The Relative Importance of Macro and Firm-Level Fundamentals to Nigerian Stocks' Prices: Lessons for other Emerging Markets

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Abstract

The recapitalization policy of the Central Bank of Nigeria in 2005 increased transactions in the Nigerian stock market and also attracted the interest of many investors. As most capital markets are pro-cyclical, the Nigerian stock market was not different. The investors' interests were not sustained over a long period of time due to a crash. Whenever there is a burst of the market bubble, it is always attributed to a deviation of the stock prices from the fundamentals of the firms that issue the stocks. Therefore, this study investigates the issue of movement in stock prices and the various changes that occurred in the characteristics of banks' stocks prices between 2006 and 2010. This study adopts pooled least square regression method using a panel of 10 banks to find out the major determinants of stock prices in the Nigerian stock market with the view to establish if the burst was actually a function of deviation of the price from the fundamentals of the firms. One of the striking findings of this study is that prices of banks' stocks have been mostly driven by the announcement and issuance of returns on investment at previous time periods – declared dividends. Both at individual bank level and the aggregate banks' level, declared dividend proved to be the major driver of stock prices. This implies that the burst might not have been as a result of deviation of the prices from the fundamentals of the banks, rather by other forces outside the firm fundamentals.

Keywords: Nigerian capital market, Bank Stock Prices, Bank Fundamentals, Emerging Market Economies, Macroeconomic fundamentals, Cyclical Market.

1. Introduction

The Nigerian stock market was not an issue of discourse either to researchers a couple of years ago. This owes to the fact that market was performing very poor and was also rated very poor too. The behaviours of the various stock prices were enough evidence for such poor ratings of the market, just as the volumes of transactions were also low. However, the market took an upward turn in the later part of last decade. This upward trend also resulted in a boom that 'coincided' with the Central Bank of Nigeria banking consolidation programme in 2004. But that was a consolidation policy that was only meant to raise the minimum capital base of banks from N2 billion to N25 billion so as to curb the persistent occurrence of bank liquidation and loss of depositors' funds. The same policy sent almost all the banks to the stock market in search of increased capital base so as to meet the required target. As has always been the case, the period of persistent issue of shares by the various banks led to a robust awareness among the general public matched with a buying fever. The stock market indices increased after 2005, while market capitalization exceeded N2,000 billion for the first time. The indices maintained a steady trend on the increasing lane up to 2007 when market capitalization reached a peak of about ₦13,000 billion. Market capitalization grew by 160.70 per cent between 2004 and 2006. In like manner, the share of the banking sector rose from 34.4 percent of total market capitalization in 2004 to 41.8 percent in 2006. In addition, between 2004 and 2006 alone, banking sector capitalization grew by 223 percent. This implies that the share of the banking sector in the market grew alongside the growth of the entire market. In fact, over 46 percent of the total growth in market capitalization and consequently, the Nigerian capital market came only from the banking sector capitalization growth (Agu, 2011).

Growth in the Nigerian capital market also coincided with growth in the Nigerian economy, just like other emerging markets especially in the Asian regions. But as other pro-cyclical market in the world, it was not long before a downward trend set in. The Nigerian capital market experienced the downward turn of its own business cycle in 2008. This downturn coincided with the global financial crisis that affect the rest of the world and

therefore, ushered in a new era for the stock market. It is true that many Nigerians may argue about the source of the crisis that hit the market and/or its relationship with the global financial crisis, but no one has argued about the severe consequences of the crisis in the Nigerian market. Just as there was a sharp rise in all the indices of the market during the boom, so was there also a sharp decline of all the indices of the market during the cyclical downturn, but this time at a little faster rate. As shown in figure 1 in the Appendix, some banks' shares, for example, United Bank for Africa fell by as much as 52% from N64 per share to only N33.9 per share within just one month between May and June 2008. Many others did not fare much better. Market capitalisation which stood at ₦12.5 trillion as at February 2008 fell to only ₦9.7 trillion as at August of the same year: a withdrawal/loss of ₦2.8 trillion worth of investment from the market within a period of just six months. This was not a very simple arithmetic for an emerging market economy like Nigeria, especially given the fact that many of the investors in the market were yet to understand the full mode of operation of the stock market (Cash Craft, 2011).

With such drastic changes come severe implications, especially for an emerging market like the Nigerian Stock Exchange. First of all, investors' confidence drastically declined, and this loss of investors' confidence brought about withdrawal of investment funds from the market, thereby grossly limiting the access of quoted firms including the banks to operating capital. In fact, the Nigerian banking sector entered into a secondary crisis arising from liquidity constraints. The crisis also opened a can of worms on the debt portfolios of many banks. The crisis also threatened the very existence of the fragile and re-emerging middle class, most of whom had heavy investment in the market with inadequate education about its workings. Even though serious concern have been shown by all the regulators, beginning from the Securities and Exchange Commission to the Central Bank and even the Ministry of Finance, yet these concerns have not translated into effective policy intervention in the market. Several fire brigade approaches have been adopted including sacking some bank chiefs. But these steps have not proved effective. The effectiveness of policy intervention has been circumscribed by limited understanding of the factors driving the crisis, their interrelationships and the most appropriate instruments for managing them.

Among recent scholars, some believe that the crisis could have been averted with appropriate policy instrument, while others believe that it is not possible to have been averted, drawing from the business cycle theory. But averting it or not depends on the level of understanding of the driving factors for the fall in prices. There are three possible sources of a crisis of this nature: the first are distortions in firms' fundamentals, the second consist of macroeconomic variables, while the third are external factors. In situations where the factors are mainly firms' fundamentals, it may be possible to arrest them by closer compliance monitoring and regulation. But where the factors are macroeconomic variables, policy instruments and application will also be different, probably more difficult to apply. This is because, it will have to do with macroeconomic policy tools that have complex outcomes. Finally, where the factors are basically external factors, then interventions will concentrate on policy instruments that could help to hedge the economy from external shocks. But to establish this, there should be evidence of correlation or causation. However, so far, there had been a lot of newspaper articles, opinion forums, and sub-guesses with little or no scientific study trying to explain the crisis. This study, therefore, intends to provide preliminary evidence on the relative importance of these three sets of factors in driving the prices of banks' stocks.

2. Related Literature

2.1 Theories

The Capital Asset Pricing Model (CAPM) which was independently developed by Sharpe (1964), Lintner (1965), and Mossin (1966), marks the birth of asset pricing theory (Fama & French, 2004; Javed 2010). The model builds on the model of portfolio choice which was developed by Markowitz (1959). It is true that no matter how much an investor diversifies his investments, it's impossible to get rid of all the risk. Therefore, an investor deserves a rate of return that compensates him for the risk-taking (McClure, 2006). The portfolio choice model assumes that investors are risk averse and, when choosing among portfolios, they care only about the mean and variance of their one-period investment return to select a portfolio at time t-1 that produces a stochastic return at time t. Criticising the Capital Asset Pricing Model, Ross (1976) proposed the Arbitrage Pricing Theory (APT), which was latter extended by Huberman (1982), Chen and Ingersoll (1983), Chen (1983), Connor and Korajczky (1988), Lehmann and Modest (1988), and numerous other researchers. The APT has recently attracted considerable attention as a testable alternative to capital asset pricing model of Sharpe-Lintner and Black (Javed,

2010). The APT is a substitute for the Capital Asset Pricing Model (CAPM) in that both assert a linear relation between assets' expected returns and their covariance with other random variables. (In the CAPM, the covariance is with the market portfolio's return.) The covariance is interpreted as a measure of risk that investors cannot avoid by diversification. The slope coefficient in the linear relation between the expected returns and the covariance is interpreted as a risk premium (Huberman and Wang, 2005). Asset pricing theories such as the Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT) have traditionally made predictions about risks and returns but have been silent on the actual process of investment. Today, most investors delegate major investment decisions to financial professionals. This suggests that the instructions given by investors to their delegated agents and the compensation of those agents might be important determinants of capital market equilibrium. In the extreme, when all investment decisions are delegated, the preferences and beliefs of individuals would be completely superseded by the objective functions of agent/managers (Cornell and Roll, 2005). This is the basis of the hypothesis of Delegated-Agent Pricing Model (DAPM). Allen (2001) as cited in Cornell and Roll (2005) stressed that investors have obvious, sensible reasons to delegate portfolio decision making. First, investment analysis and transacting exhibit economies of scale, secondly, investors who are at least quasi-rational will recognize their own limited capacity for information gathering and processing. Finally, investors may be wary of the psychological biases about which behaviourists warn and believe, perhaps wrongly, that professionals are less susceptible to such predispositions.

2.2 Empirical Studies

Sun and Zhang (2001) applied the use of CAPM and APT in assessing the financial performance of eight forestry-related investment vehicles. The authors (Sun and Zhang, 2001) selected eighteen quarterly investment portfolio or price indexes from 1986 to 1997, eight of which were forest-related while the remaining ten were for comparison. The CAPM was applied to the eight forestry-related assets, and they found out that it was only timberland that had a lower risk level than the combining of timber-land and timber processing facilities (i.e., forest products firms). The betas for other five assets were not significant. The various CAPM R^2s of the regressions were also relatively low, implying that the CAPM does not explain the return variation of those assets well. On the other hand, the APT result shows that a higher requirement than CAPM since six out of the eight assets' required returns were higher with APT than with CAPM. The APT R^2 was also relatively high. Their findings agree with Arthur *et al*'s (1988) conclusion that though the results of CAPM and APT do not differ significantly, the APT result is more robust.

Osei (2002) assessed the asset pricing characteristics of the Ghana Stock Market, and also studied to find out the relative influence of annual earnings announcement on asset pricing on the floor of Ghana Stock Market (GSM). He applied a standard market model (APT) that assumes a linear relationship between the return of a given security to the return of the market portfolio to assess the asset pricing characteristics of the GSM. He found out that out of the 16 listed stocks studied, three – AGC, FML and GGL – had betas greater than one. The t-values of those three were all significant, meaning that the systematic risks of the three stocks were greater than the market beta of one. He also found out that eight out of the 16 stocks had positive betas that were less than the market beta of one. With the exception of CFAO, all the t-values of those stocks were significant. In his discussion of his findings, he showed that the market picked up signals of impending annual earnings announcements and responded to both good news and bad news.

Jagannathan and Wang (2002) carried out a comparative study of the efficiency of the stochastic discount factor (SDF) and the beta methods in analysing asset pricing. (It should be noted that the beta method is also another name for CAPM since it is the CAPM that uses the beta to analyse the expected returns on assets, while the stochastic discount factor is another name for the APT since the APT uses the discount factor). Using data obtained from the Centre for Research on Security Prices (CRSP) – value weighted market index of New York Stock Exchange (NYSE), AMEX and Nasdaq, they came out with the comparative equations of the SDF and the beta using the Generalised Method of Moment (GMM) analytical tool. These comparative equations show, among other things, that the beta method gives the GMM estimate δ^* from the moment restrictions of the beta model, while the SDF method gives the GMM estimate $\hat{\lambda}$ from the moment restriction of the SDF model. But they had to transform the δ^* to λ^* so as to make a direct comparison of the asymptotic variances. The result of all the transformations shows that the beta method is equivalent to the maximum likelihood method under suitable assumptions regarding the statistical properties of returns and factors. Hence the beta method has a natural advantage for such models. They also concluded that if the SDF method provides as precise an estimate of factor risk premiums even for linear factor pricing models, then there would be less need for concern that the

generality of the SDF method comes at a cost.

In order to show that the prices of stocks react to information of future panic or boom in the activities of the firms whose stocks investors bid, Spyrou and Siougle (2010) embarked on a study on the stock price reaction to merger and acquisition announcements. This study employed average cumulative abnormal returns method of analysis, based on data gathered from the floor of the London Stock Exchange on 350 firms listed on the floor of the exchange. From the findings of the study, investors in the London Stock Exchange seemed to react efficiently, on average, with regard to the release of merger and acquisition information. There were very few exceptions: (*i*) for precise news/announcements about large bidders and targets that generate negative event day reaction, a statistically significant reversal during the following days was observed; (*ii*) for precise news/announcements about small bidders they observed a momentum for positive news/announcements and a reversal for negative news/announcements; (*iii*) for imprecise news/announcements about small targets that generate positive event day reaction a statistically significant reversal during the following days was also observed; and (*iv*) there was also weak evidence of reversals following both positive and negative precise announcements about small firm mergers.

The above simply shows that shocks in the confidence of the investors with respect to the firms they invest in their stocks to a very great extent influence the prices of such stocks. It is in line with the above that Laeven and Tong (2010) carried out a study to show how instability in monetary policy can affect the prices of stocks. They studied global stock price responses to U.S. monetary policy shocks using a dataset of 20,121 firms across 44 countries over the period 1990-2008. From their findings, stock prices tended to increase (decrease) following unexpected monetary loosening (tightening). This impact was more pronounced for sectors that depend on external financing, especially during economic recessions, and for countries that are more integrated with the global financial market. The findings of the study, therefore, suggest that financial frictions play an important role in the transmission of monetary policy, and that U.S. monetary policy influences global capital allocation.

Several findings about the relationship between stock pricing and financial instability support the assertion by many scholars (like Demirguc-Kunt et al, 2010; Esu and Inyang, 2011; etc.) that the recent financial crisis undoubtedly demonstrated that existing capital regulation, in its design or implementation, was inadequate to prevent a panic in the financial sector, and once again the government of Nigeria had to step in with emergency support or bail-out to prevent a collapse since many of the banks that were rescued appeared to be in compliance with minimum capital requirements shortly before and even during the crisis. The main culprits were deficient financial regulation and the failure of market discipline (which is otherwise known as animal spirit) resulting in a systematic flouting of rules and regulations by banks. As the sub-prime crisis showed, practically all banks used their ingenuity to develop structures and products that were outside the normal regulatory confines of banking in order to satisfy their customers and shareholders seeking high returns. In the process they created a large number of shadow banking institutions – investment banks, hedge funds and the likes. These shadow institutions grew over time to be systemically important. Through securitisation and other means the banks convinced themselves that the risks were spread out. The complex instruments presumed to minimise risks with the original issuer and guarantee a high return for those who bought them. In the end those who created them did not comprehend their risks. The collapse of the housing market was followed by a great squeeze in the credit markets. The failure by many economists and business people to acknowledge the common-sense fact that home prices could not continue rising faster than household incomes. Building in the repo market, where securities backed by mortgages and other assets are used as collateral for loans. Because of the collateralization, these loans were thought to be safe, but the securities turned out to be riskier than borrowers and lenders had thought.

3. The Model

Going by the focus of this study, which is to investigate and analyse the three possible drivers of stock pricing – bank fundamentals, macroeconomic environment, and the foreign investors' participation level, we adopt the hypotheses of the fundamentalist and macroeconomic hypothesis schools of thought. Originally, the fundamentalist school, the technical school, the random walk hypothesis school, the behavioural school of finance, and macro-economic hypothesis school are the five schools of thought that have looked into the issue of stock price movements. Each of these schools of thoughts viewed stock price movements to be a function of one factor or the other. Some of these views include those of the fundamentalist who see the returns to portfolios associated with observed security attributes such as dividend yield, book-to-market ratio, and industry identifiers as the major drivers of stock price movements (Sun and Zhang, 2001). In agreement with the fundamentalist school of thought, we formulate a simple equation of our model as stated below:

$$BSP = f(PAT_{t-1}, DIV_{t-1}, EPS_{t-1}, SIZE, VOT, FPIr_i, INT, GDPr) \quad (1)$$

where

PAT_{t-1} = Declared Profit After Tax at time t-1

DIV_{t-1} = Declared Dividend at time t-1

EPS_{t-1} = Declared Earnings per Share at time t-1

$SIZE_t$ = Size of the Bank, measured as total bank shares as a ratio of the total banking sector shares

VOT_t = Volume of Trade, measured as total number of traded shares divided by the total volume of shares owned by the bank

INT_t = Interest Rate

$GDPr_t$ = Growth Rate of National Output

$FPIr_{it}$ = Rate of change in Foreign Portfolio Investment in the bank

Given the above, the estimable equation for this study can be stated as:

$$BSP_i = \alpha + \beta PAT_{it-1} + \delta DIV_{it-1} + \theta EPS_{it-1} + \lambda SIZE_i + \sigma VOT_i + \gamma FPIr_i + \psi INT + \varphi GDPr + \mu_i \quad (2)$$

where

i = the banks, i.e. 1, 2, ..., 10

α = the intercept of the model

β, δ, θ, λ, σ, γ, ψ and φ = the slopes or parameters of the model

μ = the stochastic variable.

Using a panel of 10 banks for the period of 2006 to 2010 on monthly series, this study employs panel least square method of estimation. The adoption of this method is in line with the set objectives of this study, and also agrees with the method adopted by Ljungqvist and Wilhelm Jr. (2003) in their study of Initial Public Offering (IPO) pricing in dot-com bubble. However, this does not imply that there are not other methods of analysing panel studies of this nature. Other alternative measures include: Panel Data Analysis of Covariance as used by Durand (1955); VAR model of Panel Data analysis adopted by Eun and Shim (1989), Elyasiani, et al (1998), Rangvid (2001); and Panel Logit model adopted by Derrien (2005). But it should be noted that the method adopted by any study also depends on the objective of the study.

4. Empirical Findings and Discussions

Our panel regression results are presented in Tables 1 – 2 of Appendix II. From those results, we observe that information about the fundamentals of the bank in previous periods have positive influence on the price behaviours within the current periods. First of all, the prices of banks' stocks rise with increasing declared dividend at previous time. This finding is consistent for all the forms of results presented in the appendix. When all the explanatory variables are considered as cross-section-specific except DIV, EPS and FPIR, dividend alone had the highest level of statistical significance (i.e. t-statistic of 10.88). Fluctuations in the prices of banks' stocks were seen to be significantly influenced by declared dividend of previous time period. Also, in the same way, when all the variables were considered as common coefficients studying all the periods, dividend still maintain a very high level statistical significance with a t-statistic value of 17.58 It therefore implies that among those factors that strongly influences banks' stocks prices, declared dividend remains topmost. But since we know that declared dividend is the actual return on investment to investors, it is not surprising that increasing declared dividend will also motivate investors to price higher the stocks of the firm in question. Investors would invest their money in stocks that will yield the highest level of outcome or returns, since there are alternative investment opportunities.

The variable – declared earnings per share – could not exert much influence on investors in Nigerian stock market, observing from the empirical results available in study. When all the periods were studied together and all the explanatory variables considered as cross-section-specific except DIV, EPS and FPIR, earnings per share was statistically insignificant with a very minute coefficient of 0.0027. Worse still, when all the variables were considered as common coefficients studying the entire periods, earnings per share had significant negative relationship with price movement. Studying the entire banking sector as a group, we may say that price increases as earnings per share decreases. This could be a dangerous signal to the fact that price movement was not in

agreement with the fundamentals of the stock. Even though earnings per share still maintained minute coefficient of -0.0027, yet its t-statistic of -4.852 is a pointer to its significant negative effect on the prices of bank stocks. It becomes imperative to question why stock prices will rise when its earnings are decreasing. Answers to the question needs to be given with caution since there may not be a single opinion to that regard. Deeper enquiries into the firms account books reveal that some banks still posted increasing dividend even when their earnings per share had not only decreased but had turned negative. In situations like this, it becomes necessary to note that most investors may not even go through the annual reports sent to them to know the performances of the firms they hold their shares, but only mind how much dividend is declared at the end of the year.

Last of the firms' fundamentals that are presented in this study is the profitability of the firm. Looking at the banks individually, declared profit after tax had both positive and negative relationships with stock prices of the firms shared equally among the ten banks under study. Among the banks where there is inverse relationship between declared profit and stock prices are: Access Bank, Fidelity Bank, United Bank for Africa, Wema Bank, and Zenith Bank. The remaining five banks – Diamond Bank, First Bank of Nigeria, GTBank, Stanbic-IBTC, and Bank PHB – all show direct relationship between declared profit and stock prices. Of all the ten banks, the variable PAT is statistically significant in explaining changes in the stock prices of Diamond Bank, GTBank, Stanbic-IBTC, Wema Bank, and Zenith Bank. This also poses a great challenge to the regulators and players of the market. Where the movement of the prices of a particular stock does not move in the same direction with the profitability of the firm, there is bound to be severe deviation of the stock price from its fundamental value. One of the possible reasons could be that investors are not interested in long run investment and profitability but only buy stocks based on their arbitrage values. An investor may want to know by how much mark-up he will sell his stocks tomorrow should he buy today. Most often this question is answered by merely looking at the rate of change in the stock prices in previous market periods – trading days. In this situation, the stock will have to change hands regularly with fluctuating prices based on the forces of demand and supply. On the other hand, when all the banks are pooled together, declared profit after tax becomes a positive motivator for increasing stock prices. It does not only have positive relationship or effect on the prices of stocks, the impact is also very significant.

Enquiring into the market characteristics of the stocks and their relationships with the prices of banks' stocks on the floor of the Nigerian Stock Exchange, we look at the size of the individual bank's stocks with respect to the entire banking sector stocks, and the volume of trades of each of the banks' stocks. For all the banks, the size of the banks' traded stocks as a ratio in the total banking sector stocks is inversely related to the prices of the stocks. This implies that as the ratio of a particular bank's traded stocks to the total banking sector traded stocks rises, there comes a decline in the price of that particular stock. With the exception of the stock prices of Fidelity Bank, Bank PHB, and Wema Bank, all the other stock prices significantly react to changes in the size of the traded bank's stocks with respect to the entire banking sector traded stocks. One possible reason for such is that most investors will like to spread their risks as much as possible. Therefore, if all the investors will like to invest in a bank stock, then buying as many banks' stocks as possible will be his decision. Furthermore, when all the banks are pooled together, the size of banks' traded stocks with respect to the total banking sector traded stocks still remains negatively related to the prices of stock with a high level of statistical significance (t-statistic of -5.018). On this note, we may not be wrong to simply conclude that the higher the size of a particular firm's stocks traded on any day in the total stocks of all the firms in that sector, the lower the price of that particular stock.

Additionally, the volume of trade of a particular stock, which shows the volume of transaction of a particular bank's stocks as a share of the entire stocks issued by the bank, is another market characteristic variable. There are two sides to this variable – the supply side and the demand side. Based on apriori knowledge, when the volume is high from the supply side, the price should decrease, while the price should increase when the high volume is prompted by demand side. For each of the banks, stock prices increase as the volume of trade increase. With the exception of Fidelity Bank, Stanbic-IBTC Bank, and Wema Bank stocks, volume of trade remains a significant determinant of price. It is not just about being significant, but also about the magnitude of the coefficients of volume for each of the banks. In terms of magnitude of the coefficients, volume of trade shows the greatest coefficients as determinants of stock prices in this study both for each of the banks and for all the banks. After pooling the entire banks together, we establish a statistically significant positive relationship between volume of trade and stock prices.

Considering the opinions of the macroeconomic school of thought with respect to stock pricing, we include the growth rate of aggregate total output of the Nigerian economy and the rate of interest. It is a general knowledge that investing in stocks is only an alternative to investing in bonds and therefore, comparing the prevailing interest rate with the rate of returns on stocks, an investor can either decide to hold stocks or bond. This implies

an apriori expectation of negative relationship between interest rate and stock prices. However, it should be noted at this point that there have been strong supports and oppositions to this apriori expectation based on empirical evidence. For instance, Shiller (2007), and Cifter and Ozun (2007) find a negative relationship between nominal interest rate and the stock prices in their studies, while Khrawish, et al (2010) identify a positive relationship between government interest rate and the stocks prices. From our study, we find an inverse relationship between the market interest rate and stock prices for each of the banks individually, and for the entire banks as a pool. The only variation in this finding is the level of influence that changes in market rate of interest exert on changes in stock prices. Even though there is an inverse relationship between the market rate of interest and stock prices for all the banks, yet it is only significant relationship for four of the banks – Diamond Bank, GTBank, Stanbic-IBTC Bank, and Bank PHB. The rest of the banks show inverse but insignificant relationship between market rate of interest and stock prices. The implication is that investors in Nigerian stock market also enquire about alternative investment opportunities before investing in stocks. Should there be better investment opportunities, they will quickly withdraw their funds from the stock market, thereby crashing the prices of the stocks they held.

Bearing in mind that the stock (capital) market is just an aspect of the aggregate economy, it is expected that growth or decline in the aggregate economy should reflect in the capital market or that growth in the capital market should have multiplier effect on the aggregate economy by inducing other sectors of the economy. But in this study, it is the reverse. For most of the banks' stocks, price reduces as the aggregate output increase, and vice versa. Looking at the banks individually, we see that the growth rate of aggregate output of the economy only positively affected the prices of Diamond Bank, First Bank of Nigeria, GTBank, and Zenith Bank stocks. The rest of the banks show inverse relationship of stock prices with output growth rate. Also, considering all the banks as a single unit, we still see an inverse relationship between aggregate output growth and stock prices. Also noted at this point is the fact that even though a direct relationship between aggregate output growth rate and stock prices is established only in four banks, yet this direct relationship is only statistically significant for only one of the banks – Zenith Bank. The rest of the banks – Diamond Bank, First Bank of Nigeria, and GTBank – where direct relationship between stock prices and aggregate economic output growth rate is established are not statistically significant. This could imply that the capital market, which should be the hub of the entire economy is only detached from the rest of the economy thereby experiencing a boom while other sectors remain stagnant.

The participation of foreign portfolio investors is another factor that seems to contradict well known apriori expectation. Based on apriori expectation, more participation of foreign portfolio investors should induce price increase. But in the case of Nigerian Stock Exchange, the participation of foreign portfolio investors has negative influence on the movements of stock prices. But what could be the possible explanation to this scenario? First of all, as an emerging market, the Nigerian stock market has not yet attracted much attention and presence of foreign portfolio investors. No wonder the activities or participations of foreign portfolio investors still constitute negative effect on stock prices.

4.1 Implications of the Findings

The study yields five key findings:

- Arbitrage motive of stock pricing instead of long-term investment seems to be the most pronounced issue in the market.
- Changes in declared dividends of the banks positively influence the prices of the stocks;
- Changes in declared dividends are not seen to move in the same direction with profit and earnings per share, and therefore an inverse relationship between the latter two and stock prices in most cases.
- Changes in the overall economic growth have not really affected stock prices;
- There is no evidence that withdrawal of foreign investors due to the global financial crisis in their local economies really constitute a significant determinant of crash in stock prices in Nigerian.

Considering an emerging market economy like Nigerian, the implication of the first two findings is not too small to be ignored in any way. If stock prices have been dependent on the level of declared dividends it follows that any fluctuation in the declared dividend will also imply fluctuations in the stock prices. Given that the declared dividends are not consistent with the trend of earnings per share, it poses a worrisome picture that queries how sustainable such declarations might be. Also, given that stock prices were consistently directly related to declared

dividends, it is not surprising that a cut in the dividends could necessitate a crash in stock prices the way it did during the global financial crisis. It is also worthy of note that because the market is delinked from the real sectors of the entire macroeconomy, the prices of stocks still crashed in the face of positive overall economic growth. While investors only watched the book value, especially the returns on investment – dividends – they least cared about the deviation of the declared dividends from the actual earnings of the stocks within any financial year and how these earnings correspond with the aggregate macroeconomic environment.

5. Conclusion and Policy Recommendations

We have been able to establish with empirical evidence that bank stock prices depend directly and to a large extent on the declared dividends of the banks in question. Therefore, any attempt to reduce the declared dividend will amount to decline in the stock prices. Whereas, the same form of influence should have been seen for the remaining two bank fundamental variables, yet we see the reverse. Since we find out that where earnings per share exert direct influence on stock price, there is insignificant and where it is significant it is inverse, it is already a pointer to the fact that the declared dividends are not based on the earnings per share. Therefore, out of the three variables of bank fundamentals included in this study, only dividend seem to remain positively and significantly related to bank stock prices all through. When the macroeconomic variables are investigated, we also find out that it is only interest rate (with negative coefficients) that is consistent with apriori expectation with respect to movements in stock prices. The growth rate of aggregate output is not consistent with apriori expectation. In all, we can conclude that the source of the recent financial crisis of the Nigerian stock market is the firms' fundamentals which have been allowed or ignored by regulators to be delinked from the real sectors of the macroeconomy. Based on the findings of this study, the authors recommend the following policy options for forestalling future crisis and for recuperating from the recent one:

- ⇒ Regulators of the emerging market economies' financial system need to watch all the indicators of deviation of stock prices from their fundamentals to be able to forestall the reoccurrence of the global financial crisis with its devastating effects on their system.
- ⇒ Banks should be mandated to improve on their corporate governance that will ensure that banks' declared profits are consistent with the aggregate macroeconomy.
- ⇒ Participation of foreign investors should be properly harnessed and adequately monitored to avoid divestment problem whenever there is a panic in their home economies which could result in a multiplier and/or contagion effect in the Nigerian stock market.
- ⇒ The existing financial regulatory system has proved insufficient in forestalling a crisis and consequently losses in the economy. Therefore, there is need for improved regulation of the stock pricing and stock market activities so as to reduce or forestall the possibility of recurrence of such crisis in the nearest future.

As we stated in the introduction, forestalling future depression in the capital markets of the emerging market economies is a function of the combination of regulatory policies that are in place. Ensuring that the policies in place are strong and viable enough to forestall future occurrences of a downward movement in the market also depends on the level of understanding of the drivers of stock prices. Therefore, if the issues of investigation raised in this study are properly taken note of and applied, regulators of Nigerian capital market, as well as other emerging markets, can effectively insulate the market from possible causes of the panic and crisis.

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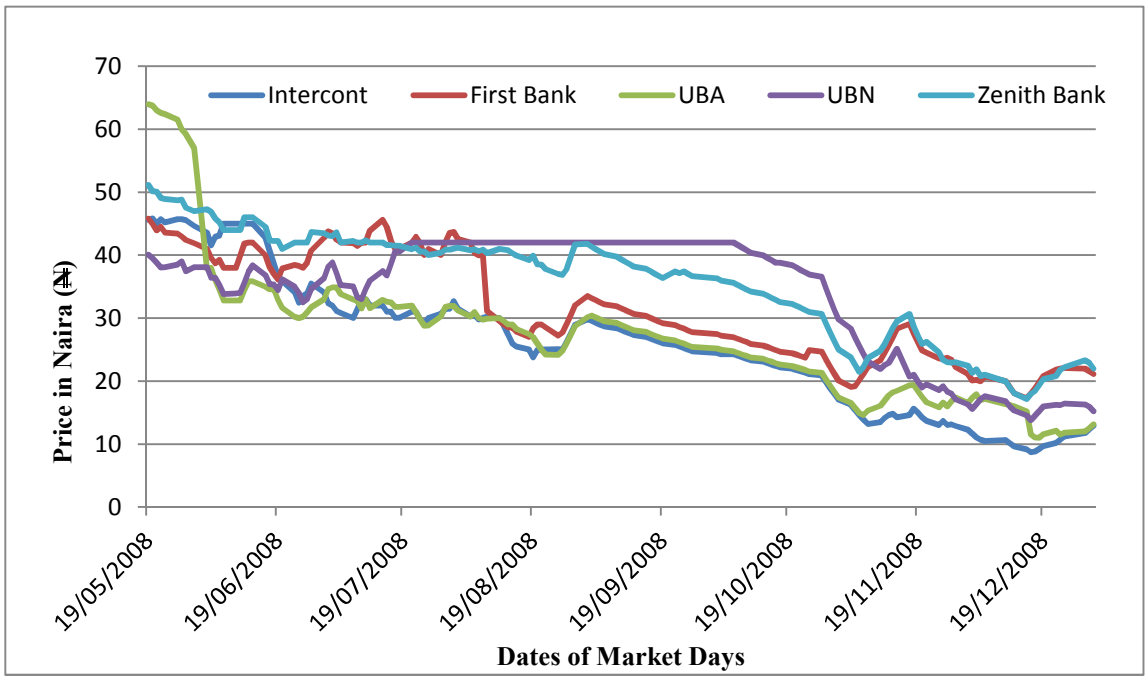
APPENDIX I

Fig 1: Movement of Selected Banks' Stock Price



Source: *Data from the Nigerian Stock Exchange Website (2011)*

APPENDIX II

TABLE 1: Panel Least Squares Result of the Model – With Common Coefficients of All Variables

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	30.26470	3.031190	9.984427	0.0000
PAT?	3.81E-05	7.93E-06	4.805161	0.0000
DIV?	0.159009	0.009043	17.58449	0.0000
EPS?	-0.002661	0.000549	-4.851545	0.0000
SIZE?	-0.453134	0.090304	-5.017865	0.0000
VOT?	19.66645	4.599698	4.275596	0.0000
FPIR?	-2.58E-07	1.75E-07	-1.477791	0.1400
INT	-0.823435	0.146100	-5.636089	0.0000
GDPR	-1.812418	0.375728	-4.823746	0.0000

R-squared	0.444660	Mean dependent var	15.42412
Adjusted R-squared	0.437142	S.D. dependent var	13.08008
S.E. of regression	9.813176	Sum squared resid	56912.37
Log likelihood	-2217.065	F-statistic	59.15152
Durbin-Watson stat	0.212027	Prob(F-statistic)	0.000000

TABLE 2: Panel Least Squares Result of the Model – With Cross-Section-Specific Variables except DIV, EPS and FPIR

Dependent Variable: BSP?

Method: Pooled Least Squares

Date: 07/19/12 Time: 23:53

Sample: 2006:01 2010:12

Included observations: 60

Number of cross-sections used: 10

Total panel (balanced) observations: 600

Variable	Coefficient	t-Statistic	Variable	Coefficient	t-Statistic
C	21.60303	7.203578	_FBN--VOT_FBN	84.68177	2.380906
FPIR?	-1.06E-06	-2.040630	_GTB--VOT_GTB	53.25573	2.539064
DIV?	0.168224	10.88131	_IBTC--VOT_IBTC	53.65062	1.781994
EPS?	0.002700	1.139017	_PHB--VOT_PHB	28.92099	2.125610
_ACC--PAT_ACC	-7.04E-05	-0.356454	_UBA--VOT_UBA	89.26007	6.336651
_DIB--PAT_DIB	0.000921	2.898943	_WMB--VOT_WMB	12.97425	1.613295
_FDB--PAT_FDB	-0.001297	-1.739047	_ZNB--VOT_ZNB	120.4235	5.246656
_FBN--PAT_FBN	0.000148	0.753416	_ACC--INT	-0.221206	-0.455801
_GTB--PAT_GTB	0.000555	2.799820	_DIB--INT	-1.553843	-2.995184
_IBTC--PAT_IBTC	0.002999	2.747914	_FDB--INT	-0.703643	-1.800773
_PHB--PAT_PHB	1.05E-05	0.667990	_FBN--INT	-1.180297	-1.674667
_UBA--PAT_UBA	-0.000121	-1.044373	_GTB--INT	-2.078755	-5.540703
_WMB--PAT_WMB	-0.000158	-2.446371	_IBTC--INT	-1.484581	-3.276229
_ZNB--PAT_ZNB	-0.000730	-6.323815	_PHB--INT	-1.277645	-2.920250
_ACC--SIZE_ACC	-0.725049	-2.827030	_UBA--INT	0.295598	0.609823
_DIB--SIZE_DIB	-0.864123	-2.300093	_WMB--INT	-0.319148	-0.834257
_FDB--SIZE_FDB	-0.167110	-0.764921	_ZNB--INT	-0.427661	-1.005389
_FBN--SIZE_FBN	-0.803200	-2.866398	_ACC--GDPR	-1.828517	-3.121884
_GTB--SIZE_GTB	-0.818969	-2.772216	_DIB--GDPR	0.264455	0.379054
_IBTC--SIZE_IBTC	-0.899027	-2.102889	_FDB--GDPR	-1.872691	-3.553796
_PHB--SIZE_PHB	-0.298381	-1.040110	_FBN--GDPR	0.637633	0.989527
_UBA--SIZE_UBA	-1.672742	-6.248121	_GTB--GDPR	0.023253	0.034059
_WMB--SIZE_WMB	-0.411172	-1.365476	_IBTC--GDPR	-1.523692	-2.199935
_ZNB--SIZE_ZNB	-1.168361	-4.448935	_PHB--GDPR	-0.298100	-0.377357
_ACC--VOT_ACC	39.55960	3.201424	_UBA--GDPR	-2.053832	-3.513804
_DIB--VOT_DIB	39.76203	2.131214	_WMB--GDPR	-2.068152	-3.673969
_FDB--VOT_FDB	6.403612	0.410733	_ZNB--GDPR	1.646118	2.873907

R-squared	0.672466	Mean dependent var	15.42412
Adjusted R-squared	0.640672	S.D. dependent var	13.08008
S.E. of regression	7.840713	Sum squared resid	33566.33
Log likelihood	-2058.668	F-statistic	21.15099
Durbin-Watson stat	0.516164	Prob(F-statistic)	0.000000

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