Determinants of Foreign Portfolio Investments: BRICS as a Unit of Analysis

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Abstract: The determinants of foreign portfolio investment in BRICS (Brazil, Russia, India, China, South Africa) were examined in this study using panel data (1998-2020) analysis methods such as Fully Modified Ordinary Least Squares (FMOLS), fixed effects and pooled ordinary least squares (OLS). What necessitated the author to undertake this study is that the existing literature on the determinants of foreign portfolio investment is full of gaps. This study is all focused on trying to fill these gaps, already enunciated in the introductory section. Economic growth under the fixed effects had a significant positive influence on foreign portfolio investment. Also, the FMOLS show that savings' impact on foreign portfolio investment was observed to be significantly positive. The pooled OLS also indicates that stock market development had a positive and significant effect on foreign portfolio investment. Finally, human capital development's influence on foreign portfolio investment was observed to significantly negative under the FMOLS approach. The study therefore encourages BRICS authorities to implement policies aimed at increasing economic growth, stock market development and savings to attract more foreign portfolio investment.

Keywords: Foreign Portfolio Investments; Panel Data; BRICS

JEL Classification: F21; C23; P2

1. Introduction

Background: According to Errunza (2001), foreign portfolio investment enhances financial resources available in the country thereby lessening the liquidity constraints for the local companies. Harvey (2003) argued that foreign portfolio investment increases the liquidity levels in the economy thereby ensuring the deficit sectors of the economy are well catered for. Moreover, financial liquidity constraints are solved

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through the increase in foreign portfolio investment inflows (Laeven. 2003). Several empirical researches examined the influence of foreign portfolio investment on economic growth and it appears there is a consensus that the economy is enhanced by the foreign portfolio investment. Examples of empirical research which concluded that foreign portfolio investment enhances economic growth include Ndong (2015), Sumanjeet (2009), Kania-Morales and Mroz (2014), Loncan and Caldeira (2015), and Elekwa et al (2016), Nyang'oro (2013), among others.

The weakness concerning the empirical research on the influence of foreign portfolio investment on economic growth is that such studies can not be used to formulate policies aimed at enhancing foreign portfolio investment. As a result, relevant empirical research on policy making purposes should be tailor made at investigating the determinants of foreign portfolio investment. This is the focus of this study. There are several studies which tried to investigate the determinants of foreign portfolio investment. Some of these studies include Al-Smadi (2018), Singhania and Saini (2017), Ngwenya (2019), Khayat (2020), Badawi et al (2019), Chaudhry et al (2014), Nwosa and Adeleke (2017), Oke et al (2020), Syarifuddin (2020), Dua and Garg (2013) and Syarifuddin (2020), among others. They produced mixed, divergent and conflicting results which show that there is no consensus. In other words, a single list of foreign portfolio investment determinants does not exist yet.

Contribution of the study: There are five ways to describe this study's contribution. This study investigated the determinants of foreign portfolio investments using BRICS as a unit of analysis. Earlier empirical research has not focused on the economic bloc, to the best knowledge of the author. This study examined how the complementarity of trade openness and foreign direct investment affected foreign portfolio investment in BRICS. The impact of such a variable on foreign portfolio investment has never been investigated to the author's best knowledge. Unlike this study, majority of empirical research on the determinants of foreign portfolio investment used time series approaches. This study used the most recent data.

Structure of the paper: Section 2 deals with theoretical determinants of foreign portfolio investment, Section 3 summarizes the empirical research on the foreign portfolio investment determinants whilst Section 4 presents and describes the foreign portfolio investment trends for BRICS for a selected period. Section 5 describes the research methodological framework, pre-estimation diagnostics and final data analysis. The conclusion is devoted to Section 6. Section 7 list the bibliography.

2. Theoretical Literature Review

Table 1 provides a summary of theoretical literature on the determinants of foreign portfolio investments.

Table 1. The Theoretical Relationship between the Dependent Variable and its Explanatory Variables

Explanatory variables	Theoretical views	Expected sign
Stock market development	According to Al-Smadi (2018), higher stock market indices attract foreign portfolio investors as they are more likely to offer higher returns. Liquid stock markets also attract foreign portfolio investments as they enable the investors to pull out their funds at any time. Consistent with Bartels et al (2009), developed stock markets enables easy linkages between local and foreign markets thereby doing away with entry and exit constraints for foreign investors. According to Gordon and Gupta (2004), foreign portfolio investments are negatively affected by stock market development especially when investments are made at a time when the stock market is on a downward spiral with the hope that it will rise.	+/-
Economic growth	According to Garg and Dua (2014), high levels of economic growth gives an impression of a very stable economy or country hence attracting foreign portfolio investments. Stable economy enables the domestic firms to make more profits and increase their share prices on the stock exchanges. This attracts foreign portfolio investments, according to Al-Smadi (2018).	+/-
Foreign direct investment	According to Hailu (2010), foreign portfolio investments is crowded out by direct foreign investments in an environment characterised by shallow financial markets. The same study done by Hailu (2010) argued the volatility of foreign portfolio investments is stabilised by foreign direct investment through its macroeconomic stabilisation abilities.	+/-
Openness to trade	Consistent with Dobbs et al (2013), trade openness enhances mobility of the international capital thereby promoting foreign portfolio investments. High trade openness is a sign to the foreign investors that the government is	+

	committed to the implementation of stable macroeconomic enhancement policies (Alesina and Dollar. 2000).	
Population	Ahmad et al (2015) argued that market size is enhanced by higher levels of population growth. The latter has got an effect of increasing the demand of securities (investment) in the economy	+
Savings	In line with Masood and Mohsin (2002), domestic savings was found to have had a non-significant positive influence on foreign portfolio investments in Pakistan. Abdelhafidh (2013) observed that savings attracted foreign portfolio investments in developing countries.	+
Human capital development	Ngwenya (2019) noted that the influence of human capital development on foreign portfolio investments was positive and significant in the context of emerging markets.	+
Exchange rates	Al-Smadi (2018) argued that depreciated local currency negatively affects the value of the return on investments, a factor which chases away potential foreign portfolio investments. In contrast, an increase in the value of the local currency scales up the confidence that potential foreign portfolio investors have in the economy (Garg and Dua. 2014).	+/-
Inflation	Potential foreign portfolio investors are dissuaded to invest their money in an inflationary environment because they are afraid of losing not only returns but their original investment (Al-Smadi. 2018).	-
External debt	In the case of China, external debt had a significant deleterious effect on foreign portfolio investments (Ahmad et al. 2015).	-
Complementarity between trade openness and foreign direct investment	Nzete and Akintunde (2019), Mehar and Hasan (2018) and Chaudhry et al (2014) noted that foreign direct investment in an open economy tends to enhance the inflow of foreign portfolio investment. In other words, the more open the economy is, the more that economy attracts foreign direct investment and consequently the inflow of foreign portfolio investment	+

Source: Author Compilation

3. Empirical Literature Review

Table 2 summarises the recent empirical research work on the determinants of foreign portfolio investments.

Table 2. Related Empirical Research

Author	Unit of analysis	Approach	Findings
Al-Smadi (2018)	Jordan	Granger causality tests (2000-2016)	Stable macro-economic environment, stable financial market, political stability and reasonable liquidity levels were found to be the factors that had a significant influence on foreign portfolio investment.
Singhania and Saini (2018)	Developed and developing countries	Panel generalized methods of moments (GMM), 2004-2013	Trade openness, stock market development and interest rate differentials were observed to have had a significant impact on foreign portfolio investment in developed countries. The same variables were found to have had a significant influence on foreign portfolio investments in developing countries.
Haider et al (2016)	China	Multiple regression analysis	External debt, economic growth, exchange rates and population were found to be the key variables which influenced foreign portfolio investments in China.
Ngwenya (2019)	Emerging markets	Dynamic GMM, fixed effects, random effects, fully modified ordinary least squares (FMOLS)	Trade openness, financial development, exchange rates, economic growth, savings and human capital development had a significant positive effect on foreign portfolio investment.
Khayat (2020)	Gulf Cooperation Council (GCC) group of nations	Fixed effects, GMM methods, random effects	Financial development, infrastructural development and trade openness had a positive influence effect on foreign portfolio investments.
Badawi et al (2019)	Saudi Arabia	Regression analysis	Firms with high levels of tangible assets and firms which are privately owned attracted foreign portfolio investments. Firms characterized by high levels of liquidity and or owned by the government repel foreign portfolio investments.
Chaudhry et al (2014)	Pakistan	Time series analysis of data	Financial development, trade openness and the lag of foreign portfolio investments had a positive influence on foreign portfolio

|			investments. Foreign direct investments had a foreign portfolio investments reduction effect.
Nwosa and Adeleke (2017)	Nigeria	E-GARCH	Economic growth, financial development and trade openness to a larger extent had a significant impact on foreign portfolio investments in Nigeria.
Oke et al (2020)	Emerging markets	Autoregressive distributed lag (ARDL) and error correction model (ECM)	Financial development, economic growth, interest rate and real exchange rate had a positive effect on foreign portfolio investments.
Giritli (2020)	South Africa	ARDL	Financial development, exchange rates, economic growth and interest rates had a significant influence on foreign portfolio investments.
Syarifuddin (2020)	ASEAN group of countries	Descriptive statistics	Inflation rate, interest rate differential, economic growth and government debt attracted foreign portfolio investments
Nzete and Akintunde (2019)	Nigeria	GARCH model	High interest rate, foreign direct investment, economic growth, currency depreciation had a positive influence of foreign portfolio investments in Nigeria.
Agarwal et al (2020)	China	Descriptive statistics	Information advantages, diversification and comparative advantages played a huge role in influencing foreign portfolio investments in China
Dua and Garg (2013)	India	ARDL	Key variables which influenced foreign portfolio investments in India include exchange rates, stock market development and economic growth.
Kumar et al (2019)	India	ARDL	Exchange rate, stock market development and foreign exchange reserves were the factors which influenced foreign portfolio investments in India.
Jothirajan (2018)	India	Multi-regression analysis	Stock market development was observed to be a major factor which had a significant influence on foreign portfolio investments in India
Kirti and Shahid (2020)	India	Multi-regression analysis	Exchange rates, economic growth, stock market development and interest rates differentials were the key factors which influenced foreign portfolio investments in India

Raghavan and Selvam (2017)	India		Exchange rate and foreign currency reserves had a significant influence on foreign portfolio investments in India
Fagbola et al (2020)	Nigeria	ARDL	Country specific related variables were key determinants of foreign portfolio investments into the Nigerian economy.
Mudyazvivi (2016)	Sub Saharan Africa (SSA)	Panel data analysis	Infrastructural development and economic growth are the two main factors which attracted foreign portfolio investment into the SSA countries.
Nxumalo and Makoni (2021)	Emerging markets	GMM approach	Positive determinants of foreign portfolio investments include trade openness, economic growth and stable institutional quality standards.
Duruechi (2021)	Nigeria	Vector Error Correction Model (VECM)	Stock market development, economic growth, inflation and interest rates were observed to be the key variables which influenced foreign portfolio investments in Nigeria.
Mugableh and Oudat (2018)	Jordan	ARDL	Foreign direct investments, government expenditure, stock market development and money supply growth were all found to be key drivers of foreign portfolio investments.
Schnorrenberger and Meurer (2017)	Emerging economies	GMM	Current account balance, real exchange rates and fiscal prudence played a huge role in influencing foreign portfolio investments in emerging economies.
Mehar and Hasan (2018)	Pakistan	ARDL	Trade openness, foreign direct investment, stock market development and money supply levels were found to be the major determinants of foreign portfolio investments in Pakistan.
Aziz et al (2015)	Pakistan	Multiple regression analysis	Inflation had a negative influence on foreign portfolio investments. On the other hand, economic growth, trade openness and stock market development had a significant positive effect on foreign portfolio investments in Pakistan.

Source: Author compilation

What is coming out clearly from the empirical research results presented in Table 2 is that there is no mutually agreed list of the determinants of foreign portfolio investments. The empirical research also indicates that there are mixed, conflicting

and or diverging results regarding the findings on the determinants of foreign portfolio investments. In other words, there is an absence of consensus in the literature in as far as foreign portfolio investments determinants is concerned. These gaps prompted this study.

4. Foreign Portfolio Investment Trends in BRICS
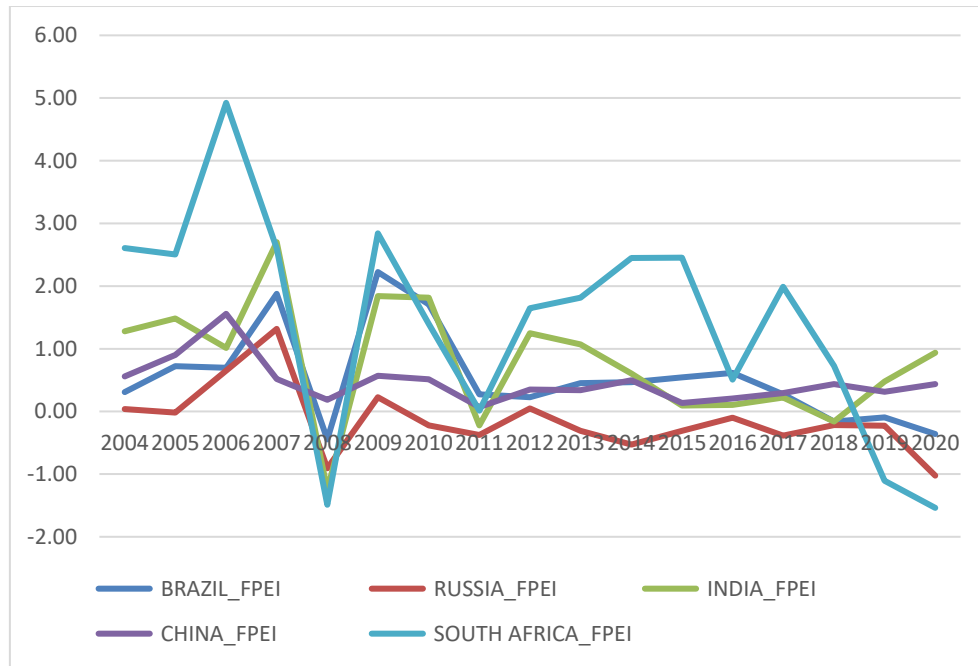
Figure 1: Foreign portfolio equity investments net inflows (% of GDP) trend analysis for BRICS
Source: Author

Brazil's net inflow of foreign portfolio investments went up by 1.38 percentage points, from 0.31% in 2004 to 1.71% in 2010. However, the five-year period from 2010 to 2015 saw Brazil's net inflow of foreign portfolio investments going down by 1.16 percentage points (from 1.71% in 2010 to 0.54% in 2015). The subsequent five-year period saw Brazil's net inflow of foreign portfolio investments further going down from 0.54% in 2015 to a negative 0.36% in 2020.

Russia's net inflow of foreign portfolio investments has been on a downward trend from 2004 to 2020. It declined by 0.26 percentage points, from 0.04% in 2004 to a negative 0.22% in 2010 before further plummeting by a further 0.09 percentage points (from a negative 0.22% in 2010 to a negative 0.31% in 2015). The subsequent

five-year period saw Russia's net foreign portfolio investments further going down by 0.72 percentage points (from -0.31% in 2015 to -1.02% in 2020).

India's foreign portfolio investments net inflow trends were mixed during the time period ranging from 2004 to 2020.The period ranging from 2004 to 2010 saw India's net inflow foreign portfolio investments going up by 0.54 percentage points, (from 1.28% in 2004 to 1.82% in 2010). However, India's foreign portfolio investments net inflows plummeted by 1.72 percentage points, from 1.82% in 2010 to 0.09% in 2015. A rebound was experienced during the subsequent five-year time period, which saw India's net inflow foreign portfolio investments going up by 0.84 percentage points (from 0.09% in 2015 to 0.93% in 2020).

In the case of China, foreign portfolio investments net inflows went down from 0.56% in 20004 to 0.52% in 2010, representing a decline by 0.04 percentage points. A further decline by 0.38 percentage points (from 0.52% in 2010 to 0.14% in 2015) was observed during the subsequent five-year period. China's net inflow of foreign portfolio investments increased by 0.30 percentage points during the subsequent five-year timeframe (from 0.14% in 2015 to 0.44% in 2020).

South Africa's foreign portfolio investments trend is also mixed during the 17-year time frame under study. The net inflow of its foreign portfolio investments plummeted from 2.60% in 2004 to 1.40% in 2010. A rebound of South Africa's foreign portfolio investments net inflow was experienced during the five-year time period ranging from 2010 to 2015. It went up by 1.06 percentage points, from 1.40% in 2010 to 2.45% in 2015. A massive 3.99 percentage points decline in South Africa's foreign portfolio investments was observed during the subsequent five-year period. It went down from 2.45% in 2015 to -1.54% in 2020.

BRICS countries' foreign portfolio investments experienced upward and downward trends during the 17-year period under study (see Figure 1). Although Figure 1 shows trends for BRICS' foreign portfolio investments net inflows, its weakness is that it cannot tell the reader the underlying causes of the trends for economic bloc. It is for this reason that the current study investigated the determinants of foreign portfolio investments in BRICS economic bloc.

5. Research Methodology

Data: The determinants of foreign portfolio investments were examined using panel data (1998-2020) analysis methods. The secondary data used was mainly extracted from World Development Indicators. The latter is an international database whose main advantages are that of (1) reliability, (2) transparency, (3) consistency and (4) verifiability.

Pre-estimation diagnostics: This sub-section encompasses correlation analysis and descriptive statistics.

Table 3. Correlation Analysis

	FPEI	STOCK	OPEN	FDI	POP	HCD	GROWTH	SAV
FPEI	1.00							
STOCK	0.42***	1.00						
OPEN	0.05	0.38***	1.00					
FDI	-0.21*	-0.47***	-0.15	1.00				
POP	0.46***	0.64***	0.03	-0.34***	1.00			
HCD	-0.35***	-0.35***	-0.24**	0.23**	-0.73***	1.00		
GROWTH	-0.24**	-0.16	-0.31***	0.09	-0.53***	0.69***	1.00	
SAV	-0.15	-0.45***	0.29***	0.21**	-0.45***	0.002	-0.25**	1.00

***/**/* represents 1%, 5% and 10% significant level respectively
Source: E-Views

Where FPEI, STOCK, OPEN, FDI, POP, HCD, GROWTH and SAV respectively stands for foreign portfolio investment, stock market development, trade openness, foreign direct investment, population growth, human capital development, economic growth and savings.

Table 3 show a significant positive relationship between (1) foreign portfolio investments and stock market development and (2) foreign portfolio investments and population growth. A significant negative relationship was observed between (3) foreign portfolio investments and foreign direct investment, (4) foreign portfolio investments and human capital development and (5) foreign portfolio investments and economic growth. A non-significant positive relationship between foreign portfolio investments and trade openness was observed. A significant negative relationship between savings and foreign portfolio investments was also detected. The maximum size of the correlation was found to be between population and human capital development (-73%), an illustration that there exists a multi-collinearity problem between the two variables. This interpretation resonates with Stead (2007).

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Table 4. Descriptive Statistics

	FPEI	STOCK	OPEN	FDI	POP	HCD	GROWTH	SAV
Mean	0.62	95.23	44.86	2.31	0.86	0.71	6 721	29.31
Median	0.44	66.00	47.15	2.13	0.89	0.72	6 797	29.79
Maximum	4.92	322.71	65.97	4.55	1.62	0.84	15 975	51.09
Minimum	-1.54	17.58	22.11	0.21	0.01	0.52	627.77	15.16
Standard deviation	1.09	75.66	11.47	1.16	0.48	0.08	3 899	10.85
Skewness	0.94	1.49	-0.49	0.17	-0.16	-0.45	0.16	0.53
Kurtosis	4.81	4.09	2.23	2.09	1.82	2.33	2.29	2.15
Jarque-Bera	24.18	35.67	5.42	3.36	5.32	4.51	2.12	6.52
Probability	0.8	0.0	0.06	0.19	0.07	0.11	0.35	0.04
Observations	115	115	115	115	115	115	115	115

Source: E-Views

The range for stock market capitalization and economic growth exceeded 100 whilst the standard deviation for the same variables were greater than 75. Such results show that there exist extreme values in the two variables. The data for foreign portfolio investments, stock market capitalization, foreign direct investment, economic growth and savings were skewed to the right whilst the data for trade openness, population growth and human capital development was skewed to the left. The results are an indication that the data for majority of the variables was skewed to the right (abnormal distribution). The probability of the Jarque-Bera criteria for variables such as stock market capitalization and human capital development, an indication that the data for these two variables was abnormally distributed. Except for foreign portfolio investments, the data for other variables was converted into natural logarithms for the obvious reasons such as managing extreme values and abnormal distribution and the multilinearity problem of the data. Aye and Edoja (2017) did the same to manage these econometric problems associated with data.

Economic model specification: Equations 1 and 2 sums up the economic models used in this study.

FPEI=f (OPEN, FDI, STOCK, POP, HCD, GROWTH, SAV)   (1)

Equation 1 above represents a summary of the determinants of foreign portfolio investments, consistent with existing empirical literature (Aziz et al. 2015; Mehar and Hasan. 2018; Mugableh and Oudat. 2018; Duruechi. 2021; Mudyazvivi. 2016; Fagbola et al. 2020; Jothirajan. 2018; Nxumalo and Makoni. 2021).

In econometric terminology, equation 1 is transformed into equation 2 below.

$$\text{FPEI}_{it} = \beta_0 + \beta_1$$
$$\text{OPEN}_{it} + \beta_2\text{FDI}_{it} + \beta_3(\text{OPEN}_{it}.\text{FDI}_{it}) + \beta_4\text{STOCK}_{it} + \beta_5\text{POP}_{it} + \beta_6\text{HCD}_{it}$$
$$+\beta_7\text{GROWTH}_{it} + \beta_7\text{SAV}_{it} + \mu + \varepsilon \qquad (2)$$

Table 5. Interpretations of Equation 2 Signs

β_0	Intercept term
β_1 to β_7	Co-efficient of the explanatory variables
μ	Time invariant and unobserved country specific effect
ε	Error term
i	Country
t	Time
FPEI_{it}	Foreign portfolio investments net inflows in country i at time t
STOCK_{it}	Stock market capitalization in country i at time t
OPEN_{it}	Trade openness in country i at time t
FDI_{it}	Foreign direct investments net inflows in country i at time t
POP_{it}	Population growth in country i at time t
HCD_{it}	Human capital development in country i at time t
GROWTH_{it}	Economic growth in country i at time t
SAV_{it}	Savings in country i at time t

Source: Author

Consistent with Nzete and Akintunde (2019), Mehar and Hasan (2018) and Chaudhry et al (2014), the complementarity between trade openness and foreign direct investment was introduced in equation 2 as one of the explanatory factors of foreign portfolio investment. The complementarity variable explores if foreign direct investment is a channel through which trade openness enhances foreign portfolio investment in BRICS group of countries. It also examines if the combination between trade openness and foreign direct investment significantly enhances foreign portfolio investment inflows into BRICS. If the complementarity variable is positive and significant, the results means that the combination between the two variables significantly enhances the inflow of foreign portfolio inflows into BRICS. Fully modified ordinary least squares (FMOLS), fixed effects and pooled OLS were used as the econometric estimation methodologies for equation 2.

Table 6. Variables, Measures and the Sources of Data

Variable	Measures used	Data sources
Foreign portfolio equity investment (FPEI)	Foreign portfolio equity net inflows (% of GDP)	World Development Indicators
Stock market development (STOCK)	Stock market capitalization (% of GDP)	World Development Indicators
Human capital development (HCD)	Human capital development index	World Development Indicators
Population growth (POP)	Population growth (% of annual)	World Development Indicators
Foreign direct investment (FDI)	Net foreign direct investment inflows (% of GDP)	World Development Indicators
Trade openness (OPEN)	Total of exports and imports (% of GDP)	World Development Indicators
Economic growth (GROWTH)	Gross domestic product per capita	World Development Indicators
Savings (SAV)	Gross domestic savings (% of GDP)	World Development Indicators

Source: Author

Mehar and Hasan (2018), Aziz et al (2015), Duruechi (2021), Mugableh and Oudat (2018), Fagbola et al (2020), Mudyazvivi (2016), Nxumalo and Makoni (2021) and Jothirajan (2018) are some of the few empirical researches which informed the choice of the proxies summarized in Table 6. Data availability was also one of the considerations when choosing the proxy to use for each of the variable.

Panel stationarity tests: Levin, Lin and Chu (2002); ADF Fisher Chi Square, Im, Pesaran and Shin (2003) and PP Fisher Chi Square tests are respectively represented by LLC, ADF, IPS and PP. Table 7 indicates that other variables were not stationary whilst the other variables were stationary. However, none of the variables were not stationary at first difference. Such results paved way for panel co-integration tests to be undertaken.

Table 7. Panel Root Tests –Individual Intercept

Level				
	LLC	IPS	ADF	PP
FPEI	-2.79***	-1.69**	16.77*	35.678***
STOCK	-4.50***	-2.73***	25.29***	32.58***
OPEN	-0.94	-0.48	12.96	13.56
FDI	-1.53*	-1.37*	17.92*	26.72***
POP	-2.82***	-1.22**	-2.88**	-1.28***
HCD	-1.64*	-0.98	13.09	19.17**
GROWTH	-4.26***	-2.38***	21.75**	51.91***
SAV	-0.47	0.22	8.11	7.61
First difference				
FPEI	-11.21***	-9.52***	78.00***	117.12***
STOCK	-8.39***	-6.88***	57.25***	99.97***
OPEN	-5.35***	-3.53***	30.60***	65.67***
FDI	-5.67***	-6.19***	51.84***	96.14***
POP	-5.18***	-4.21***	-6.43***	-5.19***
HCD	-10.56***	-9.39***	78.14***	127.66***
GROWTH	-3.02***	-5.18***	101.72***	125.34***
SAV	-3.15***	-3.51***	31.22***	51.88***

Source: E-Views

Panel co-integration tests: The results are presented in Table 8.

Table 8. Kao's (1999) results

Series	ADF t-statistic
FPEI STOCK OPEN FDI POP HCD GROWTH SAV	-4.8261***

Source: Author

The co-integration tests for the foreign portfolio investments function was performed using the Kao (1999) approach. Table 8 produced results which show that the null hypothesis cannot be rejected. The null hypothesis in this study is represented by the following statement: A long run relationship exist among the variables under study. According to Guisan (2014), these results cleared room for final data analysis to be undertaken (see results in Table 9).

Main data analysis: Table 9 presents the results for the fixed effects, pooled OLS and the fully modified ordinary least squares.

Table 9. Main Data Analysis on the Determinants of Foreign Portfolio Investments

	Fixed effects		Fully Ordinary Squares	Modified Least	Pooled OLS	
	Co-efficient	t-statistic	Co-efficient	t-statistic	Co-efficient	t-statistic
OPEN	1.42	1.2701	0.72	0.5934	0.58	1.1465
FDI	0.34	1.5485	0.34	1.5620	0.28	1.5406
OPEN.FDI	0.03***	4.9593	0.45	1.4384	0.23	0.3731
STOCK	0.53	1.5480	0.32	0.8596	0.55**	2.1533
POP	0.06	0.2684	0.05	0.2162	0.1890	1.1298
HCD	-3.16	-1.4207	-4.31*	-1.8494	-0.94	-0.5679
GROWTH	0.59*	1.7194	0.32	0.7341	0.01	0.0326
SAV	2.17	1.6440	2.52*	1.9419	0.36	0.8993
Adjusted R-squared 0.7183 F-statistic 121.32 Prob (F-statistic) 0.0000			Adjusted R-squared 0.5716 F-statistic 62.94 Prob (F-statistic) 0.0000		Adjusted R-squared 0.67 F-statistic 92.16 Prob (F-statistic) 0.0000	

Source: E-Views

Trade openness's influence on foreign portfolio investments was observed to be positive but non-significant across all the three econometric estimation methodologies. Such results are consistent with a study by Dobbs et al (2013) which explained that trade openness enhances mobility of the international capital thereby promoting foreign portfolio investments. Under the fixed effects, FMOLS and the pooled OLS, foreign direct investment had an insignificant positive effect on foreign portfolio investment. The results are in line with Hailu (2010) whose study argued the volatility of foreign portfolio investments is stabilised by foreign direct investment through its macroeconomic stabilisation abilities. The influence of the complementarity variable (trade openness x foreign direct investment) on foreign portfolio investment was found to be positively significant only under the fixed effects. The pooled OLS and FMOLS noted that the complementarity variable had a non-significant enhancing effect on foreign portfolio investment. These results agree with authors such as Nzete and Akintunde (2019), Mehar and Hasan (2018) and Chaudhry et al (2014) whose studies implied that foreign direct investment in an open economy tends to enhance the inflow of foreign portfolio investment. In other words, the more open the economy is, the more that economy attracts foreign direct investment and consequently the inflow of foreign portfolio investment.

Stock market development was found to have a non-significant positive influence on foreign portfolio investments under the fully modified least squares (FMOLS) and fixed effects whilst the pooled OLS approach noted that stock market development 's impact on foreign portfolio investment was significantly positive. The results resonate with Bartels et al (2009) whose study argued that developed stock markets enable easy linkages between local and foreign markets thereby doing away with entry and exit constraints for foreign investors.

Consistent with Ahmad et al (2015) whose study noted that market size is enhanced by higher levels of population growth, all the three panel data analysis approaches noted that population growth enhanced foreign portfolio investment in a non-significant manner. Ahmad et al (2015) further argued that higher market size has got an effect of increasing the demand of securities (investment) in the economy. In contrast to available literature (Ngwenya. 2019), a non-significant negative correlation running from human capital development towards foreign portfolio investment was observed under the fixed effects and pooled OLS approaches. The FMOLS approach also noted that the impact of human capital development on foreign portfolio investment was significantly negative, a finding which also is at variance with the available literature on the subject matter. Economic growth's influence on foreign portfolio investment was observed to be significantly positive under the fixed effects. However, pooled OLS and FMOLS produced results which shows that the influence of economic growth on foreign portfolio investment was not only positive but insignificant. The findings resonate with Garg and Dua (2014) whose study noted that high levels of economic growth give an impression of a very stable economy or country hence attracting foreign portfolio investments. Savings was observed to have had a significantly positive impact on foreign portfolio investments under the FMOLS approach. However, fixed effects and pooled OLS indicated that savings had an insignificant positive effect on foreign portfolio investment in BRICS. These results support the available literature by Masood and Mohsin (2002) and Abdelhafidh (2013) whose research noted that savings attract foreign portfolio investments into developing countries.

6. Conclusion

The determinants of foreign portfolio investment in BRICS was examined in this study using panel data (1998-2020) analysis methods such as Fully Modified Ordinary Least Squares (FMOLS), fixed effects and pooled ordinary least squares (OLS). What necessitated the author to undertake this study is that the existing literature on the determinants of foreign portfolio investment is full of gaps. This study is all focused on trying to fill these gaps, already enunciated in the introductory section. Economic growth under the fixed effects had a significant positive influence on foreign portfolio investment. Also, the FMOLS show that savings' impact on

foreign portfolio investment was observed to be significantly positive. The pooled OLS also indicates that stock market development had a positive and significant effect on foreign portfolio investment. Finally, human capital development's influence on foreign portfolio investment was observed to significantly negative under the FMOLS approach. The study therefore encourages BRICS authorities to implement policies aimed at increasing economic growth, stock market development and savings to attract more foreign portfolio investment.

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