

Investor's Sentiment, Stock Market Liquidity and Economic Growth in Nigeria

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ABSTRACT Evidence abound that investor's sentiment and stock market liquidity are critical indices for stock market growth and development. This view has been substantiated by studies in both developed and developing countries. In this paper, we investigate the relationship as well as the channel through which investor's sentiment and liquidity affect growth by using appropriate econometric technique on time series data from 1984-2005. Empirical evidence shows that both investor's sentiment and stock market liquidity Granger-cause economic growth in Nigeria.

I. INTRODUCTION

The way the investors perceive the stock market goes a long way in determining not only the return or the stock prices, but also the future and growth of the capital market. Sentiment of the investors play significant roles in determining movements in prices, the rate of turnover in the stock market and of course its capitalization. Thus, investors sentiment (their pessimism or optimism about stocks) has become a factor to be reckoned with more so, as it affects liquidity in the stock market and economic growth.

In offering a stock to the market, the psychology and perception of the would-be-investors come into play. Their sentiment determines whether an offer would be fully subscribed, under-subscribed or over subscribed. If under-subscribed, whether or not to extend the offer period. Empirical evidences abound that investors confidence is significantly associated with stock market growth in both developed and developing countries. Several studies have proved the long run relationship between stock market liquidity and economic growth, a lot others have equally established a relationship between sentiment and capital market liquidity.

However, in an emerging market economy like Nigeria, there is scarcity of literatures on (1) the relationship between investor's sentiment and stock market liquidity and (2) the channel through which investor's sentiment and stock market liquidity affect growth. This of course, is what the study aims to fill by employing unit- root test, Granger - causality test and the OLSE to Nigerian annual data from 1981- 2005. The rest of study is

split into five (5) sections: section II is on literature review while section III centres on methodology. Section IV accommodates empirical results and findings. Section V centres on discussion while section VI is on conclusion and policy implication.

II. REVIEW OF LITERATURE

Literatures are numerous on the relationship between capital market and economic growth on one hand and between capital market liquidity and growth on the other.

A lot of studies also exist on the causality between capital market development and economic growth. Such studies that have proved the long run relationship between stock market development and economic growth include: Atje and Jovanovic (1993), Levine and Servos (1996, 1998), Rousseau and Wachtel (2000), Beck and Levine (2003) and Oke and Mokuolu (2004). Others include Levine (1996), Shaw (1973), McKinnon (1973), Patrick (1996), Demguc Kunt et al. (1993), Osaze (1997), Nzotta (2002) and Musa Al-Faki (2006) inter-alia.

A stock market with high degree of turnover or high turnover ratio measured by value of transactions as a percentage of market capitalization is said to be highly liquid. Liquidity on the other hand is best measured by the total value of traded shares relative to the size of the economy, i.e. total value of traded shares (TVTS) as a percentage of GDP. Thus, turnover ratio and liquidity are analogous and interrelated but are distinct. While turnover ratio measures the rate at which stock are bought and sold, liquidity measures the rate at which agents can convert

stocks into purchasing power (see Appendix I).

Levine (1997) sees liquidity as the ease and speed with which capital market agents can convert assets into purchasing power at agreed prices. Before now, past studies have not shown the thin line disparity between turnover ratio and liquidity in the stock market. For instance, Musa Al-Faki (2006) opines that stock market liquidity is also denoted by the turnover ratio of the market. In the words of Baker and Stein (2004), they suggest that turnover or more generally liquidity can serve as sentiment index; thus representing measures of investor's sentiment.

According to Nzotta (2002), stock market liquidity is measured by the total value of shares traded at the stock exchange as a share of the GDP. He claims a link between stock market liquidity and economic growth. He asserts further that this ratio varies with the relative ease of trading.

Investor sentiment pessimism or optimism of the investor is the propensity to speculate. Sentiments drive the relative demand for speculative investment and so causes cross-sectional effects even if arbitrage forces are the same across stocks (Baker and Wurgler 2006). A history of investor's sentiments shows that the late 1970's through mid-1980's can be described as a period of general high sentiment and series of speculative episodes. By 1987 and 1988, market sentiment had changed from an acceptance of an existing story to a desire to stay closer with low multiple stocks that actually pay dividends.

The late 1990's bubble in technology stocks is familiar Cochrane (2003) and Ofek and Richardson (2002) offer export perspectives on the bubble. Asners et al. (2002) and Chan et al. (2000) argue that the late 1990's stock valuation were difficult to ascribe to rationally expected earnings growth.

Baker and Stein (2004) developed a model that helps to explain that an increase in liquidity predicts lower subsequent returns in both firm-level and aggregate data. They posit that irrational investors participate only on over-valued market because of short sales and they over react to private signals about future fundamentals and this leads to sentiment shocks. They find that measure of equity insurance and share turnover are highly correlated and that sentiment indicators from market liquidity may be responsible for low expected returns. DeLong et al. (1990) suggest that noise traders can affect stock prices because the risk aversion of irrational speculators keeps them away from taking large arbitrage positions.

Cutler et al. (1989) while investigating the role of the media on stock prices find that important qualitative news stories do not seem to help explain large market returns unaccompanied by quantitative macroeconomic event. Antiweiler and Frank (2004) find evidence of relationship between message activity and trading volume and message activity and return volatility. The model of Campbell Gross and Wang (1993) provides rationale why pessimism could be related to volume of trading. High pessimism indicates that a group of liquidity traders will suddenly decide to buy or sell equity. This assertion supports the claim of DeLong et al. (1990) that absolute value of pessimism will increase trading volume.

III. METHODOLOGY

As mentioned earlier various approaches exist for measuring investor's sentiment as it relates to stock market liquidity and turnover.

Denis and Mayhew (2002) use the put-call ratio, Randell and Tully (2003) use net cash flow into mutual funds, Lashgari (2000) uses the Banon's confidence index, Baker and Wurgler (2006) use the insurance percentage, Nzotta (2002) uses the Nigerian Stock Exchange (NSE) share turnover and Baker and Stein (2004) use turnover as a measure of sentiment index.

The Model: In line with Nzotta (2002) and Baker and Stein (2004), we posit a behavioural relationship of the form:

$$MCGDP = \beta_0 + \beta_1 Mtr + e_1 \dots\dots\dots 1$$

$$MCGDP = \beta_0 + \beta_1 TVTSGDP + e_2 \dots\dots\dots 2$$

$$MCGDP = \beta_0 + \beta_1 MTR + \beta_2 TVTSGDP + e_3 \dots\dots\dots 3$$

Where MCGDP = market capitalization as % of GDP

MTR = market turnover ratio as measure of investor's sentiment

TVTSGDP = Total value of traded shares as % of GDP is used as measure of stock market liquidity.

Stationarity Test: To test for the stationarity or otherwise of the variables, table 1 shows the data collected between 1981-2005 was subjected to unit root test using the augmented Dickey - Fuller (ADF) test (Dickey and Fuller 1979).

Granger - Causality Test: To determine the direction of causality between the variables, the Engle and Granger (1987) causality test was performed on the variables.

O.L.S.E: The use of the O.L.S.E. technique was contingent upon the unidirectional causality

Table 1: Some capital market indicators in Nigeria: 1981 - 2005 (selected years).

Year	Turnover ratio %	mc/GDP %	TVTS/GDP %	TVTS/MC %
1981	6.7	10.5	0.69	6.67
1985	5.5	9.9	0.55	5.57
1990	1.6	6.1	0.099	1.63
1995	1.0	9.3	0.095	1.02
2000	6.0	10.4	0.621	5.96
2005	9.1	27.4	2.48	8.77

Source: Computed by the author.

between the variables. Hence, both simple and multiple regression technique were used to affirm the significance of the parameter estimates.

IV. RESULTS

The unit root tests show that MCGDP is not stationary at the zero order both with constant and constant and trend terms. Hence, we move ahead to conduct the ADF test at first difference to further ascertain the stationarity of the series. The unit root results at first difference rejects the null hypothesis of non-stationarity at both 1 and 5 percent levels (Table 2, 3). Thus, having confirmed the stationarity of the series, we proceed to compute the Granger causality test.

All the results were found to be significant at the 5 percent level indicative of the fact that the

direction of causality is unidirectional i.e. from MTR to MCGDP, MTR to TVTSGDP and TVTSGDP to MCGDP (Table 4).

Table 4: Granger causality test results

Direction of causality	F – value	Decision
MTR ? MCGDP	3.535*	Reject
MCGDP ? MTR	0.502	Do not reject
MTR? TVTSGDP	7.894*	Reject
TVTSGDP? MTR	0.856	Do not reject
TVTSGDP MCGDP	24.698*	Reject
MCGDP? TVTSGDP	0.043	Do not reject

* = Significance at 5%

This confirms that the channel through which investor's sentiment and stock market liquidity affect economic growth is from investor's sentiment (MTR) to stock market liquidity (TVTSGDP) to market capitalization GDP (MCGDP). Since, causality is unidirectional; we proceed to conducting the O.L.S.E.

The regression results for both simple and multiple regressions show that MTR and TVTSGDP are correctly signed and conform with a-priori expectations (Table 5). The t-values are statistically significant as well as the F-statistics at the 5 percent level. The R² are high except for MTR alone which stood at 54.7 percent compared to 84 and 92 percent levels for TVTSGDP and MTR and TVTSGDP combined. Other statistics such as D.W., SER and R² adjusted are all reliable and satisfactory.

V. DISCUSSION

Since all the series are found to be stationary, although MCGDP was only stationary at first difference, the Granger causality results show vividly that the direction of causality is from MTR to MCGDP. The result portends that MTR as a measure of investor's sentiment drives liquidity of the stock market proxied by TVTSGDP and

Table 2: Unit root tests at levels

Series	ADF Statistics with constants	ADF statistics with constant & trend terms
MCGDP	2.273	1.227
MTR	- 3.006 **	- 4 .271 **
TVTS GDP	4.673 *	4.423 *
Critical Val (1%)	- 3.74	- 4.416
= (5%) - 3000		-3.622
= (10%)	- 2.635	- 3.247

* = Significance at 1%

** = Significance at 5%

Table 3: Unit root test at first difference

Series	ADF statistics with constants	ADF statistics with constant & trend terms
MCGDP	- 3.432 **	- 4.349 **
MTR	- 5.757 *	- 6.111*
TVTSGDP	8.828 *	6.069*
Critical Val		
1 %	- 3.74	-4.416
5%	- 3.000	-3.622
10%	- 2.635	-3.247

* = Significance at 1%

** = Significance at 5%

Table 5: Regressions using O.L.S.E. technique (1981 - 2005)

Dep variable	Constant	MTR	TVTSGDP	R ²	Adjusted R ²	F-statistics	DW.
MCGDP	(3.044) 4.384	(5.269)* 1.314		0.547	0.527	27.76*	2.29
MCGDP	(17.754) 8.630		(11.132)* 0.129	0.84	0.83	123.91*	1.35
MCGDP	(9.209) 6.302	(4.069)* 0.563	(9.465)* 0.104	0.920	0.91	112.15*	1.61

NB: Figures in parenthesis are t-statistics

* = Significance at 5 percent

this further drives economic growth and development.

Also, with the significance of the t-statistics, f-statistics, R², adjusted R² and the D.W from O.L.S.E. result, one can affirm that a strong relationship exists between MCGDP and MTR on one hand and MCGDP and TVTSGDP on the other. This further portends that developments in the stock market occasioned by investor's sentiment can promote economic growth.

VI. CONCLUSION AND POLICY IMPLICATION

In this paper, empirical evidence reveals that investor's sentiment and stock market liquidity are critical ratios for stock market growth and development. The road map though which investor's sentiment could affect economic growth has also been provided via the unidirectional movement from sentiment to liquidity and to growth.

The policy implication of these findings is that investor's sentiment i.e. their pessimism or optimism can make or mar the growth and development of capital market activities. Policy makers and opinion formers should gear efforts towards fine-tuning the indices that can result in long term pessimism in the stock market like unpaid dividends, delay in dividend payments and transfer of stocks. As instability in the stock market can send wrong signals to other macro-economic variables and this can have far reaching effects on the economy.

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