

## **Determinants of Foreign Portfolio Investment Volatility and Macroeconomic Stability in Nigeria**

<sup>1</sup>Charles Ajuwa Nzete, <sup>2\*</sup>Yusuf Wasiu Akintunde

<sup>1</sup>Central Bank of Nigeria, FCT Abuja

<sup>2</sup>Department of Economics, Nile university of Nigeria, FCT Abuja

---

**Abstract:** *The study examined the determinants of Foreign Portfolio Investment (FPI) volatility using quarterly data obtained from the Central Bank of Nigeria (CBN) Statistical Bulletin and the National Bureau of Statistics (NBS). Data were analysed using Generalized Autoregressive Conditional Heteroskedasticity (GARCH) technique. "This study reveals that the volatility of Foreign Portfolio Investment (FPI) is a major contributor to the flow of other foreign capitals being imported into the Nigerian economy and since it takes the largest share of capital importation into the country, once it is lifted back due to high interest rate in other economies, the vacuum it leaves cannot be easily occupied by the FDI and other investments. The results also reveal that there exists significant relationship between macroeconomic factors and foreign portfolio investment volatility. Thus, less volatility in international portfolio flows is associated with high interest rate, currency depreciation, foreign direct investment, lower inflation, and higher GDP growth rate of the host country. The study therefore urges the monetary authority in Nigeria to resist the temptation of raising interest rate to attract FPI at the expense of IPOGR and CPI. The authority should strengthen their efforts more at wooing more FDI which is rather more stable.*

**Keywords:** *Capital importation, Causality, Foreign direct investment, GARCH, Portfolio investment, Volatility,*

---

Date of Submission: 11-12-2019

Date of acceptance: 26-12-2019

---

### **I. Introduction**

#### **Background to the study**

The trends of capital flows to developing countries and especially countries in transition in the 1990s has two key features: private flows are the major sources of capital, with foreign direct investment (FDI) and the foreign portfolio investment (FPI) being the dominant components; and the flows have become more subject to sharp boom-and-burst swings (Kim and Yang, 2011); although, such globalization of capital can bring benefits but is also full of risks. Similarly, developing countries and countries in transition are facing a policy dilemma between the need to attract external sources of finance for development, including short term finance, and the need to be selective in the types of finance in order to reduce the likely negative impact resulting from the volatility of flows (UNCTAD, 1999)".

Macroeconomic factors play a major role in attracting foreign investment in any country and foreign private investment has become the main instrument of financial globalization which has been adopted by developed countries since 1980's to attract huge influx of foreign private investment. Foreign private investment, which is critical to investment in different countries, has two components; the Foreign Direct Investment (FDI) and the Foreign Portfolio investment (FPI) (Singh and Weisse, 1998). Furthermore, Lipsey (1999) found that foreign direct investment (FDI) is more stable, fairly dependable and is relatively permanent in nature than foreign portfolio investment (FPI); hence, FPI could as well be referred to as "hot money". However, it is the desire of majority of developing countries to always want to raise the foreign capital in order to enhance economic development (Broto, Diaz-Cassou, and Erce- Dominguez, 2011), in order to maintain full employment and stability in domestic prices. This is supported the work of Ugwuanyi (2004) in Nigeria, wherein it was stated that macroeconomic performance could be adjudged by three broad measures - unemployment rate, inflation rate and the growth rate of output.

However, the deregulation of financial markets and the increase in cross-border capital flows were the major factors suspected to be behind the recently observed excess volatility of some of the main currencies. Notable among them is the US dollar, which was relatively stable in the seventies but became highly volatile since the early eighties. The high level of cross-border portfolio (equity and bond) flows accounted for only 4percent of GDP in 1975, however, this percentage surged to 100percent in the early 1990s and had reached 245% by 2000 (Hau and Rey, 2006). Observably, global capital flows rose from about 2percent of world GDP in 1975 to over 20percent in 2007. Conversely, they fell sharply at the time of the collapse of Lehman Brothers in September 2008, and interestingly, it began to rise again in 2009 (see Milesi-Ferretti and Tille, 2011). Cross-

border capital flows could also be behind multiple equilibria, as noted by Jeanne and Rose (2002) that exchange rate volatility may differ between countries with a floating regime, even if their macroeconomic fundamentals are the same, as a result of ‘noise trading’ in the foreign exchange markets. Chen (2006) as well noted that higher interest rates move the exchange rate to a higher level too.

### **Problem statement**

The potential benefits of the FPI on the economic activity in the host country are underlined by Evans (2002). Foreign portfolio investment increases the liquidity of domestic capital markets, brings discipline and know-how into the domestic capital markets, and facilitates the use of new products and instruments for risk mitigation. This paper therefore examined some of the endogenous and exogenous causes of foreign portfolio investment (FPI) volatility in Nigeria, for which most studies have been silent and the impact of the monetary and fiscal responses that ensured the attainment of domestic and exchange rate stability that led particularly to the country’s exit from recession. Hence, the need to do a study on the determinants of capital flight (proxy by FPI), was a necessity. Although, studies have elaborated the apparent role of external commodity price shock, delayed budget implementation and general insecurity as major reasons the Nigeria slid into recession, but the effect of the global capital flow reversal (FPI) deserves serious mention. The study therefore tried to proffer answers to the following questions: (1) what are the main factors that determine the inflow of FPI into Nigeria? (2) what effect does the FPI has on Nigeria’s economic growth? However, the main objective of the study is to evaluate the effects of FPI volatility on economic growth rate in Nigeria and the measures by the monetary and fiscal authorities that ensured her economic stability. Furthermore, the debate on the role of foreign investments in bringing about economic growth has received the attention of policy makers, researchers and international organizations. This is in view of the increasing wave of globalization and the consequent substantial movement of capital across economies, enabled by improved information technology. However, the lessons from the 2008/09 global financial crises have shown that, as much as foreign investments have become increasingly important for developing economies, they are also sources of vulnerabilities to such economies (Tumala *et al.*, 2011). Also, “the alarming decline in capital importation in the first quarter of 2016 was a serious signal for the difficult period that the Nigerian economy went through. Although there a number of reasons why the amount of capital imported in recent years may have been higher than usual (such as the inclusion of Nigerian in the JP Morgan Bond Index, and globally low interest rates triggering a search for higher yields over this period) but the fact that the amount of capital imported significantly dropped to a record low suggests that there are other reasons why Nigeria has attracted less foreign investment in recent quarters. Investors may be concerned about whether or not they will be able to repatriate the earnings from their investments, given the current controls on the exchange rate. In addition, as growth has slowed in recent quarters, there may be concerns about the profitability of such investments”. In 2016, (first quarter) there was a large change in the composition of capital imported. Nigeria economy experienced a quarterly decline in portfolio investment of 71.55percent as compared to 61.18percent in the previous quarter. Therefore, analysis of reliable data on foreign portfolio investment (that constitutes the largest shock to capital importation into Nigeria economy) is therefore of significant importance for Nigeria government to know the extent of their degree of vulnerabilities to developments in other economies.

## **II. Literature Review**

### **Empirical Review**

Caporale *et al.* (2017) “investigated the effects of equity and bond portfolio inflows on exchange rate volatility using monthly bilateral data for the US vis-a-vis seven Asian developing and emerging countries (India, Indonesia, Pakistan, the Philippines, South Korea, Taiwan and Thailand) over the period 1993:01–2015:11. GARCH models and Markov switching specifications with time-varying transition probabilities were estimated in addition to a benchmark linear model. The evidence suggests that high (low) exchange rate volatility is associated with equity (bond) inflows from the Asian countries toward the US in all cases, with the exception of the Philippines. Therefore, capital controls could be an effective tool to stabilise the foreign exchange market in countries where flows affect exchange rate volatility.

Tsaurai (2017) examined the impact of foreign portfolio equity investments on economic growth on fourteen (14) Asian and European emerging markets using panel data. Generalised Methods of Moments (GMM) was used in order to cater for the dynamic nature of economic growth data and the possible endogeneity problem that exists between foreign portfolio investments and economic growth. The study noted that foreign portfolio equity investments positively but non-significantly influenced economic growth in the Asian and European emerging markets, consistent with findings by Durham (2004). From a theoretical point of view, this finding isn’t out of place since the current study excluded bonds (stable form of foreign portfolio investments) and only focused on foreign portfolio equity investments, which is a volatile part of foreign portfolio investments. Initial GDP was found to have had a positive and significant impact on GDP in line with Levine *et al.* (2000)’s observations. The study therefore urges Asian and European emerging markets to speed

up the implementation of foreign portfolio investment enhancements policies and initiatives in order to guarantee long term positive growth. “Gumus and Gungor (2013) analyzed the relationship between foreign portfolio investment to Istanbul Stock Exchange and main macroeconomic variables using monthly data for the period 2006:12 – 2011:12. Vector Autoregression method (VAR), Granger Causality Tests, Impulse Responses and Variance Decomposition are used for the purpose of examining the impacts of these variables on the level of portfolio investments to Turkey. According to Granger Causality Tests and Impulse Responses, foreign portfolio investment affects Istanbul Stock Exchange Price Index and exchange rates. Only industrial production index has effect on foreign portfolio investment. Variance decomposition says that variation in Istanbul Stock Exchange Price Index and variation in Exchange Rates result from Foreign Portfolio Investments. Other variations of variables result from their own shocks”.

Fontana (2015a) studied foreign investments in Romania, The work presents a real case: the chance of big wins and the risk of large or total losses, the shareholders wish to subscribe with a contribution in kind. The contract conditions allow shareholders to become owners of a large number of shares originating from a transnational. The study noted that, while the value of real estate assets which can be traded in Romania knows a constant decrease, the value of the shares contributed to capital is growing. The study therefore concluded that Romanian shareholder advantage is huge, but volatile.

Albulescu (2015) investigated the impact of foreign investment on the host country economic growth. The study specifically test the effect of the foreign direct investment (FDI) and of the foreign portfolio investment (FPI) on the long term economic growth in Central and Eastern European (CEE) countries, using a panel framework. GMM approach, which corrects for endogeneity issues between growth and investment was used. The result reveals that both direct and portfolio investments exert an influence on the long-term economic growth, when equity and investment funds were considered. It also shows that incentive packages should be oriented toward both types of investments. Waqas *et al.* (2015) in their study observed that macroeconomic factors play a pivotal role in attracting foreign investment in the country. The study then investigated the relationship between macroeconomic factors and foreign portfolio investment volatility in South Asian countries. Noting that monthly data is ideal for measuring portfolio investment volatility; GARCH(1,1) was used because shocks are responded quickly by this model. The results reveal that there exists significant relationship between macroeconomic factors and foreign portfolio investment volatility. Thus findings of this study suggest that foreign portfolio investors focus on stable macroeconomic environment of country.

In Nigeria, Onyeisi *et al.* (2016) examined the impact of foreign portfolio investment inflows on stock market growth from 1986 to 2014. The study used co-integration, vector error correction model and Granger Causality econometric tools. The results obtained includes the following: the trace statistics indicates one (1) co-integrating equation at 5% level of significance, the vector error correction model indicates long-run significant impact of foreign portfolio investment on stock market growth in Nigeria, and the Granger Causality shows there is no causality between foreign portfolio investment and stock market growth in the Nigerian economy. The implication of the results is that foreign portfolio investment (FPI) inflows may not contribute positively to the increase in stock market when there is no conducive business environment for foreign investments to thrive in Nigeria. The study recommends that Federal Government of Nigeria should strengthen the Security and Exchange Commission (SEC) to promote constant inflows of foreign portfolio investment to Nigeria. Also, “Eniekezimene (2013) examined the impact of foreign portfolio investment (FPI) on capital market growth by x-raying the growth of FPI in the market as well as the transmission channels through which changes in FPI affect growth of the market. Using Ordinary Least Squares (OLS) methodology with a Parsimonious Error Correction Model Specification, after testing for the stationary status (unit root) and long run relationship (co-integration) of the variables, the result showed that foreign portfolio investment has a positive impact on capital market growth with the speed of adjustment from short run to long run as indicated by the ECM-1 having a relatively high value of 66% in absolute terms. Futhermore, Omorokunwa and Ikponmwosa (2014) realized that a viable, stable, and predictable exchange rate regime could presents rich a vista for inflow of foreign investment. The study therefore employs the Error Correction Model (ECM) after a battery of preliminary investigations which include the Augmented Dickey Fuller (ADF) test for stationarity and the Engle and Granger two-step co integration procedure to examine the dynamics of exchange rate and foreign investment. The results revealed among other things that; exchange rate volatility has a very weak effect on the inflow of Foreign Direct Investment (FDI) to Nigeria, both in the long run and in the short run and that exchange rate volatility has a weak effect on foreign portfolio investment in the short run but a strong positive effect in the long run. Given this finding, the study recommends the need for a sound exchange rate management system in the country.

Ilegbinosa *et al.* (2015) examined the impact of domestic investment on economic growth in Nigeria using annual time series data from 1970-2013. Multiple regression and cointegration methods were employed to analyze the data. The study divided government expenditure into productive and protective expenditures, and found out the crowding in and crowding out impact of government investment on private investment. The result indicated that private investment and government productive investment had positive but insignificant impact

on economic growth; while government protective investment had negative as well as insignificant impact on economic growth within the period under study. Government should improve on its budget implementation, rationalization and give more priority to expenditures on economic and social services that make up for private investment”.

### III. Methodology

#### Sources of Data

The data for this study were secondary in nature and they were obtained from the Central Bank of Nigeria (CBN) Statistical Bulletins, various editions; the National Bureau of Statistics (NBS); and the study utilized the E-View 10 software for the analysis of the data.

**Econometric model:** Following Bollerslev (1986), this study adopts the Generalized Autoregressive Conditional Heteroskedasticity (GARCH). The idea of GARCH was generated by including lagged conditional variance terms in equation and the simplest form of GARCH is GARCH model. GARCH model can be generalized to additional lag terms. In GARCH (p,q) model where  $P$  is the order of GARCH term  $\sigma^2$  and "q" is the order of ARCH term  $\mu^2$  is given by:

$$\sigma_t^2 = \alpha + \alpha_1 \mu_{t-1}^2 + \dots + \alpha_q \mu_{t-q}^2 + \beta_1 \sigma_{t-1}^2 + \dots + \beta_p \sigma_{t-p}^2 \quad \text{eqn. (1)}$$

In summation form, the above equation might be written as:

$$h_t = \alpha + \sum_{i=1}^q \alpha_i \mu_{t-i}^2 + \sum_{i=1}^p \beta_i \sigma_{t-i}^2 \quad \text{eqn. (2)}$$

$\sigma_t^2$  = Conditional variance at time t

$\mu_t$  = Disturbance term

Hansen and Lunde (2001) argues that GARCH provides the best forecasting volatility results. Here GARCH is used because Hansen and Lunde (2001) also argue that GARCH (p,q) will be used where daily data of several decades is used or hourly data of several years. As in this study quarterly data is used so GARCH is the best forecaster for measuring the volatility in foreign portfolio investment. Also, GARCH is used because it respond to the shocks quickly. The ultimate equations of our Garch model:

$$\Delta \ln FPI_{vt} = \alpha_0 + \sum_{i=0} \Delta \ln(FPI_{vt-i}) + \mu_t \quad \text{eqn. (3)}$$

$$h_t = \gamma_0 + \sum_{i=1}^p \delta_i h_{t-i} + \sum_{j=1}^q \gamma_j \mu_{t-j}^2 + \sum_{k=1}^r d_1 \Delta \ln CPI_{t-k} + \sum_{l=1}^s d_2 \Delta \ln RER_{t-l} + \sum_{m=1}^t d_3 \Delta \ln RIR_{t-m} + \sum_{n=1}^u d_4 \Delta \ln FDI_{t-n} + \sum_{o=1}^v d_5 \Delta GDPGR_{t-o} + \sum_{p=1}^w d_6 \Delta \ln SMI_{t-p} + \sum_{q=1}^x d_7 \Delta \ln IPG_{t-q} + \mu_t \quad \text{eqn. (4)}$$

### IV. Results And Discussion

#### Result of Unit Root Tests

To examine the existence of stochastic non-stationarity in the series, the study tests for the order of integration of the individual variables through the unit root test employing the Augmented-Dickey Fuller (ADF) and Phillips-Perron (PP) tests. The inclusion of the Phillips-Perron test is to validate the result of the ADF. The result presented in Table 1 below indicates that RGDP, CPI, and EXC\_RATE were stationary at second difference, which implies that they are integrated of order I(2). The FPI, IPOGR, OTH\_INV, and SMI were stationary at first difference, implying that they are integrated of order I(1) while the FDI and INTEREST RATE were stationary at level (which implies that they are integrated of order I(0)). Given the unit root properties of the variables as shown in Table 1, the study proceeded to establish whether or not there is a long-run co-integrating relationship among the variables in equation (7) by using the Johansen’s co-integration test (see Table 2).

**Table 1: Unit Root Test Result**

VARIABLES	ADF TEST H <sub>0</sub> : Variable is not Stationary	PP TEST H <sub>0</sub> : Variable is not Stationary	Order of Integration
RGDP	-54.78017***	-7.665912***	I(2)
CPI	-5.318569***	-3.077066**	I(2)
EXC_RATE	-2.201532	-14.61146***	I(2)
FDI	-4.545750**	-5.018996***	I(0)
FPI	-5.021358***	-5.396787***	I(1)
OTH_INV	-5.680790***	-4.036409***	I(1)
INTEREST RATE	-3.794639**	-3.794639**	I(0)
IPOGR	-6.405429***	-6.408193***	I(1)
SMI	-4.745494***	-4.830392***	I(1)
<b>Asymptotic Critical Values</b>			
1%	-3.699871	-3.679322	
5%	-2.976263	-2.967767	
10%	-2.627420	-2.622989	

\*\*\*, \*\* implies significant at 1%, and 5% level, respectively.

Source: Authors' computation, 2018.

**Co-integration Test**

The co-integration test was performed based on the Johansen-Juselius (1990) framework. The objective is to establish whether long-run relationship exists among the variables, using Trace and Maximum Eigen tests. The result revealed long run relationship among variables adopted in the study. Specifically, there exist about five co-integrating equations. Hence, given the objective of this study which focuses on at least a single or direct relationship between the dependent and explanatory is hereby achieved, the study then employed the GARCH estimation technique to examine the determinants of FPI volatility in Nigeria.

**Table 2: Johansen Cointegration Test**

Series: LRGDP CPI EXC_RATE INTEREST RATE FDI FPI OTH_INV IPOGR SMI				
<b>Unrestricted Cointegration Rank Test (Trace)</b>				
Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.985029	416.3459	197.3709	0.0000
At most 1*	0.932863	290.2965	159.5297	0.0000
At most 2*	0.863560	209.2661	125.6154	0.0000
At most 3*	0.852072	149.5101	95.75366	0.0000
At most 4*	0.729933	92.17922	69.81889	0.0003
At most 5*	0.575506	52.90669	47.85613	0.0156
At most 6	0.415732	27.20095	29.79707	0.0968
At most 7	0.307560	11.07908	15.49471	0.2067
At most 8	0.001767	0.053069	3.841466	0.8178
Trace test indicates 1 cointegrating eqn(s) at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				
<b>Unrestricted Cointegration Rank Test (Maximum Eigenvalue)</b>				
Hypothesized		Max-Eigen	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None	0.985029	126.0494	58.43354	0.0000
At most 1 *	0.932863	81.03043	52.36261	0.0000
At most 2*	0.863560	59.75600	46.23142	0.0011
At most 3*	0.852072	57.33085	40.07757	0.0002
At most 4*	0.729933	39.27253	33.87687	0.0103
At most 5	0.575506	25.70574	27.58434	0.0853
At most 6	0.415732	16.12187	21.13162	0.2178
At most 7	0.307560	11.02601	14.26460	0.1529
At most 8	0.001767	0.053069	3.841466	0.8178
Max-eigenvalue test indicates no cointegration at the 0.05 level				
* denotes rejection of the hypothesis at the 0.05 level				

Source: Authors' computation using E-views 10

### Interpretation of GARCH Result

The effect of foreign direct investment is positively significant on volatility of FPI at 10 percent. It implies that increase in FDI leads to increase in FPI volatility. On the basis of these results, FDI has an important role to attract FPI into the country and it provides foundation for foreign portfolio investors to pursue FDI. Moreover, the significance of FDI shows that financial market is making progress and this would help understand different investment environments, this is in line with Ahmed and Malik, (2012). The result of GDP growth rate is negative and insignificant, this mean that foreign investors are not attracted by the country's GDPGR. In addition, foreign portfolio flow is linked to high GDP growth rate and given the negative growth of the GDP around 2014 to 2016, it is plausible to assert that FPI is volatile to economic investment in Nigeria and does not really stable in the economy, this is true as the FPI investors look for the countries where their investment could yield more returns. Real exchange rate is positive but not significant, so EXC\_RATE has positive effect on portfolio investment volatility and in line with the finding of Bleaney and Greenaway, (2001). Moreover, Nigeria is deliberately attempting to increase its currency value by forcibly increasing the external reserve and as well the ongoing bilateral currency swap between Nigeria and China has the tendency to reduce the demand for US dollar, causing increase in volatility. The other possible explanation for no significant effect of exchange rate is the increase in inflation rate; inflation may also affect exchange rate volatility according to interest parity theory which the study ignored due to multicollinearity problem. In Nigeria currently, interest rate decreases portfolio investment volatility because interest rate is not as high as expected and this reduces the benefit of portfolio investment to foreigners and as a result, foreign investors are more likely to leave. On the other hand, the insignificant values of RIR for Nigeria show that it has no effect on foreign portfolio investment. It diminishes the attraction of high interest rate for portfolio investors. Thus, the results are in accordance to Salahuddin and Islam (2008). The industrial production growth rate (IPOGR) and the stock market index (SMI) have both positive and significant effects on FPI volatility which implies that as the industrial production progresses and more stocks are favourably traded in stock exchange market, more investment continue to attract foreign domestic investors and the more the importation of FDI into Nigeria economy the more the fluctuations in FPI

**Table 3 GARCH results of macroeconomic factors and FPI volatility.**

Variables	Coefficient	Std. Error	Z-Statistics	Probability
C	-4.25767	6.065278	-0.70197	0.4827
FPI(-1)	0.66436	0.220471	3.013371	0.0026
ΔCPI	-0.01564	0.065857	-0.23753	0.8122
ΔEXC_RATE	0.005238	0.004298	1.218665	0.2230
ΔINTEREST RATE	-0.00742	0.075017	-0.09895	0.9212
ΔIPOGR	0.082194	0.041423	1.984276	0.0472
ΔFDI	0.179873	0.107236	1.677363	0.0935
ΔOTH_INV	-0.46641	0.207235	-2.25064	0.0244
ΔRGDP	-0.73005	0.677613	-1.07739	0.2813
ΔSMI	1.435995	0.174898	8.210485	0.0000
<b>Variance Equation</b>				
C	0.003622	0.06494	0.055775	0.9555
RESID(-1) <sup>2</sup>	-0.24478	0.237292	-1.03155	0.3023
GARCH(-1)	1.233817	0.565207	2.182947	0.029

FPI(-1) is lag term of Foreign portfolio investment, RESID(-1)<sup>2</sup> is squared error term and GARCH(-1) is effect of prior-period volatility. ΔCPI, ΔEXC\_RATE, ΔINTEREST RATE, ΔIPOGR, ΔFDI, ΔOTH\_INV, ΔRGDP, and ΔSMI are respectively return series of consumer price index, real exchange rate, real interest rate, industrial production output growth rate, foreign direct investment, other investment, real gross domestic product, and stock market index, SE is the standard error terms.

## V. Conclusion And Recommendation

### Conclusion:

This study concludes that the volatility of Foreign Portfolio Investment (FPI) is a major contributor to the flow of other foreign capitals being imported into the Nigerian economy and since it takes the largest share of capital importation into the country, once it is lifted back due to high interest rate in other economies, the vacuum it leaves cannot be easily occupied by the FDI and other investments. The results also reveal that there exists significant relationship between macroeconomic factors and foreign portfolio investment volatility. Thus, less volatility in international portfolio flows is associated with high interest rate, currency depreciation, foreign direct investment, lower inflation, and higher GDP growth rate of the host country.

## VI. Recommendations:

Thus, findings of this study suggest that foreign portfolio investors focus on stable macroeconomic environment of any country they intend to invest in. The study therefore urges Nigerian monetary authorities to strengthen the existing policy low interest rate management, and as well formulate and implement policies that will enhance the growth of FDI and GDPGR (without necessarily raising the bar on interest rate). FPI is known to be “hot money” and raising interest rate to attract FPI will at the end be counter-productive to the growth rate of the economy. This is because it will obviously impede IPOGR and disappointedly increases the rate of inflation.

### Suggestions for Further Studies

Subject to data availability, future studies should investigate the impact of foreign portfolio investments on economic growth in all emerging markets using GMM method. Moreover, examining the preconditions that must exist in the emerging markets before foreign portfolio investments significantly influence economic growth is another possible area of future research.

## References

- [1]. Ahmed, T., and Malik, S. U. (2012): “Determinants of inflow of foreign direct investment (FDI) into Pakistan”. NICE Research Journal, 5, 93–110.
- [2]. Anyanwu, J.C., and H. E. Oaikhenan 1995: *Modern macroeconomics: theory and applications in Nigeria*. Onitsha: Joanee Educational Publishers Ltd.
- [3]. Ashoka Mody, P. M. Taylor, and J. Yeon Kum 2001: “Modelling Fundamentals for Forecasting Capital Flows to Emerging Markets”. International Journal of Finance and Economics, Volume 6, Issue 3
- [4]. Bleaney, N., and D. Greenaway (2001): The impact of terms of trade and real exchange rate volatility on investment and growth in sub-Saharan Africa. *Journal of Development Economics*, 65, 491–500.
- [5]. Bollerslev, T. (1986): Generalized autoregressive conditional heteroscedasticity, *Journal of Econometrics*, 31, 307-327
- [6]. Broto, C., J. Diaz-Cassou, and A. Erce-Dominguez, (2011). “Measuring and explaining the volatility of capital flows toward emerging countries”. *Journal of Banking Finance*, 35, 1941–1953
- [7]. Chen, S.S., 2006. “Revisiting the interest rate exchange rate nexus: a Markov-switching Approach”: *Journal of Development Economics* 79, 208–224.
- [8]. Claudiu Tiberiu Albuлесcu 2015: “Do Foreign Direct and Portfolio Investments Affect Long-term Economic Growth in Central and Eastern Europe?” *Procedia Economics and Finance* 23 (2015) 507 – 512
- [9]. Dennis Quinn 1997: “The Correlates of Change in International Financial Regulation”. *American Political Science Review*, Volume 91, Issue 31, page 531 – 551
- [10]. Durham, J.B., (2004). “Absorptive capacity and the effects of foreign direct investment and equity foreign portfolio investment on economic growth”. *European Economic Review* 48, 285 – 306
- [11]. Eniekezimene, F.A. 2013: “The Impact of foreign portfolio investment on capital market growth: evidence from Nigeria”. *Global Business and Economic Research*, 1(2), 8.
- [12]. Eun, C.S., and B.G. Resnick 1988. “Exchange Rate Uncertainty, Forward Contracts, and International Portfolio Selection.” *Journal of Finance* 43:1: 197-215.
- [13]. Evans, K.,(2002). “Foreign Portfolio and Direct Investment: Complementarity, Differences, and Integration”, OCDE Global Forum on International Investment: Attracting Foreign Direct Investment for Development, Shanghai, 5-6 December.
- [14]. Geert Bekaert, Campbell R. Harvey, Robin L.Lumsdaine 2002: “Dating the integration of world equity markets”, Elsevier Volume 65, Issue 2, page 203 – 247
- [15]. Gian-Maria Milesi-Ferretti, Cédric Tille 2011: “The great retrenchment: international capital flows during the global financial crisis”, *Economic Policy*, Volume 26, Issue 66, 1 April 2011, Pages 289–346, <https://doi.org/10.1111/j.1468-0327.2011.00263.x>
- [16]. Gordon, J., Gupta, P. (2003). Portfolio flows into india: do domestic fundamentals matters? (pages 1–38). I.M.F. Working Paper
- [17]. Guglielmo, M. C., F. Menla Ali, F. Spagnolo, N. Spagnolo 2017: “International portfolio flows and exchange rate volatility. in emerging Asian markets” *Journal of International Money and Finance* 76 (2017) 1–15
- [18]. Gulzar Kurt Gumus and Bener Gungor 2013: “The Relationship between Foreign Portfolio Investment and Macroeconomic Variable”, *European Scientific Journal* December 2013 edition vol.9, No.34 1857 – 7881
- [19]. Hansen, P. R., Lunde, A. (2001): A comparison of volatility models: does anything beat a GARCH(1,1)? (pp.1–51). Working Paper Centre for Analytical Finance
- [20]. Hau, Harald and H’el’ene Rey, “Exchange Rate, Equity Prices and Capital Flows”, *Review of Financial Studies*, 2006, 19 (1), 273–317
- [21]. Henry, P. 2000: “Stock market liberalization, economic reform, and emerging market equity Prices”. *Journal of Finance*, 55, 529–564
- [22]. Imoisi, A.I., A. Micheal, and S. I. Watson 2015: “Domestic Investment and Economic Growth in Nigeria” 1970-2013: An Econometric Analysis. *Canadian Social Science*, Volume 11, No. 6, (2015) pp. 70-79, DOI:10:3968/7009
- [23]. Kim S. and D. Y. Yang 2011, “The Impact of Capital Inflows on Asset Prices in emerging Asian economies: Is too much money chasing too little goods?” *Open Economies Review*, Vol. 22, Issue 2, pp. 293-315
- [24]. Kunofiwa Tsaurai 2017: “Is foreign Portfolio Equity Investment Inspired Growth Hypothesis Relevant in Emerging Markets?” *EuroEconomica* Issue 2(36)/2017
- [25]. Levine, R. Loayza, N. and Beck, T. (2000). “Financial intermediation and growth: Causality and Causes”. *Journal of Monetary Economics* 46 (2000) 31-77
- [26]. Markowitz, H. M.1959: *Portfolio selection efficient diversification of investments*. New York: John Wiley & Sons, Inc
- [27]. Markowitz, H.M. 1952. “Portfolio Selection.” *Journal of Finance* 7:3: 77-91.
- [28]. Menzie David Chinn 2014: *Global Spillovers and Domestic Monetary Policy*. BIS Working Paper No. 436

- [29]. Miguel, A. F., and Paul A. L. 2009: Portfolio flows, volatility and growth. *Journal of International Money and Finance*, 28 (2009) 271–292.
- [30]. National Bureau of Statistics/Central Bank of Nigeria 2017: Nigeria Capital Importation Report (Q1, Q2, Q3, Q4)
- [31]. Olivier Jeanne and Andrew K. Rose 2002: Noise Trading and Exchange Rate Regimes: *The Quarterly Journal of Economics*, Volume 117, Issue 2, 1 May 2002, Pages 537–569, <https://doi.org/10.1162/003355302753650328>
- [32]. Omorokunwa, O.G., and Ikponmwosa, N. 2014: Exchange rate volatility and foreign private investment in Nigeria. *Asian Journal of Business Management* 6(4), 146-154.
- [33]. Onyeisi, Ogbonna Samuel, Odo, Idenyi Stephen and Anoke, Charity Ifeyinwa 2016: “Foreign Portfolio Investment and Stock Market Growth in Nigeria”, *Developing Country Studies*, Vol.6, No.11, 2016
- [34]. Peter Montiel Carmen M Reinhart 1999: “Do capital controls and macroeconomic policies influence the volume and composition of capital flows?” Evidence from the 1990s, *Journal of International Money and Finance*, Volume 18, Issue 4, page 619 – 635
- [35]. Robert E. Lipsey, Robert C. Feenstra, Carl H. Hahn, George N. Hatsopoulos 1999. *The Role of Foreign Direct Investment in International Capital Flows*. University of Chicago Press, p. 307 – 362
- [36]. Salahuddin, M., and Islam, M. R. (2008): Factors affecting investment in developing countries: a panel data study. *The Journal of Developing Areas*, 42, 21–37
- [37]. Singh A. and B. A. Weisse 1998, *Emerging Stock Market, Portfolio capital flows, and long-term economic growth: Micro and Macroeconomic perspectives*. *World Development*, Vol. 26, Issue 4, pp. 607-622
- [38]. Sorin Raul Fantana 2015: Aspects of Foreign Portfolio Investments Risks in Romania, 22nd International Economic Conference – IECS 2015 “Economic Prospects in the Context of Growing Global and Regional Interdependencies”, IECS 2015, *Procedia Economics and Finance* 27 ( 2015 ) 629 – 635
- [39]. Taylor, A.M. 1996: International capital mobility in history: the saving–investment relationship. *Working Paper NBER*
- [40]. Tumala, Mohammed M.; Ajibola, Olufemi I; Omotosho, Babatunde S.; Baruwa, Oladipupo A.; (2012): Survey of foreign assets and liabilities in Nigeria 2011 report. *CBN Journal of Applied Statistics*, Volume: 3, Issue 2, 143-165
- [41]. Ugwuanyi, C. (2004). *Intermediate Macroeconomics Theory* Enugu: Great AP Express Publishers” Limited.
- [42]. UNCTAD (1999) *Comprehensive Study of the Interrelationship between Foreign Direct Investment (FDI) and Foreign Portfolio Investment (FPI)*. UNCTAD/GDS/DFSB/5
- [43]. Waqas, Y. Hashmi, S.H. and Nazir, M.I. (2015). Macroeconomic factors and foreign portfolio investment volatility: A case of South Asian countries. *Future Business Journal*, Vol. 1, No. 1-2, pp. 65-74

Yusuf Wasiu Akintunde. “Determinants of Foreign Portfolio Investment Volatility and Macroeconomic Stability in Nigeria”. *IOSR Journal of Economics and Finance (IOSR-JEF)* , vol. 10, no. 6, 2019, pp. 16-23.