

EFFECT OF 2008 GLOBAL FINANCIAL CRISIS ON FDI IN BRICS NATIONS WITH SPECIAL FOCUS ON INDIA

Pummy Yadav

Assistant Professor, Department of Economics,
Kalindi College, Delhi University-110007

ABSTRACT

This paper examines the effect of 2008 global crisis on the FDI inflows using annual dataset from 1995 to 2015. We have divided this paper in two parts; detailed analysis of effect of crisis on FDI inflows in India and effect of the crisis on FDI inflows in BRICS nations. In the first part of the paper, we have conducted a detailed analysis of the effect of different determinants of the FDI on its inflow pre and post crisis. This study revolves around the 2008 global financial crisis as many economists it to be the worst financial crisis since the great depression of the 1930s. The crisis started in 2007 with the collapse of the investment bank Lehman Brothers and the collapse of the subprime mortgage market in USA accompanied by the reversal of the housing boom in other industrialized economies have had a ripple effect around the world. The study revealed that there has been a significant rise in the FDI inflows in Brazil, India and China during the post crisis period as compared to the FDI inflows in the pre-crisis period, though FDI inflows declined in first few years after the crisis but it reverted back very soon. As these five nations gain importance on the global stage, the international community will increasingly look to the BRICS to stabilize the world's economic system. Importantly, these economies along with the US that will lead the future FDI recovery. If the BRICS can productively work together today, it should bode well for the future economic order.

Keywords: BRICS, CHOW Test, Foreign Direct Investment (FDI), Global Financial Crisis, Inflow

INTRODUCTION

Foreign investment has a major role in economic development of a country as it helps the country in obtaining a launching pad from where it can make further improvements. The economically developed countries can help the developing and underdeveloped countries by providing them with financial assistance that would help them to achieve some amount of

economic stability and growth. This foreign investment can take place in two ways; foreign direct investment (FDI) and foreign portfolio investment (FPI). FDI involves establishing a direct business interest in a host country, such as buying or establishing a manufacturing business which signifies a substantial and long term interest in the host economy. FPI is investing in financial assets, such as stocks or bonds in the host country. FPI typically has a shorter time frame for investment return than FDI. FPI investors usually expect to quickly realize a profit on their investments. Unlike FDI, FPI doesn't offer control over the business entity in which the investment is made. As securities are easily traded, the liquidity of FPIs makes them much easier to sell than FDIs. FPIs are more accessible for the average investor than FDIs, since they require much less investment capital.

Foreign direct investment is a strategy for globalization of a business by physical presence in a foreign country. This can be achieved either by acquiring productive assets such as technology, land, labor, capital plant and equipment. This could be achieved by the net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as given in the balance of payments. Net inflows are defined as (new investment inflows less disinvestment) in the reporting economy from foreign investors. Companies engage in cross-border investments and collaborative ventures to enhance the competitiveness and increase shareholders value. They are looking to invest their money where they can produce cheapest with best quality resources and increase the bottom line of their company. There are strong arguments in favor of FDI and its impact on economic growth. The Japanese growth model, East Asian Miracle and success story of China are all glowing examples of the role of FDI in growth. Yet the FDI- growth nexus theory is not completely settled. There is a lot of ongoing debate among development economists and trade theorists regarding the factors that affect the flow of foreign capital, foreign investments and growth in developing countries.

In this paper, we have used FDI for our analysis as stability rate for FDI is better as compared to FPI. FDI flow is more stable as it is a long term investment by corporate, generating jobs and income in the host country. FDI typically brings along with the financial investment, access to modern technologies and export markets. The visible impact of FDI in the recipient country is far more than that of FII largely because the former would generally involve setting up a production base- factories, power plants, telecom networks etc.,- that generates direct employment. There also exists a multiplier effect on the back of the FDI because of further domestic investment in downstream and upstream projects and a host of services.

Also, other weaknesses in the global financial system have surfaced. Some financial products

and instruments became so complex and twisted, that as things unraveled, trust in the whole system failed. Although the system has never served developing countries well, the crisis is hitting hard to most of them.

We have chosen emerging market economies for our analysis as India is one of the leaders in the group. An emerging market economy (EME) is defined as an economy with low to middle per capita income. Such countries constitute approximately 80% of the global population, and represent about 20% of the world's economies. The term was coined in 1981 by Antoine W. Van Agtmael of the International Finance Corporation of the World Bank.

One key characteristic of the EME is an increase in both local and foreign investment (portfolio and direct). A growth in investment in a country often indicates that the country has been able to build confidence in the local economy. Moreover, foreign investment is a signal that the world has begun to take notice of the emerging market, and when international capital flows are directed toward an EME, the injection of foreign currency into the local economy adds volume to the country's stock market and long-term investment to the infrastructure.

For foreign investors or developed-economy businesses, an EME provides an outlet for expansion by serving, for example, as a new place for a new factory or for new sources of revenue. For the recipient country, employment levels rise, labor and managerial skills become more refined, and sharing and transfer of technology occurs. In the long-run, the EME's overall production levels should rise, increasing its gross domestic product and eventually lessening the gap between the emerged and emerging worlds.

The four largest emerging and developing economies by either nominal or PPP-adjusted GDP are the BRIC countries (Brazil, Russia, India and China). The term BRIC, coined in 2001 by Jim O' Neill, chief economist at the investment bank Goldman Sachs, brings the four largest fast growing and emerging countries (Brazil, Russia, India and China) under a common label. These four economies collectively, account for more than a quarter of the world's land area, 40 per cent of the world's population. On almost every scale, these economies are in line to be the largest grouping on the global stage. During the BRIC summit at Sanaya (China) in April 2011, a new member South Africa joined the group to make it BRICS. BRICS nations have a combined nominal GDP of US \$ 16.039 trillion, equivalent to approximately 20% of the gross world product and estimated US \$ 4 trillion in combined foreign reserves. China's cheap labor force, the young population of India, Russia and Brazil's natural resources were some of the advantages who had the effect of attracting an increasing amount of FDI in the BRICS economies. As these five states gain importance on the global stage, the international community will increasingly look to the BRICS to stabilize the world's economic system.

LITERATURE REVIEW

Sebastian-Andrei LABES, (2015) investigate the Foreign Direct Investments Inflows in the BRICS economies. The research study employs a Panel Data analysis on a sample of 5 countries, the BRICS economies Brazil, Russia, India, China and South Africa and a time series from 1992-2012. The variables taken in consideration are Trade Openness, GDP per capita, Population, Exchange Rate and Human Capital. The results indicate that the most significant determinants of FDI Inflows are Trade Openness, GDP per capita and Exchange Rate. The value of this work is that it investigates the factors that contribute to the increase of FDI inflows towards the most important emerging economies in the world.

Elif C Arbatli (2011) Concentrating on the effects of economic policies, this paper investigates the determinants of FDI inflows to emerging market economies. The empirical analysis also addresses the role of external push factors and of political stability using a domestic conflict events database. The results suggest that lowering corporate tax rates and trade tariffs, adopting fixed or managed exchange rate policies and eliminating FDI related capital controls have played an important role. Domestic conflict events and political instability are found to have significant negative effects on FDI, which highlights the role of inclusive policies to promote growth and avoid sudden stops of FDI inflows.

Radhika Kapoor, Ritika Tiwari (2010) study looks at the global scenario of FDI inflows and presents a sectoral breakdown of the inward FDI in the BRICS economies and analyzes the factors that make the BRICS economies attractive for FDI inflows along with examining the relation between economic growth and FDI. They concluded that the financial crisis changed the investment landscape of global FDI, with the BRICS economies taking the lead in attracting investments as well as investing globally. The BRICS weathered the crisis better than developed countries as their economic growth remained robust. Importantly, it is predicted that it is these four economies along with the US that will lead the future FDI recovery. If the BRICS can productively work together today, it should bode well for the future economic order. Together, they will continue to build their economic strength.

Mathipurani V. B, Rachel Nancy Philip(2014) examines the competitive position of India among Brazil, Russia and China in FDI attraction. It discusses the position of India among BRIC countries in FDI attraction. The analysis is done to find the answers to the following research questions: What is the position of BRIC's FDI share in world FDI? What is the status of FDI inflows during the period 2001 to 2011 in BRIC countries? How was the performance of BRIC's FDI inflows in contributing to Gross Domestic Product and Gross Fixed Capital Formation? How competitive is India among the other three of BRIC? The study reveals the fact that though

India has better scope in FDI attraction in spite of having low volume and rate of growth. China has outperformed India and Brazil has attracted good volume of inflows. All the four countries managed to recover post 2008 economic crisis though at differing speeds.

Bhayva Malhotra (2014) aims to examine the impact of FDI on the Indian economy, particularly after two decades of economic reforms, and analyzes the challenges to position itself favorably in the global competition for FDI. The paper provides the major policy implications from this analysis, besides drawing attention on the complexities in interpreting FDI data in India. It studies the trends and pattern of flows of FDI. It also assesses the determinants of FDI inflows and evaluates the impact of FDI on Indian economy. It also analyses the flow of investment in India.

PART-A

FDI in India: - A pre and post crisis analysis

HISTORY OF FDI IN INDIA

India being a resource poor country, particularly in capital resources, was always receptive to foreign investment. The great promise of foreign direct investment by multinational corporations is that capital will stimulate dynamic growth. It would boost not only income and employment but also bring knowledge that indirectly helps in building skill and technological capacities of local firms, catalyzing broad-based economic growth.

The part played by foreign direct investment in the development process has undergone several changes. In the 1960s, FDI was seen in most countries as a partner in the development endeavors. But at the time of independence, the attitude towards foreign capital was one of fear and suspicion. This was natural on account of the previous exploitative role played by it in 'draining away' resources from this country. The Indian government adopted a restrictive attitude towards foreign capital in late 1960s as local industries started to develop. Explicit curbs on foreign investment were imposed through the introduction of the Foreign Exchange Regulation Act (FERA) in 1973 by restricting foreign ownership of shares in enterprises incorporated in India. At the same time, foreign firms operating in India were subjected to "local content" and "foreign exchange balancing" rules that curbed their freedom of operation. The Industrial Licensing System under the Industries Development and Regulation Act, 1951 and the Monopolies and Restrictive Trade Practices Act, 1969 sought to channelize their activities into high technology and export-oriented production. Private savings financed most of India's investment, but by the mid-1980s further growth in private savings was difficult because they were already high level. These policies continued until the policy of liberalization of the Indian

economy was initiated in the 1980s. During the late 1980s India relied increasingly on borrowing from foreign sources. Increased borrowing from foreign sources in the late 1980s, which helped economic growth, led to pressure on the balance of payments. The problem became severe in 1990 when the price of oil doubled. In the early 1990s, there was violence over the domestic issues of the reservation of a proportion of public-sector jobs for members of Scheduled Castes and the Hindu- Muslim conflict at Ayodhya. The cumulative impact of these events shook international confidence in India's economic viability and the country found it increasingly difficult to borrow internationally. As a result, India made various agreements with the International Monetary Fund (IMF) and other organizations that included commitments to speed up liberalization. Thus, in the early 1990s, considerable progress was made in loosening government regulations, especially in the area of foreign trade. An important outcome of economic reform process was massive increase in Foreign Direct Investments (FDI) inflows. In fact, FDI policy reform formed part of the first package of industrial reforms in July 1991 and was reflected in the Industrial Policy announced in 1991. FDI is a major source of private capital in India. The primary reason for alluring FDI is not only the capital it brings in but along with capital it is also an important source of various technologies knows how, better managerial skills, labour training and other externalities which generate increasing return in production.

DATA AND VARIABLES

There are various factors that influence the FDI inflows into a country. The investors consider and evaluate various aspects of a country before investing in it. The relative importance of these determinants of FDI varies not only between countries but also between different types of FDI. This section examines the effect of 2008 global crisis on the FDI inflows in India using balanced panel annual dataset from 1995 to 2015. The data used by us is gathered largely from the following sources:

1. Reserve Bank of India
2. India-stat
3. The Department of Industrial Policy & Promotion
4. Tradingeconomics.com
5. World bank database

The dependent variable in our data is FDI inflows in India while the factors that are considered to affect the FDI inflows along with their proxy variables are-

Size of the Market (GDP, Population): Market size as measured by GDP or population is among the most important FDI determinant in econometric studies. The developing countries possess substantial markets where the consumers demand for certain goods far exceed the

available supplies. This demand potential is a big draw for many foreign enterprises. In many cases, the establishment of a low cost marketing operation represents the first step by a multinational company into the market of the country. This establishes a presence in the market and provides important insights into the ways of doing business and possible opportunities in the country.

Infrastructure (Electricity consumption): Infrastructure covers many dimensions ranging from roads, ports, electricity, railways and telecommunication systems to institutional development (e.g. accounting, legal services, etc.). Good infrastructure can be seen, however, as both an asset and an opportunity for foreign investment. Physical infrastructure in the form of availability of power, telephone density, access to finance, availability of civic amenities and degree of urbanization were also found to be important in the empirical studies. For the majority of low-income countries, poor infrastructure is often cited as one of the major constraints, but foreign investors also point to the potential for attracting significant FDI if host governments permit more substantial foreign participation in the infrastructure sector.

Trade Openness: Trade is nothing but the relationship among the different countries through transforming goods and services from one country to another country. It is also called as international Trade, External trade or Inter-Regional trade. It consists of imports, exports and entrepot. The inflow of goods in a country is called export trade. Many times goods are imported for the purpose of re-export after some processing operations. This is called entrepot trade. Foreign trade basically takes place for mutual satisfaction of wants and utilities of Resources. This data has been measured from International Financial Statistics (IFS) IMF data base. Trade openness is the ratio of the sum of export and import of a country and its GDP.

Exchange rates: it is also known as the foreign-exchange rate, forex rate or FX rate. It's a comparison between two currencies specify how much one currency is worth in terms of the other. It is the value of a foreign nation's currency in terms of the home nation's currency. Exchange rate movements and exchange rate uncertainty appear to be important factors investors take into consideration in their decision to invest abroad. Much of the literature on exchange rate movements and FDI concentrates on two issues: the level of the exchange rate, and the volatility of the exchange rate.

Tax Revenue: Tax is more than just a source of revenue and growth. It also plays a key role in building up institutions, markets and democracy through making the state accountable to its taxpayers. Just as excessive tax burdens might hinder growth in wealthier countries, in developing economies a lack of tax structures is a major cause of weak, unresponsive governance. It also leads to an overreliance on aid. With tax, the public can hold governments to

account for their decisions, and not feel tied to the will of aid donors. And because tax revenues are relatively predictable, governments can plan ahead with greater certainty. Developing countries need aid and will continue to do so, but they can also use it to help strengthen their tax capacity, increase their autonomy and reduce their long-term dependence on external assistance.

Agglomeration Economies (Previous year FDI flow): As countries begin to industrialize, there is a tendency for industries to concentrate initially in areas where physical infrastructure is readily available and subsequently, for related industries, to gravitate closer together, thereby taking advantage of inherent synergies. In the process, industry clusters are formed, with each geographical area specializing in certain activities, leading to spatial diffusion of industries. This clustering of firms, which is also known as the “agglomeration” factor has emerged as an important determinant of regional distribution of FDI flows between countries. One period lagged value of per capita stock of FDI in a state has been considered as independent variable to capture these agglomeration effects.

Rate of Inflation: Rate of inflation is a crucial factor in influencing the inflow of foreign investment. A high rate of inflation signifies economic instability associated with inappropriate government policies, especially the monetary and fiscal policy mix. High rates of inflation distort the economic activities, leading to lesser inflow of capital. A low and stable inflation rate acts as a sign of internal economic stability. This is because it reduces uncertainty and boosts the confidence of people and businesses for making investment decisions. On the other hand high inflation rate signifies the inability of the central bank to set appropriate monetary policies. A high inflation rate also impacts capital preservation of foreign investment. It affects profitability as higher prices can lead to increased costs and lower profits. So, stable inflation rate is desirable to attract foreign capital.

MODELS

The empirical analysis carried out in this paper is based on national level panel dataset of India for the period 1995 to 2015. Four model specifications have been considered in this analysis and the estimation results are reported in the following table. In all the models, the dependent variable in this study is $\ln(\text{FDI})$.

$$\text{Model 1} \quad \ln \text{ FDI} = \alpha + \beta_1 \text{ GDP} + \beta_2 \text{ Infra} + \beta_3 \text{ AE} + \beta_4 \text{ TR} + \beta_5 \text{ ER} + \beta_6 \text{ TO} + \beta_7 \text{ inf} + \beta_8 \text{ population}$$

$$\text{Model 2} \quad \ln \text{ FDI} = \alpha + \beta_1 \ln \text{ GDP} + \beta_2 \ln \text{ AE} + \beta_3 \ln \text{ TR} + \beta_4 \ln \text{ TO} + \beta_5 \text{ infra}$$

Model 3 $\ln FDI = \alpha + \beta_1 \ln GDP + \beta_2 \ln \text{growth rate GDP} + \beta_3 \ln AE + \beta_4 \ln TR + \beta_5 \ln TO + \beta_6 \ln \text{inf}$

Model 4 $\ln FDI = \alpha + \beta_1 \ln \text{growth rate GDP} + \beta_2 \ln AE + \beta_3 \ln TR + \beta_4 \ln ER + \beta_5 \ln TO + \beta_6 \ln \text{infra}$

VARIABLE	MODEL 1	MODEL 2	MODEL 3	MODEL 4
GDP	0.001152809	0.496178353	-0.055454174	
GDP Growth Rate			0.170562732**	0.152790901***
Population	9.405784952			
Infrastructure	- 0.011060916	- 3.845022657* *		-2.745757277
Trade Openess	-62.9136063	0.814493695* *	0.801600449*	0.996711742**
Exchange Rate	- 15.49152608			-0.808241397*
Tax Revenue	0.00879111	1.419887672* *	0.423088202	1.310378667**
Agglomeration Economy	0.009356355	0.478509613	0.485409534**	0.383991717**
Rate of Inflation	4.759647494		-0.154650658	

The values of N1, N2 and K for our data are-

N1=13

N2=7

K= 7

Country	F Calculated	F Critical (at 5%)	Result
India	0.9801	3.79	Pooled is better

RESULTS

The purpose of this section is to

- (i) Find the important determinants attracting FDI inflow in India.
- (ii) We study effect of 2008 crisis on FDI inflow in India

For our analysis, we have considered four model specifications in this paper, as shown in the table above. In all the models, the dependent variable is ln of FDI inflow to India.

Estimation results confirm the hypothesis that economic structure of a country as reflected in terms of industrial orientation plays an important role in attracting FDI flows. The gross domestic product and growth rate of gross domestic product of India have a positive and highly significant impact on attracting FDI as shown in model 3 and model 4 respectively. This result is as expected because a large market represented by the population of a country and its GDP presents multiple opportunities of growth and hence a wise investment opportunity.

The impact of infrastructure as represented by per capita electricity generation on FDI flows to India is insignificant in all our models, which could be because of the poor proxy used. However, the level of infrastructure was found to play an important role by some of the earlier studies, viz. Kumar (2002) and Mukim and Nunnenkamp (2010).

The effect of trade openness is positive in all our models and significant in three of our models, implying that it is robust to different model specifications. The FDI in India has seen a huge boost due to its trade openness especially after the 1991 liberalization.

The exchange rate has a negative and significant impact as shown by Model 4. It is generally accepted that a depreciation in the currency of one country increases Foreign Direct Investment flows into that country. However, our results are resonated by studies based on an option pricing approach and recent FDI flow data from Japan into the US, which suggest that the FDI flows may decrease as the currency of the host country depreciates. The effects and relationship

direction between the exchange rate and FDI are still uncertain because the effect of the exchange rate on the FDI also depends on the destination of goods produced. If the FDI's objective is to serve the host country market, then the FDI and trade are substitutes; in which case, the appreciation of the host currency attracts the FDI inflows due to higher purchasing power of the domestic consumers. On the other hand, if the FDI's objective is for re-export purpose, so the FDI and trade are complemented, in this case, appreciation of the host currency reduces the FDI inflows through lower competitiveness. Thus, the depreciation in the host country exchange rate will increase the FDI inflow since it reduces the cost of capital investment.

The effect of tax revenue is positive and significant in Model 2 and Model 4. This result is expected because tax revenue collected is an indicator of not only the legal structure of the country but also the strength and agility of the government.

One period lagged value of per capita FDI stock has a strong positive impact on FDI flows, indicating the importance of agglomeration effects as shown in Model 3 and Model 4. This confirms the hypothesis that cumulative FDI flows has important demonstration effect on decision making of new FDI entrants, i.e., new foreign investment tends to enter into areas with already high levels of FDI flows.

Model 4 yields the best results with 5 out of the 6 major variables turning out to be significant. As it's a double log model it gives us the elasticities of various determinants on FDI. Accordingly, if the rate of growth of GDP changes by 1%, then, FDI inflow rises by 15% on average. Similarly the elasticities for other significant determinants are trade openness (99%), exchange rate (80%), tax revenue (131%) and agglomeration economy (38%).

- (i) As Model 4 included the most relevant and significant variables we conducted a Chow test using this model to study the effect of crisis on FDI inflows in India.

As shown in the table, the crisis had no long lasting effect on FDI inflows in India, and India had a growth rate 6.7% in 2008-2009. India's FDI wasn't affected by crisis due to its low dependence on global flows on capital and trade as external trade contributes only 20% to GDP so we had some insulation. India has a huge population and therefore a huge domestic demand for goods & services thus we were able to absorb the global turndown in demand. Many Indian sectors at that time were not open to FDI. Indian growth story was fueled by home consumption and FDI contributed only 10% (even now) in total capital asset creation. Exports of services were not impacted much due to crisis due to its competitive nature. India has a highly regulated conservative financial system which did not allow banks taking deposits to enter into speculative activities and buy mortgaged back securities which was done by banks throughout the world. A very strong and effective market regulators- RBI, SEBI, and most importantly FMC (Forward

Market Commission - regulates commodity derivatives and futures) helped us to overcome the short run effect of the crisis. In addition, India followed an expansionary fiscal policy in the form of two fiscal stimuli by lowering interest rates, expanding credit and reducing excise duty, pumping money into the economy and preventing negative effects from lasting for a longer time period.

POLICIES BY INDIAN GOVERNMENT TO BOOST FDI

The Union Government has radically liberalized the FDI regime in recent years with the objective of providing major impetus to employment and job creation in India.

India's retreat from the "License Raj" began halfheartedly in the 1980s; but its decisive opening to the world economy dates back to 1991. Most border NTBs have been removed, as have internal licensing restrictions. Nominal applied tariffs came down from an average of 100 per cent in 1985 to 13 per cent by 2008/9. The maximum tariff on nonagricultural goods, save for a few items, has come down to 10 per cent. However, in agriculture, tariffs and NTBs remain much higher. The average applied tariff in agriculture is 32 per cent. The maximum MFN tariff is 246 per cent. India has bound 74 per cent of its tariffs in the WTO at an average rate of 50 percent.

These reductions have significantly narrowed the gap between Indian levels of trade protection and those of other developing countries. India is now much closer to ASEAN and Chinese levels of trade protection. Its trade-weighted tariff, at 6 per cent, is lower than that of Brazil or Russia and not that far off Chinese and ASEAN levels. Still, India's tariff structure remains more protectionist than those of east-Asian countries. Intermediate inputs and consumer goods (e.g. cars, motorcycles, textiles and garments) face relatively high tariffs. The effective rate of protection for manufacturing, though decreased, remains high compared with east-Asian countries. In addition, the Government of India operates an extremely complex, bureaucracy ridden system of duty exemptions, special establishment and investment regulations, sectoral support programs and Special Economic Zones (SEZs) to encourage exports. Also, India has become the world's most active user of AD duties, especially directed at Chinese imports.

FDI and services liberalization have proceeded alongside the liberalization of trade in goods. Manufacturing is fairly open to FDI. In terms of overall FDI regulatory restrictiveness, India is on a par with China, but it is more restrictive than Russia and Brazil. Some services sectors, notably insurance, aviation, construction, retail and distribution, face especially high levels of protection. Restrictions include foreign-equity limits, the form of commercial establishment, and complicated and costly licensing procedures. There is scope for improvement.

Foreign Direct Investment (FDI) in India has received a dramatic boost from the launch of the 'Make in India' initiative, according to the latest Economic Survey.

After the September 2014 launch of the initiative, which seeks to promote manufacturing and attract foreign investment, there was an almost 40% increase in FDI inflows from October 2014 to June 2015 over the year-ago period. Under the programme, the government has awarded 56 defense manufacturing permits to private sector entities in the past one year, after allowing 49% FDI in the defense sector in August 2014, compared with 47 granted in the preceding three years.

India operates one of the most complex and inefficient consumption tax regimes in the world. There are numerous taxes which often overlap resulting in double taxation and imposing a heavy administrative burden on taxable consumers. Previously also, industry and consumers had to deal with multiple taxes, which had a cascade effect. It led to the evasion of taxes and revenue losses. To cope up with these inefficiencies, India took its first step in the form of Value Added Tax (VAT) which should ideally be followed by Goods and Services Tax (GST). VAT was first announced to be introduced from the April of year 2002 but was followed by protests from traders and businessmen. After negotiations, it was finally introduced in 2005. For the taxation, three rates were decided: 1% for precious metals and stones such as gold, platinum and rubies, 4% for essentials including food grains, oilseeds, processed food and readymade garments, and 14% on the residual goods. VAT's success prompted the government to start working on the logical next step: the Goods and Services Tax, or GST, a far more comprehensive system. GST will be levied on the supply of goods and services, with potential reduced rate and exempt supplies for essential goods such as foodstuffs and public transport. Imports will be subject to GST; but exports will be exempt.

Once admonished for its "Hindu rate of growth" – cliché for low rate of economic growth – post-reforms, India is now the second fastest growing economy in the world, behind China until 2015. GDP growth of India was 9.3 % in 2010-11, and it was predicted that it will remain more or less same for next couple of year, but in 2011-12 it decreased to 6.2% and 5.0% for 2012-13. One of the causes can be the bad policies undertaken by Indian government. To minimize the impact of 2008 crisis, like many other countries India did a lot of spending. Government came up with popular schemes like MGNREGA. Effect of these kinds of policies is positive and forward looking.

SECTOR WISE COMPOUND ANNUAL GROWTH RATE (CAGR) OF FDI

The Compound Annual Growth Rate (CAGR) is the mean annual growth rate of an investment over a specified period of time longer than one year. **CAGR** is a business and investing specific term for the geometric progression ratio that provides a constant rate of return over the time

period.

To calculate compound annual growth rate, divide the value of an investment at the end of the period in question by its value at the beginning of that period, raise the result to the power of one divided by the period length, and subtract one from the subsequent result. This can be written as follows:

$$CAGR = \left(\frac{\text{Ending Value}}{\text{Beginning Value}} \right)^{\left(\frac{1}{\# \text{ of years}} \right)} - 1$$

The CAGR helps frame the steady rate of return of an investment over a certain period of time. It assumes the investment compounds over the period of time specified and it is also helpful for comparing investments with different returns across periods.

	INDUSTRY	CAGR(%)
1	Manufacture	7.99
2	Construction	-9.42
3	Financial Services	-17.21
4	Real Estate Activities	-23.71
5	Electricity and other Energy Generation, Distribution & Transmission	6.45
6	Communication Services	52.33
7	Business Services	-10.78
8	Miscellaneous Services	-9.56
9	Computer Services	-1.46
10	Restaurants and Hotels	3.7
11	Retail and Wholesale Trade	28.21
12	Mining	-34.44
13	Transport	-12.87
14	Trading	-52.22
15	Education, Research and Development	-5.24
16	Others	-14.59

In some of the major sectors studied above, we found that the CAGR had a wide range, varying from 52% to -52%. Service sector turned out to be the most attractive for FDI flow, which is corroborated by the data; however the transport sector seems to be the worst performer, which could be improved by more Government expenditure in infrastructure. It is to be noted however that although CAGR is superior to average returns because it considers the fact that investment returns compound over time. One limitation it assumes is that it smoothens the return over the time period measured. In reality, investments experience significant short-term ups and downs.

PART-B

Effect of crisis on FDI inflow in BRICS

Over the past few decades, the world has witnessed massive transformations both in geopolitical and economic terms. Economies with low per capita income are coming ahead and becoming major players. The role of Foreign Direct Investment (FDI) from 1990 onwards has become crucial. Foreign Direct Investment is considered as a vital component for the growth of the economy. The developing countries are taking major steps to modify their policies to attract inward Foreign Direct Investment. The rise of emerging economies like Brazil, Russia, India, China and South Africa (BRICS) is one of the characteristics of the recent international scenario. The term BRIC, coined in 2001 by Jim O' Neill, chief economist at the investment bank Goldman Sachs, brings the four largest fast growing and emerging countries (Brazil, Russia, India and China) under a common label. These four economies collectively, account for more than a quarter of the world's land area, 40 per cent of the world's population. On almost every scale, these economies are in line to be the largest grouping on the global stage. During the BRIC summit at Sanaya (China) in April 2011, a new member South Africa joined the group to make it BRICS. BRICS nations have a combined nominal GDP of US \$ 16.039 trillion, equivalent to approximately 20% of the gross world product and estimated US \$ 4 trillion in combined foreign reserves. These emerging economies of Brazil, Russia, India, China and South Africa have been the most favorable destinations of FDI during the last decade. China's cheap labor force, the young population of India, Russia and Brazil's natural resources were some of the advantages who had the effect of attracting an increasing amount of FDI in the BRICS economies. In the period before 2000, the FDI inflows in the BRICS economies were low. After 2000, they began to grow recording higher and higher annual grow rates. BRICS economies are capable of attracting larger capital inflows as they have a large number of consumers to create demand, due to the large size of the population.

Governments of the BRICS economies are investing heavily in infrastructure, industry, education, healthcare, housing and tourism, with the realization that they have the opportunity to

attract FDI, increase GDP, substantiate growth of import and export trade at the same time as increasing local employment and wealth. As these five nations gain importance on the global stage, the international community will increasingly look to the BRICS to stabilize the world's economic system. If the BRICS can productively work together today, it should bode well for the future economic order. Together, they will continue to build their economic strength.

MODEL

The model estimated in this section is-

Model: $\ln \text{FDI} = \alpha + \beta_1 \ln \text{growth rate GDP} + \beta_2 \ln \text{AE} + \beta_3 \ln \text{TR} + \beta_4 \ln \text{ER} + \beta_5 \ln \text{TO}$

To see the effect of crisis i.e. whether the crisis had a significant effect on the FDI inflows to these emerging nations we run a chow test with following specifications-

Null Hypothesis: There is no break point (i.e. that the data set can be represented with a single regression line).

Alternate Hypothesis: There is a break point (i.e. that the data set cannot be represented with a single regression line).

$$CHOW = \frac{(RSS_p - (RSS_1 + RSS_2)) / k}{(RSS_1 + RSS_2) / (N_1 + N_2 - 2k)}$$

In our data the variables have following values-

$$N_1 = 13, N_2 = 7, k = 6$$

Using these values and formula, we get F calculated for each of the BRICS nations. F critical values are calculated from the F-table.

Country	F Calculated	F Critical (at 5%)	Result
Brazil	0.7706	3.37	Pooled is better
Russia	0.75910	3.37	Pooled is better

India	1.61	3.37	Pooled is better
China	0.8196	3.37	Pooled is better
South Africa	1.338	3.37	Pooled is better

RESULTS

We reject our null hypothesis when our F- calculated value is greater than F- critical value which would imply that separate models are better for pre and post crisis periods.

We do not reject our null hypothesis when F-calculated value is less than F-critical value which would mean that pooled model is better and we can have a single regression for our entire time period.

For all BRICS nations the F-calculated value is less than the F-critical value implying that the pooled model is better. The crisis of 2008 didn't have a significant impact on these emerging nations. We are now analyzing conditions of each country pre and post crisis separately-

BRAZIL

Analysis of FDI inflow for Brazil pre and post the 2008 financial crisis using Chow test gave the result that a pooled regression for the entire period was a better fit than two separate regressions for pre and post crisis periods. This means that the crisis did not have any significant effect on FDI inflow in Brazil in the long run in the chosen period (1995-2015).

The reasons for this could be found in the sound financial institutions of the country. Three decades of strong inflation, ending in 1994 had a particular impact on the behavior of families, companies, the government and financial institutions. The high rate of inflation caused the financial institutions to change their way of operating and seriously affected their profit ratios. The finance sector was radically restructured and a new financial policy was developed just years before the crisis hit. The workings of Brazil's financial sector was sound and shift in economic policy capable, leading to only slight effect of the crisis. Hence FDI inflow was also not affected in the long run.

In 2009, after a negative short run effect of the crisis, the exchange rates, stock prices and interest spreads reversed and returned to hover between the pre-crisis levels. With an improved

institutional framework, a healthier financial system (better regulation, higher profitability margins, lower non-performing loans) and lower debt levels Brazil has created a better environment than in the 1990s. Another reason for the insignificant impact could be gauged by Brazil's openness to international trade in the first place. A country not very active on the global financial scale would be hurt less by any mishap happening in it. According to traditional macro-level measures of trade penetration (measured by trade openness), Brazil is an unusually closed economy. However, insignificant impact of the crisis on FDI inflow in not only Brazil but also most of the Latin American nations does not mean that these countries "graduated from financial crises"—to borrow a term from Qian, Reinhart and Rogoff (2010).

RUSSIA

While the timing and extent of the global financial crisis surprised many countries, Russia was generally prepared. Its macroeconomic management of the recession rightly earned accolades from several international organizations. Prior to the start of the crisis, many in Russia thought that they were "decoupled" from what happened in the leading industrial economies. The world financial crisis and the bursting of the asset bubble presented Russia with a double shock. Oil prices collapsed, which had a huge direct impact and capital was withdrawn from Russia in the flight to safety. Both of these shocks were primarily due to events abroad. However, Russia was fiscally prepared for an external shock; something that spared the country from a much worse outcome than it might otherwise have suffered. Russian leaders assured the population that their country would be safe from the turbulence of the worldwide economic downturn. So, the first impact of the crisis on FDI inflows was negative but that was contained in a short while.

In a way, Russia had a dual financial system. The Russian state bridged the two parts of the financial system. In aggregate, Russia had few debts and strong cash reserves; most of its debt had a short maturity and grew quickly, concentrating in a small number of banks and companies. One of the most peculiar Russian anti-crisis policies was the decision by its leaders to gradually devalue its currency—known as stepwise devaluation—after months of expectation in November of 2008. Overall, Russia's anti-crisis policy was a major success: timely, consistent, and effective. Hence crisis didn't affect the FDI inflows in the long run.

INDIA

India wasn't much affected by crisis due to its low dependence on global flows of capital and trade, as external trade contributed to only 20% of our GDP, so it had some insulation. India has a huge population and therefore a huge domestic demand for goods & services, as such India was able to absorb the global turndown in demand. Many Indian sectors at that time were not open to FDI. Indian growth story was fueled by home consumption and FDI contributed only 10% (even

now) in total capital asset creation. Exports of services were not impacted much by crisis due to its competitive nature. India has a highly regulated conservative financial system which did not allow banks taking deposits to enter into speculative activities and buy mortgaged back securities which was done by banks throughout the world. A very strong and effective market regulators - RBI, SEBI and most importantly FMC (Forward Market Commission - regulates commodity derivatives and futures) helped it to overcome the short run effect of the crisis. In addition, India followed an expansionary fiscal policy in the form of two fiscal stimuli by lowering interest rates, expanding credit and reducing excise duty, pumping money into the economy and preventing negative effects from lasting. Hence crisis didn't affect the FDI inflow in India.

CHINA

A key aspect of China's economic modernization and growth strategy during the 1980s and 1990s was to attract FDI into China to help boost the development of domestic firms. Investment by Chinese firms abroad was sharply restricted. However, in 2000, China's leaders initiated a new "go global" strategy, which sought to encourage Chinese firms (primarily SOEs) to invest overseas. On September 29, 2007, the Chinese government officially launched the China Investment Corporation (CIC) in an effort to seek more profitable returns on its foreign exchange reserves and diversify away from its U.S. dollar holdings. The CIC was originally funded at \$200 billion, making it one of the world's largest sovereign wealth funds.

According to the United Nations, annual FDI flows to China grew from \$2 billion in 1985 to \$128 billion in 2014. China was the world's largest destination for FDI inflows in 2014. China has a large and rapidly expanding market, which was not overly affected by the financial crisis. The country took a hit in 2008-09 but recovered swiftly. With a strong potential, a wealth of employees and potential partners eager to learn and evolve, the country is a base for low cost production. China's strong points which attract FDI are its rapid economic growth, huge market and low labour costs. Hence crisis didn't affect the FDI inflows.

SOUTH AFRICA

While ranked in the top 20 economies by size, the South African economy is relatively small and accounts for less than 1 per cent of global GDP. For a small open economy such as South Africa, which has consistently had one of the world's lowest shares of regional trade and investment, the country was not immune to the impact of the global financial crisis but the impact had not been severe. Low levels of external debt, appropriate fiscal and monetary policies and a flexible exchange rate helped 'buffer' the economy against the global storm. The economic growth did slow down but it is important to differentiate between domestic and international factors in relation to the slowdown. Appropriate measures in the form of counter-cyclical fiscal policy and

the large infrastructure investment programs were taken to take up some of the slack. The reality is that, despite having the appropriate buffers, many sectors and many companies moved into ‘survival mode’, which meant that they were focused on surviving the global crisis. Fortunately, these companies were given help to survive and a significant portion of the labour force remained employed. Since, the key input for creating and retaining employment is a growing vibrant private sector; it was effectively supported and helped the South African economy to survive. Considering everything, South Africa’s economy did relatively well. As the crisis didn’t affect the country that hard and rest of world fared worse than South Africa the FDI inflows didn’t get affected significantly in the long run.

LIMITATIONS

Some of the possible limitations this paper has are as follows-

1). Proxy variable for infrastructure:-

It is commonly argued in the economic literature that development and availability of superior infrastructural facilities have a positive effect on the location choice of FDI firms. Though much of the FDI in developing countries is prompted by traditional factors, such as market-size, lower input/labour cost and availability and prices of natural resources, yet even there, where the firms have a choice, physical and human infrastructure, together with the macroeconomic environment and institutional framework of the host country tend to play a more decisive role. Availability of transportation facilities to reach the nearest port or output markets have historically been considered as an important determinant of setting a business in a particular place. Most commonly used variables to represent transport infrastructure includes availability and quality of road and rail network. Apart from transport, physical infrastructure in the form of availability of power, telephone density, availability of civic amenities and degree of urbanization were also found to be important in the empirical studies. However, we were unable to procure data on the aforesaid variables for all BRICS nations and used per capita electricity consumption as our proxy; however a variable representing per capita electricity generation would have been a better fit.

2). Other factors having an influence on foreign firms’ investment decision:-

It has been observed that multiple factors, viz. pro-active government policies, transparent and investment friendly decision making process, political and legal environment, harmonious industrial relations and the quality of governance institutions together build the investment climate in a state. The “Doing Business” Reports jointly published by the World Bank and International Financial Corporation consider seven parameters to determine the business

environment in a state, viz. ‘ease of starting business’, ‘ease of dealing with construction permit’, ‘ease of registering property’, ‘ease of paying taxes’, ‘ease of enforcing a contract’, ‘ease of trading across borders’ and ‘ease of closing a business’. In addition to these, the legal structure, security of property rights and level of corruption in a state, reflected in terms of the quality of justice mechanism may also have some impact on FDI flows. The regulation of labour and business is another factor, which is known to have significant influence on foreign investors’ sentiments. The number of strikes and industrial disputes that take place in the economy portray the amount of control an entrepreneur has over his business. The prevalence of strong labour unions and large number of industrial disputes in the states of West Bengal and Kerala reflect the stringent labour laws and pro-labour government policies in those states. It has also been observed that the countries or regions that are politically risky with a history of expropriating FDI, endemic corruption, autocratic governments, poor law and order situation or ethnic tension tend to receive lower FDI flows. However, again, due to lack of data availability and in an attempt to restrict our analysis to the very important variables we have omitted the aforesaid factors.

3). Years under analysis (1995-2015) are less than the recommended n=30

Sample means cluster more closely around the population mean as the sample size increases. Thus, possible sampling error decreases as sample size increases. However, in the few years before 1995, a lot of political disruptions (Brazilian hyperinflation, Soviet break down) and economics changes (Indian Liberalization) had happened in the BRICS nations, data for which was hard to get (if possible) and would have resulted in skewed results for the pre-crisis era. As such, we limited our analysis to the years 1995-2015.

CONCLUSION

Amidst a sharpening financial and economic crisis, global FDI inflows fell from a historic high of \$1979 billion in 2007 to \$1697 billion in 2008, a decline of 14%. Importantly, the decline posted globally in 2008 differed among the three major economic groupings i.e. developed countries, developing countries and transition economies - reflecting an initial differential impact of the current crisis. In the first half of 2008, developing countries weathered the global crisis better than developed countries as their financial systems were less closely interlinked with the banking systems of US and Europe. Their economic growth remained robust supported by rising commodity prices. Their FDI inflows continued to grow, though at a much slower pace than in previous years, posting only a 17% increase to \$621bn in 2008. In a sense, the crisis changed the investment landscape with developing and transition economies having greater share in global FDI flows.

This paper has been divided into two parts. In part A we have tried to find the effect of crisis on FDI inflows for India. Our analysis shows that there wasn't any significant impact of crisis on FDI inflows in India. In our regression model the growth rate of gross domestic product of India had a positive and highly significant impact on attracting FDI. The effect of trade openness in all our models was positive and significant. The exchange rate had a negative and significant impact, effect of tax revenue was positive and one period lagged value of per capita FDI stock, a proxy for agglomerate economies, had a strong positive impact on FDI flows.

We have also discussed the policies and government initiatives taken to attract FDI. Policies like 'liberalization', 'Globalization', 'Make in India' and 'tax reforms' brought about major changes in FDI inflows and made India an attractive destination for foreign investment. Sector wise FDI inflow analysis is also done. We found that the compound annual growth rate (CAGR) had a wide range, varying from 52% to -52%. Service sector turned out to be the most attractive for FDI flow, which is corroborated by the data; however the transport sector seems to be the worst performer, which could be improved by more Government expenditure in infrastructure.

In part B we have made international comparison of India with BRICS nations. All members of BRICS are developing or newly industrialized countries. China's cheap labor force, the young population of India, Russia and Brazil's natural resources were some of the advantages who had the effect of attracting an increasing amount of FDI in the BRICS economies. In the period before 2000, the FDI inflows in the BRICS economies were low. After 2000, they began to grow recording higher and higher annual growth rates. So taking BRICS nations also served as a proxy for the emerging market economies. We analyzed whether financial crisis of 2008 affected the FDI inflows to these countries. Our results showed that the impact of crisis on FDI inflows was not significant. Crisis affected the developed nations more than these developing nations. There was a temporary decline in FDI after the crisis due global economic slowdown but these countries recovered quickly due to their sound financial backgrounds, huge markets and fast economic growths.

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APPENDIX

CHART 1

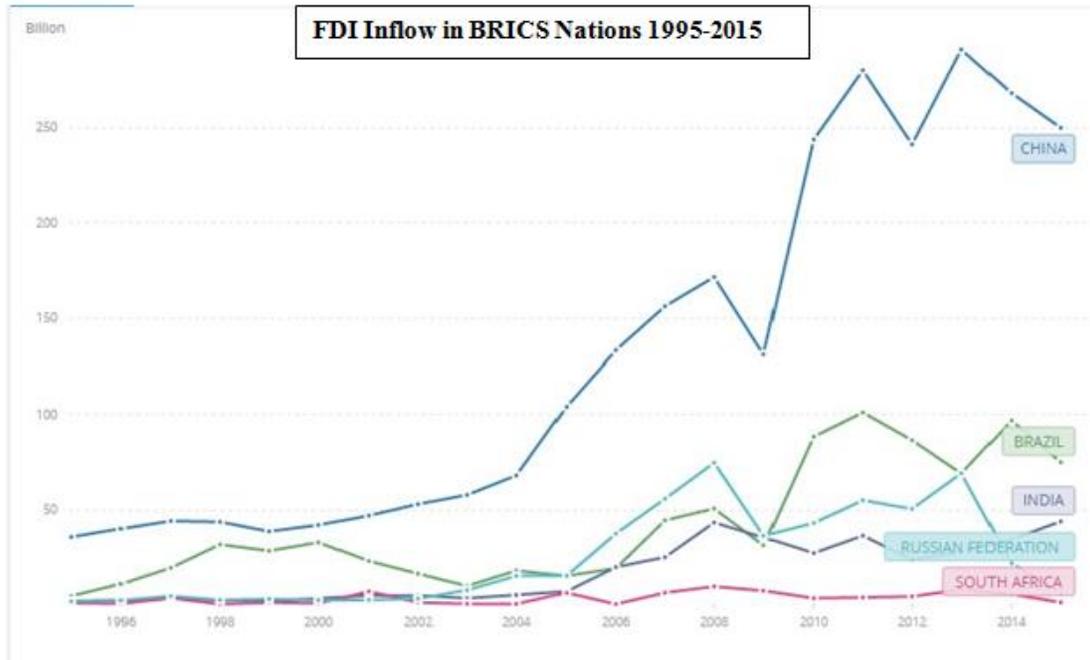
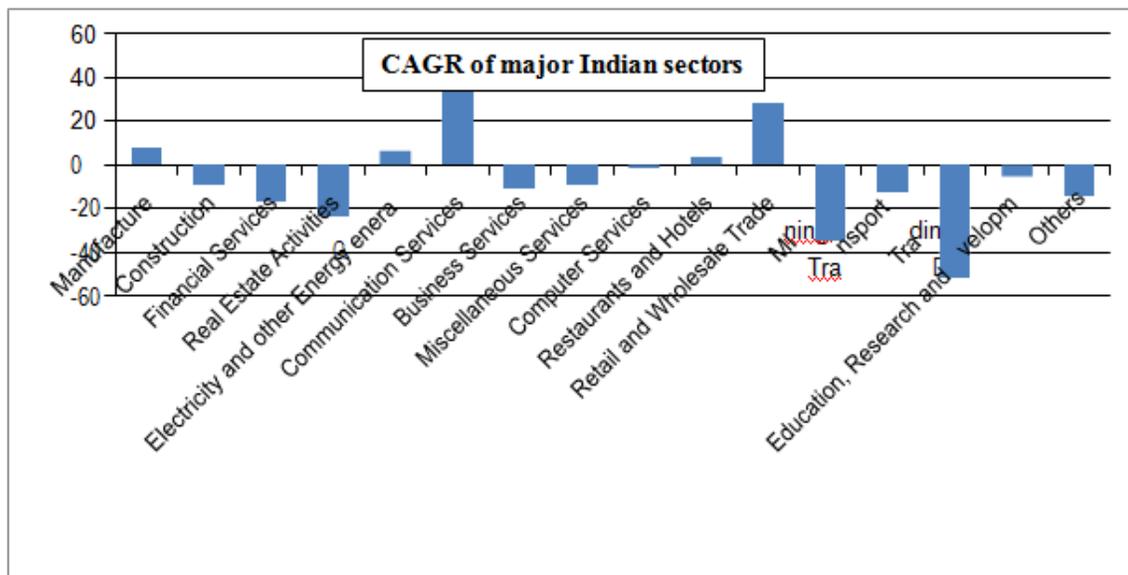


CHART 2



Variable (in ln	Brazil	Russia	India	China	South Africa
Regression results for BRICS					
growth rate GDP	-0.002	0.008*	0.190*	0.417*	0.001
AE	0.449**	0.785*	0.382**	1.592***	0.087**
TR	0.699*	0.065**	0.491**	-0.670**	1.085**
ER	-0.400	0.005	-0.510	0.346	-1.810
TO	-0.899	-0.307	0.657***	0.137	-5.418***