

To examine the determinants of fdi in china and india and the causes for their di...

[Countries](#), [India](#)



Abstract:

This study aims to examine the determinants of FDI in China and India and the causes for their difference. Ordinary least squares models were first applied to analyse separately FDI determinants in China and India and then a panel data model was developed to explore the causes of the differences. It was found that China's FDI was determined by inflation while India's FDI was influenced by infrastructure and trade openness. Infrastructure was the main reason why India was lagging behind China. The results suggest that India needs to upgrade its infrastructure and create effective trade policies in order to attract FDI.

Key words: FDI, China, India, inflation, trade openness, infrastructure.

1. Introduction:

Multinational Enterprises (MNEs), comprising 82, 000 parent companies, 810, 000 foreign subsidiaries and an excess of inter-firm arrangements worldwide, have played an important and growing role in today's global economy (UNCTAD, 2009). The world's top MNEs are the prominent driver of international production. In 2008, they accounted for around 4% of world GDP[1] and had combined assets of \$ 10. 7 trillion, combined foreign sales of \$ 5. 2 trillion and employed 8. 9 million people (Table 1-1).

Table 1-1: Snapshot of the World's top 100 TNCs, 2006-07/08

Variable

2006

2007

2006-2007

% change

2008

2007-2008

% change

Assets (\$billion)

Foreign

Total

5, 245

9, 239

6, 116

10, 702

16. 6

15. 8

6, 094

10, 687

-0.4

-0.1

Sales (\$billion)

Foreign

Total

4,078

7,088

4,936

8,078

21.0

14.0

5,208

8,518

5.5

5.5

Employment (thousands)

Foreign

Total

8, 582

15, 388

8, 440

14, 870

-1. 66

-3. 4

8, 898

15, 302

5. 4

2. 9

Source: UNCTAD (2009), p. 19, Table I. 17 (based on UNCTAD/Erasmus University database).

The key measure of MNEs' activities is foreign direct investment (FDI), defined as " an equity investment outside of the parent corporation's home country, it implies some control over economic activity, usually a greater than 10% stake" (Baker et al., 1998). In line with the increasing importance of MNEs, global FDI inflows have grown significantly in the last 20 years (UNCTAD, 2010): average annual inflow between 1990-2000 was 492. 86 \$

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billion, which reached a peak of \$ 2, 099. 97 billion in 2007 before declining to \$1, 114. 2 billion in 2009, reflecting the effects of the global crisis. However, FDI inflows are expected to increase further to \$1. 3 - \$1. 5 trillion in 2011 (Figure 1-1).

Figure 1-1: Global FDI inflows and projections, 1990-2011

Source: UNCTAD (2010).

FDI inflows have been shifted noticeably to developing and transition economies owing to their economic growth and reforms as well as their progressive liberalisation of foreign investment regimes (UNCTAD, 2010). As a result, developing and transition economies attracted nearly half of global FDI inflows in 2009 (Figure 1-2). Among the largest FDI recipients from these economies, China and India have emerged as the second and third world most popular FDI destinations (UNCTAD, 2010).

Figure 1-2: Shares of developing and transition economies in global FDI inflows and outflows, 2000-2009 (%).

Source: UNCTADstat, calculated based on data of inward and outward FDI.

China opened up its economy to foreign investment in 1979 and since then inward FDI in China has risen appreciably. By 2009, the absolute value of FDI inflows was \$95 billion compared to only \$0. 057 billion in 1980 (UNCTAD, 2010). Over 10 years after China, India too liberalised its economic policies, replacing the existing for more relaxed and open policies towards foreign investment. The reforms have resulted in considerable increased inflows of

FDI during the past decade: inflow in 2009 rose to \$34.61 billion from only \$2-3 billion during the 1990s (UNCTAD, 2010). Even so, the amount of FDI in India is still lagging behind most other emerging economies, especially China. On the global competitiveness scale, China ranked higher than India in all criteria of economic competitiveness (Table 1-2).

Table 1-2: The global competitiveness index, 2010-2011

Pillars

Basic requirements
Institutions
Infrastructure
Macroeconomic environment
Health & primary education

Country Rank

Rank

Rank

Rank

Rank

China 30

49

50

4

37

India81

58

86

73

104

Efficiency enhancersHigher education & trainingGoods market efficiency

Labour market efficiency

Financial market development

CountryRank

Rank

Rank

Rank

Rank

China29

60

43

38

57

India38

85

71

92

17

Innovation& sophisticationTechnological readinessMarket sizeBusiness
sophisticationInnovation

CountryRank

Rank

Rank

Rank

Rank

China31

78

2

41

26

India42

86

4

44

39

Source: World Economic Forum (2010).

The differences in FDI inflows between these two countries suggest an intriguing area for further research. If China, with its “ new-found” belief in capitalism[2] can attract significant amounts of FDI, why India which is endowed with Western-type institutions and capitalist organizations cannot? What causes the gap in volumes of FDI between the two? This paper is going to address these questions by evaluating factors determining FDI based on current literature on FDI in general and FDI in China and India in particular.

The study is structured as follows: part 2 reviews the literature on FDI determinants in China and India. Part 3 presents the eclectic theory and empirical studies. Part 4 describes data and methods for analysis. Part 5 analyses FDI determinants in the two countries. Part 6 suggests policy implications and part 7 concludes.

2. Literature review:

The emergence of China and India as the two most favoured hosts of FDI among developing economies has generated various numbers of empirical studies on the major determinants of FDI in each country as well as the two countries combined.

2. 1. China:

Studies on factors shaping FDI in China can be broadly categorized into two groups: studies at the national level and those at regional level.

2. 1. 1. National determinants:

The empirical results from Chen (1996), Henley et al. (1999), Zhang (2001), Dees (1998), Hong and Chen (2001) and Liu et al. (2001) all concluded that market size and preferential policies, along with others, were primary factors for China's FDI.

Wei (2005) explored the determinants of FDI from OECD to China for the period from 1987 to 2000. The analysis found significant relationship between FDI and market size, real exchange rate and trade openness. Among these determinants, market size, measured by GDP[3] per capita, appeared as the major driving force for outward FDI from OECD countries to China. This seems to be convincing as China has a huge domestic market with a mass-production system, which considerably reduces production costs. This factor coupled with " FDI friendly" policies creates business opportunities for foreign investment and hence increase the attractiveness of China to multinationals. The analysis provides reasonable explanations for

FDI inflows in China, however, it should be taken into account that the source of FDI from OECD countries only account for a small proportion of China's inward FDI. Therefore, the results should be assimilated with caution.

Mathew et al. (2009) provided evidence that corruption, as an indicator of political risk, determined the location decision of MNEs. In particular, the finding suggested that provinces with effective local governments and better efforts to tackle corruption tended to attract more FDI. The study indicated that if provinces could improve their " anti-corruption efforts" to the average level, they would be able to receive more FDI. For example, FDI would be boosted to more than \$ 40 million in the following year as a result of a 10 % increase in the anti-corruption efforts.

2. 1. 2. Regional determinants:

Some studies have investigated the determinants of FDI in China at a regional level. For instance, Xing et al. (2008), focusing on the Eastern Chinese area, found that FDI was positively related to market size and labour quality, whereas, education and infrastructure were statistically insignificant in explaining FDI.

Wei et al. (2010) analyzed the location factors and " network relations" of MNEs in Nanjing, China. This study confirmed the importance of infrastructure and government policy in the location decision of MNEs. Government intervention through investment policies was one of the key factors determining FDI since it indicated the significant role of government in expanding FDI.

2. 2. India:

The growth of FDI in India over the last decade since its economic reforms has raised the interest for further investigation. However, there are only a nominal number of empirical studies trying to indentify major determinants of FDI in India.

One of those studies is that by Pradhan (2010), examining the role of trade liberalisation on FDI inflows in India between 1980 and 2007. The results found that trade openness had a positive correlation with FDI and that this relationship was stronger after the economic reforms since 1991. This implies the necessity of maintaining an “ open door” policy to attract more FDI into the Indian economy. Other factors were also found significant in the study including real exchange rate and terms of trade.

In a current study of FDI determinants in India, Resende (2010) found the evidence supporting the positive impacts of technology growth, trade openness and market size on FDI. In particular, market size and market attractiveness appeared to be the most significant factors determining the inflows of FDI into India. Poor infrastructure, on the other hand, deterred MNEs from investing in the country.

Green (2005) explored FDI in a specific Indian industry sector: telecommunications from 1993 to 2003. The results showed that FDI would gain more traction if the government could reduce the limits on investment, maintain transparent regulations and improve physical infrastructure in the telecommunication sector. This conclusion seems to be appropriate as the evidence of FDI performance in this sector during the chosen period

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suggested that foreign firms entering the telecommunication industry did not stay in the business for a long time. The reasons behind this were that FDI had long suffered from inadequate infrastructure, opaque regulatory and legal environment.

Among infrequent macro-level studies on FDI in India, Mukim and Nunnenkamp (2010) investigated determining factors of MNEs' location decision in 447 districts of India. The analysis indicated that infrastructure and skilled workforce influenced the location choice of MNEs. However, the study suffered from data limitations with regards to FDI determinants at district-level. This may reduce the reliability of its results and hence cannot be applied generally.

There seems to be a few studies considering FDI in India such as those by Green (2005), Pradhan (2010) and Resende (2010) investigating FDI determinants in India. However, their studies only focus on a particular industrial sector or factors instead of looking at different industries or various factors. Mukim and Nunnenkamp (2010) attempted to examine the determinants of FDI at a macro-scale level. Nevertheless, their research suffers from data limitations and hence cannot always apply. In comparison, FDI in China is well-documented: there is a range of studies from regional level such as those by Xi et al. (2008) and Wei et al. (2010) to national level including those by Chen (1996), Zhang (2001) and Wei (2005).

Furthermore, there are not many studies concerning FDI in China and India to eventually compare and justify the differences in total FDI between two

countries. For example, except a study by Sinha (2007) that gives adequate attention to India, other studies such as Wei (2000) and Wei (2005) centre predominantly on China. There is not enough focus on India in terms of FDI determinants. This study will attempt to fill the gap identified in current knowledge. In particular, two homogeneous models of FDI determinants in China and India will be developed to identify important factors in each country and then a final model for both countries will be included to ultimately compare and explain the gap between China and India's FDI inflows.

3. Theoretical model of FDI determinants:

The theoretical framework for this study is based on the location advantages of "ownership, location, internalization" (OLI) paradigm proposed by Dunning (1973). The OLI model demonstrates reasons for firms that successfully operate abroad and their mode of entry (Table 3-1). In the theory, FDI is explained by identifying three main elements which guide the investment decision process of MNEs. They include: ownership (O), location (L) and internalization (I). Ownership advantages refer to the firms' production process which allows it to have a competitive advantage in overseas markets. Location advantages are benefits that a host country can offer a foreign firm. Internalization refers to transaction costs and the ability of multinationals to exploit ownership and location advantages through FDI. While ownership and internalization advantages vary among investing firms, location advantages are specific to the host country. This latter advantage provides a strong grounding for further research on the determinants of FDI.

Table 3-1: Relationship between OLI-advantages and mode of entry

Advantages

Mode of entry Ownership Location Internalization

FDI Yes

Yes

Yes

Exports Yes

Yes

No

Licensing Yes

No

No

Source: Perlitz (1997)

There is a vast number of studies on the location advantages of FDI such as those by Culem (1988), Estrin et al. (1997), Butler and Joaquin (1998), Wei (2000), Razafimahefa and Hamori (2005), Ang (2007), Sinha (2007) and Pradhan (2008). The organisation for economic co-operation and development (OECD, 2002) summarizes the main FDI determinants as follows:

Market size and growth prospects:

Countries with large market sizes (measured by GDP per capita) and sustainable economic growth (measured by the growth rates of GDP) offer better opportunities for MNEs to access the market, develop economies of scale and explore profitability. As an example, Ang (2007) confirmed that a large domestic market resulted in more FDI inflows, owing to the benefits of economies of scale.

Natural and human resource endowments:

These are factors of importance in MNEs' location decision process. Export-oriented FDI in particular seeks to take advantage of those factors related to low labour costs and abundant natural resources. Moreover, the quality of human capital in a country is crucial for technology transfer, managerial techniques and spill-over effects of FDI. Sinha (2007) suggested that the recent "business process outsourcing" boom in India occurred thanks to the qualified workforce well-skilled in English and technologically educated in "IT enabled services".

Physical, financial and technological infrastructure:

Infrastructure comprising transport, electricity, communication networks, education, health facilities and other forms are significant determinants of FDI. MNEs are more likely to be attracted to areas with good infrastructure. For example, Sinha (2007) found the significant impacts of port based infrastructure and its proximity on FDI as it lessens inland transportation and

reduce costs. Lack of investment in infrastructure, on the other hand, deters FDI.

Trade openness and access to international markets:

Trade reforms, the degree of openness to trade (measured by the proportion of exports and imports to GDP) and access to regional and global markets are important factors in determining FDI. In particular, openness makes the transfer of goods and capital in and out of the host country easier in the absence of restrictions and thus stimulates production and reduces costs. In realisation of the importance of trade openness, the World Bank has been requiring developing economies to open up their markets so that free trade can help boost growth in these countries (IMF, 2006).

The regulatory, policy framework and policy coherence:

Macroeconomic stability (indicated by exchange rate stability and low inflation) and political stability (signified by transparent regulatory, legal framework and business environment) are essential for attracting FDI. For instance, Wei (2000) concluded that if China and India could reduce red tape and corruption to a level comparable to Singapore, FDI inflows would be 218% and 348% higher respectively for these countries.

4. Data and methodology:

4.1. Data:

Based on the theoretical model and empirical studies discussed previously, five location indicators were chosen to reflect the factors that are most likely

to affect FDI. The explanatory variables comprise of infrastructure, trade openness, political risk, inflation and exchange rate. An overview of these variables and their predicted signs is presented in table 4-1:

Table 4-1: Determinants of FDI according to theory and empirical studies

Variables	Predicted sign	Empirical studies
Physical, financial and technological infrastructure:		
Infrastructure	(+)	(+): Green (2005), Mukim and Nunnenkamp (2010), Wei et al. (2010), Sinha (2007).(-): Pradhan (2008). No effect: Xi et al. (2008)
Trade openness and access to international markets:		
Trade openness	(+)	(+): Culem (1988), Wei (2005), Pradhan (2010), Resende (2010).
The regulatory, policy framework and policy coherence:		
Political risk	(-)	(-): Green (2005), Mathew et al. (2008), Butler and Joaquin (1998).
Inflation	(-)	(-): Estrin et al. (1997), Razafimahefa and Hamori (2005).
Exchange rate	(-)	(-): Wei (2005), Pradhan (2010).(+: Resende (2010).

A regression analysis was carried out in order to investigate the links and trends of the presented indicators, specific to FDI in China and India.

The regression analysis consists of data from 1984 to 2008 for both countries. FDI net inflows per capita in current US dollars are used; this allows us to take into account the relative country size. The data on FDI was drawn from the World Bank database (IMF, 2010).

The period choice of this analysis was partly determined by the availability of variables' data and is thus somewhat restricted. For example, investigation prior to 1979 for China could not be applied due to the unavailability of several independent variables. This limits the number of observations and makes it difficult to justify the effects of economic reforms on net FDI inflows in China. Therefore, this data limitation potentially leads to the study missing a key turning point in China's policy and regulatory regime following its economic reforms in 1979.

'Human resources' was identified as an important determinant of FDI in the theoretical framework. However, the data for possible indicators of human capital, such as secondary school enrolment and literacy rates, was insufficient. For example, some figures for the years studied were unavailable. As a result, human resources was not included in the regression.

Busse and Hefeker (2007) used 12 indicators of political risk which could have been applied to this analysis. However, due to budgetary constraints these were not available.

Furthermore, dummy and slope dummies (INDIA= 1 if India, otherwise China) were used to assess if FDI inflows and the chosen factors' effects on FDI were significantly different between two countries.

FDI was specified as a function of the following form:

$$\text{fdi} = f(\text{infra}, \text{trade}, \text{pol}, \text{infla}, \text{exc})$$

Where the variables are listed and defined as below:

Table 4-2: Determinants of FDI in China and India

Variable name	Proxy for variable	Measures
fdi		
	FDI inflows	
	Net inflows of FDI as a percentage of real GDP	
infra		
	Infrastructure	
	Telephone lines per 100 people	
trade		
	Trade openness	
	Sum of exports and imports as a percentage of GDP	
pol		
	Political risk	
	Scale 0-1 (0= unstable, 1= stable)	
infla		
	Inflation	

Annual growth rate of the GDP implicit deflator.

Exc

Exchange rate

Official exchange rate (local currency units per US \$)

Data sources and Summary statistics, time series plots: see appendix table A-1, A-2 and figure A-1, A-2.

4. 2. Methodology:

4. 2. 1. Determinants of FDI in China and India:

Having considered all the variables that are used in the analysis, this paper applies time series regression models and the least squares method to examine FDI determinants in China and India.

As in other studies (Wei, 2005; Busse and Hefeker, 2006) the log-linear model was adopted to adjust for heteroscedasticity. Furthermore, by taking the log-linear form, any expected non-linear relationship between FDI and the explanatory variables could be transformed into a linear one. Therefore, the estimated equation is:

A unit root test was conducted to test whether the independent variables were stationary. The results of the tests are presented in appendix table A-3. It appears that in the case of India, most of the variables were non-stationary with an exception of \ln_{ext} . The data for China also resulted in most of the explanatory variables being non-stationary apart from \ln_{infrat} . Since the use of non-stationary variables can lead to spurious regression problem, making

the analysis wholly unreliable, those variables were made stationary by using finite differences. Hence the new estimated model is:

Although taking the differences could remove the unit root, it would reduce the number of observations by one for each variable. This, in turn, may weaken the explanatory power of the models.

4. 2. 2. The difference in inward FDI between China and India:

In order to assess whether there is any difference in FDI inflows between China and India, a joint model of both countries during the period from 1984 to 2008 was conducted in the analysis. This would also assess whether the chosen explanatory factors affected FDI differently between China and India in the same period. Dummy and slope dummies were added to complete the model and panel data method was used. The estimated model is as follows:

5. Empirical results:

5. 1. Individual country models:

Table 5-1 shows the results obtained for China's and India's models. For both China's and India's models, the hypotheses of non-autocorrelation and normality were not rejected at 5 % critical value. Therefore, the parameter estimates could be concluded as being unbiased and consistent.

Although, RESET tests suggested that the functional forms were misspecified, the models were the best results to be found. The original form (1) increased the model fit and did not fail the RESET tests, however, this would lead to spurious regression problem as discussed above. In addition, possible

interactions between variables were examined. A statistical interaction occurs when the effect of one explanatory variable depends on another explanatory variable, which makes the simultaneous impacts of these variables on the dependent variable non-additive. This may cause the estimated model to be incorrectly specified. As a result, variable interactions were explored through a two-way effect experiment, however, no sensible interactions between variables were found.

Parameter stability was tested using the N-step Chow tests and the hypothesis of parameter stability was not rejected at 1% critical value for both China's and India's models (test results are displayed in appendix figure A-3).

Table 5-1: FDI determinant model
Dependent variable: fdi

China:

Model 1 Colinearity diagnostics (VIF) 2 Colinearity diagnostics (VIF)

Constant -0.236 -0.186

? lninfra 1.776 1.118 1.747 1.117

? Intrad 1.084 1.298 --

? lnpo 0.574 1.174 0.713 1.159

? infla 0.083 1.450 0.094* 1.207

? lnex -0.911 1.209 -0.918 1.209

N 24 Mean VIF: 1.25 Mean VIF: 1.17

R-squared 0.238 0.229

F 1.125 1.408

RESET 9.2866** 11.174**

Autocorrelation 0.968021. 0143

Normality (Chi²) 5.48955. 5462

India:

Model 1 Colinearity diagnostics (VIF) 2 Colinearity diagnostics (VIF)

Constant 0.185

? lninfra -1.708*1.345

? lntrad 1.584*1.104

? lnpol 0.0201.136

? infla 0.0071.211

? lnex 0.4331.235

N 24 Mean VIF: 1.251

R-squared 0.412

F 2.521*

RESET 36.691**

Autocorrelation 0.17512

Normality (Chi²) 0.15490

Note: *** significant at 1% level; ** significant at 5% level, * significant at 10% level. For more details of the test results, see appendix table-A-4, A-5, Figure A-3.

The possibility of multi-collinearity was also taken into account since the introduction of closely related variables in the model may cause serious multi-collinearity problem. This could result in an unexpected increase in the standard error of the coefficients and therefore renders the t-statistics unreliable. Multi-collinearity diagnosis was hence conducted and the results

were shown in appendix table A-4. Variation inflation factors (VIF) were reported for each specification. In all models, multi-collinearity did not seem to be serious as mean VIFs were not substantially greater than 1.

Having evaluated the models, it was generally concluded that the models were satisfactory. The estimated results for individual country are analysed below:

5. 1. 1. China:

Interestingly most of the factors did not have the expected signs except trade openness and exchange rate. However, apart from inflation, the other variables did not prove to be statistically significant.

Inflation, in particular, had a significantly positive impact on FDI inflows in China. The result is somehow surprising given that many empirical analyses such as those shown in table 4-1 have concluded that MNE's investment decision is adversely affected by price volatility as it raises the costs of doing business.

However, according to Foad (2007), inflation may affect FDI through two ways. The first is that a rise in host country's price level would make local produce more expensive in local export-markets. As a result, export behaviour would be reduced and hence discourages direct foreign investment. The second suggests that inflation in the host country gives MNEs a competitive advantage over domestic firms. In particular, since foreign firms can have access to resources from home parent companies;

they are more protected from domestic inflation. Therefore, host country inflation may generate greater volumes of FDI. The second effect appears to be dominant in the case of China as the trends in FDI inflows and inflation over the period 1984-2008 shows that there were a few years, for example the early 90s and late 2000s, when the changes in FDI and inflation moved in the same patterns (Figure 5-1).

Figure 5-1: FDI and inflation in China 1984-2008.

Source: based on UNCTAD (2010).

5. 1. 2. India:

The explanatory power for India's models is fairly higher than that for China's (41. 2% compared to 23. 8% and 22. 9% respectively). However, only infrastructure and trade openness were found to be significant. Infrastructure was negatively correlated with FDI inflows in India. This is in line with the study by Pradhan (2008), however, contrasts with other findings by Green (2005) and Mukim and Nunnenkamp (2010). The negative effect of infrastructure is most likely due to sluggish investment in infrastructural facilities in India.

Badale (1998) indicates that the regional differences in infrastructure have become an important location determinant for foreign investors. However, despite the efforts of Indian government to upgrade its infrastructural facilities in recent years, more work is still required to reach the levels comparable to other developing countries. State-controlled physical

infrastructure has long been considered as the weakest link in the Indian economy (Steel, 2001). This bottleneck in the form of inadequate infrastructure may discourage FDI flows into the country.

According to the world economic forum, backwardness of infrastructure is the most concern for foreign investors while conducting business in India (Figure 5-2). In particular, one of the biggest infrastructure problems is electricity supply (Yallapragda, 2010). Since the state power supply is so uncertain that most businesses have started to use their own power generators. These evidences combined with the model result reinforce the suggestion that poor infrastructure could deter potential foreign investment into the Indian economy.

Figure 5-2: The most problematic for doing business in India

Source: World Economic Forum (2010).

The trends of FDI inflows and trade openness in India during 1984 and 2008 seem to suggest a positive association between openness and FDI (figure 5-3).

Figure 5-3: FDI and trade openness in India 1984-2008.

Source: based on UNCTAD (2010).

The results have verified this relationship: trade openness was found significant and had the predicted positive sign. Its positive impact on FDI inflows confirms the success of India's policy reforms since 1991. Prior to the

reforms, India followed an “inward-looking import-substituting” regime with “one of the most complicated and protectionist regime in the world” (IMF, 1998). In particular, the government imposed high import restrictions with quantitative restrictions on 90% of value-added of manufacturing, maximum tariff rate of 400% and significant export controls (Rajan and Sen, 2000).

However, following the economic liberalisation in 1991, India has made drastic changes in its trade policy in order to integrate itself with the global economy. India’s average imported weighted rate declined to 27% in 1999, effective protection rate came down to 72% in 1995, export controls were removed and emphasis was placed on promoting exports (Rajan and Sen, 2000). As a result, trade liberalisation has made the transfer of goods and capital into and out of the country easier with lower restrictions, thus stimulating production and reducing costs. Trade openness is, therefore, seen as a major catalyst for inward FDI in India.

5. 1. 3. China and India:

Table 5-2 shows the results for joint model of FDI determinants in China and India. Overall the models passed the auto-correlation tests; however, the R-squared obtained is not very high: the independent variables explain about over 23 % of the variation in the change in FDI inflows in both models.

Table 5-2: FDI determinants in China and India

INDIA = 1 if India, otherwise 0

Model 1

2

Constant-0. 236

-0. 186

? lninfra1. 776

1. 747

? Intrad1. 084

-

? lnpol0. 574

0. 713

? infla0. 083*

0. 094**

? lnex-0. 911

-0. 918

INDIA0. 421

0. 486

? lninfraINDIA-3. 485

-3. 965*

? IntradINDIA0. 501

-

? InpolINDIA-0. 554

-0. 446

? inflaINDIA-0. 076

-0. 094

? InexINDIA1. 345

1. 565

N48

48

R-squared0. 265

0. 235

F1. 179

1. 298

Autocorrelation (1)0. 2297

-0. 02330

Autocorrelation (2)-1. 483

-1. 610

Note: *** significant at 1% level, ** significant at 5% level, * significant at 10% level.

It is expected that there is a considerable difference between China's and India's volumes of FDI as illustrated in figure 5-4: generally, FDI inflows in two countries fluctuate over the estimated period. However, China's FDI seems to follow a downward trend while the trend for India's seems to move upwards.

Figure 5-4 a: Changes in FDI inflows in China, 1984-2008

Source: World Bank (2010).

Figure 5-4b: Changes in FDI inflows in India, 1984-2008

Source: World Bank (2010).

The dummy variable used to estimate these differences between the two countries' FDI, nevertheless, was not statistically significant. Furthermore, the findings show that apart from infrastructure, other factors did not have any significant different effects on FDI inflows in China and India. India's poor infrastructure is a deterrent for its attraction towards FDI as compared to China. More precisely, the lack of infrastructure reduced the volumes of FDI received by India to around 3.965% less than China. Infrastructure inadequacy is therefore one of the reasons why India is lagging behind China in attracting potential FDI.

China has been ahead of India in developing its infrastructure to desirable levels for foreign investment. This can be demonstrated in the case of Chinese special economic zone (SEZ) model. Following the reforms in 1979, SEZs were created and the first one was based in Shenzhen. It used to be a small fishing village and was successfully transformed into one of the most modern cities in the world with 120, 000 MNEs in operation, contributing \$40 billion to the total GDP and was recently the world's sixth largest port (Sinha, 2007). India, in comparison, has adopted the Chinese SEZs strategy only over the last decade. However, most of the SEZs are relatively small in size and not reach their full potential. In addition, many Indian ports are undersized, with a high density of traffic and inflicted with poor management (Sinha, 2007).

The results also suggest that for both countries, inflation is the determinant of inward FDI but it has unexpected signs. In particular, inflation positively influences FDI. Possible explanations for the positive effect of inflation are the same as discussed in section 5. 1. 1.

6. Policy implications:

Based on the individual country models and the findings from Chinese-Indian joint model, policy suggestions are made to create a more friendly business environment for foreign investment in India.

India's infrastructural bottlenecks have been proved as a major deterrent of FDI flows. India should therefore take a more balanced focus on developing desirable infrastructure throughout the whole country. In particular, Sinha

(2007) suggests that India needs to invest at least \$300 billion in infrastructure and it could be funded by foreign exchange reserves and public sector equity off-loading (PSU-offloading). Specifically, India has foreign exchange reserves worth more than \$150, together with offloading PSU, which can be funded for upgrading infrastructure.

Power and electricity is another concern that Indian authority needs to resolve immediately. Power sector has given a return of 26% on government equity in state electricity boards (SEBs) (Economic survey, 2006). Privatizing power distribution companies and SEBs is necessary to improve the efficiency and tackle the long-term problems in inadequate power supply.

Furthermore, India should develop high standard transportation and telecommunication networks to better serve the economy. In the telecommunications sector, for example, the penetration of mobiles and telephones has been widely successful and it should continue to benefit all people in the country. In addition, Indian railway is highly below efficiency which should be privatized like Chinese railway. India should also replicate successful stories in the infrastructural efforts it has made. For instance, expressway networks should be established in all metro cities and link all parts of the country.

Another infrastructure concern is the creation of SEZs. Although India has adopted the Chinese SEZ model, it has not been really successful. The size and development of those SEZs do not fully reflect the potential of the Indian economy. It is thus crucial that Indian government should consider

developing larger SEZs combined with world-class infrastructure, human resources and good management. This would consequently attract MNEs to invest in these SEZs.

Moreover, India should build larger ports equipped with good facilities which would help develop “state of the art” ports that can receive larger ships. Additionally, developing strategic ports in major states could help improve trade and linkage between India and other parts of the world.

The second factor determining FDI in India that has been discussed in this study is trade openness. Liberalization of foreign trade policy has brought in substantial benefits for India in terms of trade integration and foreign investment. Trade liberalisation, according to Balasubramanyam and Mahambare (2001), does not mean an export promotion strategy being totally favoured. But a neutral regime which neither favours export-oriented industries nor import-substituting industries is appropriate since it provides a comparative advantage to determine the investment distribution between the two groups. Such a neutral regime is likely to attract larger volumes of FDI and promote its efficiency.

Creation of export processing zones (EPZs) is another recommended policy to promote exports and attract FDI (Balasubramanyam et al., 1996). Within these EPZs, no restriction on exports of final goods is imposed and duty-free of imports is permitted. It is considered as a small free-trade area and is well provided with infrastructure facilities and telecommunications.

In summary, evidence and results from this study have suggested fundamental policies, focusing on infrastructure and trade reforms, to provide congenial investment climate in India for attracting FDI and promote its position comparable to China as a FDI destination.

Conclusion:

The phenomenon of FDI inflows in developing and transition economies has attracted a significant number of analyses looking into the determinants of FDI in these countries. Based on previous literature and research, this study has attempted to examine important factors shaping FDI in two emerging markets: China and India.

India and China are the most favourite FDI destination among developing countries. China was a highly closed economy completely isolating itself from the global economy before 1979. Its closed economic policy almost limited China's potential development. Eventually, the Chinese government began to liberalise its economic regime and opened its domestic market to the rest of the world. As a result, remarkable volumes of FDI have been attracted into the country.

The same picture has been drawn for India since its reforms in 1991: FDI inflows into India have increased rapidly which places it to the second most popular FDI host after China. However, as compared to its neighbour in the East, India is still far behind in terms of volumes of FDI received. India, despite being the world largest democracy with a huge promising market is

still overlooked by foreign investors. The study tried to explore this paradox and to investigate the factors driving FDI in China and India.

For these purposes, two separate models were developed to identify the determinants of FDI in each country and then a joint model was conducted to compare and explain the difference in FDI between two countries. The individual model suggested that inflation, though concluded with an unexpected sign (coefficient was found to be positive), had significant impact on China's inward FDI. On the other hand, trade openness and infrastructure proved to be major determinants of FDI in India. The model for both countries indicated that among factors examined, inflation was important for FDI inflows in the two countries. Furthermore, the analysis resulted in no significant difference between China's and India's FDI. Infrastructure appeared to be one of the main reasons why India was falling behind China in attracting FDI.

Based on those results, policy recommendations have been made to create a congenial business climate in India for improving its attractiveness towards foreign investors. Firstly, Indian government should take immediate actions to resolve the infrastructure bottleneck. This can be achieved by developing strategic infrastructure, popularizing telecommunication and transportation networks, establishing large SEZs and ensuring efficient power supply. Secondly, India needs to create an appropriate trade policy which balances export promotion and import substitution. In addition, growing EPZs with low trade barriers are desirable for attracting MNEs.

This study has provided decent explanation for the determinants of FDI in China and India. It has, to some extent, been able to answer the research question on why India is falling behind China in attracting foreign investment. The research, however, has some limitations which need to be addressed in further study. First of all, it was difficult to obtain sufficient data on FDI determinants for India and China over the last twenty five years and hence the number of chosen factors was restricted. This may explain for the low models' explanatory power and insignificant F-statistics. Also, industry wise study can be conducted to identify which industry is the main contributor to FDI growth in China and India. Finally, this analysis only compares India with China and does not include other emerging economies such as Brazil and Russia. A study on FDI determinants in BRIC countries[4] thus would complete the comparative picture between India and other emerging countries.