\ \epsilon_{4t}^{lnexcr} \end{bmatrix}$$

DATA ANALYSIS AND DISCUSSION OF FINDINGS

The results of the analysis and their discussions will be presented in the following section.

UNIT ROOT TEST

The unit root test was carried out using the Augmented Dickey-Fuller (ADF) test in order to establish an integration order among the variables in the model. By so doing, the stationarity of the series holds that the ADF test statistic values must be greater than its respective critical value at one percent, five percent and ten percent level of significance. From the ADF results in table 1, none of the variables of interest were found to be stationary at levels. However, when all the variables were differenced once, they were all found to be stationary at first difference.

JOHANSEN CO-INTEGRATION TEST

Having known that the series was integrated of order 1(1); suggesting the absence of a unit root, hence, there was again the need to determine if there shall exist a long run association between the variables. In order to establish the long non-equilibrium association, the study employed the Johansen and Jesulius (1990) multivariate co-integration approach based on trace and maximum eigenvalue test. The result of the trace and maximum eigenvalue test both indicated that no cointegrating equation exists at five percent level. Based on the trace test, therefore, the study concluded that there was no long-run relationship between the variables in the model.

Bayesian VAR impulse response function

The impulse response functions analysis was conducted using the one standard deviation shocks to the innovations. There are the time paths of one or more variables given a one-time shock to a set of variables. Impulse responses are the dynamic equivalent of elasticities. However, it is not the right thing to do by interpreting the coefficient estimates of the BVAR model variables directly.

With the stationarity of the study variables at optimal lags based on Akaike Information Criterion (AIC), the study presents the impulse responses of the relationships between the Nigerian stock market and the contagion effect from selected foreign stock markets from Fig.1-4.

Innovation to the Nigerian stock market performance (MCAP) arising from a shock to each of the selected foreign stock market variables revealed that increase in British stock market (BDOW) exerts a continuous decreasing positive shock on MCAP throughout the ten years into the future. This implies that the Nigerian stock market would over the years witness a declining performance in response to volatility from the British stock market. This finding does not align with Olowe (2009) who similarly investigated how stock return reacted to volatility arising from British stock market. Olowe had earlier observed that the Nigerian stock market had no severity of external crisis as a result of the low exposure the Nigeria stock market to global economies.

Further analysis of the result revealed that the American stock market (ADOW) has a positive impact on the Nigerian stock market (MCAP). The MCAP responded positively to shocks arising from ADOW. Innovations to MCAP arising from shocks from ADOW began from the second and third period saw MCAP responding positively with an increase from 0.012068 to 0.013768 respectively. However, from the fourth period throughout the tenth year, MCAP responded positively in a decreasing magnitude of shocks from the American stock market in the future. This finding is consistent with the study of Dooley and Hutchison (2009) who also observed that the United States of America (US) financial crisis has no repercussion on emerging markets. Contrarily, in the analysis of US financial shocks, Samarakoon (2011) reported the existence of bi-directional, yet contagion, interdependency and asymmetric effect on emerging markets. Specifically, the study indicates the interdependence and contagion between the US and developing financial markets while the frontier markets and the American markets are also cointegrated. Furthermore, substantial cross-market inter-linkages among international stocks will inevitably result in spillover effect to other markets.

Similarly, the response of MCAP to a shock from the Chinese stock market (CDOW) followed after the pattern of the American stock market ADOW. The MCAP from CDOW is positive and varying in magnitude. The innovations from CDOW within the second and third period saw MCAP responding positively with an increase from 0.006912 to 0.007425 respectively. However, from the fourth period throughout the tenth period, MCAP responded positively in a decreasing magnitude of shocks from the Chinese stock market in the future. This finding collaborates with Chiang, Jeon and Li (2012) who asserted that it is financial market liberalization that allowed for the connection of the Chinese markets to the whole world and these reforms will allow spillovers from China to the international markets.

As expected, the response of the MCAP to shocks arising from drift in the foreign exchange rate (EXR) was observed to be negative throughout the selected periods. A plausible explanation for this response further revealed the overdependence of the Nigerian economy on foreign sustenance (import, foreign debts, and poor production base). This finding confirms Ding and Pu (2012) reports that contagion increased in line with the increase in volatility coupled with the deteriorating capacity to owner obligations as they fall due.

Variance decompositions

This showed the share of the h-periods-ahead forecast error variance of a series which could be accredited to another series. The nature of the variance decomposition signposts the Granger causality pattern between the series in the BVAR model such that it aided the transition to understanding from forecasting. The variables are in no particular ordered or sequence.

Considering the result of the variance decompositions as shown in table 5, the left-hand column and the one, five and ten periods into the future percentages can be credited to individual series shocks in the remaining columns is reported. The sum of the rows amounts approximately to 100% in that forecast error variance is expected to be explained by the series in the model. In a Granger sense where a series is considered exogenous, a greater aspect of such series' error variance is expected to be explained by its own innovations. By application, it's almost impossible to make a distinction between a series with minor predictive value and one that has no predictive value; rather, their magnitudes could be a useful remedy in predictions.

The variance decompositions result revealed that considering a 10-period forecast limit, about 68.97% forecast error variance in MCAP was attributed to its own innovations, hence, MCAP is assumed not to be exogenous in that other series like CDOW, BDOW, ADOW, and EXR jointly forecasted MCAP. The Nigerian stock market capitalization was found to be stable at period one to the next, and no other series showed any figure in its first period ahead of the forecast. The CDOW seems more important than the rest of the variables at influencing MCAP the horizon of forecasting.

The CDOW revealed an exogenous pattern as a result of the 81.03% error variance that was attributed to its own innovations. The exogenous behavior of CDOW is revealed in its response to innovations in MCAP between the first, fifth and tenth-month horizon while the rest of the variables were in the fifth and tenth month only. Obviously, MCAP seems more important than the rest of the variables at influencing CDOW in the horizon of forecasting throughout the periods.

The BDOW revealed an exogenous pattern as a result of the 16.51% error variance that was attributed to its own innovations. The BDOW series was highly explained by the interactions of other series during the forecasting periods. For instance, the CDOW series was the most influencing series at both shorter and longer horizons (1 to 5 and 5 to 10) than the other variables in forecasting BDOW.

The ADOW revealed an exogenous pattern as a result of the 40.51% error variance that was attributed to its own innovations. The ADOW series was highly explained by the interactions of other series during the forecasting periods. Similarly, the CDOW series was the most influencing series at both shorter and longer horizons (1 to 5 and 5 to 10) than the other variables in forecasting ADOW.

Lastly, the EXC revealed an exogenous pattern as a result of the 85.69% error variance that was attributed to its own innovations. The EXC series was not highly explained by the interactions of other series during the forecasting periods. The obvious differences in the EXR variable revealed that, at the first month, BDOW seems much more "exogenous" than the other variables (1.11%). However, at longer term (5 and 10 periods) forecasts of EXR, the ADOW innovations explained the greater aspects of the forecast error variance explained by EXR than other innovations.

CONCLUSIONS

The BVAR model imposes a block exogeneity assumption were Nigeria is assumed as an open economy with the U.S.A, Britain, and China markets. Notably, the contagion effect of market deregulation and globalization on the Nigerian stock market was shielded to showcase the obvious transmission of global contagion shocks. As such, the financial contagion effect measures, as represented by the shocks from foreign markets and exchange rate variable were restricted in the model at first lag, and the model was analyzed and seen to be in line with contemporary studies and economic theory.

The restrictions maintain that arising from a shock to each of the selected foreign stock market variables revealed that, increase in British stock market (BDOW) exerts a continuous decreasing positive shock on the Nigerian stock market (MCAP) throughout periods into the future. On the other hand the American stock market (ADOW) impacted on the Nigerian stock market (MCAP) positively; innovations arising from shocks began from the second and third period and saw MCAP responding positively with an increase, however, from the

fourth period throughout the tenth year, MCAP responded positively in a decreasing magnitude to shocks from the American stock market in the future.

Similarly, the Chinese stock market (CDOW) followed after the pattern of the American stock market ADOW. The MCAP from CDOW is positive and of varying magnitude. As expected, the response of the MCAP to shocks arising from drift in the foreign exchange rate (EXR) was observed to be negative throughout the selected periods. The variance decompositions result revealed that considering a 10-period forecast limit, about 68.97% forecast error variance in MCAP was attributed to its own innovations, hence, MCAP is assumed not to be exogenous in that other series like CDOW, BDOW, ADOW, and EXR jointly forecasted MCAP. The Nigerian stock market capitalization was found to be stable at period one to the next, and no other series showed any figure in its first period ahead of the forecast. The CDOW seems more important than the rest of the variables at influencing MCAP the horizon of forecasting. The findings from this study gave impetus to the conclusion that, no individual economy could cause a contagion effect on the Nigerian stock market. However, where many countries are involved, the presence of financial contagion is visible. Hence, as the Nigerian stock market gets more and more globalized and liberalized, the contagious effects will be present in the Nigerian stock market.

RECOMMENDATIONS

The following recommendations should be considered:

1. It is critically important that Nigeria improves its investment in infrastructure as this would enhance competitiveness and diversification in the private sector activities. This should reduce the over-dependence on the British economy.
2. In engaging deliberate trade-balance, there is a need for re-negotiations of certain bilateral deals with the British economy especially as it concerns the stock market development
3. There is need to focus on greater trading and openness to developing economies like China whose markets seem fairly stable as compared to the highly industrialized economies like the USA and Britain .
4. The macroeconomic policy of government should be domestic growth driven tailored towards import reduction and export expansion. This will strengthen the Naira against foreign trading partners.

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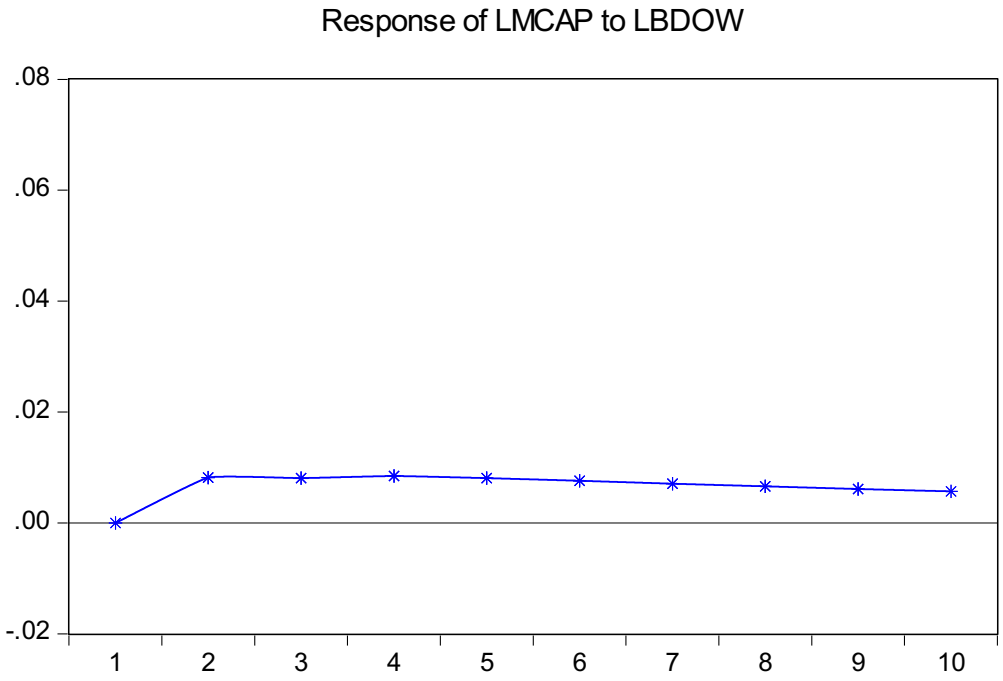
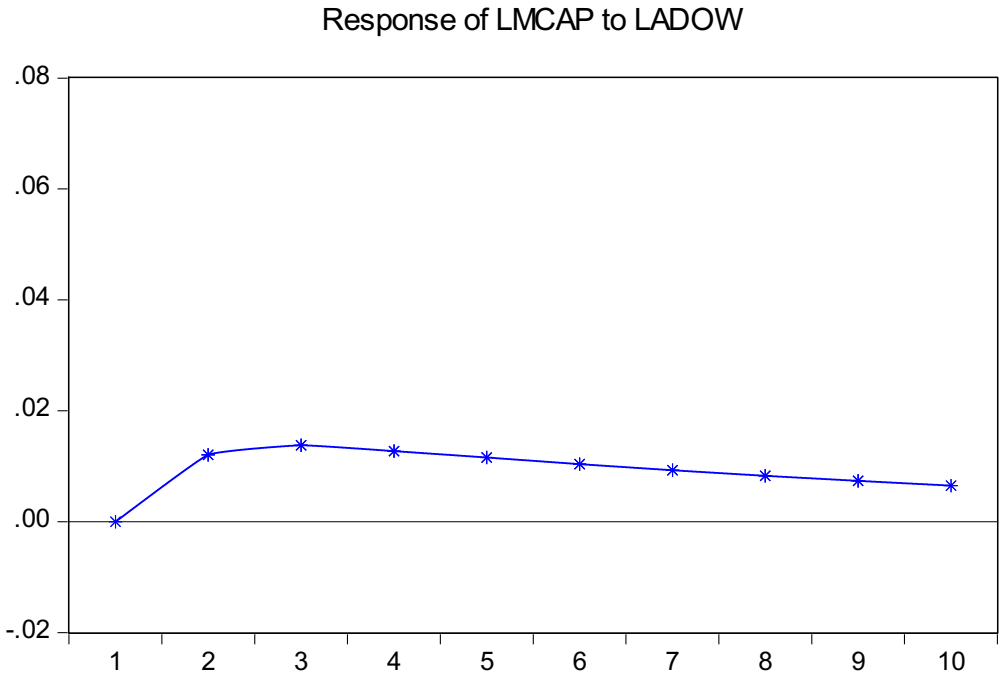
APPENDICES

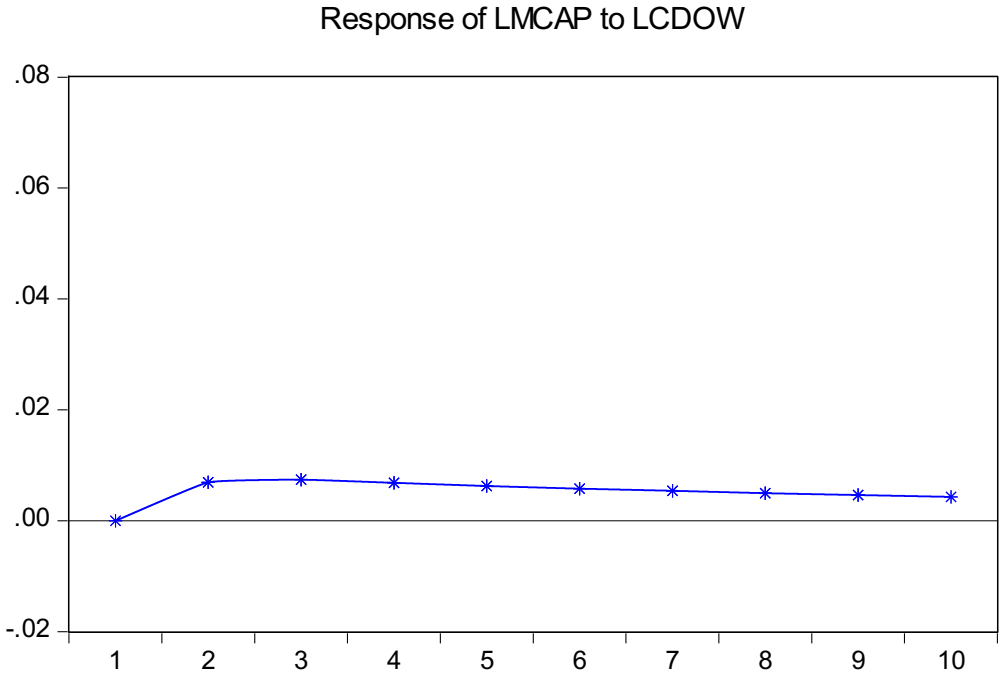
GRAPH SHOWING MCAP RESPONSE TO SHOCKS FROM BDOW



GRAPH SHOWING MCAP RESPONSE TO SHOCKS FROM ADOW



GRAPH SHOWING MCAP RESPONSE TO SHOCKS FROM CDOW



GRAPH SHOWING MCAP RESPONSE TO SHOCKS FROM EXCR

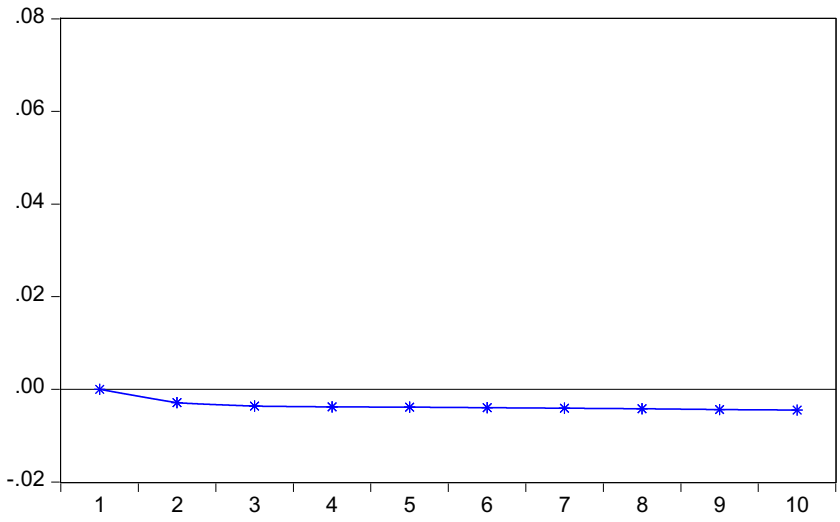


TABLE 1
Unit root test using the Augmented Dickey-Fuller (ADF) statistics

Variables	**At Level**	**At 1st Difference**	**Order of integration**
MCAP	-2.0558	-8.9231	I(1)
CDOW	-2.7793	-8.7557	I(1)
BDOW	-2.2879	-9.9500	I(1)
ADOW	-1.3098	-14.0822	I(1)
EXCR	2.1319	-6.2230	I(1)

TEST OF CRITICAL VALUES:
1%= -3.5122
5%= -2.8972
10%= -2.5858

Source: Researcher's computation from E-views 10.0

TABLE 2
Unrestricted Cointegration Rank Test (Trace)

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.198854	44.72369	69.81889	0.8396
At most 1	0.133354	26.76497	47.85613	0.8630
At most 2	0.121620	15.17186	29.79707	0.7688
At most 3	0.040020	4.668114	15.49471	0.8430
At most 4	0.016648	1.359803	3.841466	0.2436

Trace test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: E-View 10.0 Statistical software

TABLE 3
Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.198854	17.95871	33.87687	0.8797
At most 1	0.133354	11.59311	27.58434	0.9478
At most 2	0.121620	10.50375	21.13162	0.6964
At most 3	0.040020	3.308311	14.26460	0.9241
At most 4	0.016648	1.359803	3.841466	0.2436

Max-eigenvalue test indicates no cointegration at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Source: E-View 10.0 Statistical software

TABLE 4
SHOWING MCAP RESPONSE TO SHOCKS FROM ADOW, BDOW, CDOW AND EXCR

Response of LMCAP: Period	LMCAP	LBDOW	LADOW	LCDOW	LEXCR
1	0.069886	0.000000	0.000000	0.000000	0.000000
2	0.041315	0.008185	0.012068	0.006912	-0.002877
3	0.036644	0.008094	0.013768	0.007425	-0.003625
4	0.032622	0.008459	0.012714	0.006811	-0.003770
5	0.029619	0.008087	0.011552	0.006276	-0.003877
6	0.026987	0.007604	0.010352	0.005798	-0.003986
7	0.024618	0.007085	0.009258	0.005372	-0.004102
8	0.022461	0.006584	0.008257	0.004982	-0.004221
9	0.020490	0.006115	0.007346	0.004624	-0.004341
10	0.018688	0.005682	0.006514	0.004294	-0.004459

TABLE 5
SHOWING VARIANCE DECOMPOSITIONS

VARIABLE	PERIOD	MCAP	CDOW	BDOW	ADOW	EXR
MCAP	1	100.00	0.00	0.00	0.00	0.00
	5	83.88	9.97	1.47	4.22	0.43
	10	68.97	23.24	2.78	4.63	0.34
CDOW	1	6.54	93.45	0.00	0.00	0.00
	5	8.56	86.46	3.81	0.32	0.82
	10	11.56	81.03	4.45	1.10	1.84
BDOW	1	6.55	46.38	47.06	0.00	0.00
	5	13.38	63.01	23.17	0.13	0.28
	10	16.47	66.36	16.51	0.42	0.21
ADOW	1	1.10	17.28	0.36	81.24	0.00
	5	13.26	22.77	0.52	55.69	7.73
	10	17.15	26.33	0.51	40.31	15.68
EXR	1	0.01	0.70	1.11	0.43	97.74
	5	0.09	0.48	2.45	7.41	89.55
	10	0.05	0.28	3.14	10.81	85.69