

The Causal Influence of Nigeria's Stock Market Performance On New Issues: An Empirical Examination Of Bhole's Contentions

IKECHUKWU S. NNAMDI*

Senior Lecturer, Dept. Of Finance and Banking, University Of Port Harcourt, Port Harcourt, Nigeria

ULOMA ADONYE ONOH

Lecturer, Department Of Banking and Finance, Michael Okpara University of Agriculture, Umudike, Nigeria.

ABSTRACT

Bhole (2006) contends that the bulk of recent studies including World Bank publications overwhelmingly, stress the role of the stock market in maximizing speculative returns for investors and corporate operators, while completely sidetracking the vital issue of the extent to which the stock market at the other extreme, also helps the corporate sector in raising fresh capital (New Issues). This study examines consequently, the nature and direction of prevailing causal relationships between Nigeria's Stock Market annual capitalization and new issues in order to evaluate the extent to which capital market performance empirically promotes corporate issuance of new securities in Nigeria. The unit root and standard Granger Causality tests were executed on employment of published data from the Nigerian Stock Exchange over the period, 1970 – 2011, (42 years). The results indicate stationarity of the time series variables and significant bi directional causality between stock market capitalization and new issues thus, providing strong evidence in support of Bhole's contentions with respect to Nigerian data. Replication of this study in every market setting is strongly recommended in order to understand country specifics and confirm the extent to which Bhole's valid theoretical contentions are empirically supported and/or contradicted in each circumstance.

Keywords: Market Capitalization, New Issues, Causality, Stock Market.

1. INTRODUCTION

Since the appearance of various lead studies including Schumpeter (1934), Goldsmith (1969), Shaw (1973, 1976), Mckinnon (1973) and Patrick (1976) among others, finance and economics literature have been inundated with several attempts at evaluating the nature of relationship that prevails between the levels of financial development and economic growth of nations. Financial intermediation provides a veritable process for efficient resource mobilization and allocation in a market driven economy. More essentially, the quantum as well as rate of growth of capital accumulation are critical determinants of a country's long-term growth. This brings to the fore, the essential need for capital market efficiency as it constitutes, a veritable funding platform for long-term real economic ventures.

The stock market being the trading arm of the capital market therefore, finds relevance in this study as the objectives of the capital market can not be attained without a sound evaluation of the stock market operations. Several studies including Levine and Zervos (1998), World Bank (1996), Ogun and Iyoha (2005), Central Bank of Nigeria (2007) as well as Okpara (2007), all provide substantial empirical evidence to show that the growth of stock market activities is a good predictor of economic growth.

Stock market development like any economic phenomenon is a function of several determinants. In this context, several studies including Gracia and Liu (1999), Ogbulu (2009), Adenuga (2010), Okpara (2010b), Osamwonyi and Kasimu (2013) as well as Shahbaz, Rehman and Zainudin (2013) identify several macroeconomic and market specific determinants of stock market performance. Stock market capitalization within the purview of this study serves as a proxy for stock market performance and is approximated by the aggregated product of the market price of each available security in the market and the number of securities outstanding at any point in time. Market capitalization is preferred as proxy for stock market development because it is less arbitrary than most other market indices. As further observed by Levine and Demirague-kunt (1996), virtually all other indices and measures of stock market performance are highly correlated thus, creating room for multicollinearity problems in empirical studies. On the other hand, most of the studies mentioned above identify and employ a range of macroeconomic, stock market-specifics as well as money market based measures to evaluate stock market performance. These measures broadly include gross domestic product (GDP), inflation rates, lending rate, liquidity, money stock, foreign exchange rates, value of new issues, value of transactions, value of listed securities, financial deepening, intermediation ratio, new issue ratio, financial intermediation ratio among others.

However, Bhole (2006), while discussing the Theory of Equity Culture criticizes the generality of recent publications including World Bank studies for obviously overemphasizing the stock market speculative functions aimed at maximizing returns for individual investors and stock market operators, while totally ignoring the extent to which, stock market capitalization, provides avenues for the corporate sector to raise fresh capital through new issues. Although Bhole's study did not propose any workable algorithm for the evaluation of the exact nature and direction of this causal relationship, this study empirically investigates the extent to which stock market capitalization significantly promotes new issues in Nigeria's emerging market.

It is hoped that the results of this causality study between stock market capitalization and new issues in Nigeria will be useful to security market regulators, operators and the investing public. Policy makers would obviously benefit from the results of this study in the preparation of new capital market policies or in the modifications of existing policies for the benefit of the Nigerian securities market. This paper is divided into five sections. Section one, the introduction has been treated. While section two deals with the theoretical framework and literature review, section 3 deals with organization of data and methodology. The fourth part presents the results and analyses of same, while the fifth and last section provides the discussions, conclusions and recommendations.

2. THEORETICAL FRAMEWORK AND LITERATURE REVIEW:

Resulting from a wide range of roles the financial markets play in the economic progress of nations, there is a significant level of agreement that stock markets function to provide significant liquidity considered critical for continued lubrication and funding of economic growth. Section 2 of this study is further elaborated along the following lines:

2.1 Theoretical Considerations:

The studies of Shaw (1973) and Mckinnon (1973) strongly demonstrate the supply-leading functions of financial markets. Patrick (1976) offers further, an enhanced analysis of financial markets with dual roles (supply leading and demand-following) thus, providing a theoretical basis for contemporaneous roles of financial markets in economic growth process. Given the relevance of formal institutional intermediation in the mobilization of long term funds, a lot of studies have emphasized the capacity and efficiency of stock markets as facilitators and predictors of economic growth. In this connection, some studies including those of Ogun and Iyoha (2005), Ogbulu (2009) and Ikoku (2010) demonstrate that the Nigerian Stock Market serves as a veritable predictor of economic growth. On the other hand, Adenuga (2010) and Okpara (2010b) view the stock market as a promoter of economic growth. The studies of Osamwonyi and Kasimu (2013) based on stock market performance and economic growth data from Kenya, Nigeria and Ghana produced mixed results. On the other hand also, the results of Yartey and Adjasi (2007), produced inconclusive results for the Sub-sahara African Region.

Besides serving as a predictor and promoter of economic growth, a stock market provides avenues for companies to raise capital funds at a relatively lower cost. Central Bank of Nigeria (2007) compares the cost of funds in the money and capital markets over the period 2000 to 2004 and finds that the average cost of funds in the Nigerian money market is 4.07 times higher than the average cost of funds in the capital market. Of relevance too, is the role of stock markets in international risk sharing. Claesseeus, Klingebiel and Schukler (2004), also observe that internationally-integrated stock markets facilitate global resource allocation and economic growth. Further, Hall (2001) demonstrates that stock market functions to enhance capital accumulation.

Investigations into stock market operations significantly rely on the postulates of Efficient Market Hypotheses, (EMH). Basic tenets of the hypotheses largely insist that in any efficient market, stock prices at any given point in time, are fully representative and reflective of all previous prices. Current stock prices also, embody complete and summary information on all previous published information on the firms and that even insiders can not consistently out perform the market. Okpara (2010a) employs the run test in analysis of the efficiency of Nigeria's stock market and confirms a weak form efficiency and sufficient random walk behavior. In the same direction, Efobi, (2010) examines the nature of efficiency that prevails in the Nigerian Stock Market. The study employs monthly share price index from January 1985 to December, 2008 as proxy for market returns. Application of GARCH technique confirms that the Nigerian Stock Market is efficient in the weak form and that share prices follow a random walk, thus leading to the study's conclusion that Investors, Analysts and even Professional groups can not consistently earn abnormal profits from the market by predicting share prices.

2.2 **Review of Previous and Related Studies:**

Stock markets are avenues where availability of information, corporate controls and substantially, free market mechanisms are at work. The economic performances of firms therein, are consequently, measured by their prevailing stock prices. Varied studies have correspondingly appeared. Adenuga (2010) argues that although the stock market plays a key role in raising corporate capital, new equity issues have largely accounted for a small fraction of aggregate periodic corporate investments. Operating from the standpoint that present stock prices are reflective of future performance of the economy, Ogun and Iyoha (2005) employ Granger Causality techniques in analyzing Nigeria's stock market data. The findings show a significant causal relationship between lagged values of stock prices and current levels of economic activity thus, indicating that stock prices are significant predictors of future economic performance in Nigeria. While Nwakanma and Nnamdi (2012) demonstrate that stock market capitalization in Nigeria is reflective of the values of sectoral net investments, Osamwonyi and Kasimu (2013) find significant long run relationships between stock market indicators and economic growth in Ghana, Kenya and Nigeria over the period 1989 to 2009. However, the Granger Causality results indicate no significant causality between stock market development and economic growth in Ghana and Nigeria, while a significant bi-directional causality prevails in Kenya.

Adenuga (2010) acknowledges the capacity of the stock market to provide funds for medium and long term economic activities. However, recognizing the wide range of disagreements and mixed results that trail the relationship between stock market development and economic growth, the study explores the hypothesis that stock market development supports Nigeria's economic growth. Applying Co-integration and Error Correction techniques, the results provide significant evidence that stock market development supports economic growth in Nigeria. Hall (2001) argues that the stock market principally measures the accumulated value of firm's capital stock which is approximated by the product of the price of the installed capital and quantity of capital stock. The study analyses a sample of United State's firms over a 50 – year period. The results support the conclusions that capital accumulation results from productivity of capital stock, revaluation of the holdings of investors and speed of adjustment of the capital stock.

Yartey and Adjasi (2007) examine the relevance of stock markets in Sub-Sahara Africa's economic growth as well as policy options for promotion of African Stock Markets. The Co-integration and Granger Causality tests employed indicate inconclusive evidence irrespective of the fact that the volume of traded securities seems to be positively and significantly related to economic growth. The study identifies the problem of low liquidity as one of the impediments to the technical and institutional developments of African Stock Exchanges. Consequently, harmonization of legislation, especially in the areas of bankruptcy and accounting laws/regulations, liberalization of trade regimes, private sector credit evaluation standards and public sector regulatory oversight are recommended to enhance the capacity of African Stock Markets in the promotion of regional economic growth.

From the theoretical perspective that varied investor groups often exhibit significantly heterogeneous investment behavior thereby, creating conditions for their trading activities/choices to relate to asset prices in different manners, Boyer and Zheng (2008) simultaneously analyze the empirical relationships between aggregate stock market returns and net cash flows to the stock market traceable to classified investor groups in the U.S. market. These include mutual funds, households, foreign investors, insurance companies, pension funds and closed-end funds. Employing VAR technique in the analysis of quarterly data over a 53-year period (1952 – 2004), the results indicate that quarterly stock market cash flows are auto correlated for each of the varying investor groups. Further, the results provide evidence of significant positive and contemporaneous relationships between stock market returns and cash flows from foreign and mutual fund investor groups.

Ogbulu (2009) examines the existence and nature of relationships between capital market activity indicators and economic growth in Nigeria through the employment of Co-integration, Vector Error Correction Models and Granger Causality tests. The results of the study demonstrate the existence of significant long run relationship between all capital market indicators and economic growth. However, the causality results are mixed. While uni-directional causalities are observed to run from economic growth to each of market capitalization, value of new shares and value of transactions, bi-directional causality on the other hand, runs from each of total market turnover and number of listed securities to

economic growth. The second Granger Causality model however, indicates bi-directional causality between value of new issues and economic growth.

Naceur, Ghazuani and Omran (2008) investigate the impact of stock market liberalization on economic growth in the South and East Mediterranean Countries, (SEMC). Employment of data collected from a sample of eleven (11) countries over the period 1979 to 2005 and on application of the dynamic GMM panel data estimator, indicates that stock market liberalization has no significant effect on investment and economic growth. Churchill, Arhenful and Agbodohu (2013) employ quarterly time-series data to evaluate the empirical relationship between stock market development and economic performance in Ghana over the period, 1991 – 2006 through the application of Johansen Multivariate Co- integration and Vector Error Correction Model as well as Granger Causality tests. Two stock market indicators – market liquidity and real gross investments are found to significantly impact on Ghana's stock market development, while banking sector negatively and significantly relates to stock market development. The authors interpret this result as evidence of the fact that the stock market and banking sector tend to serve as substitutes and/or alternative sources for the finance of corporate investments in Ghana.

Okpara (2010b) analyzes the impact of capital market performance on the growth of Nigerian economy. The results indicate the existence of a significant long run relationship between market capitalization, new issues, value of shares traded and turnover ratio as indicators of market performance and Nigeria's real GDP. Also, the causality tests indicate that market capitalization and value of shares traded lead real GDP. The study calls for more public enlightenment on stock market activities and also, further relaxation of conditions for quotation of companies and listing of securities.

Also, Okpara (2010c) examines the effect of financial markets on the growth of investment opportunities in the Nigerian economy. The study employs Co-integration and Granger Causality tests and finds that: (i) positive changes in the price of stock are significantly related to investment expansion implying that increases in stock prices are reflective of positive changes in future investment fundamentals and (ii) stock prices and increases in investment, contemporaneously Granger Cause (support) each other. The study consequently, calls for development of supportive superstructure that will significantly, enhance financial market performance.

Further, Alti and Sulaeman (2011) argue that one of the most stylized facts in finance literature is that majority of new equity issues tend to follow periods of relatively increased stock returns and consequently, investigated on empirical basis, the extent to which the timing of new equity issues is consistent with observed increases in stock returns. The results indicate however, that corporate new issues do not significantly respond to consistent increases in stock returns per se. Rather, firms largely tend to exhibit such timing behavior, only in response to high returns that tend to coincide with significant institutional investors' demand for essentially particular corporate stocks. However, in the absence of institutional investors' purchases, the study finds that stock price rises, tends to have relatively less impact on the likelihood of new equity issuance. On the whole, the results tend to provide strong evidence of the relevance of market reception of particular stocks as basis for timing of resulting new issues.

Finally, Baker and Wurgler (2000), examine the extent to which equity share in new issues serves as a reliable predictor of stock returns in the U.S. market over the period 1928 to 1997 after controlling for other known possible predictors. Applying univariate market regression and predictor auto regression analytical tools, the authors find no significant support for explanation of the results on efficient market basis. Following the results of the study, they conclude as follows; (i) the fact that the equity share in new issues sometimes reliably predicts negative market returns is an indication of market inefficiency and (ii) it is reflective of the fact that firms do time significantly, the market component of their returns when they engage in the issuance of new securities.

3. ORGANIZATION OF DATA AND METHODOLOGY:

3.1 Data and Variable Description:

The relevant data for this study consist of aggregated annual data on Market Capitalization of the Nigerian Stock Exchange and the corresponding New Issues of securities over the period 1970 to 2011 as published in Nigerian Stock Exchange FACT BOOKS presented below in table 1.

Table 1: MARKET CAPITALIZATION AND NEW ISSUES OF SECURITIES IN NIGERIA'S STOCK MARKET, 1970 – 2011. (N'b).

Year	Stock Market Capitalization	New Issues	Year	Stock Market Capitalization	New Issues
1970	0.0201	0.0484	1991	23.10	1.099
1971	0.041	0.087	1992	31.20	1.7244
1972	0.1693	0.0706	1993	47.50	2.6369
1973	0.195	0.1343	1994	66.30	2.1617
1974	0.273	0.0767	1995	180.40	4.4256
1975	0.314	0.4588	1996	285.80	5.8582
1976	0.458	0.4413	1997	281.90	10.814
1977	0.619	0.4787	1998	262.60	15.018
1978	1.072	0.578	1999	300.00	12.038
1979	2.632	0.6498	2000	472.30	17.208
1980	4.464	0.3024	2001	662.50	37.199
1981	5.00	0.3925	2002	764.90	61.283
1982	5.01	0.4451	2003	1,359.30	180.08
1983	5.70	0.359	2004	2112.50	195.42
1984	5.50	0.1	2005	2900.10	552.78
1985	6.60	0.2084	2006	5120.90	1700.00
1986	6.80	0.1939	2007	13181.70	2400.00
1987	8.20	0.2858	2008	9563.00	2600.00
1988	10.0	0.211	2009	7030.80	279.25
1989	12.80	1.6276	2010	9918.20	2440.00
1990	16.30	1.1545	2011	9672.70	1702.00

Source: Nigeria Stock Exchange, FACT BOOK, Various Issues.

Market capitalization serves as the relevant indicator of stock market performance within the purview of this study. Several other studies including Ogun and Iyoha (2005), Shahbaz et al (2013), Ogbulu (2009) as well as Churchill et al. (2013) employ the same measure and find it statistically reliable. New issues constitutes the additional listings of varied securities from the primary arm of the stock market and constitutes for all intents and purposes, additional corporate funding through the stock market for the year. It is contended here, that the annual measures of these key variables constitute sufficient bases for examination of the nature and directions of causal relationships implicated in this study.

3.2 Specification of Analytical Techniques and Tests:

The cardinal objectives of this study are to investigate the nature and directions of prevailing causal relationship (if any) between the annual stock market capitalization of the Nigerian Stock Exchange and value of new issues of securities that prevail in the stock market. For clarity, this subsection is further subdivided as follows;

3.2.1 Stationarity Tests

Time series data are often associated with problems of non-stationarity evidenced by existence of unit root. For evaluation of the existence or otherwise of a unit root in the time series data, the modeling procedure according to Maddala (2007) and Gujarati and Porter (2009) could generally be expressed as follows for any time series variable of choice Y_t ;

$$\Delta Y_t = \alpha_0 + \alpha_1 Y_{t-1} + \sum_{i=1}^p \delta_i \Delta Y_{t-1} + \epsilon_t \quad \text{---(1)}$$

Where;

Y = Variable of choice

α_0 = Intercept

Δ = First difference operator

α_i = (for $i = 1$ and 2) and δ_i (for $i = 1, 2 \dots p$) are constant parameters

Σ_i = Stationary stochastic process
 ρ = Number of lagged terms chosen by Akaike information criterion (AIC) to ensure that Σ_i is white noise.

Following equation (1), the hypotheses for testing would consist of the following;

$H_0: \alpha_i = 0$, i.e. there is a unit root, - the time series is non-stationary.

$H_A: \alpha_i \neq 0$, i.e. there is no unit root, - the time series is stationary.

As a decision rule, if the value of the calculated Augmented Dickey-Fuller (ADF) test statistic is higher than the Mckinnon's critical values in absolute terms, then the null hypothesis H_0 , will be rejected, which implies the non-existence of a unit root and stationarity of the time series data. The converse would hold for non-stationarity of the time series data, existence of unit root and consequent acceptance of the null hypothesis. Non-existence of a unit root confirms the time series data as suitable for use in estimation of econometric relationships.

However, failure to reject the null hypothesis would methodologically provide for conduct of stationarity test on further differenced variants of each of the time series data. A modification of equation (1) provides for further differencing which includes the second differences on lagged first as well as K lags of the second differences as follows;

$$\Delta^2 Y_t = \Psi \Delta Y_{t-1} + \sum_{i=1}^{\rho} \phi \Delta^2 Y_{t-1} + \epsilon_i \quad \text{--- (2)}$$

In this further differenced situation, the hypotheses to be tested are;

$H_0: \Psi = 0$, i.e. there is a unit root, implying that the time series is non-stationary.

$H_A: \Psi \neq 0$, i.e. there is no unit root, implying that the time series is stationary.

3.2.2 The Granger Causality Tests:

Granger Causality test provides a veritable tool for this investigation. Maddala (2007), Gujarati and Porter (2009) observe that the Granger Causality approach of whether X Granger Causes (Leads) Y is simply to verify how much of present Y that can be explained by previous values of X and also, to ascertain if by adding the lagged values of X can additionally improve the explanation. In other words, Y is understandably Granger Caused by X if X assists in the prediction of Y, or if the relevant coefficients of the lagged X's are found statistically significant in the equation. Following from above assertion, the Granger test is fundamentally predicated on regression analyses as follows;

$$Y_t = \beta_0 + \sum_{i=1}^n \beta_i Y_{t-i} + \sum_{i=1}^n \beta_u X_{t-i} + \mu_t \quad \text{--- (3)}$$

$$X_t = \alpha_0 + \sum_{i=1}^n \alpha_i X_{t-i} + \sum_{i=1}^n \alpha_i Y_{t-i} + V_t \quad \text{--- (4)}$$

Where:

Y_t and X_t represent the time series variables to be tested. μ_t and V_t constitute the idiosyncratic terms (white noise errors) that capture all variations in Y_t and X_t not included in the lagged values. Maximum lag length of 2 was imputed.

4.0 PRESENTATION OF RESULTS:

4.1 Presentation of Stationarity (Unit Root) Test Results:

The results of the unit root tests are shown in table 2 below;

Table 2: Results of Stationarity (Unit Root) Tests for Market Capitalization and New Issues

Differenced Variables	ADF – Statistic	Test Critical Values			Order of Integration	Prob.
		1%	5%	10%		
D (MKC)	- 6.343528	- 3.610453	- 2.938987	- 2.607923	1 (1)	0.0000
D (NIS)	- 10.17565	- 3.605593	- 2.936942	- 2.606857	1 (1)	0.0000

Source: Authors' Computations Using E-views 7.1

The results of the unit root tests indicate that (i) the values of the ADF test statistics for Market Capitalization and New Issues are each more than those of the Mckinnon's critical values in absolute terms and (ii) the time series are stationary at first difference and integrated of order 1(1). These results therefore, confirm that each of the time series variables is stationary (has no unit root), and therefore, suitable for employment in our econometric estimates.

4.2 Presentation of Granger Causality Tests Results:

Table 3 below provides the results of the Granger Causality Tests.

Table 3: Results of Pair wise Granger Causality Tests:

Null Hypothesis	Lags	Obs	F-Statistics	Prob.
D (MKC) does not Granger Cause D (NIS)	2	39	40.8034	9.E-10
D (NIS) does not Granger D (MKC)	2	39	16.4335	1.E-05

Source: Authors' Computations using E-Views 7.1

The results of the Granger Causality test indicate that there is significant bi-directional causality between the annual market capitalization of the Nigerian Stock Exchange and New Issues. This is confirmed by high F-Statistics of 40.8034 and 16.4335 which are significant at 1% level. We therefore reject the null hypotheses that neither stock market capitalization nor New Issues Granger cause each other and accept the alternate hypotheses that Market Capitalization and New Issues lead or promote each other in the Nigerian Stock Market.

5. DISCUSSIONS, CONCLUSIONS AND POLICY RECOMMENDATIONS:

The results clearly indicate that growths in market capitalization of the Nigerian Stock Exchange and New Issues are contemporaneous and as such, promote each other. The results of this study significantly provide strong evidence and support for Bhole's contentions that growth in stock market performance promotes the issuance of new securities in the primary market. However, these results equally provide additional evidence that new securities in the Nigerian stock market equally promote market capitalization. Bhole's contentions, which have been empirically verified and validated by this study in the Nigerian environment might have resulted from the fact that enhancement in the value of market capitalization of the Nigeria Stock Market is purely indicative of improved capital market performance and by extension, the economy as a whole. This results from significant boost in corporate sector's confidence which probably, triggers off the creation of new securities and subsequent subscription to same by the investing public thereby, providing for mutual reinforcement of each other by the two study variables.

Given the results of this study, we conclude that in Nigeria: (i) Stock Market Capitalization and New Issues promote themselves and (ii) Bhole's contentions have significant empirical support in Nigeria's emerging market. Further given the theoretical and empirical importance of the subject at stake and the fact that country specifics may differ, it is recommended that this study be implemented in other market settings (economies) in order to ascertain the extent to which prevailing evidences do support and/or contradict Bhole's claims.

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