

FOREIGN PORTFOLIO INVESTMENT, FINANCIAL OPENNESS AND ECONOMIC GROWTH IN LOW AND HIGH INCOME COUNTRIES

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Abstract

This study was conducted to investigate the impact of foreign portfolio investment and financial openness on economic growth in low and high income countries. Time series data spanning 1970-2020 was analyzed using the Fully Modified Ordinary Least Square (FMOLS) while other econometric techniques such as the Pooled Mean Group (PMG) and Non-Linear Autoregressive Distributed Lag Model (NARDL) were used to enhance the robustness of study findings. Findings showed that foreign portfolio investment (FPI) had no significant relationship with economic growth in low/middle income countries while a significant positive relationship was found for high income countries. Result findings also found that financial openness (FOP) had no significant impact on the economic growth of any of the income classes. The interaction of FPI and FOP was found to be insignificant for low/middle countries while significant for high income countries. Robustness check revealed the presence of short -run asymmetric effect of FPI on economic growth in low/middle income countries while the same relationship was found between FOP and economic growth for high income countries. The study therefore concluded that foreign portfolio investment and financial openness have no joint or independent impact on economic growth in low income countries and foreign portfolio investment has a significant independent and joint impact on economic growth in high income countries.

Keywords: Financial openness, foreign portfolio investment, economic growth, FMOLS, NARDL, ARDL

JEL classification: F13, F15, G15

1. INTRODUCTION

In most African countries, stock markets have been established to enable governments and enterprises to raise relatively cheaper long-term capital for corporate growth, economic growth, and government economic operations in order to encourage poor economic growth and alleviate poverty (Okafor, Nwakoby,

Adigwe&Ezu, 2021). Financial openness and foreign portfolio investment have been identified as tools used by economic agents to reinforce the economy (Obayagbona & Igbinovia, 2021). According to Ajao (2012), financial openness is used to refer to the degree to which foreign investors are allowed to own equity in the domestic economy as well as the stimulation of foreign capital inflows. Financial openness (FOP) has proved to be of benefits for stock market and by extension the economy at large (Fratzscher & Bussiere, 2017). On the other hand, foreign portfolio investment has been described to be as a result of greater degree of financial openness and according to Oyerinde (2019), only economies that have fully liberalized its financial system can have greater flow of foreign investment in the form of foreign portfolio investment (FPI). FOP and FPI have been accredited with the ability to deepen the stock market by enhancing the availability of financial instruments which then results in wider and efficient trading activity and upsurge in economic activities (Obayagbona & Igbonovia, 2021). Bassey, Okoi and Imoh (2021) asserts that the externalities following increased FOP and FPI increases technological transfer, managerial efficiency and better corporate governance which impacts on human capital development.

Since the 1980s, aggregate capital flows to developing nations have surpassed official development assistance flows. In the past year (2020), there has been a drastic reversal in foreign private investment with a 59.6% decline (Komolafe, 2021). This decline can be attributed to the recent global pandemic (COVID-19) that rocked the world and impacted the global financial system. Another probable factor is the weak institutional quality prevalent in developing countries like increasing terrorism, political instability, and macroeconomic instability which might have eroded investors' confidence resulting in divesture from the stock market. Lots of empirical studies have been conducted to investigate the linkage between financial openness and economic growth on the one hand (Adegboye & Ikponmwosa, 2013; Barnor&Wiafe, 2015; Boboye, Oluwakemi & Alamu, 2017) and foreign portfolio investment and economic growth on the other hand (Awiajah & Choi, 2018 and Gabriel & David, 2021). While these studies have been succinct in linking these factors (FOP & FPI) to economic growth and development, these studies have been conducted on the assumption that financial openness and foreign portfolio investment interacts independently with the economy.

It is in the opinion of this author's that foreign portfolio investment does not work in a vacuum hence there is interplay between financial openness and foreign portfolio investment which must be accounted for in empirical studies. For example, theoretically, increased financial openness is expected to stimulate larger portfolio investment and vice versa. Therefore, to understand the relationship between financial openness and stock market development, studies must then capture its (FOP) interaction with foreign portfolio investment and its linkage to economic growth. To this effect some studies have been carried out to investigate the relationship between financial openness, foreign portfolio and stock market development (Ajao, 2012; Obayagbona & Igbinovia, 2021). However, these studies

were found to have linked FOP and FPI independently without capturing the peculiar interplay between FOP and FPI. This therefore creates a gap in empirical literature to investigate how the interaction between financial openness and foreign portfolio investment impacts on economic growth.

According to the classical economic theory, capital should flow from developed economies to underdeveloped ones because of the effect of diminishing returns of capital. Since developing economies have a lower level of capital per worker, the scarcity of capital indicates that the returns related to the infusion of capital are higher in developing economies than in developed ones. From the ongoing, it therefore expected that developing nations should have more capital inflow than developed economies given that the former has higher rate of return. However, no known study has investigated the impact of foreign portfolio investment and financial openness in developing (low/middle income) and developed economies (high income), and this therefore necessitate this study.

2. LITERATURE REVIEW

2.2 FINANCIAL OPENNESS AND ECONOMIC GROWTH NEXUS

According to Ajao (2012), financial openness is defined as the degree to which foreign investors can own equity in the domestic economy as well as the stimulation of foreign capital inflows. Financial openness has proved to be of benefits for many economies, however some economies have experienced cases of economic crisis following economic and financial openness (Fratzscher & Bussiere, 2017). A case for opening the financial sector is that positive externalities from financial openness may not be as a result of excess foreign capital, but as a result of mitigating economic vagaries and locks in the reform (Gourinchas & Jeanne, 2002).

The literature as to the relationship between financial openness (FOP) and economic growth and development have been mixed and ambiguous with various studies proposing different relationship (Malefane & Odhiambo, 2018; Usman & Adeyinka, 2019; Aremo & Arambada, 2021). Studies evidencing a positive relationship between (FOP) and economic growth and development have identified various channels through which FI influences economic growth and development. Levine (2001) and Klein and Olivei (2008) posits that (FOP) stimulate capital accumulation and productivity through financial diversification which improves product specializations. Another link through which (FOP) influences economic growth and development is through enhanced financial system efficiency by increasing local competition and financial services (Ekpo & Chukwu, 2017). Notwithstanding the perceived benefits of FOP to economic growth and development, some studies have posited that FOP could have some adverse effect on economic growth and development. Ahmed (2013) found a negative relationship between FI and economic growth. Specifically, liberalization was found to negate economic growth. This implies that liberalization policies negate economic growth, and these might be because of excessive capital flight and increase in financial fragility risk.

2.2 FOREIGN PORTFOLIO INVESTMENT AND ECONOMIC GROWTH NEXUS

Foreign portfolio investment (FPI) involves the transfer of financial assets including stocks, bonds and cash across international borders in want of profit. FPI occurs when investors purchase a non-controlling interest in foreign companies or by foreign corporate or governmental bonds (Patro & Wald, 2005). Individuals seeking their own advantage move accumulated funds into wherever they are likely to be most productive and in doing so make profits (love,2003).

The burning need of developing nations and the commitment of their various government has brought to the fore the need for a functional financial system given the developmental need of the economy (Wurgler, 2000). The death of adequate financing has been identified as one key factor inhibiting the much-needed investment in infrastructure. Hence substantial long term financing would go a long way in resuscitating the death of key sectors in an economy (Knill, 2004). Capital in the form of FPI impacts positively on the economy by providing financial resources needed for production by corporate institutions and the execution of capital projects by governments (Ekeocha, 2008). In other words, FPI can provide the needed resources to corporations and governments in developing nations through the financial markets for infrastructural and industrial productivity. Building infrastructures and financing business projects with the proceeds of FPI will substantially lead to economic development which in turn would result in an increase in employment, advancement in income generation, increase in gross domestic product and increase in the standard of living.

2.3 EMPIRICAL REVIEW

Yasmin, Jehan and Chaudhary (2006) explored the relationship between trade openness and economic growth using data from Pakistan for the period 1959-2003. The Two Stage regression technique was employed, and the findings were mixed across measures of economic growth used. For example, , employment level was affected positively, while GDP and income distribution were influenced negatively. However, no significant relationship was found between trade liberalization and poverty level. Oyovwi and Eshenake (2013) examined the impact of financial openness on economic development in Nigeria for the period 1970-2010. The Vector Error Correction Model (VECM) was used to test for the impact of FOP on economic development. Result indicated a positive relationship between financial openness and economic development.

Olaniyi (2013) examined the relationship between international financial integration and economic growth in Nigeria for the period spanning 1970-2012. The study employed the use of VAR modeling and granger causality test to explore the rich dynamics between study variables. Result revealed a short run relationship between international financial integration and economic growth. Egbetunde and Akinlo (2014) examined the effect of financial integration on economic growth in the SSA in which Kenya economy was inclusive of the study sample. The study was conducted for the period spanning 1980 – 2010 and the Generalized Methods of

Moments (GMM) estimation technique was used to analyze the data. Empirical result indicated that financial integration, financial development and institutional quality were found to have negatively impacted on economic growth in the SSA during the period of study.

Shuaib, Okutimiren, Odunlami and Ajagbe (2016) investigated the nexus between financial openness and economic growth in Nigeria. The study period spanned 1960-2013 which was intended to capture the pre, post and structural adjustment period. The ordinary least square technique was used to capture the relationship between study variables and result indicated that financial openness and inflation significantly influences economic growth in Nigeria. Bayar (2016) explored the impact of financial openness and economic freedom on economic development in transition economies in European Union for the period 1996-2012. The study employed the use of panel least square and result indicated a long run relationship between the variables. A positive relationship between financial openness and economic development was confirmed in the study.

Akinsola and Odhiambo (2017) examined the impact of financial liberalization on economic growth in Sub-Saharan economies for the period 1980-2015. The linear GMM technique was devised and used and result indicated that financial liberalization had a significant impact on economic growth in SSA during the period of study. The study of Qayyum, Younas and Bashir (2018) investigated the impact of TOP on economic development in Pakistan for the period 1972-2014. The Johansen co-integration test was used to examine the long run relationship between the study variables. Result indicated a positive relationship between TOP, gross fixed capital and economic development. Other control variables like inflation and interest rate were found to have a negative impact on economic development.

Acha and Essien (2018) conducted their study to examine the impact of FPI on economic development in Nigeria. The study period spanned 2005-2014 and the OLS method was used for the study. Empirical findings suggested that FPI and MCAP had a significant impact on economic development in Nigeria. Shabbir and Muhammad (2019) explored the short and long run relationship between FPI and stock price in Pakistan for the period 1984-2016. The ARDL technique was used to capture the short and long run relationship and the result indicated that FPI had a significant positive relationship with economic development.

Sheikh, Malik and Masood (2020) analyzed the nexus between trade openness and sustainable development in India for the period 2011-2016. The Autoregressive Distributed Lag Model (ARDL) was used for the data estimation. Findings indicated that trade openness had a negative relationship between green GDP and a positive relationship with conventional GDP. Etale and Sawyerr (2020) explored the nexus between foreign investment inflows on economic development for the period 2001—2018. Foreign direct investment and foreign portfolio investment were used to proxy foreign investment. The multiple regression under the OLS framework was used for data analysis and result indicated that FDI and FPI both had a significant positive relationship with economic development during the period of study.

Fasanya and Olayemi (2020) empirically examined the influence of financial openness on economic growth for the period spanned 1981-2013. The ARDL estimation technique was used to capture the relationship between study variables. Empirical result showed that too much openness inhibits the growth of the Nigeria economy through the downplaying of financial system. The study of Obayagbona and Igbinovia (2021) investigated the impact of financial openness, foreign portfolio investment and stock market development in Nigeria for the period 1986-2018. The study employed the use of Vector Error Correction Model as its primary estimation tool and findings showed that financial openness does not have a significant impact on the development of the Nigeria stock market. However, financial openness was found to have a strong impact on stock market liquidity

From the foregoing review, it is observable that majority of studies that has been conducted on this subject matter has either been country specific or region specific. However, given that foreign portfolio inflow and financial openness varies with income group, no known study has considered the effect of foreign portfolio investment, financial openness on economic growth in low/middle and high income countries. Hence, this study is conducted to examine and compare the effect of foreign portfolio investment, financial openness on economic growth in low/middle and high income countries.

3. DATA AND METHODS

This study would use the causal research design. The causal research design aims to ascertain the relationship between two variables. Since our study intends to ascertain the relationship between two variables, this design therefore suits the purpose of this study. This study is focused on accessing the impact of foreign portfolio investment and financial openness on economic growth in low (developing) and high (developed) income countries. United Nations classified these income levels based on their gross national income (GNI). Aggregate data of countries classified as low and middle economies and high income countries spanning 1970 to 2020 were sourced from the World Bank Development Indicator Database.

3.1 THEORETICAL FRAMEWORK AND MODEL SPECIFICATION

This study is anchored on the Endogenous growth model. The Endogenous growth model propounded by P.M Romer in 1994 serves as a foundation of this study. The endogenous growth model uses the aggregate production function in a Cobb Douglas form, given as

$$Y_{it} = K_{it}^\alpha, L_{it}^\beta e^{\epsilon_{it}} \quad (1)$$

Where

Y_{it} = Economy output measured by GDP at Time t

K_{it} = Level of capital stock

L_{it} = Stock of labor at time t

I = the country

e= base of natural log.

K_{it} can be expressed as a function of external capital and other factors that can impact on economic growth; we have;

$$k_{it} = F(FPI, FOP, TOP) \quad (2)$$

Where

FPI = Foreign Portfolio Investment

FOP = Financial openness

TOP = Trade openness

Substituting Equation 2 into 1 we obtain

$$Y_{it} = A_{it}^\alpha + L_{it}^\phi + FPI^\beta + FOP^\mu + TOP^\delta + e^{e_{it}} \quad (3)$$

Where $\alpha, \phi, \beta, \mu, \delta$ are constant elasticity coefficients of output relative to A, L, FPI, FOP and TOP

Taking the natural log of equation (3) gives

$$\ln Y_{it} = \alpha \ln K_{it} + \phi \ln L_t + \beta \ln FPI_t + \mu \ln FOP_t + \delta \ln TOP_t + \varepsilon_t \quad (4)$$

To capture the interaction between FPI and FOP, we re-order equation (4) and include an interaction term

$$\ln GDP_{it} = \alpha_0 + \delta_1 FOP_t + \delta_2 FPI_t + \delta_3 TOP_t + \delta_4 FOP * FPI_t + \varepsilon_{it} \quad (5)$$

Where;

α_0 = Intercept

$\delta_1 - \delta_3$ = explanatory variables

$FOP * FPI_t$ – interaction term.

ε_{it} = error term.

Following extant literature, we expect that FOP, FPI and TOP have a positive relationship with economic growth. We also expect that the interaction is significant which signifies that there is a joint impact of FPI and FOP on economic growth. Our expectation is expressed mathematically as;

$$\delta_1 - \delta_3 > 0, \delta_4 < 0.05$$

Table 3.1: Description of Variable

Variable	Measurement	Source
Gross Domestic Product	Gross domestic Product deflated by inflation	
Financial Openness	The sum of portfolio equity flows & foreign direct investment as a percentage of GDP	Ajao (2012)
Foreign Portfolio Investment	Natural log of foreign portfolio investment.	Acha and Essien (2018)
Trade Openness	The sum of import and export as ratio of GDP	Osabuohien (2007)

Source: Authors computation (2022)

3.2 METHOD OF DATA ANALYSIS

Priorto estimation of the specified models, various statistical tests are applied to our study variables to ensure they are fit for analysis. Such tests include descriptive statistics, correlation, and unit root tests. The Fully Modified Ordinary Least Square (FMOLS) is used to capture the nexus between variables of the study. This technique is suitable for our study as it is able to provide unbiased estimates given endogeneity, serial correlations and multicollinearity issues.

4. RESULTS AND DISCUSSION

4.1 DESCRIPTIVE STATISTICS

Table 4.1: Descriptive Statistics

<i>Low and Middle Income Countries</i>					
Variables	Mean	Std.Dev	Max	Min	P.Value(J.Berra)
LnGDP	12.75	0.51	13.5	11.7	0.30
LnFPI	9.3	1.54	11.12	6.12	0.07
TOP	38.8	13.7	61.17	15.5	0.16
FOP	0.01	0.01	0.03	0.00	0.07
<i>High-Income Countries</i>					
Variables	Mean	Std.Dev	Max	Min	P.Value(J.Berra)
LnGDP	13.27	0.38	13.7	12.3	0.09
LnFPI	10.71	1.07	12.0	7.6	0.11
TOP	47.04	10.08	63.2	29.6	0.2
FOP	0.02	0.02	0.07	0.00	0.02

Source: Authors Computation (2022)

The descriptive statistics in Table 4.1 shows the background characteristics of the variables under considerations. Findings showed that the average GDP (12.75) for low and middle income countries (LMIC) during the period was lower than that of the high income countries (HIC) (13.27). This shows that HIC had higher GDP during the period of study. Findings also showed that the GDP of HIC was more sustainable than that of LMC given its low variance as indicated by their standard deviation ($0.51 > 0.38$). Findings also showed that HIC received higher FPI inflow than LMC as indicated by their respective averages ($9.3 < 10.7$). This can be attributed to the fact that the stock market of HIC are more developed and have better fundamentals than that obtainable in LMIC's. However, it is found that FPI in LMIC was more volatile relative to that of HIC as shown by the value of standard deviation ($1.54 > 1.07$). The poor and weak nature of the market in LMIC's accounts for the variation and instability of FPI as foreign investors are always quick to divest given any significant changes in the market. Findings from table 4.1 also showed that HIC's had a more opened financial system and economy as compared to LMIC's. This disparity in financial openness and economic openness might also have contributed to the difference in equity inflow during the period of study. On, normality, the findings from Table 4.1 shows that all variables are normally distributed as indicated by the Jarque Berra test statistics which is above the 5% level of significance.

4.2 UNIT ROOT TEST

Table 4.2 Unit Root Test Result

Variables	Low & Middle Income Countries			High Income Countries		
	ADF @ Levels	ADF @ First Difference	Order of Integration	ADF @ Levels	ADF @ First Difference	Order of Integration
LnGDP	-1.73 (0.40)	-4.55 (0.00)	I(1)	-3.40 (0.01)	-3.47 (0.01)	I(0)
LnFPI	-1.64 (0.45)	-12.68 (0.00)	I(1)	1.00 (0.99)	-9.09 (0.00)	I(1)
TOP	-1.70 (0.42)	-6.48 (0.00)	I(1)	-1.55 (0.49)	-6.66 (0.00)	I(1)
FOP	-1.11 (0.77)	-4.60 (0.00)	I(1)	-1.93 (0.31)	-5.65 (0.00)	I(1)

Source: Authors computation (2022)

The stationarity result is depicted in table 4.2. The augmented Dickey Fuller test is used to test for the presence of unit root in the series. All variables are observed to be non-stationary at their levels for both the LMIC's and HIC's. However, only GDP series for HIC's is observed to be stationary at levels. All series were subjected to their first difference and findings showed that they became stationary after first difference. This therefore suggests that all the variables are integrated of the same order one i.e I(1), hence we can assume that the variables have a long-run relationship.

4.3 BOUND TESTING

Table 4.3 ARDL Bound Tests

Normalizing Variable: LNGDP							
Low & Middle Income Countries				High Income Countries			
Significance Level	Lower Bound	Upper Bound	Decision	Significance Level	Lower Bound	Upper Bound	Decision
10%	2.72	3.77	accept	10%	2.72	3.77	reject
5%	3.23	4.35	reject	5%	3.23	4.35	reject
1%	4.29	5.61	accept	1%	4.25	5.61	reject
F-Stat	3.37			F-Stat	8.55		

Source: Authors computation (2022)

The ARDL bound approach to co-integration is used to test for the long run form of our variables. This approach is chosen because some of our variables are integrated of different order, this makes for the case of using the bounds test. The decision rule for the bounds test is to reject the null hypothesis of no co-integration when the F-stat is higher than the lower bound. From table 4.3, we can observe that the f-stat (3.37) is higher than the lower bound for LMIC's. We therefore reject the null hypothesis of no co-integration at 5% level. Similarly, for the HIC's we observe that the F-stat (8.55) is higher than the lower bound given all levels of significance. Hence, the null hypothesis is rejected at the 1% level. Therefore, this finding confirms the presence of long-run relationship between our study variables.

4.4 REGRESSION ANALYSIS

The FMOLS technique is used to estimate the relationship between foreign portfolio investment, financial openness and economic growth.

Table 4.4 Fully Modified OLS

Method: Fully Modified Least Squares (FMOLS)						
Low-Income Countries				High-Income Countries		
Variable	Coeff	t-statistic	P.value	Coeff	t-statistic	P.value
LNFPI	0.10	1.76	0.08	0.24	5.03	0.00**
FOP	-88.44	-1.77	0.08	1.30	0.35	0.72
TOP	0.03	3.79	0.00**	0.02	4.46	0.00**
FOP*FPI	6.73	1.43	0.15	-7.54	-2.05	0.04**
C	10.93	26.39	0.00**	9.69	24.13	0.00**
<i>R-square</i>	0.82			0.88		
<i>Ajusted.R.square</i>	0.81			0.87		

*Source: Authors computation (2022). Note that ** and * indicates significance at the 1% and 5% level, respectively.*

Findings from table 4.4 show that the coefficient of FPI is positive for both LMC's and HIC's. Specifically, FPI is found to have a positive relationship with GDP in HIC's and LMIC's, however, only the relationship is found to be significant for HIC's. The magnitude of impact is found to be higher for HIC's, thus implying that HIC's benefits more from FPI inflow than LMIC's. A unit change in FPI will lead to 0.10 and 0.24 changes in GDP for LMIC's and HIC's, respectively. Findings also showed that the coefficient of FOP is not significant for either of the income groups. However, FOP is observed to impact on GDP negatively for LMIC's while a positive impact is found for HIC's. A unit change in FOP will cause a shock in GDP by -88.44 and 1.30 for LMIC's and HIC's, respectively. The coefficient of TOP is observed to be positive for both income groups as well significant. A unit change in TOP will cause a change in GDP by 0.03 and 0.02 in LMIC's and HIC's, respectively. Findings also showed that the interaction between FOP and FPI (FOP*FPI) is not significant for LMIC's but significant for HIC's. However, the interaction term is observed to be negative for HIC's. The implication of this finding is that FOP and FPI does not jointly enhance economic growth in LMIC's. However, although the interaction is observed to be significant for HIC's, the negative relationship suggests that the interplay between FOP and FPI causes a backward shift in economic growth.

4.5 ROBUSTNESS CHECKS

For robustness checking, aggregate data for each of the income groups are pooled together to ascertain the relationship when these countries are pooled. Since, the number of cross-sections (n) is lesser than time (t), we employ the Pooled Group Estimator (Panel ARDL) which is designed to handle panel structure where T>N.

Table 4.5 Panel Short and Long-Run Analysis

Method: ARDL Model Selection Criteria: AIC Model Selected: ARDL 1,1,1,1			
	Coeff	t-stat	P-value
Long Run Equation			
LNFPI	0.77	0.86	0.39
FOP	86.78	0.71	0.47
TOP	0.09	0.93	0.35
FOP*TOP	-1.87	-0.76	0.44
Short Run Equation			
COINTEQ01	0.01	1.15	0.25
D(LNFPI)	0.00	1.07	0.28
D(FOP)	-4.21	-1.27	0.20
D(TOP)	0.00	19.39	0.00
D(FOP*TOP)	0.08	1.06	0.28
C	0.01	2.09	0.03

Source: Authors computation (2022)

The short and long-run estimate when the samples are pooled is presented in table 4.5. Findings showed that all variables are positive but not significant in the long run. However, the interaction term (FOP*FPI) is observed to be negative although not significant. However, in the short-run, only TOP is observed to be significant although the magnitude of impact is observed to be minimal. FOP is observed to be negative and not significant while FPI is positive and not significant. The interaction term is positive but also found to be insignificant. The error correction term (COINTEQ01) is observed to positive and not significant which shows that the variables do not converge after disequilibrium in the short run. However, a heterogeneous short-run estimate is conducted to ascertain the short run properties of the models for various income groups.

Table 4.6 Heterogeneous Short-Run Analysis

Cross-sections	ECM	LnFPI	FOP	TOP	FOP*TOP
Low & Middle Income	-0.001 (0.00)	0.0007 (0.00)	-7.53 (0.87)	0.004 (0.00)	0.16 (0.00)
High-Income Countries	-0.02 (0.00)	0.01 (0.00)	-0.90 (0.01)	0.004 (0.00)	0.005 (0.11)

Source: Author computation (2022).

The income group specific analysis is presented in table 4.6. Findings show that there is convergence between variables when the study is disintegrated into their income groups. For LMIC's, the speed of convergence is extremely low (-0.001) while it is higher for HIC's. FPI is observed to be positive and significant in LMIC's and HIC's, although the magnitude of impact is higher for HIC's. The impact of FOP is observed to be negative and significant for both income groups. Similar finding is also observed as TOP is positive and significant for both income groups. The interaction term is observed to be positive for both income group but only significant for LMIC's.

4.7 NON-LINEAR ARDL ANALYSIS

Herein, we investigate whether there is asymmetric effect in the relationship between FPI, FOP and GDP. In other words, this study aims to ascertain if the right side and left side of FPI, FOP has the same effect on GDP. This is especially necessitated by the fact that large portfolio withdrawals have been shown to cause volatility and significant plummet in the domestic market and by extension reduction in economic growth.

Table 4.7 Non-Linear ARDL

Method: NARDL Model Selection Criteria: AIC Model Selected: ARDL 1,1,1,1			
	Coeff	t-stat	P-value
<i>Long Run Equation</i>			
LNFPI ⁽⁺⁾	-0.03	-0.85	0.39
LNFPI ⁽⁻⁾	0.02	0.81	0.42
FOP ⁽⁺⁾	1.39	0.10	0.91
FOP ⁽⁻⁾	-9.91	-0.68	0.49
TOP	0.05	1.92	0.05
	-1.87		
<i>Short Run Equation</i>			
COINTEQ01	-0.03	-0.86	0.38
D(LNFPI ⁽⁺⁾)	0.01	1.17	0.24
D(LNFPI ⁽⁻⁾)	-6.42E-05	-0.05	0.95
D(FOP ⁽⁺⁾)	-2.86	-2.14	0.03
D(FOP ⁽⁻⁾)	0.64	8.94	0.00
D(TOP)	0.00	3.60	0.00
C	0.47	0.93	0.35

Source: Authors computation (2022)

Table 4.7 shows the left and right side effect of FPI and FOP on GDP in the long run and short run. Findings show that a positive shock in FPI reduces economic growth while a negative shock in FPI enhances economic growth. However, these relationships are observed not to be significant. Findings show that positive shock in FOP causes an improvement in GDP while a negative shock creates imbalances in the economy. However, these long-run relationships are observed to be insignificant. In the short run, we observe that there is asymmetry in the relationship between FPI and GDP. Positive FPI is observed to reinforce GDP, while negative FPI creates imbalances in GDP. The same effect is found with FOP, as the positive shock improves GDP, while the negative side causes a decline in GDP and the relationship is observed to be significant. A short run heterogeneous NARDL is conducted to examine the asymmetric effect of FPI and FOP on GDP in the income groups.

Table 4.8 Short-Run Heterogeneous NARDL

Cross-sections	ECM	LnFPI ⁽⁺⁾	LnFPI ⁽⁻⁾	FOP ⁽⁺⁾	FOP ⁽⁻⁾	TOP
Low & Middle Income	-0.08 (0.00)	0.00 (0.00)	-0.00 (0.00)	-4.19 (0.49)	0.56 (0.88)	0.00 (0.00)
High-Income Countries	0.00 (0.00)	0.02 (0.00)	0.00 (0.00)	-1.52 (0.00)	0.71 (0.05)	0.00 (0.00)

Source: Authors computation (2021)

Findings showed that FPI has an asymmetric effect on GDP in LMIC's while a symmetric effect of FPI on GDP is obtained for HIC's. The implication of this is that positive shocks in FPI reinforce economic growth in LMIC's, while a negative shock creates imbalances in GDP. However, FPI is observed to have the same effect on GDP in HIC's. The FOP is equally found to have an asymmetric effect on GDP for both HIC's and LMIC's, but only that of HIC's is significant. A positive shock in FOP will cause an imbalance in GDP while a negative shock will reinforce GDP in the short run.

5. SUMMARY, CONCLUSION AND RECOMMENDATION

This study was conducted to examine the effect of foreign portfolio investment and financial openness on economic growth in low and high income countries for the period spanned 1970-2020. The objective of the study was to examine how foreign portfolio interacts with financial openness to stimulate economic growth. The study went further in examining the asymmetric effects of financial openness and foreign portfolio investment on economic growth. Findings were found to be robust to specifications and estimation techniques employed. In all, findings showed that there is larger inflow of FPI to high income countries because of their developed equity market. However, FPI in low and middle income countries was found to have large variations. Empirical findings showed that in the long run FPI and TOP reinforces economic growth in high income countries while only TOP was found to reinforce economic growth in low income countries. Suffice it to say that financial openness and foreign portfolio did not jointly stimulate growth in low income countries, although it was found to weakly enhance growth in high income countries. However, a significant short-run relationship was found between foreign portfolio, financial openness and economic growth in low and high income countries. Findings also showed the presence of short-run asymmetric relationship between FPI and economic growth in low-income countries, while FOP was found to exhibit an asymmetric relationship with economic growth in HIC's.

Premise on findings, this study concludes that foreign portfolio investment and financial openness have no joint or independent impact on economic growth in low income countries. It is also the conclusion of this paper that foreign portfolio investment has a significant independent and joint impact on economic growth in high income countries. Following this, this paper recommends that countries in the low/middle income brackets improve on their institutional quality to encourage larger foreign portfolio investment. It is believed that larger inflow of foreign portfolio will be able to provide needed funds and liquidity to bridge the gap between savings and investment. Secondly, financial openness of low/middle income countries should also be at a proper degree so that the financial system does not become unwholesomely integrated with foreign economies as shocks emanating from these countries can quickly have a ripple effect on the domestic economy. Given that foreign portfolio reinforces economic growth in high income countries, this paper recommends that these nations deepens their financial system so as to build a strong capacity for absorbing this inflow of capital.

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