

## FOREIGN PORTFOLIO INVESTMENT INFLOWS (FPIIS) AND NIGERIAN ECONOMIC GROWTH

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### **Abstract**

*The study examined the relationship between foreign portfolio investment inflows (FPIIs) and Nigerian economic growth for the period 1981 to 2021. In order to evaluate the effect of FPIIs on Nigerian economic growth, the following measures FPIIs, namely; Equity Foreign Portfolio Investment (EFPI), Bond Foreign Portfolio Investment (BFPI), Money Market Instrument Foreign Portfolio Investment (MMIFPI), Exchange Rate (EXCHR), Trade Openness (TROP) and Interest Rate (INTR) in relation to Nigerian economic growth proxied with Real Gross Domestic Product (RGDP) in Nigeria. The data was gathered from secondary sources which were mainly World Development Indicators, CBN Statistical Bulletin and CBN Annual Report and analyzed with unit root test, Auto-regressive Distributed Lag (ARDL) Bound Co-integration test and ARDL Co-integrating and Long form. The finding revealed that: EFPI it has a p-value of 0.6722 and a p-value of 0.7512 on the short and long run respectively. EFPI has an insignificant effect on RGDP in Nigeria on the short run and long run; BFPI has a p-value of 0.6620 and 0.6841 both on the short and long run. BFPI has an insignificant effect on RGDP in Nigeria on both on the short run and long run; MMIFPI has a p-value of 0.5528 and a p-value of 0.5681 on the short and long run respectively. MMIFPI has an insignificant effect on RGDP in Nigeria on the short run and long run; EXCHR has p-values of 0.4480 and 0.6987 both on the short and long run. EXCHR has an insignificant effect on RGDP in Nigeria on both on the short run and long run; TROP has p-values of 0.2916 and 0.2024 both on the short and long run. TROP has an insignificant effect on RGDP in Nigeria on both on the short run and long run and INTR has p-values of 0.0084 and 0.5586 both on the short and long run. INTR has a significant effect on RGDP in Nigeria on the short run but insignificant effect on the long run.. In the light of the findings, it evident that measures of FPIIs used has mixed effects of RGDP in Nigeria. Hence, the study concluded that FPIIs does not have significant effects on Nigerian economic growth. It was recommended that the financial system's supervisory and regulatory frameworks be strengthened further to ensure strict adherence to various policies aimed at tracking and controlling indiscriminate capital transmission via foreign portfolio investment transactions in equity.*

**Key Words:** *Foreign Portfolio, Investment Inflows, Equity Portfolio, Bond Portfolio and Money Market Instrument.*

## Introduction

Both underdeveloped and developing countries need adequate financial resources to stimulate economic activities and growth in the short and long run (Adofu & Adegioriola, 2020). These resources are needed to facilitate economic growth-related investment, company, and government operations. Globalization caused many countries to allow foreign investment to supplement weak domestic funds (Akinwale & Adekunle, 2019). Foreign portfolio investment inflows (FPIIs), a key part of foreign capital, entail foreign investors investing in a domestic country's financial instruments. Cross-border investments involve overseas investors buying cash, stock, or bonds to benefit (Baghebo & Apere, 2017).

FPIIs help emerging economies. It contributes to the recipient economy through increase capital accumulation for production activities, support of new technology, improvement of balance of payments, creation of business opportunities and high tax revenue (Okonkwo, 2017; Mugableh & Oudat, 2018). Furthermore, FPIIs influences economic performance of recipient nation in terms of productivities, employment generation, income distribution, poverty reduction and domestic investment enhancement (Gumus, Duru & Gungor, 2019). The importance of FPIIs in developing countries was justified by the dual gap analysis theory (Toyin & Oludayol, 2020).

FPIIs are easily traded investments. These products include stocks, bonds, and money market instruments issued by many foreign and local enterprises; these portfolio investment assets are extremely liquid, meaning they may be converted to currency at any time (Okonkwo, 2017). FPIIs are divided into two categories, according to Chaudry, Farooq, and Mushtaq (2018), the first is FPIIs according to financial instruments, such as stocks, bonds, and money market instruments; the second is portfolio investment according to economic sectors, such as government, banks, stock market, and other sectors of the economy.

The importance of FPIIs in the growth of stock markets has sparked substantial debate in emerging and developing nations in recent years, drawing the attention of policymakers and experts. The expanding wave of financial deregulation, and the resulting large flow of capital across economies, drew this attention (Onyeisi, Odo and Anoke, 2018). In the early 1990s, financial liberalization in developing nations began with the opening of capital accounts, which was followed by stock market liberalization (Anyanwu, 2017). Thus, there has been a push to

integrate developing countries' stock markets with the rest of the globe. Hence, the liberalization, domestic stock markets were opened to international investors as a means of achieving market integration with other markets (Bartram, et al, 2018). FPIIs have been encouraged as a result of liberalization, with the goal of improving market activity and access to foreign capital. Given the poor correlation of developing economies with developed markets, international investors have sought to diversify their assets, hedge against risk, and obtain higher returns in emerging markets (Allen et al., 2018). However, in developing nations, changes in investor composition have an impact on equity prices and risk pricing. This is especially true because a FPIIs is easily reversible, which can have an impact on stock prices and market stability.

It is evident from the foregoing that a vibrant socioeconomic and stable political environment is fundamental in attracting foreign investment and making it beneficial in the host economy (Toyin & Oludayol, 2020). It is on this background that Nigeria liberalized her economy and capital markets, as well as improved its capital market facilities and returned to stable democratic among other things. Up to the mid-1980s, Nigeria did not record portfolio investment (inflow or outflow) in her balance of payments statement (Ndugbu et al., 2021). Absence of foreign private investors in Nigeria's economy explains the zero return on the inflow column. This is due to the non-internationalization of the country's money and capital markets and the nondisclosure of FPIIs in foreign capital/money markets. Prior to 1995, ownership limits were imposed on foreign participation in the Nigerian economy. In the same vein, Nigerians could not freely invest in other countries (Adofu & Adegoriola, 2020).

Since the internationalization of the capital and money market and enthronement of democracy, cross-border listing and FPIIs in Nigeria have been encouraged and foreign interest in the country has been rekindled (Toyin et al, 2020). Despite the pass global economic meltdown and the shunning of risky investments, foreign investors and portfolio managers seeking cheap equities and high-yielding bonds continued to be attracted to Nigerian capital market. Statistics from the Nigerian Exchange Group (NEG) showed that FPIIs during 2009 was in excess of N228.986 billion which is an increase, when compared with the N153.457 billion recorded in 2008 (Ikazoboh, 2017). This increased further to N350 billion in 2010 (Ikazoboh, 2017) and furthermore to N511.74 billion in 2011 (Onyema, 2017). But the inflow fell sharply in 2016 and 2017 by about 31.9% and 45.5% to N470.83 billion and N256.52 billion respectively (NEG,

2018). In order to have a clearer picture of the pattern of FPIIs in Nigeria, it is imperative to conduct the impact of FPIIs on Nigerian EG.

### **Statement of the Problem**

Portfolio investment is not a new occurrence in Nigeria; in fact, Nigeria had a zero return on portfolio investment (inflow or outflow) in her total statement of economic transactions until the middle of the 1980s. According to Obadan, (2017), the lack of foreign portfolio investors in the Nigerian economy is largely due to the country's financial institutions' non-internalization and non-disclosure of information on portfolio investments in the foreign capital/money market. The Act was found to be antithetical to a free market economy. FPIIs dried up as equity investment flowed into Nigeria. Portfolio investing necessitates an investment climate that allows for the free flow of capital into and out of a country.

Nigeria's FPII influx has fluctuated since the democratic transition and the implementation of new policies. High insecurity, growing social vices, inconsistent government policies, and volatile macroeconomic variables like exchange rate and inflation rate may deter foreign investors. According to a literature study, few studies were done on FPIIs in underdeveloped nations like Nigeria. Several evaluated papers focus on economic FPII determinants (Idowu 2017; Mugableh & Oudat, 2018; Haider, Khan & Abdulahi, 2017). Okonkwo (2017); Akinmulegun (2018); Makoni and Marozva (2018); Onuoha, Okoro and Kinsley (2018); Aisien (2018) explored the association between FPIIs and capital market, industrial sector, exchange rate, and macroeconomic variables.

Bada (2017); Tsauroi (2017); Akinbobola, Ibrahim, and Ibrahim (2017); Ibrahim and Akinbobola (2017); Ezeanyej and Maureen (2019); Ezeanyej, & Ifeako (2019); Toyin & Oludayol, (2020); Adofu & Adegioriola (2020); Ndugbu, Otiwu, & Uzowuru (2021). These studies largely focus on the short-term effect of FPIIs on EG, and neither has employed the factors in our investigation. This study used Autoregressive Distributed Lag to assess the short- and long-term effects of FPIIs on EG. Based on this premise, this study investigated the relationship between FPIIs [proxied with; Equity Foreign Portfolio Investment (EFPI), Bond Foreign Portfolio Investment (BFPI), Money Market Instrument Foreign Portfolio Investment (MMIFPI), Exchange Rate

(EXCHR), Trade Openness (TROP) and Interest Rate (INTR)] and Nigerian EG [proxied with Real Gross Domestic Product (RGDP)] for the duration of 1981-2021.

## **Review of Related Literature**

### **Concept of FPIIs**

The acquisition of assets in a domestic stock/market by a foreign national or company is known as foreign portfolio investment. In other words, it refers to foreign people holding transferrable securities (issued or guaranteed by the importing country's government), equity shares, debentures, bonds, promissory notes, and money market instruments issued in a local market. Treasury bills, commercial papers, bankers' acceptances, and negotiable certificates of deposits are examples of money market instruments (Obadan, 2017).

Goetzmann and Kumar (2018) described international portfolio equities stocks in the US equity market investments as an available passive fund, as quoted by Iriobe, Obamuyi, and Abayomi (2018). EFPI in the Nigerian stock market also includes investments in the economy's shares and stocks. EFPI, according to Gathenya (2018), offer investors a diverse range of assets with various degrees of risk, return, and liquidity. FPIIs is defined by Onuorah and Akujuobi (2013), as cited in (Ezeanyejí and Ifeako, 2019), as "a component of international capital flows that involves the transfer of financial assets such as cash, stock, or bonds across international borders for the purpose of profit," and "occurs when investors purchase non-controlling interests in foreign companies or buy foreign corporate or government bonds, short-term securities, or notes."

FPIIs are a cross-border investment in securities with the intention of profit-making rather than management or legal control. IMF (2018) defined FPI as equity and debt issuances, including country funds, depository receipts, and direct purchases by foreign investors with less than 10% control. Capital boosts the economy through funding investment in infrastructure, agriculture, solid minerals, manufacturing, banking, and other real sector sectors (Iriobe, et al, 2018). Government or corporate organisations could promote the projects. FPI can help the Nigerian government and business sector improve infrastructure and industrial productivity.

Anyanwale (2017) includes FPI in FPIIs. FPIIs involve the commitment of funds to domestic securities by a foreign nation or the purchase of foreign securities by a resident. FPIIs may not involve positive transfers, just being a change in ownership. In finance, FPIIs is the entry of funds into a country where foreigners make purchase in the country's stock and bond markets, sometimes for speculation (Agu, Ogu & Ezeanyej (2019). It is a usually short term investment, as FDI partnership, involving transfer of technology and know-how. FPI is possibly influenced by high rates of return and reduction of risk through geographic diversification (Ezeanyej & Maureen 2019). The return on FPIIs is normally in the form of interest payments or non-voting dividends. It is a group of investment assets that focuses on securities from foreign markets rather than domestic ones. It gives the investor an exposure to growth in emerging and provides diversification allows investors to further diversify their assets by moving away from a domestic-only portfolio (Onyeisi, Odo & Anoke, 2018).

Accordingly, just as trade flows result from individuals and countries seeking to maximize their well being by exploiting their own comparative advantage, so too are capital flows the result of individuals and countries seeking to make themselves better off, moving accumulated assets to wherever they are likely to be the most productive (ERP, 2017). A portfolio investment is a grouping of assets such as stocks, bonds, and cash equivalents. FPIs are held directly by an investor or managed by financial professionals. FPI can be defined as a way in which investors diversify their portfolio with an international advantage (Appleyard & Alfred, 2017).

According to IMF (2001) cited in Umaru, Mohammed and Lawal (2021), FPI include investments made in bonds, notes, money market instrument financial derivatives outside those included under direct investment, or simply put, investments which are below the 10% rule as portfolio investor is generally restricted to small percentage of the equity thereby not getting involved in the firm's management. In line with IMF definition, FPI can also take any of the following forms: Investment in country fund which is an international mutual fund as a portfolio that could consists of securities, generally stocks of companies located in a particular country. It may also take the form of global funds consisting of securities in all parts of the world, including the country in which the investor resides. The major attraction of FPI is the ability to trade in the internationalized financial markets having ease of investment, divestment as well as absence of any form of hindrances to the functionality of the market (Umaru, Mohammed and Lawal, 2021).

FPI benefits the investors with the acquisition of dividends, capital gains and interest, while interest rates, speculation, expectation of profits, economic conditions, political stability and taxation policies are some of the factors that can affect its movement (Nwokoma, 2017). While the recipient countries will benefit as portfolio asset purchases from residents increase bank liquidity and encourage a credit boom. In addition to the liquidity of domestic capital market it favours the country's capital market development. It also leads to the financial sector development thus strengthening the financial infrastructure and deepening the process of financial intermediation. Dauda (2017) noted that foreign capital investment like portfolio investment increases the GDP and generates a stream of real incomes. It was observed that FPI into a country will lead to more foreign exchange and could help to reduce pressure on EXCHR (Nwosa and Amassoma, 2016). It has been observed that essential characteristic of instruments classified as portfolio instruments is that they are traded or tradable. According to UNCTAD (2005) cited Umaru, et al (2021), foreign investment in Africa has advanced much further and faster than integration especially in the area of structural, institutional and policy trends, and in some cases at its expense.

Nigeria has seen numerous and increased flow of FPI into the country, which has provided more capital for the companies operating in the country. By the foreign portfolio investments, the company's outputs are expected to increase, leading to increase employment opportunities, capacity utilization and economic growth, but this is not the case as more companies are operating below capacity, high EXCHR movements and high unemployment rates are evident (Iweze, Akinsola and Olanrewaju, 2020). It is based on the above observation that this study would analyze the contribution of FPIs to the EG and development in Nigeria.

### **Concept of Economic Growth (EG)**

The concept of EG is associated with the growth in population, resources development, technological advancement and increasing capital formation. EG can be defined as the increase in GDP and per capita income of the country (Onyema, 2017). EG of a particular country can be measured in terms of varied objects. EG could be said to combine three progresses: Capital accumulation, population growth and labour force.

i. Capital accumulation involves a trade-off between present and future consumption, giving up a little now so that more can be had later.

ii. Population growth and the associate increase in labor force have been considered a positive factor in stimulating economic growth.

iii. A large population means more domestic markets and a productive labour force.

## **Theoretical Review**

### **Portfolio Theory of International Capital Flows (PTICFs)**

The study would be anchored upon the PTICTs developed by Michael and Makoto in 2006, presented a tractable model of international capital flows in which the existence of nominal bonds and the portfolio composition of net foreign assets is an essential element in facilitating capital flows between countries (Ndugbu, Otiwu & Uzowuru (2021). Domestic and foreign currency bonds manage Nigerian consumption risk differently due to monetary policies. Nigerian national portfolios have different currency-denominated bonds (Nwafor, 2020).

Nigeria can optimise their net foreign assets (current account) by altering their gross positions in each currency's bonds, allowing international capital movements. The risk features of optimal portfolios ensure that current account movements are sustainable since net debtor countries pay lower rates of return on their gross liabilities than on their gross assets (Toyin & Oludayol, 2020). This maintains wealth distribution between nations, which is the theory this study was builds.

## **Empirical Review**

Trade openness affects EG in Ghana and Nigeria, according to Opong-Baah, Bo, Twi-Brempong, Amoah, Prempeh, and Addai (2022). Trade openness, inflation, real exchange, and investment are independent factors in this study. EG is the dependent variable. Pooled OLS (ordinary least square, fixed effects, random effects, and a Hausman test using panel data were employed in this work. Trade openness and real exchange rate positively and considerably affect economic growth utilising the random effect. Using Random effect estimated models, inflation and investment have little effect on EG.

Ndugbu, Otiwu & Uzowuru (2021) investigated Nigeria's 1986–2017 FPI and economic development link. ECM and granger causality were used in the study. Market capitalization, FPI, and trade openness were independent factors, while GDP is Nigeria's EG proxy. Trade openness and market capitalization promoted Nigerian EG, whereas FPI was negative and small.

Umaru, Mohammed & Lawal (2021) used ARDL estimation to examine Nigeria's FDI determinants. The analysis uses 1981–2018 CBN Statistical Bulletin and World Bank World Development Index (WDI) data on Nigeria. The bound test confirms cointegration. Foreign reserve, inflation rate, infrastructure, and population growth positively affect foreign direct investment in the long and short term. The model also corrects disequilibrium at 97.8% each year. Since CUSUM and CUSUMSQ are inside the 5% critical bound, the diagnostic test shows that the coefficients are stable.

Al-matari, Mgamma, Senan, and Alhebri (2021) evaluated the determinants of Gulf Cooperation Council (GCC) FDI inflows from 1995 to 2018. FDI was positively correlated with inflation, trade ratio, GDP, gross savings, and net foreign assets using GLS regression. FDI negatively correlated with foreign tourism.

Adofu & Adegioriola (2020) studies FPI and Nigerian economic growth 1986–2018. ARDL was used to analyse annual time series data from the CBN and National Bureau of Statistics. Results showed that present and one-period lag FPI had negative and minor effects on GDP (GDP). GDP causes FPI. GDP causes FPI. The report suggests that Nigeria's FPI fluctuation indicates that the country needs complete transformation to earn foreign investor confidence. Thus, the report advises government to quadruple its investment improvement efforts. The government should improve infrastructure, provide services, and loosen profit repatriation regulations to support existing investors.

### **Research Methodology**

The research design that was adopted in this study is the Ex-post facto and Quasi Experimental design. The ex-post facto research design will be use because this type of data is one that takes place after the event or the fact had taken place while Quasi Experimental design was adopted because it seeks to explore the causal effect of FPIs on Nigerian EG (i.e cause-effect-relationship between the explained (dependent) variable and the explanatory (independent) variable). In this circumstance, the research has no control over the variable of interest as and therefore cannot manipulate them because the variables are verifiable.

The data was gathered from secondary sources which were mainly World Development Indicators, CBN Statistical Bulletin and Annual Report for the 1991-2021 (41years). These



$\Delta$  = first differencing operator

$\varepsilon$  = white noise or disturbance error term

The co-integrating long-run relationship will be estimated using the specification below:

$$\Delta \ln RGDP = \partial_0 + \partial_1 \ln RGDP_{t-1} + \partial_2 \ln EFPI_{t-1} + \partial_3 \ln BFPI_{t-1} + \partial_4 \ln MMIFPI_{t-1} + \partial_5 EXCHR_{t-1} + \partial_6 \ln TROP_{t-1} + \partial_7 INTR_{t-1} + \varepsilon_t \dots \dots \dots 2.$$

The short-run dynamic model is specified thus:

$$\begin{aligned} \Delta \ln RGDP = & \sum_{i=1}^k \gamma_1 i \ln RGDP_{t-1} + \sum_{i=1}^k \gamma_2 i \ln EFPI_{t-1} + \sum_{i=1}^k \gamma_3 i \ln BFPI_{t-1} \\ & + \sum_{i=1}^k \gamma_4 i \ln MMIFPI_{t-1} + \sum_{i=1}^k \gamma_5 i EXCHR_{t-1} + \sum_{i=1}^k \gamma_6 i \ln TROP_{t-1} \\ & + \sum_{i=1}^k \gamma_7 i \Delta INTR_{t-1} + \varepsilon_c t \text{-----} -3 \end{aligned}$$

Where;

$\varepsilon_{c,t-1}$  = the error correction term lagged for one period

$\gamma$  = the coefficient for measuring speed of adjustment in equation (6)

RGDP = Real Gross Domestic Product

EFPI = Equity Foreign Portfolio Investment,

BFPI = Bond Foreign Portfolio Investment,

MMIFPI = Money Market Instrument Foreign Portfolio Investment,

EXCHR = Exchange Rate,

TROP = Trade Openness and

INTR = Interest Rate.

## Result and Discussions

### Descriptive Statistics

The descriptive statistics accounts for the mean, minimum, maximum value, and standard deviation (SD) value for the measures of FPIs and RGDP. The result is presented below:

**Table 4.2: Summary of Descriptive Statistics**

	LOGRGDP	LOGEFPI	LOGBFPI	LOGMMIFPI	EXCHR	LOGTROP	INTR
Mean	3.820118	1.821117	1.754214	1.955385	108.1676	5.548931	17.31024
Median	3.915637	1.748421	1.739572	1.830460	111.9400	5.790325	17.50000
Maximum	5.245699	3.624945	3.401800	3.777200	399.9600	6.765116	29.80000
Minimum	2.143982	-1.045757	-1.154902	0.610660	0.610000	3.280965	7.750000

Std. Dev.	1.057878	0.905727	0.708596	0.712092	109.9109	1.103244	4.637968
Observations	41	41	41	41	41	32	41

**Source: Econometric Views Version 9.0 Output (2022)**

Firstly, RGDP reported an average and SD value of 3.8201 and 1.0579 suggesting that RGDP has recorded a rapid growth since the SD value is lesser than the mean value, this further implies that RGDP has been on consistent increase over the years. Meanwhile, RGDP reported had minimum and maximum values of 2.1440 and 5.2457 respectively. Further, EFPI reported an average and SD values of 1.8201 and 0.9057 suggesting that EFPI has recorded a tremendously growth since the SD value is lesser than the mean value, it further implies that the Nigeria securities exchange has put various strategies in place to attract EFPI to the securities market in Nigeria. Meanwhile, EFPI reported had a minimum and maximum value of -1.0458 and 3.6249 respectively. A way further, BFPI reported an average and SD value of 1.7542 and 0.7086 suggesting that BFPI has recorded a tremendous growth due to the strategies adopted by the bond market in Nigeria to attract foreign bond. This is evident, since the SD value is lower than the mean value. Meanwhile, BFPI reported had a minimum and maximum value of -1.1549 and 3.4018 respectively. Also, MMIFPI reported an average and SD value of 1.9554 and 0.7121 suggesting that MMIFPI deviate much away from the mean value. Meanwhile, MMIFPI reported had a minimum and maximum value of 0.6107 and 3.7772 respectively. This portrays that the money market administrator has attracted much MMIFPI to the country with their attractive policies. More also, EXCHR reported an average and SD value of 108.1676 and 109.9109 suggesting that EXCHR has recorded a slow growth since the SD value is greater than the mean value. It implies that the value of the Naira has been depreciating over the years when compare to the US Dollar. Meanwhile, EXCHR reported had a minimum and maximum value of 0.6100 and 399.9600 respectively. Furthermore, TROP reported an average and SD value of 5.5489 and 1.1032 suggesting that TROP has recorded a tremendously growth over the years since the SD value is lesser than the mean value. This implies that the Nigerian economy has encouraged foreign trade, thereby increasing their trade balance. Meanwhile TROP has the minimum and maximum values of 3.2810 and 6.7651 respectively. Lastly, evidenced that INTR reported an average and SD value of 17.3102 and 4.6380 suggesting that SD is lower the mean value, which implies that INTR has been has rising. Meanwhile, INTR reported had a minimum and maximum value of 7.7500 and 29.8000 respectively.

## Correlation Matrix

The Correlation matrix is presented in table 4.3 below:

**Table 4.3: Correlation Matrix For the Independent and Dependent Variables**

	LOGRGDP	LOGEFPI	LOGBFPI	LOGMMIFPI	EXCHR	LOGTROP	INTR
LOGRGDP	1.000000						
LOGEFPI	0.619043	1.000000					
LOGBFPI	0.203860	0.432075	1.000000				
LOGMMIFPI	0.556061	0.562890	0.345649	1.000000			
EXCHR	0.594117	0.626169	0.270869	0.779822	1.000000		
LOGTROP	0.564016	0.697599	0.164149	0.646880	0.805387	1.000000	
INTR	-0.014910	0.052933	-0.110892	-0.080426	-0.035401	0.061848	1.000000

**Source: Econometric Views Version 9.0 Output (2022)**

The correlation matrix reported in table 4.3 above revealed that EFPI, BFPI, MMIFPI, EXCHR and TROP exerted positive correlation with RGDP in Nigeria while INTR exerted negative correlation with RGDP in Nigeria. Furthermore, EFPI reported a coefficient value of 0.6190 suggesting that the correlation between EFPI and RGDP in Nigeria and is high, though is positive. Meanwhile, the rest study variable reported slightly lower correlation. Generally, the result from the table shows that problem of multi-collinearity is not anticipated since the correlation coefficients of EFPI, BFPI, MMIFPI, EXCHR, TROP and INTR in relation to RGDP is lower than the bench mark of 0.7. Though, a further test will be carried out to ascertain this condition.

## Multi-Collinearity Test

The result is presented below:

**Table 4.4: Multi-collinearity Test**

Variables	Variance Inflation Factor	Tolerance Value
LOGRGDP(-1)	0.002795	5.469440
LOGEFPI	0.000181	2.693113
LOGBFPI	0.000167	1.469108
LOGMMIFPI	0.000466	3.268443
EXCHR	0.15E-08	4.557526
LOGTROP	0.001032	2.221550
INTR	0.14E-06	1.294204

**Source: Econometric Views Version 9.0 Output (2022)**

From the above Table 4.4, the tolerance level of variance in the predictor variables EFPI, BFPI, MMIFPI, EXCHR, TROP and INTR is not predicted by other predictors' variable. This is because their tolerance values are higher than 0.10 meanwhile the Variance inflation factor are less than 10. This shows the absence of multi-collinearity problem.

### Data Validity Test

Since the data are time series data, spanning for 1981-2021 (41years), the validity test was carried out using the LM test and Heteroskedasticity Test in order to ascertain the validity of the data for the analysis. This is presented in Table 4.5 below;

#### Table 4.5: Data Validity Test

Table 4.5a: Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.659180	Prob. F(2,22)	0.5272
Obs*R-squared	1.809198	Prob. Chi-Square(2)	0.4047

Source: E-VIEW, 9.0 Outputs, 2022.

Prior to estimating the models, residuals of the variables were ascertained to check for the presence of serial correlation. This was done using the serial correlation LM test. The serial correlation LM test in Table 4.5a details that there is no element of serial correlation in the models owing to the fact that the p-values of the f-statistics are insignificant at 5% level of significance.

#### Table 4.5b: Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.604309	Prob. F(7,24)	0.7464
Obs*R-squared	4.795057	Prob. Chi-Square(7)	0.6850
Scaled explained SS	6.309353	Prob. Chi-Square(7)	0.5041

Source: E-VIEW, 9.0 Outputs, 2022.

Heteroskedasticity occurs when a variable's variability differs from that of a predictor variable. To ensure that there is homoscedasticity in the model estimation, the heteroskedasticity test via the Breusch-Pagan-Godfrey was performed. With the result there is no problem of heteroskedasticity in the models as the p-values of the f-statistics are insignificant at 5% significance level. From the table above, the P-value of the chi-square which stood at 0.8076. This gives us prove that there is absence of Heteroskedasticity in the study, since it is not significant at 5%. Thus, the null hypothesis that states that the residuals have no constant variance and zero mean is rejected. Hence, we conclude that the model is Homoskedastic (i.e. it has equal variance). On this note, we can boldly state the model is reliable and fit for prediction.

### Augmented Dickey-Fuller (ADF) Unit Root Test

The rationale behind this test is to avoid the problem of spurious regression which is commonly associated with time series data.

**Table 4.6: Summary of ADF Test**

ADF test at Levels				
Parameter	ADF test statistic	Test critical value @ 5%	Prob.*	Decision
RGDP	-1.394594	-2.936942	0.5753	Non-stationary
EFPI	-3.179039	-2.936942	0.0287	Stationary
BFPI	-3.490626	-2.936942	0.0134	Stationary
MMIFPI	-2.347446	-2.936942	0.1628	Non-stationary
EXCHR	2.714122	-2.936942	1.0000	Non-stationary
TROP	-1.848892	-2.967767	0.3506	Non-stationary
INTR	-3.399770	-2.936942	0.0168	Stationary
ADF test at 1 <sup>st</sup> Difference				
RGDP	-3.459534	-2.938987	0.0147	Stationary
EFPI	-7.613470	-2.938987	0.0000	Stationary
BFPI	-7.256590	-2.938987	0.0000	Stationary
MMIFPI	-6.223257	-2.943427	0.0000	Stationary
EXCHR	-4.074471	-2.938987	0.0029	Stationary
TROP	-1.772206	-3.040391	0.3810	Non-stationary
INTR	-5.918383	-2.941145	0.0000	Stationary

**Source: Econometric Views Version 9.0 (2022)**

The table above shows the order of integration (stationarity) of the series used for the study. All series were subjected to the ADF test and results indicate that all series except BFPI, EXCHR and INTR were found to be stationary at levels. However, when subjected further; EFPI, BFPI, MMIFPI, EXCHR, TROP, INTR and RGDP attained stationarity at first difference. This therefore indicates that all series attained stationarity at level and first differencing. Since our series were stable at levels (1(0) and first differencing (1(1)), we should study the long-term link between FPIIs and RGDP in Nigeria.

### ARDL Bound Test

The cointegration relationship between FPIIs and RGDP is presented in Table 4.7:

**Table 4.7: ARDL Bounds Test**

Date: 01/13/23 Time: 11:04

Sample: 1984 2018

Included observations: 31

Null Hypothesis: No long-run relationships exist

Test Statistic	Value	K
F-statistic	7.365808	6

#### Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.12	3.23

5%	2.45	3.61
2.5%	2.75	3.99
1%	3.15	4.43

### Source: Econometric Views Version 9.0 Output (2022)

From Table 4.7, the F-statistic 7.3658 above the 5% critical values at I(0) and I(1) boundaries, rejecting the null hypothesis and indicating a long-term association between variables. FPIIs and RGDP in Nigeria have a long-term association.

### ARDL RESULT

**Table 4.8: ARDL Cointegrating And Long Run Form**

Dependent Variable: LOGRGDP

Selected Model: ARDL(1, 0, 0, 0, 0, 0, 0)

Date: 01/13/23 Time: 11:03

Sample: 1981 2021

Included observations: 32

Cointegrating Form				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOGEFPI)	-0.005768	0.013465	-0.428394	0.6722
D(LOGBFPI)	-0.005720	0.012924	-0.442589	0.6620
D(LOGMMIFPI)	0.012995	0.021585	0.602026	0.5528
D(EXCHR)	-0.000191	0.000248	-0.771320	0.4480
D(LOGTROP)	0.034638	0.032121	1.078338	0.2916
D(INTR)	0.005771	0.002009	2.872071	0.0084
CointEq(-1)	0.035134	0.052866	0.664581	0.5127

Cointeq = LOGRGDP - (-0.1642\*LOGEFPI -0.1628\*LOGBFPI + 0.3699  
\*LOGMMIFPI -0.0054\*EXCHR + 0.9859\*LOGTROP + 0.1643\*INTR  
-1.9641 )

Long Run Coefficients				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGEFPI	-0.164175	0.511801	-0.320778	0.7512
LOGBFPI	-0.162802	0.395224	-0.411922	0.6841
LOGMMIFPI	0.369857	0.638992	0.578814	0.5681
EXCHR	-0.005444	0.013898	-0.391721	0.6987
LOGTROP	0.985876	0.752289	1.310503	0.2024
INTR	0.164252	0.276920	0.593140	0.5586
C	-1.964053	3.949078	-0.497345	0.6235

### Source: Econometric Views Version 9.0 Output (2022)

The Error Correction coefficient (cointEq-1) is estimated at 0.0351, meaning the model corrects its previous periods disequilibrium at 3.51% annually. Thus, boosting FPII variables at 3.51%

annually will improve them greatly over time. The Durbin Watson Statistics (2.088414) confirmed that the model is not serially correlated.

### **EFPI and RGDP in Nigeria**

The outcome in table 4.8 above demonstrated unequivocally that a unit increase in EFPI will cut RGDP by -0.0058 and -0.1642 (0.58% and 16.42%) on a short- and long-term basis, respectively. This further shown that EFPI has significant adverse short- and long-term effects on RGDP, and that these effects are likely to extend to Nigeria's RGDP. EFPI failed to pass the test of statistical significance in terms of both short- and long-term results. This suggests that both in the short and long terms, EFPI has little impact on RGDP. This finding is in line with the findings of Nwafor (2020) whom established insignificant effect coexistence between EFPI and RGDP but contradicts the findings of Ndugbu, Otiwu & Uzowuru (2021), they established a significant effect coexistence between EFPI and RGDP.

### **BFPI and RGDP in Nigeria**

According to the study, BFPI had a short- and long-term negative negligible impact on RGDP. The negative result implies that a 1% increase in BFPI will reduce real gross domestic product (RGDP) by 0.0057 (0.57%) in the short run but by -0.1628 (16.28%) in the long run. To put it another way, the more BFPI a country draws, the less favourable it may be in the long and short runs. However, at this time, the BFPI are not statistically significant enough to have an impact on RGDP. Therefore, both in the short and long periods, BFPI has little impact on RGDP. This result is in line with the findings of Ilugbemi & Ogunlokun (2020) whom established an insignificant coexistence between BFPI and RGDP but contrary to the findings of Ndugbu, Otiwu & Uzowuru (2021) and Nwafor (2020), they established a significant coexistence between BFPI and RGDP in Nigeria.

### **MMIFPI and RGDP in Nigeria**

The result in table 4.8 above demonstrated unequivocally that a unit increase in MMIFPI will boost RGDP in Nigeria by 0.0130 (1.30%) in the short run and by 0.3699 (36.99%) in the long run. This further demonstrated that the possibility of a favourable impact on Nigeria's RGDP is higher the more MMIFPI the nation attracts in the form of FPIIs in the NSE. The p-values of 0.5528 and 0.5681 in the short and long runs, respectively, show that the MMIFPI did not pass

the test of statistical significance on the short and long runs. This finding is in line with the findings of Ilugbemi & Ogunlokun (2020) an insignificant coexistence between MMIFPI and RGDP but contrary to the findings of Ndugbu, Otiwu & Uzowuru (2021) and Nwafor (2020), they established a significant coexistence between MMIFPI and RGDP in Nigeria.

### **EXCHR and RGDP in Nigeria**

According to the analysis, EXCHR had a short-term and long-term negative negligible effect on RGDP. The negative result implies that a 1% increase in EXCHR will reduce RGDP in the near and long terms by -0.0002 (0.02%) and -0.0054 (0.54%), respectively. To put it another way, the longer and shorter term effects will be negative the more the country's EXCHR climbs. With p-values of 0.4480 and 0.6987, respectively, it is clear that EXCHR are not statistically significant enough at this time to have an impact on RGDP in the medium or long term. Hence, we draw the conclusion that EXCHR has no appreciable short- or long-term effects on RGDP. This result is in line with the findings of Ilugbemi & Ogunlokun (2020) but contrary to the findings of Oppong-Baah, Bo, Twi-Brempong, Amoah, Prempeh & Addai (2022) and Olaniyan, Adegboyo, Owoniya and Alaketu (2020).

### **TROP and RGDP in Nigeria**

The earlier tested regression result confirmed that TROP had both a short-term and long-term positive significant impact on RGDP in Nigeria. The favourable outcome is consistent with the study's initial expectations. The positive co-implications efficient imply that a 1% increase in TROP will raise Nigeria's RGDP by 0.0346 (3.46%) in the short term and 0.9859 (98.59%) in the long term. The p-values for TROP in the short and long runs, respectively, are 0.2916 and 0.2024, both of which are higher than 5%. Thus, we draw the conclusion that, both in the medium and long terms, TROP will positively but marginally affect Nigeria's RGDP. This is in line with the findings of Oppong-Baah, Bo, Twi-Brempong, Amoah, Prempeh & Addai (2022) and Ndugbu, Otiwu & Uzowuru (2021) but contradicts the findings of Olaniyan, Adegboyo, Owoniya and Alaketu (2020).

### **INTR and RGDP in Nigeria**

The analysis confirmed that INTR had a favourable short-term substantial influence on RGDP and a favourable long-term insignificant effect on RGDP. The positive result implies that a 1%

increase in INTR will raise RGDP by 0.0058 (0.58%) in the near term and by 0.1643 (16.43%) in the long term. To put it another way, if a country's INTR rises, both the short- and long-term effects may be favourable. However, in terms of a statistically significant link, INTR was statistically significant in the short run but not yet statistically significant enough to influence RGDP over the long run. Hence, we draw the conclusion that INTR has both short- and long-term effects on RGDP. This result is in line with the findings of Gini and Akokaike (2021) but contrary to the findings of Ilugbemi & Ogunlokun (2020) and Olaniyan, Adegboyo, Owoniya and Alaketu (2020).

### **Conclusion and Recommendations**

In the light of the findings, it evident that measures of FPIs used has mixed effects of RGDP in Nigeria. It only INTR that has significant effects on RGDP in Nigeria in both short run while EFPI, BFPI, MMIFPI, EXCHR and TROP exerts insignificants on RGDP in both short and long run in Nigeria. Hence, the study concluded that FPIs does not have significant effects on Nigerian EG. Based on the findings, the following was recommended:

1. The study suggests that the financial system's supervisory and regulatory frameworks be strengthened further to ensure strict adherence to various policies aimed at tracking and controlling indiscriminate capital transmission via FPI transactions in equity.
2. To promote stock market development, built-in loopholes that enable asymmetric manoeuvres by stock market players who surreptitiously implement security procurement mandates from any source without sufficient paperwork should be prohibited.
3. Modalities should be put in place to attract foreign bonds and money market instruments investment, since it plays insignificant effects in boosting the activities of the NSE.
4. The study is of the opinion that government should provide enabling business environment that will encourage FPI which will enhance stock market development; Interest and exchange rate policies should be pursued to attract FPI investors.
5. The Nigerian economy should be diversified by trade liberalization and privatization. Since, TROP has significant effects on the Nigerian EG in both short and long run.
6. Finally, the Nigerian government as a matter of urgency should build institutional capacity that will engender the inflow of FPI.

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