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FOREIGN DIRECT INVESTMENT AND ITS CAUSAL EFFECT ON STOCK MARKET DEVELOPMENT: A SELECTED SUB-SAHARAN AFRICAN COUNTRIES STUDY, 1984 – 2015

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Abstract

This Study examined Foreign Direct Investments (FDI) and its causal Effect on Stock Market Development (SMD): A selected Sub-Saharan African (SSA) Countries Study, 1984 to 2015. Theoretical studies show that increase FDI would result to SMD increase but some available findings from empirical works seems to disagree with this position. The objective of this study was to examine the Causal Effect of FDI on SMD captured by market capitalization ratio (MCR) of the selected SSA Countries. The study used secondary data obtained from World Bank, IMF, Bureau of Statistics and the Central Bank of selected countries; The research work selected Nigeria, South Africa and Kenya as its sample and used the Granger-causality and Panel Data Analysis techniques, to test the Effect of the independent variables (FDI, NS and GDP) on the dependent variable (Market Capitalization) at the 5% level of significance. The findings amongst others show that FDI does not granger-cause market capitalization (MCR) for South-Africa and Kenya but for Nigeria, it revealed a Uni-directional effect from MCR to FDIR only; while the SSA countries' pooled panel result indicate that FDI does not granger-cause market capitalization for selected countries. The study concludes that FDI attraction into the SSA countries does not influence stock market development (SMD) and hence, recommends among others the establishment of regional global stock market linkages and admonish the respective governments to encourage stock market listing of FDI benefiting Multinational companies (MNCs) through flexible listing requirements as this will granger-cause needed traction between FDI and stock market capitalization.

Key word: foreign direct investment, market capitalization, stock market development, Granger-causality,

1.0 Introduction

Foreign Direct Investments refers to investments attracted from foreign countries at little or no cost attached to such capital inflow to the domestic economy meant for long term development of such economy's private and public sector.

A foreign direct investment (FDI) is a controlling ownership in a business enterprise in one country by an entity based in another country. Foreign direct investment is distinguished from portfolio foreign investment, a passive investment in the securities of another country such as public stocks and bonds, by the element of "control". According to the Financial Times definitions (2010),"Standard definitions of control use the internationally agreed 10 percent threshold of voting shares, but this is a grey area as often a smaller block of shares will give control in widely held companies. Moreover, control of technology, management, even crucial inputs can confer de facto control."

The origin of the investment does not impact the definition as an Foreign Direct Investments: the investment may be made either "inorganically" by buying a company in the target country or "organically" by expanding operations of an existing business in that country.

Eurostat (2015) maintained that Foreign Direct Investment (FDI) is the category of international investment that reflects the objective of obtaining a lasting interest by an investor in one economy in an enterprise resident in another economy. The lasting interest implies that a long term relationship exists between the investor and the enterprise, and that the investor has a significant influence on the way the enterprise is managed. Such an interest is formally deemed to exist when a direct investor owns 10% or more of the voting power on the board of directors (for an incorporated enterprise) or the equivalent (for an unincorporated enterprise).

FDI may be seen as an alternative economic strategy, adopted by those enterprises that invest to establish a new plant/office, or alternatively, purchase existing assets of a foreign enterprise. These

enterprises seek to complement or substitute international trade, by producing (and often selling) goods and services in countries other than where the enterprise was first established.

There are two kinds of FDI: the creation of productive assets by foreigners, or the purchase of existing assets by foreigners (for example, through acquisitions, mergers, takeovers). FDI differs from portfolio investments because it is made with the purpose of having control, or an effective voice, in the management of the enterprise concerned and a lasting interest in the enterprise. Direct investment not only includes the initial acquisition of equity capital, but also subsequent capital transactions between the foreign investor and domestic and affiliated enterprises.

David, P. Barri, M and Ofei, K. (2014), opined that Foreign Direct Investment (FDI) in Africa has reached the highest level in a decade and is set to reach an estimated USD$80b that year. With ten of the world's fifteen fastest growing economies, it is no wonder that Africa continues to attract considerable FDI inflows and this positive trend is expected to continue.

The above scenario suggests that an increase in foreign direct investment in the local economy will result to increase in availability of long term developmental funds on the stock exchange market and its implication is several including increase in market capitalization as the foreign investors will channel such funds to the acquisition of shares of existing profitable or prospective local enterprise or multinational companies. According to Farole and Winkler (World Bank, 2014), they held that in such a situation, local enterprises will be able to fund their operational, tactical and strategic projects and achieve their profit and capital appreciation goals while the foreign investors hold controlling influence in such businesses.

The review of literatures revealed that little attention has been paid on the Causality effect of Foreign Direct Investments on stock market development within the Sub-saharan African hemisphere. The very few studies in this regard include Adam and Tweneboah (2008) on Ghana, and Otchere, Soumare and Yourougou (2011) on Africa. Within the Nigerian economy, plethoras of studies have only focused on the relationship between stock market development and economic growth (Mojekwu &

Ogege, 2012; Ali & Abdullahi, 2015). Despite the quantum of studies, little attention has been paid to the Causal effect of foreign direct investments on the individual stock market development components. It is against the above background that this study seeks to examine the Causal effect of foreign direct investments on stock market development in Sub-saharan Africa for the period 1984 to 2015. This study is divided into; 1. Introduction, 2. Review of Related Literature, 3. Data and Methodology, 4. Data Presentation and Analysis and 5. Conclusion and Recommendation.

2.0 Review of Related Literature

Stock market is a market where buyers and sellers engage in trade of financial securities like bonds, stocks etc and undertaken by participants such as individuals and institutions (World Bank, 2007). The market channels surplus funds from savers to institutions (deficit areas) which then invest them into productive use. This market provides long term finance for real sector developments (Desai, Foley & Hines, 2006). The primary function of stock markets is to serve as a mechanism for transforming savings into financing for the real sector. According to El-Wassal (2013), he noted that from a theoretical perspective, stock markets can accelerate economic growth by mobilizing and boosting domestic savings and improving the quantity and quality of investment. Better savings mobilization may increase the rate of saving and if stock markets allocate savings to investment projects yielding higher returns, the increasing rate of return to savers will make savings more attractive. Consequently, more savings will be channeled into the corporate sector. Efficient stock markets make corporations compete on an equal basis for funds and help make investment more efficient.

2.1 Conceptual Review

The commonly used measures to assess stock market development are stock market size and stock market liquidity indicators (El-Wassal, 2013). The knowledge of the dimensions of

stock market development will enable appropriate policies, measures and actions to be formulated and activated to assist stock markets to "develop" and also to diagnosis existing weaknesses. Primarily, it is important to state that growth and development are not the same thing. For a stock market to grow means that it increases in size or liquidity. To develop implies increasing or improving a stock market's ability to satisfy an economy's needs as stipulated among the main functions of stock markets.

2.1.1 **Stock Market Development Indicators**

Stock market development may be captured using the following indicators: i) stock market size; ii) stock market liquidity; iii) stock market performance/volatility; iv) stock market concentration; and v) stock market linkage to real sector performance (World Bank, 2015; El-Wassal, 2013; Levine & Zervos, 1998). The adoption of a variety of indicators could provide a more accurate picture of stock market development.

i) Stock Market Size:

Market Capitalization Ratio – This measures the value of listed shares divided by Gross Domestic Product (GDP). The assumption behind this variable is that capital market size is positively correlated with the ability to mobilize Capital (FDI, savings etc) and diversify risk on an economy-wide basis.

2.2 Theoretical Review

Industrial Organization Theory

The theory is also known as micro- level theory of FDI and is attributed to the work of Hymer (1960). In the theory Hymer (1960) suggests that the decision to set up value-adding operations abroad depends on the industry and certain aspects of individual companies, rather than the country and national capital availability as suggested by Dunning (1973). The theory makes emphasis on two main points. Firstly, the firms become MNEs due to their possession of competitive advantage and their ability to maximise their productivity by using this competitive advantage in another country. This however, leads to the concept of ownership advantages as discussed by Dunning (1994). Secondly, the competitive structures of some industries would encourage firms to internationalise more than those in other countries.

Hymer's industrial organisation theory of FDI hypothesises that the rate of profit has a tendency to drop in industrialised countries. This is due to domestic competition, thus creating the propensity for firms in underdeveloped countries to engage in FDI. The theory considered tradable ownership advantages and the removal of competition as key requirements for an individual firm in a given industry to invest overseas and thus become an MNE. Hymer made four assumptions under the micro-level theory of FDI namely;

- In the post-war years, FDI was two-way between developed and underdeveloped countries. Other theories suggested that the flow of capital was one way from developed to underdeveloped countries.
- A country was supposed to either engage in outward FDI or receive inward FDI only. Hymer observed that MNEs moved in both directions across national boundaries in industrialised countries. This implies that countries simultaneously receive inward FDI and engage in outward FDI.

- The level of FDI was found to vary between industries. This means that, if capital availability was the driver of FDI, then there should be no variation since all industries would be equally able and motivated to invest abroad.
- Due to local financing of foreign subsidiaries, it was not practically plausible that capital moved from one country to another.

Hymer (1976) strongly argued that MNEs can only exist in an imperfect market, when firms have non- financial ownership advantages compared to other firms in the same industry. This means that the determinants for MNEs lie with the individual firms, rather than country's capital availability as suggested by the eclectic theory of FDI.

2.3 Empirical Review

The literature addressing the link between FDI and Stock market development is very limited. For instance, Hermes and Lensink (2003) observed a unidirectional relationship between FDI and FMD along with Alfaro et al (2004) while Dutta and Roy (2011) established a Non-linear association between the variables.

Karolyi (2004) investigated the causal relationship between FDI and stock market development covering 1982 to 2002 and discovered no causal relationship but, Kholdy and Sohrabian (2005) studied the causal relationship between FDI and market capitalization for 25 countries from 1975 to 2002 and concluded from their studies that there exists a Bi-directional relationship. However, Al Nasser and Soydemir (2010) conducted Granger causality tests between FDI and financial development variables for Latin American countries. They show a unidirectional relationship from banking sector development to FDI and not the reverse; the relationship between FDI and stock market development is bidirectional. Their explanation is that FDI can initially promote stock market development because of the investment opportunities that FDI-related spillover effects usually generate: a more developed stock market may then attract more FDI in turn.

Olweny and Kimani (2011) studied the performance of stock market in relation to economic growth in Kenya from 2001 to 2010 using co-integration, VAR model and granger causality test methods. The variables employed in the study include GDP (dependent variable), Inflation and All-Share index. The study revealed the existence of a positive and significant long run relationship between GDP and All Share index and a bi-directional relationship between FDI and stock market development variables in Kenya.

Okodua and Ewetan (2013), examine the causal relationship between stock market performance and sustainable economic growth in Nigeria. They applied bound testing co-integration approach from 1981 to 2011. The variables used were gross domestic product, market capitalization, value of traded securities, average dividend yield, interest rate and financial depth. The result showed that there exists a significant long-run and a uni-directional causal relationship between the dependent and independent variables.

Ifionu and Omojefe (2013), in their studies also investigated the direction of causal relationship between capital market and economic growth in Nigerian economy over a 26 year period from 1985 – 2010, discovered a linear causal relationship between the market capitalization and economic growth (GDP). The study concluded that there is a strong positive correlation between economic growth (Independent variable) and market capitalization (dependent variable) and that policy makers should focus on policies that will strengthen the depth and breadth of the Nigerian capital market.

Issouf and Fulbert (2015) performed an empirical assessment of direct causal relationship between FDI and financial market development using panel data from emerging markets with a system of simultaneous equations and held that there is a two-way link between FDI and stock market development in studied emerging markets. On the one hand, foreign investment helps develop local stock markets by its investment spillover effects. This is because more foreign

investment increases the likelihood that the affiliates of multinationals involved in FDI activities will be listed on local stock markets, since multinationals tend to hail from industrialized countries where financing through the stock market is a tradition. Furthermore, consistent with the political economy argument, one can conjecture that FDI inflows encourage the country's political elite to adopt market-friendly regulations—especially investor protection and better governance regulations: this promotes the development of the stock market. On the other hand, a relatively well-developed stock market helps attract foreign investors, as such, a market is perceived as a sign of vitality, of openness on the part of country authorities, and of a market-friendly environment. This is especially true in emerging markets, whose stock markets are more developed than are the markets of other developing countries. Hence, Soumare and Tchana (2015) documented a bi-directional causality between FDI and stock market development variables along with the World Bank (2015).

3.0 Data and Methodology

The research design adopts the *ex post facto,* and is mostly used where variables are drawn from already concluded events and there is no possibility of data manipulation.

3.1 Sources and Nature of Data

The data for this work are secondary data drawn from the World Bank statistical data bank, International Monetary Fund (IMF), the data base of the National Bureau of Statistics of the various study country, the statistical bulletin of the Central Bank of Nigeria, statistical bulletin of the Central Bank of South Africa and the Central Bank of Kenya for the range of years under study.

3.2 Model Specification and Validity

This research work adopts the model of Adam and Tweneboah (2008), and Issourma and Tchana (2015) with slight modifications (for example; removal of non-variable of interests such as Inflation rate, Treasury bills and Exchange rates etc and inclusion of stock market development variables only). The researchers expressed stock market development indicators as a function of FDI with

GDP acting as a moderating variable (to help moderate the output from this study in line with parameter ratios used).

MCAP = f(FDIR, GDP, NS) 1

$\log MCR_t = \sum\alpha_1 \log FDI_t + \sum\alpha_2 \log GDP_{1-t} + \sum \log MCR_{1-t} + \sum \log NS_{1-t} + U_t$ ……2

Where: **MCR =** Market Capitalization ratio to GDP and is the total market value of the shares outstanding of a publicly traded company to the gross domestic product. (This variable was used by; Adam-Anokye et al, 2008; Karim, 2009; World Bank, 2015)

FDIR =Foreign Direct Investments and refers to the volume of foreign capitals inflowed into a domestic company by foreign investors and institutions for investment activities to ratio of GDP (Otchere et al, 2011)

GDP = Gross Domestic Products and it refers to the level of economic and financial activities or transactions brought into an economy through the activites of the stock market and domestic foreign investments. (Desai et al, 2006)

NS = National Security included as dummy variable (Oriakhi & Osemwengie, 2012)

3.5 APRIORI EXPECTATION

The apriori expectations adopted the World Bank findings (2007 and 2015), Issourma and Tchana (2015); which all documented a bi-directional causality between FDI and stock market development variables.

4.0 Data Presentation and Analysis

Table 1 – Tabular data Presentation of selected variables

	NIGERIA			SOUTH AFRICA			KENYA			NS
Year	MCR (%)	GDP (%)	FDIR (%)	MCR (%)	GDP (%)	FDIR (%)	MCR (%)	GDP (%)	FDIR (%)	0
1984	8.73	-4.6	1.64	62.68	-1.80	0	0.65	2.50	0.11	0
1985	9.29	5.4	1.69	82.66	0.60	0.02	0.69	-3.50	0.02	0
1986	10.83	-11.3	2.03	129.12	3.50	2.88	0.72	-2.20	0.01	0
1987	12.58	-13.3	2.52	133.42	2.30	4.99	0.76	-0.10	0.12	0
1988	12.48	4.5	1.23	110.08	2.60	4.09	0.79	2.00	0.17	0
1989	14.37	3.4	6.88	116.44	1.10	5.58	0.81	0.20	0.23	0
1990	17.60	9.6	1.98	122.19	1.10	-0.07	5.28	-2.60	0.67	0
1991	23.89	-0.7	4.51	158.63	-1.60	0.21	5.56	-3.40	0.23	0
1992	33.36	0.4	4.96	125.69	-3.90	2.51	7.76	-4.60	0.08	0
1993	46.89	2.0	4.71	161.64	-3.00	8.43	18.43	-1.00	2.53	0
1994	64.46	0.8	6.86	185.70	-0.40	0.27	42.62	0.80	0.10	0
1995	165.30	-0.5	3.09	178.43	1.30	0.81	22.30	1.00	0.47	0
1996	266.87	4.7	4.45	163.66	1.10	0.55	14.94	2.40	0.90	0
1997	264.49	2.5	4.81	150.76	-2.50	2.50	13.82	0.90	0.47	1
1998	233.11	2.3	2.93	122.33	0.00	0.40	14.82	-1.00	0.19	1
1999	258.62	0.0	2.17	190.10	0.80	1.24	10.93	0.90	0.40	1
2000	170.01	4.8	2.58	149.80	-2.40	0.84	9.88	2.60	0.87	1
2001	92.80	4.2	2.01	121.36	1.20	4.15	8.05	1.20	0.04	1
2002	33.44	4.0	2.77	157.60	-2.20	0.65	10.89	3.60	0.21	1
2003	17.01	8.9	2.28	148.78	0.20	0.30	28.06	1.70	0.55	1
2004	18.06	5.9	1.67	193.58	1.80	0.26	24.18	3.00	0.29	1
2005	19.82	5.8	3.43	213.10	2.80	2.18	34.07	3.90	0.11	1
2006	22.57	5.4	2.92	261.83	3.00	0.22	44.06	4.20	0.20	1
2007	51.00	6.1	2.90	276.60	4.00	2.22	41.76	3.90	2.28	1
2008	23.10	5.1	4.84	168.32	-2.50	2.63	30.24	1.80	0.26	1
2009	19.01	6.1	2.32	270.00	0.50	1.83	29.05	-2.90	0.29	1
2010	13.70	7.0	1.63	246.44	6.10	0.89	36.15	1.50	0.42	1
2011	9.48	2.1	2.15	189.40	3.40	1.04	24.32	1.70	0.33	1
2012	12.19	1.5	1.53	228.42	1.50	1.26	29.38	0.70	0.32	1
2013	15.65	2.6	1.08	257.43	2.90	2.25	40.50	0.60	0.68	1
2014	11.16	3.5	0.82	266.77	2.40	1.64	26.50	0.00	1.55	1
2015	9.93	-0.1	0.85	223.53	2.70	1.67	26.00	-0.50	2.28	1

Source: Central Banks and Bureau of statistics of Nigeria, Kenya, South Africa; World Bank; International monetary Fund

4.1 Data Analysis

4.2.1– **Descriptive Statistics and Test for Normality**

The descriptive statistics will be done using the Jarque-Bera Normality test, which requires that for a series to be normally distributed; the histogram should be bell-shaped and the Jarque-Bera statistics would not be significant. This implies that the p-value given at the bottom of the normality test table

should be greater than the chosen level of significance to accept the Null hypothesis, that the series is normally distributed (Brooks, 2014).

Table 2 - Descriptive Statistics for Nigeria Data

	FDIR	GDP	MCR	NS
Mean	2.882500	2.440625	61.93125	0.593750
Median	2.420000	3.450000	19.41500	1.000000
Maximum	6.880000	9.600000	266.8700	1.000000
Minimum	0.820000	-13.30000	8.730000	0.000000
Std. Dev.	1.595522	4.872693	84.37183	0.498991
Skewness	1.002600	-1.677224	1.624464	-0.381771
Kurtosis	3.315121	6.231248	4.046315	1.145749
Jarque-Bera	5.493500	28.92439	15.53375	5.361657
Probability	0.064136	0.000001	0.000424	0.068506
Sum	92.24000	78.10000	1981.800	19.00000
Sum Sq. Dev.	78.91640	736.0372	220676.8	7.718750
Observations	32	32	32	32

Source : Computation by author using E-view 7

The descriptive statistics in Table 2 shows the basic aggregative averages like mean, median and mode for all the observations. The spread and and variations in the series are also indicated using the standard deviation. Significantly, kurtosis which shows the degree of peakedness is also shown together with the skewness which is a reflection of the degree of or departure from symmetry of the given series. With all the variables showing an average kurtosis≥ 3, there is an evidence that they are all platykurtic with about half of the variables showing Jarque-Bera statistics of p-values in below the 5% level of significance, indicates a normal distribution.

Table 3 – Descriptive Statistics for South Africa Data

	FDIR	GDP	MCR	NS
Mean	1.826250	0.831250	173.9528	0.562500
Median	1.250000	1.100000	162.6500	1.000000
Maximum	8.430000	6.100000	276.6000	1.000000
Minimum	-0.070000	-3.900000	62.68000	0.000000
Std. Dev.	1.911189	2.355972	57.09750	0.504016
Skewness	1.645728	-0.179879	0.252675	-0.251976
Kurtosis	5.829387	2.482714	2.222119	1.063492
Jarque-Bera	25.11882	0.529347	1.147303	5.338708
Probability	0.000004	0.767456	0.563464	0.069297
Sum	58.44000	26.60000	5566.490	18.00000
Sum Sq. Dev.	113.2319	172.0688	101063.8	7.875000
Observations	32	32	32	32

Source : Computation by author using E-view 7

The descriptive statistics for South Africa indicates that 43% of the variables show an average kurtosis ≥ 3, indicating a platykurtic characteristics while the rest 57% are below 3, showing a leptokurtic characteristics. The variables that show Jarque-Bera statistics of p-values in excess of the 5% level of significance, indicating an outlinear in distribution will be corrected through either data differencing, log transformation or addition of dummy variables or even dropping of variables in the models to improve our R^2.

Table 4: Descriptive Statistics for Kenya Data

	FDIR	GDP	MCR	NS
Mean	0.543125	0.603125	18.87406	0.593750
Median	0.290000	0.900000	16.68500	1.000000
Maximum	2.530000	4.200000	44.06000	1.000000
Minimum	0.010000	-4.600000	0.650000	0.000000
Std. Dev.	0.673907	2.308817	14.10439	0.498991
Skewness	1.956004	-0.518127	0.238717	-0.381771
Kurtosis	5.706851	2.545283	1.825799	1.145749
Jarque-Bera	30.17446	1.707451	2.142254	5.361657
Probability	0.000000	0.425826	0.342622	0.068506
Sum	17.38000	19.30000	603.9700	19.00000
Sum Sq. Dev.	14.07869	165.2497	6166.950	7.718750
Observations	32	32	32	32

Source : Computation by author using E-view 7

The descriptive statistics for Kenya in table 9C, reveals the skewness as a swing between positive and negative signs and the Kurtosis between leptokurtic (MCR, and NS) and platykurtic (FDIR, and GDP). The Jarque-Bera statistics p-values for most of the data except FDIR are insignificant being above the 5% threshold, indicating an outlinear in the data distribution.This observed outlinear will be corrected either through data differencing, log transformation or addition of dummy variables.

TABLE 5 -PANEL DESCRIPTIVE STATISTICS

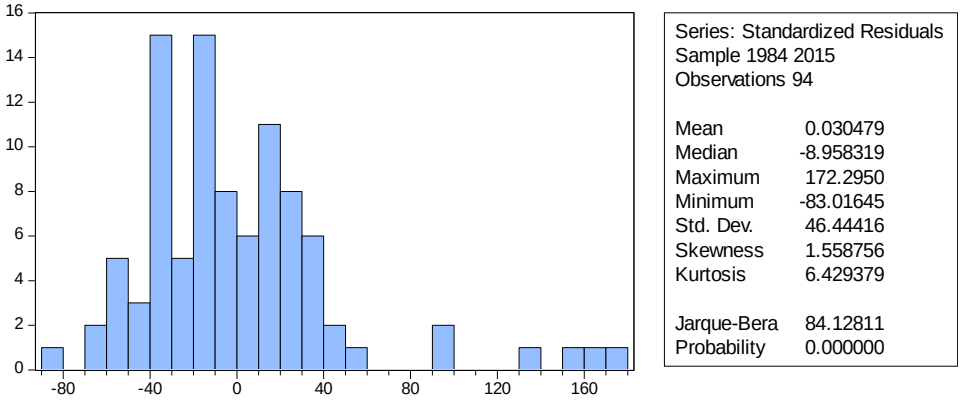
	FDIR	GDP	MCR	NS
Mean	1.750625	1.291667	84.91938	0.583333
Median	1.250000	1.500000	33.75500	1.000000
Maximum	8.430000	9.600000	276.6000	1.000000
Minimum	-0.070000	-13.30000	0.650000	0.000000
Std. Dev.	1.759379	3.460382	88.14247	0.495595
Skewness	1.410216	-1.071032	0.846097	-0.338062
Kurtosis	4.941096	6.677089	2.279369	1.114286
Jarque-Bera	46.89076	72.43767	13.53133	16.05224
Probability	0.000000	0.000000	0.001153	0.000327
Sum	168.0600	124.0000	8152.260	56.00000
Sum Sq. Dev.	294.0644	1137.553	738064.0	23.33333
Observations	96	96	96	96

Source : Computation by author using E-view 7

The mean and median as well as the standard deviation for the panel data in table 10, for the study area shows even spread and variations for the series. The panel mean, median, maximum and Standard Deviation for all the variables show positive and healthy trend. Significantly, kurtosis which shows the degree of peakedness is also shown along with the skewness which is a reflection of the degree or departure from symmetry of the given series. With a majority of the variables having kurtosis in excess of 3, there is strong evidence to believe they are mostly platykurtic. The Jarque-Bera and the probability of the pooled panel data show strong sign of normality considering the spread among the variables and a significant p-value of 0.00 which is less than the chosen significant level of 5%. The implication of this is that the observed outlinear in the individual country descriptive statistics (Kenya and South-Africa) have been corrected through the panel pool effect and the result

from such a process can be adequately relied upon.

FIGURE 1 - PANEL DATA TEST FOR NORMALITY



Source : Computation by author using E-view 7

The histogram in figure 3, shows a bell-shape but the Jarque-Bera and the p-value of the panel series is significant at the 5% level of significance showing strong Normality in the distribution.

4.2.2: **DIAGNOSTIC TESTS**

The aim here is to carry out various diagnostic tests to ensure that our data and model used in this research work conforms to the basic assumptions of the classical linear regression. This will ensure that the output of this process is not error prone and is reliable.

4.2.2.1: **Test For Stationarity**

The test for stationarity requires that the variables in the series model must be stationery at a given level and p-value must be significant at that level. Stationerity is attained where the test statistics is most negative and greater than the critical value of the chosen level of significance.

Table 6: Unit Root Tests for Nigeria Data

Variables	ADF Test Statistics	Critical Values @5%	P-value	Order of Integration
FDIR	**-3.8445**	**-2.9604**	**0.0064**	**I(0)**
GDP	**-4.1262**	**-2.9604**	**0.0031**	**I(0)**
MCR	**-3.0526**	**-2.9640**	**0.0414**	**I(1)**
NS	**-5.4084**	**-3.5684**	**0.0007**	**I(1)**

Source: Author's E-view 7 Computation

Table 7: Unit Root Tests for South Africa Data

Variables	ADF Test Statistics	Critical Values @5%	P-value	Order of Integration
FDIR	**-7.5000**	**-2.9719**	**0.0000**	**I(1)**
GDP	**-3.2401**	**-1.9521**	**0.0021**	**I(0)**
MCR	**-4.5484**	**-3.5629**	**0.0053**	**I(0)**
NS	**-5.4772**	**-2.9670**	**0.0001**	**I(1)**

Source: Author's E-view 7 Computation

Table 8 : Unit Root Tests for Kenya Data

	ADF Test Statistics	Critical Values @5%	P-value	Order of Integration
FDIR	**-4.5680**	**-2.9604**	**0.0010**	**I(0)**
GDP	**-3.0135**	**-2.9604**	**0.0446**	**I(0)**
MCR	**-5.9060**	**-2.9640**	**0.0000**	**I(1)**
NS	**-5.4084**	**-3.5684**	**0.0007**	**I(1)**

Source: Author's E-view 7 Computation

Tables 6-8 reports the tests for stationarity properties of the series following the ADF statistics. All the variables were found to be stationery at levels and at order one (1) and at 0.05 level of confidence, the p-values were all significant and thus reject the Null hypothesis for the unit root tests.

TABLE 9 – PANEL UNIT ROOT RESULT

Variables	LLandC Test Statis	Critical Values @5%	P-value	Order of Integration
D(MCR)	**-6.50578**	**-6.724**	**0.0000**	**I(1)**
D(ASI)	**-10.8777**	**-11.250**	**0.0000**	**I(1)**
D(FDIR)	**-7.01822**	**-7.258**	**0.0000**	**I(1)**
D(GDP)	**-7.2267**	**-7.532**	**0.0000**	**I(1)**
D(NLS)	**-6.0428**	**-6.249**	**0.0000**	**I(1)**
D(TUNR)	**-4.8947**	**-5.062**	**0.0000**	**I(1)**
D(VSTR)	**-10.2991**	**-10.662**	**0.0000**	**I(1)**

Source: Author's E-view 7 Computation

The Table 9 shows the stationerity tests for the panel data series following the Levin, Lin and Chu (LLC) statistics. All the panel variables were found to be stationery at first difference

level (1). At first difference levels as reported, the variable p-value were all 0.0000 and less than the 5% chosen significance level and thus we reject the Null hypothesis of the presence of Unit root and accept the alternative that there is no unit root and stationerity is attained by all the variables at the first difference levels.

4.2.2.2 - **Test For Serial Correlation – Breusch-Godfrey (BG) Tests**

The Breusch-Godfrey tests is used to test for the presence or absence of serial or autocorrelations in the model with the Null hypothesis stating that there is No autocorrelation. This holds if p-value is greater than the chosen level of significance otherwise reject.

Table 10 : Breusch-Godfrey Serial Correlation Test – Nigeria

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.034736	Prob. F(3,19)	0.3997
Obs*R-squared	3.651315	Prob. Chi-Square(3)	0.3017

Source: Author's E-view 7 computations

From table 10, the p-value is greater than the chosen level of significance of 5%, indicating the absence of autocorrelation in the model. This is further enhanced with a Durbin-Watson statistics of 1.653. Hence, we do not suspect any violation of the assumptions of classical linear regression. The applicable treatment was to lag the variables by three (-3) periods.

Table 11: Breusch-Godfrey serial correlation Test for South Africa

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.680020	Prob. F(2,20)	0.2116
Obs*R-squared	3.739764	Prob. Chi-Square(2)	0.1541

Source: Author's E-view 7 computation

From table 11, the p-value is greater than the chosen level of significance of 5%, indicating the absence of autocorrelation in the model for South Africa. This was arrived at after treating the variables with a three (3) period lag.

Table 12: Breusch-Godfrey Serial Correlation Test – Kenya

Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	1.776849	Prob. F(2,20)	0.1949
Obs*R-squared	3.922788	Prob. Chi-Square(2)	0.1407

Source: Author's E-Views 7 computation (See Appendix 4 for details)

From table 12, the p-value is greater than the chosen level of significance of 5%, indicating the absence of autocorrelation in the model. This was arrived at after treating the variables with a three (3) period lag.

4.2.2.3 Test for Heteroskedasticity (Arch)

The assumption of the classical linear regression that the variance of the errors is constant is known as *Homoskedastycity*. If the variance of the errors is not constant, this would be known as *Heteroskedasticity*. Hence, we test for the presence of heteroskedasticity with the intention of treating same if found. The treatment method adopted here is the Autoregressive conditionally Heteroscedastic test known as ARCH. The Null hypothesis states that there is no Heteroscedasticity if the p-value is greater than the level of significance (Brooks, 2014).

Table 13: Heteroskedasticity Table Result for Nigeria

Heteroskedasticity Test: ARCH			
F-statistic	2.801359	Prob. F(1,23)	0.1077
Obs*R-squared	2.714353	Prob. Chi-Square(1)	0.0994

Source: Author's E-View 7 computations (See Appendix 5 for details)

The null hypothesis states that there is No heteroskedasticity if p-value is not significant and is greater than the chosen level of significance of 5%. Hence, in this case we accept the Null hypothesis that there is no evidence of heteroskedasticity since p-value is greater than 5% significance level.

Table 14:Heteroskedasticity table Result for South Africa

Heteroskedasticity Test: ARCH			
F-statistic	0.995393	Prob. F(1,23)	0.3288
Obs*R-squared	1.037067	Prob. Chi-Square(1)	0.3085

Source: author's E-view 7 computations

From table 14 for South Africa, we accept Null hypothesis that there is No heteroskedasticity since p-valueis greater than the chosen level of significance of 5%. This was arrived at after three (3) period lag treatment.

Table 15: Heteroskedasticity Table Result for Kenya

Heteroskedasticity Test: ARCH			
F-statistic	0.128444	Prob. F(1,23)	0.7233
Obs*R-squared	0.138837	Prob. Chi-Square(1)	0.7094

Source: Author's E-view 7 Computation

In table 15 for Kenya, we accept Null hypothesis that there is No heteroskedasticity since p-value is greater than the chosen level of significance of 5%.

4.3.0.6. **Hypothesis Testing**

Ho: Foreign direct investment has no significant Causal effect on stock market development indicators of the selected Sub-Saharan African countries.

H_i: Foreign direct investment has significant Causal effect on stock market development indicators of the selected Sub-Saharan African countries.

Table 16: **Pairwise Granger Causality Test - Nigeria**

Pairwise Granger Causality Tests			
Date: 09/03/18 Time: 15:31			
Sample: 1984 2015			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
GDP____ does not Granger Cause FDIR____	30	1.23856	0.3070
FDIR____ does not Granger Cause GDP____		0.71640	0.4983
MCR____ does not Granger Cause FDIR____	30	1.00072	0.3819
FDIR____ does not Granger Cause MCR____		6.34489	0.0059
NS does not Granger Cause FDIR____	30	3.17977	0.0588
FDIR____ does not Granger Cause NS		0.18122	0.8353
MCR____ does not Granger Cause GDP____	30	0.12091	0.8866
GDP____ does not Granger Cause MCR____		0.05655	0.9451
NS does not Granger Cause GDP____	30	1.64778	0.2127
GDP____ does not Granger Cause NS		0.47603	0.6268
NS does not Granger Cause MCR____	30	0.75774	0.4792
MCR____ does not Granger Cause NS		7.68247	0.0025

Source: Author's E-views computation

From the Granger Causality Test result in Table16, for Nigeria, the test was carried out with a lag 2 period, Stock market Development is represented by Market capitalization (MCR) and the causal relationship with foreign direct investment tested. The choice of a lag of 2 is aimed at not sacrificing greater degrees of freedom which may be prejudicial to the outcome of the test. From the results, there was a Uni-directional causality relationship from FDIR to MCR with no feedback returning MCR to FDIR (since the p-values – 0.0059 and 0.3819 respectively). Also, we found a Uni-directional causal relationship from MCR to NS without returning feedback.

Decision: We reject the null hypothesis for FDIR – MCR, that there exists a Uni-directional causal relationship as well as a Uni-directional causal relationship from MCR to NS.

Table 17: **Pairwise Granger Causality Test – South Africa**

Pairwise Granger Causality Tests			
Date: 09/03/18 Time: 17:02			
Sample: 1984 2015			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
GDP does not Granger Cause FDIR	30	0.36841	0.6955
FDIR does not Granger Cause GDP		0.30184	0.7421
MCR does not Granger Cause FDIR	30	0.91931	0.4119
FDIR does not Granger Cause MCR		0.05071	0.9506
NS does not Granger Cause FDIR	30	1.49884	0.2428
FDIR does not Granger Cause NS		0.41599	0.6642
MCR does not Granger Cause GDP	30	0.86036	0.4352
GDP does not Granger Cause MCR		0.23852	0.7896
NS does not Granger Cause GDP	30	0.76741	0.4748
GDP does not Granger Cause NS		1.06080	0.3612
NS does not Granger Cause MCR	30	2.02587	0.1530
MCR does not Granger Cause NS		0.23455	0.7926

Source: Author's E-views computation

From the Granger Causality Test result in Table 17 for South Africa carried out using 2 period lag, Stock market Development was depicted by market capitalization, MCR and its causal effect with foreign direct investment tested. The results shows No causal relationship between Foreign Direct Investments and the Johannesburg stock market capitalization (Since their respective p-values are greater than 5%, the chosen level of significance).

Decision: We Accept the null hypothesis that there is no causal effect of foreign direct investments(FDIR) and South Africa stock market capitalization, MCR.

Table 18 : **Pairwise Granger Causality Test – Kenya**

Pairwise Granger Causality Tests			
Date: 09/03/18 Time: 17:37			
Sample: 1984 2015			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
GDP does not Granger Cause FDIR	30	0.05357	0.9479
FDIR does not Granger Cause GDP		1.86442	0.1759
MCR does not Granger Cause FDIR	30	1.94452	0.1641
FDIR does not Granger Cause MCR		1.24660	0.3047
NS does not Granger Cause FDIR	30	0.28443	0.7548
FDIR does not Granger Cause NS		0.27524	0.7617
MCR does not Granger Cause GDP	30	0.60192	0.5555
GDP does not Granger Cause MCR		0.05031	0.9510
NS does not Granger Cause GDP	30	1.76950	0.1911
GDP does not Granger Cause NS		1.54998	0.2320
NS does not Granger Cause MCR	30	0.76172	0.4774
MCR does not Granger Cause NS		0.77272	0.4725

Source: Author's E-views computation

From the Granger Causality Test result in Table 18 for Kenya conducted using a lag of 2 period, Stock market Development was captured by market capitalization and its causal effect with foreign direct investment tested. From the results, we observed No causality relationship running from MCR to FDIR nor appropriate feedback.

Decision: We accept the Null hypothesis that there is no causal relationship between MCR and FDIR nor vice-versa and reject the alternative accordingly.

4.3.6 **Hypothesis Testing II**

The Granger-Causality method was used to investigate the direction of influence between FDI and stock market development captured by market capitalization.

Ho_6: Foreign direct investment has no causal effect on stock market development captured by market capitalization of selected Sub-Saharan African countries.

H_{i6}: Foreign direct investment has causal effect on stock market development captured by market capitalization of selected Sub-Saharan African countries.

TABLE 19 – PANEL RESULT FOR CAUSALITY EFFECT

Pairwise Granger Causality Tests			
Date: 09/03/18 Time: 17:46			
Sample: 1984 2015			
Lags: 2			
Null Hypothesis:	Obs	F-Statistic	Prob.
GDP does not Granger Cause FDIR	90	0.57974	0.5622
FDIR does not Granger Cause GDP		1.05350	0.3532
MCR does not Granger Cause FDIR	90	0.09310	0.9112
FDIR does not Granger Cause MCR		1.84621	0.1641
NS does not Granger Cause FDIR	90	1.93382	0.1509
FDIR does not Granger Cause NS		0.04698	0.9541
MCR does not Granger Cause GDP	90	0.21445	0.8074
GDP does not Granger Cause MCR		1.02437	0.3634
NS does not Granger Cause GDP	90	3.32827	0.0406
GDP does not Granger Cause NS		1.18884	0.3096
NS does not Granger Cause MCR	90	0.81254	0.4471
MCR does not Granger Cause NS		2.32992	0.1035

Author's Eviews computation

The result from table 19 showing Granger Causality of FDIR against stock market development indicator namely, MCR carried out at the 5% level of significance using a lag of 2 period reveals that

FDIR and MCR for the panel pooled data, does not Granger Cause each other with F-statistics of 1.84621 and 0.0931 and p-values are 0.1641 and 0.9112 respectively above the 5% level of significance. This shows that though the relationship is positive, they are however not statistically significant.

The result also shows that though NS (national security) does not granger-cause FDIR as the p-value is not significant at 0.1808 but it granger causes GDP with a significant p-value of 0.0406 at the 5% level of significance. Since GDP is considered a major factor for influencing FDIR into an economy, it follows that NS indirectly granger-causes FDIR. The implication of this is that if the issue of national security is adequately addressed by the government of the respective Sub-Saharan African countries, substantial FDI will be attracted into the sub-region with attendant impact on their stock market development vis-à-vis stock market capitalization.

Decision Rule: We accept null to reject alternative hypothesis that FDIR have no significant causal-effect on stock market capitalization.

4.4 Discussion of Findings

The result of the granger causality of FDIR against stock market capitalization carried out at the 5% level of significance using a lag of 2 period reveals that FDIR and MCR for the panel pooled data, does not Granger Cause each other with F-statistics of 1.84621 and 0.0931 and p-values are 0.1641 and 0.9112 respectively above the 5% level of significance. This shows that though the relationship is positive, they are however not statistically significant. This result is consistent with the findings of Alfaro et al (2004), Dutta and Roy (2011), Aduda et al (2013) and Karoyi (2004), who found non-causal relationship between FDI and stock market development indicators. This result however is not consistent with our Apriori expectation from such an investigation of a positive, significant and Bi-directional relationship between FDI and stock market development variables. (World Bank, 2015; Soumare & Tchana, 2015).

The result of the individual country however, shows a departure from above scenario as in Nigeria, showed a Uni-directional causal-relationship between FDIR-MCR. South Africa however did not show any Causal effect between FDIR and stock market capitalization. Similarly, Kenya showed No causal relationship between FDIR and MCR nor vis-versa.

The panel data analysis result on pairwise granger causality does support the Hymer FDI theory that individual country's firm profitability determines FDI influx rather that country's capital availability. The implication of this panel result is that the Sub-Saharan African countries are yet to productively develop their stock markets and most FDI inflows into the region are mainly into MNCs that are not quoted on the stock exchange such as the telecommunications sector in Nigeria where the major operators are not quoted on the Nigeria stock exchange. Another implication of this result is that the inflows of FDIs are not being channeled to quoted productive and manufacturing companies/sectors for the region's development.

5.0 Conclusion

This research work studied foreign direct investment and its causality effect on stock market development captured by market capitalization, in selected Sub-Saharan African countries following largely from the work as postulated by Hymer and Efficient Market Hypothesis. This means that the determinants for MNEs lie with the individual firms, rather than country's capital availability as suggested by the eclectic theory of FDI.

We conclude from this study that foreign direct investment had no causal effect on stock market development indicators of the selected Sub-Saharan African countries.

5.1 Recommendations

The respective governments of the Sub-Saharan African Countries should be encouraged to consolidate their market strengthening and deepening efforts through the establishment of regional global stock market that is electronically linked to all stock markets in the Sub-region. The SSA countries are admonished to encourage the NMCs operating within their territories to approach the stock markets for listing with flexible conditionalities as this will help trap foreign capital inflows and result to favourable traction with stock market development. This will facilitate speedy developments of the stock markets; encourage the development of single regional trading currency; improved ease of liquidity flow between the various markets within the region; encourage improved transparent corporate governance and greater foreign investor participation. This will enable capital inflows into the financial systems to be channeled appropriately towards the development of relevant market fundamentals.

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