

Foreign Portfolio Investment and Nigerian Economic Growth

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Abstract

The study evaluated the nature and impact of foreign portfolio Investment on Nigerian economic growth using time series data, econometric techniques like ADF Unit Root Test, Granger Causality test and ARDL Bound test were employed. Nigeria's real gross domestic product was modeled as the function of foreign equity investment and bond investment. The unit root test indicates that two variables are stationary at difference while the remaining is stationary at level. The Granger causality test result shows that there is no causal relationship between foreign portfolio investment and economic growth. The cointegration bound test, for long run relationship, indicated that there is long run relationship between foreign portfolio investment and economic growth at 1%, 5% and 10% levels of statistical significance. The error correction term (ECM-1) was significant with correct negative sign. The long-run regression of the ARDL model shows that increase in foreign equity investment is associated with increase in real gross domestic product of Nigeria while increase in foreign bond investment is associated with negative effect on Nigeria economic growth. The study concluded that there is a long run positive relationship between foreign equity investment but negative long run relationship between foreign bond investment and economic growth in Nigeria. The study therefore recommends that government provide a sound macroeconomic policy that ensures proper utilization of foreign investment, in addition to comprehensive adjustment of macroeconomic policies to achieve and maximize the expected positive impact of foreign portfolio investment on Nigerian economic growth.

Keywords: *Foreign Portfolio Investment, Foreign Equity Investment, Foreign Bond Investment, Nigerian Economic Growth*

INTRODUCTION

The concern of every economy is the attainment of greater heights in the level of economic performance through positive changes in production levels of goods and services. The attainment of sustainable levels of economic performance is a core macroeconomic objective of an economy. Traditional factors and the distinct interactions amongst each other have been identified to play a crucial role in the growth process. Such factors include capital, labour and land. The performance of an economy is usually assessed in terms of the achievement of economic objectives. These objectives can be long, medium term such as sustainable growth and development or short term, such as the stabilization of the economy. The economic objective of contracting external debt is to

achieve monetary and macroeconomic goals such as increase productivity and full employment. To know how well an economy is performing against these objectives, economists and financial analyst employ a wide range of economic indicators. Economic indicators measure macroeconomic variables that directly or indirectly enable economists to judge whether economic performance has improved or deteriorated. Tracking these indicators becomes valuable to policy makers, both in terms of assessing whether to intervene and whether the intervention has worked or not.

Foreign portfolio investment is a component of foreign private capital. It is an aspect of international capital flows, comprising transfer of financial assets, such as cash, stocks or bonds across international boarder in want of profit (Kurt Gumus, Duru, & Gungor, 2013). The inflow of foreign portfolio investment is determined by the development of the capital market, the market rate of return and the monetary policy of the country. Unlike Foreign Direct Investment, inflow of portfolio investment is sensitivity to exchange rate risk and political risk of the country (Anayochukwu, 2012). Following the transition to financial liberalization which took place in Nigeria in the 1980's, the deregulation of the economy in the last quarter of 1986, abrogation of the indigenization laws, the reforms in the foreign exchange laws, the macroeconomic and financial sector reforms in the democratic regime, Nigeria expects steady increase in inflow of foreign portfolio investment. Hence, opportunities for profitable investment increased in the 1990's. Portfolio inflows increased from \$6.2 billion in 1987 to \$46.9 billion in 1993 (UNDP, 2013). Onakoya (2016) was of the view that the relative importance of portfolio investment to a small emerging market like Nigeria has been attributed to the effective role played by the Nigerian capital market in the recent past. This includes the deregulation of the capital market in 1993 which made the federal government to internationalize the market in 1995, with the abrogation of laws that constrained foreign participation in the Nigeria capital market. Following the abrogation of the Exchange Control Act 1962, foreigners can participate in the Nigerian capital market both as operators and investors.

Accordingly, with the internationalization of the Nigerian stock exchange, which was part of the financial liberalization policy in Nigeria in the mid-2000, there was increased inflow of foreign portfolio investment into the Nigeria economy through the capital market (CBN, 2006). Before 1986; capital flows to Nigeria were mainly, foreign direct investment, foreign aids and bank loans. However, from 1986, there was a change in the composition of private capital flows to Nigeria. Foreign portfolio investment took the centre stage and its share of private capital flows to Nigeria were on the increase while at the same time official flows and bank loans were declining in real terms. Foreign portfolio investment (bond and equity) increased dramatically over the last twenty years that by the end of 2005 it surpassed every other type of capital inflows into Nigeria. It should be noted that institutional investors have also become very important. Not only have they increased their share of companies listed on the stock markets, they have also started to invest more in other emerging and developed markets (AFDB/OECD, 2007). However, with the global financial and economic crisis that started in 2009, the foreign portfolio investment flow into Nigeria decreased significantly.

Furthermore, while studies on foreign portfolio investment inflow and economic growth abound for America, Asia and Europe Calvo et al., 1994; Agarwal, 1997; Gordon & Gupta, 2003; Garg & Dua, 2014), the case is not necessarily so for Nigeria. Additionally, empirical literature, including studies on Sub Saharan Africa by Delechat et al. (2009) and Anayochukwu, (2012) concentrated on the pull factors of foreign portfolio investment leaving no evidence for push factors. Although the study by Garg and Dua (2014) included a wide range of pull factors, the Ordinary Least Squares (OLS) methodology is used. This may generate bias and inconsistent results if the regressors are endogenous. The Generalised Moment Method (GMM) which overcomes such problems will be employed for this study. This study provided a new contribution to the existing literature by focusing on the relationship between foreign portfolio investment and Nigeria economic growth which has been the most important source of capital for emerging economies like Nigeria.

REVIEW OF RELATED LITERATURE

Foreign Portfolio Investment

Foreign portfolio investment is an investment activity that involves the purchase of bonds, stocks or money market instruments for shorter time period in foreign country. Because of its short term nature, it provides opportunity to investors to take advantage of favorable interest rate and exchange rate for buying and selling the security. It is an investment in the foreign secondary market and its purpose is to obtain higher return. This task can be completed through passive holding of shares or through active trading of securities in the financial or capital markets. It improves liquidity position of host economy and also helps to increase the foreign reserves that result in stability of exchange rate.

Firstly, the foreign portfolio investment (FPI) is affective for obtaining higher return and decreases risk through international diversification. Secondly, it plays a significant role in the economic growth of the host country. Thirdly, it encourages investment of new funds in the country due to which investment level would increase. Foreign portfolio investment (FPI) is one of the crucial capital flows and in current economic conditions, it is extremely important as the market risk is very high due to instable political conditions, and the foreign investors are avoiding investment in Pakistan, therefore, foreign investors can be attracted to invest in Pakistan through FPI. Although, it is a shorter time period investment but it may be helpful to attract foreign investors in Pakistan. But unfortunately, the present conditions of Pakistan's economy and stock markets are unstable. Economists suggest that stock exchange is the indicator of an economy, and the stock market of Pakistan is in deep crisis.

Portfolio investment usually involves the movement of capital across national borders and positions involving debt or equity securities, other than those included in direct investment or reserve assets (World Bank, 1993). World Bank (1993) defines portfolio flows to consist of bonds, equity (comprising direct stock market purchases and country funds) and money market instruments such as certificates of deposits and commercial papers. UNCTAD (1999) also defines portfolio flow as a cross border transaction of financial assets in securities, a company's assets or through the financial market. Portfolio investment therefore includes the transfer of assets by way of investing in securities such as bonds, bank loans, stocks, derivatives and other forms of credit (e.g. pledges and trade). Investors are more interested in reaping the maximum return on their investment for a given level of risk and FPI normally have a shorter time horizon. Portfolio

investment therefore tends to be volatile in nature. While volatility may create opportunities for arbitrage profit and encourage market efficiency; it can also result to economic disturbance specially, in a boom or bust period.

Various approaches are used to examine the determinants of foreign portfolio investment (FPI). The portfolio is often divided into three categories, including country, industry, and firm levels. Most research focuses specifically on the country-level, specifically the relationship between exchange rates and foreign portfolio investment flows, including Garg & Dua (2014), Anggitawati & Ekaputra (2018), dan Caporale et al. (2017), Gumus et al. (2013). Garg & Dua (2014), using a sample of India and the ARDL method, established that portfolio inflows were influenced by lower exchange rate volatility and appreciation, and greater risk diversification opportunities. Furthermore, it also disaggregates FPI into two, Foreign Institutional Investment flows (FII) and American / Global Depository Receipts (ADR / GDR). The FII determinants are similar to aggregate portfolio flows, while ADR / GDR is influenced by returns on domestic equity, exchange rates, and domestic and foreign output growth. This is in line with Anggitawati & Ekaputra (2018) which established a causal relationship between net foreign investment and the exchange rate in Indonesia using the VAR method.

The increase in FPI in form of domestic bonds often strengthens the local exchange rate. Domestic appreciation tends to increase FPI in the bond market. In the domestic stock market, there is only a one-way relationship, where only the domestic exchange rate has a significant impact on FPI movements on the Indonesian stock market. In this regard, the FPI on the stock market does not affect the domestic exchange rate. These results contravene Gumus et al. (2013), which established that FPI is only influenced by the industrial production index, rather than the exchange rate.

Asia (2000) noted that foreign portfolio investment, strong and well-regulated financial markets are necessary to deal with the inherent volatility. The financial system must have the capacity to assess and manage risks if it is prudently and productively invest capital flows, foreign or domestic. Its central role of financial intermediation and credit allocation is a key element of economic growth and development. As has been shown above, foreign portfolio investment can be an important player in this function, and bring additional strengths and benefits, but those benefits will be most effective when working within a healthy financial system. For a financial market to maintain its health Osiegbu and Onuorah (2011), stated that institution within it must be able to identify, monitor and manage business risks efficiently. The payment system, through financial institutions and clearing houses, must be efficient and reliable. The financial system must also have the ability to withstand economic shocks, such as a substantial shift in the exchange or interest rates, or a sudden capital withdrawal. It must, as well be able to withstand systemic shocks, is a central, and perhaps unique, element of capital market. It demands adequate capitalization and risk management capabilities.

Economic Growth

Economic growth is the increase of the aggregate national production by spending the scarce resource. It is known as the value of goods and services which are produced in the geographic territory in the given interval of time in the country. In addition, it is the value of the total consumption, investment and government spending in the country. Todaro (1977) defined

economic growth as the increase overtime of an economy's capacity to produce those goods and services needed to improve the wellbeing of the citizens in increasing numbers and diversity. It is the steady process by which the productive capacity of the economy is increased overtime to bring about rising levels of national income. Baumol and Blinder (1988) noted that economic growth as occurring when an economy is able to produce more goods and services for each consumer, while Roger Miller (1991) defined economic growth as the expansion of the economy to produce more goods, jobs and wealth. Henderson and Poole (1991) defined economic growth as the increase in output and other measures of material progress at a certain period. It is also said to be either growth in national output as measured by GDP or GNP (which measures economic power), or growth in the national average standard of living as measured by the GNP per capita (which measures the well-being of citizens).

Dornbusch, et al. (1994) stated that, economic growth focuses on the expansion of productive capacity over time. The expansion of productive capacity requires an increase in natural resource, human resource, capital and technology. Thus economic growth is due to growth in inputs, such as labor, capital and technological improvement. Jhingan (2005) described economic growth as "the process whereby the real per capita income of a country increases over a long period of time." Economic growth is measured by the increase in the amount of goods and services produced in a country. A growing economy produces more goods and services in each successive time period. Thus, growth occurs when an economy's productive capacity increases which, in turn, is used to produce more goods and services. Beardshaw, Brewster, et al (1998) defined economic growth as an increase in the real GDP per capita of a nation; while the Encyclopedia of earth defined economic growth as an increase in real gross domestic product (GDP).

Financial dictionary defined economic growth as increase in the national income of a country created by the long-term productive potential of its economy; while the investment dictionary defined economic growth as an increase in the capacity of an economy to produce goods and services, compared from one period of time to another Johnson (2000) defined economic growth as that part of economic theory that explains the rate at which a country's economy grows over time. It is usually measured as the annual percentage rate of growth of the country's major national income accounting aggregates, such as the gross national product (GNP) or the gross domestic product (GDP) with appropriate statistical adjustment to discount the potentially misleading effects of price inflation.

Samuelson et al. (2001) defined economic growth as an expansion of a country's potential GDP or national output. This means that economic growth occurs when a nation's production possibility frontier shifts outward. Economic growth is a dynamic process in which the supply, demand and efficiency factor all interest. Economic growth generally, can be described as a positive change in the level of production of goods and services by a country over a certain period of time. In other words, economic growth is the increase in the value of goods and services produced by an economy. It can also be referred to as the increase in the gross domestic product. It is a relatively straight forward measure of output and gives an idea of how well off a country is, compared with competitors and past performance. It is a beacon that helps policy makers steer the economy towards key economic objectives. It is a measure of the wellbeing of a state; usually in real terms, all other things being equal (Enu, 2009; Lucky & Nwosi, 2016).

The Push Factor Theory

This theory explains the cause of FPI to external factors other than what happens in the domestic country. Among the push factors, a prominent role has been attributed to slow economic growth rate and low interest rate of industrialized countries (Calvo & Reinhart, 1998). Additionally, the increasing appetite of investors towards international diversification may also push capital flows into emerging economies (Calvo et al., 1996). Empirically, scholars such as Calvo et al. (1993) and Fernandez-Arias (1994) attributed the increase in capital inflows of developing countries in the 1990's to the decline in the US interest rate. Another key push factor identified by these authors is the rise in the tax rate of multinational corporations. While there are considerable numbers of literature which explain capital flows to emerging countries to be induced by a recession in industrialized countries, a contrast view has been provided once for developed countries.

Jeanneau and Micu (2002) indicated that robust economic activities in industrialized countries are significant in explaining portfolio inflows of developing countries. Another set of domestic factors in literature are the contagion effect. Contagion has gained much attention in literature since the Asian crises in 1997-1999. It generally explains circumstances between groups of countries. Masson (1999) identified three transmission mechanisms of contagion. These are the monsoonal effect, the spillover effects and the shift or pure contagion.

The monsoonal effect (such as real interest rate of major developed countries) is believed to be factors that affect a number of countries simultaneously especially, countries in the same region or with similar economic conditions. The spillover affects generally results from trade and financial channels. Trade channels include market competition and import price changes while financial channels results from portfolio investment. Hence, a loss of competitiveness for country "A" for instance may cause a currency depreciation of country "B", suppose both countries are linked by commercial operations. On the other hand a simultaneous crises resulting from any of the above factors, is referred to as the pure contagion or shift contagion (Masson, 1999 and Forbes and Rigobon, 2002). For instance, a change in investors' sentiments may yield reversal of funds and trigger financial crises.

Forbes and Rigobon (2002) and Kleimeier and Sander (2003) assessed the contagion factors provided by Masson (1999). They provided evidence that the first two of Masson's factors may be channels where external shocks are usually transmitted and that, only the third factor could be contagion. This theory has important implications for policy design toward sustainable portfolio inflows of SSA. For instance once it is established that lower interest rate leads to an increase in PI of developing countries, an increase in such rates may hinder the ability of these countries to sustain such inflows. This raises an important issue for policy makers in host countries as to whether the domestic response is likely to effectively consider the possibility of reversal.

The Pull factor Theory

The pull factor theory attributes the flow of capital to be as a result of the domestic fundamentals of the recipient country. These domestic factors include creditworthiness of a country, improvement in fiscal and monetary policies and neighbourhood externalities (interest rate and the price earnings ratio of the host country) (Calvo, et al, 1996). Haque, Mathieson and Sharma (1997)

also identify an increase in domestic output and domestic money demand to be pull factors. Other domestic factors also include the performance of macroeconomic variables such as financial development, inflation, GDP growth rate, current account balance and gross domestic investment. Thus, to evaluate the level of sound economic policies and the sustainability of capital flows, investment environment, infrastructure as well as the quality of institutions are also included as key domestic factors. Many scholars (Chuhan et al, 1994 and Ul-Haque, Kamar, Mark, & Mathiesan, 1996) have identified pull factors to be the main significant factors that explain capital inflows of emerging economies in the 1990s. The authors argue that financial liberalisation among other factors such as privatisation of public enterprise and improvement in macroeconomic conditions have improved the credit worthiness of developing countries leading to international capital mobility. Basu and Srinivasan (2002) provided evidence from Africa that, well-structured economic reforms coupled with political and macroeconomic stability and natural resources have attracted foreign capital like FDI to these countries. Similarly Asiedu (2002) found that poor policy and restrictions in trade hinders capital flows to African countries. Asiedu (2002) considered these factors to be paramount in explaining the proportion of foreign capital inflows of African countries

Solow Growth Model

The Solow growth model is built on a closed economy which makes use of labour and capital as its means of production. Under this scenario the implication of external debt on growth can be seen through its effect on the domestic saving which in turn used as investment in a closed model. The general effect of external debt on the Solow growth model can be analyzed by looking at the individual effects of the debt overhang and debt crowding theories on the Solow growth model. According to the debt overhang hypothesis, the government in an attempt to amortize the accumulated debt will increase tax rate on the private sector (as means of transferring resources to the public sector). This will discourage private sector investment and also reduce government expenditure on infrastructure as the resources are used to pay up huge debt service payments instead of being put into good use. This will lead to a reduction of total (private and public) investment in the economy and a shift downward of both the investment and production function curves in Solow growth model. On the other hand in the case of debt crowding out, in a bid to clear their outstanding debts use their revenue from export earnings and in some cases transfer resources including foreign aid and foreign exchange resources to service their forthcoming debt. Those countries which transfer revenue from export earnings which can be used in investment in the economy to avoid huge debt payments will discourage public investment. This in turn will decrease economic growth and will shift both the investment and production function curves in Solow growth model downward (Dereje, 2013).

Empirical Review

Baghebo and Apere (2014) examined the effect of foreign portfolio investment on economic growth and used the Augmented Dickey-Fuller (ADF) test, Johansen cointegration technique, and error correcting mechanism techniques in their analysis. The study found that real gross domestic product in Nigeria showed positive long-term relationships with foreign portfolio investment, market capitalization, and trade openness. With the help of ordinary least square analysis, Bada (2016) examined the impact of foreign portfolio investment on Nigerian economic growth from

1991 to 2014. The results showed that both foreign portfolio investment and other variables used in the study had a positive impact on economic growth in Nigeria.

Albulescu (2015) tested the impact of FPI on growth in Central and Eastern European (CEE) nations using panel data. The study's findings suggested that, over time, FDI and FPI had an impact on economic growth. In their 2016 study, Haider et al. looked into what factors influenced foreign portfolio investment in the Chinese economy from 1997 to 2014. The study used OLS for analysis and found that China's overseas portfolio investments were significantly impacted by the GDP, population growth, currency rate, and external debt

Claudiu (2015) used a panel structure to examine the impact of foreign direct investment (FDI) and foreign portfolio investment (FPI) on long-term economic growth in CEE nations. They used a system-GMM approach to achieve this, which corrects the endogeneity problems between growth and investment, and a sizable number of control variables, including the interest rate, CPI inflation, unemployment rate, money supply, exchange rate, primary energy consumption, and educational attainment. The sample consists of 13 CEE nations: Bulgaria, Croatia, Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Romania, the Slovak Republic, and Slovenia. The study's analysis covers the years 2005 to 2012. They discovered that investments, both direct and portfolio have an impact on long-term economic growth.

Using a different GMM, Murtala (2017) conducted an empirical investigation of the effect of foreign capital influx on the economic growth of sub-Saharan African nations between 2010 and 2015. It was discovered that foreign capital inflow has a negative impact on the expansion of the economies in sub-Saharan Africa. The implication is that because of the region's high levels of insecurity and unfavorable business climate, sub-Saharan African countries do not have adequate access to the foreign capital that mostly comes in the form of FDI. As a result, the level of economic development in these countries is negatively impacted rather than positively by the inflow of foreign capital. Brahim (2017) gave an explanation for the weak relationship between private capital flows and the region's sub-Saharan economic growth as well as policy suggestions for a stronger relationship and growth optimization. In support of the stylised facts, estimation of a straightforward growth equation demonstrates that the flows have no impact on growth. Additional research that takes into account the surge components of these flows as well as the implications of capital regulations offers insightful information.

Oluwaseyi (2017) investigated the nature of the relationship between foreign capital inflows and the rate of economic growth in a few West African nations, as well as the causation between the various elements of these inflows and economic growth. The Two Gap Theory was used in this study to evaluate how foreign capital inflows affected the economic growth in the chosen West African countries using panel data from 1980 to 2015. Additionally, we use the Granger causality test and Pedroni cointegration. A long-term association between foreign capital inflows and economic growth in a particular West African country is demonstrated by the data. Although all the variables were favorable, only foreign direct investment is noteworthy.

Tsaura (2017) examined the effect of foreign portfolio equity investments on economic growth using a panel data of 14 Asian and European emerging nations. In all of the nations examined, the study found a favorable but negligible correlation between FPI and economic growth. Over a 30 year period, from 1984 to 2014, Waweru (2017) looked at the immediate and lag effects of several types of capital flows, including portfolio flows, "Other investments capital flows," and FDI flows, on economic growth in Kenya. The GDP growth rate is negatively impacted by FDI and portfolio investment flows, albeit this effect is not statistically significant. According to the study's findings, a significant slowdown or reversal in capital flows into Kenya in the form of "Other Investment Capital Flows" results in a significant slowdown in the nation's economic growth.

Adekunle (2018) looked into the relationship between various types of capital flows and economic expansion in Nigeria. The findings indicated that FPI had a negative impact on economic growth while FDI had a positive impact. By controlling the "globalization" variables of trade openness, foreign direct investment (FDI), and portfolio investment in addition to the structural break dummy, Fukuda (2019) looked into the relationship between finance and growth in Mexico. Two measures of size and efficiency are used as proxies for financial development. Using the cointegration and Granger causality tests, we discovered that financial size is negatively correlated with economic growth without any feedback, financial efficiency and economic growth are negatively correlated bilaterally, trade openness and portfolio investment are positively correlated with economic growth, and FDI is negatively correlated with both economic growth and financial efficiency.

Suidarma et al. (2020) investigated the impact of foreign direct investment and portfolio investment on the convergence incidence of economic growth of nations in the ASEAN + 3 regions. The study's findings demonstrate that foreign direct investment (FDI) and portfolio investment, the first lag variable of economic growth, have a considerable impact on economic growth in ASEAN + 3, but not in ASEAN without China, Japan, and Republic of Korea. Portfolio investments have less of an impact on changes in economic growth than does foreign direct investment (FDI). The dynamic character of the relationship between foreign investment and economic growth in Nigeria from 1980 to 2018 was examined by Toyin and Oludayol (2020). The study experimentally confirms and conceptually establishes that market capitalization, domestic savings, foreign investment, and government spending all affect long-term trends in the growth of Nigeria's gross domestic product. Practically, the empirical finding showed that Nigeria's significant domestic savings deficit creates barriers to the nation's successful economic growth both in the short and long terms. Portfolio foreign investment accelerates economic growth more quickly in the long run than it does in the short run.

Al-karasneh, Bataineh, Hayajneh, and Khodirat (2021) used econometric techniques including ARDL and Error Correction Models to analyze the effects of short- and long-term active foreign portfolio investments (FPI) on Jordan's economic growth (EG) from 1996 to 2017. Findings show that FPI have both a short-term (-5%) detrimental impact on EG at level and a long-term (-5%) statistically favorable influence on EG at level, with EG needing roughly ten years to make a full adjustment.

Ndiweni and Lumengo Bonga-Bonga (2021) examined correlation between international capital inflows and economic growth in emerging economies. The data demonstrate that there is a threshold effect in the relationship between capital inflows and growth. More specifically, the results showed that after a predetermined threshold level of institutional quality has been reached, the influence of capital inflows on economic growth is positive and considerable. The link between capital inflows and growth appears to be non-existent at any point below that threshold level. These findings lend credence to the idea that the relationship between capital inflows and economic growth depends on the degree of institutionalization of a country's economy.

METHODOLOGY

The study adopted the quasi-experimental research design. This is because the variable under study cannot be manipulated or is not under the control of researcher. This study used secondary data sourced from Central Bank of Nigeria financial stability report, Central Bank of Nigeria Economic reports from 1990 – 2022.

Model Specification

$$RGDP = f(FEI, FBI) \tag{1}$$

To have the estimable version of above models 1 to can be rewritten to have

$$RGDP = \alpha + \beta_1 FEI + \beta_3 FBI + \mu \tag{2}$$

Where

RGDP = Nigeria real gross domestic product

FEI = Foreign equity investment

FBI = Foreign bond investment

$\phi_0 \alpha_0$ = Constant

$\beta_1 - \beta_3$ = Coefficients of independent variables

μ_{it} = Error Term

A-Priori Expectation

Base on theories such as push and pull factors theory and empirical results examined in this study, the variables are expected to have a positive effect on the dependent variables. The mathematical implication is stated as follows: $\beta_1, \beta_2 > 0$

Data Analysis Techniques

Unit Root Test

A unit root test is a statistical test for the proposition that in a autoregressive statistical model of a time series, the autoregressive parameter is one. (Econtermsy(t), where t a whole number, modeled by:

$$y(t+1) = ay(t) + \text{other terms}$$

Where a is an unknown constant, a unit root test would be a test of the hypothesis that $a=1$, usually against the alternative that $|a|$ is less than 1. The Augmented Dickey Fuller (ADF) unit root test is used to test the stationarity property of a time series data in order to avoid the spurious regression problem. The ADF unit root test is specified as

$$\Delta Y_t = \alpha + \beta Y_{t-1} + \sum_{j=1}^n \gamma_j \Delta Y_{t-j} + \varepsilon_t \quad 3$$

$$\Delta Y_t = \alpha + \beta Y_{t-1} + \sum_{j=1}^n \gamma_j \Delta Y_{t-j} + \varepsilon_t \quad 4$$

$$\Delta Y_t = \alpha + \beta Y_{t-1} + \sum_{j=1}^n \gamma_j \Delta Y_{t-j} + \varepsilon_t \quad 5$$

Note: The null hypothesis is rejected on the ground that the absolute value of the calculated ADF test statistic is larger than the absolute value of the Mackinnon critical value.

Cointegration Test

Cointegration is a statistical property of time series variables. In a situation where two or more series are individually integrated (in the time series sense) but some linear combination of them has a lower order of integration, then the series are said to be cointegrated. To test for the presence of long-run equilibrium relationship, the Johansen's and Juselius (1990) and Johansen (1991) multivariate cointegration technique is employed. The cointegration test is based on the following equation.

$$\Delta Y_t = \alpha + \beta Y_{t-1} + \sum_{j=1}^n \gamma_j \Delta Y_{t-j} + \varepsilon_t \quad 6$$

Where n and n are 4×4 matrices and k is the lag length. The tests used here involved cointegration with linear deterministic trend in the vector auto regression (VAR).

Granger Causality Test

The main objective of this study is to investigate the causality between the independent and the dependent variables. Granger (1996) proposed the concept of causality and exogeneity: a variable Y_t is said to cause X_t , if the predicted value of X_t is ameliorated when information related to Y_t is incorporated in the analysis. The test is based on the following equation below

$$Y_t = \alpha + \beta Y_{t-1} + \sum_{j=1}^n \gamma_j \Delta Y_{t-j} + \mu_{1t} \quad 7$$

and

$$X_t = \alpha + \beta X_{t-1} + \sum_{j=1}^n \gamma_j \Delta X_{t-j} + \mu_{2t} \quad 8$$

Where X_t and Y_t are the variables to be tested while μ_{1t} and μ_{2t} are white noise disturbance terms and n is maximum number of lags. The null hypothesis $\alpha_1 = \beta_1 = 0$ for all 1 's is tested against the alternative hypothesis $\alpha_1, 0$ and $\beta_1, 0$, if the coefficient of α_1 are statistically significant, that of β_1 are not, then X causes Y , If the reversal is true than Y causes X . However, where both coefficient of α_1 and β_1 are significant then causality is bi-directional.

RESULTS AND DISCUSSION

Table 1: Augmented Dickey-Fuller (ADF) unit root tests

Variable	ADF Statistic	Critical value @ 1%	Critical value @ 5%	Critical value @ 10%	Order of integration
RGDP	-1.734970	-3.886751	-3.052169	-2.666593	1(0)
FEI	-4.555641	-3.920350	-3.065585	-2.673459	1(I)
BI	-1.239738	-3.886751	-3.052169	-2.666593	1(I)

Source: Extract from E-view 9.0, 2023

The findings of Augmented Dickey-Fuller (ADF) unit root tests are presented in table 1 above. The ADF unit root test found that the model has a mixture of I(0) and I(1) variables, and subsequently justify the use of ARDL Bound test for the examination of the long-run relationship of the model among the variables.

Table 2: Cointegration Bound Test Result for FPI and Economic growth

F-Bounds Test		Null Hypothesis: No levels relationship			
Test Statistic	Value	Signif.	I(0)	I(1)	
Asymptotic: n=1000					
F-statistic	7.869202	10%	2.63	3.35	
k	2	5%	3.1	3.87	
		2.5%	3.55	4.38	
		1%	4.13	5	
Finite Sample: n=30					
Actual Sample Size	15	10%	2.915	3.695	
		5%	3.538	4.428	
		1%	5.155	6.265	

Source: Extract from E-view 9.0, 2023

The cointegration Bound tests for long run relationship in table 2 shows that F-statistics 7.869202 is greater than upper bound critical values at 1%, 5% and 10% level of significance respectively. The study therefore rejects the null hypothesis, and concludes that there is long run relationship between foreign portfolio investment and economic growth in Nigeria.

Table 3: Cointegration Regression of Long-run ARDL Model

ECM Regression				
Case 2: Restricted Constant and No Trend				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FEI)	0.170625	0.052668	3.239668	0.0177
D(FEI(-1))	0.172823	0.051030	3.386704	0.0147
D(BI)	-0.083322	0.149365	-0.557839	0.5971
D(BI(-1))	-1.010702	0.214981	-4.701363	0.0033
D(BI(-2))	-0.303770	0.220160	-1.379770	0.2169
CointEq(-1)*	-1.044249	0.216729	-4.818217	0.0029
R-squared	0.845384	Mean dependent var		-0.281333
Adjusted R-squared	0.759487	S.D. dependent var		2.761055
S.E. of regression	1.354081	Akaike info criterion		3.733297
Sum squared resid	16.50181	Schwarz criterion		4.016517
Log likelihood	-21.99973	Hannan-Quinn criter.		3.730280
Durbin-Watson stat	2.694423			

Source: Extract from E-view 9.0, 2023

Table 3 shows the ARDL Model cointegration regression of the long run relationship between the variables. The table shows the sign, magnitude and the nature of statistical relationship between the dependent variable Gross Domestic Product and explanatory variables. The error correction coefficient, estimated at -1.044249, it is significantly significant and has the correct negative sign. The coefficient shows the speed of adjustment of the model to long-run equilibrium. The error correction term validates the existence of a stable long-run relationship. Also the coefficient of the error term implies that the deviation from long run equilibrium level of dependent variable of the current period is to be corrected by 104% in each period to bring back equilibrium.

Table 3: VAR Lag Order Selection Criteria

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-129.0017	NA	8841.354	17.60023	17.74184	17.59872
1	-112.3647	24.40094*	3320.814*	16.58197*	17.14841*	16.57593*
2	-102.3545	10.67754	3527.852	16.44727	17.43854	16.43671
3	-77.90557	16.29932	814.1072	14.38741	15.80351	14.37233

Source: Extract from E-view 9.0, 2023

Table 3 presents the VAR Lag Order Selection Criteria results on the effect of foreign portfolio investment and economic growth in Nigeria using the vector autoregressive (VAR) optimal lag selection criteria. We find a uniform selection of 1 lags among all the criteria; thus, the study adopts the 1 lags.

Table 5: ARDL Regression Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
RGDP(-1)	-0.044249	0.329494	-0.134295	0.8976
FEI	0.170625	0.071420	2.389051	0.0541
FEI(-1)	0.114949	0.088721	1.295617	0.2427
FEI(-2)	-0.172823	0.077949	-2.217134	0.0685
BI	-0.083322	0.234693	-0.355023	0.7347
BI(-1)	-0.349975	0.257581	-1.358698	0.2231
BI(-2)	0.706931	0.257939	2.740687	0.0337
BI(-3)	0.303770	0.302123	1.005452	0.3535
C	-2.919092	4.177212	-0.698814	0.5108
R-squared	0.893190	Mean dependent var		3.807333
Adjusted R-squared	0.750776	S.D. dependent var		3.321965
S.E. of regression	1.658403	Akaike info criterion		4.133297
Sum squared resid	16.50181	Schwarz criterion		4.558127
Log likelihood	-21.99973	Hannan-Quinn criter.		4.128772
F-statistic	6.271789	Durbin-Watson stat		2.694423
Prob(F-statistic)	0.019000			

Source: Extract from E-view 9.0, 2023

Table 5 shows the ARDL Model regression results. The adjusted R-square found that foreign portfolio investment accounted for 75 percent variation in Nigeria real gross domestic product while 25 percent was attributed to factors not captured in the model. The F-statistic and probability proved that the model is statistically significant. The Durbin Watson indicates that the variables

are free from autocorrelation. The coefficient of foreign equity investment is 0.114949 which indicate a positive relationship. This means an increased in the value of foreign equity investment will cause 0.11 percent increase in Nigeria gross domestic product. Also, the coefficient of foreign bond investment is -0.349975, which means it has a negative influence on economic growth and statistically not significant at 5% level. This indicates that a percentage rise in the rate of foreign bond investment will bring 3.5 percent decrease in the economic growth. The positive finding confirm the findings of Baghebo and Apere (2014) that real gross domestic product in Nigeria showed positive long-term relationships with foreign portfolio investment, market capitalization, and trade openness. With the help of ordinary least square analysis, Bada (2016) that both foreign portfolio investment and other variables used in the study had a positive impact on economic growth in Nigeria, the findings of Albulescu (2015) that China's overseas portfolio investments were significantly impacted by the GDP, population growth, currency rate, and external debt, the findings of Claudiu (2015). However, the negative effect of foreign bond confirm the findings of Abdullahi, Murtala, and Magaji (2017) that foreign capital inflow has a negative impact on the expansion of the economies in sub-Saharan Africa, the findings of Brahim (2017) gives an explanation for the weak relationship between private capital flows and the region's sub-Saharan economic growth as well as policy suggestions for a stronger relationship and growth optimization.

Table 6: Pairwise Granger Causality Tests

Null Hypothesis:	Obs	F-Statistic	Prob.
FEI does not Granger Cause RGDP	16	1.72357	0.2233
RGDP does not Granger Cause FEI		1.03462	0.3875
BI does not Granger Cause RGDP	16	2.72905	0.1090
RGDP does not Granger Cause BI		0.65727	0.5375
BI does not Granger Cause FEI	16	0.15339	0.8596
FEI does not Granger Cause BI		2.16886	0.1607

Source: Extract from E-view 9.0, 2023

Given the probability values of the variables, the study found that there is no causality among the variables in the model.

CONCLUSION AND POLICY RECOMMENDATIONS

Conclusion

This study examined the nature and impact of long-run relationship foreign portfolio investment on Nigerian Economic growth, from the periods of 2005 to 2022. The economic growth was proxied by real Gross Domestic Product while foreign portfolio investment was proxied by FDI foreign equity and bond investment. The unit root test indicates that two variables are stationary at level while the remaining is stationary at first difference. The Granger causality test result shows that there is no causal relationship between foreign portfolio investment and economic growth. The cointegration bound test, for long run relationship, indicated that there is long run relationship between foreign portfolio investment and economic growth at 1%, 5% and 10% levels of statistical significance. Also, the error correction term (ECM-1) was significant with correct negative sign. The long-run regression of the ARDL model shows that increase in foreign equity investment is

associated with increase in real gross domestic product of Nigeria. This implies that foreign equity investment has no statistical significance and positive impact on Nigerian economic growth. This is confirming to a-priori expectation. It is expected that increase in foreign portfolio investment leads to increase in economic growth. However, the long-run regression of the ARDL model shows that increase in foreign bond investment is associated with decrease in real gross domestic product of Nigeria. This implies that foreign bond investment has no statistical significance and negative impact on Nigerian economic growth. This is contrary to a-priori expectation. It is expected that increase in foreign bond investment leads to increase in economic growth. From the findings, the study concludes that foreign portfolio investment explained significant variation in Nigeria real gross domestic product.

Recommendations

- i. Policies such as financial sector deepening should be directed toward attracting large inflow of foreign portfolio investment and absorptive capacity of Nigerian financial sector should be enhanced.
- ii. Given the findings of this study, it is recommended that federal government of Nigeria critically monitors and evaluates the components of the foreign portfolio investment into the country. This work suggests there are some pitfalls of foreign bond investment which makes it dangerous and negatively affects Nigerian economy.

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