Account and Financial Management Journal e-ISSN: 2456-3374
Volume 7 Issue 04 April 2022, (Page No.-2709-2718)
DOI: 10.47191/afmj/v7i4.02, Impact Factor: 6.839

The Conundrum of Stock Market Performance and Gross Domestic Product: An Empirical Evidence from Kenya

Tobias Olweny, PhD., CIFA
Senior Lecturer Department of Economics Finance and Accounting, JKUAT

ABSTRACT: The main objective of this study was to establish is the difficult question among researchers on the direction of relationship between the stock market performance and the gross domestic product using an empirical evidence from Kenya. Both theoretical and empirical reviews have presented a puzzle especially in the long run relationship between the two variables and empirical investigations in various country contexts , time varying longitudinal periods and other settings have continued to provide conflicting results. The study employed quarterly statistics of the Nairobi All Share Index (NASI) obtained from the Capital Markets Authority Bulletins and quarterly Gross Domestic Product rates from 2012-2019 obtained from Kenya National Bureau of Statistics and applied the Engle granger causality test and establish the link between stock market performance and economic growth in the long run (i.e. whether stock market performance causes economic growth or itself is a consequence of increased economic activity). The statistical techniques used included the unit root Augmented Dickey Fuller (ADF) test in order to test the stationarity for all the time series in their levels and first differences. The Johansen co-integration test to investigate whether the variables are cointegrated of the same order taking into account the trace statistics and the maximum eigen-value tests. The data was transformed into natural logarithms and normalized for further analysis. Both GDP and NASI were found to be stationery at level and upon first difference after ADF tests. The findings were that there was none directional/No causal relationship between the two variables after conducting a pairwise granger causality test, however there was a significant cointergrating equation on the variables, signifying the long run relationship between the two variables. From the results, it was inferred that the movement of stock prices in the Nairobi stock exchange reflect the macroeconomic condition in the long run of the country and can therefore be used to predict the future path of economic growth however the puzzle continues on causality.

KEY TERMS: Stock Market Performance, Granger Causality, Cointergration

1.0 INTRODUCTION

Economic growth is conventionally measured as the per cent rate change in the real GDP. An important aspect is the per capita income (the ratio of the GDP to the population of an economy) and as such it is a powerful instrument for poverty reduction and improving the quality of life of the citizens. GDP growth is measured on an inflation-adjusted basis to eliminate the distorting effects of inflation on prices. However, due to different prevailing conditions, similar rates of economic growth may have varying impacts on poverty reduction and as indicators of human development. Kenya's economic growth patterns albeit stable have exhibited fluctuations over the past decade with different regimes promising double digit growth rates. However, this has not been achieved under the current regime with the highest growth rate of 6.3% recorded in 2018 (KNBS, 2019).

The relationship between the stock market and the real economy varies in magnitude and direction. High economic growth rates are a key attraction to foreign investors targeting higher returns outside their jurisdictions. Capital being a key input in production activities is a crucial determinant of an economy's productivity in real terms by stimulating the utilization of other factors of production. To improve access to credit by the SMEs-a key driver of Kenya Vision 2030, the NSE introduced the Growth Enterprise Market Segment (NSE, 2012). The sector has suffered low credit extension from the formal financial sectors following the interest capping with lenders viewing start-ups as high risk investments. Financial intermediation provided by the stock markets provides an ideal avenue to mobilize these savings by creating financial instruments of varying maturities that enhance the aggregation of capital. As such the stock markets facilitate the transfer of capital and the uptake of investments with longer maturities (Levine, 1991 and Bencivenga et al, 1996).

Financial inclusion and development has been touted as a crucial catalyst of economic growth (Levine, 1998; Oyewo and Oyewole, 2014; Sharma, 2016; UNCTAD and WFE, 2017). Governments globally are able to regulate money supply by utilizing the stock markets so as to obtain both the desired price stability and inflation rates through the short term government securities. Long term maturity treasury instruments enable the government raise huge capital for infrastructural projects as has been the case in Kenya. This

has further helped eliminate the crowding out effect of the private sector arising from governments' borrowing from the banking sector.

Ateyobi et al (2013) by employing the VAR model confirms the existence of a long term relationship between the stock market and economic growth in Nigeria between 1981 and 2010. The All share index had a positive relationship with real GDP with the economy favorably responding to increases in the number of listings on the domestic exchange. They study poised the capital market to be the mainstream means of raising funds for the government and firms in every economy with the power to drive economic growth.

Kirui et al (2014) on the other hand conducted a study to evaluate the relationship between macroeconomic variables, volatility and stock market returns in Kenya. The study concluded that exchange rate affected stock market returns while economic growth, inflation and the Treasury bill rate were inconsequential in explaining stock market returns.

Njenga (2016) studied the relationship between stock market performance and economic growth in the East Africa Community between 2000 and 2015. Using the All share indices in Kenya, Tanzania, Uganda and Rwanda assessed the relationship between economic growth and market capitalization, liquidity and share price volatility by employing the VAR model. The study found no significant linkages both in the short and long run between share price volatility and GDP growth. However, there was a significant long run relationship association between market capitalization and economic growth and a long run constructive relationship between liquidity and economic growth.

Liquidity is a key consideration for investors as it represents the ease with which investors can trade the security without significant price concession. This variable will help understand the significance of liquidity in the NSE on economic growth. Market capitalization incorporates all the listed companies of the NSE and therefore reflects total value of all the listed securities in the exchange. NASI has the advantage in that it is adjusted for free float as the entire market is not investible. Stock market returns provide an insight on the relationship and causality of stock market turnover and economic growth.Different studies have presented varying conclusions on the direction of this relationship. This study seeks to employ more stock market variables in unraveling the relationship existing in the Kenyan case and providing insights into policy making on the appropriate policies to boost stock market development and economic growth.

2.0 LITERATURE

Stock market returns refer to stock appreciation and divided returns. The stock appreciation return is the difference between the buying price and the selling price while dividend returns are obtained from the profit share to the shareholders. The NSE 20 share index is a major stock index that tracks the performance of the twenty best performing companies listed on the NSE. They are selected based on a weighted market performance for a twelve month period based on the number of shares traded, number of deals, market capitalization and turnover. It more specifically tracks the NSE equities market. The NSE 20 share index is a price weighted index calculated as a mean of the twenty selected stocks. The selection criteria is based on: First, the trading activity measures weighted in the ratio 4:3:2:1 for market capitalization, traded shares, liquidity (deals) and turnover respectively. Secondly, a company with a free float of 20%. Thirdly, the company must have a market capitalization of at least Kenya shillings twenty million and finally the company should have superior profitability and dividend record. A company that breaches on any of these requirements for over three years is disqualified from inclusion. The index comprises of two companies from the Commercial and Services sector, six from the Banking sector, four from the Manufacturing and Allied sector, three from Energy and Petroleum sector, two from the Insurance sector, one from the Telecommunication and Allied sector, one from the Investment sector and one from the Investment services sector as shown in appendix III.

MSCI (2010) empirically tested the steps leading from the GDP growth to stock returns. The study employed the long-run Microsoft Securities Composite Index data and macroeconomic data for the period between 1958 and 2008. The study revealed a negative correlation between economic growth and stock market returns for the eight developed economies. For this study period long run stock markets were lower than the economic growth in many economies. This may be explained by the fact that the anticipated economic growth was already incorporated into the price of the stocks in their respective exchanges.

Olweny and Kimani (2011) investigated the relationship between stock market performance and economic growth in Kenya. This study covered the period between 2001 and 2010 while employing quarterly data. The VAR model was utilized together with a Granger causality test. Causality was found to run unilaterally from the stock market returns as measured by the NSE 20 share index to economic growth. Hence, stock market returns as measured by the NSE 20 share index reflected macroeconomic activities of the economy and can thus be used to forecast the future trend of Kenya's economy.

Komain (2012) studied the predictive role of stock market returns for real activity in Thailand. The study utilized monthly data on all listed firms for the period between 1993 and 2011. Using the Granger causality test, the stock market returns were found to perform the predictor role on the economy for a short period running between three and four months. Hence, an increase (decrease) in the stock market returns indicate an increase (decrease) in the real economy for the succeeding 3 (three) to 4 (four) months.

Onakoya (2013) examined stock market volatility and economic growth in Nigeria for the period running from 1980 to 2010. Using EGARCH the study revealed that Nigeria's

stock market performance is hardly reflected in the real economy. As such, the stock market returns were not responsive to changes in macroeconomic factors and it is therefore very difficult to forecast stock market returns through macroeconomic changes.

Kaimba (2010), studied the relationship between NSE-20 share index and selected macro-economic variables that influence growth in Kenya. He used the GDP, interest rates, inflation rates, exchange rates and domestic savings. Using a descriptive design to establish the causal relationship between the independent variables and the stock market he used annualized data of the NSE-20 share index and the macro-economic variables for the period between 1990 and 2009. The study concluded that a significant relationship exists between the NSE and macro-economic variables. This evidence supported the assertion that the stock markets are important predictors of the direction of the economy.

Kinyae (2013) studied economic performance indicators and stock returns at the stock NSE. The study adopted an explanatory research design on a sample of all the sixty two (62) listed firms of the NSE. It was revealed that the stock market returns as measured by the NSE 20 share index had a positive relationship with inflation, economic growth and the exchange rates. Economic growth was found to be statistically significant with sectoral analysis revealing that economic growth and the exchange rate are the key determinants of stock returns in Kenya. Increased stock market returns were observed to result from coinciding periods of increased economic growth. The study further recommended that investors should consider economic growth when forecasting stock market returns as periods of increased economic growth led to higher stock market returns.

Kori (2018) analyzed the effect of macroeconomic variables on the stock market returns in Kenya between 2008 and 2013 while adopting a descriptive research design. To this end the researcher utilized the NSE 20 share index as a proxy for the stock market returns with a sample made up of all the listed firms that constitute the NSE 20 share index. The study established that the exchange rate had a significant negative correlation with the performance of the index, inflation had an insignificant negative correlation with the index while money supply was found to have an insignificant positive correlation with the index. The study recommended that the government should continuously monitor and maintain foreign exchange rates, money supply and inflation within desired levels so as to boost the growth of the stock market.

Kamunde (2012) concludes that NSE-20 has less significance in explaining market capitalization than NASI. Osoro and Jagongo (2013) concluded that the NSE-20 share index and NASI had no significant difference on investor perspectives as performance measurement indicators. Also, Waithaka (2014) concluded that no significant difference exists between NSE-20 share index and NASI in representing overall market capitalization. There thus arises the need to unravel the underlying performance of these two indices as stock market measurement indicators against economic growth in Kenya.

Of the existing documented literature that exists on the NSE, only two (Kaimba 2010; Olweny and Kimani 2011) studied the relationship between the stock market and economic growth. Of these two only the latter carried out an in-depth study on this underlying relationship. However, the study employed only one stock market variable (NSE stock market returns) to represent the stock market in understanding the existing relationship. The former study does not reveal the direction of the relationship between the stock market and economic growth. These limitations of the two studies covering the Kenyan stock market and economic growth raise the need to carry out further studies on the area.

The relationship between stock market performance and economic development has interested a number of researchers such as Charkravarty (2005) and Calderon and Liu (2002). In the early studies such as Shaw and McKinnon (1973) the researchers independently observed that development in financial market is positively correlated to gross per capita income.

Harris (1997) examines the empirical relationship between stock markets and economic growth. It reveals no strong evidence that the level of stock market activity helps to explain growth in per capita output Seyyed (2010) have however found out that there is no relationship between economic growth and stock market performance more so in developing countries where government influence is usually significant. Apart from the view that stock markets may be having no real effect on growth, there are theoretical constructs that show that stock market development may actually hurt economic growth. For instance, Stiglitz (1985, 1994), Shleifer and Vishny (1986), Bencivenga and Smith (1991) note that stock markets can actually harm economic growth. They argue that due to their liquidity, stock markets may hurt growth since savings rates may reduce due to externalities in capital accumulation. Diffuse ownership may also negatively affect corporate governance and invariably the performance of listed firms, thus impeding the growth of stock markets.

(Kaimba 2010; Olweny and Kimani 2011) concluded that there exists a relationship between the stock market and economic growth. This study contradicts the study of Kimura and Yobesh (1999) that concluded that there exists an insignificant correlation between growth of the stock market and economic growth in Nigeria. The study by Kaimba (2010) does not reveal the direction of this relationship unlike Olweny and Kimani (2011). The study by Mogambi (2010) concludes that the NSE 20 share index cannot be relied upon to effectively predict the overall performance of the NSE. These findings necessitate the need to carry out an in-depth analysis of the prevailing causal relationship in the case of Kenya and the performance of individual indices in

representing the securities market in Kenya using more current and relevant data.

3.0 METHODOLOGY

Research design is an outline of all procedures selected by a researcher to assess the relationship between variables (Khan, 2008). This study employed a causal relationship to analyze the direction of causality between the stock market and economic growth in Kenya. This will help in understanding how the variable(s) in the study are responsible for changes in the other variable(s). Cooper and Pamela (2011) notes that the ideal standard of causation requires that one variable always causes another and no other variable has the same causal effect with empirical conclusions based on inference-induction.

The target population for this study are all the quoted NSE companies for the period under study. Economic growth will be measured by real GDP growth rates over the same period. The real GDP is used as a proxy indicator of economic growth changes over time for an economy. Purposive sampling was employed and the most recent economic growth and stock market time series data was used to achieve the objectives of the study. Data for all variables in the study was collected from the first quarter of 2012 to the fourth quarter of 2019. This data provided a means for drawing conclusions on the existing relationship as well as the leading economic indicator role of the stock market.

To meet the objectives of the study a data collection schedule guided this process for the period of the study. To determine this relationship stock market time series data on the NASI index data was collected by the researcher from the NSE periodical hand books and My Stocks Limited for the period between the fourth quarter of 2012 and the fourth quarter of 2019. Time series data on economic growth was drawn from GDP growth rates provided on a quarterly basis by the KNBS which is the principal government agency for collecting and analyzing statistical data.

Data Analysis

The data collected was be analyzed using both regression analysis and causality tests. Inferential statistics was used to estimate the sample parameters. To estimate the causality direction between the stock market indicators and economic growth, Granger-causality tests were used as applied by Comincioli (1996) and Olweny and Kimani (2011). These analysis were carried out by use of the Eviews 11 statistical software.

Time series data often tend to exhibit non-stationarity. It therefore necessitates carrying out unit root tests to ensure stationarity so as to avoid spurious regressions results. If the variables are not stationary at levels the ADF test for unit roots using the VAR model as applied in this study will be used. The ADF test controls for high-order correlation by assuming that the series follows an AR (p) process. The optimal lag length was determined by the use of the Aikaike Information Criteria (AIC) as proposed by Aikaike (1977).

Analytical Model Equation

$$GDP = f(NASI)$$

$$LGDP_t = \beta_i LGDP_{t-i} + \beta_j NASI_{t-j} + \varepsilon_t$$

Whereby: L – logarithm
NASI – stock market index
GDP – rate of growth in real GDP
ε – error term

Co-integration Tests

This test is useful in testing for the existence of an equilibrium relationship between the variables. Johansen and Juselius (1990) propose the use of a relatively simple model outlining a vector valued autoregressive (VAR) process including a constant, seasonal dummies with independent Gaussian errors. A hypothesis for the presence of co-integrating vectors is formulated as a hypothesis of a reduced rank of the long-run impact matrix. This is stated in a simple parametric form that allows for the application of the method of maximum likelihood and likelihood ratio tests. Johansen co-integration analysis examines whether the variables are co-integrated of the same order taking into account the maximum Eigen values and trace statistics tests. The null hypothesis is the testing hypothesis for non-cointegration against the alternative which is the existence of co-integration using the maximum likelihood procedure. If the variables are non-stationary at levels they are differenced.

Granger Causality Tests

To test the causality direction between the stock market and economic growth, a one-sided distributed lag test as proposed Granger (1969), the direct Granger-causality test was carried out. For a pair of linear covariance stationary time series X and Y, X causes Y if the past values of X can be used to predict Y more accurately than using the past values of Y. This test rests on the temporal of X as an indication of causal influence on Y. This test also sought to establish whether the direction of the causal relationship is bi-directional, unidirectional or has a feedback mechanism. If a causal relationship exists between two variables, they can be used to predict each other.

4.0 FINDINGS AND DISCUSSIONS

Descriptive Statistics

Abnormally distributed variable assumes a Jarque- Bera value that is indifferent or close to zero and a probability value of more than 0.1. Both GDP and NASI were found not to be normally distributed because none of the Jarque-Bera values were close to zero nor the probability values above 0.1. The variables were log transformed to standardize the data for ease of further analysis and interpretations. Table 4.1 presents the descriptive results.

Table 4.1 Descriptive Results

	LN_GDP	LN_NASI
Mean	1.654318	4.915088
Median	1.704748	4.975353
Maximum	2.014903	5.198718
Minimum	0.405465	4.255755
Std. Dev.	0.278346	0.237713
Skewness	-2.940698	-1.402675
Kurtosis	14.23499	4.226701
Jarque-Bera	207.7205	12.10910
Probability	0.000000	0.002347
Sum	51.28387	152.3677
Sum Sq. Dev.	2.324289	1.695222
Observations	31	31

Correlation Analysis

NASI had a correlation coefficient of 0.24 as shown in table 4.2 with GDP signifying a weak positive correlation, hence no risk of having highly correlated variables in the model. This is expected because there would be more indices to explain the GDP .The positive correlation may allude to the fact that the two variables co move in the same direction.

Table 4.2 Correlation between NASI and GDP

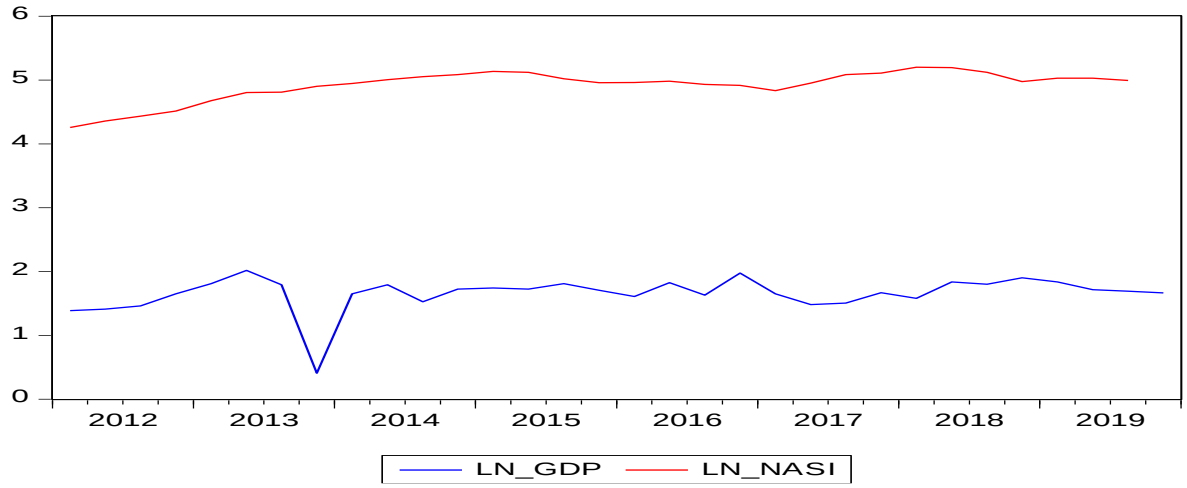
Covariance Analysis: Ordinary
Date: 07/11/21 Time: 10:53
Sample (adjusted): 2012Q1 2019Q3
Included observations: 31 after adjustments
Balanced sample (listwise missing value deletion)

Correlation	LN_GDP	LN_NASI
LN_GDP	1.000000	
LN_NASI	0.240026	1.000000

Trend

The trend confirms the above co movement as reflected in figure 1.However in 2013 second quarter the GDP was seen to decline, which could be due to the closely contested Kenyan elections in the very year. Its noted that the stock market was however not significantly affected which adds more to the conundrum as to whether the stock market investments truly reflects economic reality or the investors are just a clique. In 2017 an election year, the GDP again slightly declined while the NASI moved on the forward trajectory. However one can explain these with the higher percentage of foreign investors and institutional investors trading at the Nairobi Securities Exchange.

Figure 1



Unit root tests at Level and Intercept I (0)

GDP

The natural log of GDP was found to be stationery at level and intercept I (0) because the ADF-Test statistic was less than the McKinnon critical value at 5 percent level of significance.

Table 4.3 Unit Root Test of GDP at Level
Null Hypothesis: LN_GDP has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.102067	0.0002
Test critical values:	1% level	-3.661661	
	5% level	-2.960411	
	10% level	-2.619160	

*MacKinnon (1996) one-sided p-values.

NASI

The natural log of NASI was also found to be stationery at level and intercept I (0) because the ADF-Test statistic was less than the McKinnon critical value at 5 percent level of significance.

Table 4.4 Unit Root Test for NASI at Level
Null Hypothesis: LN_NASI has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.019076	0.0448
Test critical values:	1% level	-3.679322	
	5% level	-2.967767	
	10% level	-2.622989	

*MacKinnon (1996) one-sided p-values.

Unit root tests at first difference I (I)

Johansen long run cointegration test assumes that the variables must be found to be stationery at first difference hence the variables were tested for stationarity at first difference.

GDP

The natural log of GDP was also found to be stationery at first difference I (1) because the ADF-Test statistic was less than the McKinnon critical value at 5 percent level of significance.

Table 4.5 Unit Root Test of GDP at First Difference
Null Hypothesis: D(LN_GDP) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.495199	0.0000
Test critical values:	1% level	-3.679322	
	5% level	-2.967767	
	10% level	-2.622989	

*MacKinnon (1996) one-sided p-values.

NASI

The natural log of NASI was also found to be stationery at first difference I (1) because the ADF-Test statistic was less than the McKinnon critical value at 5 percent level of significance.

Table 4.6 Unit Root Test for NASI at First Difference

Null Hypothesis: D(LN_NASI) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=7)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.324864	0.0229
Test critical values:	1% level	-3.679322	
	5% level	-2.967767	
	10% level	-2.622989	

*MacKinnon (1996) one-sided p-values.

From the above results both at level and first difference, On application of the ADF test, on the level series none of the two variables understudy: namely log of real GDP rate, log of Index are stationary (they all contain a unit root) as indicated by the fact that their respective critical values are all smaller (in absolute terms) than the calculated ADF statistics and hence we do not reject the null hypothesis: that the time series data variables are non-stationary.

Johansen Cointegration

Since it has been determined in the unit root test that the variables under examination are integrated of order 1, the cointegration test is performed. Cointegration analysis is therefore used to investigate the long-term relationship between stock market performance and economic growth. Enders (2004) noted that, any equilibrium relationship among a set of variables implies that their stochastic trends must be linked. The testing hypothesis is the null of non-cointegration against the alternative that is the existence of cointegration relationship.

To conduct cointegration test, this study uses the method developed by Johansen and Juselius (1990). The Johansen-Juselius test gives better results and test cointegration by applying maximum likelihood estimation procedure. Both the Trace test and the Maximum Eigen value tests indicate one co integrating equation at the 0.05 level because the hypotheses at Null is rejected because it had a significant probability value of less than 0.05.Meaning a long run relationship exists between the two variables as seen in table 4.7

Table 4.7 Johansen Cointergration Test Results

Date: 07/11/21 Time: 11:03
Sample (adjusted): 2012Q3 2019Q3
Included observations: 29 after adjustments
Trend assumption: No deterministic trend
Series: LN_GDP LN_NASI
Lags interval (in first differences): 1 to 1

Unrestricted Cointegration Rank Test (Trace)

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.435232	17.05529	12.32090	0.0075
At most 1	0.016633	0.486411	4.129906	0.5487

Trace test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level

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

Unrestricted Cointegration Rank Test (Maximum Eigenvalue)

Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None *	0.435232	16.56888	11.22480	0.0053
At most 1	0.016633	0.486411	4.129906	0.5487

Max-eigenvalue test indicates 1 cointegrating eqn(s) at the 0.05 level
* denotes rejection of the hypothesis at the 0.05 level
**MacKinnon-Haug-Michelis (1999) p-values

Pairwise Granger Causality

No Causal relationship was established between GDP and NASI because neither had significant probability values hence both the null hypotheses were accepted. This finding contradicts the findings of Olweny and Kimani (2011) from which a positive relationship was established between these variables for the period between 2001 and 2010.

Table 4.8 Granger Causality Results
Pairwise Granger Causality Tests
Date: 07/11/21 Time: 11:07
Sample: 2012Q1 2019Q4
Lags: 5

Null Hypothesis:	Obs	F-Statistic	Prob.
LN_NASI does not Granger Cause LN_GDP	26	0.92030	0.4945
LN_GDP does not Granger Cause LN_NASI		0.37804	0.8560

5.0 CONCLUSIONS AND RECOMMENDATIONS

The main objective of this research study was to test the direction of causality between stock market performance and economic growth as well as the long run relationship between the two variables in Kenya. The techniques employed were the Granger Causality Test approach and Coitergration. It was envisaged that there were four probable results: (a) stock market performance driving economic growth; (b) economic growth driving stock market performance; (c) the bi-directional causal link and finally, (d) the absence of any causal link and long run relationships.

The direction of causality is established to run from the GDP to the stock market with no feedback and as such the performance of the economy can be relied upon to forecast the future stock market retuns. These findings are useful in explaining the need for a stable macroeconomic environment in sustaining a growing stock market that is a medium for capital aggregation in the economy. This causality test is in contradiction with that of Comincioli (1996) for the United States between 1990 and 1994 and those of Olweny and Kimani (2011) but agrees with Seyyed (2010) as noted above.

Economic growth significantly aid in forecasting of the current and future stock market trends given the confirmed long run connection between the variables as established by coitergration results. This confirms the existing research findings that suggest that this relationship is country and time specific-varying across regions and periods. The findings are supported by the fundamental theories which hold that stock prices are driven by underlying macro-economic factors. As such, past macro-economic trends and the anticipated real economic changes cause stock prices.

The debate on the direction of causality between economic growth and stock markets still remains inconclusive with increased attention drawn to why this relationship has yielded mixed outcomes over time. It is important for stock market investors to incorporate the influence of economic growth into their portfolio creation strategies. This is because economic growth has portrayed significant impact on stock market returns derived.

Further Studies should be carried to establish whether other aspects of the stock market such as size, volatility, trade volume and, depth in terms of instruments on offer exhibits different results from the ones reached in the conclusion of this study. Another direction for future research is a cross-national study involving other developing countries such as the sub-Saharan African countries as well, in order to bring out further empirical evidence with regard to the direction of causality between the stock market and economic activity. In future, when larger samples of observations are available, the regression parameters may be re-estimated for comparative analysis with the empirical results of this study.

REFERENCES

1. Adenuga A. O. (2010), Stock Market development indicators and economic growth in Nigeria (1990-2009): Empirical investigations. Central bank of Nigeria, Economic and Financial Review, 48(1).
2. Alejekwu Udoku and Achugbu Austin (2012),The role of stock market development and economic growth in Nigeria: A time series analysis. African Research Review, Vol6 (1), 51-70.
3. Ateyobi Kehinde *et al* (2013). Capital market and economic growth: An empirical analysis. IOSR Journal of Humanities and social sciences, 6(6), 60-68.
4. Bamurange Pamela *et al* (2019). Influence of selected Macroeconomic factors on stock market performance in Kenya. Journal of Finance and Accounting, Vol. 3, (2), 1-24.
5. Barasa J. Wanjala (2014). Macroeconomic determinants of stock market performance in Kenya: A case of Nairobi Securities Exchange. Unpublished MSc. Project, University of Nairobi.
6. Bencivenga V. and Smith B. (1991). Financial intermediation and Endogenous growth. Review of Economic studies 58 (2), 195-209.
7. Calderon C. & Liu L.. (2002). The direction of causality between financial development and economic growth Working Papers, Central Bank of Chile
8. Capital Market authority (2018). Annual Report and Financial Statements.
9. Charkravartv. S,. (2005). Stock market and macroeconomic behaviour in India. Institute of Economic Growth. Delhi. India
10. Comincioli Brad (1996), The Stock Market as a leading indicator: An application of Granger Causality. The University Avenue Undergraduate Journal of Economics, Sample issue.
11. Cooper D.R and Pamela P.S (2011). Tata McGraw-Hill Publishing Company, New Delhi, India.
12. Cutler D.M. et al, What moves stock prices? Journal of Portfolio Management, 15(3), 4-12.
13. Cytonn (2018). Why stock indices performance differ: A case study of NASI vs NSE 20. Retrieved from https://cytonn.com/topicals/why-stock-indices-performance-differ-a-case-study-of-nasi-vs-nse-20
14. Dada S. Obafemi et al (2012), Robust Application of the Arbitrage Pricing Theory and the Test for Volatility in the stock market: Evidence from Nigeria. Research Journal of Finance and Accounting, vol 12, No.4.
15. FTSE Russell. https://www.ftse.com/Analytics/Factsheets
16. Granger C.W (1969). Investigating Causal Relations by Econometric models and Cross Spectral methods. Econometrica, 37, 424-438.
17. Harris. K . (1997). Stock Markets and Development. A Re-assessment European Economic Review. Vol 41. Pp 139-46
18. Ikikii Stephen M. and Nzomoi N. Joseph (2013). An analysis of stock market development on economic growth in Kenya. International Journal of Economics and Finance, Vol. 5, No. 11, 145-151.
19. Johansen Søren and Juselius Katarina. (1990). Maximum Likelihood estimation and inference on co-integration-with applications to the demand for money. Oxford Bulletin of Economics and Statistics, 52, 2, pp 169-210.
20. Jugu Yohanna and Amodu Yunisa (2014), Capital Asset Pricing Model and Arbitrage Pricing Theory: A comparative Analysis.
21. Kaimba I. Karigu, Relationship between Nairobi Securities Exchange 20-Share Index and selected macro-economic variables. Unpublished MBA project, 2010.
22. Kamunde Lawrence Kaburu (2012). Analysis of the relationship between market capitalization and stock market indices at the NSE. Unpublished MBA project.
23. Koszegi Botond and Rabin Matthew (2006). A model of reference-dependent preferences. Quarterly Journal of Economics, Vol CXXI, Issue 4, 1133-1165.
24. World Bank (1996). Stock market development and long-run growth. Policy research working paper (1582).
25. World Bank (2012). Kenya Economic update, Walking on a Tightrope Rebalancing Kenya's economy with a special focus on regional integration. World Bank.
26. Karungu R. *et al* (2019). Effects of securities behaviour on performance of Nairobi Securities Exchange indices. Research Journal of Finance and Accounting, Vol. 9, No. 14.
27. Kenya National Bureau of Statistics (2009, 2013, 2016, 2019), Economic Survey Highlights. Government of Kenya.
28. Kinyae A. Mwangangi (2013), Economic Performance Indicators and Stock Returns at the Nairobi Securities Exchange. Unpublished MBA project.
29. Kirui *et al* (2014). Macroeconomic variables, volatility and stock market returns: A case of Nairobi Securities Exchange, Kenya. International Journal of Economics and Finance. Vol. 6, (8), 214-228.
30. Kori K. Mutweta (2018). Macroeconomic variables and their effect on stock market returns in Kenya. Unpublished MBA project, United States International University- Africa.

31. Levine, R. & Zervos, S. (1996). Stock market, banks and economic growth. A policy working paper. New York: World Bank WPS1690/ 1996.
32. Levine Ross and Zervos Sara (1998). Stock markets, banks, and economic growth. The American Economic Review, 88(3), 537-558.
33. Lo Andrew (2004), The Adaptive Market Hypothesis: Market efficiency from Evolutionary perspective. Journal of Portfolio Management, 30(5), 15-29.
34. Lo Andrew (2016). What is an index? Journal of Portfolio Management, 42(2), 21-36.
35. Mogambi N. Monica (2017). The effectiveness of the NSE 20 share index in representing the overall market performance at the Nairobi Stock Exchange.
36. Muhamad Kamran et al (2018). Stock market development and Economic growth: Evidence from Pakistan. Journal of Business and Tourism, 04 (12), 21-38.
37. MSCI Barra (2010). Is there a link between GDP growth and equity returns? MSCI Barra Research Bulletin.
38. Ndede C. Otieno *et al* (2017). An assessment of the effects of Nairobi Securities Exchange (NSE) 20 share index. International Journal of Economics, Commerce and Management. Vol. V, Issue 10, 161-191.
39. Ngare E. *et al* (2014). Stock market development and economic growth in Africa. Journal of Economics and Business, Vol. 74, 24-39.
40. Njenga E. Nyanaro (2016). The relationship between stock market performance and economic growth in the East Africa Community. Unpublished MSc. Project.
41. Nairobi Securities Exchange. The History of NSE. https://www.nse.co.ke/nse/history-of-nse.html
42. NSE (2014). Annual Report and Financial statements.
43. NSE (2018). Investors Handbook 2017-2018.
44. Ochieng D. Elly and Oriwo E. Adhiambo (2012). The relationship between Macroeconomic variables and Stock market performance in Kenya. DBA Review. Vol. 3, (1), 38-49.
45. Odera J. Odhiambo (2000), Determining the Accuracy of the Nairobi Securities Exchange 20-Share Index. Unpublished MBA project.
46. OECD, Main Economic Indicators. http://www.oecd.org/daf/investmentfordevelopment
47. Okumu N. Agatha and Onyuma O Samuel (2015), Testing Applicability of Capital Asset Pricing Model in the Kenyan Securities Market. European Journal of Business and Management, vol.7, 126-133.
48. Olweny O. Tobias and Kimani Danson (2011). Stock Market performance and economic growth. Empirical Evidence from Kenya using Causality Test Approach. Advances in Management & Applied Economics, 1 (3), 153-196.
49. Onyango P. Arogo (2010),The relationship between stock market liquidity and economic growth in Kenya. Unpublished MSC project.
50. Osho A. Ejededawe (2014), Role of stock market on Nigeria's economic development. International Journal of Scientific and research publication, 4(4).
51. Osoro Cliff and Jagongo Ambrose (2013), Investors Perspectives on the NASI and NSE 20- Share Index as performance measurement indicators at the Nairobi Securities Exchange in Kenya. International Journal of Humanities and Social Sciences, 3 (18), 153-162.
52. Oyewo B. Michael and Oyewole O. Sharon (2014). Financial system, financial inclusion and economic development in Nigeria. International Journal of management sciences, Vol 2, No. 3, 139-148.
53. Ragheb Mohamed et al (2016), Arbitrage Pricing Model; Determining the number of factors and their consistency across markets. International Journal of African and Asisan Studies, vol. 24, 42-64.
54. Rurangwa Gerard and Shukla Jaya (2017). Capital market development and economic growth: Evidence from Rwanda. International Journal of Economics, Commerce and Management, V (10), 507-517.
55. Shabbaz et al (2013), Macroeconomic determinants of stock market capitalisation in Pakistan: Fresh Evidence from Cointgration with unknown structural breaks. Munich Personal RepEc Archive, paper No.52490.
56. Sharma Dipasha (2015). Nexus between financial inclusion and economic growth. Evidence from the emerging Indian economy. Journal of Financial economic Policy, vol. 8 No. 1, pp13-36.
57. Shaw and McKinnon. R.I.. (1973). Money and Capital in Economic Development, The Brookings Institution. Washington. DC, 1973
58. Seyyed. A.. (2010). Emerging Stock Market Performance and Economic Growth. American Journal of Applied Sciences. Vol 7, No. 2. Pp. 265-69
59. Shleifer A. and Vishny R. (1997) A survey of corporate governance Journal of Finance, 52(2).
60. Waithaka J. Njuguna (2014). The effectiveness of the NSE 20 share index in representing the overall market performance at Nairobi Securities Exchange. Unpublished MBA research project, University of Nairobi.
61. World Bank (2015). World Bank Development Indicators.