



Management

FINANCIAL MARKET PERFORMANCE AND FOREIGN PORTFOLIO INFLOWS TO NIGERIA: AUTOREGRESSIVE DISTRIBUTIVE LAG APPROACH

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Abstract

This study examined the relationship between financial market performance and foreign portfolio investment in Nigeria. The study specifically assessed whether there is a long run and short run causal relationship running from financial market performance to foreign portfolio investment in Nigeria. Financial market performance was measured using stock market performance, stock market liquidity and total new issues. The data for the study were source from the CBN statistical bulletin for the period 1984 to 2015. The exploratory design was combined with the ex-post facto research design; the data collection method was desk survey. The study used the Autoregressive Distributive Lag (ARDL) technique for data analysis. Findings from the analyses showed that financial market performance has no long run causal relationship with foreign portfolio investment in Nigeria. Also, stock market performance and stock market liquidity have no short run causal relationship with foreign portfolio investment in Nigeria. Lastly, total new issue has a short run causal relationship with foreign portfolio investment in Nigeria. The study on the basis of these findings recommends that stock market regulators should through conscious enlightenment campaigns encourage more domestic participation in the market to enhance the market performance, deepening and growth as this will strengthen its long run causality with FPI. Lastly, stock market regulators should through conscious risk reduction policies formulation and implementation reduce the riskiness of investing in the stock market to increase transactions and liquidity in the stock market, boost the rate of turnover to investors as this will attract foreign portfolio investors to the Nigerian financial market.

Keywords: Stock Market Liquidity; Foreign Portfolio Investment; Capital Market; Financial Market; Total New Issues; Foreign Capital Inflows.

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1. Introduction

The need to augment the saving-investment gap has given rise to the high demand for foreign capital in Nigeria. Foreign capital could be seen as the capital resources (either in form of cash, financial instruments or equipments) owned by a country other than the receiving country. It is the financial instruments, cash, equipments, skills and benefits granted to or invested in a country other than the originating country. Foreign capital could flow into a country either as foreign direct investment (FDI), foreign portfolio investment (FPI), commercial loans or transfers (TRF) (Jeffrey & Spaulding, 2005).

The composition of foreign capital inflow to developing countries in general and Nigeria in particular has shifted from commercial loans to foreign direct investment (FDI) and portfolio investment (Ndem, Okoronkwo & Nwamuo, 2014). Foreign portfolio investment as an international capital flow comprises of transfers and financial assets such as stocks or bonds. It occurs when investors purchase non-controlling interest in foreign companies or buys foreign corporate or government bonds, short term securities or notes (Ekeocha, Ekeocha, Victor & Onyema, 2012). The desire by foreign firms, governments and individuals to explore their comparative advantage has necessitated international capital flows. Therefore, foreigners seeking to maximize their earnings, move their accumulated foreign assets to countries where they will be more productive. Hence, it is the productivity of capital that facilitates international investments.

Foreign capital plays key roles in enhancing investment and facilitating macroeconomic goals attainment. Foreign investment create employment; provides knowledge and skills transfer in the area of management and technology; facilitates local firms' access to international markets and finance; enhances international trade integration; facilitates human capital development; provides avenues for risk and product diversification; encourages favourable competition among businesses and increases product diversity (Ngowi, 2001; Nwankwo, Ademola & Kehinde, 2013 and Adaramola & Obisesan, 2015).

The flow of foreign capital is highly dependent on the functioning of the financial market. One major aspect of the financial market that triggers investment is the stock market. The stock market enhances investment opportunities of the investors by providing avenues for the sale of securities when the need for cash/liquidity arises and enables investors to alter their choice of asset portfolio (Nwosa, 2015). From the business point of view, the stock market provides access to long term finance at a reduced cost (Dailami & Aktin, 1990; Kohli, 2003) and enable firms to undertake certain very-long term investments which seldom occur due to savers unwillingness to tie-up their investment for a long time (Adenuga, 2011; Greenwood & Smith, 1996).

The existence of a well-organized and liquid stock market is a potent incentive to foreign investors which facilitates inflows of foreign capital (Stiglitz, 1985). The high performance of the stock market in terms of increased volume of market capitalization, turnover ratio and all share price index equally serve as factors capable of pulling capital flows into the capital market of an economy (Ötker-Robe, Polański, Top & Vávra, 2007). This study is meant to examine the impact of financial market development on capital flows in Nigeria.

The operational efficiency of the Nigerian financial market has been seriously hindered by several economic challenges in Nigeria, resulting in the inability of the market to actively mobilize idle funds to finance domestic investments as well as attract foreign capital to Nigeria. This results in low level of transactions in the Nigerian capital market, leading to the inability of firms to sufficiently mobilize long term funds to finance their expansion and/or modernization of technologies. These, coupled with the unstable and risky conditions that characterized the Nigerian investment environment have reduced the liquidity, capitalization and dealings of the Nigerian capital market. Given this scenario, This study is meant to examine the impact of financial market development on foreign capital flows to Nigeria.

1.1. Objectives of the Study

The major objective of this study was to examine the impact of financial market development on foreign portfolio inflows in Nigeria. The specific objectives were:

- 1) To examine the impact of stock market performance on foreign portfolio investment inflows to Nigeria;
- 2) To ascertain the impact of stock market liquidity on foreign portfolio investment inflows to Nigeria;
- 3) To assess the impact of total new issues on foreign portfolio investment inflows to Nigeria.

The remainder of the paper is organized into four sections. Following section one is section two which deals with the literature review and theoretical framework, section three handles the research methodology. Section four shall present the empirical data for analyses and testing and finally, in section five the entire findings in the research process shall be summarized, conclusions drawn which will then lead us to making appropriate recommendations.

1.2. Literature Review and Theoretical Framework

Theoretical Framework

In order to give direction to the empirical investigation, this study was built on the foundation of the neoclassical financial theory of portfolio flow and cheap financial capital hypothesis

1.3. Neoclassical Financial Theory of Portfolio Flows

This theory was propounded by Harison (2000) in iwedi & Igbani (2015). Theory lies in interest rate differentials between countries. According to this theory, portfolio investment moves in response to changes in interest rate differentials between countries, regions and multinational companies which are simply viewed as arbitrageur of capital from countries where return is low to countries where it is high. This explanation, however, fails to account for the cross movements of capital between and across countries. In practice, capital moves in both directions between countries. In addition, the theory posits that capital is only a complementary factor in direct investment.

1.4. Cheap Financial Capital Hypothesis

The cheap financial capital hypothesis was propounded by Barker, Foley and Wurgler (2009). It views foreign capital inflows as an opportunistic use of the temporarily low-cost financial capital (relative to the theoretical world benchmark cost of capital) available to overvalued firms in the source country. Here cheap capital is the underlying factor that pushes foreign capital into a target country; hence, acquirers with relatively easy access to financial capital seek to invest their capital in target countries with relatively higher domestic cost of capital. The theory assumes market imperfections in the host and source countries.

1.5. Measures of Capital Market Performance

Discussed below are some of the measures of capital market performance in Nigeria. They include:

i. Stock market size

A common index often used, as a measure of stock market size is the market capitalization. Market capitalization equals the total value of all listed shares. In terms of economic significance, the assumption is that market size and the ability to mobilize capital and diversify risk are positively correlated. For the period covered by the study (1972 -2014) the highest market capitalization was #19077.4 billion in 2013 and lowest capitalization of N2.1 billion in 1972. Adeyemi (1998) identified a number of factors that account for lack of interest by Nigerian companies in being listed in the exchange to include: high cost of public quotation, reluctance to dilute ownership and control through public quotation, the interest rate structure in the past which favoured debt financing over equity financing, and stringent requirement for listing.

ii. Liquidity

This is used to refer to the ability of investors to buy and sell securities easily. It is an important indicator of stock market development because it signifies how the market helped in improving the allocation of capital and thus enhancing the prospects of long-term economic growth. This is possible through the ability of the investors to quickly and cheaply alter their portfolio thereby reducing the riskiness of their investment and facilitating investments in projects that are more profitable though with a long gestation period.

Two main indices are often used in the performance and rating of the stock market liquidity: total value traded ratio and turnover ratio. Total value traded ratio measures the organized trading of equities as a share of the national output while turnover ratio is used as an index of comparison for market liquidity rating and level of transaction costs. This ratio equals the total value of shares traded on the stock market divided by market capitalization. It is also a measure of the value of securities transactions relative to the size of the securities market. The Nigerian capital market had an annual average turnover ratio of 0.054 in 2012, in 2013; the turnover ratio increased to 0.123 and fell in 2014 to 0.079.

iii. Concentration

This factor measures the level of domination of the market by a few enterprises. The significance of concentration as a measure of performance of stock market is because of the adverse effect it

may have on the liquidity of the market. The share of market capitalization accounted for by the 10 largest stocks often measures the degree of market concentration. In Nigeria, a few companies dominate the market as the market capitalization of the top ten equities listed on the Nigerian Stock Exchange accounted for about 40 percent of the total stock market capitalization in 2014.

Number of listed Companies

The average number of listed companies in the Nigerian capital market for 1980-2004 periods was 215.24 companies. At the end of 2014, the number of listed companies stood at 228.81. In effect, the Nigerian stock market provides greater option to investors in terms of choice of equities than most African market do (Tokunbo, & Lloyd, 2010). Over the years, the Nigerian capital market witnessed growth of equity listings, especially in the 1990s. This was attributable to economic policies put in place by the government, notable among which was privatization of public enterprises. Also, the establishment of second-tier securities market (SSM) which allowed small/medium-sized enterprises to participate in the capital market. As at the end of 1999 16 firms were listed in SSM market. The market capitalization, which opened the year at N263.3 billion, closed the year at N300 billion. This growth was attributed to new listings and recovery of equity prices.

1.6. Review of Empirical Literature

The critical roles played by foreign capital in stock market performance in Nigeria have been widely researched. This section considers an empirical review of these studies.

Chauhan (2013) examined the impacts of foreign capital inflows on stock market development for the period 2000 to 2011. Specifically, the study analysed the impacts of Foreign Direct investment (FDI), Foreign Institutional Investment (FII), and Foreign Portfolio investment (FPI) inflows on the movement of Bombay Stock Exchange (BSE) and National Stock Exchange (NSE). The study employed Ordinary Least Square, Karl Pearson's correlation and Analysis of Variance techniques. The findings of the study showed that FDI had the greatest effect on both Bombay and National stock exchanges up to 61 per cent and 86 per cent respectively. The Karl Pearson's coefficient of correlation showed that foreign direct investment was highly and positively associated with both the markets with a score of 0.78 and 0.92 respectively. Further, the study observed that FPI had a very low impact on Bombay stock market and a comparative high impact on the National stock exchange while FII had the least impact on both markets.

Syed, Syed and Sahar (2013) examined the impacts of foreign capital inflows and economic growth on stock market capitalization in Pakistan for the period of 1976 to 2011. Employing an ARDL bound testing co-integration approach the study observed that foreign direct investment, workers' remittances and economic growth have significant positive relationship with the stock market capitalization both in long run and the short run. Using variance decomposition test, the study also observe bidirectional causal relationship of foreign direct investment and economic growth with stock market capitalization while unidirectional causal relationship was observed from workers' remittances to stock market capitalization.

Vladimir, Tomislav and Irena (2012) studied the long run and short run relationship between stock market and foreign direct investment in Croatia. They tested the long run relationship by

using a co-integration analysis and the short run relationship by using a VAR model. The long run analysis suggested the absence of long run relationship among observed variables. This was explained by the lack of connection between FDI and economic growth in Croatia. The result obtained from the VAR model were consistent with the theoretical assumptions as the stock market indicators did proved to be an important short term determinant of FDI in Croatia.

Vagias and van Dijk (2011) examined the nexus between international capital flows and local market liquidity for a group of forty-six countries in six regions for the period 1995 to 2008. Utilizing a vector auto-regressive technique, the study observed that international capital flows to developed Europe and Asia/Pacific positively responded to local market liquidity, while U.S. market liquidity positively predicted international capital flows to developed and emerging Europe and emerging Asia.

Umar, Ismail and Sulong (2015) studied the impact of the stock market development on foreign direct investment using autoregressive distributed lag (ARDL) in the presence of structural breaks (dummies) in Nigeria. The study utilized annual time series data from 1970 to 2013. The data were generated from World Bank and Central Bank of Nigeria (CBN). The result suggests that the foreign direct investment (FDI) has a significant positive long-run impact on the value of the total stock transaction, but has a negative and significant effect on the rate of stock returns. However, the relationship between FDI and market capitalization ratio is not statistically significant.

Agarwal (2006) examines the determinants of foreign portfolio investment (FPI) and its impact on the national economy in six developing Asian countries. Regression results show that inflation rate, real exchange rate, index of economic activity and the share of domestic capital market in the world stock market capitalization are four statistically significant determinants of FPI. The first variable has a negative coefficient while the last three variables possess positive coefficients. Foreign direct investment, total foreign trade and current account deficit variables were found to be statistically insignificant. Regarding the impact of FPI on the national economies, it was found that the index of economic activities and inflation rate showed an upward trend. Volatility in portfolio flows had not increased overtime. Ratio of foreign debt and debt-servicing to GDP had declined. But the rule of thumb regarding the issue of sustainability of FPI suggests that India and Indonesia have crossed the upper bounds of permissible debt ratios.

Lamouchi and Zouari (2013) examined the role played by the financial development in the influencing capital flows on real effective exchange rates for thirty-eight developed and developing countries for the period 1989 to 2011. Using a dynamic panel co-integration technique, the study observed that in the long run financial development weaken the appreciation effect of capital flows on real effective exchange rates. Through the calculation of the threshold value, the study concluded that from a certain threshold of financial development, capital flows can have a real depreciation effect on exchange rates.

Rai and Bhanumurthy (2007) tried to examine the determinants of Foreign Institutional Investments (FII) in India, which have crossed almost US\$ 12 billion by the end of 2002. Given the huge volume of these flows and its impact on the other domestic financial markets, understanding the behaviour of these flows becomes very important at the time of liberalizing

capital account. In this study, by using monthly data, they found that FII inflow depended on stock market returns, inflation rate (both domestic and foreign) and ex-ante risk. In terms of magnitude, the impact of stock market returns and the ex-ante risk turned out to be major determinants of FII inflow. This study did not find any causation running from FII inflow to stock returns as it was found by some studies. Stabilizing the stock market volatility and minimizing the ex-ante risk would help in attracting more FII inflow that has positive impact on the real economy.

2. Materials and Methods

This study adopts both the exploratory and ex-post design. While the exploratory design was used to access the relevant theories and literatures ex-post facto design was used to collect the data on the study's variables, analyze and test them. The data for this study were predominantly secondary data sourced from the CBN statistical bulletin using desk survey method.

2.1. Model Specification

The functional relationship between financial market development and foreign portfolio investment is expressed thus:

$$FP\text{II} = F(\text{SMD}, \text{SMR}, \text{TNI}) \quad (1)$$

Where

FP_{II} = Foreign portfolio investment inflow (measured by the ratio of foreign portfolio investment to GDP)

SMD= Stock market development (measured by the ratio of stock market capitalization to GDP)

SML= Stock Market Liquidity (measured by the ratio of value of transaction to market capitalization)

TNI = Total new Issues

The above relationship can be expressed econometrically using the following equation:

$$FP\text{II} = a_0 + b_1\text{SMD} + b_2\text{SML} + b_3\ln\text{TNI} + e_t \quad (2)$$

The a priori expectation about the signs of the parameters of the independent variables is stated thus: $b_1, b_2, b_3 > 0$.

This study employs the Autoregressive Distributed Lag (ARDL) bounds test approach to cointegration proposed by Pesaran, Shin and Smith (2001) to estimate the above relationship. The ARDL approach offers some desirable statistical advantages over other co-integration techniques. While other co-integration techniques require all the variables to be integrated of the same order, ARDL test procedure provides valid results whether the variables are I(0) or I(1) or mutually co-integrated and provides very efficient and consistent estimates in small and large sample sizes (Pesaran, Shin & Smith (2001). This approach therefore becomes relevant to this study as all the series are either I (0) or I (1). The ARDL model can be specified as:

$$\Delta FPII = \beta_0 + \sum_{t=i}^k \beta_{1i} \Delta FPII_{t-i} + \sum_{t=i}^k \beta_{2i} \Delta SMD_{t-i} + \sum_{t=i}^k \beta_{3i} \Delta SML_{t-i} + \sum_{t=i}^k \beta_{4i} \Delta InTNI_{t-i} + \varepsilon_{1t}$$

Where

Δ = the difference operator.

The test involves conducting F-test for joint significance of the coefficients of lagged variables for the purpose of examining the existence of a long-run relationship among the variables. The error correction model for the estimation of the short run relationships is specified as:

$$\Delta FPII = \beta_0 + \sum_{t=i}^k \beta_{1i} \Delta FPII_{t-i} + \sum_{t=i}^k \beta_{2i} \Delta SMD_{t-i} + \sum_{t=i}^k \beta_{3i} \Delta SML_{t-i} + \sum_{t=i}^k \beta_{4i} \Delta InTNI_{t-i} + \lambda_1 ECM_{t-1} + u_{1t}$$

A negative and significant ECM_{t-1} coefficient implies that any short term disequilibrium between the dependent and explanatory variables will converge back to the long-run equilibrium relationship.

To validate the stability of the estimates, the CUSUM test and the histogram normality test were apply. Furthermore, the study applied the Breusch-Godfrey serial correlation LM test to test whether or not the estimates of the model are interdependent. Lastly, the study applied the Wald test to assess whether or not the independent variable move together both in the long run and short run to influence the dependent variables.

3. Results and Discussions

Unit root test

Table 1: Augmented Dickey Fuller (ADF) and Philips Peron Test Results

Variables	ADF Test Statistics		PP Test Statistics		Order of integration
	Level	1 st Difference	Level	1 st Difference	
FPII	-4.341829		-5.228965		I(0)
SMD	-1.961641	-5.715922	-1.968627	-6.469746	I(1)
SML	-2.566540	-7.618129	-2.449018	-10.08018	I(1)
LTNI	-1.679053	-6.075177	-1.695249	-6.075177	I(1)

Test critical values at level: 1% = -3.689194, 5% = -2.971853, 10% = -2.625121

Test critical values at 1st Diff: 1% = -3.670170, 5% = -2.963972, 10% = -2.621007

Source: Researchers' E-view 9 computation, 2017

As pre-test criteria, the study employed the unit root test using ADF and PP complementarily, assuming the presence of intercept only in the model, to assess the order of integration of the series. The above table is the result of the tests. From the table, the null hypothesis for FPII was rejected and the alternative hypothesis accept for both ADF and PP at level, since the absolute values of the test statistics was more than it critical value. Also, the coefficients of the ADF and PP test equations had negative values implying that our decision to reject the null hypothesis is valid.

At levels the null hypotheses for SMD, SML and TNI were not rejected for both ADF and PP, since the absolute values of the test statistics were less than their critical value. However, after differencing once, it became possible to reject their null hypotheses and accept their alternative hypotheses as the absolute values of the test statistics for SMD, TNR and TNI became more than the critical value.

Lag order selection criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-64.79073	NA	0.001919	5.095610	5.287586	5.152694
1	-19.41893	73.93924	0.000222	2.919920	3.879800*	3.205343
2	2.728586	29.53002*	0.000154*	2.464549*	4.192332	2.978310*
3	13.55803	11.23053	0.000287	2.847554	5.343239	3.589652

Source: Researchers' E-view 9 computation, 2017

Having found that the series are of order I (1) and I (0), the study proceeded to determine the optimal lag using the Akaike information criterion. From the above table, the AIC showed that the optimum lag is two.

Long run ARDL Cointegration Analysis

Dependent Variable: D(FPII)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	7.594219	5.386571	1.409843	0.1804
D(FPII(-1))	0.325545	0.296122	1.099360	0.2902
D(FPII(-2))	0.132082	0.211716	0.623866	0.5427
D(SMD(-1))	19.51113	42.06032	0.463884	0.6499
D(SMD(-2))	15.42933	47.21695	0.326775	0.7487
D(SML(-1))	5.116346	117.8417	0.043417	0.9660
D(SML(-2))	13.05481	78.21570	0.166908	0.8698
D(LTNI(-1))	-4.848182	2.480237	-1.954726	0.0709
D(LTNI(-2))	2.799471	3.039869	0.920919	0.3727
FPII(-1)	-1.340933	0.458036	-2.927571	0.0110
SMD(-1)	-24.62388	56.53840	-0.435525	0.6698
SML(-1)	-44.68799	90.30540	-0.494854	0.6284
TNI(-1)	3.34E-06	8.13E-06	0.411350	0.6870
R-squared	0.758016			
Adjusted R-squared	0.550601			
F-statistic	3.654584	Durbin-Watson stat	2.086109	
Prob(F-statistic)	0.011852			

Source: Researchers' E-view 9 computation, 2017

The above table represents the ARDL long run estimates of the relationship between SMD, SML, TNI and FPII. From the result, the R^2 value of 0.7580 show that about 75.80 percent of the chances in the FPII have been explained by the independent variables (stock market development, turnover ratio and total new issues) in the long run. Furthermore, the F-Statistics showed that the model is significant at 5 percent. With this the study proceeds to examine whether the model is free from serial correlation in the long run using the Breusch-Godfrey Serial Correlation LM test. Extract of the result of the Breusch-Godfrey Serial Correlation LM test is presented in the table below:

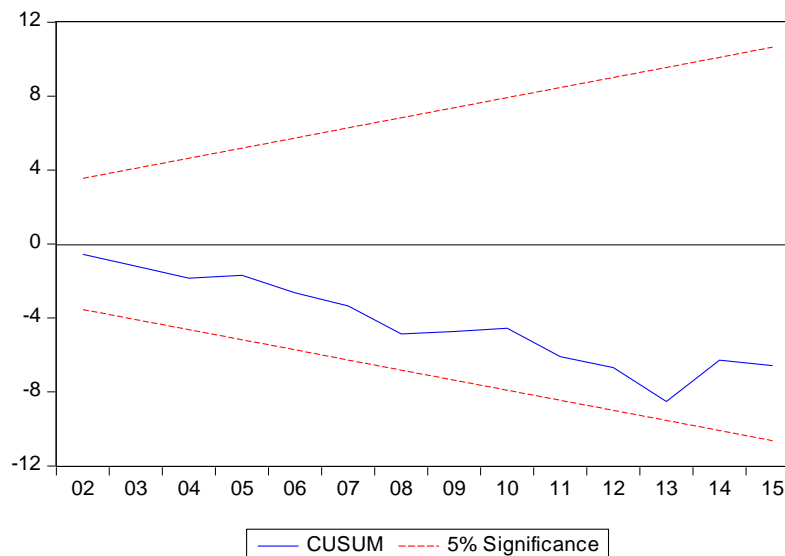
Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.068496	Prob. F(2,12)	0.3741
Obs*R-squared	4.081404	Prob. Chi-Square(2)	0.1299

Source: Researchers' E-view 9 computation, 2017

From this result, the prob chi square (2) is above 5 percent, it is 12.99 percent, meaning that the null hypothesis no serial correlation cannot be rejected. It therefore means that the model is free from serial correlation.

We also tested for the stability of the estimates by using the CUSUM test, the result is presented below:



CUSUM Test for Stability Analysis of Long Run Model

Source: Researchers' E-view 9 computation, 2017

From the above result, it could be seen that the blue line lies in between the two red lines. This means that the estimates of our model are stable and reliable.

Bound test

The study further checked whether the variables have long run relationship or not using the Wald statistics thus:

Wald Test:

Test Statistic	Value	df	Probability
F-statistic	2.221884	(4, 14)	0.1191
Chi-square	8.887536	4	0.0640

Null Hypothesis: $C(10)=C(11)=C(12)=C(13)=0$

Null Hypothesis Summary:

Normalized Restriction (= 0) Value	Std. Err.
C(10)	-1.340933 0.458036
C(11)	-24.62388 56.53840
C(12)	-44.68799 90.30540
C(13)	3.34E-06 8.13E-06

Restrictions are linear in coefficients.

Source: Researchers' E-view 9 computation, 2017

We compare the estimated F-statistics of 2.2218 with the Pesaran unrestricted intercept, no trend upper bound level at 5 percent, which gave 4.01. With this result, we accept the null hypothesis that there variables have no long run association, meaning that the variables do not move together in the long run.

Short run ARDL Cointegration Analysis

Dependent Variable: D(FPII)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.116170	1.555117	0.074702	0.9413
D(FPII(-1))	0.519519	0.283362	1.833408	0.0843
D(FPII(-2))	0.222534	0.192590	1.155482	0.2639
D(SMD(-1))	-1.847872	16.00342	-0.115467	0.9094
D(SMD(-2))	0.988268	27.53571	0.035890	0.9718
D(SML(-1))	-44.57252	85.77285	-0.519658	0.6100
D(SML(-2))	-30.95689	51.91685	-0.596278	0.5588
D(LTNI(-1))	-4.377084	1.814007	-2.412936	0.0274
D(LTNI(-2))	2.546928	2.549009	0.999184	0.3317
ECM(-1)	-1.592597	0.432483	-3.682448	0.0018
R-squared	0.779937			
Adjusted R-squared	0.663433			
F-statistic	6.694500	Durbin-Watson stat	2.305209	
Prob(F-statistic)	0.000415			

Source: Researchers' E-view 9 computation, 2017

The above table represents the ARDL short run estimates of the relationship between SMD, SML, TNI and FPII. From the result, the R^2 value of 0.7799 shows that about 77.99 percent of the changes in the FPII have been explained by the independent variables (stock market development, turnover ratio and total new issues) in the short run. Furthermore, the F-Statistics value of 6.694 with it corresponding probability of 0.041 showed that the model is significant at 5 percent.

Furthermore, the coefficient of the ECM is negative and significant as theoretically expected. This means that the system is getting adjusted at the speed of 159.25 percent towards long run equilibrium. With this the study proceeds to examine whether the short run model is free from serial correlation using the Breusch-Godfrey Serial Correlation LM test. Extract of the result of the Breusch-Godfrey Serial Correlation LM test is presented in the table below:

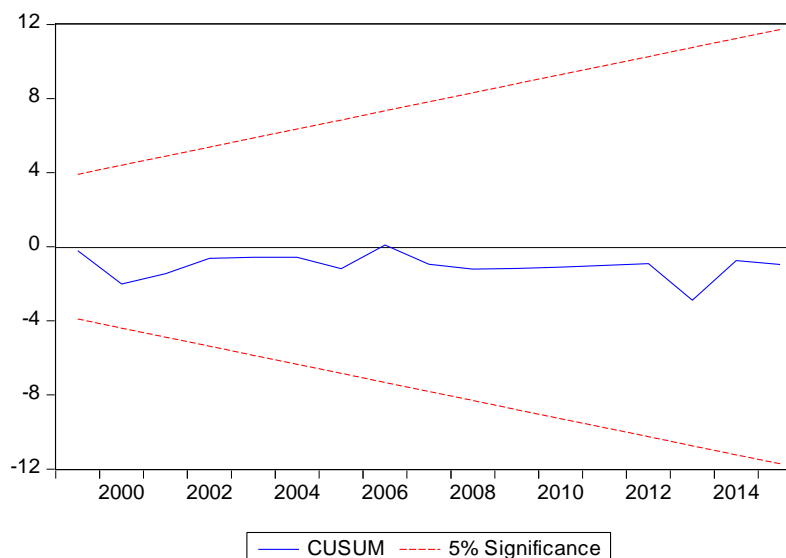
Breusch-Godfrey Serial Correlation LM Test:

F-statistic	3.053506	Prob. F(2,15)	0.0772
Obs*R-squared	7.812065	Prob. Chi-Square(2)	0.0201

Source: Researchers' E-view 9 computation, 2017

From this result, the prob chi square (2) is less than 5 percent, it is 2.01 percent, meaning that the alternative hypothesis of serial correlation cannot be rejected. It therefore means that the model is not free from serial correlation.

We also tested for the stability of the short run model by using the CUSUM test, the result is presented below:



CUSUM Test for Stability Analysis of Short Run Model

Source: Researchers' E-view 9 computation, 2017

From the above result, it could be seen that the blue line lies in between the two red lines. This means that the estimates of our model are stable and reliable.

Bound test for short run association

The study further checked whether the variables have short run relationship or not using the Wald statistics thus:

Causality test of stock market development and foreign portfolio investment

Wald Test:

Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	0.006856	(2, 17)	0.9932
Chi-square	0.013711	2	0.9932

Null Hypothesis: $C(4)=C(5)=0$

Null Hypothesis Summary:

Normalized Restriction (= 0) Value	Std. Err.
C(4)	-1.847872 16.00342
C(5)	0.988268 27.53571

Restrictions are linear in coefficients.

Source: Researchers' E-view 9 computation, 2017

The value of the above F-statistics of 0.0068 and it corresponding probability of 99.32 percent shows that we cannot reject the null hypothesis that D (SMD (-1)) and D (SMD (-2)) have no causal relationship with D (FPII) in the short run. In other words there is no short run causality running from stock market development to foreign portfolio investment in Nigeria.

Causality test of Stock market liquidity and foreign portfolio investment

Wald Test:

Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	0.206430	(2, 17)	0.8155
Chi-square	0.412861	2	0.8135

Null Hypothesis: $C(6)=C(7)=0$

Null Hypothesis Summary:

Normalized Restriction (= 0) Value	Std. Err.
C(6)	-44.57252 85.77285
C(7)	-30.95689 51.91685

Restrictions are linear in coefficients.

Source: Researchers' E-view 9 computation, 2017

The value of the above F-statistics of 0.2064 and it corresponding probability of 81.55 percent shows that we cannot reject the null hypothesis that D (SML (-1)) and D (SML (-2)) have no causal relationship with D (FPII) in the short run. In other words there is no short run causality running from stock market liquidity to foreign portfolio investment in Nigeria.

Causality test of total new issues and foreign portfolio investment

Wald Test:

Equation: Untitled

Test Statistic	Value	df	Probability
F-statistic	3.649061	(2, 17)	0.0480
Chi-square	7.298121	2	0.0260

Null Hypothesis: C(8)=C(9)=0

Null Hypothesis Summary:

Normalized Restriction (= 0) Value	Std. Err.
C(8)	-4.377084 1.814007
C(9)	2.546928 2.549009

Restrictions are linear in coefficients.

Source: Researchers' E-view 9 computation, 2017

The value of the above F-statistics of 3.649 and it corresponding probability of 4.80 percent shows that we can reject the null hypothesis that D (LTNI (-1)) and D (LTNI (-2)) have causal relationship with D (FPII) in the short run. In other words there is a short run causality running from total new issues to foreign portfolio investment in Nigeria.

4. Summary of Findings

The major aim of this study was to examine the relationship between financial market development and foreign portfolio investment inflows to Nigeria. In view of this, the relationships between stock market development, turnover ratio, total new issues and foreign portfolio investment were examined using Autoregressive Distributive Lag (ARDL) technique. Consequently, the following major findings were made:

- 1) There is no significant long run association between financial market development and foreign portfolio investment in Nigeria;
- 2) There is no significant short run causal relationship between stock market development and foreign portfolio investment in Nigeria;
- 3) There is no short run causal association between stock market liquidity and foreign portfolio investment in Nigeria;
- 4) There is a short run causal relationship between total new issue and foreign portfolio investment in Nigeria.

5. Conclusions & Recommendations

This study examined the relationship between financial market development and foreign portfolio investment inflow to Nigeria using the ARDL model. From the findings of this study, it was concluded that the Nigerian stock market has underperformed in terms of influencing foreign portfolio investment inflows to Nigeria both in the short run and long run. Based on this, the following recommendations have been made:

- 1) Stock market regulators should through conscious enlightenment campaigns encourage more domestic participation in the market to enhance the market performance, deepening and growth; this will strengthen its long run causality with FPI.
- 2) Stock market regulators should through conscious risk reduction policies formulation and implementation reduce the riskiness of investing in the stock market to increase transactions and liquidity in the stock market, boost the rate of turnover to investors as this will attract foreign portfolio investors to the Nigerian financial market.
- 3) Government should encourage new entrance into the stock market by educating business operators on the benefit of transacting in the stock market; this will further signal to foreign portfolio investors that the market is performing well and will enhance portfolio investment.

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