# TRENDS AND DETERMINANTS OF FDI IN BRICS COUNTRIES: A PANEL DATA ANALYSIS

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**ABSTRACT:**

This study explores the trends of individual and aggregate FDI inflows in BRICS countries using annual dataset for the period 1991 to 2015. The study further examines the determinants of FDI inflows in Brazil, Russia, India, China and South Africa i.e. BRICS countries using annual dataset for the period of 22 years i.e. 1991 to 2012. The study employs pooled OLS model and Fixed Effect model on panel data set. The result shows that Economic Growth, Economic stability, Natural Resources, Exchange Rate, Market size, Total Reserves and National Income are the potential determinants of FDI inflows in BRICS where as Trade openness, Gross Capital Formation and Infrastructure facilities are insignificant determinants.

**KEYWORDS**: BRICS, Determinants, Foreign Direct Investment, Panel Data.

**INTRODUCTION:**

Trade is a vital part of economy which reaches to the international level with globalization. Foreign Direct Investment (FDI) plays an important role in this development. The continuous increase in FDI flows across countries is one of the signs of the globalization of the world economy over last two decades. (UNCTAD, 2006). According to UNCTAD, Foreign direct investment (FDI) is defined as an investment involving a long-term relationship and reflecting

a lasting interest in and control by a resident entity in one economy (foreign direct investor or parent enterprise) of an enterprise resident in a different economy (FDI enterprise or affiliate enterprise or foreign affiliate). Such investment involves both the initial transaction between the two entities and all subsequent transactions between them and among foreign affiliates. FDI has lot of effects on the host country's economy. It influences the income, production, prices, employment, economic growth, development and general welfare of the recipient economy. Further, FDI helps in dissemination of modern technology and plays a key role in development of emerging economy.

During last twenty five years, world has experienced a tremendous change in economics and organization and distribution of production. For several reasons, emerging economies of Brazil, Russia, India, China and South Africa (BRICS) have achieved important role in the world economy as producers of goods and services. All five countries of BRICS have common features of big population, large consumer market, fast economic growth, big land size etc, on the basis of which they are attracting large amount of investors around the world. The BRICS, with 40 percent of the world's population account for one fourth of global GDP (IMF article "BRICS Drive Global Economic Recovery", July 22, 2009). These BRICS economies appear likely to become the largest global economic group by the middle of this century. (Cheng, Mahajan, 2007). China and India are likely to emerge as dominant global suppliers of manufactured goods and services while Brazil and Russia to dominate in supply of raw materials. (Goldman Sachs). Currently BRICS are the world's four leading emerging market economies, the nominal GDP of which reached 16.88 trillion US dollars in 2015. According to World Bank Database, FDIs net inflow (BoP, current US $) of BRICS grew from $ 309.16 billion in 2008 to $ 558.33 billion in 2015. China, the leading market destination of FDI received US$ 431.24 billion inflows in 2015 where as Russia, Brazil, India and South Africa attracts US$ 6.48, US$ 75.07, US$ 44.01 and US$ 1.52 billion respectively. China and India are emerging as the most important economic driving forces in the world. The two Asian giants have 40% of the global labor force and 18% of the world economy in terms of purchasing power parity (PPP).

After 2008, the world financial market was stuck due to global financial crisis. The BRICS were not wholly affected by the economic decline of the US, whose sub-prime mortgage crisis has created the global financial crisis.

A sharp decrease in FDI inflow as shown in figure 1.1 and 1.2 explains the trend individually and in aggregate. But unlike the US and many other developed countries, the BRICS appear well placed to face the global crisis forming differently in attracting inward FDI. Which factors determines the flow of FDI into the BRICS countries? Will BRICS continue an increasing trend of FDI inflows? To address these questions, present study is conducted, which locates the major determinants of the capital flow to BRICS countries in a globalization framework. The study shall provide a generalized empirical analysis and conclusions by employing large panel-data over a long time period. The rest of the study is organized as follows. Section 2 presents a brief review of literature; Section 3 discusses the FDI determinant theory and structured hypothesis; Section 4 narrates the methodology and data collection; Section 5 explains the findings and the empirical analysis and finally Section 6 provides conclusion of the study.

## REVIEW OF LITERATURE

This section brief the literature reviews which investigate the determinants of flow of FDI across various economies in the world.

The classical model for determinants of FDI begins explained by Dunning (1973, 1981) which provide a comprehensive analysis based on ownership, location and the internationalization (OLI) paradigm. The empirical analysis based on econometrics approach made by Agarwal (1980) and Schneider et al (1985). Lucas (1993) examines the determinants of FDI inflows for select East and South Asian economies during 1960 to1987 and finds that FDI inflows are more elastic with respect to cost of capital than wages and also more elastic with respect to aggregate demand in exports than domestic demand.

Loree and Guisinger (1995) study the determinants of FDI by United States towards developed nations from 1977 to 1982 and conclude that the Host country variables are significant in developed countries and infrastructure seems to be an important determinant for all the regions. Sing and Jun (1995) find a positive relationship between taxes on international transactions and FDI inflows to developing countries and export related variables strongly pull FDI to a country. Duran (1999) using the Panel data and time series techniques find out the drivers of FDI for the period 1970-1995. The study infers that the size, growth, domestic savings, country's solvency, trade openness and macroeconomic stability variables are the major drivers of FDI. Beven and Estrin (2000) establish the determinants of FDI flows to transition economies (Central and Eastern Europe) by taking variables as country risk, labour cost, host market size and gravity factors from 1994 to1998. The study notes that country risks are influenced by private sector development, Industrial development, government balance, reserves and corruption. Lipsey (2000) captures a positive effect of FDI on growth.

Garibaldi et al (2002) analyse the FDI flows to 26 transition economies in Eastern Europe including the former Soviet Union from 1990 to 1999. The regression estimation indicates that the FDI flows are well explained by market size, fiscal deficit, inflation and exchange rate regime, risk analysis, economic reforms, trade openness, availability of natural resources, barriers to investments and bureaucracy. Nonnenberg and Mendonca (2004) observed that the factors such as the market size measured by GNP, growth rate of the product, the availability of skilled labour, the receptivity of foreign capital, the country risk rating and stock market behaviour seem to be the important determinants of FDI flows for developing countries comprising of 33 countries from 1975 to 2000. In the context of Latin American countries, Nunes et al (2006) find the factors such as market size, openness of the economy, infrastructure, macroeconomic stability (inflation), wages, human capital and natural resources as the determinants of FDI flows during the period 1991 to 1998. The study observes that the market size, infrastructure and inflation are positively influencing and wage rate is negatively influencing the FDI flows. Sahoo (2006) by estimating the panel co-integration test, finds that the market size, labour force growth, infrastructure index and trade openness are the important determinants of the FDI flows in South Asian countries.

Narayanamurthy et al (2010) examines the factors determining FDI inflows of BRICS countries by employing Panel data analysis for the period 1975 to 2007 and finds that the Market size, Labour cost, Infrastructure, Currency value and Gross Capital formation are the potential

determinants of FDI inflows of BRICS countries whereas the Economic Stability and Growth prospects, Trade openness are seems to be the insignificant determinants. Ranjan et al (2011) explores FDI inflow determinants in Brazil, Russian Federation, India and China (BRIC) employing random effect model on Panel data set of 35 years from 1975 to 2009. The empirical results show that market size, trade openness, labour cost, infrastructure facilities and macroeconomic stability and growth prospects are potential determinants of FDI inflow in BRIC, although macroeconomic stability and growth prospects have very little impact where as gross capital formation and labor force are insignificant.

Jadhav (2012) explores the role of economic, institutional and political factors in attracting FDI in BRICS economy and the comparative weightage of these factors in attracting FDI. The study using panel data for a period of ten years i.e. 2000-2009 examine the significant determinants of FDI in BRICS from a holistic approach. Panel unit-root test and multiple regressions are used for analysis. This study takes into account Market Size, Trade openness, natural resources as economic determinants and Macroeconomic Stability (Inflation Rate), Political stability/No violence, Government Effectiveness, Regulatory Quality, Control of corruption, Voice and accountability, Rule of Law as potential institutional and political determinants of FDI. Findings indicate that economics factors are more significant than institutional and political Factors in BRICS economies. The results indicate that market size is a significant determinates of FDI which implies that most of the investment in BRICS is motivated by market-seeking purpose. Analysis also indicates that trade openness, natural resource availability, rule of law and voice and accountability are statistically significant. Coefficients of market size, trade openness are positive which implies that these variables have positive effect on total inward FDI. Natural resource availability has negative effect on total inward FDI, which indicate that FDI is not motivated by resource-seeking purpose in BRICS economies.

Madaan (2016) examined causal relationship between select macroeconomic Variables and FDI inflows in Indian environment. In the study, the annual time series data of selected economic variables as well as FDI inflows is considered for the period 1995 to 2014. The time series regression model is applied to study the relationship between the macroeconomic variables and FDI inflows. However the causal relationship is analyzed with the help of vector auto regression model.

The Granger Causality Test conclude that imports, IIP, exchange rate, employment ratio, total reserves, nifty 50 and internet users are statistically significant variables influencing FDI inflows in India, whereas inflation rate, GDP, GDP growth, GDP deflator, lab our force participation rate, taxes on international trade and population are insignificant variables to determine FDI inflows in India.

This reviews help in choosing the factors or determinants of FDI inflows of BRICS countries.

**POTENTIAL VARIABLES OF DETERMINING FDI INFLOWS .**

Based on the literature review, this study list a set of potential determinants that influence the FDI flows and these variables are categorized as below.

i.    **Market size.**

Larger market size should receive more inflows than that of smaller countries having lesser market size. In this study, Market size is measured by Gross Domestic Product (GDP) (Current US $). It is expected to be a positive and significant determinant of FDI flows.

ii.    **Economic stability.**

A nation having stable macroeconomic condition will receive more FDI inflows than a more volatile economy. In this study, inflation rate (Consumer Price Index in %) is taken as proxy for measuring the level of economic stability. In connection with this, investors prefer to invest in more stable economies that reflect a lesser degree of uncertainty. It is expected that the Inflation rate would influence negatively.

iii.    **Economic Growth**

A country which has a high and sustained growth rates will receive more FDI inflows than a economy with low growth rate. In this study, the proxy for measuring growth rate is GDP growth rate (in %). It is expected that GDP growth rate would influence FDI flows positively

iv.    **Infrastructure facilities**

The well established and quality infrastructure is an important determinant of FDI flows. Therefore, it is expected to have positively significant relationship between FDI and Infrastructure. The availability of quality Infrastructure can be constructed by considering Electricity, Water, Transportation and Telecommunications. This study considers Electric Power Consumption (KWH per capita) as a proxy for Infrastructure.

v.    **Trade openness**

Trade openness is considered to be a key determinant of FDI. Much of FDI is export oriented and may also require the import of complementary, intermediate and capital goods. In either case, volume of trade is increased and thus trade openness is generally expected to be a positive and significant determinant of FDI. Trade openness, in this study, is proxies as Import and Export as a percentage of GDP.

vi.    **Exchange Rate**

The strength of a currency depends on Exchange rate, which is used as proxy for purchasing power of the investing firm. Devaluation of a currency would result in reduced exchange rate risk. When exchange rate is reduced, the purchasing power of the investors in foreign currency terms is enhanced, thus it is expected to have a positive and significant relationship between Exchange Rate and FDI inflows. In this study, exchange rate is Official (Real) Exchange Rate. (LCU per US$)

vii.    **Gross Capital Formation**

Higher Gross capital formation leads to greater economic growth which is result of improvements in the investment climate which further helps to attract higher FDI inflows. However, a positive or negative and significant relationship between FDI and Capital Formation is expected. Gross capital formation is measured as % of GDP.

viii.    **Natural Resources**

Resource-seeking FDI is motivated by the availability of natural resources in host countries. Natural resources plays vital role in overall FDI attraction or decision. Availability of natural resources attracts more FDI. Thus, it is expected to have a positive and significant relationship between Natural Resources and FDI inflows. Net Savings: Natural Resources Depletion (% of GNI) is used as a proxy for availability of natural resources.

ix.    **Total Reserves**

The level of total reserves is an important indicator of the growth of financial sector of any developing economy. Foreign reserves are required in order to fund foreign currency payments

and to boost confidence in the economy. It is expected that total reserves has positive impact on FDI inflows. In this study, total reserves are measured as Total Reserves (including Gold) in US $.

## x.       Gross National Income

Gross National Income is a key determinant of FDI inflows. High Gross National Income indicates faster growth of the economy. Therefore, it is expected to have a positive and significant relationship between Gross National Income and FDI inflows. In this study, Gross National Income is measured as GNI per capita (Current US $).

## Hypotheses.

The present study has following ten hypotheses:

H1: Market size of the host country has significant impact on FDI inflows.

H2: Economic stability attracts FDI to the host country.

H3: High growth rates attract more FDI to the host country.

H4: Availability of Infrastructure facility pulls FDI.

H5: Trade openness policy of host country attracts FDI inflows.

H6: Exchange rate of host country has positive and significant impact on FDI inflows.

H7: Gross capital formation has significant impact on FDI inflows.

H8: Availability of Natural Resources in the country attracts FDI.

H9: Reserves of host country has positive impact on FDI inflows.

H10: National Income of a country has significant impact on FDI inflows.

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## Data and Methodology.

The data set consists of yearly observations for the period 1991 - 2012 for the five fast developing countries namely Brazil, Russia, India, China and South Africa (BRICS countries). The required data set for the selected countries were obtained from World Bank's World Development Indicators (WDI).

The dependent variable in our study is the Log of FDI net inflow in current US$ (l_FDIIF) and the independent variables include Gross Domestic Product (GDP), GDP Growth Rate Inflation rate, Infrastructure facility (Electric Power Consumption (kwh per capita), Trade Openness, Exchange Rate, Gross capital formation, Reserves, National Income and Natural Resources.

In this connection, an estimation model is proposed as follows, where the selected variables are expected to determine the FDI inflows:

$$l\_FDIIF_{ti} = \alpha + \beta1 \, l\_GDP_{it} + \beta2 \, l\_GRCAPFOR_{it} + \beta3 \, l\_TOTRES_{it} +$$
$$\beta4 \, l\_GNI_{it} + \beta5 \, l\_EPC_{it} + \beta6 \, GDPGR_{it} + \beta7 \, TRDOP_{it} + \beta8 \, INFLR_{it}$$
$$+ \beta9 \, NATRES_{it} + \beta10 \, EXCHRAT_{it} + e_{it}$$

Where,

$l\_FDIIF_{ti}$ is the log of net inflow of Foreign Direct Investment (BoP in current US$) for country i at time t.

$l\_GDP_{it}$ is the log of Gross Domestic Product in current US$ for country i at time t and is the measure of market size

l_GRCAPFOR$_{it}$ is the log of Gross Capital Formation in % of GDP for country i at time t.

l_TOTRES$_{it}$ is the log of Total Reserves (Current US $) for country i at time t.

l_GNI$_{it}$ is the log of Gross National Income (Current US $) for country i at time t.

l_ EPC$_{it}$ is the log of Electric Power Consumption in kwh per capita for country i at time t and is the measure of infrastructure facility.

GDPGR$_{it}$ is the GDP Growth Rate (Annual percent) for country i at time t, which is the measure of Economic Growth of country.

TRDOP$_{it}$ is the Trade Openness for country i at time t and is computed as Import and Export of Goods and Services as a % of GDP

INFLR$_{it}$ is the Inflation Rate (Annual percent) for country i at time t, which is the measure of Economic Stability of a country.

NATRES$_{it}$ is the availability of Natural Resources for country i at time t and is computed as % of GNI

EXCHRAT$_{it}$ is the Real Exchange Rate for country i at time t, which is computed as Local Currency Unit (LCU) per US $

$e_{it}$ the error term over the time t.

## Data Analysis Tools

Panel Data Analysis: The panel data estimation is used in the study to capture the changing behaviour of the parameters and to provide more efficient estimation and information of the parameters. Panel data techniques is used because of its advantages over cross-section and time series in using all the information available, which are not found in pure cross-sections or in pure time series [Baltagi and Kao (2000)]. Panel data sets possess several major advantages (Hsiao (1985, 1986) and Baltagi (1995). Panel data reduce the risk of obtaining biased results and increase the degrees of freedom and variability and helps to study the dynamics of adjustment.

The Panel data model includes three different methods:
1.      **Random effects method:** The Random effects method is an alternative method of estimation which handles the constants for each section as random parameters rather than fixed.
2.      **Fixed effects method:** The Fixed effects method treats the constant as group (section)-specific, i.e. it allows for different constants for each group (section). The Fixed effects also called as the Least Squares Dummy Variables (LSDV) estimators.
3.      **Common constant method**: This method is also called as pooled OLS method. This estimation presents result under the principal assumption that there are no differences among the data matrices of the cross sectional dimension (N).

Generally in the panel data analysis, the fixed effects model assumes that each country differs in its intercept term, whereas the Random effects model assumes that each country differs in its error term. When the Panel is balanced (i.e. contains all existing cross sectional data), it is

expected that Fixed effects model will work well. Otherwise, the Random effect method will be more appropriate when the sample contains limited observations of the existing cross - sectional units. But, this study Fixed effect method and Common constant (OLS) method are used for panel data estimation.

**Results**.

This study uses Panel Data Analysis technique to estimate the dynamic behaviour of determinants of FDI inflow in Brazil, Russia, India, China and South Africa. But before that, descriptive statistics and correlation analysis has been done. The outcomes of descriptive statistics and correlation analysis are present in table 1 and 2 respectively. All the variables are having 110 observations. Table 1 reflects that the Inflation Rate (INFLR) has highest mean and standard deviation of 70.22 and 295.19 respectively in the data distribution. Standard deviation values of inflation indicate the presence of vast range of fluctuation of inflation in BRICS countries during 1991 to 2012, inflation rate touched four digit in Brazil (in 1993, 1928.00 and in 1994, 2075.90) and three digit in Russia (874.6 in 1993, 307.6 in 1994 and 197.5 in 1995). Table 1 also depicts the values of skewness and kurtosis. Table 2 shows the Correlation matrix which indicates high correlation of l_TOTRES with l_GDP (0.78), l_GRCAPFOR (0.59) and TRDOP (0.55). Variable TRDOP is highly correlated with l_EPC (0.59) and l_GDP is highly correlated with l_GRCAPFOR (0.55). Variable l_EPC is also highly correlated with Exchange Rate (0.60). The existence of high correlation among the independent variables will lead to the problem of multi-collinearity in the estimation. Still we consider these variables because of the statistical nature of panel data estimation which takes care of the collinearity problems.

The estimates through Panel data analysis include OLS pooled regression (Common constant method) and Fixed Effects method for the select study period. Results are shown in table 3. The table indicates that, the empirical results obtained from the pooled ordinary least squares (OLS) and the Fixed effects (FE) are more or less similar. The empirical results (Table 3) obtained from FE shows that regression model with dependent variable l_FDIIF fits well with independent determinant variables as value of adjusted $R^2$ is significant (0.81) and P value 0.00. High value of $R^2$ also indicates that the explanatory variables included in the equation can explain most of the variation in the dependent variable. Empirical results also support four hypotheses out of ten, as these variables have the right signs as expected, and they are significant. The coefficient of Inflation Rate (INFLR) is statistically significant at high level of 1% and Exchange Rate (EXCHRAT), Total Reserves (TOTRES) and Gross National Income (GNIPC) are significant at 5% level which shows that these are potential determinants of FDI inflow where as other six variables are not significant which indicates that these determinants might not be important determinant in this case. The co-efficient signs for four out of ten variables are negative. Positive value indicates perfect synchronization of determinant variable with FDI inflow where as negative sign shows that they affect FDI inflow in reverse manner i.e. decreasing value of the determinant attracts more FDI to the BRICS countries with an exception of inflation.

Coefficient of inflation has negative relation with FDI inflow which supports the hypothesis but, its magnitude is very less so effect is not much of significance. In this study growth prospects are gauged by inflation and it suggest that slight boost in economy attracts FDI but

the pulling power is not of high magnitude. Stable exchange rate also has slight positive impact on FDI as 1% increase in exchange rate leads to 0.05% increase in FDI. The coefficient of national income, infrastructure facilities and spending potential of nation, l_GNIPC, l_EPC and l_GRCAPFOR shows that foreign investors are highly sensitive to them as 1% increase in the variables leads to 2.32%, 2.06% and 1.17% increase in FDI respectively.

The empirical results (Table 3) obtained from OLS also shows that regression model with dependent variable l_FDIIF fits well with independent determinant variables as value of adjusted $R^2$ is significant (0.79) and P value 0.00. Results also support five hypotheses out of ten, as these variables have the right signs as expected and they are significant.

BRICS countries' relatively bigger market size, quicker market growth, large reserves, low inflation rate and high per capita national income have a significantly attractive effect on inward FDI. It can be proved that one of the important motives of FDI in China and India is market-seeking or tapping their large domestic markets. Coefficient of GDP indicates that 1% increase in host countries' market size will lead to 0.43% increase in FDI inflow. Natural resources show significant but inverse relationship with FDI inflows. Finally, Gross Capital Formation (l_GRCAPFOR) and Trade Openness (TRDOP) are negatively insignificant in determining the FDI inflows, which might mean that they are not important considerations for foreign investors investing in BRICS countries.

Thus, empirical results provides the information that GDP, GDP growth rate, Inflation rate, Exchange rate, Total Reserves and National income are six potential determinants for the inflow of Foreign investments in BRICS countries where as Infrastructure Facility, Trade Openness, Natural Resources and Gross Capital Formation are not significant. So, aforesaid six hypotheses are accepted.

**Conclusion.**
The term BRICS represents the five largest, fast growing emerging economies i.e. Brazil, Russia, India, China and South Africa. Recently, these fast developing countries of the world having larger market potentials are expected to attract large inflow of FDI. However, the factors attracting the FDI inflows towards these nations are relatively less researched. This study made an attempt to identify the determinants of FDI inflows of BRICS countries for the period 1991 to 2012. The determinant factors include Market size, Economic Stability, Economic Growth Prospects, Infrastructure Facilities, Trade Openness, Exchange Rate, Reserves, National income, Availability of Natural Resources and Gross capital formation. The study finds that other than Infrastructure Facility, Trade Openness, Natural Resources and Gross Capital Formation all other factors seem to be the potential determinants of FDI inflows in BRICS countries.

The implications of empirical result reflect the perceptions of global investors of BRICS countries. Out of the BRICS countries India and China are most promising major economies. According to A. T. Kearney, 2005 China is cited as the world's manufacturing hub and fastest-growing consumer market, while India is known as the foremost business-processing and IT services hub with long-term market potential. On the other hand special trade openness facilities, geographical position and cheap labour cost are making Brazil a major destination for FDIs.

Russia attracts FDI due to its abundance resource of oil and gas. Similarly, South Africa attracts FDI due to economic stability and high degree of infrastructure in terms of information and communication technology. The challenge for the BRICS countries is how to sustain their performance and trend of FDI inflow and how to prepare their policy and optimize their economic condition to attract more FDIs in future. BRICS countries will have promising prospects for FDI inflows as their cheap labor cost, big market size and growth potential will remain as the key factors and attractions for years.

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## Table 1. Descriptive Statistics of FDI and Determinants

| Variable | Mean | Median | Min. | Max. | Std. Dev. | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| l_FDIIF | 22.87 | 22.90 | 15.03 | 26.66 | 2.08 | -0.73 | 1.24 |
| l_GDP | 12.62 | 13.24 | 7.79 | 15.97 | 2.27 | -1.12 | -0.10 |
| l_GRCAPFOR | 3.12 | 3.10 | 2.66 | 3.64 | 0.27 | 0.28 | -1.03 |
| l_TOTRES | 24.78 | 24.62 | 21.57 | 28.31 | 1.57 | 0.14 | -0.60 |
| l_GNIPC | 7.70 | 7.97 | 5.80 | 9.45 | 1.00 | -0.43 | -0.84 |
| l_EPC | 7.90 | 8.44 | 5.68 | 9.16 | 1.03 | -0.92 | -0.54 |
| GDPGR | 4.67 | 4.70 | -14.50 | 14.20 | 5.01 | -1.06 | 2.37 |
| TRDOP | 34.25 | 25.35 | 7.28 | 111.17 | 29.19 | 1.40 | 0.62 |
| INFLR | 70.22 | 6.90 | -1.40 | 2075.90 | 295.19 | 5.63 | 32.53 |
| NATRES | 4.61 | 3.07 | 0.46 | 20.57 | 4.50 | 1.97 | 3.19 |
| EXCHRAT | 15.27 | 7.86 | 0.00 | 53.44 | 15.64 | 0.98 | -0.53 |

Source: Compiled by author from World Bank data.

## Table 2. Correlation for variables in the study

| l_FDIIF | GDPGR | TRDOP | INFLR | NATRES | EXCHRAT | l_GDP | l_GRCAPFOR | l_TOTRES | l_GNIPC | l_EPC | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.00 | 0.46 | 0.53 | -0.17 | 0.17 | 0.02 | 0.69 | 0.42 | 0.84 | 0.17 | 0.25 | l_FDIIF |
| | 1.00 | 0.47 | -0.14 | -0.02 | 0.26 | 0.29 | 0.39 | 0.43 | -0.35 | -0.04 | GDPGR |
| | | 1.00 | -0.15 | -0.01 | -0.21 | 0.31 | 0.50 | 0.55 | -0.14 | 0.59 | TRDOP |
| | | | 1.00 | -0.07 | -0.19 | 0.04 | -0.04 | -0.13 | 0.05 | -0.06 | INFLR |
| | | | | 1.00 | 0.31 | 0.25 | 0.06 | 0.32 | 0.27 | 0.28 | NATRES |
| | | | | | 1.00 | 0.23 | 0.43 | 0.23 | -0.47 | -0.60 | EXCHRAT |
| | | | | | | 1.00 | 0.55 | 0.78 | -0.15 | -0.12 | l_GDP |
| | | | | | | | 1.00 | 0.59 | -0.48 | -0.11 | l_GRCAPFOR |
| | | | | | | | | 1.00 | 0.10 | 0.18 | l_TOTRES |
| | | | | | | | | | 1.00 | 0.53 | l_GNIPC |
| | | | | | | | | | | 1.00 | l_EPC |

### Table 3. Determinants of FDI Inflows: Panel Data Estimation Result on Fixed Effect (FE) and Ordinary Least Square (OLS) Models

| Variables | Fixed Effect Model | | | | OLS Model | | | |
|---|---|---|---|---|---|---|---|---|
| | *Coefficient* | *t-ratio* | *p-value* | | *Coefficient* | *t-ratio* | *p-value* | |
| const | -2.3875 | -0.30 | 0.77 | | -2.4503 | -0.71 | 0.48 | |
| GDPGR | 0.0496 | 1.44 | 0.15 | | 0.1016 | 4.11 | 0.00 | *** |
| TRDOP | -0.0058 | -0.34 | 0.74 | | -0.0025 | -0.25 | 0.80 | |
| INFLR | -0.0010 | -2.71 | 0.01 | *** | -0.0008 | -2.22 | 0.03 | ** |
| NATRES | -0.0218 | -0.36 | 0.72 | | -0.1108 | -2.85 | 0.00 | *** |
| EXCHRAT | 0.0537 | 2.43 | 0.02 | ** | 0.0115 | 0.81 | 0.42 | |
| l_GDP | -1.7445 | -1.58 | 0.12 | | 0.4293 | 4.66 | 0.00 | *** |
| l_GRCAPFOR | 1.1686 | 1.55 | 0.12 | | -0.1026 | -0.17 | 0.87 | |
| l_TOTRES | 0.3535 | 1.94 | 0.055 | * | 0.4881 | 2.66 | 0.00 | *** |
| l_GNIPC | 2.3214 | 2.09 | 0.04 | ** | 0.5457 | 2.39 | 0.02 | ** |
| l_EPC | 2.0628 | 1.49 | 0.14 | | 0.4972 | 1.60 | 0.11 | |
| Adjusted $R^2$ | 0.81 | | | | 0.79 | | | |
| P value | 9.05e-31 | | | | 4.62e-31 | | | |
| Durbin Watson | 1.033 | | | | 0.997 | | | |

**\*\*\* Significant at 1% Level          \*\* Significant at 5% Level          \* Significant at 10% Level**
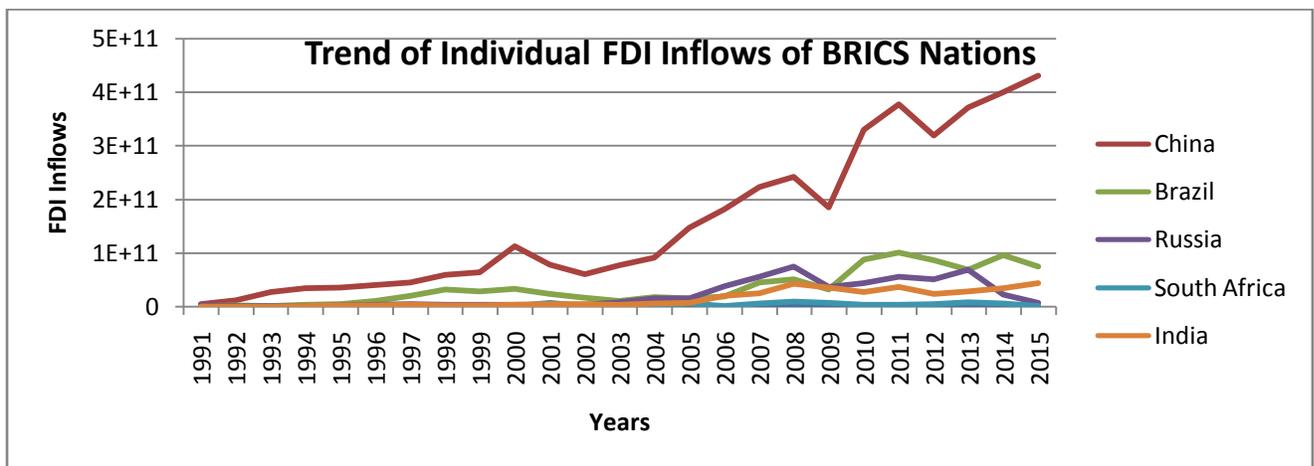
### Table 4. Hypotheses Test Result.

| Hypothesis No. | Hypothesis Statement | Result |
|---|---|---|
| 1 | Market size of the host country has significant impact on FDI inflows. | **Accepted** |
| 2 | Economic stability attracts FDI to the host country | **Accepted** |
| 3 | High growth rates attract more FDI to the host country. | **Accepted** |
| 4 | Availability of Infrastructure facility pulls FDI. | Rejected |
| 5 | Trade openness policy of host country attracts FDI inflows. | Rejected |
| 6 | Exchange rate of host country has positive and significant impact on FDI inflows. | **Accepted** |
| 7 | Gross capital formation has significant impact on FDI inflows. | Rejected |
| 8 | Availability of Natural Resources in the country attracts FDI. | Rejected |
| 9 | Reserves of host country has positive impact on FDI inflows | **Accepted** |
| 10 | National Income of country has significant impact on FDI inflows. | **Accepted** |

Source: Composed by author from analysis.

## Fig. 1 Trend of Aggregate FDI Inflows of BRICS Nations
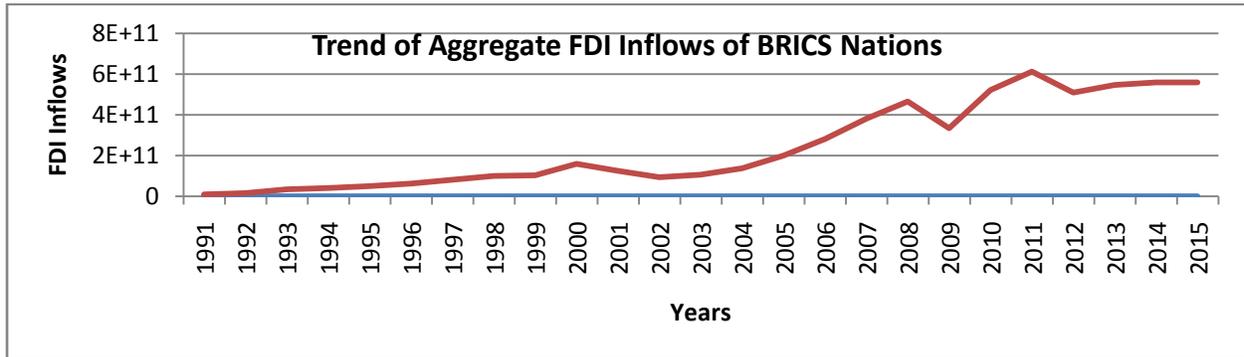


## Fig. 2 Trend of Individual FDI Inflows of BRICS Nations



Source: Compiled by author from World Bank data.