A Study of the Determinants of Foreign Direct Investment Inflows into BRICS Economies

Payal Bassi* **Rajni Saluja****

***Associate Director, University School of Management, Desh Bhagat University, Mandi Gobindgarh**

****Associate Professor, University School of Management, Desh Bhagat University, Mandi Gobindgarh**

Abstract

Foreign Direct Investment has become sine-quo-non for the economic development of both developed and developing countries. FDI is defined as a non-debt financial capital. FDI is also described as "investment into the business of a country by a company in another country". The BRICS economies have been identified as some of the fastest growing countries and the engines of the global recovery process which underscores the changed role of these economies. BRICS have the potential to evolve into a powerful economic bloc. This study intends to evaluate the trends and patterns of FDI Inflows into BRICS. The relationship between FDI Inflows and its selected determinants are examined. The study is based on secondary time series data collected for ten years ranging from FY 2005-06 to FY 2014-15. GDP, Financial Position, Exchange rate, Trade openness etc. are the variables taken as the determinants of FDI Inflows. Data is analyzed by using correlation analysis, linear regression analysis and compounded annual growth rate. Significant relationship is found between selected variables and FDI Inflows and these variables are positively correlated. Equations were formulated using the regression analysis and they were found to be good fit to predict the FDI Inflows. Policy makers should make concerted efforts to improve these variables under study which will result in increased foreign capital inflow.

Keywords: FDI Inflows, Determinants, BRICS Economies

1. Introduction

Foreign Direct Investment has become sine-quo-non for the economic development of both developed and developing countries. FDI is defined as a non-debt financial capital. FDI is also described as "investment into the business of a country by a company in another country". FDI has proven to be an 'engine of growth' of a country in the modern era. FDI is a key element in this rapidly evolving international globalization. FDI provides a means for creating direct, stable and long-lasting links between economies. The present study aims to study the trends and patterns of FDI Inflows into BRICS economies and examine the determinants of FDI flows.

1.1 Determinants of FDI

The determinant varies from one country to another due their unique characteristics and opportunities for potential investors. In specific determinants of FDI in India are as:

- **Stable Policies:** India stable economic and socio policies have attracted investors across border. Investors prefer countries with stable economic policies. If government makes changes in policies which will have effect on the business, the business requires a lot of funds to be deployed and any change in policy against the investor will have a negative effect.
- **Economic Factors:** Different economic factors encourage inward FDI. These include interest loans, tax breaks, grants, subsidies and removal of restrictions and limitation. The government of India has given many tax exemption and subsidies to foreign investors who would help in developing the economy.
- **Cheap Labour:** There is abundant labour available in India in terms of skilled and unskilled human resources. Foreign investors will take advantage of difference in cost of labour as we have cheap and skilled labours. For example foreign firms have invested in BPO' in India which required skilled labour and we have been providing the same.
- **Basic Infrastructure:** India though is a developing country, it has developed special economic zones where there have focused to build required infrastructure such as roads, effective transportation and registered carrier departure worldwide, Information and communication network / technology, powers, financial institutions and legal system and other basic amenities which are must for success of business. A sound legal system and modern infrastructure supporting an efficient distribution of goods and services in host country.

- **Unexplored Markets:** In India, there is large scope for investors because there is a large section of markets have not explored or unutilized. In India, there is enormous potential customer market with large middle class income group who would be target group for new markets. For example BPO was one sector where investors had large scope exploring markets where service was provided with just a call, with almost customer satisfaction.
- **Availability of Natural Resources:** As we know that India has large volume of natural resources such as coal, iron ore, natural gas etc. If natural resources are available, they can be used in production process or for extraction of mines by foreign investors.

2.0 Concept of BRICS

The acronym was coined by Jim O'Neil in a 2001 paper entitled, 'Building Better Global Economic BRICS'. BRICS originally BRIC before the inclusion of South Africa in 2010 is the title of an association of emerging national economies: Brazil, Russia, India, China and South Africa. With the exception of Russia, the BRICS members are all developing industrialized countries but they are distinguished by their fast growing economies and significant influence on regional and economic affairs.

Table 2.1: General Profile of BRICS Nations

Profile/Country	Brazil	Russia	India	China	South Africa
Area of territory (1000 sq km.)	8516	17125	3287	9600	1221
Capital city	Brasilla	Moscow	New Delhi	Beijing	Pretoria
Mid-Year Population (Million persons)	204	146	1254	1371	55
Population Density (Persons per sq. km.)	24.0	8.6	396	143	44.2
National Currency	Real- R$	Rouble- Rub	Rupee- INR	Renminbi- RMB	Rand-ZAR

Source: BRICS Joint Statistical Publication, 2016

Table 2.1 highlights general information of BRICS countries. Population density is highest in India that is 396 persons per sq. km.

Table 2.2: Economic & Social Indicators of BRICS Nations

Indicators/Country	Brazil	Russia	India	China	South Africa
Population (Mid-Year)Million Persons	204	146	1254	1371	55.0
Male Population (%)	49.4	46.3	51.8	51.2	26.9
Female Population (%)	50.6	53.7	48.2	48.8	28.1
Labour Force share (%)	66.5	52.5	39.5	56.3	38.4
Unemployment Rate (%)	6.9	5.6	2.2	4.1	25.3
GDP (at current prices)Billion US$	1772	1332	2035	11006	313
Per capita GDP (at current prices/US$)	8668	9098	1586	8027	6483

Source: *BRICS Joint Statistical Publication, 2016*

Table 2.2 indicates Economic and Social Indicators of BRICS Nations. Female population is less as compared to male population in India and China that is 48.2 percent and 48.8 percent respectively. It is opposite in case of Brazil, Russia and South Africa. Unemployment rate is lowest in India that is 2.2 percent and highest in Russia that is 25.3 percent. Per capita GDP at current prices in terms of US$ is lowest in India that is 1586 as compared to other BRICS economies.

Objectives of the Study

- To study the trend and pattern of Foreign Direct Investment Inflows into BRICS Nations
- To examine the influence of Gross Domestic Product (GDP), Trade Openness (TO), Share of External Debt as percentage of GDP (EXDGDP), Annual Average Exchange rate (EXR), Foreign Exchange Reserves as percentage of GDP(RESGDP)

4.0 Research Hypothesis

To fulfil the objectives of this study the following hypothesis have been set:

H01: There is no significant relationship between FDI Inflows and its determinants in terms of proxy variables (Gross Domestic Product, Trade Openness, Share of External Debt, Annual Average Exchange rate, Foreign Exchange Reserves as percentage of GDP) in BRICS Nations

H11: There is significant relationship between FDI Inflows and its determinants in terms of proxy variables (Gross Domestic Product, Trade Openness, Share of External Debt, Annual Average Exchange rate, Foreign Exchange Reserves as percentage of GDP) in BRICS Nations.

Research Methodology

Research Design: The study is descriptive and analytical as it aims to study the relationship between the selected variables and FDI Inflows in BRICS.

Sources of Data: The data for this study has been collected from various secondary sources like BRICS Joint Statistical Publication, World Development Indicators Report and other online publications. National and International Journals related to Foreign Direct Investment and BRICS has also been referred to.

Statistical tools used: Descriptive Statistics, Simple Growth Rate, Compound Annual Growth Rate, Correlation Analysis, Regression Analysis

Period of the Study: The study is conducted for a period of ten financial years starting from 2005-2006 to 2015-2016.

Variables used in the study:

- Gross Domestic Product (GDP)
- Trade Openness(TO)
- Annual Average Exchange Rate(EXR)
- Share of External Debt as percentage of GDP(EXDGDP)
- Foreign Exchange Reserves as percentage of GDP (RESGDP)

6.1: FDI Inflows in BRICS Nations

Table 6.1: FDI Inflows in BRICS Nations

(Million US$)

Year/Nation	Brazil		Russia		India		China		South Africa	
	Value	GR	Value	GR	Value	GR	Value	GR	Value	GR
2006	19418	-	-	-	22826	-	63021	-	312	-
2007	44579	1.29	55874	-	34843	0.53	74768	0.19	6530	19.9
2008	50716	0.13	74783	0.34	41873	0.20	92395	0.24	9220	0.41
2009	31481	-0.37	36583	-0.51	37745	-0.09	90033	-0.03	7535	-0.18
2010	88452	1.80	43168	0.18	34847	-0.08	105735	0.17	3635	-0.52
2011	10158	-0.88	55084	0,27	46556	0.34	116011	0.09	4248	0.17
2012	86607	7.53	50588	-0.08	34298	-0.26	111716	-0.04	4559	0.07
2013	69181	-0.20	69219	0.37	36046	0.05	117586	0.05	8304	0.82
2014	96895	0.40	22891	-0.67	45148	0.25	119562	0.02	5775	-0.30
2015	75075	-0.23	-	-	55457	0.22	126267	0.06	1774	-0.69
Mean	57256.2		51023.75		38963.9		101709.4		5189.2	
SD	28954.12		15801.38		8381.54		19850.59		2697.08	
CV	0.506		0.310		0.215		0.195		0.520	
CAGR	14.48		-8.54		9.28		7.20		18.98	

6 Analysis& Interpretation

From the table 6.1, it is seen that there is no particular pattern found in FDI Inflows. There is a mixed trend in FDI Inflows. Compound Annual Growth Rate is calculated to be 14.48 percent for Brazil, 9.28 percent for India, 7.20 percent for China, 18.98 percent for South Africa for the period under study. This means the FDI inflows have increased on an average of 14.48 percent, 9.28 percent. 7.20 percent, 18.98 percent year after year for ten years respectively for these nations. The compound annual growth rate is negative in case of Russia that is – 8.54 percent indicating negative increase in FDI Inflows over a period of ten years.

: To examine the influence of Gross Domestic Product (GDP), Trade Openness (TO), Share of External Debt as percentage of GDP (EXDGDP), Annual Average Exchange Rate (EXR), Foreign Exchange Reserves as percentage of GDP(RESGDP)

Table 6.2.1 shows correlation coefficients of FDI and its determinants for BRICS Nations. In case of Brazil there is moderate relationship between FDI and GDP, FDI and RESGDP.

: Correlation Analysis: For the purpose of testing hypothesis, correlation analysis has been used.

Table 6.2.1: Correlation Coefficients of FDI and its Determinants for BRICS Nations

Determinants/ Nations	Brazil		Russia		India		China		South Africa	
	FDI	P value	FDI	P value	FDI	P value	FDI	P value	FDI	P value
GDP	.743	.014	-.238	.570	.679	.031	.948	.000	-0.15	.967
TO	-.008	.982	.687	.060	.165	.671	-.331	.385	.109	.765
EXR	.202	.577	-.641	.087	.528	.117	-.938	.000	-.100	.783
EXGDP	-.119	.744	-.554	.155	.599	.067	.129	.722	.278	.468
RESGDP	.653	.041	.297	.475	-.208	.563	.238	.508	.268	.454

Source: ***Calculated Values***

Regression Analysis: To further verify the relationship and to predict the FDI Inflows, regression analysis has been used.

Table 6.2.2 (a): Regression Equations of FDI and its Determinants for BRICS Nations (Brazil, Russia & India)

Nation	Brazil		Russia		India	
Dependent Variable/ Independent Variable	Equation	R Square	Equation	R Square	Equation	R Square
FDI	-3520.115+52.392 (GDP)	.552	64169.046-13.682 (GDP)	.057	23192.237+120 (GDP)	.460
FDI	67875.640-4.184 (TO)	.000	-15578.912+ 70.672(TO)	.472	36478.464 + 101.781 (TO)	.000
FDI	46981.381+.8649.473 (EXR)	.041	88524.844- 1126.582 (EXR)	.411	8011.109 +622.667 (EXR)	.279
FDI	87189.347-1512.937 (EXDGDP)	.014	120670.565- 2049.943 (EXDGDP)	.307	-1761.291+2040.30 (EXDGDP)	.359
FDI	-31190.125 + 4.745 (RESGDP)	.427	54152.970-.027 (RESGDP)	.096	45873.554- 30.831(RESGDP)	0.43

Source: *Calculated Values*

Table 6.2.2 (b): Regression Equations of FDI and its Determinants for BRICS Nations (China & South Africa)

Nation	China		South Africa	
Dependent Variable/ Independent Variable	**Equation**	**R Square**	**Equation**	**R Square**
FDI	46486.001+8.404(GDP)	.899	5362.804- 8.26 (GDP)	.000
FDI	223877.658-235.857(TO)	.232	4027.079+ 1.129 (TO)	.006
FDI	341949.500-36072.087(EXR)	.880	6110.699- 100.85 (EXR)	.010
FDI	91433.829+970.309 (EXDGDP)	.057	1872.779+ 121.265 (EXDGDP)	.077
FDI	60350.009+.997(RESGDP)	.017	-2073.95 +.359 (RESGDP)	.072

Source: *Calculated Values*

Regression Equations evolved in table 6.2.2 (a) and table 6.2.2 (b) are of good fit and the R square values seems to be significant in explaining the variations in the dependent variable FDI. Using the above equations, FDI Inflows can be predicted with the help of independent variables.

: Multiple Regression Analysis: To get multiple regression equation of FDI and its determinants for BRICS Nations

Table 6.2.3: Multiple Regression Equation of FDI and its Determinants for BRICS Nations

Dependent Variable/Nation/ Independent Variable	Equation	R Square
FDI (Brazil)	-270745.387+78.464 (GDP)+ 341.159 (TO) - 18576.522 (EXR) + 7535.639 (EXDGDP) + 2.256 (RESGDP)	.866
FDI (Russia)	-132661.850+ 87.052 (GDP) + 124.219 (TO) - 2001.024 (EXR) + 1388.176 (EXDGDP) + .021 (RESGDP)	.917
FDI (India)	-185688.25 + 197 (GDP) + 12117.008 (TO) + 2541.829 (EXR) – 1668.513 (EXDGDP) +133.486 (RESGDP)	.962
FDI (China)	234381.279 + 4.648 (GDP) – 24.315 (TO) – 19484.513 (EXR) – 767.161(EXDGDP) -.307 (RESGDP)	.966
FDI (South Africa)	-69923.638- 163.858 (GDP)- 6.006 (TO) + 4275.275 (EXR) + 544.802 (EXDGDP) + 3.008 (RESGDP)	.841

Source: *Calculated Values*

Table 6.2.3 shows multiple regression equations for FDI & its determinants for BRICS Nations. The value of R Square in case of Brazil is .866 which means that independent variables GDP, TO, EXR, EXDGDP, RESGDP can explain 86.6 percent of the variations in the dependent variable which is FDI Inflows. From the given equation, FDI Inflows can be predicted with the help of GDP, TO, EXR, EXDGDP, RESGDP. In case of Russia, value of R square is .917 which indicates that selected independent variables can explain 91.7 percent of the dependent variable. On the same lines, 96.2 percent, 96.6 percent, 84.1 percent of the

variations in the dependent variable that is FDI Inflows in India, China, South Africa is explained by independent variables on basis value of R square of India (.962), China (.966) & South Africa (.841) respectively. From the above equations, FDI can be predicted with help of gross domestic product, trade openness, annual average exchange rate, external debt as percentage of GDP and foreign exchange reserves as percentage of GDP.

7.0 Conclusions

Foreign capital is sine-quo-non for the development of emerging economies. Policy makers should make concerted efforts to improve these variables under study which will result in increased foreign capital inflow.

References

Agrawal, Gaurav (2015). Foreign Direct Investment and Economic in BRICS Economies: A Panel Data Analysis, Journal of Economics, Business and Management, 3(4):421-424. http://www.joebm.com/papers/221-W00050.pdf

Himachalapathy, R. & V, Kavya A Study on the determinants of Foreign Direct Investment Inflows into India. http://www.sjec.edu.in/pdf/Determinants%20of%20Foreign%20Direct.pdf

Narender & Devi Shilpi (2015) Foreign Direct Investment and Growth in BRICS Countries: A Review. International Journal of Science and Research (IJSR), 4(4):1932-1934. https://www.ijsr.net/archive/v4i4/SUB153542.pdf

Nistor, Paula (2015). FDI Implications on BRICS Economic Growth, Elsevier Procedia Economics and Finance, 32:981-985. http://www.sciencedirect.com/science/article/pii/S2212567115015579

Ranjan, Vinit & Agrawal, Gaurav (2011). FDI Inflow Determinants in BRIC Countries: A Panel Data Analysis. International Business Research, 4(4):255-263. http://www.brics.unipr.it/paper/Agrawal%20Ranjan_2011.pdf http://www.business-and management.org/library/2010/5_3--1--13 Vijayakumar,Sridharan,Rao.pdf