

# Foreign Direct Investment, Trade and Economic Growth: A New Paradigm of the BRICS

Akhilesh Chandra Prabhakar<sup>1</sup>, Muhammad Azam<sup>1</sup>, B. Bakhtyar<sup>1</sup> & Yusnidah Ibrahim<sup>1</sup>

<sup>1</sup>School of Economics, Finance & Banking, College of Business, Universiti Utara Malaysia, Malaysia

Corresponding author: Akhilesh Chandra Prabhakar, School of Economics, Finance & Banking, College of Business, Universiti Utara Malaysia, Malaysia. E-mail: acpjni@gmail.com

Received: May 7, 2015

Accepted: July 15, 2015

Online Published: October 31, 2015

doi:10.5539/mas.v9n12p32

URL: <http://dx.doi.org/10.5539/mas.v9n12p32>

## Abstract

The present study begins by surveying broadly supports the assertion that regional integration in the case of the BRICS is not adequately paid attention except with very few original or significant contributions. This research examines the existing pattern in the areas of trade and investment with a view to locate in the development context. It was also essential to make a theoretical investigation on literature of trade along with the empirical one. The survey broadly supports the frequent, through usually undocumented, assertion that BRICS was an area had tended to neglect and to which they had made few if any original or significant contributions. Alongside, this study panel data on BRICSs, where the results confirm that foreign direct investment (FDI), trade and economic growth indicate the presence of long-run sustainable equilibrium relationship between them. It is thus important that policymakers to remove obstacles to FDI inflows and improve the respective absorptive capacity in order to reap maximize positive growth effects. This study also discussed that how China performed well through attracting FDI inflows and maintained trade balance.

**Keywords:** FDI, Trade, Economic Growth, Multi-polarity, De-dollarization, BRICS

## 1. Introduction

As an emerging regional block the BRICS (Brazil, Russia, India, China and South Africa) play a significant role through acquiring the technological capacity and internalize capability to exploit resources, develop infrastructure, and finally reduce the gap between demand and supply through improving production capacity and the distribution networks with the principles of collective self-reliance at the South-South level. BRICS have increased their trade, financial as well as technical cooperation and established distinct ways and means of economic cooperation, especially through south-south cooperation with an enormous potential consumer market with larger middle-class, abundant supply of natural resources, well developed financial parameters, good communication and networks, and sound legal system and modern infrastructure supporting an efficient distribution of goods and services (Vijayakumar, 2010). In terms of combined GDP BRICS economies are already larger than the USA and the European Union (Naud'e, 2013). BRICS economies are more stable with high growth rates, economic potential and demographic development, and intensified economic cooperation linkages with other developing countries not only with regard to trade and financial flows but also as emerging donors. Europe and the United States were drivers of economic and trade growth in the 19th and 20th centuries, respectively. The 21st century potentially belongs to BRICS and other emerging economies (Mathur, 2013). According to the IMF; BRICS promotes stability in trade and investment and cushioning global recession in the current financial crisis (IMF 2011:8).

BRICS encompass over 25 percent of the world's land coverage with 43 percent of the world's population; hold a combined GDP (PPP) of 24,000 billion dollars (as in the last fifteen years more than three times increased). Over the past 10 years, BRICS countries increased their share of global gross domestic product from 18 percent to 28 percent. BRICS' percent of global exports is also expected to grow from 12.4 percent to 20.1 percent in 2014. BRICS countries hold US\$3.93 trillion of foreign reserves, more than one-third of the global reserves. The overall BRICS focus of development cooperation lies on regional integration and technical assistance with various regional groups in Latin America, ASEAN and Asia-Pacific region in Asia, and in African countries. From a purely demographic point of view, India and China have the most economic prospects as combing huge population, and sufficient capital accumulation favor and support the BRICS agendas.

However, trade and the current FDI inflow into BRICS are extremely complex and subject to various factors related to the competitive environment, this study intends to examine the pattern of trade, economic growth and the major determinants factors of FDI inflow-outflow. Currently domestic investment ratios are around 40 per cent and 30 per cent of GDP in China and India, respectively, where as an investment ratio of Brazil, Russia and South Africa account to 20 per cent to 23 per cent to GDP.

The central premise of this study is to investigate both intra-BRICS FDI and trade, and internationally also, and its impact on economic growth in the BRICS. There are, of course, several studies contributing to the economic literature on the subject. The existing literature includes a number of surveys, case studies, and some empirical studies formulated cross sectional analysis and found a set of explanatory variables that determine FDI, trade and growth of into BRICS. Though, some earlier studies investigated the relationship among FDI, trade and economic growth for transition economies and developing economies as well as for groups like ASEAN and European Union. While, the available research literature pertaining to BRICS countries is still limited. In this context, our study intends to examine the role FDI flows and trade on economic growth in the context of BRICS by employing long recent data. Hope, this fresh study will contribute largely to the literature on incoming FDI, trade and economic growth literature on BRICS and can be extended to the other countries as well.

The rest of the study is structured as follows. Section 2 deals with the literature review. Section 3 presents Methodology. Section 4 deals with the data analysis. Finally, Section 5 concludes the paper.

## 2. Literature Review

Worldwide FDI represents a major source from MNCs for capital intensive projects. Due to global economic recession since 2007 developing countries like Mexico, Indonesia, Norway, Turkey (called MINT), India, China, Asia-Pacific and other East and Southeast regions become most competitive host for foreign capital. Empirical studies regarding the link between FDI, trade and economic growth in the BRICS economies are not sufficient. However, numerous studies are FDI, trade and economic growth in the context of other developed and developing countries. FDI increases capital accumulation in the receiving country by introducing new inputs and technologies (Balasubramanyam et al. (1996); Blomstrom et al., 1996; Borensztein et al.1998). Alfaro (2003) concludes in his research finding that FDI exerts an ambiguous effect on growth. His work further states that FDI in the primary sector, however, tend to have a negative effect on growth, while investment in manufacturing a positive one. Several prior studies also explain the significance of FDI and trade in the process of economic development and even affirm positive linkages, for example see (Moran et al., 2005; Kobrin 2005; Le & Ataulloh, 2006; Dawson, 2012; Azam et al. 2013; Azam & Ibrahim, 2014; Haseeb et al. 2014; Mohammad & Gavril, 2015; Azam, 2015). Studies conducted by Hermes and Lensink (2003) and Durham (2004) all find that countries with better financial systems and financial market regulations can exploit FDI more efficiently and achieve a higher growth rate. Coe et al. (1997) detect the positive association between FDI and economic growth, but suggest that the host country should have an attained level of development that helps it reap the benefits of higher productivity. However, there also exist contradicting theories that predict FDI in the presence of pre-existing trade, price, financial and other distortions will hurt resource allocation and slow growth. Levy-yeyati et al (2002) examine the extent of business cycles and interest rate cycles of developed countries impact on FDI flows to developing countries for the period 1980 to 1990. They consider the determinants of bilateral FDI using a gravity model. They find that FDI flows from US and Europe move counter cyclical to the business cycle in the source country, as well as, the interest rate cycles are the important determinants of FDI inflows. In the context of Latin American countries, Nunes et al (2006) find the variables 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. Kowalski et al 2009 explained among others the impact of trade liberalization on economic growth in South Africa during data for the period 1988-2003 and found a positive impact of trade liberalization on growth.

The BRICS' significance has risen sharply in recent years since the economic crisis, as has been the case for trade flows. Outward investment is relatively concentrated in sectors where the home economy has relatively-well developed capabilities, while also underlining the importance of outward investment in the further development of those capabilities. In addition, the financial services and pharmaceutical cases underline that there are important complementarities in key sectors supporting capability development and internationalization of firms when BRICS are both home and host economies (Stephen, 2014).

Trade between BRICS countries and the rest of the world has grown significantly with China and Brazil being the world's fastest growing economies. These countries are set to improve their economies by developing

infrastructure, agriculture, manufacturing and the development of small business. Ranked as the poorest continents in the world, Latin America and Africa have posted strong growth rates in recent years, drawing increasing inward investment (Ho, 2013).

Emerging economies together attracted more than half of global FDI inflows in the year 2010. As international consumption and international production has been shifted to emerging economies (BRIC), MNCs are increasingly investing in these countries. To utilize this trend of FDI it becomes important to look back the status of India's FDI attracting position among the other BRICS countries (Mathipurani, 2014).

### **3. Data and Methodology**

This study used a technique for analytical and empirical study in depth on the commodity trade and FDI, and focused on other variables also. This study is expected to contribute its empirical results for BRICS along with existing literature. We used graphs and tables also to explain the data accordingly. Moreover, the panel data analysis is conducted to overcome the problems of endogeneity, heteroscedasticity and non stationarity in the regression models. The data used in this study are taken from the World Development indicators (2014), the World Bank.

### **4. Data Analysis and Findings**

#### *4.1 Global FDI and Trade in BRICS*

Global FDI increased by 11 per cent to an estimated \$1.46 trillion in 2013. FDI inflows into developing economies reached a new high of \$759 billion, accounting for 52 per cent, during the year. Developed countries, however, are "trapped in a historically low share" (39 per cent) for the second consecutive year. Global FDI inflows will gradually rise to \$1.6 trillion and \$1.8 trillion in 2014 and 2015, respectively. FDI inflows into developed countries increased 12 per cent to \$576 billion, with such investments into the European Union increasing, while flows to the United States continued their decline. The US received \$159 billion in FDI inflows last year. Continued inflows of FDI, which testify to the foreign investor community's long-term confidence in the BRIC economies and which provide those countries with a measure of insulation from the global credit crunch. BRICS now account for over one fifth of global FDI inflows with 22 per cent up from 21 percent in 2012 which is almost double share from the pre-crisis level at \$322 billion in 2013. However, global FDI increase by an estimated 10.94 per cent from \$ 557.58 billion in 2012 to \$ 618.62 billion in 2013. China was the highest ranked country globally with \$64.1 billion worth of FDI announced in 2013.

#### *4.2 Top Sources for FDI*

Western Europe was the top source for FDI in 2013. It accounted for 34.94 per cent of all announced outward FDI in the year and also experienced a 10.38 per cent increase on 2012. Estimated capital investment from North America increased by 9.57 per cent in 2013, and the region maintained a global market share of about 20 per cent decline as a source region for FDI projects with outward project numbers coming in at 2951 in 2013 compared with 3287 in 2012 (The FDI Markets Database, 2014).

#### *4.3 Sector-wise Analysis*

Coal, oil, and natural gas, communications, business services, renewable energy, and real estate were the top five sectors by capital investment in 2013, accounting for 47.26 per cent of FDI globally. Of the top five sectors, real estate was the only one to record a decline by 27.03 per cent to \$46.74 billion FDI activity in construction picked up with hotels and tourism increasing by 36.3 per cent to \$18.98 billion in 2013 and building and construction materials increasing by 88.39 per cent to \$9.69 billion. In 2013, FDI markets recorded 762 investments, in the communications sector totaling \$ 61.59 billion. This represents an increase of 82.2 per cent on 2012 and the highest ever capital investment since measuring such statistics in 2003 (The FDI Markets Database, 2014).

#### *4.4 Intra-BRICS Trade and FDI*

BRICS accounts to \$ 230 billion of intra-trade. BRICS' intra-trade was only 27.3 billion dollars in 2002, currently reached at 300 billion dollars, and in 2015, it is predicted that the BRICS intra-trade will cross more than 500 billion dollars. BRICS' combined share in international trade is currently 18 percent (BRICS Nations and the IMF<sup>2</sup>, 2014). It is predicted that BRICS may account for 41 percent of the world's market capitalization by 2030. South Africa outperformed other countries within BRICS, with FDI inflows rising by 126 percent, inflows to China at an estimated US\$127 billion – including both financial and non-financial sectors – the country again ranked second in the world, closing the gap with the United States to some \$32 billion. Manufacturing remains the centerpiece of China's foreign investment sector, accounting for nearly 70 per cent of the country's inbound FDI stock. China's large installed manufacturing base enables the country to bootstrap sequential investments in key

industries (automotive, consumer durables, garments, microelectronics, and telecommunications), solidifying China's standing as the world's manufacturing platform. Chinese foreign investment has stimulated FDI in financial services, real estate, construction, and other non-manufacturing sectors.

FDI inflow to Russia jumped by 83 percent to US\$94 billion making it the world's third largest recipient of FDI for the first time ever. Russia's centrality as an oil and gas supplier indicates growing inflows of hydrocarbon-related FDI. Meanwhile, Russia's rising per capita income and expanding middle class are stimulating foreign investment in non-energy sectors, notably banking, consumer goods and real estate. Manufacturing-related investment in Russia remains small (about 7% of inbound FDI), but is likely to grow in the coming years as Russian manufacturers seek foreign investment to bridge the competitive gap with China, Brazil and East Central Europe. FDI inflows into India grew 17 per cent to \$28 billion ranked 16th among the top 20 global economies in 2013 despite unexpected capital outflows in the middle of the year. India's inbound FDI stock is the smallest of the BRIC countries, and smaller than the FDI stocks of others.

India's weak performance in the FDI arena demonstrates several factors: India's belated opening to foreign investors, which didn't occur until 1990 and which enabled China to exploit first-mover advantages in manufacturing-related FDI. The low FDI intensity of off-shored IT services, which have become the bulwark of India's foreign investment sector. A notoriously balky and inefficient bureaucracy, which raises entry costs for putative foreign investors. A poorly developed infrastructure, which frustrates transportation, logistics and supply chain management by foreign manufacturers and distributors. The central challenge facing India is leveraging the country's success in IT services to stimulate technology-intensive investment in manufacturing and other non-service sectors. To that end, the Indian government has accelerated privatization of state-owned companies, launched major investments in infrastructure and created special economic zones to attract export-oriented FDI. India's locational assets (notably a rapidly expanding middle class and a huge supply of well-trained, English-speaking professionals) augur favorably for a steady if unspectacular expansion of foreign investment in coming years.

FDI to Brazil – the largest recipient of FDI in Latin American region at \$63 billion in 2013, with 7<sup>th</sup> ranked in the list of top 20 host economies during the year. A number of leading multinational corporations have been active in Brazil for decades. The country's size, resource endowment, industrial base and geographic locale offer huge rewards for foreign investors. But a variety of factors (high levels of corruption, acute income inequality and a long history of political-economic instability) has hindered Brazil from realizing its FDI potential. A number of leading multinational corporations have been active in Brazil for decades. While Brazil is unlikely to attain Chinese FDI levels, recent developments bode well for the country's ability to boost foreign direct investment. Brazil's automotive, food and beverages and retail distribution sectors are receiving increasing amounts of FDI. The Brazilian biofuels industry, which has become a world leader amid growing demand for renewable energy products, is also garnering significant attention from the foreign investor community. Figure-1 show the BRICS economic performance in terms of GDP (%).

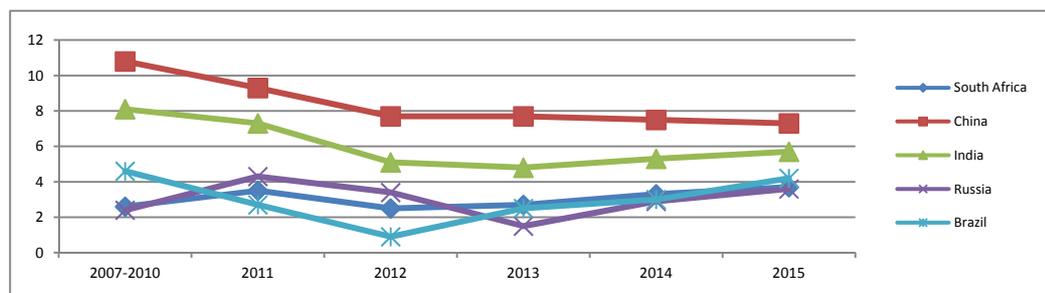


Figure 1. BRICS Economic Performance in terms of GDP (in %)

#### 4.5 Growth Slowdown in the BRICS

In many large developing countries, including the BRICS (Brazil, the Russian Federation, India, China and South Africa), economic growth has weakened considerably over the past two years and is now well below the pre-crisis level. For 2013, weighted GDP growth in the BRICS is projected at 5.6 percent, down from an annual average of about 8 percent during the period 2000-2008. A standard growth decomposition exercise for the BRICS for the period 1996-2012 can reveal some interesting features about the growth deceleration in these

countries. By a production function approach, GDP growth can be decomposed into the contributions from three sources: growth in labour inputs, accumulation in capital, and increase in total factor productivity (TFP)-a catch-all category that measures the overall efficiency of the economy in transforming labour and capital into output. As illustrated in the figure below, most of the decline in GDP growth triggered by the eruption of the global financial crisis of 2008 can be attributed to a drop in the growth of TFP. However, the contributions from growth in labour (measured as total employment (quantity) adjusted for changes in the composition of labour) and capital have also been on a downward trend in recent years. One caveat about this exercise is that since TFP is estimated as the residual, a large part of its fluctuation in the aftermath of the financial crisis may reflect a cyclical movement caused by changes in aggregate demand, rather than a structural change in technological advance or other supply-side factors.

A number of recent studies, with various more sophisticated approaches, including structural modelling and time-series analysis techniques, have offered more information. Estimates of potential output and output gaps (the gap between actual GDP growth and potential growth) in the BRICS suggest: First, prior to the crisis, from 2005-2008, actual GDP grew faster than potential output, resulting in a significant positive output gap at the onset of the crisis. The rising output gap was associated with a marked increase in inflation in all of these economies, except Brazil. The output gap was probably largest in the Russian Federation and South Africa. Second, potential GDP growth seems to have declined in the aftermath of the crisis in all five economies, with the decline most pronounced in China and India. And third, small negative output gaps are currently estimated for these economies, with the largest gap in India. The estimated decline in the potential growth, combined with relatively small negative output gaps, suggests that the pace of economic expansion in the BRICS will remain notably below the pre-crisis period. A moderate cyclical upturn is expected in the near term, particularly in India, but more lasting progress will depend on policies and reforms to remove supply-side bottlenecks to growth. In most economies, this will require increased efforts to stimulate capital accumulation, promote technological advances, strengthen human capital and improve the functioning of labour markets. India and South Africa record trade deficits and lack of competitive advantages, while China and Brazil, and to a lesser extent Russia, have large trade surpluses and obvious comparative advantages. Further, according to UNCTAD statistics online reports; until the economic crisis, Russian's exports followed by those of Brazil and China have significantly exceeded import flows. As a result, in this first period, total trade of countries showed the uneven development within the BRICS group. .

If in 1997, the BRICS share in world trade in goods was 6 percent, since 2004 the five states have maintained relatively stable growth in the range of 20-30 percent. .The analysis of data from the period 2001-2007 reflects the best the characteristics and national trade level in the BRICS. In these years, the five countries have seen the flowering stage through a high growth trend, especially in living standards (India), meaning a strong development momentum. Also, we find that the growth rate of trade has maintained a high level until 2008 – when the economic crisis started. As an example only, the growth of China and India compared to other countries was faster, followed by that of Russia, South Africa and Brazil. The explanation for China's case consists in the early process of the gradual reforms that is the introduction of the policy of “openness” in 1978 compared to Russia (1991) and Brazil (1994). BRICS states are increasingly dependent on foreign trade. From the perspective of the experts of the World Bank shows that in descending order of export dependence may be mentioned China, South Africa, Russia, India and finally, Brazil. Regarding imports, the situation looks like this: South Africa, China, India, Russia and Brazil. As a consequence, the large commercial dependence leads to an irrational domestic production, consumption and foreign trade structure, affecting GDP because of trade volatility (case of South Africa).

#### *4.6 Impact of Foreign Direct Investment*

Multinational companies (MNC), from the highly industrialized countries, shifted to emerging markets such as Brazil, China, and India (4000 MNCs operates). But on the other hand these emerging countries (BRICS) private corporations, with highly subsidies from China (700 Corporations operates in Africa), India, and Russia, are operating abroad. Moreover, subsidiaries in BRICS evolve in parallel with expansion of group and its increasing importance in the global market. Therefore, we can say that expansion abroad is an opportunity to acquire existing capacities in case of a MNC that operate on a developed market (see the data in Table-1 and Table- 2).

Table 1. Intra-BRICS balance (outflow-inflow) of FDI in US\$ million

	Brazil	China	India	Russia	South Africa
FDI in other BRICS	2628	41133	22082	12365	10013
FDI received from other BRICS	17806	25891	20286	15637	8601
Net result	-15178	15242	1796	-3272	1412

\*Source: Greenfield Investment Data from the Financial Times Database.

Table 2. Bilateral FDI among the five countries (January 2003-July 2013 in US\$ million)

Source Country	Brazil	China	India	Russia	South Africa	Total
Brazil		1.613	462	528	25	2.628
China	12.769		14.273	12.272	1.818	41.133
India	3.568	10.622		2.511	5.381	22.082
Russia	117	5.895	4.976		1.377	12.365
South Africa	1.352	7.761	574	326	-----	10.013
Total	17.806	25.891	20.286	15.637	8.601	88.220

\*Source: Greenfield Investment Data from the Financial Times Database.

FDI inflows in BRICS can be identified two groups of countries, some focusing on the manufacturing sector (China and Brazil) and energy (Russia), and the second – on the services (India, with emphasis on communication and information) and Russia). China and India followed by Russia, Brazil and South Africa. India, for example, attracted among the most investments in the first period of 21<sup>st</sup> century due to major reforms on opening the economy towards the world markets. India and China have the advantages of cheap labour costs, and low country risk. The increase of the FDI flow in China is mostly due to its large domestic market, and close international trade ties with OECD countries. Regarding investment abroad, these were seen in the BRICS like some tools of access to technology and natural resources (the case of China). In these circumstances, we consider that before the 2008 financial crisis, the rapid growth of BRICS countries accounted a major share of global economic growth. However, the onset of the world economic crisis has affected BRICS members, through to a lesser extent. Both import and export volume fell in Russia (with 65 percent), Brazil (52 percent), China (41 percent), South Africa (32 percent) and India (23 percent). But compared to G-7, the impact of the crisis on BRICS countries in terms of trade is not dramatic (Carp, 2013). Compared to other emerging countries, the Chinese economy continued its upward trend (with 8 percent /year). Thus, we believe that China is an engine of global economic growth, alleviating somewhat the regress of rich world.

#### 4.7 China-Russia Economic Corridor for De-Dollarization

Russia has just entered on May 21, 2014 into an agreement with China to the tune of US\$400 billion for supplying gas to the latter over the next thirty years. The significant feature of the deal, however, is that the payment will not be made in US dollars. This substitution of other currencies for the reserve currency which in today's world consists essentially of the US dollar is what the Russians are calling "de-dollarization". Therefore "de-dollarization" can become a prelude to a new conjuncture entailing severe crisis and destabilization in the capitalist world, and leading to a loss of US hegemony. Figure 2 to Figure 4 portrays the trend analysis and percentages of GDP growth rates respectively.

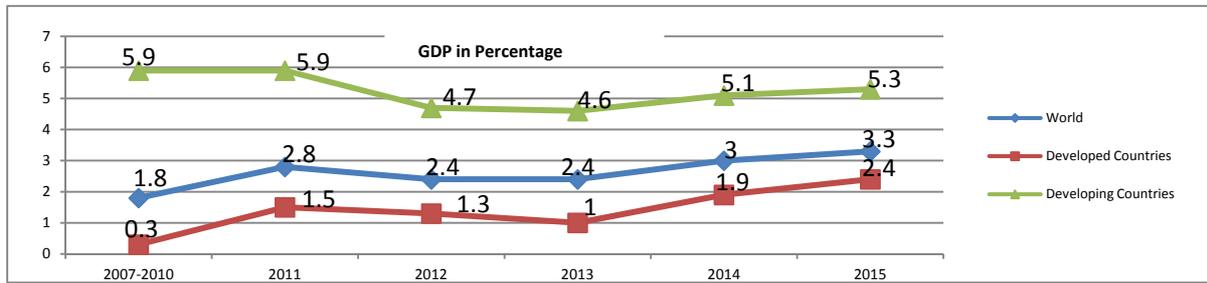


Figure 2. Trend in GDP growth rate

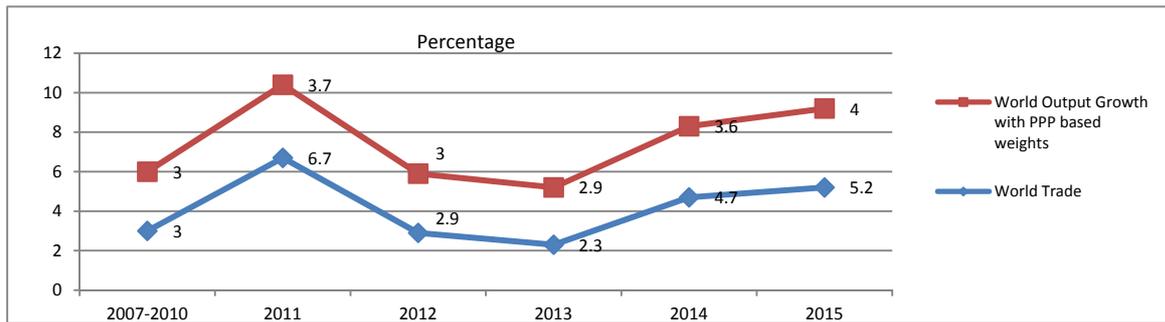


Figure 3. Trend in World output and Trade

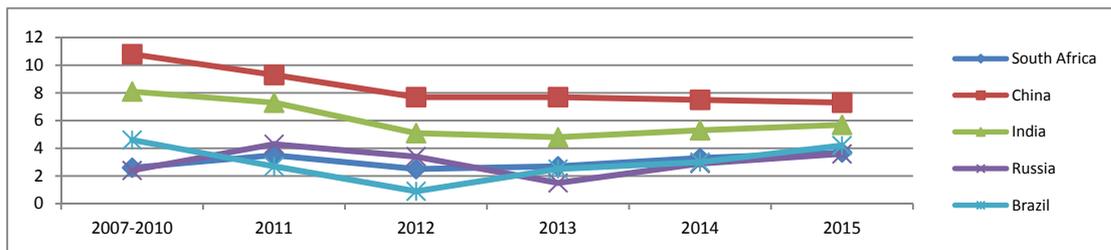


Figure 4. Trend in BRICS growth rates

#### 4.8 The Evolution of the International Trade of Emerging Economies

The international organizations statistics show an increase from year to year, China is the leading exporter and importer among the BRICS. However, it recorded large trade deficits and as a result, services continued to have a small share in trade. The same feature is valid for Russia and Brazil. In the case of India, the services accounted for approximately 37 percent of its total exports (goods + services) and 24 percent of its total imports – higher values than those recorded by the U.S.A (Carp, 2013). Due to poor basic infrastructure and lower investment India’s share was only 1.7 per cent in world’s export in 2013 while China’s share was 11 per cent in the same year. There are three factors that determine the industrial patterns of FDI inflows in BRICS namely: courses of development, presence of resources and business environment. For this reason, we consider that in Brazil, Russia and India, the tertiary sector has attracted most FDI in recent years, the primary sector -only a few millions of dollars, and the secondary one was located in the middle. China’s secondary sector was and remains dominant in terms of attracting foreign capital, what cannot be said about the primary and tertiary. Compared with other members, Russia does not attract many FDI. A number of barriers, such as administrative ones, infrastructure issues and enforcement of intellectual property rights are major obstructions to FDI inflows.

However, studies have shown that a relationship exists between GDP and FDI inflows of BRICS states that can be approximated to a linear equation with a positive slope (Nandi, 2012). Further, despite the domestic obstacles, the economies of Brazil, Russia, India, China and South Africa seem to form the world’s largest economic group at the mid-twentieth century on the increasing attraction of FDI flows and their rapid development, now continue their efforts in the 21st century. All macroeconomic indicators show that the five members continued their

upward trend of yesteryear (it is true, in lower percentages). In this context, the possibility for China to become as large as the U.S.A. by 2027 and even exceed it by 2050 became a heated and controversial subject of debate among researchers.

#### 4.9 Econometric Model and Empirical Results Interpretation

The main focus of the present study is to empirically explore impacts of foreign direct investment and trade on economic growth performance in the context of BRICS countries. The data uses for empirical investigation purpose covers the period from 1993 to 2012. For this study panel data have been used and the time period selected based on the availability of data and obtained from the World Development Indicators (2014).

In our proposed econometric model, GDP per capita (current US\$) is dependent variable, where explanatory variables are net inflows foreign direct investment (current US\$), and exports of goods and services. The data used are in natural log form. The following proposed econometric model (Note 1) is to be used, which can be written as below:

$$\ln G_{it} = \gamma_0 + \gamma_1 FDI_{it} + \gamma_2 EXP_{it} + \varepsilon_{it} \quad (1)$$

$$\text{Where, } \varepsilon_{it} = w_{it} + \mu_{it}$$

While,  $\gamma_s$  in equation (1) signifies the estimated coefficients of different explanatory variables,  $i$  and  $t$  denote the  $i^{\text{th}}$  country and the  $t^{\text{th}}$  time period, respectively ( $i = 1, 2, \dots, N$ ;  $t = 1, 2, \dots, T$ ). Likewise, in equation (1)  $G_{it}$  represent GDP per capita;  $FDI_{it}$  is net inward foreign direct investment in current US\$,  $EXP_{it}$  is exports (trade) and  $\varepsilon_{it}$  is stochastic term. Moreover, the stochastic term  $\varepsilon_{it}$  is contained  $w_{it}$  which is time invariant and accounts for any not observable singular source country-specific effect which is not included in the econometric model and  $\mu_{it}$  is supposed to be white noise (Kimino *et al.* 2007; Azam and Ather, 2015). Furthermore, equation (1) states that the impacts of FDI inflows and exports on economic growth are expected to be positive in the study. In the present study for empirical enquiry, a balanced panel data set of 20 years is used for five countries of BRICS over the period from 1993 to 2012. For the parameters estimation purpose, the Panel method is employed because it is reasonably suitable for this kind of experiential analysis. The Hausman's specification test is utilized for choice of random-effects or fixed-effects model (Greene, 2008). In the present study, the Hausman's test signifies that random-effects model is better over the fixed-effects model. While, we employ both random-effects or fixed-effects model and their respective results are reported in Table 3.

Table 3. Panel Data estimates (Dependent variable is GDP per capita)

Variables	Random-effects		Fixed-effects	
	coefficient	t-ratio	coefficient	t-ratio
FDI	0.334*	8.947	0.339*	9.934
EXP	0.208***	1.719	0.203***	1.913
C	-0.545	0.562	-0.664	1.186
R <sup>2</sup>	0.541		0.927	
adj. R <sup>2</sup>	0.527		0.922	
F-statistic	56.050		197.407	
Prob(F-statistic)	0.000		0.000	
Hausman Test (p-value)= 1.1545 (0.561)				

Note: Asterisks \* and \*\*\* shows statistically significant at 1 % and 10 % respectively.

Periods included: 20 Cross-sections included: 5 Total panel (balanced) observations: 100.

Table 3 reveals that the impact of FDI inflows on economic growth in BRICS is positive and statistically significant. In the random-effects model, the estimated coefficient of 0.334 is found for the FDI inflows variable statistically significant with 1 percent level of significance. The estimated coefficient indicates that an increase of one percentage point in FDI inflows leads to increase in GDP per capita by 0.334 unit percentage for each specific country. Similarly, it is evident from Table 3, that exports/trade has a positive and statistically significant relationship with economic growth in BRICS countries. In the random-effects model, the impact of the exports/trade variable on economic growth is statistically significant with 10 percent level. The estimated coefficient of

exports/trade found is 0.707; implies that one unit change in the exports bring 0.707 percent increase in the economic growth measured by GDP per capita. The  $R^2$  explain 54 percent variation in the dependent variable by the explanatory variables in the random-effects model. Empirical results obtained are technically and theoretically acceptable and conceivable for onward policy advice for BRICS countries in particular and rest of the world in general.

#### *4.10 BRICS-AFRICA Cooperation*

The growing economic linkages of Africa with the BRICS is significantly through three key channels: trade, investment, and development assistance. Africa's trade with the BRICS has grown faster than the continent's trade with any other region in the world, for example; doubling since 2007 to US\$ 340 billion in 2012, and it is projected to reach US\$500 billion by 2015 (AFRICA-BRICS COOPERATION: IMPLICATIONS FOR GROWTH, EMPLOYMENT AND STRUCTURAL TRANSFORMATION IN AFRICA, 2013). The BRICS are not becoming a larger feature on the global and African economic landscapes-their economic, political and strategic position in global affairs is a manifestation of the potential of South-South Cooperation. Africa's resource endowments create opportunities to leverage Africa-BRICS cooperation for embarking on an industrial strategy to maximize backward and forward processing linkages with the commodity sectors. Such linkages potentially offer major benefits for commodity producing countries, not the least of which is decent employment. Cooperation with the BRICS African countries can capitalize and development their sectors like agriculture and manufacturing-which could boost growth and employment through these linkages, as well as other channels. The success of the BRICS in promoting inclusive growth, employment and structural transformation will lead to reduce poverty and inequality for Africa.

#### *4.11 Foreign Direct Investment*

The largest FDI come to Africa from the BRICS (until 2002 their FDI inflows were dwarfed by those from western countries). FDI flows to Africa from India, China and Brazil have risen from 18 per cent of the total in 1995-1999 to 21 per cent in 2000-2008 to meet the requirements of Africa for infrastructure development. The BRICS' financial aid has increased to Africa through project aid, (mainly to improve infrastructure, complementing aid, concessionary loans and credits, as well as grants.

### **5. Conclusion**

This research has found a new prosperous and scope of emerging, other developing and transitional economies, with the commercial exchanges, through foreign direct investments with technical cooperation, and trade as an engine of sustainable economic growth of world economy, which ultimately creates a 'new world economic order.' The institutionalized grouping known as the BRICS (or BRICS, according to some experts) represents includes three different continents namely; Asia, Latin America, and Africa, share in many ways. In trade in goods, taking into account the export structure, it can be distinguished two complementary groups; in one hand, China and India whose exports are dominated by manufactured goods. Russia and Brazil focuses on commodity exports surpassing those of manufactured goods, raw materials, and oil and gas supply (especially by Russia) on the other hand. In terms of exports trend, Brazil and India are less interested to exports their products, while China and Russia are predisposed to export.

China's economic cooperation with India is continuously growing with the target of increasing annual trade scale to \$150 billion, and the total amount of China's outward investment up to \$30billion in the next five years. India and China today constitute almost 35 percent of the world's population, their bilateral trade volume increasing from less than US\$3 billion early this century to nearly US\$70 billion. The two emerging powerhouses have set a target of increasing their annual bilateral trade volume to US\$100 billion by 2015, as they are seeking to step up trade and investment engagement. It is concluded that overall FDI inflows and trade have a positive impacts on the economic growth of BRICS.

Thus, based on findings of the present study, 'South' can achieve the goal of 'Bandung Consensus' through regional integration, and support each other at all levels: investment, technological transfer, trade and economic cooperation etc. Moreover, the policy makers of BRICS need to formulate appropriate and effective policy in order to encourage FDI and expand trade volume in order to further stimulate economic growth.

For future research it is suggested that cross-country analysis, long period data, and more sophisticated econometric techniques, if used covering the main determinants of FDI in the context of BRICS will certainly give more robust results and largely help policy makers.

### **References**

Alfaro, L. (2003). Foreign direct investment and growth: does the sector matter? Harvard University, Harvard

Business School, Working Paper.

- Azam, M., & Ather, M. A. (2015). Role of human capital and foreign direct investment in promoting economic growth: evidence from Commonwealth of Independent States. *International Journal of Social Economics*, 42(2), 98-111.
- Azam, M., Hassan, S., & Khairuzzaman. (2013). Corruption, workers remittances, FDI and economic growth in Five South and South East Asian Countries: a panel data approach. *Middle-East Journal of Scientific Research*, 15(2), 184-190.
- Azam, M., & Ibrahim, Y. (2014). Foreign direct investment and Malaysia's stock market: using ARDL bounds testing approach. *Journal of Applied Economic Sciences*, 4(30), 591-601.
- Azam, M. (2015). The role of migrant workers remittances in fostering economic growth: The four Asian developing country's experiences. *International Journal of Social Economics*, 42(8), 690-705.
- Balasubramanyam, V., Salisu, M., & Sapsford, D. (1996). FDI and growth in EP and IS countries. *The Economic Journal*, 106(434), 92-105.
- Blomstrom, M., Lipsey, R. E., & Zejan, M. (1996). Is fixed investment the key to economic growth? *Quarterly Journal of Economics*, 269-276.
- Borensztein, E., de Gregorio, J., & Lee, J. W. (1998). How does foreign direct investment affect economic growth? *Journal of international Economics*, 45, 115-135.
- Carp, D. P. (2013). The influence of foreign trade and foreign direct investment on BRICS economic growth, Economy and Business Economics. Romania.
- Coe, D. T., Helpman, E., & Hoffmaister, A. W. (1997). North-South R., & D Spillovers. *Economic Journal*, 107,134-149.
- Dawson, L. (2012). Potash and black berries: should Canada treat all foreign direct investment the same? A Macdonald-Laurier Institute Publication
- Durham, B. (2004). Absorptive Capacity and the Effects of Foreign Direct Investment and Equity Foreign Portfolio Investment on Economic Growth, *European Economic Review*, 48(2), 285-306.
- Greene, W. (2008). *Econometric Analysis* (6th Ed). Upper Saddle River: Pearson Prentice Hall.
- Haseeb, M., Hartani, N. H., Bakar, N. A. A., Azam, M., & Hassan, S. (2014). Exports, foreign direct investment and economic growth: empirical evidence from Malaysia (1971-2013). *American Journal of Applied Sciences*, 11, 1010-1015
- Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica*, 46, 1251-71.
- Hermes, N., & Lensink, R. (2003). FDI, Financial Development and Economic Growth. *Journal of Development Studies*, 40(1), 142-163.
- Ho, C. S. F, A. N. (2013). Economic freedom, macroeconomic fundamentals and foreign direct investment in fast emerging BRICS and Malaysia. *International Journal of Banking and Finance*, 10(1), 50-61.
- IMF, "Gradual Upturn in Global Growth During 2013," in World Economic Outlook Update, Washington, USA: IMF Publications, 2013
- Kimino, S., Saal, D. S., & Driffield, N. (2007). Macro determinants of FDI Inflows to Japan: an analysis of source country characteristics. *The World Economy*, 446-469.
- Kobrin, S. (2005). The Determinants of liberalization of FDI policy in developing countries: a cross sectional analysis, 1992-2001. *Transnational Corporations*, 14(1), 67-104.
- Le, M. H., & Ataulloh, A. (2006). Foreign capital and economic performance of Pakistan. *The Lahore Journal of Economics*, 7(1), 01-32.
- Levy, Y., Ugo Panizza. E., & Stein. E. (2002). *The cyclical nature of north South FDI flows*. IADB Working paper, Inter- American Development Bank.
- Mathipurani, P. R. (2014). A comparative assessment of FDI in BRIC countries with special Focus on India's Position. *International Journal of Management and Commerce Innovations*, 2(1), 245-254.
- Mathur, S. D. M. (2013). *From BRIC to BRICS: An Overview*. New Delhi: Swati Communications.
- Mohammad, A., & Gavrilu, L. (2015). Inward foreign capital flows and economic growth in African countries.

*Journal of Applied Economic Sciences*, X-3(33), 362-371.

- Moran, T. H., Graham, E. M., & Blomstrom, M. (2005). Does direct investment promote development? The Peterson Institute for International Economics.
- Muhammad, A., Ibrahim, Y., & Bakhtiar B., (2014). Foreign direct investment and economic growth in Asia. *Actual Problems of Economics*, 11(161), 58-67.
- Nandi S. (2012). Comparative analysis of foreign direct investment trends in emerging economies. in International Conference on Emerging Economies – Prospects and Challenges (ICEE-2012), Maharashtra, IN, 2012, 230-240.
- Naud'e, W., S. A. (2013). *Industrialisation lessons from BRICS: A Comparative Analysis*. Bonn: IZA.
- Nunes, C. L., Oscategui, J., & Peschiera, J. (2006). *Determinants of FDI in Latin America*, Documento De Trabajo 252.
- Stephen, G. (2014). *South Africa's Foreign Direct Investment Links with the BRIC Countries*. World Trade Institute, University of Bern.
- Vijayakumar N. S. P. (2010). Determinants of FDI in BRICS countries: a panel analysis. *International Journal of Business and Applied Management*, 5(3), 1-13.
- World Bank, the World Development Indicators (2014). Retrieved from <http://data.worldbank.org/>

#### **Note**

Note 1. The control variables also used by Azam et al., (2013), Muhammad et al. (2014) and Azam and Ather (2015).

#### **Copyrights**

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/3.0/>).