British Journal of Arts and Social Sciences
ISSN: 2046-9578, Vol.4 No.2 (2012)

http://www.bjournal.co.uk/BJASS.aspx

Market Capitalization Volatility: Effects on The Nigerian Economic Growth

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Abstract

Basically the economic growth of a nation should lend itself to growth and development in the money and capital market of the nation. Studies have revealed the extent of the money market volatility/shock effect on the economy, however, little have been done to evaluate capital market shock effect on the economic growth, this remain the focus of this study. The ordinary linear regression model and robust Autoregressive Conditional Heteroskedasticity (ARCH) and the General Autoregressive Conditional Heteroskedasticity (GARCH) as in E-view 7 package was adopted for this study and Time series data covering years 1981 – 2009 were adopted. The data were collected from the CBN reports. The result of the study revealed that there exist no ARCH effect on GDP by market capitalization except for the lag of GDP and lag of market capitalization. However, the relationship was effectively significant. It was recommended that policy should be put in place that will encourage larger participation in the market as well as encourage the internationalization of the capital market.

Keywords: capital market: capitalization: volatility: Economic: GARCH: ARCH.

1. Introduction

The rate of economic development has over time remained fast in developed countries and generally slow in Africa as a whole compared to other developing countries. This slow rate of economic development is indicated by the marginal increase in the gross national product, the increasing volume of imports compared to exports, the weak exchange value of currencies, the low expenditure on capital goods, and the slow rate of urbanization (in Nigeria) in particular, the rate of economic development has been slow. One of the major reasons attributed to the slow rate is the problem of accessibility by business organizations, private individuals and even the government to cheap funds by way of capital to finance developmental projects or to strengthen working capital requirements. Ironically, there has been a numerical increase in the number of banks and other financial institutions during the last two or three decades that trade in the financial market. Olowe (1997) opined that the financial market is the mechanism that guides the flow of funds from economic units whose savings exceeds their investment requirements to those units that have investment needs beyond their own resources. Thus, the capital market which is the concern of this study is aimed at increasing the standard of living and the general well being of the people in an economy.

Research question and objective

Over the years there has been doubt about the contributing value of the capital market to economic growth in Nigeria. There is also the problem of uncertainty over the volatility effect of the capital market on the gross domestic product of the economy and the problem of poor estimate of volatility of the Gross Domestic Product and market capitalization on the gross domestic product.

In the light of the above, the objective of the study is (i) to estimate the significant of relationship between the capital market and the Nigeria economy, (ii) determine the extent of effect of changes in the capital market on the Nigeria economic growth and (iii) estimate the volatility effect of market capitalization on the Gross Domestic Product in Nigeria. These objectives thereby bring about the following research questions:

- Is there a relationship between market capitalization and the gross domestic product?
- Is the change in market capitalization has any volatility effect on the gross domestic product?
- Is the growth of economic responsive to volatility in the capital market?

2. Literature Review

Sidney (2006) states that: The capital market" is the market where long term funds (usually more than one year duration) are obtained. It consists of the primary market and secondary market. The primary market (also known as the new issue market) is the market for new issue of securities. It is the market where seekers of funds coming into the market for the first time to raise their finance do go . The market provides a meeting point for lenders and borrowers of funds.

The secondary market (also known as the Trading Market) is the market that allows existing holders of financial claims (shares and bonds) to sell them to investors. In other words, the secondary market provides a medium where the securities that have already been issued are bought and sold. Thus, it provides liquidity for financial claims in the primary market. The financial assets traded in the capital market are known as capital market instrument. The focus of this study is the capital market shock effect on the economic growth .

2.1 The Capital Market

Midgley and Burns (1997) averred that a market provides a focus for the activities of buyers and sellers of a particular commodity or services, whereby in the course of dealings, the price or series of price is settled. The capital market is the market where securities (bonds, stocks, share etc) i.e. instruments that stay outstandingly for relatively long period of time are issued and often traded. Sidney (1996) defined capital market as the market where long-term funds are obtained by businesses and government at all levels to finance capital projects.

Goodie (2000) also defined capital market as "a network of individuals’ institutions and instruments involved in the efficient channeling of funds from the surplus units to the deficit economic units. The market conforms to the laws of demand and supply in the ordinary way. Thus, if there is an increase in the demand for funds

2.2 The Role of the Capital Market in Promoting Economic Development

Development can be defined as the process whereby the level of national income or per capita income increases over a period of time.

According to Bangs, (1968), states that economic development is aimed at raising the standard of living and the general well being of the people in an economy. Economic development involves changes in the structure of the economy, which includes emphasis on developing manufacturing industries as opposed to agriculture, movement of labour from rural to urban industries as opposed to agriculture, movement of labour form rural to urban industrial areas, less reliance on imported goods in preferences to home produced goods, revision or abolition of the land tenure system which hinders the acquisition of land for industrial projects, and the establishment of a stable political system.

The promotion of economic development should be the core objective of the government of any nation. This is because the realization of the economic policy of the government is to a very large extent dependent on the growth achieved in economic development.

2.3 Economic Growths, Economic Development and Economic Policy

Smithies (1961), states that "economic growth" and "economic development" are often used synonymously in economic discussions as if there is no distinction between both. Economic growth means more output, which implies more input, and hence more efficiency that is an increase in output per unit of input. The measurement of the rate of growth is the national income.

Economic growth is today widely accepted as a major goal of national policy, both in the developed and less developed countries. The advanced countries want more growth so that their labors force will be fully occupied and their living standard will continue to improve. The less developed countries want to begin closing the gap between their incomes level and the more fortunate countries. They want to enjoy more of the fruits of modem science and technology and to break the circle of poverty, low productivity and stagnation within which too many of the people have been confined for generations.

2.4 The role of capital market in promoting economic development

The role of the capital market in the development of a nation's economy cannot be over emphasized in view of its positive potentials and likely impact on the economy if well harnessed. According to "Nigerian capital market (2000)" states that, it is a known fact that nations cannot develop without the needed long-term fund for developmental projects, and the potential for sourcing long-term funds for industrialization.

The role of the capital market includes first and foremost, the promotion of the nation's socio-economic development through the channeling of surplus funds to the required sectors of the economy. The efficient and effective channeling those resources will lead to increased economic activities and general improvement of the well being of the populace. The capital market also provides an avenue for the citizen of a country to activity partake in the economy and benefit from its accrued on wealth through ownership of securities. The capital market provides an avenue whereby suppliers and buyers can exchange a commodity at mutually satisfactory prices. The creation of liquidity is perhaps the most obvious and certainly the most important function of the market. If not for the capital market, most of the long-term securities issued by companies would be far more permanent investment in the hands of the holders.

The capital market, through its pricing mechanism allocates and rations funds among companies", which can make the best use of them. The capital market price funds for borrowers and suppliers according to their different requirements. For large efficient companies, which can offer sound securities subject to minimum of risk, the rate for borrowing would be comparatively lower than small companies, which cannot give the same assurance of safety.

2.5 Assessing Returns on Investment in the Nigerian Capital Market

How high is the return on investment in the Nigerian capital market?

This is a vital question for most investors because no investor puts his money in the capital market for the fun of it. The first thought of the investor as he considers investment in available alternative is beyond the risks. An average investor will take the highest of risk if the returns are right. A good example is shell petroleum.

Returns on investment can usually be looked at in different ways. A traditional way of looking at it is the returns on the initial capital invested; that is, calculating the returns on capital employed or returns on equity. Another approach used by investors in the capital market is the dividend yield which shows the returns investors is making from cash dividend paid by quoted companies he has stakes in. That is, relating to each dividend paid to the market value of a particular company to see if the current dividend paid is comparable or better than returns obtainable from a alternative investments. There is also the pay back period, which considers how fast it takes to recover the invested capital.

In the capital, returns on investment can be assessed in two ways namely the price earnings ratio and the earnings yield. The price earning ratio. According to "An assessment on returns on investment in Nigerian capital Market (2003), says the price earnings ratio determines how long it will take an average investor to recover his investment in a particular company based on current earnings. It is the equivalent of the traditional approach of pay back period, and shows how expensive a share is. It is calculated by expressing the market value of one ordinary share. It is the ratio of current price to latest annual earnings on the same unit; or earnings per unit divided in price.

Goodie (2000) says the earning yield is a way of estimating investors expected returns on his investment based on current earnings. It is a measure of the underlying annual yield of the investment and of course, it is the inverse of the price earning ratio. Usually, it is expressed as a percentage. It is calculated by dividing the earning per share by the share price.

Standard and Poors, a reputable international rating agency, has rated the Nigerian Capital Market severally as having the highest returns on investment in the world. The Nigerian stock exchange won this unique distinction in 1999, 2000 and 2001 (Business Day, Thursday 20/2/2003,). The highest returns on equity are found among quoted companies in the oil market segment of the market. The Pearl Awards analysis of the returns on equity in the Nigerian Capital Market in the year 200 1 shows that the oil market sector can boast of beings the most lucrative in the capital market, if return on equity in the sector according to the Pearl Award analysis is 18% which means that managements makes an average of 81 kobo on every naira of shareholders equity in the sectors.

3. Research Methodology

The research made use of secondary data source from the CBN report 2008.the ordinary least square regression model was used to test the relationship that exist between the domestic gross profit (GDP) and the dependent variable on the market capitalization volatility (mktCapVol), market capitalization and national debt.

The market capitalization volatility was deduced as the square value of the residuals of the market capitalization depends on the market capitalization at difference of two lag of one. This is done using the Breush–Pagan–Godfrey Autogresive Conditional Heteroskedasticity (ARCH) effect test of volatility of random shock. The various dependent variables were also tested for the present of unit root. The Augumented Dickey – Fuller (ADF) test was adopted. Market capitalization was stationary at difference of two lag of one while national debt and gross domestic product (GDP) were stationary at levels at 1% significant test. The decision criterion was based on the Mackinnon (1996) one – sided p – values.

The linear regression model was estimated as below

$GDP = a_0 + a_1 D(mrk\ cap\ (-1), 2) + a_2 D(mrkCap\ (-1), 2) + a_3\ NDebt + U$

Where:

GDP = Gross domestic product

Mrk cap = market capitalization

Mrk cap vol = market capitalization volatility

NDebt = National debt

a_0, a_1, a_2, a_3 = constants value of the coefficients

U = residual value of the error term.

4. Results and Discussion

The study test the effect of the volatility of market capitalization and national debt on the gross domestic income of Nigeria between 1981-2008. To ensure the stability of the variables , the unit root test using the Augmented Dickey-fuller (ADF) was carried out on the variables. The result shows as follows:

Table 1

AUGUMENTED DICKEY FULLER TEST (with intercept)

	t-statistics	Decision rule	Probability
GDP	-6.714	I(0)	0.000
mrkCap	-6.402	I(1)	0.000
NDebt	-6.777	I(0)	0.000
mrkCapVol	-6.251	I(2)	0.000

Note: one asterisks denote rejection of the null hypothesis at 1% based on the Mackinnon (1996) critical value.

Table 1 shows the result of the augumented dickey-fuller (ADF) unit root test for the variables; GDP, mrkCap, NDebt and mrkCapVol. While GDP and NDebt were stationery at level, mrkCap and mrkCapVol were stationery at 1^{st} difference respectively . The variable were however stationery at 1% critical value.

Table 2
Breusch-pagan-godfrey: ARCH test

	probability	t-statistics
mrkCap(0)	0.0097	2.792671
NDebt(0)	0.1957	1.327922
GARCH(-1)	0.000	-12.19698

Table 2 revealed the basic GARCH (1, 1) results for mrkCap and NDebt. The test for ARCH effect on mrkCap was significant at 0.0097 and not significant for NDebt at 0.1957. Thus, no ARCH effect exists in NDebt. The GARCH (-1) for the linear equation revealed a strong ARCH effect on GDP by the mrkCap(0) and NDebt(0) variables.

Table 3

	Coefficient	Probability
C	2572335	0.000
D(mrkCap,	-6.325287	0.000
mrkCapVol	6.551280	0.000
NDebt	-0.095698	0.9799
R-Squared		0.835266
Adjusted R^2		0.814675
P ratio (F-statistics)		0.0000

** Significant at 0.05
** significant at 0.10

The result in table 3 shows the least square regression model, expressing GDP as a function of market capitalization, Market capitalization volatility, and NDebt. The result of the regression revealed a R^2 of 0.835266 or 84%. It means that the determinant variables have high effect on GDP, there exist a high positive relationship between the dependent variable and the explanatory variables. Also the coefficient of determinant stands at 0.814 or 81% which suggest that 81% changes in the dependent variable (GDP) is caused by the explanatory variables.

The effect of each variable on the explained variable (GDP) revealed that market capitalization and market capitalization volatility are significant deterministic factors while National Debt is not a significant factor on the growth of gross domestic product (GDP). It should be noted that the market capitalization at integration of order one was used while a negative relationship exist between mrkCap and GDP a positive relationship of the same level exist between GDP and marketCapVol. This suggests that only the shock in marketCap effect changes in GDP. National Debt is not a significant factor or explanatory variable of the GDP. Other exogenous variable apart from National Debt influence changes in GDP. However, there is a combine effect of all the variables on GDP. This is revealed by the significant value of the probability ratio of F – statistics at 0.05 levels.

Thus, the market capitalization itself is the intrinsic significant change factor on the gross domestic function in Nigeria.

5. Findings

The study reveal that each of the dependent variable impact strongly on the GDP over the period. It was also discovered that market capitalization volatility (mktcapvol) remain a strong influence variable on the GDP as well as the market capitalization at lag of one. However, national debt does not reveal any impact on the GDP. The lag of market capitalization also become stationary at the short run, at the second difference at lag 1 and lag 2. It is important to note that the capital market provoke serious impact on the GDP. Notwithstanding, the lack of valuable effect by national Debt on GDP. All the determinant variables combined promote changes in GDP beyond individual influence. It is noteworthy that 81% changes in GDP is attributable to changes in the independent variables combined.

Lastly, the volume of debt owed by Nigeria does not promote any short – run or long – run growth in the economy. Despite the huge debt burden of Nigeria, such borrowing does not translate to economic growth in any form. There is also a strong combine volatility effect of the independent variables on GDP.

6. Conclusion and Recommendations

This study unveils a high impact relationship between market capitalization and GDP on one hand and market capitalization volatility and GDP on the other hand. There is also a combined effect on GDP by the independent variables. It is thus of value to note that events at the capital market holds value on the GDP. The capital market changes influence the growth of the economy, while large debt volume does not impact significantly on the value of the economy. The following are the recommendations put forward:

- The government should put in place policy that will bring increased participation in the stock market activities.
- Policy should be put in place that will encourage more firms going public, this will increase the Capital base of the market.
- Policy should be put in place that will encourage the internationalization of capital market. The bond market should be given spirited effort to grow to robust level. The debt volume should be redirected to bring about development in the economy.

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