

# STOCK MARKET PERFORMANCE AND THE AUGMENTATION OF FRONTIER ECONOMIES: A COMPARATIVE SCRUTINY OF NIGERIA & MAURITIUS

**Godsday Edesiri Okoro**

Department of Accountancy, Faculty of Management Sciences,  
NnamdiAzikiwe University, Awka, Anambra State, Nigeria.

[edesirioracle@yahoo.com](mailto:edesirioracle@yahoo.com)

## **Abstract**

*This paper provides a comparative analysis on stock market performance and augmentation of frontier economies: Nigeria and Mauritius. Using a Paired-Samples T-test statistical modus-operandi, data of Market Capitalization and Gross Domestic Product were obtained from the Central Bank of Nigeria Statistical Bulletin and Annual Financial Services Commission Statistical Bulletin of Mauritius during 2006-2010. The findings revealed that stock market performance for Mauritius was superior to Nigeria and same for GDP. In addition, the negativity shows that stock market performance has a negative impact on economic progress in Nigeria and Mauritius. This may be due to the fact that frontier markets give attention to money market while relegating stock market to the background. On this note, since stock market contributes significantly to economic growth, efforts by both governments should be that of developing policies aimed at further strengthening stock market. These policies should not be 'written-policies' but policies that can be put into practice. Also, market capitalization can be stimulated by encouraging investments in stock market. This can be done by ensuring investors are fail-safe of their investments. When investors perceive a safety of their investment, they may want to commit their resources and in turn make the economy to flourish.*

## **Keywords**

Stock Market Performance; Economic Growth, Market Capitalization; GDP; Nigeria; Mauritius

## **JEL Classification**

M4

## **Introduction**

There is the general assumption that the rate of economic growth of a nation depends on a linkage to sophisticated financial market. As noted by Adewuyi and Olowookere (2011) the financial market (stock market) is a segment of a country's financial system where the main article that is traded is medium and long-term financial instruments. These instruments traded in the stock market are commonly described as 'securities' because investors have the self-confidence on the repayment of their principal whether now or in the future. Stock market according to Chiwuba and Amos (2011) provides channel for resource mobilization, risk diversification, securitization and determination of cost of capital for project evaluation that affects economic growth. Prior empirical evidence depicts that developed economies have explored two channels through which resources can be mobilized: money and capital market (Samuel, 1996; Demirguc-Kunt and Roos, 1996). This is however not the case in frontier markets like Nigeria and Mauritius where emphasis has always been placed on money market with little attentiveness on stock market (Nyong, 1997) which is the main engine that drives the financial system in most leading economies of the world.

It is interesting to note that the link between stock market performance and economic growth in the past has generated passionate hullabaloo amongst stock market researchers in developed, emerging, frontier and outliers markets (Akinifesi 1987; Samuel, 1996; Demirgüç-Kunt and Ross, 1996; Levine and Sara, 1996; Obadan 1998; Onosode, 1998; Emenuga 1998, Edesiri and Ejubekpokpo, 2012; and Edesiri, 2014). This case is not different for Nigeria and Mauritius which is believed to be classified as an emerging or frontier market. One way of resolving this tumult in stock market research is through conducting an investigation into emerging, frontier and outlier capital markets since there is the general assumption that developed economies have efficient stock market. Thus, this paper provides a comparative analysis on stock market performance and the augmentation of two frontier markets: Nigeria and Mauritius so as to resolve the passionate arguments that have rocked stock market research in Nigeria, Mauritius and the world over. This paper is sectionalized into: empirical foundation, empirical model, discussion of results and concluding remarks.

### **Empirical Foundation**

There are vast stock market researches that have shown that capital markets have the ability to affect economic growth and development in Nigeria, Mauritius and the world over. In spite of the bulk of empirical evidence over the decade, a comparative analysis on Nigeria and other frontier stock markets like Mauritius has not been established. A number of studies have shown that stock market positively affect economic activities. Quite a few studies have shown that stock market contributes to economic growth and development in frontier market like Nigeria (see Adewuyi and Olowookere, 2011; Kolapo and Adaramola, 2012; Adetayo and Sajuyigbe, 2012; Oke and Adeusi, 2012; Benedict and Emmanuel, 2013; Owolabi and Ajayi, 2013; Atoyebi *et al.*, 2013) and in Mauritius (Hartmut, Peter, Josef and Volker, 2005; Nowbusting, 2009; Nowbusting, Ramsok and Ramsok, 2010; Seetanah, Sannasee and Lamport, 2012; Seetanah, Sawkut, Sannasee and Seetanah, 2012; Svirydenka and Petri, 2014).

In Nigeria, Adewuyi and Olowookere (2011) descriptively assessed the contribution of capital market to economic development in Nigeria. The study found that capital market has significantly impacted on the development of the Nigerian economy such that it promotes and provide opportunities for investment diversification as well as improvement in service delivery. Kolapo and Adaramola (2012) tested the relationship between the Nigerian capital market and economic growth during the period 1990 – 2010. The variables used were Gross Domestic Product (proxy for economic growth), Market Capitalization, Total New Issues and Total Listed Equities and Government Stocks (proxies for capital market). Applying Johansen co-integration and Granger causality test, the study found that the Nigerian capital market and economic growth are co-integrated. Implying that a long run relationship exists between capital market and economic growth in Nigeria; also, the study found no causation between economic growth and capital market except for market capitalization that have no reverse causation with Gross Domestic Product.

Adetayo and Sajuyigbe (2012) examined the effect of Nigerian capital market on economic growth and development during the period 1990 through 2011, using the Ordinary Least Square estimation technique. The result found a significant relationship between capital market and economic growth. Oke and Adeusi (2012) studied the impact of capital market reforms on economic growth during the period 1981 to 2010 in Nigeria using the Ordinary Least Square estimation method and the

Johansen co-integration test. The study suggests that capital reforms positively impact on the economic growth in Nigeria. Owolabi and Ajayi (2013) examined the relationship between capital market and economic growth in Nigeria using the Ordinary Least Square (OLS) technique during the period 1971-2010. The study showed a positive relationship between economic growth and gross capital formation, foreign direct investment, capital market index and debt overhang, suggesting that capital market affect economic growth in Nigeria.

Benedict and Emmanuel (2013) explored the economic analysis of capital market performance and economic growth in Nigeria. The study used a multiple regression and Vector auto-regression model to capture the impact of capital market on economic development and the transmission mechanism between the all share index, value of shares traded and number of deals. The Augmented Dickey Fuller tests indicated that the variables are non-stationary but became stationary after taking the first differences implying that the variables follow a random walk. The proof from Johansen co-integration test suggests a long run equilibrium relationship between capital market and economic development in Nigeria, thus, implying that capital market affect economic development in Nigeria. Atoyebiet *al.*, (2013) investigated the impact of capital market on economic growth in Nigeria using annual data from 1981 to 2010 in a linear regression (Ordinary Least Square) and non-linear regression (Vector Auto-regression) models. The linear regression equation found that market index and capitalization are statistically significant while the non-linear regression indicate a long run relationship between stock market and real GDP. The implication is that capital market impact on economic growth in Nigeria.

In Mauritius, there are no studies that have established a comparative analysis in Mauritius and other frontier capital markets like Nigeria. The numerous studies in Mauritius have been that of the relationship between capital market and economic growth. For instance, Hartmut, Peter, Josef and Volker (2005) investigated the place of international capital market integration and education choice on economic growth. The study adopted the structural estimation technique. Using foreign direct investment as measure for capital inflows, the study suggests that when there is an increase in the net capital inflows in response to higher education, economic growth is influenced. Nowbusting (2009) ascertained how certain variables (foreign direct investment, gross capital formation and government expenditure) affect stock market (stock traded ratios). Using natural logarithm of the variables inter-alia, the empirical evidence shows that these macroeconomic variables significantly affect stock market and in turn economic growth.

Seetanah, Sannasee and Lamport (2012) theoretically explore how export diversification influence economic growth and found a bi-causal relationship between diversification and growth in Mauritius such that human capital and foreign direct investment are the major determinants of exports diversification. Seetanah, Sawkut, Sannasee and Seetanah (2012) empirical tested the relationship between stock market development and economic growth in Mauritius using panel VAR analysis. The findings of the study indicated that stock market development is a determinant of economic growth. In addition, it was discovered that the growth rate of stock market to economic growth is lower when compared to other factors that determine economic growth in Mauritius. The study on a multivariate analysis of financial development and growth by Nowbusting, Ramsok and Ramsok (2010) suggest that financial development positively impacts on economic growth in Mauritius, although its impact is fairly minimal on the economy. Svirydenka and Petri (2014) study seek to question the drivers of growth in Mauritius using growth accounting to evaluate the sources of past growth and project potential ranges of growth through 2013. The study found that improvement in savings and investment in the capital market has the

tendency to influence economic performance, although improvement in the efficiency of social spending and public enterprises reforms, investments in education among others are determinants of economic performance. Concluding this empirical review, we have however observed that there are empirical studies on capital market performance and economic growth in Mauritius. Also, we acknowledged that there is no empirical evidence on a comparative analysis of the capital market performance and economic growth of Nigeria and Mauritius. Thus, this study was carried out to analyze stock market performance and the augmentation of two frontier economies: Nigeria and Mauritius as well as resolving the hullabaloo on frontier stock markets researches.

### Empirical Model

This paper presents the empirical results of stock market performance and the augmentation of frontier economies: Nigeria and Mauritius. However, in order to do this, we employed a Paired-Samples T-test (PST) statistical technique. The test variables are Market Capitalization (MRCAP) and Gross Domestic Product (GDP) of both countries. Data of Market Capitalization and Gross Domestic Product was obtained from the Central Bank of Nigeria Statistical Bulletin and in the case of Mauritius; data of Market Capitalization and Gross Domestic Product was sourced from the Mauritius Financial Services Commission Annual Statistical Bulletin. We believe that GDP is a measure of economic growth and Market Capitalization measures the aggregate performance of capital market of a country. The study period is during 2006 – 2010 for both countries.

### Discussion of Results

We presented the descriptive statistics (mean, standard deviation and standard error of mean) of the variables and inferential statistics (paired-sample test statistics) in tables 1-3.

**Table 1 Paired Samples Descriptive Statistics: MRCAP Example of table**

|                      | <b>N</b> | <b>Mean</b>  | <b>Std. Dev.</b> | <b>Std. Error Mean</b> |
|----------------------|----------|--------------|------------------|------------------------|
| MRCAP <sub>NIG</sub> | 5        | 8962922000   | 3064502819       | 1370487324             |
| MRCAP <sub>MAU</sub> | 5        | 145716995601 | 31518160890      | 14095350059            |

Source: SPSS Output, 2015

Table 1 presents the descriptive statistics of Market Capitalization for Nigeria and Mauritius so as to see the difference between the performances of both stock markets. As shown above, the mean of 145716995601 suggests that Market Capitalization (MRCAP) of Mauritius is greater than Nigeria with mean value 8962922000. The above scenario is further captured in the standard deviation and standard error of mean with value 31518160890 and 14095350059 for Mauritius respectively which is greater than Nigeria with mean and standard deviation of 3064502819 and 1370487324 respectively. MRCAP was reported in millions of Naira for Nigeria and Mauritian Rupee for Mauritius. We have however found that the magnitude in the difference of the mean is not moderate for both countries.

**Table 2: Paired Sample Descriptive Statistics: GDP**

|                    | <b>N</b> | <b>Mean</b> | <b>Std. Dev.</b> | <b>Std. Error Mean</b> |
|--------------------|----------|-------------|------------------|------------------------|
| GDP <sub>NIG</sub> | 5        | 24459447    | 5917678          | 2646466                |
| GDP <sub>MAU</sub> | 5        | 195053000   | 110548403        | 49438749               |

Source: SPSS Output, 2015

Table 2 shows the descriptive statistics of Gross Domestic Product for Nigeria and Mauritius in order to ascertain the differences in economic prosperity of both countries. As could be seen above, the mean of 195053000 implies that economic growth of Mauritius was better off than Nigeria with mean value of 24459447. The above position was further reflected in the standard deviation and standard error of mean with value 110548403 and 49438749 respectively for Mauritius which is greater than Nigeria with mean and standard deviation of 5917678 and 2646466 respectively. GDP was reported in millions of Naira for Nigeria and Mauritian Rupee for Mauritius.

**Table 3: Paired Sample Test**

|   | <b>T</b> | <b>df</b> | <b>Sig(2-tailed)</b> | <b>Mean Diff.</b> | <b>95% Confidence Interval of the Diff</b> |              |
|---|----------|-----------|----------------------|-------------------|--|--------------|
|   |          |           |                      |                   | <b>Lower</b>                               | <b>Upper</b> |
| Pair 1: MRCAP <sub>NIG</sub> - MRCAP <sub>MAU</sub> | -10.246  | 4         | .001                 | -136754073601     | -173810016392                              | -99698130810 |
| Pair 2: GDP <sub>NIG</sub> - GDP <sub>MAU</sub>     | -3.576   | 4         | .023                 | -170593553        | -303046942                                 | -38140164    |

Source: SPSS Output, 2015

Table 3 reports the Paired-Sample Test for Nigeria and Mauritius stock market performance (MRCAP) and economic growth (GDP). From the above table, it could be seen that the asymptotic significance of .001 and .023 is lesser than our chosen significance level  $\alpha = 0.05$ . However, this implies that stock market performance and economic growth for Nigeria and Mauritius is significantly different, i.e. MRCAP ( $t_4 = -10.246$ ,  $p < 0.05$ ) and GDP ( $t_4 = -3.576$ ,  $p < 0.05$ ). Taking a closer look at the result, an additional factor could be found. The negative sign attached to the coefficient of market capitalization suggests that in Nigeria and Mauritius, market capitalization have negatively affected the level of economic growth. This is not surprising since developed economies like the US, UK, China, Spain among others explore money and capital market while frontier markets like Nigeria and Mauritius harness only money market with little consideration on capital market which is the main engine that drives the financial system in most leading economies of the world.

### Concluding Remarks

The analysis of data has provided us with some insightful revelations. First we discovered that stock market performance for Mauritius was superior to Nigeria. The same was also reported for economic growth. This was captured by the descriptive statistics, although the growth rate was stronger in Mauritius. Second, the negativity calls to mind that stock market performance has a negative impact on economic progress in Nigeria and Mauritius. This may be due to the proposition that frontier markets give attention to the money market while relegating stock market to the background. The negative sign represents severe inference for the management of

both countries' economy because stock market is a major institution in the financial system while GDP is a fundamental macroeconomic variable that most governments pursue rigorously. On this note, since capital market contributes significantly to economic growth, efforts by both governments should be that of developing policies aimed at strengthening the capital market. These policies should not be 'paper-policies' but policies that will be put into practice. There should be routine check on how these policies in the market are formulated and implemented. In addition, market capitalization should be stimulated by encouraging investments in the capital market. This can be done by ensuring that investors feel safe of their investments. When investors perceive a security standpoint of their investment, they may want to commit more of their resources and this in turn will further strengthen economic growth.

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**APPENDIX**

**Output of Paired Sample T-Test**

T-TEST PAIRS=MRCAPNIG GDPNIG WITH MRCAPMAU GDPMAU (PAIRED)

/CRITERIA=CI(.9500)

/MISSING=ANALYSIS.

DataSet0]

**Paired Samples Statistics**

|               | Mean               | N | Std. Deviation    | Std. Error Mean   |
|---------------|--------------------|---|-------------------|-------------------|
| Pair MRCAPNIG | 8962922000.0000    | 5 | 3064502818.82233  | 1370487324.02529  |
| MRCAPMAU      | 145716995601.00005 | 5 | 31518160898.58333 | 14095350059.00164 |
| Pair GDPNIG   | 24459446.8960      | 5 | 5917677.74323     | 2646465.94056     |
| GDPMAU        | 195053000.0000     | 5 | 110548402.46019   | 49438748.54100    |

**Paired Samples Correlations**

|                            | N | Correlation | Sig. |
|----------------------------|---|-------------|------|
| Pair 1 MRCAPNIG & MRCAPMAU | 5 | .580        | .305 |
| Pair 2 GDPNIG & GDPMAU     | 5 | .670        | .216 |