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Abstract: The risk of global recession occasioned by the Global Economic Meltdown (GEM) heightened the volatility of commodity prices, which is the mainstay of most developing countries Nigeria inclusive. This paper evaluates the implications of the global economic meltdown on the Nigerian Capital market development. Data for the study are mainly secondary in form of annual aggregate time series data of market share index as the dependent variable and exchange rate, interest rate, inflation rate, unemployment rate as independent variables with a Dummy to represent the period of economic crisis. Ordinary least square (OLS) of multiple regressions was used to analyze the data into econometric model while F-statistics was used to test for the formulated hypotheses. Among the study findings are that the global economic meltdown has a negative effect on the Nigerian capital market development. On the basis of the findings, the study recommend fiscal policy formulation in form of tax regime, subsidies, grant and subvention as means for sustaining productive activities within the Nigerian economy. It also recommend that employers when it becomes imperative should adopt wage reduction as a means of cutting cost rather than retrenchment as a panacea for managing the pains of recession.

Keywords: GDP; Economic meltdown; Market Share Index; Capital Market; Fiscal policy.

I. Introduction

Global economic meltdown is a topical issue that connotes near catastrophic circumstances necessitating scarcity or unavailability of otherwise available exploitable resources. It is also characterized by severe closures of companies, loss of jobs, crash of share prices, and squeeze in consumer credit facilities with crumbling mortgage facilities among others in developed economies as well as in developing economies, Nigeria inclusive, where the effects were exhibited in the form of crash in share prices, dwindling revenues, and declining dividends from foreign direct investments. (Gbeneny, 2014).

Global financial crisis began in July 2007 with the collapse of Lehman Brothers and other Wall Street icons (Datt, 2009), with growing recession affecting the US, the European Union (EU) and Japan. It subsequently resulted in large scale defaults in the US housing market as the banks went on providing risky loans without due consideration for adequate security and the repayment capacity of the borrower. The principal source of transmission of the crisis has been the real sector, generally referred to as the ‘Main Street’, especially in the United States where it was first noticeable in the form of creeping recession. The aftermath of this was a loss of confidence by investors in the value of securitized mortgage and liquidity crisis in Europe thus prompting the need for substantial injection of capital into the financial market by the United States Federal Reserve, Bank of England and European Capital Bank. Investment banks also reported decreases in assets as interest rates declined around the world with US and Japan cutting theirs to 0.25% and 0.1% respectively (bbc.co.uk). The integrated nature of capital market all over the world implies a spiral effect in the stock market with effect from the developed countries badly affecting other developing countries hence leading to downturn in the Nigerian capital market.

Financial trade and monetary systems are designed to improve the efficiency of real activity and resource allocation in any nation. Globalization of financial activities between industrialized and developing countries have been associated with economic growth and enhancement of the ability of a developing country to derive global benefits and ameliorate relative vulnerability to the volatility of international capital flows which can significantly affect the quality of both macroeconomic framework and institutions. However, a number of developing countries have been experiencing periodic collapses in growth rate and significant financial crises that have had substantial macroeconomic and social costs (Prasad, Rogoff, Wei and Kose, 2003). The stock market exists primarily as a segment of financial system that facilitate the mobilization and efficient allocation of long term funds with its performance evaluated through the investors’ response. Ekundayo (2002) argues that a nation requires a lot of local and foreign investments to attain sustainable economic growth and development. The capital market provides a means through which this is made possible. However, the paucity of long-term capital has posed the greatest predicament to economic development in most African countries.

The Nigerian capital market in particular has been the hub of economic growth and development given its supports for long-term growth and capital formation. It is also crucial in the mobilization of savings and channelling of such savings to profitable self-liquidating investment. For instance the Nigerian High Commission London in 2007 observed that the Nigerian oil sector accounted for 20 per cent of GDP, 95 per cent of foreign exchange earnings and about 65 per cent of budgeted revenues thus recording an average growth rate of 6.3 per cent between 2006 and 2008.
This was largely fuelled by the growth in the non-oil sector before the sharp decline of 2008 made worse by the global economic meltdown.

According to Osaze (2000) the Nigerian capital market constitutes 20% of the Gross Domestic Product (GDP) while shares of the banking industry constitute about 60% of the total portfolio; thus making the market significantly exposed to equities. The development of the market has been steady for almost a decade and investor’s confidence in the market has been very high. Returns from the market have also accounted for increased attraction of Foreign Direct Inflows into the market and this has impacted positively on the Gross Domestic Product. However, the emergence of the Global economic meltdown within the last seven years starting from 2007 to date has resulted in massive withdrawal of foreign capital many of which were divested with subsequent incidence of capital flight. Behavioural finance has shown that investors are not always rational hence their response could be ‘snake – bite’ which implies that when they experience financial losses they are less willing to take further risk (Suleiman, 2009). This by implication explains the reaction of investors who lost significant value during the American 1929 stock market crash and on this basis refused to invest in stocks up till today.

The Nigerian capital market which was on a bubble before the global financial crisis hit the shores of Nigeria was the first sector to show signs of distress within the economy. Like every other capital markets in the world, the Nigerian economy was a target of speculative pressures from investors who were selling off assets in response to the crisis. For instance, Nigerian Capital Market which posted a market capitalization of $2.94 billion in 1999; with market-listed stocks rose to $63 billion as at June 2007. This reported return on investment in the market was about 350% making the market to be adjudged the best global performing market (Obademi, 2009). However, subsequent crash in the market exposed the vulnerability of banks assets and other business portfolio as well as decreases in the Nigerian Stock Exchange; All - Share Indexes (ASI) which fell by 40% in 2009 and thus becoming the global worst performing equities. Ajakaiye and Fakiyesi (2009) also noted the impact of the crisis on the Nigerian economy and their implication on the capital market, the banking sector, foreign exchange and the balance of payments as well as the real sector. For instance, the Nigerian capital market in 2008 reported reduction in the capitalization by 45 per cent a reversal of growth from 2007, when the market grew by 74.7 per cent; Okereke (2009). The crude oil price (bonny light) decline precipitously from US $147 per barrel in January 2009 prompting the government to seek other source of financing for the 2009 fiscal year, as it cannot rely on earnings from crude oil exports while the value of the Nigerian currency sharply depreciated against the dollar with implication for foreign reserves which dropped from $67 billion in June 2008 to $53 billion in December 2008.

1.2 Statement of the Problem

Interrelationship between the economies of nations engendered by the concept of globalization also heightened the vulnerability of capital market of both developed and developing nation to the vagaries of economic crisis from one place to another. Research findings confirmed that decline in capital market performance in the United State of America (with losses approximately US 2.8 trillion) triggered by loss of investors’ confidence in securitized mortgages have spiral effects on the erstwhile Nigerian capital market driven largely by banking sector equities which reported increases in its market capitalization and All Share Index by over a hundred percent (100%) between 2005 and 2008. The same market by 2009 posted about seventy percentages (70%) decline in most of its performance parameters with attendant negative effects on wealth creation, bank credit creation, corporate liquidation and loss of investor confidence in the market; (George 2009). The extent of the response of capital market development and Nigeria financial economic fundamentals likes exchange, interest and inflationary rate changes to the GEM have not been given academic attention it deserves. Previous academic discuss on the subject matter have at best concentrated on the causes and impacts; Olaniyi and Olabisi (2010), ‘the effect of GEM on financial institutions Andy (2010) and the effects of the crisis on survival of the financial system Obademi (2009).

However given the interrelationship between the declines in the performance parameters and the paucity of findings on Nigerian Capital Market as an institution significant to economic development, bank credit creation and corporate financial health; a motivation to examine whether any form of connection exist between the GEM and Nigerian Capital market becomes imperative.

1.3 Study Objectives and Hypothesis

On the basis of the problems stated above, this study is designed primarily to examine the impacts of global economic meltdown on the Nigerian capital market development. Specifically the study evaluates the impacts of Global Economic Meltdown (G.E.M ) as explanatory variables on the development of the Nigerian Capital Market (N.C.M). While unemployment, exchange, interest and inflation rates volume in the ten year period of 2000 – 2009 provide surrogates for G.E.M , market share index in the same period proxy capital market development. A testable hypothesis is also postulated to determine the implication of GEM on Nigerian capital market in the study period.

An academic discussion on the relationship between economic system and capital market development is ultimately designed to provide an insight into investor’s welfare and economic well being. Studies on the capital market as a channel through which national economies attract foreign direct investment is significant based on its salutary effect on economic development and the possible input into government monetary policy framework. This study will apart
from its possibility of widening academic horizon on the subject matter will also afford inputs into individual business investment decision-making as well as provide inputs for government policy formulation.

II. Literature Review

The theoretical foundation for this study rests on the Efficient Market Hypothesis (EMH), which asserts that market prices fully reflect all available information (Fama, 1970). The early test hypothesized that if prices fully reflected available information, if information arrives randomly, and if expected returns are constant, then stock returns from one period to the next should be statistically independent. Financial economists often classify efficiency into three categories based on what is meant as "available information" the weak, the semi strong and the strong forms. The weak form efficiency exists if security prices fully reflect all the information contained in the listing of past prices and returns. Semi strong form efficiency exists if security prices fully reflect all public information and strong form efficiency reflects all information in security prices thus no investor can earn excess profit trading on public or non-public information. (Steven and Jeffrey, 2012).

According to Kelly (2010), the primary link between the stock market and the economy in the aggregate is that an increase in money and credit pushes up both the GDP and the stock market simultaneously. A growing economy exhibits rising prices with a rise in interest rates engendering increases in stock market prices. A stock market boom is a reflection of a progression and as the economy improves companies makes more money and the stock market value rises in accordance with their intrinsic value. The effect is spiral as development in one nation influences another leading to global equity markets explosive growth with emerging equities experiencing more rapid development hence taking larger share of the global boom. According to the World Bank (2000), foreign investors should have access to well regulated financial markets which will enhance economic growth. The relationship between stock market and economic development was examined by Levine and Zervos (1996) who adopted pooled cross country time series regression and found a positive causal relationship and correlation between stock market performance and economic development. Andy (2010) observed that the global economic meltdown affected the stock market and financial institutions resulting in shortage of cash flow and working capital. Abdul (2008) noted that the original root of the current financial meltdown is in the US which has an estimated GDP of $14billion and contributes about 25% of world output.

The current financial crisis was however believed to have been preceded by over a hundred episodes of financial crisis (CBN 2009) having its antecedent in the Great Depression of 1929 – 1933. It is pertinent to note that 75 percent of these crises had either been caused by capital market or had affected the capital market; for example, Black Monday (1987) and the Asian Financial Crisis (1990). Both regression and correlation analysis between capital market development and economic growth of Romania was examined by Flavia and Petru – Ovidiu (2010); the result shows that capital market development is positively correlated with economic growth but with feedback effect being stronger from economic growth to capital market, an indication that financial development follows economic growth.

Alajekwu and Achugbu (2011) examined the role of stock market development on economic growth using Ordinary Least Square (OLS) technique to assess the correlation between stock market development and economic growth and between stock market indexes. The result shows that stock market turnover ratio (a proxy for liquidity) has a very strong relationship with economic growth while stock market capitalization ratio (a proxy for stock market size) gives very weak negative correlation which is not statistically significant. This implied that increased GDP is expected to cause a decrease in market capitalization and value of traded shares on the Nigerian Stock Exchange.

Aiguh (2013) examine the impact of capital market on Nigeria economic growth adopting the OLS with findings indicating that the capital market has positive and significant impact on the country’s economic growth. It was also observed while contribution of the market to the development of the industrial sector was limited, market capitalization has insignificant effect with the volume of transaction and total listed equities and government stock having significant impact on the economy. The stock price of most banks nosedived and become penny stocks with some going for as low as three naira per share and even less as a result of bad debt, non-performing loans and overvaluation of bank stocks due to fraudulent activity. Apart from the growth rate of 2009 which indicators showed to be 2.8 percent which is about half of the growth rate in 2008 vital source of bank deposit also fell with serious implications that created doubts as to whether Nigerian banks can withstand the impact of the Global Economic Meltdown.

Oke and Ajayi (2012) examine the macro effect of the global financial crisis on Nigerian economy using key economic variables. Error Correction Mechanism (ECM) technique to analyze the time series data from secondary sources. The results revealed a positive relationship between GDP and Foreign Direct Inflow (FDI) with finding indicating negative relationship between GDP and Inflation. The study recommended policy formulation that will reduce inflation, diversify the economy as well as encourage local and foreign investors. Okoye and Nwisienyi (2013) also examined the capital market contributions towards economic growth using the multiple regressions and ordinary least squares estimation techniques with findings indicating a significant relationship between share index, market value and market capitalization on GDP. This implies that the GDP is affected by the movement of the capital market share index, market value and market capitalization hence the study conclude that capital market drives the economy. Available statistics in the Nigerian case also exist that gave FDI through the capital market in 2008 to be in excess of 150.135 billion representing 6.3% of the aggregate turnover, although this was followed by a decline when
compared with ₦256 billion recorded in 2007. According to Aluko (2008), the Nigerian Stock Exchange’s All-share index currently provides a composite picture of the financial health of 233 listed equities with increase listings and financial activity; it attained a value of 57,990 in 2007. It started the year 2008 at 58,580 (with a market capitalization of ₦10,284 million) and went on to its highest value ever of 66,371 on March 5, 2008 with a market capitalization of about ₦12.640 million. By April 2008 it has reported an approximately loss of ₦3.38 trillion or about 26.7%. According to Aiguh (2013) the capital down turn and divestment by foreign investors leading to loss of investors’ confidence and increase in bank non - performing loans facilities are said to be the most severe effects of G.E.M., Key financial institutions which directly depend on the stock market such as the stock broking firms, rating, agencies, investment and asset management’s companies as well as banks that are exposed to these institutions have been experiencing loss of business.

Previous literature on the relationship between GEM and capital market development abound in the academic work of Jenrola and Daisi (2012) which affirmed that the Nigerian Stock Exchange (NSE) downfall is not attributed to Global Financial Crisis (GFC) but to the instability of macroeconomic variables in Nigeria like unfavourable exchange rate, inflationary pressure and problem of insecurity while Oke and Ajayi (2012) revealed a positive relationship between GDP and FDI with a negative relationship between GDP and Inflation. Sanusi (2011) emphasized that the excess exposure of Nigerian Banking Sector to the Capital Market crisis and Oil and Gas bloated the impact of global financial crisis on the Nigerian economy while Yakubu and Akerele (2012) ascribed more significance to the effects of capital inflow and exchange rate impact on Nigerian Capital Market as a result of economic meltdown. Nyong (1997) adopted aggregate index of time series data and find negative but significant correlation. These findings are in line with Osinubi (1998) who employed neoclassical growth model statistics and found weak but significant relationship. Similar conclusion was made by Okpara (2010) who adopted a co - integration approach and found long run growth relationship. Consistently, researchers on the relationship between Economic Growth and GEM have identified the significance of such variables as Market Share, Exchange Rate, Inflation Rate, Interest Rate and Global Economic Effects. Based on these backgrounds, the study adopts similar theoretical foundation to examine the relationship between Nigeria Economic Development and GEM. The study therefore conceptualizes a framework linking the variable as presented below:

Fig. 2.1 A Conceptual Relationship between Global Economic Meltdown and Capital Market Development

### III. Methodology

#### Sources of Data

The study adopts mainly secondary data in the form of aggregate annual time series from 1985 - 2011. The data were sourced from Nigeria bureau of Statistics (NBS), Federal Office of Statistics (FOS), and CBN annual Statistical Bulletins. Other information was obtained from journals, articles and security exchange commission monthly bulletin. The data consist of such specific performance variables as Market share index, Unemployment rate, Interest rate, Exchange rate, and Inflation rate. The reason for using secondary data is to have unbiased result due to the inappropriateness or insufficiency of primary data gathering usage for the analysis of identified study variables.

#### Measurement of Variable

**Dependent/Output Variable:** Capital Market Development (Y)

**Independent/Input Variables:**

- Unemployment rate ($X_1$)
- Exchange rate ($X_2$)
- Inflation rate ($X_3$)
- Interest rate ($X_4$)
- Economic crisis period ($X_5$)

(Dv): Dummy variable was used to differentiate the pre-economic melt-down period (represented as 0) and the economic crisis period (represented as 1).
Model specification:
The relationship between the Response and the Stimuli was captured using OLS regression model as stated below:

\[ Y_i = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + D_v + \varepsilon_i \quad \text{eq. 3.1} \]

Where \( \beta_{0-4} \) are the coefficients of the estimated variables \( X_1, \ldots, X_n \) as defined above and \( D_v \) represent the dummy variable with \( \varepsilon_i \) as the Stochastic term in equation 3.1

Estimation Techniques:
To estimate the model in this study, Multiple Regression Analysis was used in order to reflect the explanatory nature of the variables under investigation. The evaluation criterion is concerned with determining whether or not the estimates are meaningful and statistically satisfactory to our investigation. The model was verified in the following ways:
- A priori criteria which are based on the signs and magnitudes of the coefficients of the variables under investigation.
- Statistical criterion based on the statistical theory of the first order least square test. For this study, the following statistical criteria were used; R-Squared, F-Statistics and P-value.

The \( R^2 \) is concerned with the overall explanatory power of the regression. It is used to determine the goodness of fit of the regression analysis and it shows that the percentage of the total variation of the response that is explained by the stimulus (Adekanmbi and Mutalib, 2012; Gujarati, 2004, Olaniyi and Olabisi, 2011). Thus, the greater the \( R^2 \), the better the goodness of fit.

F statistics is also used to test the overall significance of the regression analysis. In essence, the analysis aims at finding out whether the explanatory variables do actually have any significant influence on the dependent variable.
The decision rule is to reject the null hypothesis if the calculated value is greater than the tabulated value (i.e. Reject \( H_0 \) if \( F_{cal} > F_{tab} \) and vice versa while the p-value is expressed based on the assumption that independent variables are influential if the values are significant at 1%, 5% and 10% respectively and overall \( R^2 \) or adjusted \( R^2 \) is greater than or equal to 50%. Inference is then drawn that the explanatory variables statistically influence the explained variables.

### IV. Results and Discussion

Result of Pooled OLS Regression of the Relationship between Market Share Index and Unemployment rate, Exchange rate, Interest rate, Inflation rate, and Economic crisis period.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>T</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exchange rate</td>
<td>794.81</td>
<td>1.84</td>
<td>0.080</td>
</tr>
<tr>
<td>Interest rate</td>
<td>1963.07</td>
<td>0.51</td>
<td>0.616</td>
</tr>
<tr>
<td>Economic crisis period</td>
<td>238.633.30</td>
<td>4.45</td>
<td>0.000</td>
</tr>
<tr>
<td>Inflation rate</td>
<td>-302.65</td>
<td>-0.30</td>
<td>0.764</td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>2.27</td>
<td>1.26</td>
<td>0.233</td>
</tr>
<tr>
<td>Constant</td>
<td>304776.6</td>
<td>4.58</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Dependent variable: Capital Market Development (CMD) = 16.80 significant at 1%

The overall regression result interpreted based on the explanatory power of Adjusted R – square and F – ratio indicates \( R^2 \) is 0.75. The implication of this is that collectively 75% of the variation in Nigerian CMD is predicted by the independent variables (i.e. Exchange rate, interest rate, Economic crisis period, inflation rate, and the unemployment rate). This means that about 25% of the variation in Nigerian CMD over the study period is due to the stochastic term (i.e. factors not stated in the model).

The overall F-ratio tests also indicate significance of the regression model given 16.80 and it is significant at 1% level of accuracy. This shows that the regression line is well fitted. On the other hand only one (1) out of the five explanatory variables is statistically significant at 1% in explaining variation in Nigerian CMD due to GEM. The variable only the dummy variable which is Economic Crisis period with a coefficient of 238.6, t-value 4.45 and a p-value of 0.000. Thus collectively, the selected specific study variables indicate significant influence of GEM. Individually, most of the independent variables do not account for variation in the regressand at the level of significance i.e.1% only. The coefficient of exchange rate at 794.81 is also significant at 1%. This shows that the exchange rate have a significant effect on the Nigerian CMD over the study period while the coefficients of interest rate, inflation and unemployment at 1963.07, -302 and 2.27 do not significantly account for variation on the Nigerian CMD. Unemployment rate have a coefficient of 2.27 which does not significantly affect the Nigerian CMD change. The significance of the impact of Economic crisis on the Nigerian CMD at 1% level of significance is in line with the findings of Abdul (2008) which traced the root of 2007 economic crisis to the Global Economic Meltdown as well as corroborate the CBN pronouncement that the Nigeria capital market crisis of the period was a spill-over effect of GEM that decreases in the Nigerian CMD between 2008 and 2009 is a resultant effect of the global economic crisis.
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V. Result of Hypothesis Testing

The F-statistic tests for the joint significance of the parameters in the model shows that $F_{cal} > F_{tab}$ given $F_{cal} = 16.80$ and $F_{(2,21)} = 4.04$ indicating that valid inference could be drawn from the analysis given that calculated value is greater than the tabulated value, thus satisfying the criterion to reject our apriori expectation in the null hypothesis that states that GEM does not influence Nigerian CMD; this call for rejection of Null Hypothesis and acceptance of alternative hypothesis; an implication that the Nigerian CMD was affected by the global economic crisis. In essence variables determining changes in economic growth even when external to national economies such as financial crisis can have influences on the capital market development.

VI. Conclusion and Recommendations

Based on the analysis carried out in this study, it was discovered that the variables of global economic meltdown that is proxy thus; Exchange rate, Interest rate, Economic crisis period, inflation ratio and unemployment rate, significantly affected the Nigerian CMD. The study therefore recommends the adoption of fiscal policy formulation in the form of tax regime, subsidies, grants, and subventions as palliative to ameliorate the influences of this and future economic crisis on the performance of the Nigerian economic sectors. The Central Bank of Nigeria, financial institutions and the regulatory agencies (i.e. Nigerian Deposit Insurance Corporation and the Nigerian Stock Exchange), therefore have major roles to play in the management of bank specific variables such as loans and advances, customers deposits and investment in securities in order not to distort the overriding objective of total economic growth in the country.

In order to reduce the pain of recession, employers could cut wages all along the line to reduce costs, rather than retrenching workers and thus add to job losses. To quote: “Jobs must be protected even if it means some reduction in compensation at various levels.” This is a useful tool that has been used successfully by some emerging nations like Singapore in fighting recession in some several countries. Similarly, the State and Local governments must improve the share of their implementation and co-operate with the Federal Government to improve various infrastructure projects in their domain. It needs to be emphasized that implementation holds the key to bail out the Nigerian economy hence Nigerian capital market from the economic crisis.

References


