

Impact of Foreign Direct Investment Inflow on Capital Market Development in Nigeria

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Abstract

The study examines the impact of foreign direct investment on the capital market in Nigeria. Continuous growth of foreign direct investment flows into the country has led to questions how this flow of capital actually impacts the development of the capital market of the country. The main objective of this study is to determine how the inflow of tertiary FDI impacts the development of the Nigerian capital market. The research uses time series data for 39 years spanning from 1981-2019. The study employed annual tertiary FDI inflow into Nigeria as proxy for FDI while annual total value of transactions in the Nigerian capital market was used as proxy for the Nigerian capital market. Ex-post facto research design was adopted and was analysed using regression analysis with the aid of STATA 13. The results of the analysis showed that there is no statistically significant evidence of any impact of FDI inflow on the Nigerian capital market. The study concluded that the inflow of FDI does not impact on the capital market variables statistically. Therefore, the study recommended continued liberalisation of foreign investment and the industries that make up the tertiary sector of the economy in Nigeria.

Keywords: Foreign Direct Investment, Volume of Capital Market Transactions, Tertiary FDI inflow

INTRODUCTION

The capital market is a systematic mechanism that exists with the sole purpose of trading intermediate and long term securities. The fact that the capital market helps to mop up excess cash from economic units and directs such excess cash to deficit economic units to stimulate and support necessary economic activities has made it one of the most prominent systems in finance of a country. Rasmus and Mathias (2018), defined foreign direct investment (FDI) as an investment made across border by an investor in one specific country, with the main objective to establish a long-lasting interest in another country. Sghaier&Abida (2013), stated that FDI is an investment that comprises the acquisition of lasting management interest in a corporation in a country other than the nationality of the investors with the aim of playing an effective vocal role in the earning of long and short term capital as depicted in the country's balance of payment account statement. There has been a continuous growth of FDI across the world since the seventies. The World Bank (2017) posited that the inflow of FDI around the world has multiplied itself with 200 times between year 1970 and 2016. Closer examination of World Bank statistics indicates that FDI inflow and outflows of Nigeria since the seventies has multiplied itself by 43 and 308 times respectively till date. United Nations conference on trade and development (UNCTAD) (2019) released a statistic titled world investment report 2019 that exhibited that west African FDI inflow declined by 15% and also reported a 42% drop in foreign direct investment inflow into Nigeria in the 2018 financial year while Africa's overall FDI inflow increased by 11% with other African countries like South Africa doubled its FDI inflow, Morocco in northern Africa increased their FDI inflow by 36%. From 2009 up till 2019, the tertiary sector of Nigeria's economy have accounted for an average of 53% of the total GDP in the country. This figure is higher than the combination of the contributions made by both primary and secondary sectors of the economy to the GDP. This indicates that the tertiary sector of Nigeria's economy is a very prominent and significant part of the economy.

The capital market is one of the most prominent financial institutions in Nigeria with market capitalisation reaching up to trillions of naira and about 23% of the national GDP in 2018. FDI flow still accounts for a substantial portion of external finance to Nigeria. Figures extracted from Central bank of Nigeria external

sector statistical bulletin for 2018 indicate that from 2015-2018, FDI inflows in Nigeria accounted for an average of 46% of external finance inflows. FDI outflows formed over 9% of foreign finance outflows from Nigeria while exhibiting an average growth rate of 10% over the past eight years. According to Prince and Vijay (2019), on the average, between 2013 and 2017, FDI accounted for 39% of external finance for developing economies like Nigeria. The concept of materiality in Accounting qualifies FDI as a material aspect in Nigerian finance sector if the above statistics are considered. This calls for prudent and proactive actions to support FDI flows. This study posits that there is a lack of sufficient and appropriate knowledge on the type of relationship that exists between FDI inflows and volume of capital market development in Nigeria due to inadequate research efforts invested towards the subject area. The inflows of FDI should ordinarily make more funds available and its outflows should reduce the amount of capital available for local investment. Concerns on how these relationships actually manifest in Nigeria should not be subject to educated guesses rather, it must be addressed from the point of scientific research by integrating extensive econometric, theoretical and empirical analysis to solve the research problem. The research problem is to fill the long standing knowledge gap of how FDI flows; particularly tertiary FDI inflows affect the Nigerian capital market.

This study will examine in detail the inflow of tertiary FDI in Nigeria collected over most recent years to understand how these flows have impacted the volume of capital market in Nigeria. The knowledge of this relationship could help prepare the capital market from the effects of shocks that would emanate from the fluctuations in FDI flows. Little is known on how these sectorial flows impact the local capital market. The inflow of FDI into Nigeria also needs to be analysed for its impact on the local capital market. The main objective of this study is to determine how foreign direct investment inflows into the tertiary sector of the Nigerian economy have impacted the development of the Nigerian capital market during the study period. To help achieve this objective, the study formulated the null hypothesis that states that there is no relationship between FDI inflow and Value of capital market transactions.

LITERATURE REVIEW

Conceptual Framework

For the purpose of this study, the following concepts will be explained as variables to help measure and analyse the pertinent relationships. These are the concepts of foreign direct investment, tertiary FDI inflow, capital market volume of transactions and inflation rate. These concepts will be discussed in this section to clarify the criteria for recognition and measurement. This would enable the users of this research work to understand what these concepts are and how they were measured.

FDI and Tertiary FDI Inflow

Bharat (2019), defined Foreign direct investment inflow as the total value of inward overseas direct investment made by foreign entities, including individuals, firms and governments. It is therefore, investment coming into the domestic country or reporting economy. The researcher went further to explain inward foreign direct investments into the domestic country to include all assets and liabilities exchanged between the foreign investors and enterprises based in the domestic country, where the investment is being made. The World Bank (2020), defines FDI inflows as the value of inward direct investment made by non-resident investors in the reporting economy. Inward Direct Investment, also called direct investment in the reporting economy, includes all liabilities and assets transferred between resident direct investment enterprises and their direct investors. It also covers transfers of assets and liabilities between resident and non-resident fellow enterprises, if the ultimate controlling parent is non-resident. FDI inflow is the amount of direct investment from overseas investors that were made in the reporting economy. It includes cost of equity, assets and retained earnings. This can be classified as primary, secondary and tertiary inflows depending on the receiving industry. This amount is used to conduct business in the reporting economy for profit making purposes. Tertiary FDI inflow is the amount of FDI inflow that is channelled into the tertiary economic sector of the country. Tertiary FDI inflow encompasses all FDI received by the tertiary sector of the reporting economy. The exporting country

will classify it as tertiary FDI outflow because it is going into the tertiary sector of another country. Ownership, destination and direction of FDI flows are very crucial in defining the proper classification of FDI flows.

The economy is divided into three major sectors based on the nature of business carried out by firms. These are the primary, secondary and tertiary sectors of the economy. The primary sector of the economy focuses on the extractive industries who are involved in acquiring raw materials from the earth. The primary sector consists of firms involved in mining, forestry, fishing and agriculture. The secondary sector of the economy is based on firms using the output of primary industries as inputs to create final goods. The secondary sector is made up of firms that are involved in manufacturing, processing, building and construction. The tertiary sector of the economy is also known as the services sector. The tertiary sector of the economy is made up of businesses that do not extract raw materials from the earth nor engage in manufacturing of goods. In other words the tertiary economic sector is made up of businesses that offer services like transportation, communication, miscellaneous services and trading and business services. Tertiary FDI inflow is any inward direct investment that is solely invested in a firm operating in the tertiary sector of the economy. Shaolong, Yiqun and Junjie (2020), defined tertiary FDI inflow of a country as the total amount of foreign direct capital that allow foreign investors significant control and ownership of any local firm operating in the tertiary industries of the country. They went further to state that tertiary FDI inflow is one of the main factors responsible for technology transfers into the country in the course of business. Fernando and Caroline (2019), defined tertiary FDI as FDI flows committed to businesses that are neither extractive nor manufacturing. They argued that the diverse nature of tertiary sector of the economy makes it hard to accurately describe what it is; rather a clearer picture would be painted by stating what it's not. In other words any FDI that comes into the country into a company that does not belong to either the primary or secondary sectors of the economy can be described as tertiary FDI inflow.

Capital Market Volume of Transactions

Beck and Levine (2004), defined Volume of shares traded as the total measure of shares traded from seller to buyer on the stock market during a period of time. It is the total measure of shares bought and if a particular stock is bought five times, it will have to be added to the total value of shares the same number of times it is traded. Omodero and Ekwe (2016), defined Value of shares traded as the sum of all share sales in the capital market for a given period of time. They went further to state that it is a measure usually taken on daily, weekly, monthly, quarterly and even yearly basis. Malik and Amjad (2013), defined volume of capital market transactions as the measure of capital market activity level that involves comprehensive assertion of the number of shares that were traded within a particular period of time on a particular stock market. If a particular share is traded multiple times it is added as many times as it is traded to this measure. A low volume of transactions does not necessarily mean that the market is weak as high volumes of trade have sometimes been attributed to lack of stability in stock prices. Buthiena and Ahlam (2019) explained the concept of capital market volume of transactions as the amount of shares that have changed ownership within a particular period of time as regards a particular capital market or company stock. They went further to state that trading volume is bound to rise when commodity prices change more frequently. Value of shares traded is a measure of capital market transactions that indicate the total measure of all sales of securities during a particular period of time. This is used to measure market activity level and also value of shares. Shares included in the sum can be recorded at the original price they were traded, number of shares traded or simply number of market deals. It is usually measured daily, weekly, monthly, quarterly and even annually.

Concept of Inflation Rate

Rasmus and Mathias (2018), explained inflation as the progressive increase in the general level of prices brought about by an expansion in demand for or supply of money. This was a bold definition as it did not only seek to clarify the meaning of inflation but also state the factors that cause inflation. Saba and Neelam (2017), define inflation rate as the rate of change in the price of commodities and services over a period of time. These

changes are measured in average on a basket of commonly consumed goods and services. Inflation is a numerical measure of the rate which prices of goods and services change over a period of time. Inflation rate is usually measured in percentages. Inflation can be used to interpret the economic situation of the country and also stability of prices. Inflation is a measure of average changes in the price of a basket of goods and services. Inflation is a normal economic phenomenon which is usually monitored and controlled by monetary authorities in the interest of prolonged economic growth. It brings both good and bad effects on the local economy. A high rate of inflation will affect the purchasing power of the local currency while increasing the local cost of living.

Empirical Review

Tsagkanos, Siriopoulos, and Vartholomatou (2019), examined the impact of FDI on the Greek capital market. The study which was fitted into the historical research design covers a time period of 27 years spanning from 1988 till 2014; this period was split into two for separate analysis to see if the relationship changes over time. Annual FDI inflow and stock market capitalisation were used as the independent and dependent variables respectively. Cointegration techniques and Markov switching regression model were employed in analysing the relevant data. The study found weak but positive and symmetric long run relationships for the full period of the study. The study concluded that FDI only affected the greek capital market on the long run. The recommendations focused on the upgrading of the Greek capital market. The time scope of the research is no longer considered for research purposes. The Greek financial sector has been in devastating financial crisis over the years and thus cannot be a suitable model for understanding Nigeria's situation. The study failed to analyse sectorial FDI flows as potential influencer of the stock market. Rasmus and Mathias (2018), studied the impact of foreign direct investment on the stock market development in Sweden. Affärsvärlden General Index (AFGX) was used as proxy for stock market development and net FDI inflow was used as proxy for FDI. The study which was fitted into the descriptive research design uses quarterly time series data for 36 years from 1982-2017 for the necessary analysis. The study employed the use of time series regression. The study found that no strong contemporaneous relationship between FDIs and the stock market development existed, while the FDI during the previous quarter did not significantly affect the stock market. The study concluded that on the short run, FDI is insignificant in affecting the Swedish stock market. The study failed to proffer any recommendations based on its findings. The study failed to recognise sectorial FDI flows as a potential determinant of stock market development. The Swedish economic climate is different from the Nigerian climate and this makes the findings of a Swedish study inapplicable in Nigeria.

Ebele (2016), studied the impact of different classes of investment on the Nigerian stock market development. The study covered a period of 10 years from 2001-2010. The study which was built on the ex-post facto research design employed the use of ordinary least square techniques for the time series analysis. Market capitalization and value of traded securities as ratios of real GDP were used as the dependent variables representing stock market development while FDI inflow as a percentage of real GDP was used as the independent variable representing gross investment. The study found that foreign direct investment has a positive significant influence on Nigerian capital market development during the study period. From the findings, the study concluded that FDI inflows cause a crowding in effect on the Nigerian capital market. Policy recommendations to increase liquidity and ease of entry in the local capital market were proffered by the study. The study is no longer current enough to be considered current and consistent with the Nigerian situation. The scope of the study was too limited and old to give a clear picture of the characteristics of FDI and its relationship with the capital market. The study also failed to recognize sectorial FDI flows as a potential influencer of the capital market. Omodero and Ekwe (2016), examined the impact of FDI on stock market performance in Nigeria from 1985-2014. The study employed stock market index and value of capital market transactions as proxies for stock market performance while FDI inflows was used to proxy FDI. The study was built on the quasi-experimental research design and employed the ordinary least square regression techniques in analysing data that covered a scope of 30 years. Descriptive statistics and ordinary least square regression were used to analyse the data. The study found that FDI has no significant impact on the share price index & Nigerian stock exchange transactions and also that the macroeconomic variables determine the performances

of the Nigerian stock market. The study concluded that FDI is not a prominent factor in determining stock market performances in Nigeria. The study recommended policies to encourage foreign firms operating in the oil and gas including the telecommunication and agricultural sectors to be listed, insisting that it would go a long way in attracting more FDI, leading to improvement in the stock market performance. The study failed to recognise sectorial FDI flows as a factor that can affect the local capital market. The scope of the study is no longer considered current for research purposes.

Stijin, Daniela, and Sergio (2002), examined the relationship between FDI and stock market development; questioning whether they were complements or Substitutes. The cross sectional study which was built on the descriptive research design used panel data gathered from 77 countries. The study employed the ratio of market capitalisation to GDP, value of domestic traded stock to GDP and value traded over market capitalisation as proxies for capital market while the ratios of capital raised abroad to GDP, capital raised abroad to capital raised domestically and FDI inflows as proxies for foreign investment. The study employed the use of Hausman specification tests and random effects regression for the necessary analysis. The study found that FDI inflow was positively correlated with the capital market variables. The study concluded that FDI inflows normally cause a crowding in effect on the receiving stock markets. The research recommended continuous effort by government to attract and maintain higher FDI inflows. The results of the study which are currently about 20 years old can no longer be considered current for research purposes.

Theoretical Framework

Uppsala Model

The Uppsala model is a theory that seeks to illustrate how foreign firms navigate foreign investment from low intensity operations to more complex operations as the firms get increasingly familiar with the new environment. It was first proposed by Johanson and Vahlne (1977) and revisited again in (2009) attributing the decision to revisit the model to changes in business practices and theoretical advances that have been made since the 1970s. The model seeks to explain how firms acquire relevant experience from the domestic market through normal operations and then move to foreign markets. The model posits that such venture into foreign markets will begin by taking investment in geographically close countries and gradually the firms will move to more distant countries. Arvidsson and Arvidsson (2019), stated that when firms have enhanced knowledge of the market and more control of resources, gradually they become more experienced and acquire better resources, and then they expand to the more distant market. The model also posits that these foreign ventures will usually begin with simple conventional import and export operations before moving to more complex and intense operations with the foreign countries. In other words, due to uncertainty in investment decisions, MNC's begin foreign investments gradually and grow based on success rates and capacity. It is like a form of defence mechanism by multinationals to minimise risk but that is not its only advantage. Continuous increase in firm foreign activities will translate to increase in capital flow. This continuous increase in capital flow has a stimulant effect to the FDI receiving economy which would cause the economy to mimic traits of economic growth and ultimately bring some degree of economic growth. The Uppsala model when applied to a FDI receiving country will imply that incremental inflow of FDI will encourage capital market and economic development. The revised version of the Uppsala model was far evolved and was stripped of its limitations to international investment and placed it more as a general strategic investment theory.

Modern Portfolio Theory

This is a theory proposed by Harry Markowitz on the concept of modern portfolio theory in an article which was posted in the Journal of Finance in 1952. The theory seeks to explain the behavioural pattern of investors based on risk and investment diversification.

Ali and Setayesh (2007), state the modern portfolio theory as an investment theory based on the idea that risk averse investors can construct portfolios to maximise returns while minimising risk, emphasising that risk is an

inherent part of higher reward. They went further to describe it as one of the most important and influential economic theories dealing with finance and investment. The theory assumes that the investor is rational and would take the more profitable if faced with a choice of different investments. Also assumes that the investor will not select a more risky venture over a less risky one if there is no additional compensation for the additional risks. The theory also assumes that the investor will diversify his risk across different investments to balance the risk level of his portfolio. This is done by constructing a portfolio of many assets to maximise returns given a particular level of risk. This diversification will cause the investor to spread his investment risk over different countries and sectors of the economy. This is done with a believe that holding investment in one pool could be dangerous if something goes wrong but by spreading the risks, it is almost impossible for something to go wrong on all the investments and if something goes wrong with one investment the shortage would be remedied by the proceeds from other investments. A major criticism of this theory is that risk, return and correlation measures used by MPT are mathematical estimates of future events which do not always tally exactly with the real outcome.

Capital Market Theory

This theory is often called the currency area theory. It is considered one of the first theories that explained FDI and foreign investment as a whole. It's based on the work of Aliber (1970), it postulated that foreign investment in general existed as a result of capital market imperfections. Nayak and Choudhury (2014), stated that FDI specifically was the result of differences between source and destination country currencies. According to Aliber (1970), weaker currencies have a higher FDI-attraction ability and are better able to take advantage of differences in the market capitalisation rate, compared to stronger country currencies. Aliber (1971), further adds that source country MNCs based in hard currency areas can borrow at a lower interest rate than host country firms because portfolio investors overlook the foreign aspect of source country MNCs. This gives source country firms the borrowing advantage because they can access cheaper sources of capital for their overseas affiliates and subsidiaries than what local firms would access the same funds for. While this capital market theory holds true in the case of developed countries such as the United States, United Kingdom and Canada, it was challenged by later scholars on the basis of ignoring basic currency risk management fundamentals. A major criticism of Aliber's theory was made by Lall (1979), when he highlighted that the theory does not apply in the case of less developed countries with highly imperfect or non-existent capital markets, and those with strictly regulated foreign exchange rates. Also, Nayak and Choudhury (2014), allude to the fact that Aliber's theory does not explain investment between two developed countries with similar strength currencies, nor how developing country MNCs with weaker currencies are able to invest in developed countries with much stronger currencies. This they exemplified using the case of Chinese firms with sizeable investments in USA and the UK. The inflow and outflows of FDI is expected to affect the local capital market due to the intertwined nature of relationship that exists between them.

Eclectic Paradigm (OLI) Theory

Just as the name implies, this theory is a notable concinnity of paramount theories relevant to understanding FDI. This theory was originally brought up by Dunning (1980). It is a mix of three different theories. These theories are ownership, location and internationalisation (OLI). The grand idea is that firms with ownership of income bearing or cost saving assets which can be transferred between firms and places will have to consider if the usefulness of such assets is strongly affected by location specific variables and if an international location seems to be a more lucrative destination for such assets, then the firm will opt for foreign investment. Ownership advantages include possession of patents, mineral rights, brand name, property, plant & equipment etc. Location advantages may arise from lower operating costs, political support from host country's

government, or better social acceptability while finally the internalization characteristic allows a firm to set up foreign production rather than license it.

The Eclectic paradigm shows that Ownership, Location and Internationalisation parameters can vary from firm to firm and the final form it takes depends upon context and the economic, political, and social characteristics of the host country. Eclectic paradigm theory takes into account a series of decisions firms take that lead to foreign investment. The theory considers ownership of special resources, identifying a location with the most conducive environment and incurring foreign exchange, political risks and foreign cost of doing business.

According to Dunning (2001), in order for a firm to engage in foreign direct investment, it must simultaneously fulfil three conditions. The firm should possess net ownership advantages over other firms serving particular markets. These ownership advantages are firm specific and exclusive to that firm, in the form of both tangible and intangible assets such as trademarks, patents, information and technology, which would result in production cost reductions for the firm. Thirdly, that some location advantages are present in using firm's ownership advantages in a foreign locale. The advantages of using firm's resources abroad were emphasised by Hymer (1976) and Kindleberger (1969) in their market imperfections' theories on firm-specific and monopolistic advantages, respectively. It must have ownerships of internationally usable resources. Secondly, it must be more profitable for the firm possessing these ownership advantages to use them for itself (internalisation), rather than to sell or lease them to foreign firms through licensing or management contracts (externalisation). Boddewyn (1985), refers to this as the internalisation condition. Thirdly, assuming that the preceding conditions are both met, it must be profitable for the firm to exploit these advantages through production, in collaboration with additional input factors such as natural resources and human capital, outside its home country. Location-specific factors have to be taken into consideration by the investing firms, as per the economic geography and institutional FDI fitness theories discussed under the macroeconomic FDI theories. Boddewyn (1985) praised Dunning's theory for explaining the initial FDI decision by Multinational corporations (MNCs), but however laments the lack of explanation with regard to subsequent FDI increases, which may only require changes only in some but not necessarily all the OLI factors. Another criticism of the eclectic theory according to Makoni (2015) is that it incorporates so many variables that it ceases to be operationally practicable as it does not explain FDI at the firm, industry and country levels. This is the theoretical framework that underpins this research work. This is because it is the most comprehensive theory to explain why there is FDI inflow into Nigeria at the while the capital market needs of investor countries have not been fully met.

METHODOLOGY

The study adopted the Ex-post facto research design using regression analysis through the stata 13 interface. The research used secondary time series data for the necessary analysis. This research is built on the ex-post facto research design. Ex-post facto research is a form of conclusive research which seeks to describe past events, phenomena or scenario. The population of this study is made up of Nigerian inflow of tertiary FDI, value of capital market transactions and annual inflation rate which represent independent, dependent and control variables respectively. The sample is made up of three macroeconomic indicators covering a 39 year time period from 1981 to 2019. The study sample for FDI data is the tertiary FDI inflow into Nigeria, value of capital market transactions and annual inflation rate. Judgemental sampling technique was used to sample the population. Adefila (2008) defined a judgemental sampling technique as one where the researcher will intentionally select certain groups or individuals as samples mainly because of their relevance to the investigation being carried out. It is also called the purposive sampling technique. The annual total value of transactions and annual inflation rates were sourced from CBN annual statistical bulletin 2019 while Nigeria's tertiary FDI inflows was sourced from National Bureau of Statistics report 2019.

The study will employ regression analysis for hypothesis testing using the stata 13 statistical software. The null hypothesis of this study is that there is no relationship between FDI inflow and Value of capital market

transactions. The model used to examine the hypotheses was adopted from Shehu, (2015) as specified below:

$$LNTVT = \beta_0 + \beta_1 LNTERTFDI_{it} + \beta_2 LNINF_{2it} + \varepsilon_{it}$$

Where:

$LNTERTFDI_{it}$ = Foreign direct investment inflow

$LNTVT_{it}$ = Volume of capital market Transactions

$LNINF_{it}$ = Inflation Rate

β = coefficient of parameter estimate

ε = error term

t = time

i = individual firms

RESULT AND DISCUSSION

Results

In order to get a summarised glimpse of the data used in this study, a tabular representation of the descriptive statistics carried out is presented below in table 1.

Table 1: Descriptive statistics

stats	tertfdi	inf	tv
mean	90.02281	19.14718	376.4597
sd	89.90261	17.06314	572.7314
variance	8082.48	291.1507	328021.2
skewness	.61587	1.783729	1.635293
kurtosis	1.87481	4.998158	5.204277
p5	1.9433	5.72	.2254

Source: *Authors computation using STATA 13*

Table 1 displays the summary of descriptive statistics of variables used in the study. There is evidence of wide variations in the values of variables as depicted by the mean and standard deviation figures in the table for the years 1981-2019. Skewness measures the degree of asymmetry in the distribution while Kurtosis tells us the peakness and the flatness of the distribution in relation to the series. Normal skewness means a distribution that is symmetric around the mean and that the skewness value is 0. Positive skewness means that the series has a long right tail, indicating higher values above the sample average. Mesokurtic Kurtosis embodies a normal distribution with a kurtosis of 3. Leptokurtic Kurtosis has a positive kurtosis, it is peaked and indicating higher values of the series above the sample average. Platykurtic Kurtosis means negative kurtosis and a flatter curve. More lower values below the sample average.

An FDI skewness value of 0.61587 mirrors a normal distribution. Because the value is close to zero. An Inflation skewness value of 1.783729 does not mirror a normal distribution. This means that the series has a long right tail, indicating higher values above the sample average. It is positively skewed. A skewness value of 1.635293 for total value of capital market transactions does not mirror a normal distribution. This means that the series has a long right tail, indicating higher values above the sample average. It is positively skewed. Tertiary FDI has a kurtosis value of 1.87481. This means that tertiary FDI inflow is Platykurtic. Because the figures in the series will be lower than the sample average. Inflation rate has a kurtosis value of 4.998158. This means that the series is Leptokurtic because the kurtosis value is higher than 3. This means that the series has more observations with higher values that are higher than the sample average. Total value of capital market transactions has a kurtosis value of 5.204277. This means that the series is Leptokurtic because the kurtosis value is higher than 3. This means that the series has more observations with higher values that are higher than the sample average.

Augmented Dickey Fuller Test (ADF)

The augmented dickey fuller test was used to test each of the variables separately to determine whether or not they are stationary. Here, the null hypothesis is that the variable has unit root or not stationary. The decision rule here is that the series is stationary if the test statistic is greater than the 5% critical value. All the variables were found to be stationary at first difference. The results are depicted by tables 2 to 7 below.

Table 2: Augmented Dickey Fuller Test (ADF) for Tertiary FDI at log level

Augmented Dickey-Fuller test for unit root		Number of obs		=	37	
		————— Interpolated Dickey-Fuller —————				
	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value		
Z (t)	1.135	-2.641	-1.950	-1.605		
D.lntertfdi	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lntertfdi						
L1.	.0211186	.0186098	1.13	0.264	-.0166612	.0588985
LD.	.0042422	.1692966	0.03	0.980	-.3394481	.3479326

Source: *Authors computation using STATA 13*

In table 2, the test statistic of 1.25 is less than the absolute 5% critical value of 1.950. Therefore, the study cannot reject the null hypothesis that tertiary FDI was not stationary. This means that at log level, FDI was not stationary.

Table 3: Augmented Dickey Fuller Test (ADF) for Tertiary FDI at First Difference

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Augmented Dickey-Fuller test for unit root Number of obs = 36

	Test Statistic	Interpolated Dickey-Fuller		
		1% Critical Value	5% Critical Value	10% Critical Value
Z (t)	-3.498	-2.642	-1.950	-1.604

D. Intertfdi_D1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
Intertfdi_D1						
L1.	-.7892929	.2256267	-3.50	0.001	-1.247821	-.3307643
LD.	-.188582	.1627194	-1.16	0.255	-.5192676	.1421036

Source: *Authors computation using STATA 13*

In table 3 above, the test statistic of 2.498 is more than the 5% critical value of 1.950. Due to this, the study will reject the null hypothesis. This means that FDI is stationary at first difference. therefore, FDI will be converted to first difference for the purpose of this analysis.

Table 4: Augmented Dickey Fuller Test (ADF) for Inflation Rate at Log Level

Augmented Dickey-Fuller test for unit root Number of obs = 37

	Test Statistic	Interpolated Dickey-Fuller		
		1% Critical Value	5% Critical Value	10% Critical Value
Z (t)	-0.649	-2.641	-1.950	-1.605

D.lninf	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lninf						
L1.	-.026474	.0407636	-0.65	0.520	-.1092286	.0562805
LD.	.0178431	.1640824	0.11	0.914	-.3152619	.350948

Source: *Authors computation using STATA 13*

In table 4, the test statistic of 0.649 is less than the absolute 5% critical value of 1.950. Therefore, the study cannot reject the null hypothesis that inflation rate was not stationary. This means that at log level, inflation rate was not stationary.

Table 5: Augmented Dickey Fuller Test (ADF) for Inflation Rate at First difference

Augmented Dickey-Fuller test for unit root Number of obs = 36

	Test Statistic	Interpolated Dickey-Fuller		
		1% Critical Value	5% Critical Value	10% Critical Value
Z (t)	-6.990	-2.642	-1.950	-1.604

D.lninf_D1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lninf_D1						
L1.	-1.388594	.1986526	-6.99	0.000	-1.792305	-.9848837
LD.	.4653219	.1390267	3.35	0.002	.1827856	.7478581

Source: *Authors computation using STATA 13*

The test statistic of 6.990 is more than the 5% critical value of 1.950. Due to this, the study will reject the null hypothesis. Due to this, the study will reject the null hypothesis. This means that inflation rate is stationary at first difference. Therefore, inflation rate will be converted to first difference for the purpose of this analysis.

Table 6: Augmented Dickey Fuller Test (ADF) for Total Value Of Capital Market Transactions at Log Level

Augmented Dickey-Fuller test for unit root Number of obs = 37

	Test Statistic	Interpolated Dickey-Fuller		
		1% Critical Value	5% Critical Value	10% Critical Value
Z (t)	-0.399	-2.641	-1.950	-1.605

D.lntvt	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lntvt						
L1.	-.0115384	.0289355	-0.40	0.692	-.0702805	.0472038
LD.	.1937161	.2323069	0.83	0.410	-.277892	.6653242

Source: *Authors computation using STATA 13*

In table 6, the test statistic of 0.399 is less than the absolute 5% critical value of 1.950. Therefore, the study cannot reject the null hypothesis that Total value of capital market transactions was not stationary. This means that at log level, Total value of capital market transactions was not stationary.

Table 7: Augmented Dickey Fuller Test (ADF) for Total Value of Capital Market Transactions at First Difference

Augmented Dickey-Fuller test for unit root		Number of obs =		36	
	Test Statistic	1% Critical Value	5% Critical Value	10% Critical Value	
Interpolated Dickey-Fuller					
Z (t)	-6.413	-2.642	-1.950	-1.604	
D.lntvt_D1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
lntvt_D1					
L1.	-1.889486	.2946353	-6.41	0.000	-2.488257 -1.290715
LD.	.2852232	.1719193	1.66	0.106	-.0641588 .6346052

Source: *Authors computation using STATA 13*

The test statistic of 6.413 is more than the 5% critical value of 1.950. Due to this, the study will reject the null hypothesis. Due to this, the study will reject the null hypothesis. This means that Total value of capital market transactions is stationary at first difference. Therefore, Total value of capital market transactions will be converted to first difference for the purpose of this analysis.

Table 8: Summary of Augmented Dickey Fuller Tests for Stationarity

S/ N	Variable	Stata I.D	Functional level	Test statistic	5% Critical Value	Interpretation
1	Tertiary FDI	Lntertfdi	Log level	1.135	1.950	Not stationary
2	Inflation rate	Lninf	Log Level	0.649	1.950	Not stationary
3	Total value of transaction	Lntvt	Log Level	1.616	1.950	Not stationary
4	Tertiary FDI	intertfdi_D1	1 st difference	3.498	1.950	Stationary at 1 st difference
5	Inflation rate	ninf_D1	1 st difference	6.990	1.950	Stationary at 1 st difference
6	Total value of transaction	ntvt_D1	1 st difference	6.413	1.950	Stationary at 1 st difference

Source: *Authors compilation*

Breush-pagan/ Cook-Wiseberg Test for Heteroskedasticity

The Breush-pagan test is makes use of residuals and sums of squares from a regression analysis to determine if a model is homoskedastic or not. The null hypothesis here is that there is no heteroskedasticity. The decision rule is that If the p value is less than 0.05 it means that the model is heteroskedastic and the null hypothesis should be rejected. The results of these estimates are shown in table 9 below.

Table 9: Breush-pagan/ Cook-Wiseberg Test for Heteroskedasticity

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Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of utsq

chi2(1)          =          3.81
Prob > chi2      =          0.0508
```

Source: *Authors computation using STATA 13*

The probability value of 0.0508 in the Breusch-Pagan estimations is above the 5% significance level. Therefore the research cannot reject the null hypothesis. The null hypothesis here is that there is no heteroskedasticity. Therefore, the research can conclude that the model is homoskedastic.

Regression Analysis

Regression analysis was estimated to detect linear relationship between the variables. Here the null hypothesis is that there is no relationship between FDI inflow and Value of capital market transactions. The decision rule is to reject the null hypothesis if the probability value of a predictor variable is less than 5%. The results are displayed in table 6 below.

Table 10: Regression Analysis

Source	SS	df	MS			
Model	1.18367309	2	.591836546	Number of obs =	38	
Residual	129.086253	35	3.68817865	F(2, 35) =	0.16	
Total	130.269926	37	3.52080881	Prob > F =	0.8524	
				R-squared =	0.0091	
				Adj R-squared =	-0.0475	
				Root MSE =	1.9205	

D.lntvt	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
lninterfdi						
D1.	.2921699	.7897144	0.37	0.714	-1.311036	1.895375
lninf						
D1.	.1681111	.4662129	0.36	0.721	-.7783513	1.114574
_cons	.1010877	.3324221	0.30	0.763	-.5737649	.7759404

Source: *Authors computation using STATA 13*

The results in Table 10 above indicate that all the variables were previously converted to first difference. A coefficient value of -0.1681111 falls between the values of -0.7783513 and 1.895375. This goes to demonstrate that the coefficient is significant. A negative coefficient value depicts a negative association between the variables. The decision rule is to reject the null hypothesis if the probability value of a predictor variable is less than 5%. The FDI probability value of 0.714 is higher than the 5% level of significance and as a result, the research will not reject the null hypothesis. This means that the independent variable is not statistically significant in explaining the dependent variable. In other words, there is no statistically evidence in the results of this study that suggests that tertiary FDI inflow impacts total volume of transactions in the Nigerian capital market.

Discussion of Findings

This study found that there is no statistically significant relationship between FDI inflow to the tertiary sector and capital market. This was evidenced by the 0.714 pvalue found in Table 10 above. The findings of this study state that there is no evidence that FDI impacts capital market in Nigeria. The findings of this study are in line with the findings of Omodero and Ekwe (2016) and Rasmus and Mathias (2018). Omodero and Ekwe (2016) found that FDI inflow had no significant impact on the share price index & Nigerian stock exchange transactions. Rasmus and Mathias (2018) did not find any evidence of strong relationship between FDIs and the stock market development existed.

The results of this study are in contrast with Tsagkanos, Siriopoulos, and Vartholomatou (2019), Ebele (2016) and Stijin, Daniela, and Sergio (2002). Tsagkanos, Siriopoulos, and Vartholomatou (2019) found weak but positive and symmetric long run relationships for the full period of the study. The study concluded that FDI only affected the Greek capital market on the long run. Ebele (2016), studied the impact of investment on the Nigerian stock market development The study found that foreign direct investment has a positive significant influence on Nigerian capital market development during the study period. Stijin, Daniela, and Sergio (2002), examined the relationship between FDI and stock market development; questioning whether they were complements or Subtitles. The study found that FDI inflow was positively correlated with the capital market variables. The contrast in these results could be due to differences in scope, population and methodology.

CONCLUSIONS AND RECOMMENDATIONS

From the results of the analysis conducted, the study has come up with the following conclusions and recommendations. Using descriptive statistics and regression analysis, the study examines the impact of tertiary FDI inflow on the Nigerian capital market. The study concludes that the flow of FDI does not impact capital market variables statistically. This was evidenced by the 0.714 Pvalue found in Table 10 above. This does not undermine the significance of FDI into the country. FDI inflows had not yet reached a level from where it can impact the Nigerian capital market. From the findings and conclusions above, the study recommends continuous liberalisation of the capital inflow and repatriation in the country as a way of attracting more FDI. The study also recommends the minimisation of entry barriers into the tertiary sector of the economy to enable the maximum profitability from the sector.

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