Determinants of foreign direct investment in BRICS economies: Analysis of economic, institutional and political factor

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Abstract

This paper explores the role of economic, institutional and political factors in attracting foreign direct investment (FDI) in BRICS (Brazil, Russia, India, China & South Africa) economy and the comparative weightage of these factors in attracting FDI. The study uses panel data for a period of ten years (2000-2009) in order to examine the significant determinants of FDI in BRICS from a holistic approach. Analysis has been done using panel unit-root test, and multiple regressions. This study takes into account Market Size, Trade openness, natural resources as economic determinants and Macroeconomic Stability (Inflation Rate), Political stability/No violence, Government Effectiveness, Regulatory Quality, Control of corruption, Voice and accountability, Rule of Law as potential institutional and political determinants of FDI. These factors are based on their relative importance from previous empirical literature. Findings indicate that economics factors are more significant than institutional and political Factors in BRICS economies. The results indicate that market size measured by real GDP is a significant determinates of FDI which implies that most of the investment in BRICS is motivated by market-seeking purpose. Analysis of empirical data also indicates that trade openness, natural resource availability, rule of law and voice and accountability are statistically significant. Coefficients of market size, trade openness are positive which implies that these variables have positive effect on total inward FDI. Natural resource availability has negative effect on total inward FDI, this particular result indicate that FDI is not motivated by resource-seeking purpose in BRICS economies.

Keyword: BRIC; Emerging Economies; Foreign Direct Investment; Panel Data

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1. Introduction

Foreign Direct Investment (FDI) in emerging economies has been phenomenal and has contributed to the overall economic growth of a country. According to the World Investment Report (2011), 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, MNCs are increasingly investing in both efficiency-seeking and market-seeking projects in these emerging countries. There are various empirical studies which show that there is a positive relationship between FDI and Economic Growth and FDI is a key component of the world’s growth engine, hence countries try to create favourable conditions to attract more FDI inflow into their economies. (Adhikary 2011; Bhavan et.al 2011; Azam 2010).

FDI not only raises the level of investment or capital stock but increases employment by creating new production capacity and jobs; transfer intangible assets such as technology and managerial skills to the host country and provide a source of new technologies, processes, products, organizational technologies and management skills, Backward and Forward linkages with the rest of the economy (Ho and Rashid 2011).

To attract FDI the policymakers must facilitate the process, and becomes imperative to identify the major determinants of the FDI, hence lot of research has been happening with respect to determinants of FDI. These determinants enable policy makers to understand the scale and direction of FDI flows. The current study also gives important policy recommendations in connection with attracting FDI.

2. Literature Review

An individual firm can have large number of motivations to undertake FDI; hence there is no general theory of FDI that can comprehensively explain the existence of Multinational companies (MNCs), international production and FDI. The explanation of FDI was started after world war second when the forces of globalization emerged into the world. The growing importance of multinational enterprises and foreign investment during the 1950’s and 60’s gave impetus to many researcher to find out the theories of MNC’s behaviour and the existence of international production. According to the capital-market approach, the important reason for capital flows are interest rate differentials, this approach states that capital tend to flow the region where capital get highest return. This approach fails to incorporate the fundamental difference between portfolio and direct investment. Hymer (1960), in his doctoral thesis explains the concept of ownership advantage which states that in order to compete with domestic firms MNCs should have firm-specific advantages which include superior technology, brand name, managerial skills and scale economies, but this approach could not explains the actual decision about FDI. According to product life cycle theory firms set up production facilities abroad for products that had already been standardized and matured in the home markets (Vernon 1966). The OLI paradigm (Dunning 1980, 1993) provides an ownership, location and internalization advantage-based framework to analyze why, where and how MNCs would invest abroad. According to dunning these investment could be natural-resource seeking, Market seeking, Efficiency seeking, strategic asset seeking.

According to new theories of FDI which used general equilibrium model, increasing returns to scale, imperfect competition, and MNCs firm-specific advantages are primarily based on knowledge-capital consisting of intangible assets such as patents, human capital, trademarks and brand name. (Markusen 1995). Licensing increase risk of the MNC losing the firm-specific advantages hence MNC choose internalize and Choose FDI. MNC dependence on knowledge capital provides a strong incentive for Internalising Ownership-specific advantages resulting in larger volumes of FDI. (Markusen 1997, Care et al. 2001, Markusen and Maskus 2002). Proximity-concentration trade off theory states that MNC’s compare trade costs to the costs of producing at different locations in the world. If the trade cost is higher than MNCs undertake FDI which support the Horizontal FDI. When MNCs exploits differences in factor
cost between different geographical locations then it leads to Vertical FDI. (Helpmen. 1984) Export-Platform FDI (Ekholm et al 2004) explains that MNC production in a host economy when the output is sold in third markets and not in the parent or host country market.

2.1. Empirical Studies

There are large numbers of studies which focuses on the factors that influence flow of foreign capital in emerging economies. These studies focus on economic, socio-political, and institutional factors of FDI. Economics factors identify the variables related to market size, labor cost, Trade openness, economic stability. Market size has been widely accepted significant determinants of FDI flows nearly all empirical studies that explains determinants of FDI. (Bhavan et.al 2011; Ting & Tang 2010; Leitao & Faustino 2010; Leitao 2010; Lv et.al 2010; Hailu 2010; Schneier & Matei 2010; Mohamed & Sidiropoulos 2010). Several Studies used Real Gross Domestic Product per capita or real gross national product per capita for the market size of a country or income within the country. Real GDP used as a proxy to market size which shows higher purchasing power, where firms can potentially receive higher returns on investment on their capital and by gain higher profit from their investment. Hence, we expect positive relationship between Market Size and FDI.

The positive relationship between FDI and trade volumes implies that countries that wish to more FDI should increase trade. Most of the studies find that trade openness is positively related to FDI in host country but the impact of openness on FDI depends on whether the investment is market seeking or export-oriented. According to “tariff jumping” hypothesis less open economy with trade restrictions can have a positive effect on FDI (Market-Seeking). Export-oriented MNC’s prefer to locate to a more open economy because trade protection generally states higher transaction cost associated with exporting. Most of the FDI literature used share of trade in GDP as a proxy of openness (Bhavan et.al 2011; Ting & Tang 2010; Leitao & Faustino 2010; Leitao 2010).

A higher wage corresponds to a lower level of FDI. Higher wage reflects more production cost hence it leads less competitive to MNCs both at home and in foreign markets. Dependency hypothesis and modernization hypothesis agreed the importance of low-cost labor in attracting FDI (International Division of labor). Tsai (1994) obtains strong support for cheap-labor hypothesis one the period 1983-1986 but weak support from 1975 to 1978.

Political stability and risk are generally affect the decision whether to invest or not in a particular location (Dunning 1993; Moosa 2002). Political risk indicate the political actions that interrupts sales or causes harm to property or personnel which includes, riots, operational restrictions impeding their abilities to undertake certain actions, and governmental takeover of property. (Daniels, et al., 2002). Political risk factors generally affect negatively to the investment decisions of MNCs in that particular country. (Dunning, 1993; Dupasquier & Osajwe 2006; Zenegnaw A.H.2010). Li (2008) shows that FDI flows and Military conflict are inversely related.

There are various empirical research work which states that Inefficient institutions discourage foreign investment (Gastanaga et.al 1998; Campos et.al. 1999; Asiedu and Villamil 2000; Wei 2000; Asiedu 2006; Ting & Tang 2010). Countries which have better quality institutions contributes to attracting FDI into the manufacturing sector (Mehic et.al 2009). Mohamed, Sidiropoulos (2010) explains that institutional variables are the major determinants of FDI in MENA countries. Smarzynska and Wei (2002) explains that “corruption makes local bureaucracy less transparent and hence acts as a tax on foreign investors; corruption affects the decision to make on a local partner; corruption increases the value of using a local partner to cut through the bureaucratic maze; and corruption decreases the effective protection of investor’s intangible assets and lowers the probability that disputes between foreign and domestic partners will be adjudicated fairly, which reduces the value of having a local partner”. “Habib M and Zurawicki L (2002), and Smarzynska and Wei (2002) found negative effects of corruption on FDI that is corruption.
reduces inward FDI, while Wijeweera and Dollery (2009) found no statistically significant impact of corruption on FDI. Generally, institution quality is measured by corruption and weak enforcement of contacts.

Resource-seeking FDI is motivated by the availability of natural resources in host countries. This type of FDI was historically fairly important and remains a relevant source of FDI for various developing countries. Natural resources plays vital role in overall FDI attraction or decision e.g. Several studies (Aseidu 2002,2006, Dupasquier & Osajwe 2006) shows that natural resources in African countries attract more FDI. Deichmann et.al. 2003 explains that in transition economies of Euro-Asia countries natural resources plays important role as determining factor.

2.2. Gaps in existing literature:

A vast amount of empirical literature has been developed to analyze the determinants of FDI as whole, but the results on empirical evidences are mixed depending on the choice of country, time-periods and applied methodology. The objective of this study is to complement the existing literature in two ways:

A) To the best of our knowledge, there is a need of systematic study on identifying the major determinants of FDI flows in India vis-à-vis that of other emerging countries

B) There is a limited research with respect to institutional and political determinants of FDI in emerging countries.

Therefore, this study aims to analyze in a more holistic framework, the role of economic factors, natural resources, institutional and political factors, government policy etc. as potential determinants of FDI in emerging economies.

3. Trends of FDI flow in BRICS

The BRICS countries have been attract most of FDI during the last decades. Until 1984, Brazil was the major FDI recipient country among the BRICS, overtaken by China in 1985 and since then China continues to be a major destiny of FDI, especially in the automotive and consumer durables sectors. (Narayananmurthy 2011). According to World Bank 2011, China rank third in the world in overall FDI inflow in 2009(Table 1). MNCs have shifted their operations to China to take benefit of its low labor costs and huge market size. Russian federation ranks eight, Brazil India and South Africa ranks nine, thirteen and thirty-five in the world respectively. India Brazil and South Africa received an almost constant and small part of the world total FDI flows during last 5 year. Net inflow of Foreign Direct Investment in current US Billion dollar is presented in table 1 and as well as in graphical form in figure 1.

<table>
<thead>
<tr>
<th>Rank</th>
<th>Country Name</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>China</td>
<td>79.13</td>
<td>78.09</td>
<td>138.41</td>
<td>147.79</td>
<td>78.19</td>
<td>-1</td>
</tr>
<tr>
<td>8</td>
<td>Russian Federation</td>
<td>12.89</td>
<td>29.70</td>
<td>55.07</td>
<td>75.00</td>
<td>36.75</td>
<td>185</td>
</tr>
<tr>
<td>9</td>
<td>India</td>
<td>7.61</td>
<td>20.34</td>
<td>25.13</td>
<td>41.32</td>
<td>34.58</td>
<td>355</td>
</tr>
<tr>
<td>13</td>
<td>Brazil</td>
<td>15.07</td>
<td>18.78</td>
<td>34.58</td>
<td>45.06</td>
<td>25.95</td>
<td>72</td>
</tr>
<tr>
<td>35</td>
<td>South Africa</td>
<td>6.52</td>
<td>-0.18</td>
<td>5.74</td>
<td>9.64</td>
<td>5.35</td>
<td>-17.91</td>
</tr>
</tbody>
</table>

Source: World Bank, 2011
4. Potential determinants of FDI

Based on the discussed literature review, our study estimates a set of potential determinant variables that influence the FDI flows and we classify the variables into the following broad categories:

Table 2.

<table>
<thead>
<tr>
<th>Explanatory Variables</th>
<th>Indicators</th>
<th>Expected Sign</th>
<th>Data Sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policy Variables</td>
<td>A) Macroeconomic Stability: Inflation Rate</td>
<td>-</td>
<td>World Development Indicators, World Bank</td>
</tr>
<tr>
<td></td>
<td>B) FDI Policy: Trade openness (Trade to GDP ratio)</td>
<td>+</td>
<td>World Development Indicators, World Bank</td>
</tr>
<tr>
<td>Institutional Variables</td>
<td>A) Corruption</td>
<td>-</td>
<td>World Governance Indicators, World Bank</td>
</tr>
<tr>
<td></td>
<td>B) Rule of Law</td>
<td>+</td>
<td>World Governance Indicators, World Bank</td>
</tr>
<tr>
<td>Political Risk Variables</td>
<td>A) Political Stability No Violence</td>
<td>+</td>
<td>World Governance Indicators, World Bank</td>
</tr>
<tr>
<td></td>
<td>B) Government Effectiveness</td>
<td>+</td>
<td>World Governance Indicators, World Bank</td>
</tr>
<tr>
<td></td>
<td>C) Regulatory Quality</td>
<td>+</td>
<td>World Governance Indicators, World Bank</td>
</tr>
<tr>
<td>Market Size</td>
<td>Ratio of Net FDI inflow to GDP</td>
<td>+</td>
<td>World Development Indicators, World Bank</td>
</tr>
<tr>
<td>Natural Resource Availability</td>
<td>Share of minerals and oil in total export</td>
<td>+</td>
<td>WITS</td>
</tr>
</tbody>
</table>

5. Data and Model specification

The data set consists of panel dataset from 2000 - 2009 for the five emerging economies namely Brazil, Russia India, China and South Africa. The required data set for the selected countries were obtained from the World Bank dataset.
The dependent variables in our study is the FDI inflow in billion dollar and the independent variables that are expected to determine FDI flows are carefully chosen, based on previous literature and availability of dataset for the selected period. The independent variables in our estimation include Gross Domestic Product for market size, Inflation rate for Macroeconomic stability, Trade Openness. Corruption, voice and accountability are institutional variables Rule of Law, Political stability No violence, Government Effectiveness, Regulatory quality are the political risk variables.

In connection with discussions of the previous section, we propose an estimation model as follows, where the selected variables are expected to determine the FDI inflows:

$$ FDI_{it} = \alpha + \beta_1 MS_{it} + \beta_2 NRA_{it} + \theta (\text{Institutional Variables})_{it} + \mu (\text{Policy Variables})_{it} + \epsilon_{it} \quad (1) $$

Where, $FDI_{it} =$ Net FDI inflow in country i & time period t; $MS =$ Market Size; $NRA =$ Natural Resource Availability; Institutional Variables = Corruption, Rule of Law, Voice and Accountability; Policy Variables = Inflation Rate, Trade openness (Trade to GDP ratio); Political Risk Variables = Political Stability No Violence, Government Effectiveness, Regulatory Quality

6. Results

In order to investigate the possibility of non-stationarity in the dataset, it is first necessary to determine the existence of unit roots in the data series. For this study we have chosen Levin, Lin & Chut test. The results of the Levin, Lin & Chut test panel unit root test at level indicating that all variables are $I(0)$. These results clearly show that the null hypothesis of a panel unit root (non-stationarity) in the level of the series can be rejected.

In the Multiple Regression model shown in the table 3, R-squared is 0.89, which shows that the model explains 89% variation in FDI inflow in BRICS economies. The F statistics is 38.53, and the probability of F statistics is 0.0000 which shows that the results are statistically significant and the null hypothesis of the independent variables having no effect on FDI inflow in BRICS economies is rejected.

The table 3 shows that the Market Size, Natural Resource availability, Inflation Rate are statistically significant. Coefficients of Market Size, Trade openness, Inflation rate are positive which implies that these variables have positive effect on total inward FDI. Voice and accountability, Natural Resource availability variables have negative effect on total inward FDI. The probability value associated with t statistics of this coefficient is 0.0000 less than 0.05 which shows that the estimated value of the coefficient is statistically significant. As most of the economic determinates of FDI are statistically significant rather than institutional and political determinants of FDI, we further divided our variables into economic and political & institutional variables and did the multiple regression. The results of these tests are follows.

Table 3. Multiple Regressions

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Size</td>
<td>1.68E-05</td>
<td>3.79E-06</td>
<td>4.418816</td>
<td>0.0001</td>
</tr>
<tr>
<td>Regulatory Quality</td>
<td>0.002281</td>
<td>0.002696</td>
<td>0.846095</td>
<td>0.4025</td>
</tr>
<tr>
<td>Rule of Law</td>
<td>-0.000888</td>
<td>0.002858</td>
<td>-0.310688</td>
<td>0.7577</td>
</tr>
<tr>
<td>Trade Openness</td>
<td>2.053484</td>
<td>0.931746</td>
<td>2.20391</td>
<td>0.0333</td>
</tr>
<tr>
<td>Voice and Accountability</td>
<td>-0.004698</td>
<td>0.001754</td>
<td>-2.678608</td>
<td>0.0107</td>
</tr>
</tbody>
</table>
Table 4 shows that the Market Size, Trade openness, Natural Resource availability, is statistically significant. Coefficients of Market Size, Trade openness are positive which implies that these variables have positive effect on total inward FDI. Natural Resource availability has negative effect on total inward FDI this particular result suggest that in BRICS economies FDI is not resource-seeking FDI. As market size variable is quite significant and 1% increase in Market Size increase around 2.5% of FDI most of the FDI in BRICS economies are for Market-seeking. The probability value associated with t statistics of this coefficient is 0.0000 less than 0.05 which shows that the estimated value of the coefficient is statistically significant. In the Multiple Regression model shown in the table 4, R-squared is 0.86, which shows that the model explains 86% variation in FDI inflow in BRICS economies. The F statistics is 70.55, and the
probability of F statistics is 0.0000 which shows that the results are statistically significant and the null hypothesis of the independent variables having no effect on FDI inflow in BRICS economies is rejected.

Table 5.  

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regulatory Quality</td>
<td>0.004800</td>
<td>0.003432</td>
<td>1.398630</td>
<td>0.1689</td>
</tr>
<tr>
<td>Rule of Law</td>
<td>0.008133</td>
<td>0.002641</td>
<td>3.079184</td>
<td>0.0036</td>
</tr>
<tr>
<td>Voice &amp; Accountability</td>
<td>-0.012075</td>
<td>0.001175</td>
<td>-10.27763</td>
<td>0.0000</td>
</tr>
<tr>
<td>Political Stability</td>
<td>-0.001164</td>
<td>0.002768</td>
<td>-0.420536</td>
<td>0.6761</td>
</tr>
<tr>
<td>Control of Corruption</td>
<td>0.001014</td>
<td>0.003651</td>
<td>0.277695</td>
<td>0.7825</td>
</tr>
<tr>
<td>C</td>
<td>0.149141</td>
<td>0.107301</td>
<td>1.389930</td>
<td>0.1715</td>
</tr>
</tbody>
</table>

Table 5 shows that the only rule of law and voice and accountability are statistically significant in the institutional and political determinants of FDI. Coefficients of Rule of law is positive and Voice & Accountability is negative which implies that rule of law have positive effect on total inward FDI. Voice and Accountability has negative effect on total inward FDI this particular result suggest that in BRICS economies FDI is negatively affected by voice & accountability. In the Multiple Regression model shown in the table 5, R-squared is 0.74, which shows that the model explains 74% variation in FDI inflow in BRICS economies. The F statistics is 26.19, and the probability of F statistics is 0.0000 which shows that the results are statistically significant and the null hypothesis of the independent variables having no effect on FDI inflow in BRICS economies is rejected.

7. Conclusion

This study presents and brings together economic institutional and political determinants of FDI in the more generic and holistic way in order to explain determinates of FDI in BRICS economies. Results derived several generic propositions based on the previous empirical research and then empirically verified these previous research by statistically analyzing determinates of FDI in BRICS economies over the 10 year period 2000-2009. Results shows that traditional economic determinates are more important than institutional and political determinants of FDI. Most of the FDI in BRICS economies are motivated by the market-seeking purpose. Most of the institutional and political determinants are not statistically significant and voice and accountability shows negative coefficient which support the results of Cuervo-Cazurra (2006) which states that investors from countries with high corruption and the lack of enforcement of anticorruption laws select similar countries when they internationalize in order to exploit their familiarity with corrupt environments and also because they face lower costs of operating as opposed to other investors.
Reference


