

## EXAMINING THE ROLES OF INSTITUTIONAL QUALITY AND FINANCIAL OPENNESS IN ENHANCING ECONOMIC PERFORMANCE: EVIDENCE FROM BRICS COUNTRIES

Nzeh Innocent Chile<sup>1</sup> , Benedict I. Uzoechina<sup>2</sup> , Chika P. Imoagwu<sup>2</sup> , Okoli Uju Victoria<sup>2</sup> 

<sup>1</sup>Department of Economics, Renaissance University, Ugbawka, Enugu State, Nigeria

<sup>2</sup>Department of Economics, Nnamdi Azikiwe University, Awka, Anambra State, Nigeria

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Corresponding Author:  
Nzeh Innocent Chile

Email: [nzechile@yahoo.com](mailto:nzechile@yahoo.com)

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### ABSTRACT

**Purpose:** The aim is to examine the roles of institutional quality and financial openness on the economic performance of BRICS, using annual series that covered the period from 1996 to 2020.

**Methods:** Principal component analysis (PCA) was used to select the institutional quality variables, while analysis of the study was conducted under the panel data random effect model. Findings indicate that FDI inflows and capital account openness positively impacted on GDP per capita significantly; however the impact of FDI outflows on GDP per capita, though positive, was not significant. Moreover, control of corruption and government effectiveness both had positive and significant impact on GDP per capita, while trade openness impacted GDP per capita negatively, though the result was not significant.

**Findings:** The outcome of the study reveals that the economy of the BRICS improved by removing restrictions on capital controls which retard capital inflows, but liberalization of trade had adverse effect on growth in the bloc. Equally revealed in the study is that effective government which reduces corrupt tendencies lead to improved economic performance. The study therefore recommends the removal of all bottlenecks that hinder FDI inflows and the building of strong institutions in BRICS.

**Practical Implications:** With respect to the institutional variables employed in the study, findings revealed that when governance is effective, it encourages improvement in the economy. Effectiveness in governance encourages reduction in corruption which is the bane of underdevelopment in many developing countries.

**Originality/Value:** The panel random effect results showed that of the three financial openness indicators employed, FDI inflows and capital account openness significantly impacted on GDP per capita positively, while the impact of FDI outflows was positive but negligible.

### INTRODUCTION

The ultimate goal of every government in promoting economic growth is to improve the living standards of the people. Apart from the traditional factors that improve the economy, factors such as institutional quality and financial openness have been noted to influence the growth

path of the economy. It has been argued by the new school of institutional economics that institutions are the major determinants of the efficiency of the economy. A country's institutional frameworks create incentives that encourage economic growth because these incentives directly impact economic and political activities (North, 2000). Strong institutions reduce corrupt tendencies and administrative rigidities which hinder growth. It also instills confidence in foreign investors as investors are aware that their investment is secure because contracts can be honored. In another respect, the role of financial openness in promoting economic growth has been stressed. A major policy thrust of most countries (especially developing countries) in the mid-80s was international financial liberalization as it became obvious that by opening up the financial sector, a country's economy is improved. In theory, as observed by Wei (2015), the lifting of restrictions on capital induces capital flows from developed to developing and underdeveloped countries. The accumulation of capital in these countries, induced by capital inflows, encourages economic growth.

However, despite the envisaged gains accruable from an institutional quality and financial liberalization, debate still emerges regarding the actual impact of these factors on the economy. For instance, several financial crises that bedeviled most economies over the years have raised suspicions regarding the rationale behind financial sector openness. In another vein, Murshed (2004) has contended that poor institutions could lead to inappropriate or bad policies which can impact negatively on the economy. Developing countries mostly grapple with weak institutions that result in corrupt tendencies. The controversies surrounding the actual impact of institutional quality and financial openness on the economy formed part of the motivation for this study as we investigated this in BRICS. This study is relevant for the reason that the countries comprising the bloc are mainly developing countries that require capital inflows to complement domestic resources, but at the same time whose trade relationship with the developed countries is skewed in favor of developed countries (Prebisch, 1950). Developing countries are also known to have poor institutions that retard their quest for economic growth. It is hoped, therefore, that the outcome of the study will assist policymakers in this bloc and other developing countries to fine-tune their policies to address the factors that encumber growth. The lack of empirical work on this topic in BRICS is equally among the motivations that spur this research and this gap in the literature is the contribution of this study to knowledge.

### **Some Stylized Facts on BRICS**

In 2001, the chairman of Goldman Sachs Asset Management, Jim O'Neill, in his publication was believed to have coined the word BRICS as an acronym representing five large emerging economies, namely: Brazil, Russia, India, China, and South Africa. Originally, the countries comprised Brazil, Russia, India and China, however; at China's insistence, the membership was enlarged in 2010 to include South Africa. In BRICS, bilateral relations among members are conducted majorly on the basis of equity, non-interference and mutual benefit. As at 2018, the combined nominal GDP and foreign reserves for the five countries comprising the bloc were very high. The economic activities controlled by the BRICS countries have made the bloc an important force at the international level. For instance, Brazil has been noted to be the largest economy in South America as well as the fifth largest nation in the world. As observed by the International Monetary Fund (IMF), Brazil's nominal GDP as at 2021 was in trillions of US Dollars. With huge deposit of oil and natural gas reserves, the Russian economy is rated the fifth largest in Europe and at the world level, it occupies the eleventh position in terms of nominal GDP. In terms of nominal GDP, India occupies the sixth position in the world. Even with its large population, the young population in the country coupled with high savings and investment rates are sources of advantage for the long-term growth prospect of the country.

China is rated among the world's fastest-growing economies. With an economy driven by a strong private sector in addition to having four major financial sectors, namely: Hong Kong, Shenzhen, Shanghai and Beijing, the growth prospect of the country is assured. South African economy is noted to be the third largest in Africa as well as the most industrialized and diversified in Africa. The country is endowed with huge natural resources, such as gold and diamond.

Figure 1 shows the trend of GDP per capita for the BRICS countries sampled in the study. As indicated in figure 1, before 2005, the GDP per capita for Brazil was the highest among the countries followed by Russia. Beginning from 2006 however, Russia enjoyed a high GDP per capita in relation to other countries but China led the other countries from 2019. It should be noted that China had the lowest GDP per capita among the countries, apart from India up to 2011. In all the periods sampled, the trend of GDP per capita in India was the lowest. We are of the view that the high population in India could be partly responsible for the low GDP per capita compared to other countries in the bloc. The same high population also affected the GDP per capita of China but for the high growth rate in the country. The trend for South Africa was almost flat within the sample period.

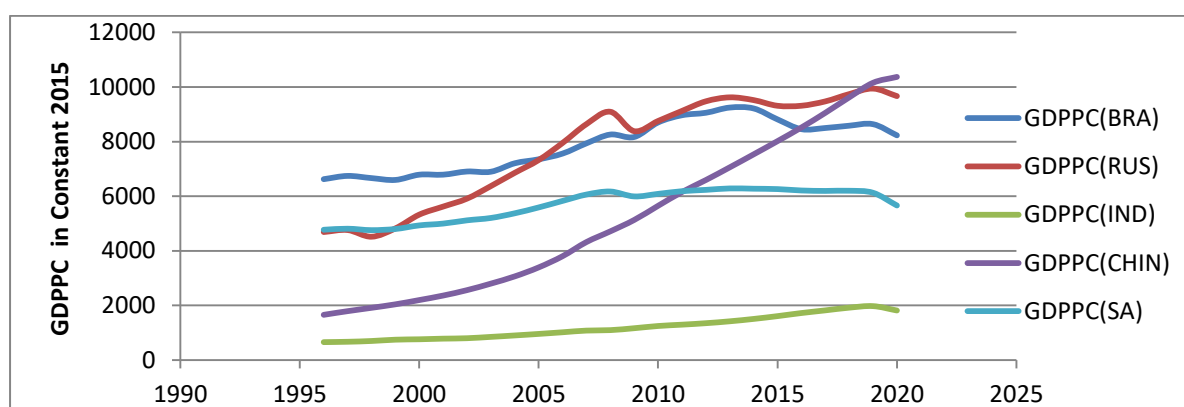


Figure 1. Trend of GDP Per Capita in BRICS

In figure 2, the trend in FDI inflows shows that Brazil had the highest FDI inflows up till 2000, but in 2001, South Africa's FDI inflows were the highest. Beginning from 2002 through 2007, China had the highest FDI inflows compared to other countries in the sample. Russia's FDI inflows were the highest from 2008 up to 2009, but from 2011 all through the sample period, its GDP per capita was the highest. Among the countries, South Africa had the lowest FDI inflows within the sample period apart from 2001 when it had an abrupt surge in FDI inflows that declined sharply afterward. Trailing behind South Africa in terms of FDI inflows is India. It should be observed that FDI inflows attained a peak for all the countries in 2008 and thereafter began to decline. The economic boom that occurred in 2008 led to the penetration of capital inflows to developing countries which declined as the boom got burst beginning in 2009 owing to the global financial crisis.

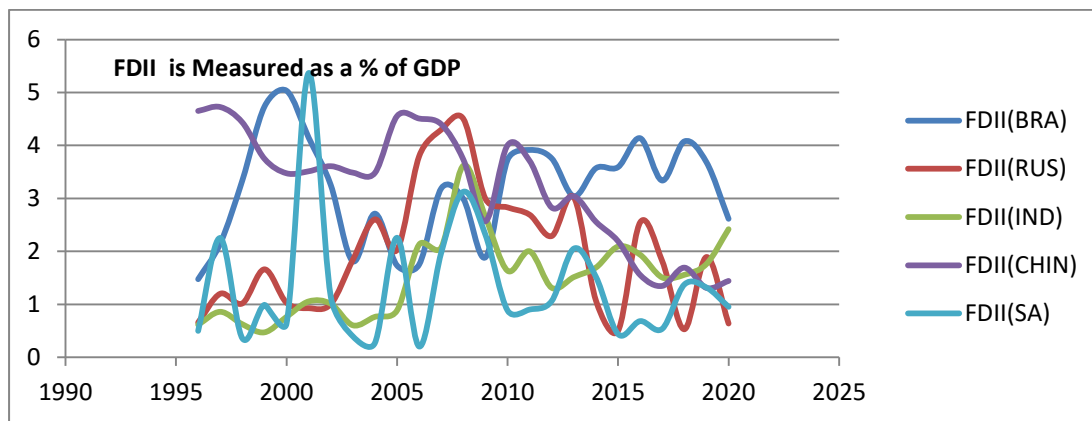


Figure 2. Trend of FDI Inflows in BRICS

The trend of FDI outflows in fig. 3 indicates that South Africa experienced the highest FDI outflows up till 1998. However, after 1998 the trend of FDI outflows for Russia was the highest among the countries all through the sample period. What is glaring in the trend is that FDI outflows for all the countries experienced a peak in 2006, but in 2008 it showed a declining trend for all the countries. Worthy of note also is that all the countries had a peak in the trend of FDI outflows between 2016 and 2017. In most of the sample period, South Africa and India had the lowest FDI outflows.

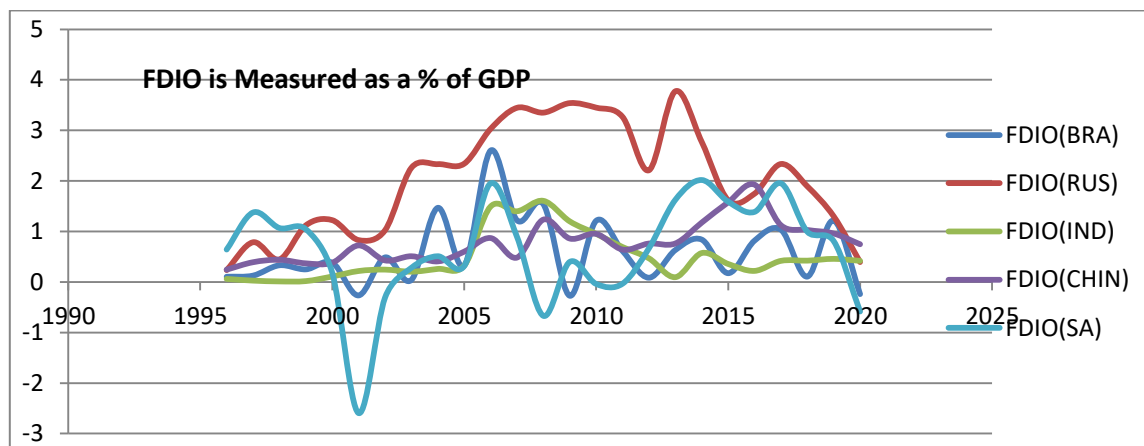


Figure 3. Trend of FDI Outflows in BRICS

### Theoretical Background

Over the years, some theoretical views have been expressed on the link between the openness of the economy and economic growth. Lucas (1988) provided evidence that supported the existence of a positive impact of openness of the economy on economic growth. The study argued that as a country opens up its economy through engaging in international trade, over some time it begins to benefit from diffusion in technology from developed countries. Also, as a country embraces economic openness, domestic productivity is enhanced because international trade leads to specialization and hence, economies of scale. Openness encourages competition which puts pressure on domestic firms to innovate to raise efficiency in production. Citing the endogenous growth theory, Grossman and Helpman (1991) contended that the foreign direct investment (FDI) spillover could come in form of technology transfer which can stimulate productivity and, hence leads to economic growth. As observed by McKinnon and Shaw (1973), when a country represses the financial sector, such will reduce savings, credit and thus reduces investment opportunities. The study

however noted that by removing barriers on the financial sector, such will improve savings and investment and thus encourages growth.

Notwithstanding the hypothesized growth-led hypothesis of openness of the economy, divergent views have been raised by some scholars. Prebisch (1950) and Singer (1950), in their separate studies, expressed skepticism over the benefits of trade openness in developing countries. In their separate studies, they contended that terms of trade between developed and developing countries are skewed in favor of developed countries. This is because developing countries usually specialize in the export of primary products with low export elasticity, while developed countries export more capital goods that have low substitutes in the international market. Krugman (1994) corroborated the views of Prebisch and Singer by noting that the impact of openness on economic growth is not clear. As observed by Krugman (1994), terms of trade of a country can deteriorate if local consumption of imported commodities exceeds the domestic production of such commodities. Furthermore, Diakosavvas and Scandizzo (1991) provided an argument that a country's terms of trade will decline if her export demand is elastic.

In a different vein, some scholars have raised theoretical arguments with respect to the nexus between institutional quality and economic growth. North (1990) noted that institutions are essential in enhancing economic growth. The study observed that sound legal system, political stability and other institutional quality variables have been noted as essential factors that stimulate a country's economic growth. This view finds support in Rodrik (1999) which noted that the long-term economic growth of a country can be guaranteed by institutional quality. To enhance economic growth, institutional quality can impact on other variables. Effective institutions eliminate structural rigidities which end up lowering transaction costs, thus enhancing investment. Also, if property rights are strongly defined and enforced, a country can attract more investment because investors are aware that profits arising from such investment will not be seized by the state. Aron (2000) supports the above observation by noting that countries that maintain quality institutions enjoy quality investments.

### **Empirical Literature**

The link between financial openness and economic growth has received empirical attention from several authors across different countries. In another dimension, the nexus between institutional quality and economic growth has equally been deeply investigated. A study for Nigeria by Saifullahi and Nuruddeen (2015) used the vector error correction model (VECM) and Granger causality test to show that trade openness has a positive link with real GDP, while real GDP and financial openness are negatively related. In a study of Asian countries, Wei (2015) revealed that *de facto* indicators of financial openness improve economic growth, but *de jure* indicators do not. For China, Quazi, Shahida and Wee-Yeap (2016) used the Autoregressive Distributed Lag (ARDL) to prove that trade openness and economic growth are positively related, both in the long run and in the short run. A study for sub-Saharan African (SSA) countries by Mputu (2016) used panel fixed and random effects to reveal that the link between terms of trade and GDP is positive. In another cross-country study comprising 125 countries, Brun and Gnanon (2017) used three-stage least squares (3SLS) to show that trade openness improves financial flows and government revenue. However, a study by Le, Kim and Lee (2015) used the generalized method of moments (GMM) to reveal that institutional quality leads to financial development in developing countries, while economic growth and trade openness determine financial depth in developed economies.

For 29 emerging economies, Nguyen, Su and Nguyen (2018) used the system GMM to indicate that institutional quality exerts a significant and positive impact on economic growth.

In another panel study involving 169 countries, Huchet, Mouël and Vijil (2018) used the GMM to show that trade openness impacted negatively growth in countries that specialized in low-quality products. Ehigiamusoe and Hooi Hooi (2018) used the ARDL to reveal that financial development, trade openness and economic growth are related in a study involving Ghana, Nigeria and South Africa. In another cross-country study involving 115 countries, Goh, Tong and Tang (2019) used unbalanced panel data to show that a bi-directional causality exists between *de facto* financial openness and trade openness. For middle-income countries, Recuero and González (2019) used the panel vector autoregressive (PVAR) model to prove a positive link between institutional quality and economic growth. In a study for Nigeria, Olanrewaju, Tella and Adesoye (2019) used augmented VAR to show that all the variables used in the study, except the financial inclusion index Granger-caused growth without feedback. For Asian countries, Ngo and Nguyen (2020) use the GMM to show that institutional factors do not have a positive impact on economic growth in middle-income countries.

Another study for Nigeria by Abubakar (2020) used the ordinary least square (OLS) to show that economic growth responds positively to institutional quality. This result finds support in Abere and Akinbobola (2020) which used the structural vector autoregressive (SVAR) approach to show that institutional quality improves the macroeconomic environment. Fatima, Chen, Ramzan and Abbas (2020) used the GMM to reveal that an indirect link exists between trade openness and GDP growth in developed and developing countries. Another panel study involving West African countries by Wiredu, Nketiah and Adjei (2020) used static panel regression techniques to show that trade openness, investment and inflation impact on economic growth positively. In Romania, Malsha, Mayoshi and Iu (2021) used the ARDL to show that trade openness has negative and significant long-run and short-run relationships with FDI inflows. Tran, Le and Nguyen (2021) used quantile regression methods in a study involving 48 countries in Asia to prove that an institutional threshold exists for economic growth to reach its highest level. The study observed that if the indicator for an institution exceeds the threshold, economic growth declines. Wang, Ntim, Yang and Zheng (2021) employed the fully modified ordinary least squares (FMOLS) method and VECM to show that institutional quality significantly promotes economic growth in non-oil producing countries, but showed no significant impact in oil-producing countries.

## METHODOLOGY AND PROCEDURES

In this study, the impact of financial openness and institutional quality on GDP per capita in BRICS is evaluated by employing the panel random effect model. Under the random effect, it is assumed that changes which exist across the individual entities are random and not correlated with the independent variables captured in the model. This assumption implies that time-invariant variables are excluded from being considered as explanatory variables in the model. However, before a choice was made between random effect and fixed effect, we first conducted a test of the suitability of the model using the Hausman test. As preliminary tests to ascertain the order of integration of the series, the study used different panel unit root tests such as: Levin, Lin and Chu (LLC), the augmented Dickey Fuller-Fisher (ADF-Fisher), Im, Pesaran and Shin (IPS), and Phillip-Perron-Fisher (PP-Fisher) tests. While LLC test for common unit root, others test for individual unit root. Next, the study investigated the cointegrating relationship among the variables employed in the study using both Kao residual co-integration and Johansen-Fisher panel cointegration tests. Several indicators have been used to proxy institutional quality, in order not to over-parametrize the model; we used principal component analysis (PCA) to select the suitable variables among the institutional quality variables.

## Model Specifications

With respect to the reviewed theoretical and empirical literatures that provided the link among financial openness, institutional quality and GDP, we specify this relationship as follows:

$$LGDPC_{it} = \delta_0 + \delta_1 FDII_{it} + \delta_2 FDIO_{it} + \delta_3 KAOPEN_{it} + \delta_4 CONTRCOR_{it} + \delta_5 GOVEF_{it} + \delta_6 TOPEN_{it} + \varepsilon_{it} \dots \dots \dots (1)$$

Where

*LGDPPC* = log of gross domestic product per capita (A proxy for economic performance)

*FDII* = foreign direct investment inflows

*FDIO* = foreign direct investment outflows

*KAOPEN* = capital account openness

*CONTRCOR* = control of corruption

*GOVEF* = government effectiveness

*TOPEN* = trade openness

$\varepsilon_t$  = random term

Subscripts i and t = country and time respectively

## Data and Variables

This study aimed to investigate the roles of financial openness and institutional quality on the economic performance of BRICS over the period of 1996 to 2020. Data on FDI inflows, FDI outflows, GDP per capita were obtained from the data bank of the World Development Indicators (WDI). However, data on control of corruption and governance effectiveness were sourced from the Worldwide Governance Indicators (WGI), while data on capital account openness was obtained from Chinn and Ito (2006). GDP per capita is used as a measure of economic performance and it is measured in constant 2015 US Dollars for all the countries. It is computed as the ratio of real GDP to population. We chose the two institutional variables namely: control of corruption and governance effectiveness from the result of the principal component analysis. Trade openness was computed as the ratio of the sum of export and import to GDP. The GDP we employed in the calculation of trade openness is measured in constant 2015 US Dollars for all the countries. Also, export and import are measured in 2015 constant US Dollars. As measures of financial openness, the study employed two *de facto* indicators and one *de jure* indicator. The two *de facto* indicators are FDI outflows and FDI inflows which are all measured as a percentage of GDP. The *de jure* indicator is capital account openness (KAOPEN) and data on it were obtained from Chinn and Ito (2006). KAOPEN index measures the extent of openness or restrictions on cross-border financial transactions

## RESULTS AND DISCUSSION

The results of the test of correlation among all the components of institutional quality variables are summarized in table 1. Results indicate that control of corruption has a strong positive link with all the variables after it. Government effectiveness is found to have a fairly strong positive link with regulatory requirements and rule of law, while having a weak positive link with voice and accountability and political stability. The regulatory requirement has a fairly strong positive link with the rule of law and voice and accountability but a strong

positive link with political stability. Rule of law has a strong positive link with voice and accountability, while having a weak positive link with political stability.

Table 1. Correlation matrix of the Institutional Quality Variables

Components	CONTRCOR	GOVEFF	REGQ	RLAW	VOCACC	POLSTAB
CONTRCOR	1					
GOVEFF	0.722	1				
REGQ	0.768	0.577	1			
RLAW	0.788	0.585	0.477	1		
VOCACC	0.574	0.200	0.482	0.695	1	
POLSTAB	0.667	0.442	0.666	0.342	0.150	1

Source: Authors

The results of the PCA for the six institutional quality variables considered in the study are displayed in table 2. Variable selection is done using the eigen-values and the condition for the selection is when the eigen-values are equal to or greater than one or with at least 80% cumulative. Results indicate that the eigenvalues of control of corruption and government effectiveness are 3.8 and 1.05, respectively and their cumulative variances are 62.9% and 17.4%. The results of the eigen-values for the other variables are less than one, thus implying that both control of corruption and government effectiveness are considered. Figure 1 shows the scree plot of the eigen-values of the principal components. The scree plot indicates that the control of corruption which is the first component has the highest eigen-value of 3.8 with a variability of 62.9%. Also, government effectiveness which is the second component with the second highest eigen-value of 1.05 has a variability of 17.4%. The choice of control of corruption and government effectiveness in the study is further supported by the orthonormal loading plot in figure 5.

Table 2. Extraction method: Principal component analysis

Institutional Variables	Eigen values	Proportion (%)	Cumulative (%)
CONTRCOR	3.78	62.9%	37.8%
GOVEFF	1.05	17.4%	48.2%
REGQ	0.63	10.5%	54.5%
RLAW	0.35	5.8%	57.9%
VOCACC	0.11	1.9%	59.1%
POLSTAB	0.09	1.5%	60%

Source: Authors

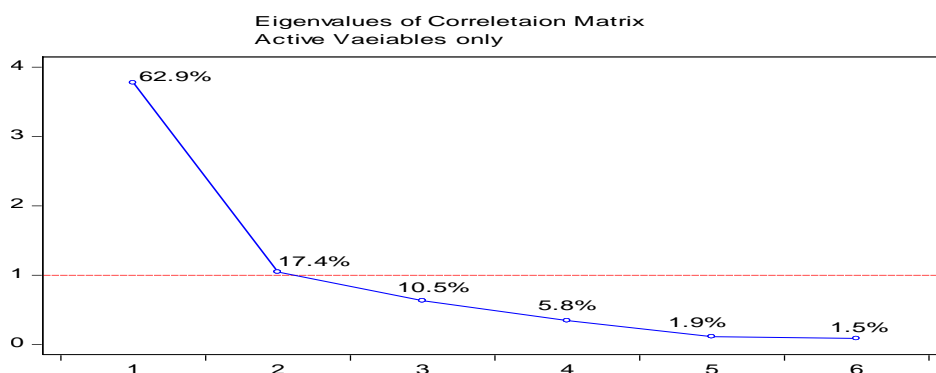


Figure 4. Scree plot of institutional quality variables



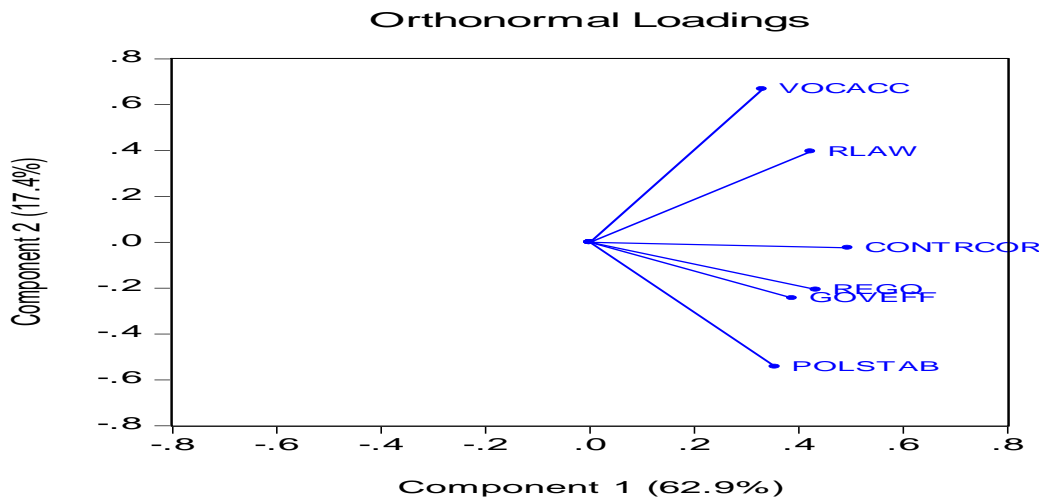


Figure 5. orthonormal loading plot

The results of descriptive statistics in table 3 indicate closeness in the values of the median and the mean variables which imply that the variability in the series is low and in addition that the variables are symmetric. Finding also shows that FDI inflows is higher than FDI outflows which is good for the bloc since FDI inflows contributes more to economy than FDI outflows. In another direction, finding indicates that GDP per capita, on the average, is higher than FDI inflows and FDI outflows and the Jarque-Bera results show a probability value that is significant for most of the variables, thus indicating that the null hypothesis of normal distribution of the error terms cannot be accepted.

Table 3. Results of Descriptive Statistics

	LGDPPC	FDII	FDIO	CONTRCOR	GOVEFF	KAOPEN	TOPEN
Mean	3.64	2.25	0.90	-0.28	0.03	-0.82	0.39
Median	3.79	2.03	0.69	-0.27	0.00	-1.23	0.40
Maximum	4.02	5.37	3.77	0.73	1.02	1.12	0.59
Minimum	2.81	0.21	-2.59	-1.13	-0.73	-1.92	0.14
Std. Dev.	0.35	1.30	0.96	0.41	0.32	0.70	0.13
Skewness	-1.05	0.37	0.68	-0.14	0.39	1.08	-0.25
Kurtosis	2.78	2.06	4.84	2.76	3.21	3.13	1.70
Jarque-Bera	23.12	7.51	27.44	0.69	3.42	24.48	10.10
Probability	0.00	0.02	0.00	0.71	0.18	0.00	0.006
Sum	455.4	280.8	112.9	-35.3	3.37	-102.3	48.5
Sum Sq. Dev.	14.8	212.2	115.2	20.92	12.50	61.4	2.19

Source: Authors

Having chosen the appropriate variables for the institutional quality, the study next presents the results of the stationarity or unit root test. In retrospect, the test of stationarity was done using the panel unit root tests such as the: Levin, Lin and Chu (LLC), the augmented Dickey-Fuller (ADF), Im, Pesaran and Shin (IPS) and Phillip Perron (PP). At the 5% level of significance, the results of unit root tests at level and at first difference are shown in tables 4 and 5 respectively. Findings in table 4 show that GDP per capita achieved stationarity at level, *ie* became I(1) under LLC and PP-Fisher, while FDI inflows achieved stationarity at level under IPS, ADF-Fisher and PP-Fisher. Finding also shows that FDI outflows, control of corruption and government effectiveness achieved stationarity at level under PP-Fisher, respectively. Results of stationarity test at first difference displayed in table 5 indicate that, apart from GDP per capita which did not become stationary, other variables became stationary at first difference, *ie* they became I(1) after first differencing.

Table 4. Panel Unit Root at Level

	Common Unit Root		Individual Unit Root	
	LLC	IPS	ADF-Fisher	PP-Fisher
GDPPC	-2.1( 0.02)*	-0.3(0.4)	9.2(0.5)	3.7(0.00)*
FDII	-1.2( 0.1)	-1.8( 0.04)*	20.5(0.03)*	30.2( 0.00)
FDIO	0.2( 0.6)	-1.0( 0.2)	12.5(0.3)	28.3( 0.00)*
CONTRCOR	1.7(0.9)	0.6(0.7)	5.1(0.9)	45.6( 0.00)*
GOVEFF	-0.4( 0.3)	2.3( 0.9)	2.8( 0.9)	42.9(0.00)*
KAOPEN	-0.3(0.4)	-0.3( 0.4)	4.0(0.40)	4.4( 0.4)
TOPEN	-1.9(0.04)	-0.4(0.3)	9.7(0.5)	9.7( 0.5)

Note: \* signify significant level at 5%

Source: Authors

Table 5. Panel Unit Root at First Difference

	Common Unit Root		Individual Unit Root	
	LLC	IPS	ADF-Fisher	PP-Fisher
$\Delta$ GDPPC	0.2( 0.57)	-0.9( 0.21)	21.5(0.02)*	26.8(0.002)*
$\Delta$ FDII	-5.2( 0.00)*	-6.2( 0.00)*	54.3(0.00)*	331.2( 0.00)*
$\Delta$ FDIO	-8.07( 0.00)*	-5.01(0.00)*	43.6(0.00)*	116.02( 0.00)*
$\Delta$ CONTRCOR	-7.3(0.00)**	-4.2(0.00)*	36.3(0.00)*	470.4(0.00)*
$\Delta$ GOVEFF	-8.3( 0.00)*	-5.7(0.00)*	50.07(0.00)*	405.1(0.00)*
$\Delta$ KAOPEN	-4.1( 0.00)*	-1.9(0.024)*	10.7(0.03)*	31.5( 0.00)*
$\Delta$ TOPEN	-5.1(0.00)*	-4.6(0.00)*	39.9(0.00)*	58.9(0.00)*

Note: \* signify significant level at 5%

Source: Authors

So far, the stationarity results indicate that the series have a combination of I(1) and I(0). The next preliminary test we carried out is the test of the long run relationship among the variables used in the study and the test was conducted using panel cointegration tests such as Kao panel cointegration and Johansen-Fisher panel cointegration tests. As shown in table 6, under the null hypothesis of no cointegration, the Kao cointegration test indicates that at the 5% level of significance, the study cannot accept the null as the p-value of the residual is less than 5%. This result is further validated by the result of Johansen-Fisher test shown in table 7 which indicates that the p-values of both the trace and eigen-value tests are less than 5%.

Table 6. Kao Residual Panel Cointegration Test

Series: GDPPC FDII FDIO GOVEFF KAOPEN CONTRCOR				
Null Hypothesis: No cointegration				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID(-1)	-0.19	0.07	-2.61	0.01

Source: Authors

Table 7. Johansen-Fisher Panel Cointegration Test

Unrestricted Cointegration Rank Test (Trace and Maximum Eigenvalue)				
Hypothesized	Fisher Stat.*	Prob.	Fisher Stat.*	Prob.
No. of CE(s)	(from trace test)		(from max-eigen test)	
None	94.09	0.00	63.11	0.00
At most 1	69.18	0.00	33.54	0.00
At most 2	45.45	0.00	27.32	0.00
At most 3	24.29	0.00	16.75	0.00
At most 4	10.66	0.03	12.38	0.01

Source: Authors

Having carried out the preliminary tests, we next investigated the impact of institutional quality and financial openness on the per capita GDP of BRICS. The investigation was carried out under the framework of panel random effect. The choice of random effect was arrived at after conducting the Hausman test. The Hausman test is conducted by assuming that the random effect is uncorrelated with the explanatory variables. The test is guided by the null hypothesis which states that the random term is not correlated with the explanatory variables. If the findings show that the random effect passes this test, then random effect model is chosen against the fixed effect model. The reverse is the case if the random effect fails this test and in that case, the fixed effect model is chosen. From the Hausman test result in table 8 which shows a p-value greater than 5%, the implication is that the random effect model is suitable for the study since we cannot reject the null hypothesis that the error terms are uncorrelated with the explanatory variables.

Table 8. The Hausman Test.

Hausman Test for Period Random Effect			
Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f	Prob
Period random	3.17	6	0.79

Source: Authors

With the Hausman test showing a preference for random effect, the results of the random effect test are presented in table 9. Findings indicate that FDI inflows have a positive and significant impact on per capita GDP. One unit rise in FDI inflows lead to increase in GDP per capita by 0.12%. This result is in line with apriori expectation as it is expected that FDI inflows encourage the inflows of capital equipment and emergence of new factories which lead to economic growth. The positive impact of FDI inflows on economic growth finds support in some studies relating to developing countries such as Wei (2015) and Wang *et al.* (2021). However, the study did not find the impact of FDI outflows to be significant, even though the impact is positive. Capital outflows represent a transfer of resources from the domestic economy to other countries and as such, it can only contribute to the economy if the proceeds from the investment are repatriated to the domestic economy. The evidence of a non-significant impact of FDI outflow on GDP per capita could therefore be an indication that the proceeds from capital outflows coming into the economy of BRICS countries is negligible. Some studies have found FDI outflows to impact negatively on economic growth in developing countries such as Wei (2015).

The study found the two institutional quality variables to positively impact on GDP per capita and the results are significant. Finding shows that if corruption is controlled by one unit, GDP per capita improves by 0.14%. Also, one unit improvement on government effectiveness resulted in a rise in GDP per capita by 0.16%. The implication of the results is that control of corruption and government effectiveness are important factors that improve the economic performance of BRICS countries. In another vein, capital account openness was found to positively impact on GDP per capita. The result of capital account openness indicates that one unit rise in capital account openness contributed to the growth of the economy by 0.25%. However, finding showed that trade openness adversely affected GDP per capita even though the outcome is not significant. If the BRICS bloc opens its trade link with the outside world, its GDP per capita is adversely affected. Some studies on developing countries such as Wei (2015), Huchet, *et al.* (2018) and Wang, *et al.* (2021) support the negative impact of trade openness on economic growth.

Table 9. Results of Random Effect

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	3.43	0.23	15.04	0.00

FDII	0.12	0.04	2.80	0.00
FDIO	0.28	0.18	1.58	0.12
CONTRCOR	0.41	0.24	1.69	0.09
GOVEFF	0.61	0.30	2.02	0.05
KAOPEN	0.25	0.08	3.13	0.00
TOPEN	-0.05	0.65	-0.07	0.94
R-squared	0.10			
F-statistic	12.55			
Prob(F-statistic)	0.00			
D. Watson stat	0.98			

Source: Authors

## CONCLUSION AND SUGGESTION

This study sought to investigate the roles of institutional quality and financial openness on the economic performance of BRICS over the period from 1996 to 2020. The panel random effect results showed that of the three financial openness indicators employed, FDI inflows and capital account openness significantly impacted on GDP per capita positively, while the impact of FDI outflows was positive but negligible. In another vein, the two institutional quality variables (control of corruption and government effectiveness) impacted on GDP per capita positively, but trade openness exhibited a negative impact on GDP per capita. The growth-led hypothesis of FDI inflows has been established to exist in BRICS in this study. Another point established in the study is the synergy between FDI inflows and capital account openness. The fact that capital account openness encourages improvement in GDP per capita is an indication that capital account liberalization stimulates FDI inflows in BRICS which in effect leads to an improvement in economic performance of the bloc. However, by opening its borders to trade with other countries, such open door policy leads to an adverse effect on the economic performance of the bloc. This shows that the concentration of some countries that comprise the bloc on the exploitation and export of primary products could work against the trade relation of the bloc with other countries. The negative link between trade openness and GDP per capita confirms the views by Prebisch (1950) and Singer (1950) that the export of primary commodities whose terms of trade is weak vis-à-vis manufactured products could be detrimental to countries that specialize in the export of such primary products. With respect to the institutional variables employed in the study, findings revealed that when governance is effective, it encourages improvement in the economy. Effectiveness in governance encourages reduction in corruption which is the bane of underdevelopment in many developing countries. The study, therefore, recommends that all bottlenecks that hinder FDI inflows should be dismantled and there is need to build strong institutions in the bloc.

## REFERENCES

- Abere, S. S. & Akinbobola, T. O. (2020). External shocks, institutional quality, and macroeconomic performance in Nigeria. *SAGE Open*, 1-18. <https://doi.org/10.1177/2158244020919518>
- Abubakar, S. (2020). Institutional quality and economic growth: Evidence from Nigeria. *African Journal of Economic Review*, 8(1), 48-64.
- Aron, J. (2000). Growth and institutions: A review of the evidence. *The World Bank Research Observer*, 15(1), 99-135. <https://doi.org/10.1093/wbro/15.1.99>
- Brun, J. & Gnangnon, S. K. (2017). Does trade openness contribute to driving financing flows for development? World Trade Organization Working Paper ERSD-2017-06. <https://doi.org/10.30875/1f74d977-en>

- Devereux, M. B. & George, W. S. (1994). International risk-sharing and economic growth. *International Economic Review*, 35(3), 535-550. <https://doi.org/10.2307/2527072>
- Diakosawas, D. & Scandizzo, P. L. (1991). Trends in the terms of trade of primary commodities, 1900–1982: The controversy and its origin. *Economic Development and Cultural Change*, 39(2), 231-64. <https://doi.org/10.1086/451869>
- Ehigiamusoe, K. U. & Hooi Hooi, L. (2018). Tripartite analysis of financial development, trade openness and economic growth: Evidence from Ghana, Nigeria and South Africa. *Contemporary Economics*, 12(2), 189-206. <http://dx.doi.org/10.5709/ce.1897-9254.271>
- Fatima, S., Chen, B., Ramzan, M. & , Abbas, Q. (2020). The nexus between trade openness and GDP growth: Analyzing the role of human capital accumulation. *SAGE Open*, 1-18. <https://doi.org/10.1177/2158244020967377>
- Goh, X., Tong, W. & Tang, T. (2019). Financial openness and trade openness nexus: Empirical evidence from global data. *Capital Markets Review*, 27(1), 1-18. <https://doi.org/10.17093/alphanumeric.640213>
- Grossman, G. M. & Helpman, E. (1991). Quality ladders in the theory of growth. *The Review of Economic Studies*, 58, 43-61. <https://doi.org/10.2307/2298044>
- Huchet, M., Mouël, C. L. & Vijil, M. (2018). The relationship between trade openness and economic growth: Some new insights on the openness measurement issue. *The World Economy*, 41(1), 59-76. <https://doi.org/10.1111/twec.12586>
- Krugman. P. (1994). The myth of Asia's miracle. *Foreign Affairs*, 73(6), 62-78. <https://doi.org/10.2307/20046929>
- Le, T., Kim, J. & Lee, M. (2015). Institutional quality, trade openness, and financial development in Asia: An empirical investigation. Asian Development Bank Economics Working Paper Series No. 452. <https://hdl.handle.net/11540/5157>
- Lucas, R. E. (1988). On the mechanics of economic development. *Journal of Monetary Economics*, 22(1), 3-42. [https://doi.org/10.1016/0304-3932\(88\)90168-7](https://doi.org/10.1016/0304-3932(88)90168-7)
- Malsha, R. M., Mayoshi, G. E, & Ju, B. T. (2021). Causal links between trade openness and foreign direct investment in Romania. *Journal of Risk and Financial Management*, 14(90), 1-18. <https://doi.org/10.3390/jrfm14030090>
- McKinnon, R. I. (1973). *Money and capital in economic development*. Oxford University Press
- Murshed, S.M. (2004). When does natural resource abundance lead to a resource curse? Environmental Economics Programme Discussion Paper 04-01.
- Ngo, M. N., & Nguyen, L. D. (2020). Economic growth, total factor productivity, and institutional quality in low-middle income countries in Asia. *The Journal of Asian Finance, Economics, and Business*, 7(7), 251-260. <https://doi.org/10.13106/jafeb.2020.vol7.no7.251>
- Nguyen, C. P., Su, T. D. & Nguyen, T. V. H. (2018). Institutional quality and economic growth: The case of emerging economies. *Theoretical Economics Letters*, 8, 1943-1956. <https://doi.org/10.4236/tel.2018.811127>
- North, D. C. (1990). *Institutions, institutional change, and economic performance*. Cambridge University Press.

- Olanrewaju, G. O., Tella, S. A. & Adesoye, B. A, (2019). Institutional quality, financial inclusion and inclusive growth: Causality evidence from Nigeria. *Central Bank of Nigeria Economic and Financial Review*, 7(3), 40-60.
- Prebisch, R (1950). The economic development of Latin America and its principal problems. *Economic Bulletin for Latin America*, 7, 1-22. <http://hdl.handle.net/11362/29973>
- Qazi M. A., Shahida, W. & Wee-Yeap, L. (2016). The impact of trade openness on economic growth in China: An empirical analysis. *Journal of Asian Finance, Economics and Business*, 3(3), 27-37. <https://doi.org/10.13106/jafeb.2016.vol3.no3.27>
- Recuero, L. H. & González, R. P. (2019). Economic growth, institutional quality and financial development in middle-income countries. Banco De Espana Documentos de Trabajo N0 1937.
- Rodrik, D. (1999). Where did all the growth go? External shocks, social conflict, and growth collapses. *Journal of Economic Growth*, 4, 385-412. <https://www.jstor.org/stable/40216016>
- Saifullahi, S. & Nuruddeen, T. (2015). The linkages between trade openness, financial openness and economic growth in Nigeria. MPRA Paper No. 87494. <https://mpra.ub.uni-muenchen.de/87494/>
- Shaw, E. (1973). Financial deepening in economic development. Oxford University Press.
- Singer, H (1950). The distribution of gains between investing and borrowing countries. *American Economic Review. Papers and Proceedings*, 40, 473-485. <https://www.jstor.org/stable/1818065>
- Tran, O. K., Le, H. D. & Nguyen, A. V. (2021). Role of institutional quality in economic development: A case study of Asian countries. *Problems and Perspectives in Management*, 19(2), 357-369. [http://dx.doi.org/10.21511/ppm.19\(2\).2021.29](http://dx.doi.org/10.21511/ppm.19(2).2021.29)
- Wang, M. L., Ntim, V. S., Yang, J., Zheng, Q. & Geng, L. (2021). Effect of institutional quality and foreign direct investment on economic growth and environmental quality: Evidence from African countries. *Economic Research-Ekonomska Istrazivanja*. <https://doi.org/10.1080/1331677X.2021.2010112>
- Wei, H. (2015). Does financial openness affect economic growth in Asian economies? A case study in selected Asian economies, 1980-2010. A PhD Dissertation presented to the Graduate Faculty in Economics, City University of New York [https://academicworks.cuny.edu/gc\\_etds/638](https://academicworks.cuny.edu/gc_etds/638)
- Wiredu, J., Nketiah, E., & Adjei, M. (2020). The relationship between trade openness, foreign direct investment and economic growth in West Africa: Static panel data model. *Journal of Human Resource and Sustainability Studies*, 8, 18-34. <https://doi.org/10.4236/jhrss.2020.81002>