The impact of capital market on economic growth: the Nigerian Perspective

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Abstract

The objective of this study is to examine the impact of capital market on economic growth in Nigeria. The study adopts a time-series research design relying extensively on secondary data covering 1985-2012. The study utilizes regression analysis as data analysis method incorporating multivariate co-integration and error correction to examine characteristics of time series data adopting disaggregate the capital market indices approach. Observation across studies on this subject is the heterogeneity in empirical findings over what may be termed a considerably uniform theoretical framework at least with regards to causality. Our finding suggests that two exhibit positive while two exhibit inverse and statistically significant relationship with economic growth. This could stimulate dialogue on the implication for policy simulation. Recommendation is that relevant regulatory agencies should focus on enhancing efficiency and transparency of market to improve investor's confidence. Therefore the need for effective and favourable macroeconomic environment to facilitate economic growth and ensure that channels of capital market induced growth are built around effective systems; and that policy institutions are active in making systemic checks and appropriate policy innovations to ensure capital market led economic growth.

Keywords: Capital Market; Economic Growth; Total Listing; Market Capitalization; Value of Transaction and Total New Issues

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1. Introduction

In the last two decades, studies on the capital market have received considerable attention from contemporary finance and economics literature resulting from its role in the provision of long-term, non-debt financial capital which enables companies to avoid over-reliance on debt financing, thus improving corporate debt-to-equity ratio and also in the mobilization of resources for national growth. According to Ndako (2010), the capital market is viewed as a complex institution imbued with inherent mechanism through which long-term funds of the major sectors of the economy comprising households, firms, and government are mobilized, harnessed and made available to various sectors of the economy. For sustainable economic growth, funds must be effectively mobilized and allocated to enable businesses and the economies harness their human, material, and management resources for optimal output. Hence, the capital market is an economic institution, which promotes efficiency in capital formation and allocation.

The capital market contributes to economic growth through the specific services it performs either directly or indirectly. Notable among the functions of the capital market are mobilization of savings, creation of liquidity, risk diversification, improved dissemination and acquisition of information, and enhanced incentive for corporate control. Improving the efficiency and effectiveness of these functions, through prompt delivery of their services can augment the rate of economic growth (Okereke-Onyiuke, 2000; Levine and Servos, 1996; Obadan, 1995; McKinnon, 1973).

The theoretical framework on the effects of capital market on economic growth dates back to the work of Schumpeter, (1911) which explained that a well developed financial system can facilitate technological innovation and economic growth through the provision of financial services and resources to investors. The above argument of Schumpeter, (1911) was later advanced as the McKinnon-Shaw, (1973) hypothesis, which is a policy analysis tool for developing countries with strong recommendation and high priority on the efficiency of financial systems in facilitating capital accumulation and financial intermediation.

The above hypothesis became formalized and popularized through the endogenous growth models of Fry (1988), Greenwood and Jovanovic (1990) and Pagano (1993) which specify explicitly the modeling of the link between financial intermediation role of capital markets and growth indicators. These models have identified the capital market as an institution that contributes to the economic growth of emerging economies, they are also considered as a variable in explaining the economic growth in the most-developed ones.

The Nigerian capital market which started operations in mid-1961 with eight stocks and equities; with about seven United Kingdom (UK) firms quoted on the Nigerian Stock Exchange (NSE) which had, at the same time, dual quotations on the London Stock Exchange. At the commencement of operations, the market started with 0.3 million shares worth N1.5 m in 334 deals and the value continued to grow steadily to N16.6m in 634 deals by 1970 (CBN 2004). According to Nigerian Stock Exchange report (NSE, 2009), in 1995 the Federal Government liberalized the capital market with the abrogation of Laws that prevent foreign investors from participating in the domestic capital market. This includes: The Foreign Exchange; Monitoring and Miscellaneous Provision Decree No: 17, 1995; Nigerian Investment Promotion Commission Decree No: 16, 1995; Companies and Allied Matters Decree of 1990 and Securities and Investment Act (ISA) 45 of 1999. These legislations have accorded Nigerians and foreign investors the same right, privileges and opportunities
for investment in securities in the Nigerian capital markets. Other key measures included The Central Security Clearing System (CSCS) which commenced operations in April 1997. It is a central depository for all the share certificates of quoted securities including new issues.

With a market size of over 233 listed equities and gradual stability of the market resulting from the aftermath of the volatility induced by global economic crisis, there is a need to examine theoretical expectations with regard to the effects of Nigerian capital market on economic growth. From evidence in extant literature across different countries, the arguments are quite inconclusive and with mixed results with regard to the effects of capital market on economic growth. For example Grilli and Milesi-Ferretti (1995), Kraay (1998) and Rodrick (1998) found that capital market does not affect growth, while others stood their grounds that there is positive effect (Levine, 2001; Bekaert et al., 2003; Bonfiglioli and Mendicino, 2004), yet others note that it is negative (Eichengreen and Leblang, 2003). Certain studies show the effects to be heterogeneous across countries at different stages of institutional and economic growth (Bekaert et al., 2003; Edwards, 2001) and countries with different macroeconomic frameworks (Arteta et al., 2001). Rancière et al. (2006) observed that we could expect the growth effect of capital markets to be smaller in high-income than in middle-income countries. Consequently, this study is an attempt at evaluating the relationship between capital market and economic growth and thus providing empirical evidence from Nigeria.

1.1. The research problem

In recent times there has been a growing concern on the role of capital market in economic growth and thus the capital market has been the focus of economic policies and policy makers because of the perceived benefits it provides for the economy. The capital market provides the fulcrum for stock market activities and it is often cited as a barometer of business direction. An active capital market may be relied upon to measure changes in the general level of economic activities (Obadan, 1998).

Deducing from the extensive studies on the theoretical expectations on the role of capital markets on economic growth which have formed the core of normative economics, the capital market is expected to contribute to economic growth through the transmission mechanisms of savings mobilization, creation of liquidity, risk diversification, improved dissemination and acquisition of information, provision of long-term, non-debt financial capital which enables companies to avoid over-reliance on debt financing, and enhanced incentive for corporate control amongst others. However, an x-ray on the path of “positive economics” which is concerned with “what is” rather than “what should be” reveals that the argument in the literature on the growth effects of capital market has not been adequately resolved. The inconclusive nature of these theoretical and empirical studies provides the basis for a further empirical investigation on the role of capital market in economic growth. Hence, this study was needed.

Furthermore, a fundamental weakness of most studies providing evidence from developing economies is that past regression analyses were often run without a thorough examination of the characteristics of time series economic data. It is therefore not surprising that some of them are, in fact “spurious regressions” exhibiting an excellent fit between unrelated variables, especially when levels of the variables themselves are used in the regression. In general, when the regression includes non-stationary variables, the estimation of
coefficients and inference from them becomes impossible (Iyoha and Ekanem, 2004). Besides, recent empirical studies (Abu-Badr and Abu-Qarn, 2008; Wolde-Rafael, 2009; Ndako, 2010) have shown that major macro economic variables such as Gross Domestic Product often used as proxy for economic growth may be a non-stationary process rather than a trend-stationary process as was generally assumed. This implies that the conventional approach in regression has not always yielded reliable results. Consequently, this study addresses this gap by employing the Cointegration technique and Vector Error Correction Model (VECM) to determine the long and short run dynamics between capital market performance and economic growth in Nigeria.

In the light of the above, the following research questions have been specified to guide the direction of the study. They are as follows;

- Is there a positive relationship between market capitalization and economic growth in Nigeria?
- Is there a positive relationship between number of listed securities in the capital market and economic growth?
- Is there a positive relationship between the volume of shares traded in the capital market and economic growth?
- Is there a positive relationship between the value of transaction in the capital market and economic growth?

1.2. Research hypotheses

The following testable propositions were specified for the purpose of the study. They are as follows;

- There is a positive relationship between market capitalization and economic growth in Nigeria.
- There is a positive relationship between number of listed securities in the capital market and economic growth.
- There is a positive relationship between the volumes of shares traded in the capital market and economic growth.
- There is a positive relationship between value of transaction in the Capital market and economic growth.

This study attempts to examine the relationship between capital market and economic growth in Nigeria. The study adopts a time series design and will cover the period between 1985-2010. It is expected that this study would consolidate existing literature on the issues surrounding the relationship between capital markets and economic growth. The study would also facilitate the examination of the short run and long run effects of capital markets on economic growth and thus boosting the empirical evidence from Nigeria. Furthermore, given the empirical nature of the study, the outcome of this study would aid policy makers and regulatory bodies in economic modeling and policy simulation with respect to the selected variables examined in the study.

The result of the study would be of benefit to investment analysts, investors and corporations in examining the effectiveness of the capital market and thus evaluating the options available for accessing long-term, non-debt financial capital which enables companies to avoid over-reliance on debt financing, thus
improving corporate debt-to-equity ratio prices. It will also be useful in stimulating public discourse given the dearth of empirical researches in this area from emerging economies like Nigeria. Finally, it would also add to the available literature on the area of study while also providing a platform for other researchers who may want to further this study.

2. Literature review

2.1. Introduction

The role of stock market has assumed a developmental role in global economies following the observable impact the market has exerted in corporate finance and economic activity. Thus the capital market has been the focus of economic development policies and policy makers because of the perceived benefits it provides for the economy. Consequently, Institutionalizing and sustaining efficient capital market performance has become a requisite condition for economies wanting to experience accelerated growth and development and this is because the capital market provides the fulcrum for stock market activities and it is often cited as a barometer of business direction. Thus, an active capital market may be relied upon to measure changes in the general level of economic activities. Deducing from the extensive studies on the theoretical expectations on the role of capital markets on economic development, the capital market is expected to contribute to economic development through the transmission mechanisms of savings mobilization, creation of liquidity, risk diversification, improved dissemination and acquisition of information, provision of long-term, non-debt financial capital which enables companies to avoid over-reliance on debt financing, and enhanced incentive for corporate control amongst others. This section will examine both theoretical and empirical literature on capital market and economic growth, the Nigerian capital market and its performance, problems, regulatory and legal environment of the market amongst others.

2.2. The capital market

According to Levine and Zervos (1998) the capital market is expected to encourage savings by providing individuals with an additional financial instrument that may better meet their risk preferences and liquidity needs. Better savings mobilization may increase the savings rate. Capital markets also provide an avenue for growing companies to raise capital at lower cost. In addition, companies in countries with developed stock markets are less dependent on bank financing, which can reduce the risk of a credit crunch. Stock markets therefore are able to positively influence economic growth through encouraging savings amongst individuals and providing avenues for firm financing.

The challenge of economic growth is the availability of long term funding, far longer than the duration for which most savers are willing to commit their funds and this constitutes a barrier to economic growth. In this regards, the capital market provides an avenue for the mobilization and utilization of long-term funds for development and hence it is referred to as the long term end of the financial system. Over the past few
decades, globally there has been an upsurge in capital market activity and this suggests the growing recognition of the capital market as a tool for fast-tracking economic progress.

Sule and Momoh (2009) argues that through the capital formation and allocation mechanism the capital market ensures an efficient and effective distribution of the scarce resources for the optimal benefit to the economy and it reduces the over reliance of the corporate sector on short term financing for long term projects and also provides opportunities for government to finance projects aimed at providing essential amenities for socioeconomic development. In a study published at the beginning of the nineties. Levine (1991) points out that capital markets can help the process of financial integration, financial intermediation and speed up the economic growth through two key processes. The first is by making property changes possible in the companies, whilst not affecting their productive process; the second is by offering higher possibilities of portfolio diversification to the agents.

2.3. Capital market and economic growth

According to Levine and Zervos (1998) the capital market is expected to encourage savings by providing individuals with an additional financial instrument that may better meet their risk preferences and liquidity needs. Better savings mobilization may increase the savings rate. Capital markets also provide an avenue for growing companies to raise capital at lower cost. In addition, companies in countries with developed stock markets are less dependent on bank financing, which can reduce the risk of a credit crunch. Stock markets therefore are able to positively influence economic growth through encouraging savings amongst individuals and providing avenues for firm financing.

Kumar (1984) notes that the capital market contributes to economic growth through the specific services it perform either directly or indirectly. Notable among the functions of the stock market are mobilization of savings, creation of liquidity, risk diversification, improved dissemination and acquisition of information, and enhanced incentive for corporate control. Improving the efficiency and effectiveness of these functions, through prompt delivery of their services can augment the rate of economic growth. At any stage of a nation's development, both the government and the private sectors would require long-term capital which is provided by a well functioning stock market.

Sule and Momoh (2009) specifying the channels for growth through the capital market opine that it provides opportunities for companies to borrow funds needed for long-term investment purposes. It also provides avenue for the marketing of shares and other securities in order to raise fresh funds for expansion of operations leading to increase in output/production. It creates a means of allocating the nations real and financial resources between various industries and companies. Sule and Momoh (2009) argues further that through the capital formation and allocation mechanism the capital market ensures an efficient and effective distribution of the scarce resources for the optimal benefit to the economy and it reduces the over reliance of the corporate sector on short term financing for long term projects and also provides opportunities for government to finance projects aimed at providing essential amenities for socioeconomic development.

Obstfeld (1994) notes that the capital market may also affect economic activities through the creation of liquidity. Liquid equity market makes available savings for profitable investment that requires long-term
commitment of capital. Without liquid capital market there would be no industrial revolution. This is because savers would be less willing to invest in large, long-term projects that characterized the early phase of industrial revolution. Closely related to liquidity is the function of risk diversification. Stock markets can affect economic growth when they are internationally integrated. This enables greater economic risk sharing. Because high return projects also tend to be comparatively risky, stock markets that facilitate risk diversification encourages a shift to higher-return projects and the resultant effect is a boost in the economy leading to growth through the shifting of society’s savings to higher-return investments.

According to Filler et al. (1999) the nature and economic significance of the relationship between capital market development and growth vary according to country’s level of economic development with a larger impact in less developed economies. The proponents of positive relationships between stock market development and economic growth base their argument on the fact that the stock market aids economic growth and development through the mobilization and allocation of savings, risk diversification, liquidity creating ability and corporate governance improvement among others.

Using the liquidity argument, Bencivenga et al. (1996) reasoned that the level of economic activities is affected by the capital market through its liquidity creating ability. The logic of this reasoning is that profitable investment requires long-term capital commitment; often investors are not willing or are reluctant to trade their savings for a long gestation period. With liquid equity markets, risks associated with investment are reduced, making it more attractive to investors. Thus, the easy transfer of capital ownership facilitates firms’ permanent access to capital raised through equity issues. Therefore, as liquid market improves the allocation of capital, the prospect for long-term economic growth is enhanced. Also, savings and investment are increased due to reduction in the riskiness of investment facilitated by stock market liquidity.

However, an alternative view on capital market and long term economic growth by Demirgüç-Kunt and Levine (1996) observed that there are some channels through which liquidity can deter growth: Firstly, savings rate may be reduced, this happens when there is increasing returns on investment through income and substitution effect. As savings rate falls and with the existence of externality attached to capital accumulation, greater stock market liquidity could slow down economic growth. Secondly, reducing uncertainty associated with investment may impact on savings rate, but the extent and the direction remain ambiguous. This is because it is a function of the degree of risk-averseness of economic agents. Thirdly, effective corporate governance often touted as an advantage of liquidity of stock market may be adversely affected. The ease with which equity can be disposed off may weaken investors’ commitment and serves as a disincentive to corporate control and vigilance on the part of investors thereby negating their role of monitoring firm’s performance. This often culminates in stalling economic growth.

Rouseau and Wachtel (2000) advanced four reasons for the importance of capital market on financial institutions even when equity issuance is a relatively minor source of funds. First, an equity market provides investors and entrepreneurs with a potential exit mechanism. According to them, venture capital investments will be more attractive in countries where an equity market exists than one without an adequately functioning public equity market. Secondly, capital inflows and Portfolio flows tend to be larger to countries with organized and liquid markets. Thus, the existence of equity markets facilitates capital inflow
and the ability to finance current account deficits. Thirdly, the provision of liquidity through organized exchanges encourages both international and domestic investors to transfer their surpluses from short term assets to the long-term capital market, where the funds can provide access to permanent capital for firms to finance large, indivisible projects that enjoy substantive scale economies. Thus, given this scenario the importance of domestic resource mobilization cannot be underestimated. Finally, the existence of a stock market provides important information that improves the efficiency of financial intermediation generally.

Atje and Jovanovic (1993) present a cross country study of capital market and economic growth over the period 1980-1988. They found a significant correlation between average economic growth and stock market capitalization for 40 countries. Harris (1997) re-examined the empirical relationship between capital market and economic growth using appropriate instruments for investment. In contrast to Atje and Jovanovic (1993), he found no hard evidence that the level of capital market activity helps to explain growth in per capita output.

A study of the Ghana Stock Exchange carried out by Osei (2005) interestingly revealed that stock market performance granger-causes economic growth in Ghana economy. The study did not find a reverse causality, but rather a unidirectional relationship. This upheld the fact that economic growth does not predict stock market development in Ghana. However, the researcher attributed this unidirectional causality to the low level of income as evidenced in most developing economies.

Similar to the result obtained by Osei (2005) and Nzue (2006) also attempted to investigate the relationship between the development of the Ivorian capital market and the country's economic performance. His empirical results suggested that gross domestic product and stock market development were cointegrated when the control variables were included in the analysis. That is, there is a long-run relationship between these variables taken together. The result also indicated a unidirectional causality running from capital market development to economic growth. From the afore discourse it would be recalled that various researchers has posited that bi-directional causation is evident in developed economies while unidirectional causation exist in developing economies. It therefore becomes necessary to examine the directional effect of causation between capital market and economic development.

Irving, (2004) considered the links between capital market and overall socio-economic development to be tenuous, nonexistent or even harmful. He advised African countries not to devote further scarce resources and efforts to promoting stock exchange, since there are many weightier problems to address in Africa: high poverty levels, inadequate social services and undeveloped infrastructure. Even if the resources were available, stock markets could expose already fragile developing economies to the stabilizing effects of short-term, speculative capital inflows. Demirguc-Kunt and Asli (1996) examined the relationship between capital market earning and economic growth, they found out that there is a positive relationship but not a very strong one.

Levine and Zervos, (1996) examines whether there is a strong empirical association between capital market development and long-run economic growth. The study was similar to that of Demirguc-Kunt and Levine (1996) by conglomerating measures such as stock market size, liquidity, and integration with world markets, into index of stock market development. The growth rate of Gross Domestic Product (GDP) per
capita was regressed on a variety of variables designed to control for initial conditions, political stability, investment in human capital, and macroeconomic conditions; and then include the conglomerated index of stock market development. The finding was that a strong correlation between overall stock market development and long-run economic growth exist. This means that the result is consistent with the theories that imply a positive relationship between stock market development and economic growth.

In another research, Levine and Zervos (1998) used pooled cross-country time series regression of 47 countries from 1976 to 1993 to evaluate whether stock market liquidity is related to growth, capital accumulation and productivity and found the slope coefficients of the explanatory variables to be positive.

2.4. The Nigerian capital market

The stock market is viewed as a complex institution imbued with inherent mechanism through which long-term funds of the major sectors of the economy comprising households, firms, and government are mobilized, harnessed and made available to various sectors of the economy (Nyong, 1997). The development of the capital market, and apparently the stock market, provides opportunities for greater funds mobilization, improved efficiency in resource allocation and provision of relevant information for appraisal (Inanga and Emenuga, 1997).

2.4.1. Analysis of the Nigerian capital market performance

The Nigerian capital market could be assessed as having performed fairly well despite the numerous challenges and problems some of which include the buy and hold attitude of Nigerians, massive ignorance of a large population of the Nigerian public, the nature and benefits of the capital market, few investment outlets in the market, lack of capital market friendly economic policies and political instability, private sector led economy and less than full operation of recent developments like the Automated Trading System (ATS), Central Securities Clearing System (CSC), On-line and Remote Trading, Trade Alerts and Capital Trade Points of the Nigerian Stock Exchange.

2.5. The Nigerian capital market and economic growth

Nyong (1997) developed an aggregate index of capital market development and use it to determine its relationship with long-run economic growth in Nigeria. The study employed a time series data from 1970 to 1994. The result of the study was that capital market development is negatively and significantly correlated with long-run growth in Nigeria. The result also showed that there exists bidirectional causality between capital market development and economic growth.

Ewan et al. (2009) appraise the impact of the capital market efficiency on the economic growth of Nigeria using time series data from 1961 to 2004. They found that the capital market in Nigeria has the potential of growth but it has not contributed meaningfully to the economic growth of Nigeria because of low market capitalization, low absorptive capitalization, illiquidity, misappropriation of funds among others.
Akinbohungbe (1996) and Adebiyi (2005) have argued separately that the capital market is very vital to the growth, development and strength of any country because it supports government and corporate initiatives, finances the exploitation of new ideas and facilitates the management of financial risk. The rate of economic growth has been linked to the sophistication of the financial market and capital market efficiency. Both markets facilitate the mobilization and channeling of funds into productive constituents and ensuring that the funds are used for the pursuit of socioeconomic growth and development without being idle.

According to Sule and Momoh (2009) from 1961, the Nigerian capital market has grown tremendously, particularly during the periods of the indigenization decrees of 1972 and 1977. The securities increased from 8 in 1961 to about 301 in 2008. Over the years, the Nigerian capital market has witnessed relatively stability and also recorded impressive growth. This has positioned it to positively impact the economy. There is clear evidence that the capital market remained an important source of capital for the nation’s economic development in financing infrastructural projects, the privatization programme of the government and banking sector recapitalization in Nigeria.

According to Okereke-Onyiuke (2000), the capital market has been a viable source of financing state and local government infrastructural projects and developmental strides with less pressures and lean on resources.

According to Anyanwu et al. (1997), the Nigerian Capital Market played a paramount role in the privatization of the State Owned Enterprises (SOEs) by giving creditability and transparency to the exercise.

According to Soludo (2006) the bank recapitalization to N25 billion in which 25 banks emerged from the previous 89 banks clearly revealed the importance of the capital market. In fact, most of the banks in Nigeria were able to raise the required capital after going to the capital market through initial public offerings.

2.6. Challenges of the Nigerian capital market

The Nigerian capital market, like any other national economy has been faced with many challenges and problems both endogenous and exogenous. Some of these problems are listed below:

- Small Size of the Market
- Problem of Illiquidity of the Market
- Slow growth of Securities Market
- Delay in Delivery of Share Certificates
- Problem of Manual Call-over
- Double Taxation
- Lack of Effective Underwriting
- Problem of Macro Economic Instability

3. Research methodology

The study adopts a time-series research design with reliance on secondary data from the CBN statistical bulletin and the NSE annual reports. The study will cover the period 1985-2012. The methodological
approach builds extensively on the works Demirgue-kunt and Levine (1996). Their investigation was on the linkage between stock market and economic growth. Their model specified that socio-economic development is significantly influenced by the capital market indices. But this study has employed the more reliable multivariate co-integration and error correction model which incorporates a thorough examination of the characteristics of time series economic data. This is imperative so as not to fall into an empirical “spurious regressions” where there is an excellent fit between unrelated variables as a result of non–stationary nature of the variables especially when levels of the variables themselves are used in the regression.

3.1. Data analysis method

The study will make use of regression analysis as the data analysis method. However, it will incorporate multivariate co-integration and error correction in order to undertake a thorough examination of the characteristics of time series economic data. Four analytical procedures are involved in the co-integration and error correction model. First, the unit root test will be carried out for each of the variables so as to ascertain the time series properties of the data set and obtain the stationary status. This is necessary in order to ensure that the variables are stationary and that shocks are only temporary and will dissipate and revert to their long-run mean. Next, the test of Cointegration is performed in order to discover the long run rational properties of the data. The third step is to obtain the error correction representation for the model which helps to analyze the dynamic short run and long run behaviour of the model. Eviews 7 econometric software will be utilized for the analysis.

3.2. Model specification

For the purpose of the study a multivariate econometric model will be specified and estimated. The model examines the relationship between the capital market and economic growth using selected capital market variables such as Market capitalization, Volume of shares traded and Number of listed securities. The functional specification is shown thus;

\[ GDP = f (MKTCAP, VALTRAN, NOLIST, TONIS) \]  

(1)

The econometric specification is thus;

\[ GDP = \beta_0 + \beta_1 MKTCAP + \beta_2 VALTRAN + \beta_3 NOLIST + \beta_4 TONIS \]  

(2)

To account for other indices that are no specified we introduce the error term. Thus;

\[ GDP = \beta_0 + \beta_1 MKTCAP + \beta_2 VALTRAN + \beta_3 NOLIST + \beta_4 TONIS + \mu \]  

(3)

By linearization we have the equation thus:

\[ \log GDP = \beta_0 + \beta_1 \log MKTCAP + \beta_2 \log VALTRAN + \beta_3 \log NOLIST + \beta_4 \log TONIS + \mu \]  

(4)

where;

GDP= Gross domestic product
MKTCAP=Market capitalization
VALTRAN=Value of transaction
NOLIST=No of Listed Securities
TONIS= New Issues
\(\mu=\) Error Term
Aprori expectation; \(\beta_1, \beta_2, \beta_3, \beta_4 > 0.\)

4. Presentation and analysis of result

In this chapter, the empirical background is provided upon which the evaluation of the model is based. The model specified in the previous chapter is estimated and characteristically analyzed. In doing this, the pertinent aspects of an error correction methodology (ECM) are highlighted and focus is laid on the implication of the estimated result for policy. Four analytical procedures are involved in the co-integration and error correction model. First, the descriptive statistics for the data is presented. After that, the unit root test is carried out for each of the variables so as to ascertain the time series properties of the data set and obtain the stationary status. Next, the test of Cointegration is performed in order to discover the long run properties of the data. The third step is to obtain the error correction representation for the model which helps to analyze the dynamic short run and long run behaviour of the model.

4.1. Presentation of result

<table>
<thead>
<tr>
<th></th>
<th>GDP</th>
<th>TONIS</th>
<th>MKTCAP</th>
<th>VALTRAN</th>
<th>TOLIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>438772.4</td>
<td>546104.3</td>
<td>5316268</td>
<td>369270.5</td>
<td>270.962</td>
</tr>
<tr>
<td>Median</td>
<td>291715</td>
<td>12038.5</td>
<td>290928.4</td>
<td>7062.7</td>
<td>270.5</td>
</tr>
<tr>
<td>Maximum</td>
<td>2937454</td>
<td>5527827</td>
<td>89965332</td>
<td>4400000</td>
<td>310</td>
</tr>
<tr>
<td>Minimum</td>
<td>674</td>
<td>400</td>
<td>16.3584</td>
<td>136</td>
<td>220</td>
</tr>
<tr>
<td>Std. Dev.</td>
<td>542271.3</td>
<td>1219577</td>
<td>17577293</td>
<td>954437.2</td>
<td>22.2558</td>
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<tr>
<td>Jarque-Bera</td>
<td>338.5786</td>
<td>127.6418</td>
<td>496.4128</td>
<td>181.7485</td>
<td>0.2878</td>
</tr>
<tr>
<td>Probability</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.86598</td>
</tr>
</tbody>
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Source: eviews 7.0
### Table 2. Diagnostic Test

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<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Breusch-Godfrey Serial Correlation LM Test:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>0.960207</td>
<td>Prob. F(2,18)</td>
</tr>
<tr>
<td>Obs*R-squared</td>
<td>2.410109</td>
<td>Prob. Chi-Square(2)</td>
</tr>
<tr>
<td>Heteroskedasticity Test: Breusch-Pagan-Godfrey</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>0.287889</td>
<td>Prob. F(4,20)</td>
</tr>
<tr>
<td>Obs*R-squared</td>
<td>1.361075</td>
<td>Prob. Chi-Square(4)</td>
</tr>
<tr>
<td>Scaled explained SS</td>
<td>7.552596</td>
<td>Prob. Chi-Square(4)</td>
</tr>
<tr>
<td>Ramsey RESET Test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F-statistic</td>
<td>0.085860</td>
<td>(1, 19)</td>
</tr>
<tr>
<td>Likelihood ratio</td>
<td>0.112719</td>
<td>1</td>
</tr>
</tbody>
</table>

*Source: eviews 7.0*

### Table 3. Variance Inflation Factors

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Centered</th>
<th>VIF</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIS</td>
<td>0.012365</td>
<td>1.363861</td>
<td></td>
</tr>
<tr>
<td>MKTCAP</td>
<td>5.32E-05</td>
<td>1.266259</td>
<td></td>
</tr>
<tr>
<td>VALTRAN</td>
<td>0.020097</td>
<td>1.357685</td>
<td></td>
</tr>
<tr>
<td>TOLIST</td>
<td>48812983</td>
<td>1.860172</td>
<td></td>
</tr>
<tr>
<td>C</td>
<td>3.39E+12</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

*Source: eviews 7.0*
Table 4a. Result for Augmented Dickey Fuller test (Levels)

<table>
<thead>
<tr>
<th>ADF test statistics</th>
<th>Intercept &amp; trend</th>
<th>Critical values</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADF test statistic- GDP</td>
<td>-4.91</td>
<td>1% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% critical value</td>
</tr>
<tr>
<td>ADF test statistic- MKTCAP</td>
<td>-5.012</td>
<td>1% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% critical value</td>
</tr>
<tr>
<td>ADF test statistic- NIS</td>
<td>-4.925</td>
<td>1% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% critical value</td>
</tr>
<tr>
<td>ADF test statistic- TOLIST</td>
<td>-3.938</td>
<td>1% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% critical value</td>
</tr>
<tr>
<td>ADF test statistic- VALTRAN</td>
<td></td>
<td>1% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% critical value</td>
</tr>
</tbody>
</table>

Source: eviews 7

Table 4b. Results of augmented Dickey Fuller test (1st difference)

<table>
<thead>
<tr>
<th>ADF test statistics</th>
<th>Intercept &amp; trend</th>
<th>Critical values</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADF test statistic- GDP</td>
<td>-7.754</td>
<td>1% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% critical value</td>
</tr>
<tr>
<td>ADF test statistic- MKTCAP</td>
<td>4.602</td>
<td>1% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% critical value</td>
</tr>
<tr>
<td>ADF test statistic- NIS</td>
<td>-8.529</td>
<td>1% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% critical value</td>
</tr>
<tr>
<td>ADF test statistic- TOLIST</td>
<td>-5.936</td>
<td>1% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% critical value</td>
</tr>
<tr>
<td>ADF test statistic- VALTRAN</td>
<td>-5.624</td>
<td>1% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5% critical value</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10% critical value</td>
</tr>
</tbody>
</table>

Source: Eviews 7.0
**Table 5.** Result for Johansen co-integration test

<table>
<thead>
<tr>
<th>Hypothesized</th>
<th>Trace No. of CE(s)</th>
<th>Eigenvalue</th>
<th>Statistic</th>
<th>Critical Value</th>
<th>Prob.**</th>
</tr>
</thead>
<tbody>
<tr>
<td>None *</td>
<td></td>
<td>0.983165</td>
<td>161.0928</td>
<td>69.81889</td>
<td>0.0000</td>
</tr>
<tr>
<td>At most 1 *</td>
<td></td>
<td>0.900000</td>
<td>75.32250</td>
<td>47.85613</td>
<td>0.0000</td>
</tr>
<tr>
<td>At most 2</td>
<td></td>
<td>0.497105</td>
<td>26.96815</td>
<td>29.79707</td>
<td>0.1024</td>
</tr>
<tr>
<td>At most 3</td>
<td></td>
<td>0.440158</td>
<td>12.53328</td>
<td>15.49471</td>
<td>0.1331</td>
</tr>
<tr>
<td>At most 4</td>
<td></td>
<td>0.016584</td>
<td>0.351183</td>
<td>3.841466</td>
<td>0.5534</td>
</tr>
</tbody>
</table>

Trace test indicates 2 cointegrating eqn(s) at the 0.05 level

* denotes rejection of the hypothesis at the 0.05 level

** MacKinnon-Haug-Michelis (1999) p-values

Source: Eviews 7

---

**Dependent variable: GDP(-1) LONG RUN ESTIMATES**

<table>
<thead>
<tr>
<th>REGRESSORS</th>
<th>ESTIMATE</th>
<th>STANDARD ERROR</th>
<th>T-VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ln TONIS(-1)</td>
<td>0.237467</td>
<td>0.01358</td>
<td>17.0814</td>
</tr>
<tr>
<td>Ln MKTCAP(-1)</td>
<td>-0.207419</td>
<td>0.01214</td>
<td>-17.0814</td>
</tr>
<tr>
<td>Ln VALTRAN (-1)</td>
<td>0.812501</td>
<td>0.05205</td>
<td>15.6088</td>
</tr>
<tr>
<td>Ln TOLIST(-1)</td>
<td>-1491.313</td>
<td>846.181</td>
<td>-1.76241</td>
</tr>
<tr>
<td>C</td>
<td>806013.6</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SHORT RUN ESTIMATES**

<table>
<thead>
<tr>
<th>REGRESSORS</th>
<th>C</th>
<th>U1 (ECT)</th>
<th>ΔLn TONIS</th>
<th>ΔLn MKTCAP</th>
<th>ΔLn VALTRAN</th>
<th>ΔLn TOLIST</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coefficient</td>
<td>4695</td>
<td>-0.33</td>
<td>0.033975</td>
<td>-0.78940</td>
<td>-0.184020</td>
<td>-2682.932</td>
</tr>
<tr>
<td>T-values</td>
<td>421902</td>
<td>0.547</td>
<td>0.59161</td>
<td>0.10844</td>
<td>0.42753</td>
<td>9035.42</td>
</tr>
</tbody>
</table>

$R^2 = 0.59$  Adjusted $R^2 = 0.41$  Sum sq resid = 2288.377

$S.E$ equation=666174.809  $F$-stat= 3.32  $log$ likelyhood$= -307.12$

Source: Eviews 7.0
4.2. Analysis of the result

Table 1 above displays the descriptive statistics for the data. As observed, Gross Domestic Product (GDP) has a mean value of \( \text{₦} 438772.4175 \) for the time period examined i.e from 1980-2010 and standard deviation of \( \text{₦} 542271.3 \). The maximum and minimum amount of GDP for the period was \( \text{₦} 2937454 \) and \( \text{₦} 674 \) billion respectively. The Jarque-Bera statistic value of 338.57 and p-value of 0.00 confirms the normality of the data and suitability for generalization. It also indicates the absence of outliers in the data. For (TONIS), the mean value for the period under review was \( \text{₦} 546104.3 \) while the standard deviation stood at \( \text{₦} 1219577 \). The maximum and minimum value for the period under review is \( \text{₦} 5527827 \) and \( \text{₦} 400 \) respectively. The Jarque-Bera statistic value of 127.64 and p-value of 0.00 also confirms the normality of the data and suitability for generalization. It also indicates the absence of outliers in the data. Furthermore the average value of market capitalization (MKTCAP) for the period under review stood at \( \text{₦} 531628 \) while the standard deviation is \( \text{₦} 17577293 \). The maximum and minimum values stood for the study period was \( \text{₦} 89965332 \) and \( \text{₦} 16.3584 \) respectively. The Jarque-Bera statistic value of 496.41 and p-value of 0.00 also confirms the normality of the data and suitability for generalization. It also indicates the absence of outliers in the data.

The mean value for Value of transaction (VALTRAN) for the period under review stood at \( \text{₦} 369270.5 \) with a standard deviation value of \( \text{₦} 954437.2 \). The maximum and minimum revenue from the value for the study period was \( \text{₦} 4400000 \) and \( \text{₦} 136 \) respectively. Like in the others, the Jarque-Bera statistic value of 181.74 and p-value of 0.00 also indicates that the data is normal and there are outliers in the data. Finally, the mean value of Total listing (TOLIST) for the period under review stood at \( \text{₦} 270.962 \) with a standard deviation value of \( \text{₦} 22.2558 \). The maximum and minimum revenue from the value for the study period was 310 and 210 respectively. Unlike in the others, the Jarque-Bera statistic value of 181.74 and p-value of 0.865 indicates that the data failed the normality test.

Table 2 shows the diagnostics analysis of the variables. Firstly, the Breusch-Godfrey correlation LM test test for the presence of autocorrelation. The result of the test reveals that the p-value of about 33% is greater than the critical value of 5%. This shows the non existence of autocorrelation. The Breusch-Pagan-Godfrey test for Heteroskedasticity The table reveals that the p-value of about 49% is greater than the critical value of 5%. This shows that there is no evidence of the presence of heteroskedasticity since the p-values of the f-statistic, observed R-squared and the scaled explained sum of squares are considerably in excess of 0.05. Finally, the Ramsey Reset Test test shows that p-value of about 60% is greater than the critical value of 5%. This shows that there is no apparent non-linearity in the regression equation and it would be concluded that the linear model is appropriate.

Table 3 shows the variance inflation factor (VIF) for the variables which measures the level of collinearity between the regressors in an equation. The VIF test shows how much of the variance of a coefficient estimate of a regressor has been inflated due to collinearity with the other regressors. The VIFs are inversely related to the tolerances with larger values indicating involvement in more severe relationships. Basically, VIFs above 10 are seen as a cause of concern (Landau and Everitt, 2003). Thus with VIF values all less than ten (10) for GDP, TONIS, MKTCAP, TOLIST and VALTRAN respectively, there is no evidence of multicollinearity.
Table 4a and 4b show the unit root test for the variables. Generally, the unit root test involves the test of stationarity for variables used in the regression analysis. The importance of stationarity of the time series used in regression analysis is based on the fact that a non stationary time series is not possible to generalize to other time periods apart from the present. This makes forecasting based on such time series to be of little practical values. Moreover, regression of a non-stationary time series against another non-stationary time series may produce spurious regression (Gujarati, 2004). The Augmented Dickey Fuller (ADF) test is employed in order to analyze unit roots. The result is reported in levels and first differences in each case.

Table 4a shows the result of the unit root test at levels and as shown in the table, GDP with an ADF value of -4.91 exceeds the critical ADF value of -4.37, -3.60 and -3.23 at 1%,5% and 10% respectively and this implies that GDP is stationary at levels i.e. $I(0)$. The ADF test statistic for MKTCAP is -5.012 which also exceeds the ADF critical value of -4.416,-3.622 and -3.242 at 1%,5% and 10% significance respectively and this implies that the MKTCAP is also stationary at levels i.e. $I(0)$. The ADF test statistic for TONIS is -4.925 exceeds the ADF critical value of -4.416,-3.622 and -3.248 at 1%, 5% and 10% levels of significance respectively and this implies that the NIS is also stationary at levels i.e. $I(0)$. Also, TOLIST with an ADF test statistic of -5.936 exceeds the critical ADF value of -4.394, -3.394 and -3.243 at 1%,5% and 10% levels of significance respectively and this implies that TOLIST is stationary at levels i.e. $I(0)$. The ADF test statistic for VALTRAN is -3.938 is less than the ADF critical value of -4.416 at 1% significance level but exceeds the ADF critical value at both 5% and 10% sig. levels. Hence the variable is stationary at levels i.e. $I(0)$ at 5%.

Table 4b shows the result for unit root at first difference and as shown in the table, the ADF test statistics for GDP with a value of -7.752 exceeds the ADF critical values of -3.738,-2.993 and -2.634 at 1%,5% and 10% significance levels respectively and thus we conclude that GDP is also stationary at 1st difference i.e. $I(1)$. The ADF test statistics for MKTCAP with a value of 4.602 exceeds the ADF critical values of -3.788,-3.012 and -2.646 at 1%,5% and 10% significance levels respectively and thus we conclude that MKTCAP is also stationary at 1st difference i.e. $I(1)$. The ADF test statistics for NIS with a value of -8.592 exceeds the ADF critical values of -4.467, -3.644 and -3.261 at 1%,5% and 10% significance levels respectively and thus we conclude that NIS is also stationary at 1st difference i.e. $I(1)$. Also, TOLIST with an ADF test statistic of -5.936 exceeds the critical ADF value of -4.394, -3.394 and -3.243 at 1%,5% and 10% levels of significance respectively and this implies that TOLIST is stationary at levels i.e. $I(0)$. The ADF test statistic for VALTRAN is -3.938 is less than the ADF critical value of -4.416 at 1% significance level but exceeds the ADF critical value at both 5% and 10% sig. levels. Hence the variable is stationary at levels i.e. $I(0)$ at 5%.

Table 5 shows the result for co-integration. Basically, the next step after establishing the stationarity (or order of integration) of the variables is to determine whether there exist any cointegrating vector supporting the existence of long-run relationship between the dependent variables and the explanatory variables. To do this, the Johansen test is used. In the test relationships were estimated with intercept and linear deterministic trend in a Vector Auto Regression (VAR) model. The most general method of selecting an optimal lagged length $k$ are the Akaike information criteria (AIC) and the Schwartz Bayesian criterion (SBC). The rational are similar: running the VAR with a different lagged length and the choosing a lagged length which makes the VAR have higher explanatory power that other lagged length. However, Enders, (2004)
notes that if the lag length is too long, it may suggest skepticism about the validity of the co-integrating equations. In line with Enders (2004), the study selects a lag length of 1-3. The test result indicates the presence of 2 cointegrating equations at 5 percent level of significance thereby confirming the existence of a long-run equilibrium relationship between the variables and denotes rejection of the hypothesis of no cointegrating relationship at the 0.05 level. With this result, one proceeds to specify the long run and short run dynamic equation.

Table 6 shows the result of the error correction model capturing the long run and short run dynamic of the model normalized on Gross domestic product (GDP) which is the dependent variable. From the table, the coefficient of determination as depicted by the $R^2$ is 0.59 which implies that the model accounts for 59% of the systematic variations about the mean of the dependent variable. The adjusted $R^2$ is 0.41. To examine the models adequacy in approximating the line of best fit, the f-stat is considered. With a value of 3.32, it suggest that the error correction model may not fit the data fairly well and a possible reason been that more exogenous variables may play a critical role.

The long run inverse relationship is observed to exist between GDP and Market capitalization (MKTCAP) given its slope coefficient of -0.207. The relationship is also observed to be statistically significant as the t-value of 17.08 exceeds the critical t value of 2.05 at 5% significance level. This suggests that in the long run market 1% change in market capitalization will result in a change in GDP by 20%. However, the finding is at variance with the aprori expectation. The relationship between new issues (TONIS) and the Gross Domestic Product in the long run is observed to be positive and also statistically significant given its slope coefficient of 0.237 and a t-ratio of 17.49 which exceeds the critical t-value of 2.05 at 5% significance level. The finding is consistent with the aprori expectation and suggests that a 1% change in the value of new issues will result in about 23% change in GDP in the long run. The long run relationship between Total listing (TOLIST) in the stock market and GDP is observed to be inversely related to GDP given its slope coefficient of -1419.31. However, the finding is at variance with the aprori expectation and is also statistically insignificant at 5% level. A long run positive relationship was also observed to exist between value of transaction (VALTRAN) in the stock market and GDP. This is depicted by the slope coefficient of 0.8125 and a t-value of 15.61 which exceeds the critical value of 2.08 at 5% significance level. The finding is in tandem with the a priori expectation; it is statistically significant at 5% and also suggests that a 1% change in Value of transaction will result in about 81% change in GDP.

The short run behaviour of the variables is also presented in table 6. From the table, it is observed that New issues (TONIS) in the short run tends to exhibit a positive relationship with GDP as also observed in the long run. This is depicted by the short run slope coefficient of 0.033. However, the relationship was observed to be statistically insignificant at 5%. The short run relationship for Market capitalization was also observed to exhibit an inverse relationship with GDP as also noticed in the long run with a short run slope coefficient of -0.789. The relationship was also observed to be statistically insignificant at 5%. The short run relationship for Value of transaction (VALTRAN) was also observed to exhibit an inverse relationship with GDP as against the positive relationship noticed in the long run. This is depicted by the short run slope coefficient of -0.184. However, the relationship was observed to be statistically insignificant at 5%.
listing (TOLIST) just like in the long run was also observed to display an inverse relationship with GDP in the short run with a short run slope coefficient of -2689.9 observed to be statistically insignificant at 5% level.

The specified error correction term (U_{t-1}(ECT)) is used to examine the short-run correction mechanism behaviour of the relationship between the explanatory variables and GDP (that is the dependent variable) performance in Nigeria from its long-run equilibrium as a result of the error term (white noise) shock. The error correction coefficient term coefficient of -0.33 measures the speed of adjustment towards long-run equilibrium. It also indicates a feedback of about 33% percent of the previous year’s disequilibrium from the long-run elasticity of GDP. This also implies that the speed with which the explanatory variables adjust from short-run disequilibrium to changes in GDP in order to attain long-run equilibrium is 33% percent within one year.

4.3. Hypothesis testing

4.3.1. H1: There is a positive relationship between market capitalization and economic growth in Nigeria

From the long run error correction estimates in table 6, a long run inverse relationship is observed to exist between GDP and Market capitalization (MKTCAP) given its slope coefficient of -0.207. The relationship is also observed to be statistically significant as the t-value of 17.08 exceeds the critical t value of 2.05 at 5% significance level. This suggests that in the long run market 1% change in market capitalization will result in a change in GDP by 20%. Consequently, we fail to accept the hypothesis of positive relationship between market capitalization and economic growth as measured by GDP in Nigeria.

4.3.2. H2: There a positive relationship between Total number of listed securities (TOLIST) in the capital market and economic growth

The long run relationship between Total listing (TOLIST) in the stock market and economic growth as measured by the Gross domestic Product GDP is observed to be inversely related to GDP given its slope coefficient of -1419.31. However, the finding is at variance with the aprori expectation and is also statistically insignificant at 5% level. Consequently, the study fails to accept the hypothesis of a positive relationship between Total number of listed securities (TOLIST) in the capital market and economic growth. The non-statistical significance of the variable suggests the need for caution in implying strict causality.

4.3.3. H3: There is a positive relationship between the Value of shares traded in the capital market and economic growth

A long run positive relationship was observed to exist between value of transaction (VALTRAN) in the stock market and economic growth as measured by the Gross Domestic Product (GDP). This is depicted by the slope coefficient of 0.8125 and a t-value of 15.61 which exceeds the critical value of 2.08 at 5% significance level. The finding is in tandem with the aprori expectation; it is statistically significant at 5% and also suggests that a 1% change in Value of transaction will result in about 81% change in GDP. Consequently, the
study fails to reject the hypothesis of a positive relationship between the Value of transaction or share traded in the capital market and economic growth.

4.3.4. H4: There is a positive relationship between New issues (TONIS) in the capital market and economic growth

From the long run vector error correction results, the relationship between new issues (TONIS) and the economic growth measured by the Gross Domestic Product in the long run is observed to be positive and also statistically significant given its slope coefficient of 0.237 and a t-ratio of 17.49 which exceeds the critical t-value of 2.05 at 5% significance level. The finding is consistent with the a priori expectation and suggests that a 1% change in the value of new issues will result in about 23% change in GDP in the long run. Consequently, the study fails to accept the hypothesis of a positive relationship between New issues (TONIS) in the capital market and economic growth.

5. Summary of findings, conclusion and recommendation

5.1. Summary of findings

The summary of the study findings are presented thus;

- A long run inverse relationship is observed to exist between GDP and Market capitalization (MKTCAP) given its slope coefficient of -0.207. The relationship is also observed to be statistically significant as the t-value of 17.08 exceeds the critical t value of 2.05 at 5% significance level. In the short run an inverse relationship with GDP is also noticed with a short run slope coefficient of -0.789. The relationship was observed to be statistically insignificant at 5%.

- The relationship between new issues (TONIS) and the Gross Domestic Product in the long run is observed to be positive and also statistically significant given its slope coefficient of 0.237 and a t-ratio of 17.49 which exceeds the critical t-value of 2.05 at 5% significance level while in the short run a positive relationship with GDP is also observed as depicted by the short run slope coefficient of 0.033. However, the relationship was observed to be statistically insignificant at 5%.

- The long run relationship between Total listing (TOLIST) in the stock market and GDP is observed to be inversely related to GDP given its slope coefficient of -1419.31. The finding is statistically insignificant at 5% level. Just like in the long run, TOLIST was also observed to display an inverse relationship with GDP in the short run with a short run slope coefficient of -2689.9 observed to be statistically insignificant at 5% level.

- A long run positive relationship was also observed to exist between value of transaction (VALTRAN) in the stock market and GDP. This is depicted by the slope coefficient of 0.8125 and a t-value of 15.61 which exceeds the critical value of 2.08 at 5% significance level and thus the finding is statistically significant at 5%. However, an inverse relationship with GDP was observed in the short run. This is depicted by the short run slope coefficient of -0.184. The relationship was observed to be statistically insignificant at 5%.
• The specified error correction term \((U_{t-1}(ECT))\) is to examine the short-run correction mechanism behaviour of the relationship between the explanatory variables and GDP performance in Nigeria from its long-run equilibrium as a result of the error term (white noise) shock. The error correction coefficient term coefficient of \(-0.33\) measures the speed of adjustment towards long-run equilibrium. It also indicates a feed back of about 33% percent of the previous year’s disequilibrium from the long-run elasticity of GDP. This also implies the speed with which the explanatory variables adjust from short-run disequilibrium to changes in GDP in order to attain long-run equilibrium is 33% percent within one year.

5.2. Discussion of findings and policy implication

The relationship between economic growth and capital market is one that that attracted attention across researchers. The intriguing observation across a number of these studies is the heterogeneity in empirical findings over what may be termed a considerably uniform theoretical framework at least with regards to causality. The finding of this study suggest that of the four capital market variables examined, two (New issues and Value of transaction) were found to exhibit a positive and statistically significant relationship with economic growth measured by GDP. On the contrary, Market capitalization (MKTCAP) and Total listing (TOLIST) exhibited inverse relationship with economic growth. Though, studies that have provided evidence in this regards did not clearly disaggregate the capital market indices, this study adopts that approach and show differences in the relationship between the disaggregated capital market indicators and economic growth. This could stimulate dialogue on the reason for such outcomes and the implication for policy simulation.

With regards to the study findings, Harris, (1997) re-examined the empirical relationship between capital market and economic growth and in contrast to Atje and Jovanovic (1993), he found no hard evidence that the level of capital market activity helps to explain growth in per capita output. Atje and Jovanovic, (1993) present a cross country study of capital market and economic growth over the period 1980-1988. They found a significant correlation between average economic growth and stock market capitalization for 40 countries. Kim and Singal, (2000), Bekaert and Harvey, (2000), Henry, (2000), and Bekaert et al., (2003) have all argued that stock market does have positive effects on the economy since it reduces the equity cost of capital and encourages information efficiency. Furthermore, Singh, (1997), Stiglitz, (2000), Allen and Gale, (2000) and others have argued that stock markets increases the level of capital mobility which in turn increases the speculative activities and market volatility leading to crashes. Irving, (2004) considered the links between capital market and overall socio-economic development to be tenuous, nonexistent or even harmful. Osei, (2005) and Nzue, (2006) examined the relationship for the Ghanaian and Ivorian economies respectively. The studies revealed that stock market performance granger-causes economic growth.

The policy implication of the study findings and others also examined raise several policy issues which need to be addressed so as to will reinforce the link between the stock market and economic growth in Nigeria. We identify them as follows;

• Firstly, the Nigerian capital market currently is confronted with a crisis of confidence of investors on the market. The effect of the financial crisis coupled with the revelations of corporate malfeasance both by
management of the capital market and quoted companies have resulted in adverse decline in the spate of activities in the stock market and there is a need to pursue policies that will reverse this trend.

- Secondly, given that the stock market operates in macroeconomic environment, it is therefore necessary that the environment must be an enabling one in order to realize its full potentials.

Again, the determination of stock prices should be deregulated as well and Market forces be allowed to operate without any hindrance. Interference in security pricing is inimical to the growth of the market and should be under checks.

6. Conclusion

This study examines the relationship between capital market and economic growth in Nigeria using time series analysis. Several diagnostic test was performed on the data such as the Breusch-Godfrey correlation LM test for the presence of autocorrelation, the Breusch-Pagan-Godfrey test for Heteroskedasticity, the Ramsey Reset Test for non-linearity in the regression equation and the variance inflation factor (VIF) for the variables which measures the level of collinearity between the regressors in an equation. The result for the p-values of the test showed that the p-values all exceeded the critical 0.05 value at 5% significance level which suggests the rejection of the null hypothesis for the respective diagnostic test. The unit root test for all the variables showed that they all achieved stationary at 1st difference and the con integration result confirmed the presence of a long run relationship between the variables. The finding reveals that a long run inverse relationship is observed to exist between GDP and Market capitalization. The relationship between new issues (TONIS) and the Gross Domestic Product in the long run is observed to be positive. However, the long run relationship between Total listing (TOLIST) in the stock market and GDP is observed to be inversely related to GDP. Also an inverse relationship was also observed to exist between value of transaction (VALTRAN) in the stock market and GDP. The specified error correction term (U_t-1(ECT) The error correction coefficient term coefficient of -0.33 which measures the speed of adjustment towards long-run equilibrium. indicates a feed back of about 33% percent of the previous year’s disequilibrium from the long-run elasticity of GDP. In conclusion, though, the research evidence have shown mixed findings for several economies, with regards to the Nigerian capital market, a key challenge is the loss of investor confidence in the system resulting from the unbridled corporate malfeasance on both the capital market operators, management and quoted companies. There is a need to take steps in restoring this declining confidence in the market.

7. Recommendations

In line with issues raised in the policy implications, the recommendation is that the relevant regulatory agencies in the capital market should be focused on enhancing the efficiency and transparency of the market in order to improve investor’s confidence. Also, there is need for effective and favourable macroeconomic environment to facilitate the causality from stock market to economic growth. It must be understood that growing economies with significant and consistent impact on living standards of the people are a product of
effective social, economic and political institutions and this is a major setback in the Nigerian environment. Thus there is the need to ensure that the channels of capital market induced growth are built around effective systems and that the policy institutions are actively involved in making systemic checks and appropriate policy innovations to ensure capital market led economic growth.

**References**


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