

Impact of Bilateral Investment Treaties on FDI Inflows: The Indian Case

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DECLARATION

I declare that the thesis entitled "Impact of Bilateral Investment Treaties on FDI Inflows: the Indian Case" submitted by me for the award of the degree of Doctor of Philosophy from Jawaharlal Nehru University is my own work. The Thesis has not been submitted for any other degree of this University or any other University.


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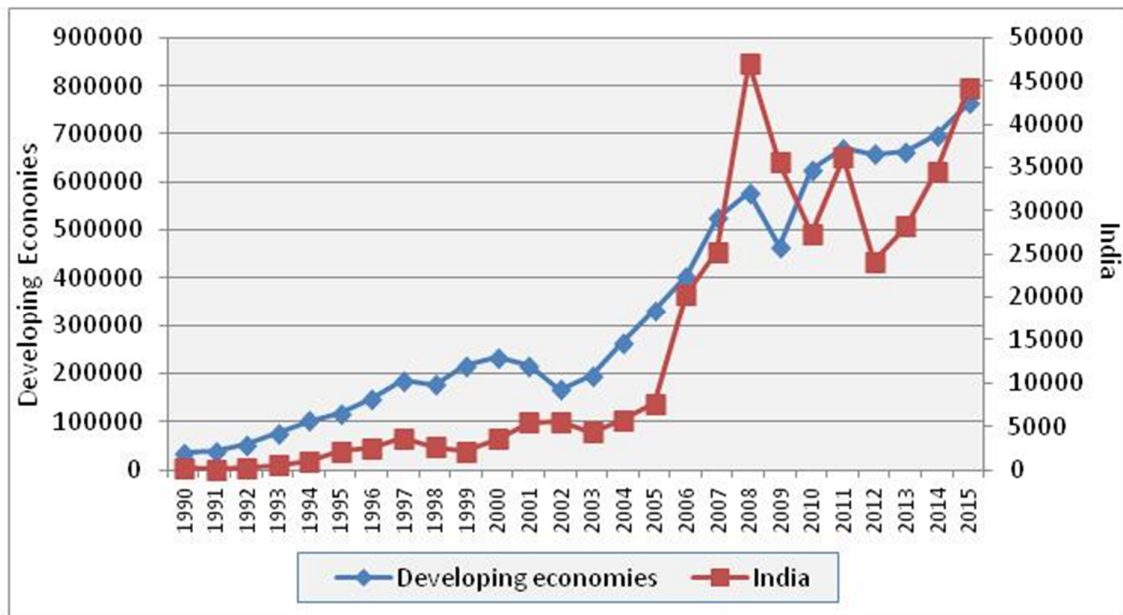
CHAPTER 1: INTRODUCTION

1.1 The Context

Foreign Direct Investment (FDI) is seen as different from purely financial flows of capital, not only because it combines capital, technology and managerial knowhow and sometimes even market access, but also because it is perceived as having a long run interest in earning profits from production rather than just from capital gains. Thus FDI is often seen by developing countries as being a catalyst for development.

As a developing country India has, since the early 2000s, been a favoured destination for global FDI. Figure 1.1 shows the trends for gross inflow of FDI into India and all developing countries. The data shows that for developing countries as a whole there was a dip in FDI following the 2008 crisis, but it soon regained its pre-crisis level by 2010. After that point FDI flows to developing countries have been increasing again. In the case of India, however, following the sharp dip during 2008-09, FDI flows are yet to touch their pre-crisis peak, though there has been a steady increase in flows after 2012. There is therefore a need to identify and suitably design investment promotional policies that attract greater FDI into India.

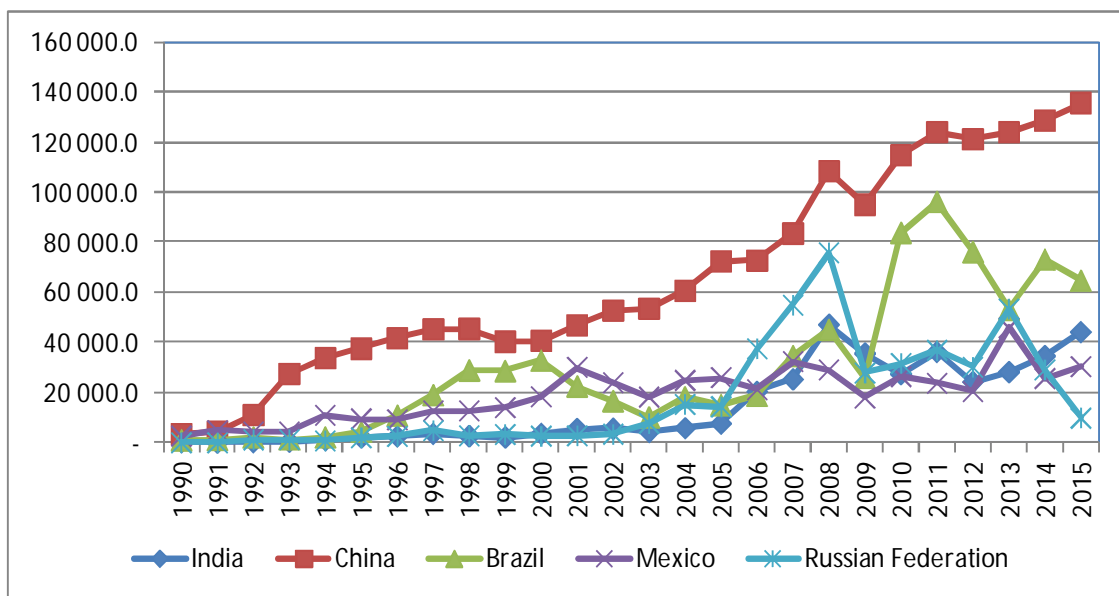
Figure 1.1: FDI inflows- India vis-à-vis All Developing Countries (in Million USD)



Data Source: WIR 2016

Figure 1.2 below shows the trends in FDI flows for five of the largest developing countries- China, Brazil, Mexico, Russian Federation and India. When compared against some of the other largest FDI recipients in the developing world, India doesn't seem to be doing too badly. As can be seen, China's trends closely mirror the trends noted for developing countries as a whole. For the other four countries, year on year volatility is observed. However, on an average the FDI flow levels are similar across the four countries. There has been a steady and remarkable rise in FDI flows to India after 2003.

Figure 1.2: FDI Flows in Top Developing Countries (in Million USD)



Data Source: WIR 2016

Many experts attribute the ability of India to benefit from the rising global FDI flows after 2003 to improved domestic economic fundamentals and growth acceleration. Kumar (2013), for example, asserts that the increase in FDI flows reflected the improved investment climate in India that was marked with accelerated GDP growth rates since 2003, rise of a sizeable middle class with purchasing power, and the development of and global recognition of India's comparative advantage in knowledge-based industries.

Another school of thought believes that FDI figures quoted by government sources are erroneous. They state that the higher FDI levels are more a reflection of round-tripping investments that are wrongly counted as part of FDI (Gopalan and Rajan 2010, Rao and Dhar 2011). The OECD categorises direct investments to be of the round-tripping type if its

ultimate investor belongs to the same economy. For this reason these investments cannot be technically identified as FDI.

Rao and Dhar (2011) point out that round-tripping investment blurs the distinction between foreign and domestic investors. They further quote another study by Bain Consulting that states that many domestic private equity (PE) funds invest in Indian companies through wholly owned offshore subsidiaries. These PE funds use Special Purpose Vehicles based in countries with double taxation treaties with India, such as Singapore and Mauritius, to avoid transferability restrictions when they eventually exit from an investment.

To the extent that the FDI figures are indeed representative, one other possible explanation for India's success in attracting enhanced flows is its entry into bilateral investment treaties (BITs) that are seen as means of boosting investor confidence. UNCTAD (2016)¹ defines a bilateral investment treaty (BIT) as "an agreement between two countries regarding promotion and protection of investments made by investors from respective countries in each other's territory".

Since India has been a signatory to a number of BITs since 1995, it can be argued that BITs also contributed in the increased FDI flows to it. Looking at figures, India has one of the largest numbers of BITs signed in the developing world. Till date India has signed 82 agreements of which 72 are in force. It would be interesting to see what portion of this increase in FDI can be attributed to the increased number of BITs signed.

Data on country pairs with the highest average FDI flows during 1990-2012 has been presented in Table 1.1 and Annexure 1.1. As can be seen, quite a few of these flows are between countries that have entered into a BIT. Of the large developing countries, Brazil has yet to ratify any BIT. Thus, all FDI flows that Brazil receives from USA, Spain and Japan occur despite the absence of the protection afforded by BITs. Most of the other flows are, however, protected and facilitated by BITs or IIAs² between the country pairs concerned. India's largest average FDI inflow from a single developed country i.e. from the US, ranks 16th in the overall database. It is however noteworthy that India hasn't signed a BIT with the United States yet. The results from a cursory glance at the largest FDI flows are thus

¹ UNCTAD, Investment Policy Hub, International Investment Agreements Navigator

² International Investment Agreements- Includes BITs and FTAs containing Investment Clauses

ambiguous as regards the importance of BITs. It is therefore important to analyze more carefully using robust statistical methods the impact of BITs on FDI flows to developing countries such as India.

Table 1.1: Bilateral FDI Flow (1990-2012) (USD Million)

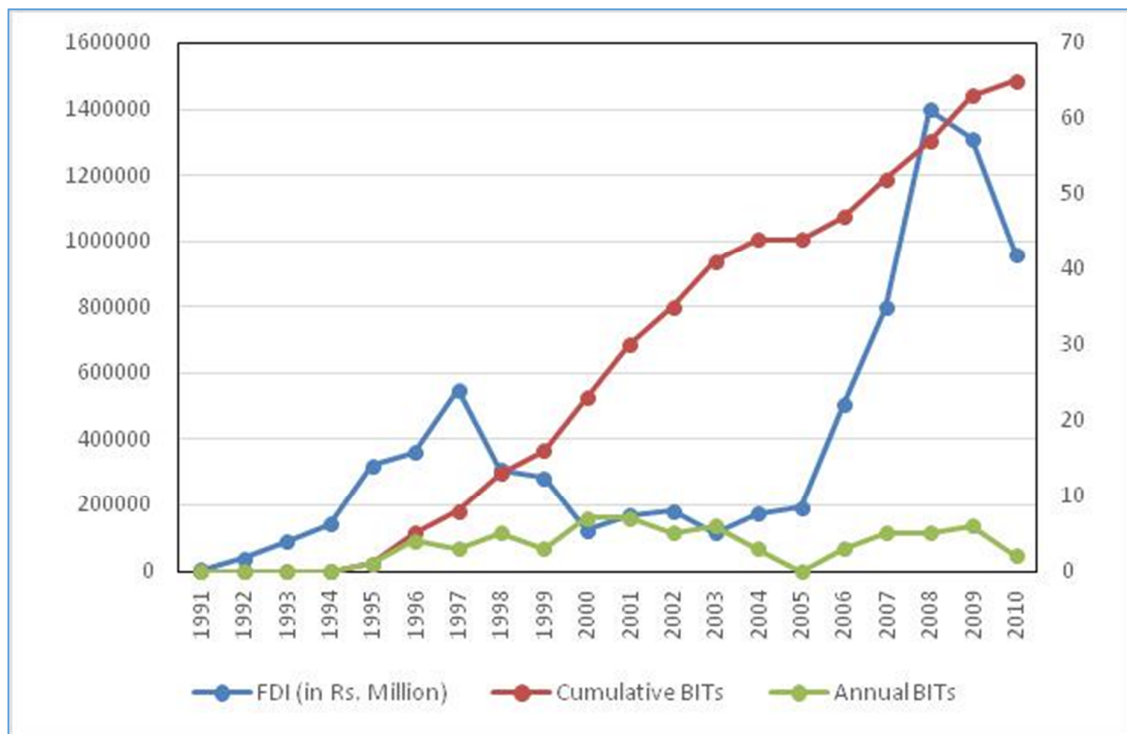
Rank	Source	Host	Average FDI Flow (1990-2012)
1	USA	Mexico	5919
2	Japan	China	4116
3	USA	Brazil	3768
4	Spain	Brazil	3475
5	UK	South Africa	2360
6	Germany	China	2139
7	Spain	Mexico	2105
8	Korea	China	1856
9	Spain	Argentina	1725
10	Japan	Brazil	1710
...			...
16	USA	India	1214

Source: UNCTAD (2015)

Many studies have investigated the impact of bilateral investment agreements on a country's FDI inflows but consensus on their positive impact has not yet been reached. This is discussed in more detail in Chapter 2. It is, therefore, important to conduct an India-specific study to assess the impact of BITs on FDI flows to the country, as the country goes forward with signing more BITs drafted on the lines of its Model BIT template. It is not only the number of bilateral investment treaties signed that is important, but also the quality of these treaties. Thus, in order to study the impact of BITs on India's FDI inflows, the treaty provisions also need to be examined and their effects assessed.

Figure 1.3 below plots the trends in FDI bound for India and the annual and cumulative number of BITs signed. As India started signing BITs from 1995 onwards, the curve is flat in the early years. However, post that period, the trends are seen to move in opposite a direction which possibly lends credence to the assertion that BITs are seen by countries as an important investment attracting tool. In the years that India's FDIs were high, the number of BITs being signed was low. However, years with dips in FDI inflows saw an increase in annual BITs signed as compared to previous periods.

Figure 1.3: India Bound FDI and BITs signed (in Rs. Millions)



Data Source: DIPP FDI Statistics, UNCTAD IIA Database

1.2 Study Objectives

The present study in its three analysis pieces seeks to analyse the impact of BITs on FDI flows. This has been looked at using both global as well as Indian FDI flow models.

The study also examines the role of the 'quality' from both analysis standpoints. To illustrate, in one of the analysis pieces, I look at the 'quality' of BITs and its impact on FDI flows. For the other standpoint, the existence of BIT and its role in determining the 'quality' of FDI flows has been looked into. The metric defining quality is however different in both cases.

1.3 Chapter Scheme and Main Hypotheses Studied

As mentioned above, a large number of developing countries have signed bilateral investment treaties in the hope that they would make them attractive to foreign investors, increase FDI flows and bring them the associated positive externalities. However there are costs associated with BITs. One such cost is the threat of having to face investor-state disputes facilitated by the clauses contained in the BITs.

Therefore, the first part of the analysis concentrates on analyzing whether or not BITs have had a significant impact on the flow of FDI to a country. The analysis has been done for 41 of the largest developing countries as well as India in separate exercises (Chapters 2 and 4). The hypothesis subjected to empirical verification here is whether the *signing of bilateral investment agreements leads to increase in foreign direct investments*.

The second part of the analysis involves looking at the quality of BITs based on the kind of clauses they contain. Focusing on the objective of enhancing 'flexibility for development', this section quantifies various clauses to develop a BIT quality index. Using that index, this section seeks to analyse whether or not varying provisions contained in a BIT have an impact on determining the FDI flow levels (Chapter 3). The hypothesis tested here is that *treaties containing higher 'provisions for flexibility' would lead to greater inflows*.

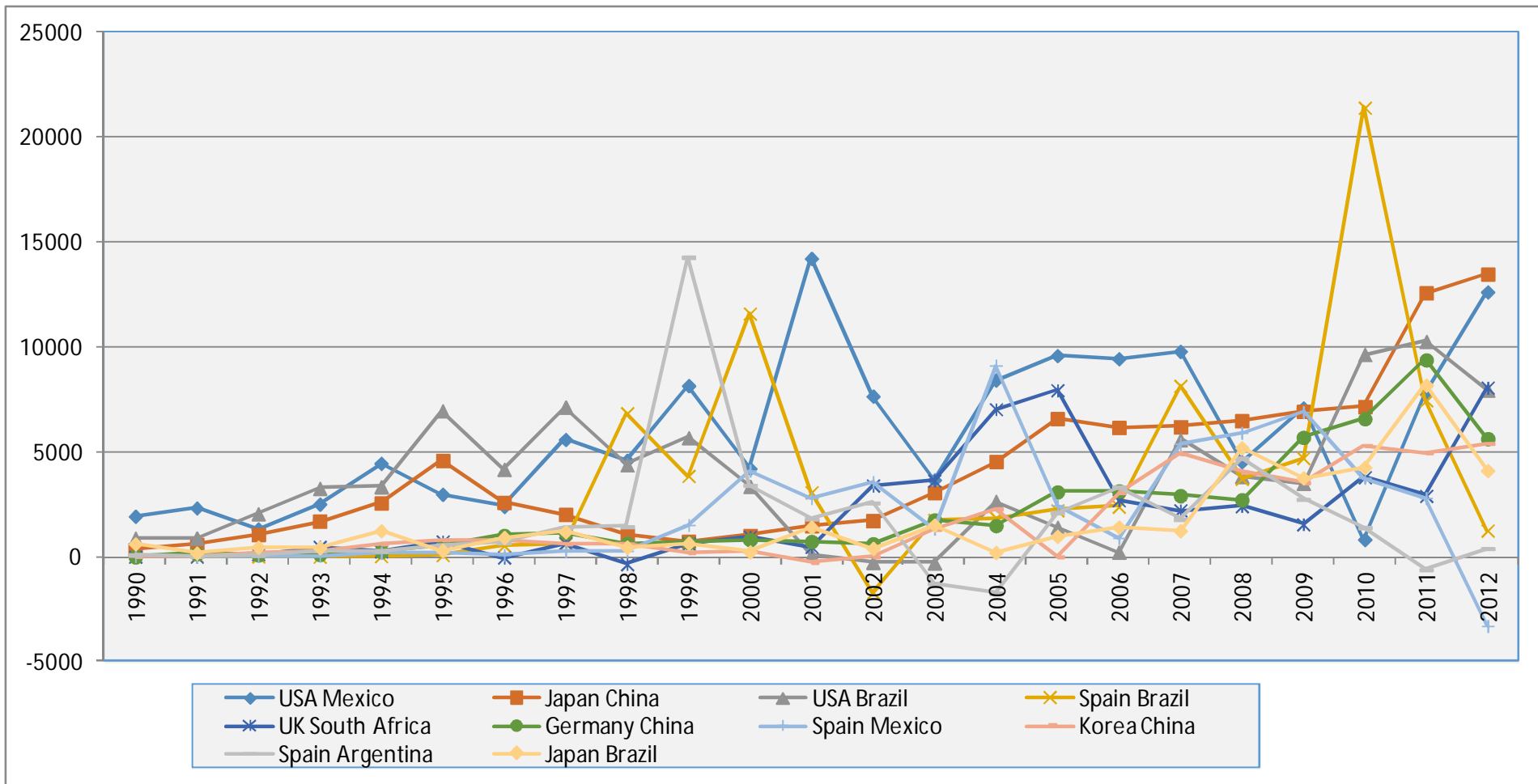
It is noteworthy that India has signed agreements with both developed as well as developing countries in the past. It would, therefore, be of interest to study the differences in the investment agreements with respect to clauses contained in North-South and South-South agreements. Now that outward FDI is also becoming important, it would be interesting to look at how BITs between developing countries look like (Chapter 3). The hypothesis considered here is that the *provisions contained in South-South and North-South investment agreements differ significantly*.

The impact of foreign direct investment (FDI) with respect to knowledge spillovers need not be homogeneous and of equal importance for the development of the host countries (Pradhan, 2006). These would differ based on the sectoral perspective and localization perspective of the foreign investors among others. However, to the extent that developing countries are entering into BITs in order to attract FDI and ensure its safety, certain costs are

being incurred by the nation. Looking at the problem from the point of view of India requires careful analysis of the performance of FDI from different source countries in Indian firms. The analysis therefore tries to examine how the performance of firms differs based on the source of the FDI and whether or not a BIT has been signed with the developed country in question. The FDI performance impacts are seen through the lens of employment creation, export propensity, technology diffusion and local content usage (Chapter 4). What is analysed here is the fact that whether *the level of FDI performance varies significantly due the signing of investment agreements with source countries or not.*

The final chapter i.e. Chapter 5, summarizes the main findings of the study.

Annexure 1.1: Largest North-South FDI flows between countries over the period 1990-2012 (in Million USD)



Data Source: UNCTAD Bilateral FDI Database, 2016

Chapter 2: Treatment Effects Model for Investment Flows

2.1 Background

With the multilateral negotiations aiming to take forward the framework for foreign investment rule stuck in a deadlock, International Investment Agreements (IIAs)³ have quickly attained the position of milestones in the path that the developing countries agenda are taking in their investment liberalization. The decline of grants and other official flows in recent times has meant that private capital, particularly in the form of FDI, has become a major source of external finance for developing countries and therefore the competition between developing countries for these FDI flows has heightened. Current figures show that the number of bilateral investment agreements stood approximately at 2923 by the end of 2015 (UNCTAD, 2016). While a number of these agreements are between developed and developing country partners, the number of South-South agreements, i.e. agreements between developing countries has increased as well.

There is a large theoretical literature that explores why and how developing countries benefit from FDI inflows. Developing countries, in turn, believe that trade pacts will help attract foreign direct investment (FDI) from the partner countries (“investment creation”), which would carry with it prospects for the transfer of global technology leading to increased productivity. Specifically, FDI spillovers occur through five main channels: demonstration/imitation, labour mobility, exports, competition and backward and forward linkages with domestic firms. Commensurately, many developing countries in their rush to attract foreign investment have honed their investment related policies in such a way that TNCs on the lookout for potential investment destinations find greater benefit in locating in their country rather than anywhere else.

The literature also provides reasons why the other party, i.e. the investor, would want to invest in particular developing countries. FDI flows into developing countries to take

³ Includes Bilateral Investment Treaties, and Trade and/or Economic Cooperation Treaties with Investment Provisions

advantage of its local factors of production (such as local labour) and to set up export platforms. Other types of FDI that may flow into a country are - 'market seeking' and 'resource seeking'. While market seeking FDI looks for large and growing markets, resource-seeking FDI looks for ample natural resources that could be extracted for their benefit (UNCTAD, 2003).

Developing countries in their race towards attracting greater amounts of FDI into their country, are following a two-pronged strategy. While they are liberalizing investment rules in the country unilaterally, they are also entering into Investment agreements to provide assurance of security to these investment flows. Most countries are unilaterally liberalizing the conditions for the entry and establishment of foreign firms. Many new sectors are being thrown open to foreign investors with a better investment climate sought to be provided. On the other hand, countries are increasingly entering into bilateral investment treaties with important investor countries. These BITs provide enforceable rules to protect foreign investment and reduce the risk faced by investors. Following the rules, the risk of violations/expropriations by the host/developing country is substantially reduced and thus, the expected returns to investment increased substantially. This, in turn, provides incentives for investors from the home/developed country to invest even more in the host developing country.

Furthermore, it should be noted that once a developing country signs a BIT, the impact of the signal that prospective investments in the host country is well protected is restricted not only to investors in the partner country. This BIT might send a signal to investors in other countries as well and investment flows from other sources may also increase. Unfortunately, the comparison of the importance of the signalling effect, which benefits investors from all countries, compared to the commitment effect, which only relates to investors from BIT partner countries, is difficult to make (Neumayer and Spess, 2005).

The increased investment flows due to the BIT comes primarily from two broad resource pools. First, a BIT may shift resources from current consumption (effectively, stimulating new capital investments that would not have been made in the absence of reduced transactions costs). Second, a BIT can attract capital by redirecting it from a high transactions cost venue to a lower cost one. Thus, it leads to a redistribution of an

existing stock of investment that favours the BIT signatory over its other rivals. It is this possibility of investment diversion that forces many developing country governments to implement BITs competitively.

If viewed as a competitive game, then each developing country analyses the probable benefits of FDI (such as augmentation of investible resources, technology transfer and productivity gains) against the costs that it incurred by entering into the BIT. Some of the costs that are directly visible are the loss of sovereign rights. By entering into Investment agreements and through the dispute settlement clauses most governments give the State as well as investors belonging to the partner country the right to litigate against violations of clauses in the agreement. In fact, studies show that “virtually any public policy regulation can potentially be challenged through the dispute settlement mechanism as long as it affects foreign investors” (Neumayer and Spess, 2005). In view of the above, Vandeveld (2000) states that “BITs seriously restrict the ability of host states to regulate foreign investment.” Elkins et al. (2004) comment that in concluding BITs, developing countries are therefore “trading sovereignty for credibility.”

To make matters worse, these agreements are costly even when specific clauses are not violated. This is because, under these agreements governments agree to give up the use of a broad range of policy instruments (taxation, regulation, currency and capital restrictions) they might have legitimately wanted to use to achieve domestic political, social or economic ends.

BITs’ diversionary potential gives early signers an advantage over their rivals in the competition to attract investment. If developing countries were able to act collectively, they might have preferred that the first BIT never be signed, but once these treaties were in place, the possibility of capital diversion has made BITs increasingly attractive.

Thus, while developing countries strongly resist multilateral investment treaties at fora such as the UNCTAD where they can collectively express and organize their interests, when a less developed country’s neighbour or economic competitor signs a BIT in order to remain competitive they must sign one as well (Neumayer and Spess, 2005).

The above-mentioned competition would, however, be heightened or weakened depending on the resource base of the developing country as well as the nature of FDI. A country that attracts investment into its extractive industry faces relatively little competition in that sector – its only competition is other states with similar natural resources. A country that attracts investment in manufactures, in contrast, competes with many more countries. Any country that can host the manufacturing process would be a potential competitor.

It should however be noted that if most competitors to a particular country have signed about the same number of BITs as that country, then the marginal effect of the overall number of BITs on FDI will be small. Additionally, the share going to a particular country with many BITs is likely to fall as other countries follow its lead. The end result upon the FDI would depend upon the way in which the BITs stimulate overall FDI and the investment diversion effects of BITs signed elsewhere.

As has been mentioned in earlier, Bilateral Investment Treaties (BITs) signed by partner countries provide a legal guarantee against expropriation after establishment, ensure smoother repatriation of profits and improve national investment credibility as a whole. They have been deemed by many to be a substitute for quality of governance existing domestically in the host country. The restrictive clauses of these agreements are entered into by developing countries in the hope of attracting greater amount of FDI and starting-off a virtuous cycle of economy-wide positive spillover effects.

There have been a number of instances where developing countries have been hurt by the stronger investment protection regime following the BIT, specifically following domestic downturns or crisis conditions. Technical clauses such as 'Creeping Expropriation', 'Fair and Equitable Treatment', 'National Treatment' have remained open to interpretation and have caused many a developing country a lot of grief in international litigations. To illustrate, indirect or creeping expropriation has been alleged by TNC in many disputes against India citing changes in taxation regimes, withdrawal of concessions/permits given following corruption charges in departments, etc. as the medium of indirect expropriation. On the flip side, there have been no conclusive studies that have established the positive impact of BITs on FDI flows.

Despite the large number of studies in recent times looking at the impact of BIT, there has been a lot of controversy regarding their results. There are papers that have looked at aggregate global impacts such as UNCTAD (1998)⁴, still others that have analysed impacts on specific hosts (Eastern Europe, Latin America) and specific sources (US, EU) [Hallward-Driemeier (2003), Buthe and Milner (2009), Neumayer and Spess (2005), Egger and Pfaffermayr (2004), Grosse and Trevino (2005), Gallagher and Birch (2006), Tobin and Rose-Ackerman (2005)]. Aisbett (2007) is one of the first papers that have questioned the direction of causality that was presupposed by all these earlier studies. She uses the Granger causality test as well as cointegration analysis, to assess the impact of BITs.

Since that time there have been a number of improvements in techniques of analysis specifically relevant for impact evaluation that permit assessment of the impact of a particular 'treatment' in experimental and non-experimental setups. In addition to successfully dealing with the sample selection and endogeneity biases that plague traditional frameworks of analysis, these new techniques are able to factor in the impact of unobservable factors as well. The treatment effects model that has been used in this chapter is explained in the following section.

2.2 Earlier Studies on the impact of Bilateral Investment Treaties (BITs) on FDI

There have been many studies that analyze the impact of entering into BITs on FDI. However, a consensus about the impact of bilateral investment agreements has not been reached. For example, while the World Bank study by Hallward-Driemeier (2003) does not find any statistically significant effect of BITs on FDI, the study by Tobin and Rose-Ackerman (2005) finds a negative effect at high levels of country risk and a positive effect only at low levels of country risk.

Hallward-Driemeier, using twenty years of bilateral FDI flows from 20 OECD countries to 31 developing countries, found that BITs play a minor role in stimulating greater FDI and they are only effective in countries with high quality of institutions and strong local property rights (Kim, 2006). Tobin and Rose-Ackerman (2005) examined BITs signed with the U.S. and

⁴ The analysis included 200 BITs signed between fourteen home countries and seventy-two host countries.

found little evidence to explain the importance of BITs signed by low and middle-income countries with the U.S. in their bilateral analysis. In the general analysis, they argue that BITs only play a major role in countries where the investment environment has already been improved. Using the aggregate index from the International Country Risk Guide (ICRG) for political risk rating, they point out that BITs have a positive impact when the political risk is equal to 65 or above.

The study by Salacuse and Sullivan (2005) finds a positive effect only for United States BITs, but not for BITs from other countries of the Organization for Economic Co-operation and Development (OECD). Neumayer and Spess (2005) find that developing countries that signed BITs with developed countries received more FDI. This was especially true for developing countries with poor domestic institutional quality. Using three components of the political risk index developed by International Country Risk Guide (ICRG), they find that a country with relatively lower institutional quality benefits more from BITs *i.e.* BITs act as a substitute for rather than a complement to the quality of a country's institutions (Kim, 2016). However, BITs signed between developing countries are excluded in their study due to the small amount of intra-developing country FDI flows. In addition to the above-mentioned papers, there have been a number of papers that specifically look at the impact of signing FDI for a subset of countries/regions.

Most of these papers investigating the impact of BIT on FDI use the gravity model. Essentially, the gravity model seeks to explain investment flows to country *i* from country *j* using their economic sizes (GDP), their populations, direct geographical distances and a set of dummies incorporating certain types of institutional characteristics common to specific flows. In these models, the impact of entering into a BIT is estimated using a dummy variable. Thus, the positive/negative impact of signing BITs for a developing country on its FDI inflows can be assessed using the gravity model. However, most of the studies consider only the impact of presence or absence of agreements. The quality of agreements entered into are not taken into account. However, some studies have attempted to translate the provisions contained in a BIT into an index which can further be used as an explanatory variable for the analysis.

2.3 BITs as a substitute for governance

Following from the aforementioned 'signalling' and 'credibility' enhancing functions of the BITs, some of the literature argues that BIT functions as a substitute for governance. Neumayer and Spess (2005) state that BITs provide security and pre-specified standards of treatment to foreign investors mostly in the cases where domestic institutions fail to deliver the same security and standards. Thus, for high-risk countries the reputational advantages due to upholding of agreement clauses far surpass the resultant losses in sovereignty. Some studies⁵, however, argue that BITs might only be seen as credible in an environment of good institutional quality. This would imply that BITs are most effective in countries where they are least needed (Neumayer and Spess, 2005). Sornarajah (1986), for example, suggests that "in reality attracting foreign investment depends more on the political and economic climate for its existence rather than on the creation of a legal structure for its protection."

Some studies such as Neumayer and Spess (2005) point out that the basic provisions of BITs answer the "dynamic inconsistency" problem that faces developing countries attempting to attract FDI. The dynamic inconsistency problem arises from the fact that although host countries have an incentive to promise fair and equitable treatment beforehand in order to attract foreign investment, once that investment is established and investors have sunk significant costs, the host country's incentive is to exploit or even expropriate the assets of foreign investors. Even those host countries that are willing to forego taking such advantage will find it very difficult to credibly commit to their position given these circumstances (Guzman, 1998).

Thus, despite the fact that developing countries may strive towards improving the investment climate through improved investment governance and favourable legislation, the fact remains that these domestic legal rules cannot substitute for the commitment offered by entering into a legally binding bilateral treaty.

⁵Hallward-Driemeier (2003) and Sornarajah (1986)

2.4 Econometric Model Framework

2.4.1 Impact of Bilateral Investment Agreements on Foreign Direct Investment Flows

In the first model used in this analysis, dyadic FDI between various host (41 top FDI receiving developing countries) and source countries (18 OECD countries) has been regressed on various factors explaining FDI such as market size, resource rents, skilled manpower pool availability, etc. The existence of a BIT enters in this case as a variable of specific interest. The basic idea in this framework of analysis is that all of these selected 41 countries have had a good experience with respect to inflow of foreign funds in the period 1990-2010. Such a trajectory is what other developing countries hope to reach though the signing of BITs. This experience in the aforementioned 41 countries could be due to domestic conditions and markets, their export potential, their resource abundance (both natural and human), etc. This could also be partially due to the signing of BIT with significant FDI source countries that guarantee investment promotion and protection. The application of this model helps evaluate the marginal impact of having additional agreements.

The second model for analysis tries to evaluate the impact of total BITs⁶ on total FDI flows received by these aforementioned 41 developing countries. As mentioned earlier, developing countries hope that signing of BITs would improve their credibility and showcase their commitment towards investor protection. There is thus an expectation that BITs would send a positive signal to all investor countries in addition to the specific BIT partner countries, which would in turn result in an increase in total investment flows from all other sources. Using econometric techniques, the marginal impacts of BIT signing on total FDI has been examined in this case as well.

The treatment effects model has mostly been used in the literature for impact evaluation of welfare programmes. This paper is one of the first applications of the treatment effects model to study the causal impact of signing of BITs on FDI inflows. In the standard experimental treatment effects model, an attempt is made find the causal impacts and entities are selected at random and divided into two similar groups - control and treatment. In an artificially created environment of 'ceteris paribus', the impact of a specific treatment

⁶Cumulative total of all BITs signed by a particular host country in a specific year.

and the marginal impact of the treatment is ascertained. The average treatment effect in this case becomes the difference in expected outcomes (such as FDI flow) after participation and non-participation in specific treatment procedures (in this case, BIT participation):

$$\Delta_{ATE} = E(\Delta) = E(Y^1) - E(Y^0)$$

Where Y is an outcome indicator and the superscripts 1 and 0 represent participation and non-participation in the specific treatment procedure.

However, note that the application of this model to the FDI data is dissimilar from a laboratory treatment setup in the sense that this data is from random assigned entities (non-experimental). At any point in time, any entity can only be in a state of participation or non-participation (D=1 or D=0). It is thus not possible to observe the counterfactual in this sense. With non-experimental data, developing the counterfactual i.e. what would have happened if this treatment (in this case, signing of the agreement) did not happen, becomes tricky. What is observed in this case is average treatment effect on the treated (ATT), i.e. the FDI increase for only those who have participated in the 'treatment' i.e. BIT participants.

$$\Delta_{ATT} = E(\Delta | D = 1) = E(Y^1 | D = 1) - E(Y^0 | D = 1)$$

Since most data is not random and is non-experimental, the experience of Country A if it had not signed an agreement (a counterfactual) and Country B that has in present time (observed history) not signed is very different i.e. $E(Y^0 | D = 1) \neq E(Y^0 | D = 0)$. It depends on the observed covariate levels (Xs, explanatory variable values accounted for in the country specific data) as well as arguably unobserved factors. This problem has often been called as the sample selection problem. In such a scenario, the treatment effect model uses all data within the sample and creates a counterfactual based on the patterns of a similar country (as declared by the explanatory variables) and uses this for estimating the difference in outcome i.e. the causal impact.

Also, the treatment effects model is needed to evaluate the impact of the endogenously determined existence of BIT (or the treatment) on FDI inflows. As mentioned earlier, traditional literature assumes that BIT is an exogenous variable with no correlation with the error terms. This is incorrect since the decision to enter into a BIT may be determined by the

other explanatory variables themselves (such as governance levels, resource availability, etc.). This makes the BIT variable endogenous and the traditional panel data model erroneous.

For solving the above modelling issues, the Heckman's Two-Step Sample Selection model applicable for treatment effects estimation has been used that divides up the causation question into a two-step process:

1. A Probit model estimate which explains the decision of countries regarding entry into BIT in terms of the various factors that induce entering into BIT
2. A two stage least squares (2SLS) estimate for understanding the impact of the estimated BIT probabilities and other explanatory variables on influencing the flow of FDI to a specific developing country, after the BIT has been signed.

To illustrate, the functional form of the model is as below:

$$y_0 = \mu_0 + x\beta_0 + e_0, E(e_0) = 0, E(e_0|x) = 0$$

$$y_1 = \mu_1 + x\beta_1 + e_1, E(e_1) = 0, E(e_1|x) = 0$$

$$y = y_0 + w(y_1 - y_0)$$

The first and second equations are potential outcome equations for different values of y and the vector \mathbf{x} is a functions of the various covariates. The last equation is the so-called "potential outcome model" and expresses the observational rule of the model, where y is the observed outcome.

As mentioned earlier there is also a selection equation for w , which calculates the propensity to be selected for treatment:

$$w = \theta_0 + x\theta_1 + \epsilon$$

For all nonrandomized studies such as this, Heckman's work on modeling sample selection by using a two-step procedure or switching regression becomes very important. Rubin (1986) in his paper shows that a two-step framework is useful for applying conditions of a randomized experiment to observational studies. Note that this model is quite close to the

general Heckman's Sample Selection Model (or Heckit). Both of these models have a two-step procedure- first involving the participation decision and the second on the effect of participation in the treatment on outcomes. However, the key difference between the two is that in the treatment model unlike the Heckit, outcome data for both d=1 and d=0 are observed i.e. outcomes for all entities irrespective of whether or not they participate in the treatment programme (BIT in this case).

I use IVtreatreg model in STATA to estimate the treatment effect of entering into a BIT. Unlike clinical treatment, this model is used especially in cases where there are heterogeneous impacts. What this essentially means is that despite having signed BITs the experience with respect to FDI flows would vary, even after controlling for model covariates. In the current model context, since the impact of entering into BIT would vary between countries, the usage of the heterogeneous impacts option is the correct one. For the IVtreatreg model, I use FDI Attractiveness Index constructed using data from the Doing Business Report as an instrument in the model. The selection of the instrumental variable is based on the variable having some correlation with the treatment (i.e. signing of BIT) but no correlation with the flow of FDI.

For the second model on analysing credibility impacts of signing BITs, panel data methods have been used. A different model is necessitated for the assessment as treatment effects model assumes treatment to be a dichotomous variable. As total BIT having a multinomial form is the explanatory variable of interest, treatment effects model cannot be used. Thus, using a panel data model total FDI flows have been regressed against various explanatory variables as well as lagged values of total BITs signed. The lagged values of total BITs have been taken to avoid potential endogeneity effects of including *total_BIT* as an explanatory variable. The model used can thus be written as

$$Total_FDI_{it} = \mu_t + \beta x_{it} + \gamma total_BIT_{it-1} + \alpha_i + \varepsilon_{it}$$

In other words, quantum of total FDI flowing into a country would be regressed against independent explanatory variables x that vary across time (such as GDP, population, etc.) as well as lagged values to total BITs signed by developing countries . α_i and ε_{it} are both error

terms. ϵ_{it} is different for each country at each point in time. α_i only varies across countries but not across time.

As it can't be assumed that α_i is uncorrelated with the x because no time-invariant variables are omitted, or because the variables that are omitted are not correlated with the variables that are in the model. A fixed effects model is used to provide estimates of both the β s and the γ s i.e. coefficients for both sets of explanatory variables.

2.4.2 Data Selection

For the analysis, the data on the level of dyadic FDI has been taken from the OECD.Stat database. This shows the level of inflows from the developed countries to top developing countries in the world. Annexures 2.1 and 2.2 provide the list of countries that have been considered for the analysis. The time period of analysis is 1990-2010.

An alternate set of regressions were done for total bilateral FDI inflows as well. This takes into account the signalling effect of signing BIT on other sources. The data on total FDI inflows has been taken from UNCTAD's World Investment Reports for various years.

Explanatory variables that are considered for the regression analysis include:

1. Market Size: these include indicators for GDP, GDP growth, per capita income difference and population. All of these indicate the market size of the developing country in question and how it has been doing over time. All four are standard variables that are often taken to reflect motivations for market seeking FDI flow.
2. The next set of variables indicate the macro-economic strength of the FDI recipient country. These are inflation and the NEER (nominal effective exchange rate). These indicate the possibility of any financial crisis happening that would erode the investment made by the source country. A variable for real Interest rate difference has also been included in the analysis to serve as a proxy for difference in rate of return on capital offered.

3. A number of variables have been included that reflect the quality of labour supply available—this includes variables for proportion of the labour force that is skilled and the wage rates that are paid on an average to workers in industry.
4. For assessing resource-seeking FDI, the indicator included in the model is the amount of resource rents paid out. The World Bank World Development Indicators captures total natural resources rents as the sum of oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents.
5. The variables for FDI governance includes world governance indicators (WGI) (World Bank), political constraints (POLCON) (Henisz 2006), and FDI attractiveness index that has been constructed using figures taken from the WB Doing Business Report. All of these three indicators look at different dimensions of the issue of national governance. The WGI has six pillars in its framework—Control of Corruption, Government Effectiveness, Political Stability and Absence of Violence, Regulatory Quality, Rule of Law, and Voice and Accountability⁷. The POLCON index looks at the feasibility of policy change and number of branches of the governing system that have veto power over policy change⁸. Lastly, the FDI Attractiveness Index uses specific data from the Doing Business Report and converts them into an index having aspects of contract enforcement, insolvency resolution, investor protection, procedural delays, etc⁹.
6. An additional variable for infrastructure has also been included. This variable for overall infrastructure quality has been taken from the World Competitiveness Indicators developed by the World Economic Forum.

⁷ While WGI has widespread use as measure of governance quality, it has come under a lot of criticism due to the fact that WGI is largely perception based and is not built on a normative theory, criteria or analytical framework that explains how the quality of “the traditions and institutions by which authority in a country is exercised” is evaluated by respondents (Oman and Arndt, 2010).

⁸ POLCON identifies the number of independent branches of government (executive, lower and upper legislative chambers) with veto power over policy change. The index ranges between 0 to 1 with higher values indicating greater feasibility of a change in policy given the structure of a nation’s political institutions (the number of veto points) and the preferences of the actors that inhabit them.

⁹ FDI Attractiveness Index has been constructed using three components: Operational Difficulty (days needed for construction permits, registering property, starting a business), investor protection (strength of investor protection index) and enforcing contracts (enforcing contracts costs, enforcement procedure, enforcement time, recovery rate post insolvency)

7. A variable for electricity consumption has also been included to reflect energy utilisation patterns and to indicate complexities of production and consumption processes.
8. A number of countries receive FDI for the manufacture of exportables rather than just to tap their domestic markets. This variable of export orientation has been measured by using the trade values of the host countries (trade/GDP ratio). A related variable that indicates the strength of bilateral trade relations between the two countries (as a proportion of total world trade for the two countries). This variable indicates the cultural/tastes preferences of the two countries. Countries with longstanding history of trading with each other are expected to invest in each other's industrial sectors as well.
9. BIT existence and quality- The most important variable that has been looked at in the econometric analysis, is the existence of a bilateral investment agreement between the two parties in question (source and host country). The data on the exact date of ratification of the treaty has been taken from the UNCTAD database on Bilateral Investment Agreements and has been used to generate the dummy variable for BIT existence. A variable for total number of BITs in force was also created. For this purpose, for each country, the total number of BITs in force was calculated for the country during each year of the period 1990-2010.

2.5 Model Results

The following subsections present and discuss the model estimation results for the two models discussed above. The first estimation of the treatment model was done using the IVTreatreg packages of STATA 14.0. Table 2.1 presents the results of the model estimation. The commands used as well the detailed model results are also placed in Annexure 2.3.

2.5.1 Impact of BITs on Bilateral FDI Flows

(i) Determinants of BIT

In the first part of the analysis, the results show that the decision to enter into BITs is primarily driven by past investor protection and contract enforcement by host countries (FDI Attractiveness Index). The presence of skilled manpower within host countries was also found to be important. Wage levels were however found to be statistically insignificant in explaining the decision to enter into BITs.

Strong macroeconomic fundamentals were also found to be important determinants of BIT. These include high GDP and rising exchange rates. A negative association of BIT signing and inflation levels was also found.

While trade openness was found to positively affect the decision to enter into a BIT, resource rents were surprisingly found to have a negative influence. The latter might be due to the fact that countries within the sample that have high natural resource rents such as Angola, Congo, Libya, etc. have signed very few BITs so far.

Both the measures of good governance (WGI and POLCON) were found to be significant determinants of FDI but with different directionalities. In other words, results indicate that countries with lower governance levels and lesser political constraints (higher feasibility of a policy change) are more likely to enter into BITs. Based on literature this result can be said to be true. It is also interesting to note here that higher governance levels are associated with more FDI flows, but lower governance quality levels lead to a greater number of BITs being signed.

A positive impact of infrastructure quality on signing of BITs was found. This also reiterates the result for the high significance of FDI attractiveness Index found earlier. The negative relationship observed between bilateral trade and BIT signing is surprising. This seems to indicate that countries are more likely to enter into BIT with countries with whom they have had low trade relations in the past. One possible explanation for this could be that developing countries hope to use BITs as credibility signalling mechanisms. Entering into this

sort of a contract would thus be more important for partner countries with whom the host has not had traditional trade ties.

(ii) Determinants of Bilateral FDI

Among the explanatory variables used in the analysis, high bilateral trade was found to be the single largest determinant of FDI flows into a country. Countries that have traditional trade ties are more likely to invest in a particular country. With the internationalisation of production chains there are many products, components of which are sourced from around the world. Once trade links are established with particular firms located in a particular country, it is a natural next step for a larger TNC to acquire the component supplying firm located in a particular country or enter into a JV to protect proprietary technology, process knowledge, etc.

Market size (GDP), resource availability (resource rents), and governance systems were all found to be significant and positively associated with determining FDI flows. Other macroeconomic determinants such as inflation and exchange rates were found to be significant. It is interesting that wage rates were also found to be an important determinant but with the wrong signs. In other words, the models shows that countries with higher wage rates are more likely to receive FDI. While this is a surprising result, this result needs to be looked at in relation to the skill variable. It is thus likely that a country with higher skilled manpower and thus paying higher wage costs, receives higher amount of FDI.

BIT, the most important variable of the analysis, was found to have a significant positive impact on FDI flows. The results interestingly show that the marginal impact of signing a BIT for the 41 countries considered for the study was an increment of USD 220 million in their FDI flows. Note that this coefficient needs to be viewed as an additional annual inflow that is expected to come into a developing country for each BIT that it signs with the set of developed countries in the analysis. This is therefore a very significant impact.

Table 2.1: Model Estimation Results for Analyzing BIT Impact on Bilateral FDI

	Variables	Coefficient	Standard Error	Z or t Statistic
Step 1: Probit Regression on BIT[#]				
	BIT			Z Statistic
1.	Fdiattract	1.209813**	.1077905	11.22
2.	Gdp	1.49e-13**	4.28e-14	3.48
3.	Inflation	-.0006873**	.0000896	-7.67
4.	Neer	.5681458**	.0361089	15.73
5.	resource_rent	-.0030918**	.0009201	-3.36
6.	Tradeopen	.0006609**	.0003325	1.99
7.	Wgi	-1.207227**	.1729232	-6.98
8.	Polcon	.2898177**	.0454254	6.38
9.	Wages	-.0000317	.0000556	-0.57
10.	Skill	.0106226**	.0006992	15.19
11.	infrastructure	.1604991**	.0173507	9.25
12.	bilateral_prop	-.0235294**	.0093312	-2.52
13.	Constant	-2.29662	.0873142	-26.3
Step 2: IV 2SLS Regression on Bilateral FDI				T Statistic
14.	BIT	220.8933*	114.3304	1.93
15.	GDP	2.08e-10**	2.16e-11	9.63
16.	inflation	0.0096342	0164495	0.59
17.	NEER	-47.07433	30.64742	-1.54
18.	resource_rent	2.118514**	.467787	4.53
19.	tradeopen	-0.3039105*	.1591006	-1.91
20.	Wgi	314.3501**	93.84353	3.35
21.	polcon	94.91554**	26.18594	3.62
22.	wages	.1410463**	.0271403	5.2
23.	Skill	.3276644	.4445279	0.74
24.	infrastructure	-49.11016**	12.04226	-4.08
25.	bilateral_prop	238.584**	4.451389	53.6
	Constant	-180.8536	34.82083	-5.19

** and * indicate significance at 1% and 5% respectively

the marginal effects in the Probit model gives the derivative of the prediction function and the slope of the function can be greater than one, even if the values of the function are all between 0 and 1.

2.5.2 Impact of BITs on Aggregate FDI Flows

In the aggregate FDI model, market size (GDP and population) was found to be a very important determinant of FDI flows. High resource rents, infrastructure quality and good governance systems (WGI and Polcon) were all found to be significant and strong determinants of FDI flows.

Significant negative causality between FDI and inflation was also found. The impact of nominal exchange rates was found to be positive. This essentially implies that FDI flows to countries with a strong currency and with low inflationary pressures. This leads to the conclusion that FDI is attracted by countries with strong and stable domestic market economies. As the results also reveal a negative relation with trade openness, it seems that FDI comes in primarily to target domestic markets than use the host countries to export elsewhere.

As regards the various inputs for production, both wages and physical infrastructure were found to have a positive impact. As greater skills are generally embodied in higher paid workers, it seems to suggest that foreign investors value countries with skilled labour force.

Lastly, the BIT variable was found to be a significant determinant of aggregate FDI flows. The results seem to indicate that the marginal impact of a country signing an additional BIT on total FDI received is around USD 68 million per year. This figure encapsulates the improved credibility effects associated with BIT on total FDI flow, not just on the bilateral flow received from the BIT partner. Note that the total BITs include all BITs signed by the 41 developing countries with both developed and developing country partners. While this is not a very high sum, it shows the aggregate importance of signing BIT for the countries covered in the study. The high impact of signing North-South agreement as was seen in Section 2.5.1 is diluted to an extent with the large number of South-South agreements that were signed as well. On a comparative scale, South-South FDI is much lower.

Table 2.2: Model Run Results for Analysing BIT Impact on Aggregate FDI

	Variables	Coefficient	Standard Error	T statistic
Panel Regression on Aggregate FDI				
1.	BIT_Total lag	67.14919**	3.842707	17.47
2.	GDP	3.30e-08 **	3.46e-10	95.48
3.	population	.0000155**	2.46e-06	6.28
4.	inflation	-1.273986**	.1033081	-12.33
5.	NEER	1048.044 **	144.0859	7.27
6.	resource_rent	68.1782 **	6.332807	10.77
7.	tradeopen	-19.6141**	2.527129	-7.76
8.	wgi	29661.97**	1237.404	23.97
9.	polcon	4695.318**	213.5539	21.99
10.	wages	1.89106**	.2306854	8.20
11.	infrastructure	1581.897 **	152.4587	10.38
12.	Constant	-23144.92**	747.103	-30.98

Conclusions

There are both costs as well as benefits associated with signing BITs for developing countries. As an investment guarantee, the BITs serve to bridge the credibility gap for developing countries and help them attract more FDI than they could have done before. However, BITs are legal contracts and nuances of 'Fair and Equitable Treatment', 'MFN clauses' etc. seriously curb the sovereignty of the national governance systems with the threat of arbitration at each step.

Developing countries therefore need to reassess their BIT strategies and look at whether or not this has been fruitful in their case in attracting more FDI. In the 41 country sample that was looked at as part of the analysis, a strong positive relation between BITs and FDI inflows was found.

I used the treatment effects model to study the impact of signing of BITs by these 41 countries. This model was used because of the endogeneity of BIT with FDI flows that make its suitability as an explanatory variable very low. STATA 12.0 module on IVTREATREG was used for the analysis to divide up the estimation process into two steps. The first process was a Probit regression to collect information on the probability of countries entering into BITs. Using instruments, these results were thereafter used to determine the BIT impact on bilateral and aggregate FDI.

The results show that determinants of BITs and FDI are quite different. Countries with stronger histories of contract enforcement and investor protection were more likely to enter into BITs. Countries with larger skilled manpower, market size and poorer governance systems were also found to be more likely to enter into BITs. Stronger trade ties were also found to be an important determinant of whether a country would sign an agreement with a partner country or not.

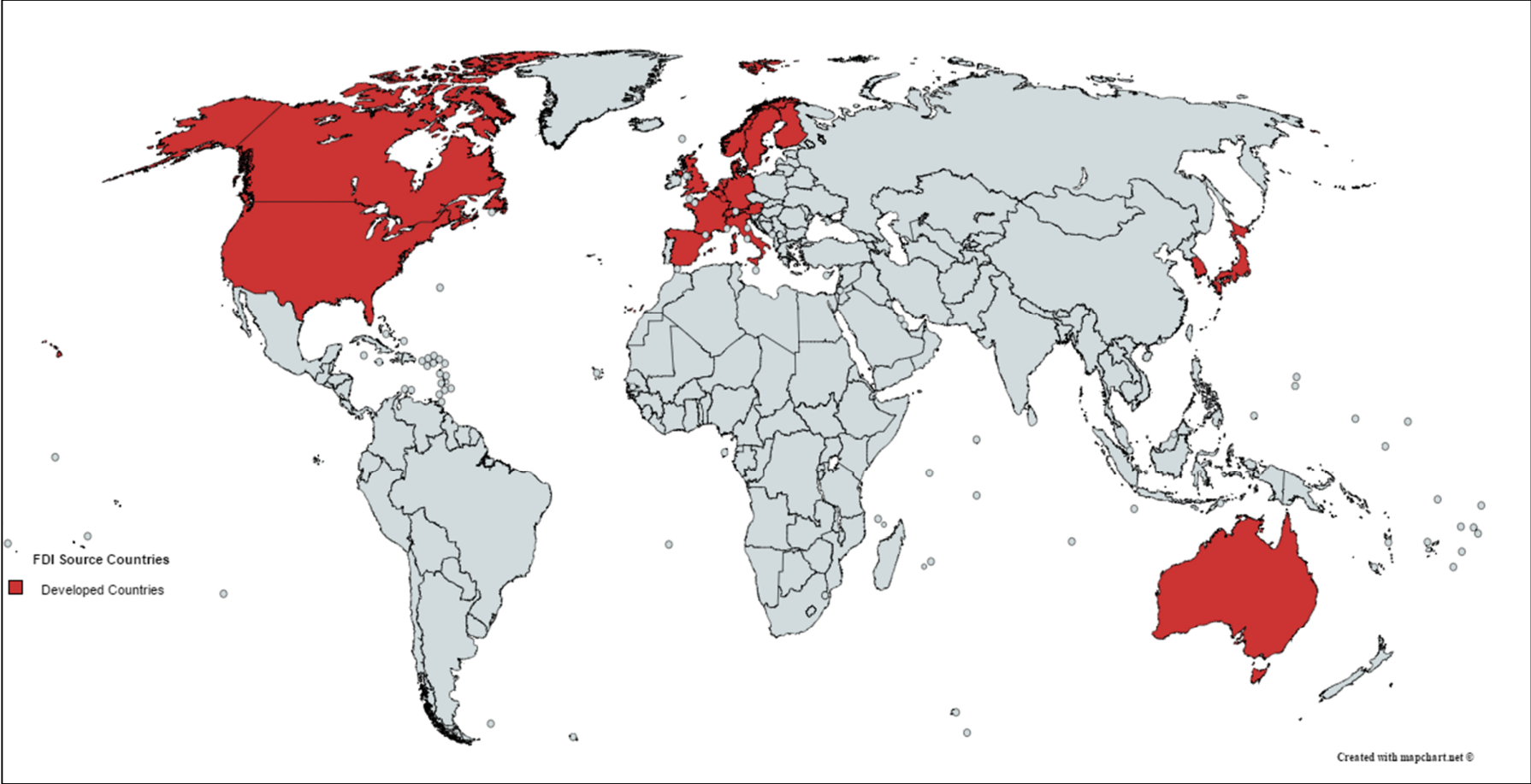
As regards determinants of FDI, the results showed there is a strong positive causal relationship between market size, resource availability, trade orientation, governance systems and FDI. Existence of strong trade ties were also found to be significant determinants. These results follow what is traditionally known about determinants of FDI. The one surprising result was related to the wage rates which showed higher wages to have a positive influence on bilateral FDI flows.

Lastly, the analysis results show that the marginal impact of signing an agreement could be as high as USD 220 million incremental FDI from the particular developed country partner and USD 68 million per BIT in aggregate. These are very significant sums and spell out the potential 'benefits' of entering into BITs for developing countries. It however needs mentioning that the higher volume of FDI need not in itself become a benefit. That depends on the net Balance of Payments effect of FDI investments, technology transfer outcomes, etc. These can be poor even when FDI volumes are large. These are delved into in greater detail in Chapter 4.

Annexure 2.1: List of Developed Countries

1. Australia
2. Austria
3. Belgium and Luxembourg
4. Canada
5. Denmark
6. Finland
7. France
8. Germany
9. Italy
10. Japan
11. Korea, Republic of
12. Netherlands
13. Norway
14. Spain
15. Sweden
16. Switzerland
17. United Kingdom
18. United States

Annexure 2.1: FDI Source Countries in Analysis Dataset (18 Countries)



Annexure 2.2: List of Developing Countries

1. Algeria
2. Angola
3. Argentina
4. Brazil
5. Bulgaria
6. Chile
7. China
8. Colombia
9. Congo, Republic
10. Costa Rica
11. Dominican Republic
12. Egypt
13. India
14. Indonesia
15. Iran, Islamic Republic of
16. Jordan
17. Kazakhstan
18. Lebanon
19. Libyan Arab Jamahiriya
20. Lithuania
21. Malaysia
22. Mexico
23. Morocco
24. Nigeria
25. Pakistan
26. Panama
27. Peru
28. Philippines
29. Romania
30. Russian Federation

31. Serbia
32. South Africa
33. Sudan
34. Thailand
35. Tunisia
36. Turkey
37. Turkmenistan
38. Ukraine
39. Uruguay
40. Venezuela, Bolivarian Republic of
41. Viet Nam

Annexure 2.3: STATA Treatment Effects Modelling Results

```
xi: ivtreatreg fdi_bilateral bit gdp inflation neer resource_rent tradeopen wgi
polcon wages skill infrastructure bilateral_prop, iv( fdiattract ) model (probit-
2sls)
```

```
Probit regression                               Number of obs   =    14,004
                                                LR chi2(11)     =    1607.93
                                                Prob > chi2     =     0.0000
Log likelihood = -8684.2539                    Pseudo R2       =     0.0847
```

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```

bit	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
fdiattract	1.209813	.1077905	11.22	0.000	.9985478	1.421079
gdp	1.49e-13	4.28e-14	3.48	0.001	6.50e-14	2.33e-13
inflation	-.0006873	.0000896	-7.67	0.000	-.0008629	-.0005117
neer	.5681458	.0361089	15.73	0.000	.4973738	.6389179
resource_rent	-.0030918	.0009201	-3.36	0.001	-.0048952	-.0012885
tradeopen	.0006609	.0003325	1.99	0.047	9.20e-06	.0013126
wgi	-1.207227	.1729232	-6.98	0.000	-1.54615	-.8683037
polcon	.2898177	.0454254	6.38	0.000	.2007856	.3788499
wages	-.0000317	.0000556	-0.57	0.569	-.0001407	.0000773
skill	.0106226	.0006992	15.19	0.000	.0092523	.011993
infrastructure	.1604991	.0173507	9.25	0.000	.1264923	.194506
bilateral_prop	-.0235294	.0093312	-2.52	0.012	-.0418182	-.0052405
_cons	-2.29662	.0873142	-26.30	0.000	-2.467753	-2.125488

```
-----
```

Instrumental variables (2SLS) regression

```
Source |          SS          df          MS      Number of obs   =    14,004
```

```

-----+-----
                                F(12, 13991)   =   274.15
      Model | 1.5227e+09          12  126894714  Prob > F      =   0.0000
      Residual | 5.5367e+09      13,991  395734.587  R-squared     =   0.2157
-----+-----
                                Adj R-squared =   0.2150
      Total | 7.0595e+09      14,003  504139.055  Root MSE     =   629.07

```

```

-----+-----
      fdi_bilateral |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----+-----
           bit |    220.8933   114.3304      1.93   0.053    -3.209458    444.9961
           gdp |     2.08e-10   2.16e-11      9.63   0.000     1.65e-10    2.50e-10
      inflation |     .0096342   .0164495      0.59   0.558    -.022609     .0418774
           neer |    -47.07433   30.64742     -1.54   0.125    -107.1474    12.99869
      resource_rent |    2.118514   .467787      4.53   0.000     1.201589    3.035439
      tradeopen |    -.3039105   .1591006     -1.91   0.056    -.6157689     .007948
           wgi |    314.3501   93.84353      3.35   0.001     130.4043    498.296
           polcon |    94.91554   26.18594      3.62   0.000     43.58761    146.2435
           wages |     .1410463   .0271403      5.20   0.000     .0878477     .194245
           skill |     .3276644   .4445279      0.74   0.461    -.5436696     1.198998
      infrastructure |   -49.11016   12.04226     -4.08   0.000    -72.7146    -25.50572
      bilateral_prop |    238.584   4.451389     53.60   0.000     229.8587    247.3093
           _cons |   -180.8536   34.82083     -5.19   0.000    -249.1071   -112.6001

```

```
-----+-----
Instrumented:  bit
```

```

Instruments:  gdp inflation neer resource_rent tradeopen wgi polcon wages
              skill infrastructure bilateral_prop G_fv

```

```
-----+-----
xtreg fdi_total ll.bit_total gdp population inflation neer resource_rent tradeopen
wgi polcon wages infrastructure, fe
```

```

Fixed-effects (within) regression      Number of obs   =   14,724
Group variable: cdfin                 Number of groups =     738

R-sq:                                Obs per group:
    within = 0.6426                    min =          18
    between = 0.7553                   avg  =         20.0
    overall = 0.6743                    max  =          20

                                         F(11,13975)    =   2283.95
corr(u_i, Xb) = -0.7506                 Prob > F       =     0.0000

```

```

-----
      fdi_total |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-----+-----
      bit_total |
          L1.   |   67.14919   3.842707    17.47  0.000    59.61697    74.68141
          |
          gdp   |   3.30e-08   3.46e-10    95.48  0.000    3.23e-08    3.37e-08
      population |   .0000155   2.46e-06     6.28  0.000    .0000106    .0000203
          inflation |  -1.273986   .1033081   -12.33  0.000   -1.476484   -1.071489
          neer   |  1048.044    144.0859     7.27  0.000    765.6162    1330.471
      resource_rent |   68.1782    6.332807    10.77  0.000    55.76505    80.59135
          tradeopen |  -19.6141    2.527129    -7.76  0.000   -24.56761   -14.66059
          wgi    |  29661.97    1237.404    23.97  0.000   27236.49    32087.45
          polcon |  4695.318    213.5539    21.99  0.000    4276.724    5113.913
          wages   |   1.89106    .2306854     8.20  0.000    1.438886    2.343235
      infrastructure |  1581.897    152.4587    10.38  0.000    1283.057    1880.736
          _cons   | -23144.92    747.103    -30.98  0.000  -24609.34   -21680.5
-----+-----
      sigma_u   |  7426.3116
      sigma_e   |  4158.1905
          rho    |   .7613143   (fraction of variance due to u_i)
-----

```

```

F test that all u_i=0: F(737, 13975) = 7.12          Prob > F = 0.0000

```

Chapter 3: Bilateral Investment Treaties and International Investment Rulemaking

3.1 Background

The basic provisions of a BIT typically guarantee certain standards of treatment for the foreign investor. By entering into a BIT, signatories agree to grant certain standard conditions such as national treatment and most-favored nation treatment to the partner. They also agree to guarantee certain minimal standards such as fair and equitable treatment for foreign investors in accordance with international practices after the investment has taken place. BITs typically ban discriminatory treatment of foreign investors and include guarantees of compensation for expropriated property or funds, and free transfer and repatriation of capital and profits. Further, the BIT parties agree to submit to binding dispute settlement, should a dispute concerning these provisions arise (Neumayer and Spess, 2005).

These provisions secure some of the basic requirements for credible protection of property and contract rights that foreign investors look for in host countries. They should also protect foreign investors against political and other risks prevalent in many developing countries (Neumayer and Spess, 2005). Some of the most important investment provisions that appear in BITs are examined below.

It is important to note that for the period for which data have been analysed, i.e. 1990-2010, two clear timelines show up. The time period from the 1990s to 2007 have been identified by many as the 'era of proliferation'. Data show that while only 381 BITs existed at the end of the 1980s, their number increased manifold to reach 2923 by end of 2015. Following the deadlock at the multilateral level, most countries entered into BITs as a necessary step towards facing the global competition for foreign investment. However, with the global crisis and rapid increases in the number of ISDS cases¹⁰, many countries were forced to reconsider their stance regarding future BITs. The period from 2008 onwards has been termed by some to be an 'era of re-orientation'. Thus, an enquiry into BIT design and degree of restrictiveness built into the

¹⁰The number of ISDS cases rose sharply from 326 in 2008 to 608 at the end of 2014, involving both developed and developing countries as defendants (UNCTAD, 2015). Many of these investment disputes challenged the often thin line of demarcation between permitted regulatory activities of the State and illegal interference with investor rights for which compensation has to be paid.

framework needs to be made in the current context to look at areas that are problematic and need an overhaul.

3.2 Critical Aspects of BIT Design

A. Scope of the agreement

The nature of the investment provisions in a BIT is contained in its definitions (especially of investment and investor), its operational provisions, and the general exceptions and special exceptions it grants

B. Investment Liberalization

“Investment liberalization provisions are those that reduce or eliminate barriers to the entry, establishment and operation of cross-border investment. BITs contain either of two different provisions intended to remove legal and policy barriers to cross-border investment flows. The first is a provision that typically provides for rights of entry and establishment for investment in at least certain sectors of the economy. The second is a market access provision that generally provides for a right to provide services in at least certain sectors through a commercial presence in the host country” (UNCTAD, 2006).

Some BITs also have provisions that intend to remove informational barriers to entry. These are provisions that require the host country to make available certain information about the investment climate in its territory or transparency provisions (UNCTAD, 2006). For example, the Canada-Ukraine BIT (1995) states that: *“Each Contracting Party shall, to the extent practicable, ensure that its laws, regulations, procedures, and administrative rulings of general application respecting any matter covered by this Agreement are promptly published or otherwise made available in such a manner as to enable interested persons and the other Contracting Party to become acquainted with them.”*

In addition, BITs that seek to liberalize investment flows usually contain provisions intended to grant free transfer of funds related to such investment. Provisions allowing for entry of

foreign personnel in relation to the investment, and those proscribing the imposition of performance requirements, are also associated with investment liberalization through BITs.

Host countries sometimes impose requirements on foreign investment that are intended to influence the economic impacts of the investment. These are often referred to as “performance requirements”. In many cases, performance requirements are imposed as a condition for permitting entry to these investments. In many cases these requirements are also imposed as a condition to qualify for certain incentives (UNCTAD, 2006).

C. Investment protection

Protection standards in a BIT further the goal of establishing a favourable investment climate, but restricts the parties' future discretion in regulating foreign investment or promoting local investment.

In this regard, UNCTAD (2006) document looking into Investment Provisions in various Economic Integration Agreements states that “Provisions that protect investment may use either relative or absolute standards. The relative standards generally require non-discrimination as between covered investment and certain other investments. The absolute standards may be intended to protect investment generally or they may be intended to protect investment against only certain specified actions, such as expropriation or restrictions on intellectual property rights. Typically, these latter standards are intended to protect the ownership or beneficial use of the investment against political risk” (UNCTAD, 2006).

D. Investment Promotion

A fourth set of investment issues addressed in BITs concerns investment promotion. Many BITs, especially BITs between countries at different levels of development, or between developing countries, include provisions requiring the parties to take steps towards promoting investment flows among themselves. Investment promotion provisions in BITs may be analysed according to several characteristics, which include the “nature of the

obligation assumed, the intended beneficiary of the promotion efforts and the party upon whom the obligation is placed” (UNCTAD, 2006).

E. Investment Regulation

A fifth set of policy issues involves investment regulation. BITs often include provisions intended to regulate investment such as provisions to limit practices that restrict or distort competition. Provisions regulating restrictive business practices appear in many BITs signed by the European Community, as well as bilateral free trade agreements modelled on the NAFTA design. The breadth and depth of these provisions obviously vary between different agreements (UNCTAD, 2006).

3.3 Potentially Contentious Issues in Treaty Clauses

At their own expense, many developing countries have realized that BITs are legally binding instruments and not harmless political declarations. Broad and vague formulations of BIT provisions drafted during the era of proliferation have allowed investors to challenge sovereign policy decisions and has led to a surge in the number of ISDS cases filed. Even in the litigation process, the language used in BITs has been interpreted differently by arbitral tribunals which has led to inconsistencies and confusion about what BITs actually require from States. There is a widely held view that treaty provisions need to be clear and detailed with foresight regarding their potential legal implications. Many countries have therefore released their versions of a Model BIT that details the clauses and their applicability in different situations.

A. Definition of investment

The definition of “investment” in BITs, combined with the substantive provisions, has profound developmental implications, because it defines their scope and reach. For developing countries the key issue is whether investment is defined narrowly, focusing on FDI, or broadly, including virtually every asset connected with foreign investors. While developing countries have indicated a preference for a narrow definition in the discussions of the WTO Working Group on the Relationship between Trade and Investment, the trend in Investment agreements has been towards a broad asset based definition (UNCTAD, 2003).

An example of a broad definition of investment is as follows (APEC and UNCTAD, 2012):

“Investment means every kind of assets invested by investors of a Party in the territory of the other Party and shall include in particular, though not exclusively:

a. movable and immovable property as well as any other rights, such as mortgages, liens, pledges, usufructs and similar rights;

b. stock, shares, debentures and other forms of participation in companies;

c. claims to money and claims to performance;

d. intellectual property rights;

e. rights to engage in economic and commercial activities conferred by law or by virtue of a contract, including concessions to search for, cultivate, extract or exploit natural resources.”

- Jordan-Singapore BIT (2004)

B. National Treatment

National treatment can be defined as “ a principle whereby a host country extends to foreign investors treatment that is at least as favourable as the treatment that it accords to national investors in like circumstances (UNCTAD, 1999)”. This principle of non-discrimination may be applied in both the pre-establishment phase and the post-establishment phase. For developing countries national treatment in the post-establishment phase is more widely accepted since in this case the governments preserve their right to control FDI admission and establishment in investment agreements (UNCTAD, 2003). However, in many cases agreements containing pre-establishment national treatment are also being signed. Many countries are also opting for including exceptions to the scope of National Treatment obligations.

To illustrate the above, following are two examples of national treatment clauses included in BITs. Note the exceptions to the NT clause included in the Belarus-Mexico BIT.

“Each Contracting Party shall in its area accord to investors of the other Contracting Party and to their investments treatment no less favorable than the treatment it accords, in like circumstances, to its own investors and to their investments with respect to investment activities.”

- Kuwait-Japan (2012)

“Articles 3 [National Treatment] and 4 shall not be construed so as to oblige one Contracting Party to extend to the investors of the other Contracting Party and their investments the benefits of any treatment, preference or privilege which may be granted by such Contracting Party by virtue of:

(a) any existing or future regional economic integration organization, free trade area, customs union, monetary union or any other similar integration arrangement, of which one of the Contracting Parties is or may become a party;

(b) any rights or obligations of a Contracting Party resulting from an international agreement or arrangement relating wholly or mainly to taxation. In the event of any inconsistency between this Agreement and any tax-related international agreement or arrangement, the latter shall prevail.”

- Belarus-Mexico BIT (2008) (Source: APEC and UNCTAD, 2012)

C. Most Favored Nation Clause

Most Favored Nation clauses aim to prevent less favourable treatment of investors from the signatory State vis-à-vis comparable investors from any third country (i.e. nationality-based discrimination). The MFN principle thereby aims to ensure a level playing field between investors of different foreign nationalities. In actual ISDS practice, investors have very frequently invoked the MFN clause to access more “investor-friendly” provisions in BITs concluded by the host State with third countries. Several tribunals have deemed this circumvention possible in cases involving broadly drafted MFN clauses in which the claimant

has been able to point to a BIT signed by the host State in which the said requirements were absent. Application of MFN clauses in this way potentially result in investors “cherry picking” the most advantageous clauses from different treaties concluded by the host State.

An example of the clause is presented below (APEC and UNCTAD, 2012):

“Each Contracting Party shall accord to investors of the other Contracting Party treatment no less favorable than that it accords, in like circumstances, to investors of any third State with respect to the operation, management, maintenance, use, enjoyment or disposal of investments.”

- China-Mexico BIT (2008) (Source: APEC and UNCTAD, 2012)

D. Fair and Equitable Treatment

The meaning of the “fair and equitable treatment” standard has become an issue in recent investment agreements. More precisely, the issue is whether the fair and equitable treatment standard incorporates the international minimum standard required by customary international law or whether it imposes other, possibly more stringent, obligations on the host developing country. In fact, almost all ISDS cases to date have included an allegation of an FET breach.

In recent times the use of the FET standard to protect investors’ “legitimate expectations” has also increased. Given the potentially far-reaching application of the concept of “legitimate expectations”, there is a concern that the FET clause can restrict countries’ ability to change investment-related policies or introduce new policies if they have a negative impact on individual foreign investors.

To illustrate a common FET clause included in BITs:

“Investments made by investors of each Contracting Party shall at all times be accorded fair and equitable treatment, and shall enjoy full protection and security in the territory of the other Contracting Party.”

- Costa Rica-Republic of Korea BIT (2000)

E. Nationalisation and Expropriation

Nationalisations and expropriations (“takings of property”) are the oldest issue in FDI regulation.

Capital exporting countries seek to ensure through investment agreements that an expropriation would be lawful only if it was for a public purpose, non-discriminatory, consistent with due process, and accompanied by compensation, generally at fair market value. These basic principles have been universally accepted, and for many countries these stand as the legal basis for their national laws and practices. Until recently, the main controversy was over the precise compensation payable on nationalization or expropriation. New issues have subsequently cropped up such as how should indirect takings, including so-called “creeping expropriation” and “regulatory takings”, be covered by protection standards (UNCTAD, 2003). However, most agreements are still unclear about what degree of interference with the rights of ownership is required for an act or series of acts to constitute an expropriation. Acts that only partially devalue an investment, however, may be viewed by the host country as merely routine regulatory acts that may not be the equivalent of an expropriation (UNCTAD, 2006). There is thus the need to draw the borderline between expropriation (for which compensation must be paid) and legitimate public policy-making (for which no compensation is due).

To avoid this issue, many of the recent BITs limit the cases for protection required against indirect expropriation by establishing criteria that need to be met in order for an indirect expropriation to be found. These include reference to (i) the economic impact of the government action; (ii) the extent of government interference; or (iii) the character of the government action (e.g. whether it is discriminatory or disproportionate to the purpose of the measure under challenge).

The Japan-Peru BIT puts forth the conditions under which expropriation is ‘allowable’ and the equivalent compensation that needs to be paid following the expropriation (APEC and UNCTAD, 2012):

“1. Neither Contracting Party shall expropriate or nationalise investments in its Area of investors of the other Contracting Party directly or indirectly through measures equivalent to expropriation or

nationalisation (hereinafter referred to as "expropriation") except: (a) for a public purpose; (b) in a non-discriminatory manner; (c) upon payment of prompt, adequate and effective compensation pursuant to paragraphs 2, 3 and 4; and (d) in accordance with due process of law and Article 5.

2. The compensation shall be equivalent to the fair market value of the expropriated investments at the time when the expropriation was publicly announced or when the expropriation occurred, whichever is earlier. The fair market value shall not reflect any change in value occurring because the expropriation had become publicly known earlier.

- Japan-Peru BIT (2008)" (Source: APEC and UNCTAD, 2006)

F. Dispute Settlement

The two key issues in dispute settlement concern the role of investor-State procedures in future Investment agreements and the extent to which the investment dispute settlement process is self-contained. Earlier BITs concentrated more on State-State dispute settlement provisions, but investor-State procedures are being increasingly stressed upon as well. That raises fears of frivolous or vexatious claims that could inhibit legitimate regulatory action by governments (UNCTAD, 2003).

A common element in BITs is to set a time limit for mutual negotiations in cases of dispute, beyond which the injured party can move the case to an international arbitral tribunal (APEC and UNCTAD, 2012). To illustrate,

"If a dispute involving the amount of compensation resulting from expropriation, nationalisation, or other measures having effect equivalent to nationalisation or expropriation, mentioned in Article 6

[Expropriation] cannot be settled within six months after resort to negotiation as specified in paragraph (1) of this Article by the investor concerned, it may be submitted to an international arbitral tribunal established by both parties.

- Mauritius-Swaziland BIT (2000)" (Source: APEC and UNCTAD, 2012)

G. Performance Requirements

Performance requirements can be an important policy tool to enhance the benefits of inward FDI, so developing countries seek to preserve their right to use them. Host countries sometimes impose requirements on foreign investment that are intended to mandate the behavior of investments in order to shape their economic consequences. But developed countries associate them with interventionist strategies of the past and question their effectiveness (UNCTAD, 2003).

The following example lists out the specific performance requirements that were not permitted as part of this particular agreement:

“Neither Party may impose or enforce any of the following requirements, or enforce any commitment or undertaking, in connection with the establishment, acquisition, expansion, management, conduct or operation of an investment of an investor of a Party or a non-Party in its territory:

(a) to export a given level or percentage of goods;

(b) to achieve a given level or percentage of domestic content;

(c) to purchase, use or accord a preference to goods produced or services provided in its territory, or to purchase goods or services from persons in its territory;

(d) to relate in any way the volume or value of imports to the volume or value of exports or to the amount of foreign exchange inflows associated with such investment;

(e) to restrict sales of goods or services in its territory that such investment produces or provides by relating such sales in any way to the volume or value of its exports or foreign exchange earnings;

(f) to transfer technology, a production process or other proprietary knowledge to a person in its territory, except when the requirement is imposed or the commitment or undertaking is enforced by a court, administrative tribunal or competition authority, to remedy an alleged violation of competition laws or to act in a manner not inconsistent

With other provisions of this Agreement; or

(g) to supply exclusively from the territory of the Party the goods it produces or the services it provides to a specific regional market or to the world market.”

- Canada Model BIT (2004)

H. Transfers of funds

A common provision in investment agreements guarantees to investors the right to transfer their investment and any returns from their investment into a freely convertible or freely usable currency. Some investment agreements specify in more detail the kind of transfers protected by the agreement. In some cases the provision applies to transfers into, as well as out of, the host country. That is, it creates a right not only to repatriate capital but also to bring capital into the host country's territory. Once an investment has been established, the investor has the right to transfer funds relating to the investment into the territory. Transfer provisions in investment agreements may raise serious concerns on the part of host countries. To illustrate, "...an investor may seek to transfer a large sum at a time when foreign exchange reserves are low, thereby depleting exchange reserves needed for other purposes. Another concern is that permitting free transfers might result in massive capital flight during times of economic difficulty, thus exacerbating the host country's problems" (UNCTAD, 2006). For these reasons, recent agreements often limit the right of free transfers and outline conditions under in which free transfers might be regulated.

The following provides an example of the payments that are generally permitted a free transfer. Noteworthy are the exceptions to free transfer mentioned in the Mexico-UK BIT as well (APEC and UNCTAD, 2012).

“Each Contracting Party shall ensure that all payments relating to an investment in its territory of an investor of the other Contracting Party may be freely transferred into and out of its territory without delay. Such transfers shall include, in particular, though not exclusively:

a) the initial capital and additional amounts to maintain or increase an investment;

b) returns;

c) the amounts required for payment of expenses which arise from the operation of the investment under contract, loan repayments, payment of royalties, management fees, licence fees or other similar expenses;

d) proceeds from the sale or liquidation of all or any part of an investment;

e) payments of compensation under Article 5 and 6 of this Agreement;

f) payments arising out of the settlement of an investment dispute;

g) earnings and other remuneration of personnel engaged from abroad in connection with an investment.

- Croatia-Thailand BIT (2000)" (Source: APEC and UNCTAD, 2012)

"In case of a serious balance of payments difficulty or of a threat thereof, a Contracting Party may temporarily restrict transfers provided that such a Contracting Party implements measures or a programme in accordance with international standards. These restrictions should be imposed on an equitable, non-discriminatory and in good faith basis.

- Mexico-UK BIT (2006)" (Source: APEC and UNCTAD, 2012)¹¹.

3.4 Quality of BITS: An Analysis of BIT Provisions across Developing Countries

Most BITs at their core contain variations of the following treaty clauses. While the following have been outlined for a generic treaty, subsequent sections highlight the interesting facets of treaty drafts identified for key developing countries.

- Article 1: Definitions

This article gives the legal definition for terms such as "Companies", "Investment", "Investors", "Nationals", "Returns" and "Territory".

- Article 2: Scope of the Agreement

¹¹ Available at http://investmentpolicyhub.unctad.org/Upload/Documents/UNCTAD_APEC%20Handbook.pdf?

The scope states the applicability of the agreement clauses.

- Article 3: Promotion and Protection of Investment

It states that both parties would accord fair and equitable treatment and full protection and security to both investments and investors in its territory.

- Article 4: National Treatment and Most Favoured Nation Treatment

It states that national as well as most favoured nation treatment would be accorded to investors of the contracting party. This would accrue with respect to benefits with respect to operation, management, maintenance, use, enjoyment or disposal of investment.

- Article 5: Expropriation or Nationalisation

It defines in a situation of expropriation or nationalization or measures having effect equivalent to expropriation, the equivalent compensation that needs to be provided.

- Article 6: Compensation for Losses

It states that in the situation of war or other armed conflicts, national emergency or civil disturbances, in which substantial losses are incurred, the compensation paid should be no less favourable than that paid to a third country.

- Article 7: Repatriation of Investment and Returns

Allows for free transfer of capital, net operation profits, loan repayments, royalties, proceeds from sale of shares, proceedings from liquidation, etc.

- Article 8: Subrogation

It recognises the right of the other to assert the claims of its investors by virtue of subrogation in case that one of the contracting parties gives the guarantee of indemnity against non-commercial risks.

- Article 9: Investment Disputes

It states that in the case of disputes the parties may refer such dispute to arbitration in accordance with the United Nations Commission on International Trade Law (UNCITRAL) rules. The decision of the arbitral tribunal would be final and binding. Each party would have to bear the cost of its own arbitration and its representation in the arbitral proceedings.

- Article 10: Applicable Laws

It establishes that all investments would be governed by the laws prevailing in the territory in which investment is made.

- Article 11: Duration and Termination

It defines the duration for which the agreement would remain in force. For most agreements, this period was 10 years.

3.5 Analysing Quality of Bilateral investment Treaties

3.5.1 Variations in Treaty Drafts

In the previous chapter, FDI flow patterns for a select set of developing countries was looked at following the signing of a BIT. The patterns referred to dyadic FDI flows between 18 developed countries and 41 developing countries. Continuing with the same set of developing countries, a small sample is chosen from each continent to take a qualitative look at treaty provisions, and differentiate, if possible, between the provisions contained in North-South and South-South Agreements.

The countries for this particular analysis (see Annexure 3.1) are selected based on two criteria. First, to make the sample more regionally dispersed, two countries were selected from each continent. However, this would have meant that many of the other larger economies (specifically Asian) would have been excluded from the analysis. Thus, a second group of countries were also selected that recorded receiving FDI of more than 10 billion annually on an average in the period 1990-2010. The countries that were selected were the following:

Tier 1: Countries with FDI around than 10 billion annually

China, Mexico, Russia, India

Tier 2: By Continent

Asia: Thailand, Malaysia

America: Argentina, Chile

Africa: Egypt, South Africa

Central and Eastern Europe: Romania, Ukraine

3.5.2 BIT Quality Indicators and Index Creation

There already exists some amount of work in the literature that looks at the qualitative aspects of BITs and seeks to quantify it. There are studies that include dummies for stringent dispute settlement (Berger et al., 2010) and advanced investment protection provisions (Te Velde and Bezemer, 2008). Leshner and Miroudot (2005) also provide a coding of investment provisions in RTAs and use it to analyse impacts on FDI inflows. However, in the current study, I combine elements of the BIT quality as determined by the Chaisse and Bellack index and the Haslam index (explained below) to construct a more comprehensive index analyzing BIT quality.

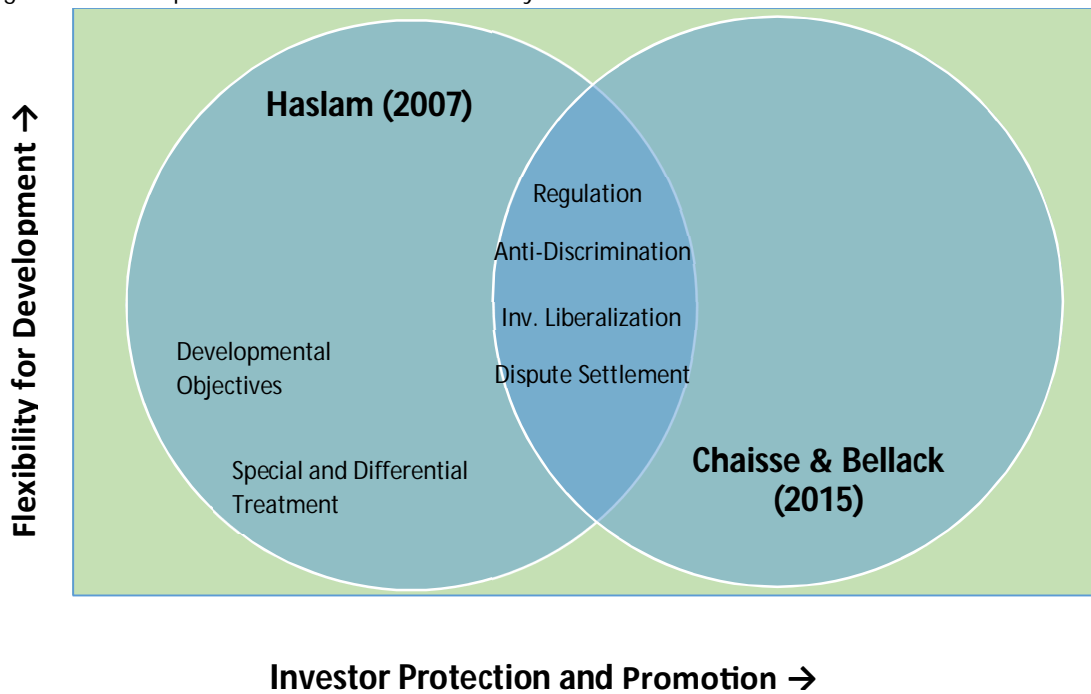
The work on the quality of BITs (also called the BITSEL index) by Chaisse and Bellack (2011) involved developing a set of qualifiers to classify them into restrictiveness categories. They included the following provisions for rating various BITs on their quality- (i) the definition of investment, (ii) admission for foreign investment, (iii) national treatment, (iv) most favored nation, (v) expropriation and indirect expropriation, (vi) fair and equitable treatment, (vii) transfer of investment-related funds out of the host state provision, (viii) non-economic standards, (ix) investor-state dispute settlement mechanism, (x) umbrella clause, and (xi) temporal scope of application. While commendable, their work does not comment on what constitutes a normatively 'good' treaty based on the implications that these agreements might have for signatory countries. The index quantifies agreements based on the existence and stringency of each of above 11 treaty provisions.

Another important index evaluating International Investment Agreements (IIAs) developed by Paul Alexander Haslam (2007) bases its assessment on the UNCTAD's concept of 'flexibility for development' that an agreement grants to its signatory countries. UNCTAD'S 'flexibility' refers to enhanced room for manoeuvre for government policy-making and in essence captures the divided interests of the host state and the foreign government with respect to investment protection and regulatory control. UNCTAD develops the concept of 'flexibility' based on four categories: "the objectives of the treaty, the structure of the treaty in terms of its embrace of non-reciprocal or 'special and differential' treatment for the developing country signatory, the meaning of its substantive provisions, and the application of the treaty" or its legal force (Haslam, 2007). Haslam's Index (2007) translates these four concepts of flexibility into specific indicators and trigger words or phrasings found in the text of the BITs. Since the index gives preference to understanding the developmental concerns of countries, it includes provisions that reflect 'special and differential treatment' for developing countries as well as developmental objectives.

There is also a normative basis for rating treaties higher depending on how well they serve developing country interests. The Haslam index quantifies treaties on a four point ordinal scale where 0 reflects very inflexible provisions contained in the text, while 3 is allocated to flexible provisions that give lot of policy space. The intervening two scales i.e. 1 and 2, are assigned to provisions based on how close they are to the above two extremes.

These two studies are diagrammatically represented in Figure 3.1 below. It clearly showcases the common elements between the two indices as well as the additions exclusive to the Haslam index. Note that the rankings/scoring of the two indices run diametrically opposite to each other. In other words, an agreement that contains more stringent clauses on investment regulation or anti-discrimination, will score high on the Chaisse and Bellack Index and low on the Haslam Index.

Figure 3.1: Comparison of the Two BIT Quality Indices



It needs mentioning that both of the above studies give equal weights to indicators contained in their proposed indices. Any study that seeks to look at the quality or stringency of particular clause of an agreement, also needs to understand the relative importance of the clause (as reflected by the weights) in the larger schema of treaty drafting/investment rulemaking. This becomes even more essential when studying the impact of clauses on developing countries.

Basing the index design from the indicators suggested by Haslam (2007) and Chaise and Bellack (2015) and imputing differential weights for clauses that specifically reflect developing country concerns, an index of BIT quality can be constructed¹². Table 3.1 below presents the indicators as well as relative weights that I consider for my analysis.

¹²Note that both of these bodies of work pertain to only agreements drafted in English. Thus for this analysis, each of the Non-English treaty texts (Spanish, French, Arabic, German, Russian, Italian, etc.) for the selected countries were translated to English using Optical Character Recognition (OCR) software and translation software.

Table 3.1: BIT Quality Indicators (Developmental Objectives) and Index Weights

	Categories of Flexibility	Explanation	Indicators	Sub-Groups
1.	Objectives (5%)	Recognition of Developmental Needs	Text of Preamble (5%)	(1) Text of Preamble (5%)
2.	Substantive Provisions (60%)	Do the provisions of the treaty permit policy flexibility	Investment Liberalization (30%)	(2) Investment Definition (5%)
				(3) Admission (5%)
				(4) Transfer of funds (10%)
				(5) Performance Requirements (5%)
				(6) Promotional Measures (5%)
			Anti-discrimination (15%)	(7) MFN & NT (5%)
				(8) FET (10%)
			Regulatory Control (15%)	(10) Expropriation (7.5%)
				(11) Compensation (7.5%)
			3.	Application (15%)
(13) Normative Force of the Agreement (5%)				
4.	Special and Differential Treatment (20%)	Extent to which the agreement provides flexibility and non-reciprocity in application for developing countries	Limitations (20%)	(14) Limitations in treaty provisions (15%)
				(15) Limitation in temporal application (5%)

Source: Haslam (2007), with additional weights added by Author

The weight assigned to each indicator has been chosen based on how important an indicator is to the ultimate goal of “flexibility for development”. The group of indicators under the ‘special and differential treatment’ head have thus been given a high weight. Higher weights have also been given to critical BIT clauses discussed in earlier sections. This group of critical indicators includes dispute settlement provisions, flexibility in fair and equitable treatment provisions, transfer of funds, etc.

3.5.3 BIT Quality Results and Comparisons

For the comparison of BIT quality and constructing the index mentioned above, a total of 302 agreements were studied in total. These included 165 North-South agreements that the 12 sample countries entered into with developed countries¹³ and 137 South-South agreements with 41 developing country partners¹⁴. Each of these agreements were read and coded into the BIT quality index criteria mentioned earlier. Annexure 3.2 provides details of the coding criteria used as part of the analysis.

3.5.4 Overview of Results

Figure 3.2 provides an overview of the BIT quality numbers derived from the analysis. The scatter diagram draws a distinction between the North-South and South-South Agreements as denoted by differently colored markers. Trend lines have also been added in the graph to show the temporal movement of BIT quality. This graph brings to light a number of salient points that characterize the experience of developing countries while entering into BITs.

1. A large number of BITs were entered into in the 1990s as denoted by the sheer magnitude of colored dots shown to exist in that time period. The number of agreements has since then i.e. in the 2000s, significantly declined. Though the trend of signing agreements started in the 1950s, the earliest agreement that was included in the sample was ratified in July 1963.
2. From an intertemporal trend perspective, a gently upward sloping curve can be seen. This can be interpreted as flexibility to development increasing overtime. However, it can also be said that a number of countries are entering into 'template' agreements with minimal level of deviations from one partner country to the next.
3. As regards the difference between North-South(NS) and South-South Agreements (SS), two trends can be discerned:
 - a. Most developing countries entered into NS agreements in the earlier time periods. However with many large developing countries turning into net

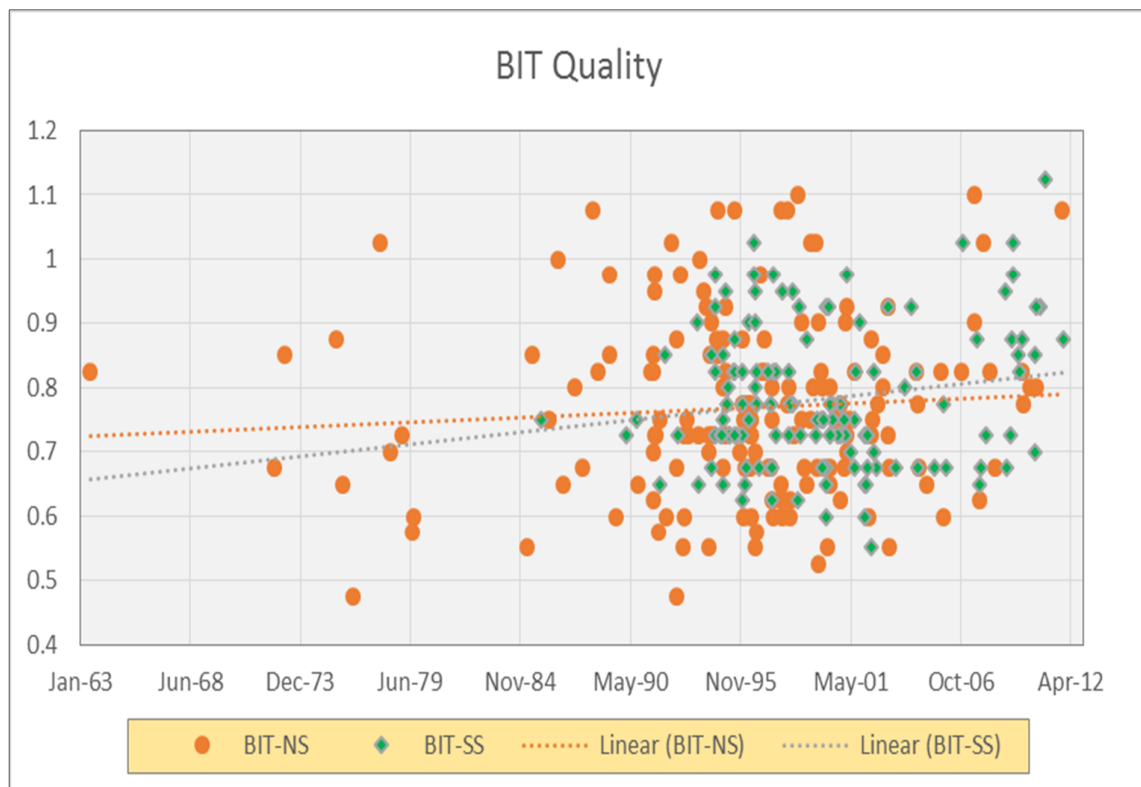
¹³Developed Countries set included from Chapter 3- 16 countries

¹⁴Developing country partners listed in Chapter 3- 41 countries

capital exporting countries, the number of SS agreements are seen to be increasing in later periods.

- b. There are very high degrees of variation in BIT quality for NS agreements. There were a number of agreements that scored low on the quality index, but there were a significant number that scored very high as well.
- c. On a comparative scale, SS agreements showed a much lower level of variation. The markers for SS agreements are thus seen to be scattered closer together. However, the mode value of the distribution¹⁵ was 0.725 which was much higher than the mode value of 0.675 noted for NS agreements. This implies that in terms of flexibility, the SS agreements scored higher.

Figure 3.2: BIT Quality observed in Sample Set of Agreements



Source: Author's Calculation

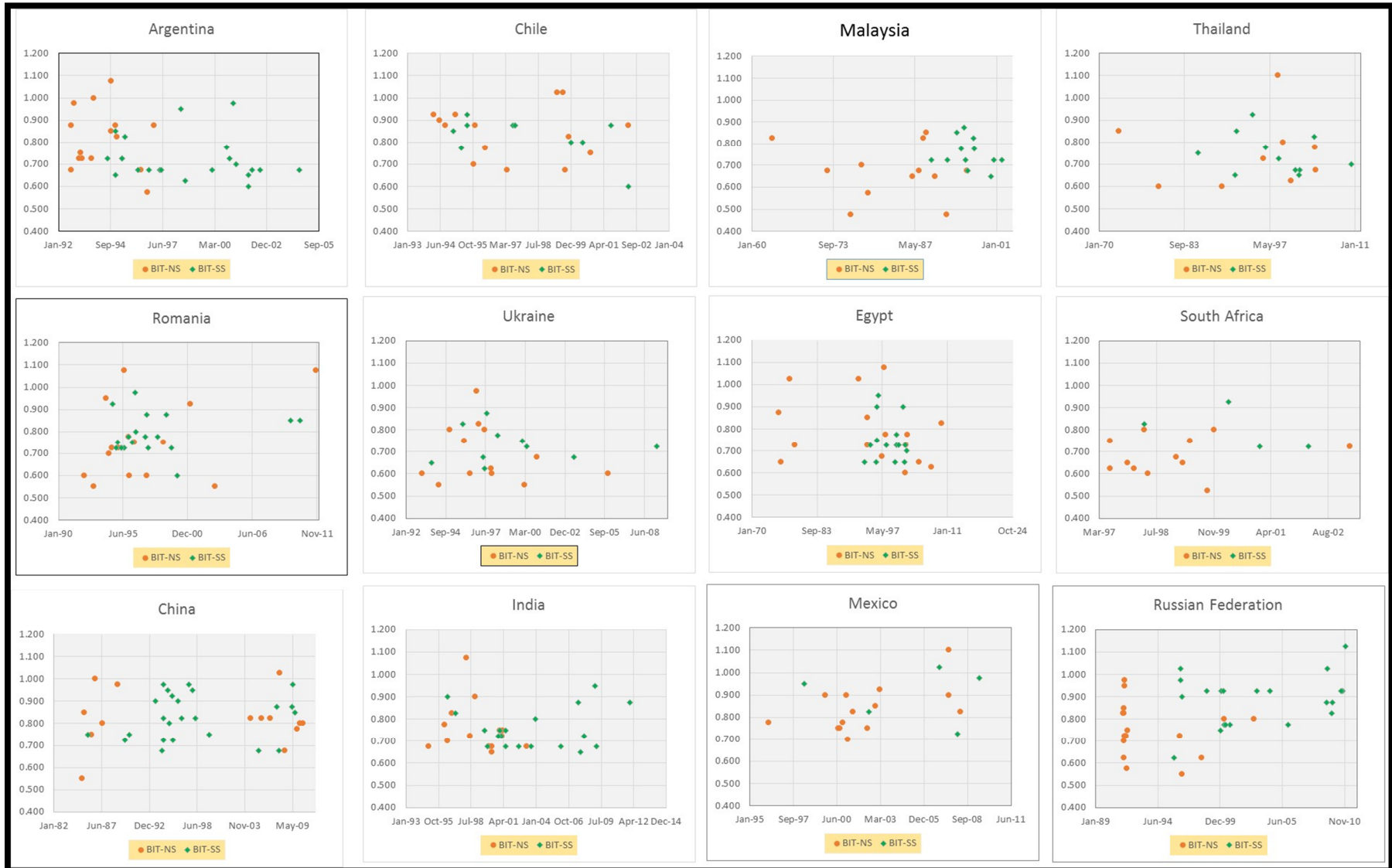
¹⁵ The mode is the value that appears most often in a set of data, i.e. the value that is most likely to be sampled.

Country Storylines

Disaggregated figures for individual sample countries are presented in Figure 3.3. Similar to the conclusions emerging from a comprehensive overview of all agreements, the salient points that emerge from the country-specific analyses are as follows:

1. A number of countries (Chile, Thailand, Ukraine, South Africa, Mexico and India) followed the 'template' agreement approach. In other words, there were little differences in agreements signed with partner countries, be it developed or developing countries. This is shown by the remarkable lack of variation in the quality index values. Since all BITs are negotiated texts with potential risk of arbitration from inadequately specified treaty clauses, this similarity is remarkable. Note however, that even though countries signed 'template' agreements, variations exist between countries as reflected by individual quality index values. To illustrate, almost all Mexican agreements had similarly worded meticulously detailed provisions for dispute settlement. This is different from the Chilean agreements that had milder dispute settlement provisions but included much more detailed requirements necessary for the transfer of funds.
2. Traditionally BITs were signed with developed countries to ensure security of capital invested. However, with increasing amounts of outward FDI flows from developing countries, a number of South-South agreements are being signed as well. This trend is most visible in the data from India, Russian Federation, Argentina and Malaysia.
3. An interesting variation emerging from the country groups is that some countries such as India and China seem to have emphasized S-S agreements, whereas others like Mexico and South Africa seem to have emphasized N-S BITs. Many seem to have a more equal distribution.
4. Despite the BIT templates mentioned earlier, many agreements included a protocol that explained in greater detail the specific conditions under which a specific clause was applied. This section was useful as it contained details, in many cases, of the special and differential treatment accorded to the specific developing country partner(s). It discussed the rules and regulations that would be applicable for investments falling in the ambit of the BIT.

Figure 3.3: Country-wise Details for Quality of BITs Signed



Figures 3.4 and 3.5 below provide an aggregate picture of what an average agreement signed by the 12 sample developing countries looked like. The computation has been done separately for both N-S and S-S agreements signed by them. Also, some of the indicators have been moved around and clubbed together to provide a more concise idea of the quality of agreements typically signed. Table 2 below provides details of the clauses that have been moved and/or clubbed together.

Table 3.2: BIT Clauses and their Grouping

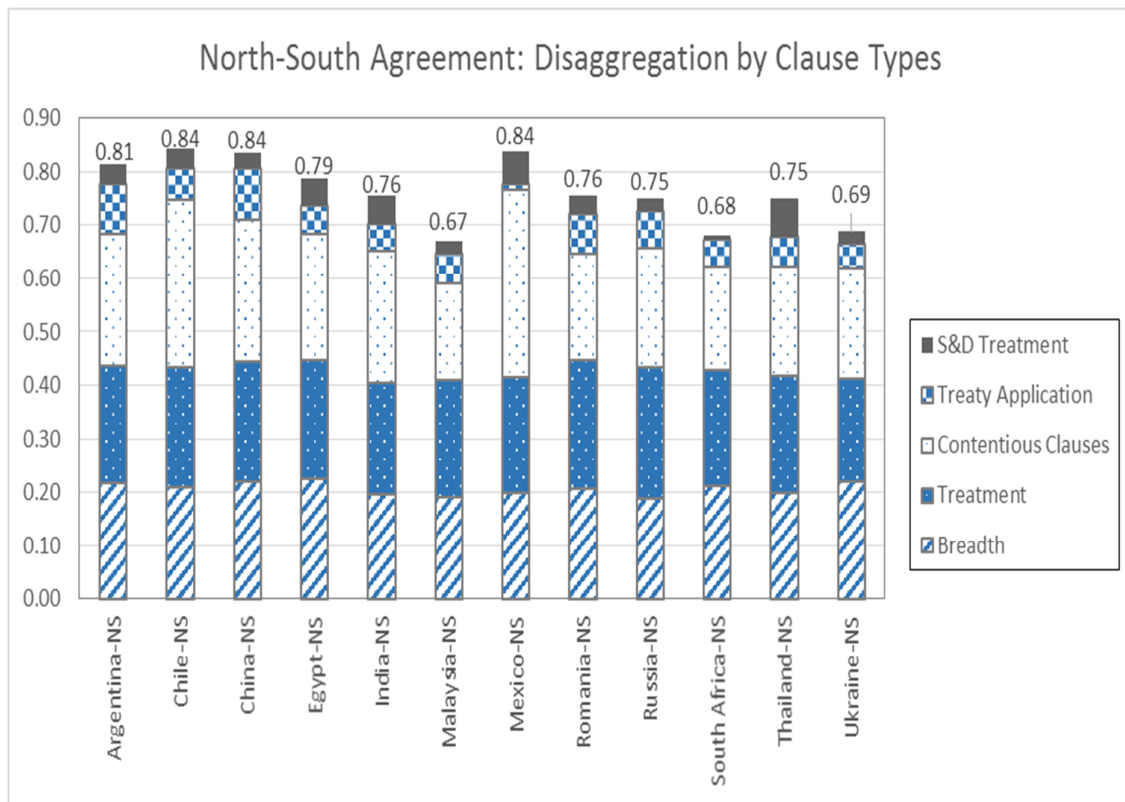
Combined Group	Index Criteria
Breadth of the Agreement	Text of Preamble
	Investment Definition
	Admission
	Promotional Measures
Treatment	MFN & NT
	FET
	Performance Requirements
Contentious Clauses	Transfer of funds
	Expropriation
	Compensation
Application	Dispute Settlement
	Normative Force of the Agreement
Special and Differential Treatment	Limitations in treaty provisions
	Limitation in temporal application

Of the 12 countries, Chile, China and Mexico had agreements that scored the highest in N-S BIT quality. For S-S BITs, Mexican and Russian agreements scored the highest.

As visible from the two graphs, South-South agreements on an average scored higher than the North-South agreements for most countries. Note the similarity in graphs (N-S and S-S) for India and China. This further supports the argument that both India and China followed a template approach towards agreements with very minor changes made to agreements they signed with individual developed or developing countries.

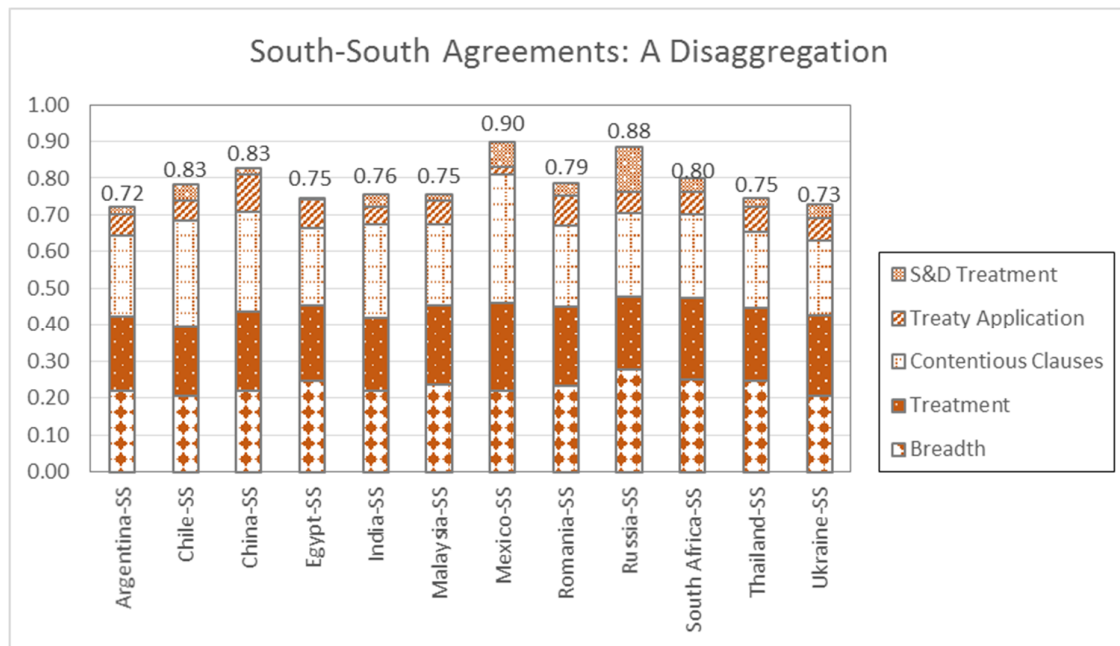
A clause-wise breakup shows that for most countries the breadth of the agreements was similar. This included how investment, pre-establishment clauses, the rules and regulations that would govern investment admittance and the promotional measures that each of the partner countries agreed that they would provide the other, were defined.

Figure 3.4: Average BIT Scores for the 12 Sample Countries (North-South Agreements)



Source: Author's Calculation

Figure 3.5: Average BIT Scores for the 12 Sample Countries (South-South Agreements)



Source: Author's Calculations

Further, when comparing each of these country agreements clause by clause, some of the conclusions that can be drawn are as follows:

1. Most agreements mentioned host government's approval as the precondition to investment admission without giving any details. Among the sample countries, Thai agreements stand out as having the most detailed rules and regulation for investment admission, some of which both referred to and enclosed a copy of the Thai Cabinet's decision to this effect.
2. Many variations to the investment promotional measures were noticed in agreements. The Ukraine-Finland BIT (2005) is one of the most detailed in this regard. It underlines the need for transparent sharing of domestic laws, regulations, procedures and administrative rulings and judicial decisions; regular consultations for reviewing the BIT's implementation; expeditious granting of necessary permits; as well as favourable treatment to applications for movement of natural persons.
3. As regards 'Treatment', some of the most detailed agreements were the ones signed with Canada or the United States. They meticulously detail the exceptions applicable

to the Most Favored Nation and/or National Treatment conditions. Such attention to detail was missing in most of the North-South and South-South agreements studied in this analysis. There were however some agreements that accorded specific exception to a particular sector, such as the financial sector or Services in general. However, these were very few in number.

4. Agreements signed with Canada and the US, in many cases, also provided details of the conditions under which performance requirements could not be imposed. An example of this has already been provided in an earlier section.
5. The agreement clauses included under the quality criteria of 'Expropriation' and 'Compensation' were in most cases quite generic. There were very few variations that were included in treaty texts. Most agreements included phrases such as inclusion of both direct and indirect expropriation and invoked the Hull standard (prompt, adequate and effective) for commensurate compensation. Some agreements also discussed the free transfer of compensation money and the payment of interest till the compensation money was paid out to the injured party. Only a very small subset of agreements discussed what would actually constitute indirect expropriation. One example of this category is the Romania-Canada BIT (2011).
6. There were more variations visible for the 'Transfer of funds' criteria. Agreements made by the Latin American countries such as Chile, Argentina and Mexico had stringent transfer of funds criteria. Some of the Chilean agreements imposed a time limit before which investment could not be transferred back. Certain Mexican agreements also provided conditions under which transfers would be delayed or prevented.
7. Among all the treaty clauses mentioned before, the provisions under 'Treaty Application' i.e. dispute settlement and normative force of the agreement, were the ones that read as derived from a template. A majority of agreements included national litigation and international arbitration as alternative options that the injured party may choose in case of treaty violation. Only a few talked about prior

exhaustion of national remedies before international arbitration. Among the sample countries, Mexico had some of the most detailed dispute settlement provisions. It thus scores exceptionally low on this criteria.

8. The set of criteria denoting special and differential treatment to developing countries refer to special treatment granted to specific sectors of the developing country and certain leeway given as regards time needed for repatriation or compensation requirements. As for sectoral exceptions, almost all of Russian Federation's SS agreements include the following clause: *"Each Contracting Party shall reserve the right to determine economic fields and areas of activity where activities of foreign investors shall be excluded or restricted."* It thus scores high in this criteria. Many agreements included exceptions provided to protect public security, health, environment, culture, etc.
9. Examples of temporal phasing of obligations were found to be much more common than sectoral exceptions. A large number of these agreements allowed developing countries a two or three month delay in transfer of funds once a request was placed by an investor. There were other cases also that gave some leeway with respect to time for developing countries to compensate the partner country in cases of treaty violation.

3.6 Threshold Regression on BIT Quality

While the previous section highlighted the fact that all agreements are not the same, there is merit in analyzing the basic strength that is required for countries to show a significant increase in FDI. To analyse the 'threshold' beyond which this significant increase is felt, the Hansen (1999) model for panel threshold regression has been used. This is different from traditional models where the threshold level is determined exogenously and tests are run to examine whether or not they are valid breaks. In this case thresholds are selected as part of the model itself. Also using this model, it becomes possible to analyse how relationships between FDI and specific factors differ in each sample grouped on the basis of thresholds estimated.

3.6.1 Data sources

As with the earlier models, bilateral FDI flows between partner countries have been used as the dependent variable for the analysis. However, unlike the previous instances the present analysis concentrates on just those agreements that have been assessed as part of the BIT quality assessment exercise. The aforementioned average BIT ‘flexibility of development’ (FFD) index has been used as the cornerstone of the analysis. This variable thus serves as the threshold variable for the threshold regression. Concentrating just on North-South (NS) FDI flows and therefore N-S agreements, there are 216 (18 developed countries, 12 developing countries) bilateral country pairs that are looked at as part of the analysis. Data from 1990 to 2010 have been used to complete the data panel.

In addition to the FFD index values, some of the other explanatory variables that are included as part of the analysis were – GDP, NEER, resource rents, trade openness, political constraints, wages, infrastructure, inflation, BIT and governance (or WGI). Data sources from where each of these variables were collated are mentioned in Table 3.3.

Table 3.3: Variables used in the analysis

Variable	Data Source
GDP	World Bank World Development Indicators, Various Years
NEER	
Resource Rent	
Trade Openness	
Wages	World Bank The Occupational Wages around the World (OWW) Database
Political Constraints	Henisz (2006, 2012)
Infrastructure	WEC World Competitiveness Indicators, various years
Inflation	World Bank World Development Indicators, various years
WGI	
BIT Quality	UNCTAD IIA Database, Author’s analysis
BIT STAR	UNCTAD IIA Database, Author’s analysis

3.6.2 Methodology

As the first step, the existence of a single threshold was checked. The single-threshold model takes the following form:

$$y_{it} = \mu + X_{it}(q_{it} < \gamma)\beta_1 + X_{it}(q_{it} \geq \gamma)\beta_2 + u_i + e_{it}$$

where variable q_{it} is the threshold variable, and γ is the threshold parameter that divides the equation into two regimes with coefficients β_1 and β_2 . The parameter u_i is the individual effect, while e_{it} is the disturbance.

Hansen (1999) proposes to use two-stage OLS method to estimate the panel threshold model. In the first stage, for any given threshold (γ), the sum of square errors (SSR) (or $\hat{e}^* \hat{e}^*$) is calculated separately.

The second stage involves the estimation of γ by minimization of the sum of squares which is:

$$\hat{\gamma} = \arg_{\gamma} \min S_1(\gamma)$$

Hansen in his paper proves that $\hat{\gamma}$ is a consistent estimator for γ . He also states that to test the level of γ , the analysis needs to form a confidence interval with the following likelihood-ratio statistic:

$$LR_1(\gamma) = \frac{\{LR_1(\gamma) - LR_1(\hat{\gamma})\}}{\hat{\sigma}^2} \xrightarrow{\text{Pr}} \varepsilon$$

$$\text{Pr}(x < \varepsilon) = (1 - e^{-\frac{x}{2}})^2$$

The testing for thresholds is done with the hypothesis that the coefficients are not varying with subsequent regimes or different threshold levels. Thus, the H_0 in this case is the non-existence of a threshold level.

The F statistic for the testing is constructed as follows:

$$F_1 = \frac{(S_0 - S_1)}{\hat{\sigma}^2}$$

The significance of the threshold effect is assessed through bootstrapping on the critical values of the F statistic.

The estimation of coefficients for every regime was done using the Xthreg Package in Stata 14.0. Detailed analysis results from the software have been placed in Annexure 3.3 for further reference.

3.6.3 Results from the threshold regression

Despite the fact that the model was run on a subset of countries¹⁶, the results derived are quite similar to the larger exercise done for assessing BIT impact in earlier models (Chapter 2). The results show that GDP, resource rents, political constraints, wages and WGI were all significant variables for explaining bilateral FDI flow. The model was run assuming WGI to be a regime dependent variable.

FDI is seen to be going to countries with larger market size (GDP) and natural resource endowment (resource rents). Macroeconomic stability as represented by NEER and inflation seem to have lesser importance. Trade openness was also found to be not very important.

Governance quality was found to be a key determinant for FDI. Wage level was also found to be positively significant in determining FDI. This can be explained through greater skill generally espousing higher wages which in turn attract FDI. The existence of BIT was also important but was significant at 5% level. The explanation of each of these variables and their significance in determining FDI flows have been discussed earlier (Chapter 2) in greater detail.

Table 3.4: Results from the Threshold Regression

	Variables	Coefficient	Standard Error
	GDP	5.94e-10**	5.20e-11
	NEER	17.92855	63.29256
	Resource Rent	17.56873**	2.98451
	Trade Openness	1.408042	1.05955
	Political Constraints	318.6114**	75.82504
	Wages	0.5934168**	0.1283528
	Infrastructure	-30.72297	40.4759
	Inflation	.0171374	.0243749
	BIT	160.3061*	85.59672
	WGI:		
	0	1647.484**	528.0371
	1	1327.205**	524.2889

¹⁶12 developing countries

For the current analysis, however the second part of the model, i.e. threshold determination and significance tests, is more important. The results for this part of the model are provided in Tables 3.5 and 6. The F statistic computed after the regression surprisingly shows that the hypothesis of no threshold cannot be rejected in the current context. The F statistic of 3.78 is much lower than the critical level of 15.61 calculated for a 10% significance level. This means that there is no critical level of BIT quality beyond which significant increases of FDI ensue. The threshold Estimator is also estimated to be at a low value of 0.6 compared to a minimum of 0.475.

Table 3.5: Threshold effect test

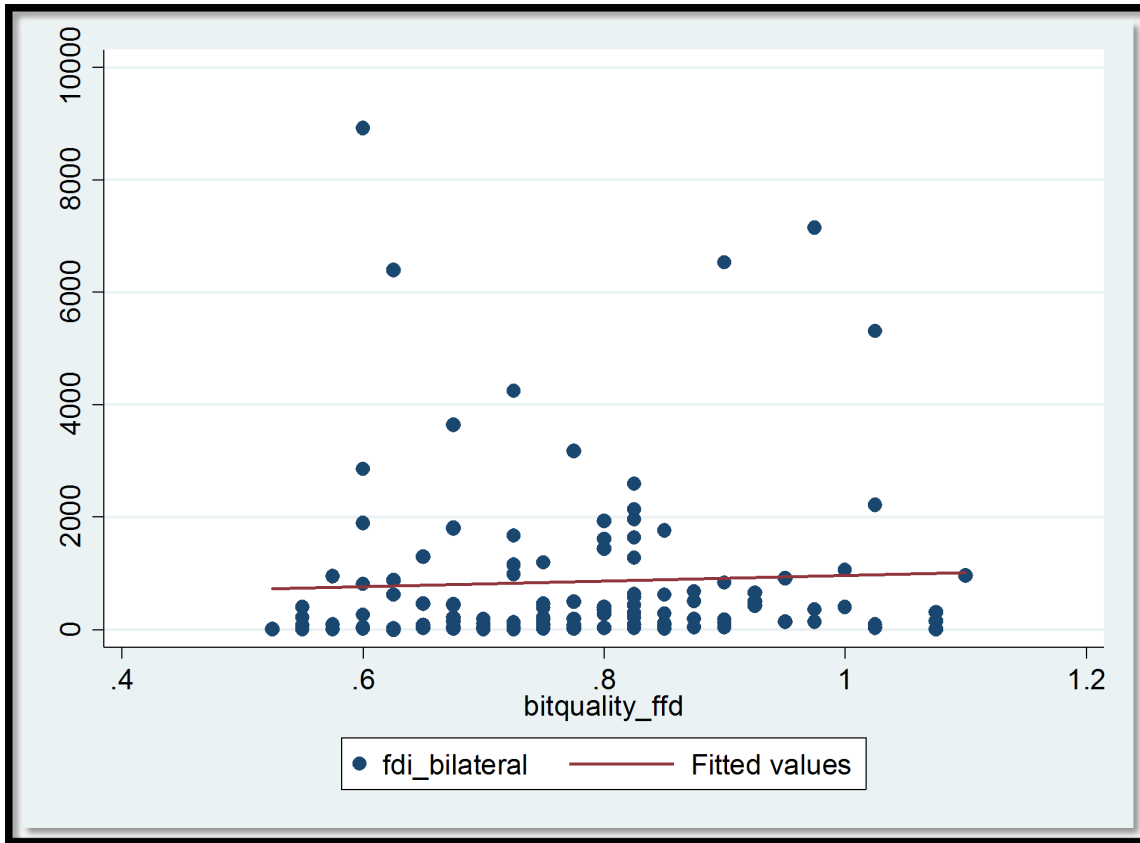
Threshold	RSS	MSE	F Statistic	Probability	Crit10	Crit5	Crit1
Single	2.62e+09	5.81e+05	3.78	0.6133	15.6159	20.1949	33.3066

Table 3.6: Threshold estimator (level = 95)

	Threshold	Lower	Upper
Threshold 1	0.6	0.5750	0.6250

To further check the surprising results against actual data, the data for BIT's qualities (bitquality_ffd) and bilateral FDI flows for different country pairs for the year 2010 were plotted (Figure 3.6). For the year 2010 it can be clearly seen that the relation between BIT quality and FDI flow was nearly flat. This means that FDI flowed into countries without too much concern about the quality of BITs that were entering into by them.

Figure 3.6: Relation between BIT quality and FDI flows in India



Source: Author's Calculations

Bring together results from Chapter 2 and the above analysis; it would seem that while there are significant impacts of the existence of BITs on FDI, there are no discernible impacts of quality of BITs on FDI flows. Investors seem to perceive BITs as a dichotomous variable where existence rather than quality seems to be the deciding factor. It would thus seem that the links between the quality of BIT and investor-state disputes (or 'costs' of BIT) can be more clearly established than quality and the flow of funds.

Putting both points together leads to the conclusion that rather than including more detailed clauses that seek to increase benefits from BITs such as investment promotion for greater FDI; clauses that aim to reduce 'costs' for developing countries should be stressed upon. Greater care should be taken while drafting dispute settlement clauses and the hitherto 'contentious' clauses such as the free transfer of funds, what constitutes direct and indirect expropriation, and what needs to be done for compensation; so that costs of BITs

can be reduced. Clauses for FDI promotion seem to have had limited impact as far as attracting FDI is concerned.

3.6.4 Dynamic Panel Data Regression for Analyzing BIT Quality

To look at the issue further a panel data model was run to analyse the impact of BIT quality. In addition to the variables analysed in earlier models, a new quality variable has been included. Based on the FFD Index values, an additional variable has been constructed for all country pairs that have signed agreements that score more than the average BIT quality value i.e. 0.75. The variable has been named as BIT Star. This is an interaction variable created by the multiplication of BIT variable and FFD index values.

As with the threshold model, this analysis has been conducted for only the aforementioned set of 12 developed countries receiving FDI from 18 developed countries. The econometric framework and the results of the exercise are presented in sections below.

3.6.4.1 Econometric Model Framework

The dynamic panel data model framework is as follows:

$$y_{it} = \sum_{j=1}^p \alpha_j y_{i,t-j} + x_{it}\beta_1 + w_{it}\beta_2 + v_i + \epsilon_{it} \quad i = \{1, \dots, N\}; t = \{1, \dots, T_i\}$$

Where

$\alpha_1, \dots, \alpha_p$ are p parameters estimated, x_{it} are exogenous covariates, w_{it} are endogenous covariates, v_i are panel level effects, and ϵ_{it} are iid error terms.

The coefficients for different covariates are estimated using the Arellano and Bond (1991) generalised method of moments or GMM estimator. This estimator is an improvement over the Anderson and Hsiao (1981) model of first differencing the model and using the differences as an instrument for previous years' values. In the Arellano and Bond Estimator, additional instruments are added for every period T, the instruments become $(y_{i1}, y_{i2}, \dots, y_{iT-2})$.

Post the model estimation, the Sargan test is performed, which is a test for over-identifying restrictions. The test is conducted with the null hypothesis that over-identifying restrictions are valid.

As there is strong likelihood of heteroskedasticity in the model, an alternative calculation of the variance-covariance matrix method has been used. STATA uses the Huber/White/sandwich estimator (or VCE (robust)) which is valid if the errors are independently distributed. It is not required that the errors follow a normal distribution, nor is it required that they be identically distributed from one observation to the next.

3.6.4.2 Model Results

The results show that GDP, resource and wages are all positive and significant factors influencing the flow of funds to the set of 12 developing countries. Impact of population was found to be insignificant, while inflation was seen to have a negative impact. This, in sum, seems to suggest that FDI flows into those countries with strong macro-economy as well as skilled labour force. Previous year's value of FDI was seen to not have too much of an impact on determining the current year's FDI.

Both of the governance variables (WGI and polcon) were found to be insignificant determinants. As regards the trade variables, trade openness was found to be positive but insignificant. Bilateral proportion of trade i.e. bilateral trade volumes as a share of total trade, was found to be both positive as well as significant. This suggests that FDI flowed into those countries that already had historically established bilateral trading ties. It is interesting that a negative relationship with exchange rates (NEER) was found. This again supports the point made earlier that countries that have depreciating exchange rates get more FDI as it makes subsequent exports from FDI host country cheaper. The FDI model that seems to be emerging from the results seems to be that of efficiency seeking or export orientation.

The BIT variables, the variables of key interest, do not show up as significant in both of the model variants. This seems to suggest that as governance is not found to be a key determinant for these set of countries, even BITs are not too important. However, it is interesting to see that the marginal impact of signing a BIT on an average was USD 371

million. When a more stringent BIT was signed, it led to the inflow increasing to USD 691 million. However, the insignificance of both factors is a surprising result.

Table 3.7: Dynamic Panel Data Model Results for BIT Quality Impacts on FDI

Bilateral FDI	Econometric Model	
	Model 1	Model 2
Bilateral_FDI L1.	-0.0236371 (0.1350194)	-0.0229395 (0.1353936)
BIT	371.5581 (567.165)	472.4111 (600.8371)
BIT_Star	691.2463 (1064.708)	909.8283 (1107.488)
GDP	0.00000000753** (0.000000000378)	0.00000000682** (0.000000000305)
Inflation	-0.0401287* (0.0235711)	-0.0626502** (0.0292573)
Population	-0.00000108 (0.00000154)	
NEER	-245.8197** (83.57808)	-233.2382** (77.76477)
Resource_rent	18.97213** (7.169042)	20.21154 (7.29079)
Tradeopen	1.591515 (1.789086)	
WGI	58.98409 (1070.018)	
Polcon	234.6203 158.26)	220.3587 (164.8687)
Wages	0.5832389** (0.2213617)	0.6241252** (0.2195569)
Infrastructure	-69.70347 (61.40391)	-69.8342 (61.70625)
Bilateral_prop	352.0686** (116.5647)	347.974** (117.6769)
FDIattract	806.4075 1389.156)	

Conclusion

This chapter looked at the quality of BITs and built a 'flexibility for development' index that could serve as a basis for assessing the impact of BITs. Many of the contentious BIT clauses were looked at and analyzed from a developing country point of view. This analysis also served as the basis for assigning weights to the quality index mentioned. The index gave higher weights to special and differential treatment clauses included in the agreement as also to leeway given in some of the contentious clauses such as transfer of funds, dispute settlement, fair and equitable treatment, etc.

Using the constructed BIT quality index, about 302 agreements were analyzed. These agreements were specifically chosen as they were ratified by both a geographically as well as economically diverse set of countries. The analysis found that overtime the index measure of 'flexibility for development' has been increasing for countries. As expected South-South (SS) agreements scored higher in terms of flexibility when compared with North-South (NS) agreements. However, it was also found that a number of countries are entering into 'template' agreements with minimal level of deviations from one partner country to the next. This especially highlights the lack of careful thought when developing countries are signing BITs.

Another interesting observation from the analysis was that traditionally BITs were signed with developed countries to ensure security of capital invested. However, with increasing amounts of outward FDI flows from developing countries, a number of SS agreements are being signed as well.

An examination of these agreements clause by clause, brings to light some additional points. Most of the agreements had very loosely defined 'treatment' clauses. This lack of attention to detail, especially with respect to the applicability of the MFN and FET clauses, spells trouble for developing countries during legal arbitration.

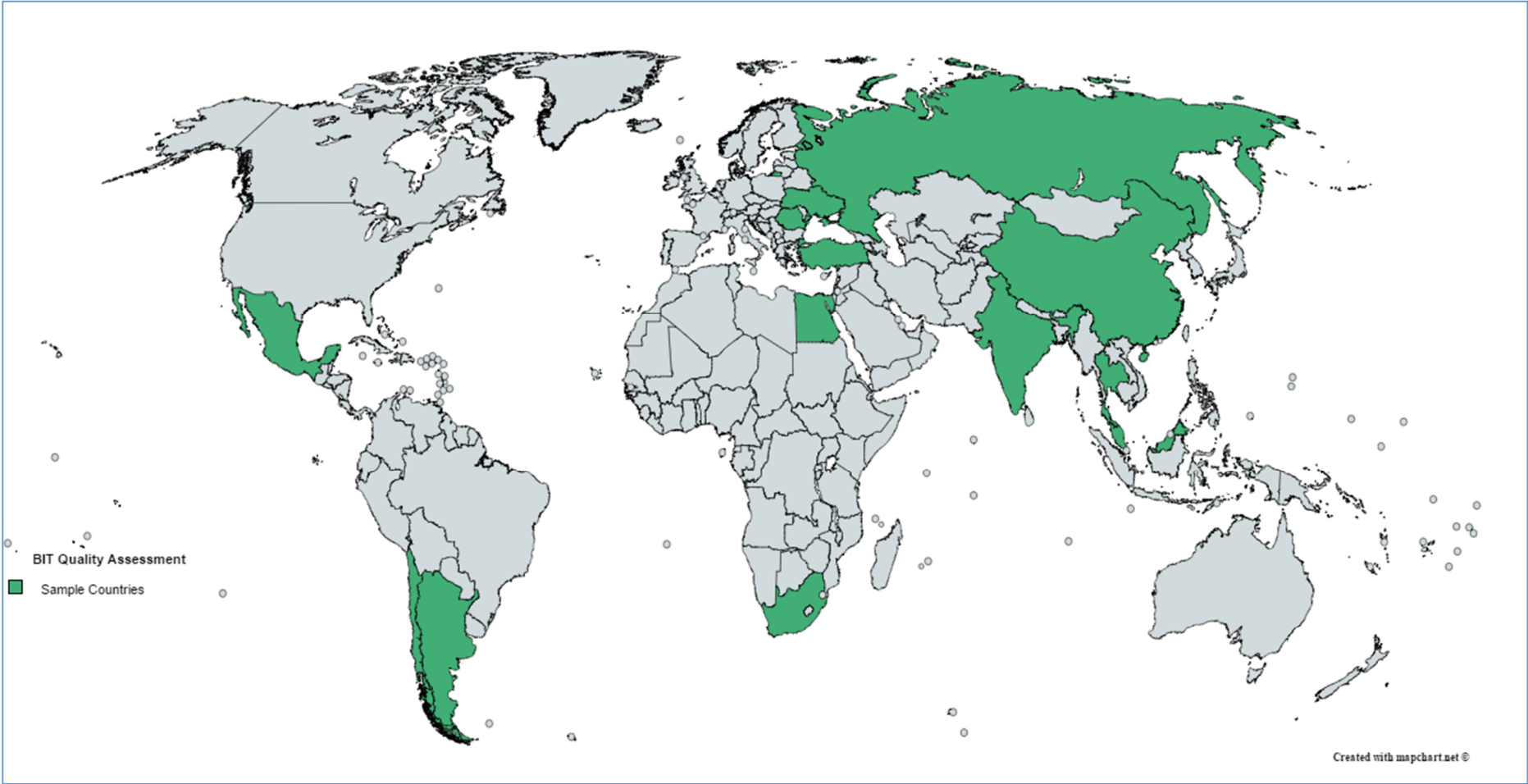
Despite being a very important clause, most agreements were silent about what actually constitutes 'indirect expropriation' and what may be the conditions that would serve as exceptions to it. As this is also a clause for which many developing countries have been dragged to international tribunals, this clause merits further examination.

Of all clauses, provisions under dispute settlement were the ones that most read as coming from a template. A majority of agreements included national litigation and international arbitration as alternative options that the injured party may choose in case of treaty violation. Only a few talked about prior exhaustion of national remedies before international arbitration.

Despite the mention of national approval required for investment admission, most agreements were silent about the specific sectors where the activities of foreign investors would be excluded or restricted. It would be better for developing countries to fence in sectors that they might want to protect or might not want foreign investment in. This lack of sectoral directives coupled with the MFN and NT clauses of BITs might cause trouble later when the developing country decides to take protectionist measures. Many agreements, however included exceptions to sectors in order to protect public security, health, environment, culture, etc.

Both econometric models i.e. threshold regression and dynamic panel data model, used to look at the impact of BITs for the select set of 12 developing countries seem to suggest that BIT quality is not an important criterion while deciding FDI flows. There is no conclusive proof that BITs that are stringent or flexible beyond a certain level attract more FDI. The dynamic panel results does show that the FDI flow following a more 'flexible' BIT is higher, its insignificance leads us to question its larger applicability. Thus, it is safe to conclude that BITs are generally seen by developed countries seeking to invest more as a 'template' document with certain key clauses in place. Any variations brought in the form of dispute settlement procure, sectoral exceptions, etc. through the treaty negotiation process do not seem to be of too much interest for investors looking for newer avenues.

Annexure 3.1: BIT Quality Assessment Country Set (12 Countries)



Annexure 3.2: Haslam's (2007) Indicators for the 'Flexibility for Development' BIT Quality Index¹⁷

Categories of 'flexibility'	Explanation	Indicators and scores
Objectives	Extent to which the unique developmental needs or special conditions experienced by developing countries are recognised in the statement of principles which guides the interpretation of the treaty.	Text of preamble:
	Indicators:	[0] No recognition of economic development as goal
	(1) Text of preamble.	[1] Weak reference to development goals of IIA, no reference to asymmetry between parties if it exists
		[2] Stronger language referring to the developmental purpose of the IIA. Some recognition of asymmetry between 2 parties
		[3] Explicit consideration of asymmetry; and/ or specific reference to developmental goals.
Substantive Provisions	Extent to which the provisions of the treaty permit policy flexibility.	Scope of application (definition of investment):
	Indicators:	
	(1) Scope of application (definition of investment);	Scope of application (definition of investment):
		[0] Broad asset-based (including direct and portfolio investment, broad intellectual property rights)
		[1] Asset-based with some exclusions (including some forms of portfolio investment, narrower IPRs)
		[2] Asset-based with limiting substantive provisions (property rights accorded by national legislation, size of investment, sectoral location, years of establishment, official approval)
		[3] Enterprise-based

¹⁷ Haslam, P.A. (2007) "A 'Flexibility for Development' Index: Can International Investment Agreements be Compared Quantitatively?" The European Journal of Development Research, Vol.19, No.2, June 2007, pp.251–273.

	(2) Admission and treatment (national treatment);	Admission and establishment (national treatment):
		[0] Pre-establishment NT with short opt-out list for developing or smaller partner
		[1] Pre-establishment NT with detailed opt-out list or opt-in list
		[2] Post-establishment NT with opt-out list and minimal exceptions
		[3] Post-establishment NT with substantive exceptions.
	(3) Transfers;	Transfers:
		[0] Unrestricted transfers with no exceptions; prompt guaranteed convertibility; broad definition of transfers
		[1] Unrestricted transfers with temporary and non-discriminatory derogations for balance of payments, currency crises
		[2] Liberal transfer rules with some permanent restrictions on the outflow of capital
		[3] Broader restrictions based on domestic law.
	(4) Treatment standard-MFN&NT;	Treatment standard- MFN:
		[0] Broad definition of NT and MFN
		[1] Narrower definition of NT and MFT; with clear limitations and exceptions
	(5) Treatment standard- FET;	Treatment standard-FET:
		[0] Broad definition of 'fair and equitable' in conjunction with other standards particularly 'full protection and security'
		[1] Narrower definition of 'fair and equitable treatment'; with clear limitation to international minimum standard of customary international law
		[2] Weaker formulation than 'fair and equitable'
		[3] No reference to an investment security standard or hortatory reference (to 'endeavour', etc).
	(6) Taking of property;	Taking of property:

		[0] Broad interpretation of indirect takings as 'measures tantamount to nationalisations'
		[1] Broad interpretation of indirect takings with explicit right to regulate in the public interest
		[2] Narrower interpretation of indirect takings (only when equivalent to direct takings; limits of customary international law, etc.)
		[3] Direct takings only.
	(7) Compensation standard;	Compensation standard:
		[0] Hull standard ('prompt, adequate and effective compensation', market value, paid speedily in a freely convertible currency)
		[1] Hull standard (less detailed regarding payment, valuation)
		[2] Compensation terms vague, 'just compensation' 'appropriate compensation' with effective specification of 'market value' and provisions that specify payment schedule and currency
		[3] Compensation terms vague, form of valuation not specified or soft language.
	(8) Operational measures and advantages (performance requirements);	Operational measures and advantages:
		[0] Maximum restriction of operational measures, either 'green light' or extensive list of 'yellow light' measures
		[1] Restriction of some 'yellow light' operational measures
		[2] Operational measures restricted only in TRIMs categories known as 'red light' categories
		[3] Operational measures not mentioned in text; or restrictions explicitly limited for developmental reasons.
	(9) Promotional measures	Promotional measures for FDI and development:
		[0] No promotional or technical assistance language

		[1] Hortatory language for promoting investment
		[2] Several specific home-country measures
		[3] Institutionalised redistributive mechanism.
Application	Extent to which the provisions of the treaty are considered binding (overall legal force) on the signatories.	
	Indicators:	
	(1) Dispute settlement procedure	Dispute settlement type:
		[0] International investor-state arbitration, investor choice of forum, and/or simultaneous pursuit of cases in multiple for a
		[1] International investor-state arbitration with mandatory transparency and/or mandatory prior exhaustion of all national remedies subject to time limit of not less than 1 year
		[2] International investor-state arbitration, state retains significant control through ability to issue binding interpretative statements
		[3] International state-state arbitration or investor-state dispute resolution in national courts in most cases.
	(2) Normative force of agreement	Normative force of agreement:
		[0] Legally binding with extremely high level of precision, room for interpretation restricted, ratified
		[1] Legally binding with medium level of precision in text. Broad room for debate over meaning
		[2] Legally binding with weaker, less detailed or 'soft' legal language in key provisions
		[3] Voluntary. Non-binding.
Overall structure:	Extent to which the structure of the agreement permits flexibility in its application,	

	and special, asymmetrical, or non-reciprocal treatment for developing countries.	
special and differential treatment		
	Indicators:	
	(1) 'Rationae materiae' limitation of effect of treaty provisions;	'Rationae materiae' limitations:
		[0] General exceptions (order, morals, public security)
		[1] Industry-specific and country-specific exceptions as well as protocols and reservations (through opt out-list).
		[2] Derogations, waivers, and safeguards (in addition to prior limitations), and/or use of opt-in lists.
		[3] Ability to select those parts of the treaty to be considered binding; broad flexibility due to 'conform to national legislation'
	(2) 'Rationae temporis' limitation of temporal application of treaty;	'Rationae temporis' limitation:
		[0] No temporal phasing of obligations
		[1] Minor temporal phasing
		[2] Broader temporal phasing; discretion in determining the pace of implementation
		[3] Transitional and non-reciprocal temporal provisions, with specific economic targets to be reached before implementation.

Source: Haslam (2007)

Annexure 3.3: Threshold Regression for BIT quality

```
xthreg fdi_bilateral gdp neer resource_rent tradeopen polcon wages infrastructure
inflation bit, rx(wgi) qx(bitquality_ffd) thnum(1) grid(400) trim(0.05)bs(300)
```

Threshold estimator (level = 95):

model	Threshold	Lower	Upper
Th-1	0.6000	0.5750	0.6250

Threshold effect test (bootstrap = 300):

Threshold	RSS	MSE	Fstat	Prob	Crit10	Crit5	Crit1
Single	2.62e+09	5.81e+05	3.78	0.6133	15.6159	20.1949	33.3066

```
Fixed-effects (within) regression          Number of obs   =    4536
Group variable: cdfin                     Number of groups =    216

R-sq:  within = 0.0771                    Obs per group:  min =    21
        between = 0.0052                    avg           =   21.0
        overall = 0.0371                    max           =    21

                                           F(11,4309)      =    32.75
corr(u_i, Xb) = -0.1988                    Prob > F        =    0.0000
```

fdi_bilateral	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
gdp	5.94e-10	5.20e-11	11.42	0.000	4.92e-10 6.96e-10
neer	-17.92855	63.29256	-0.28	0.777	-142.0145 106.1574
resource_rent	17.56873	2.98451	5.89	0.000	11.71755 23.4199
tradeopen	1.408042	1.05955	1.33	0.184	-.6692214 3.485305
polcon	318.6114	75.82504	4.20	0.000	169.9553 467.2675
wages	.5934168	.1283528	4.62	0.000	.3417793 .8450542
infrastructure	-30.72297	40.4759	-0.76	0.448	-110.0766 48.63064

inflation		.0171374	.0243749	0.70	0.482	-.0306499	.0649247
bit		160.3061	85.59672	1.87	0.061	-7.507567	328.1197
_cat#c.wgi							
0		1647.484	528.0371	3.12	0.002	612.2595	2682.708
1		1327.205	524.2889	2.53	0.011	299.329	2355.081
_cons		-1225.215	330.2289	-3.71	0.000	-1872.633	-577.7961

sigma_u		587.39555					
sigma_e		780.28942					
rho		.36171393	(fraction of variance due to u_i)				

F test that all u_i=0: F(215, 4309) = 10.39						Prob > F = 0.0000	

Annexure 3.4: Dynamic Panel Data Model for BIT quality

```
xtabond fdi_bilateral gdp inflation population neer resource_rent tradeopen wgi
polcon wages infrastructure bilateral_prop fdiattract, lags(1) endogenous(bit,
lag(0,.)) endogenous (bit_star, lag(0,.)) nocons vce(robust)
```

```
Arellano-Bond dynamic panel-data estimation      Number of obs      =      3,807
Group variable: cdfin                            Number of groups   =        216
Time variable: year
```

```
Obs per group:
                min =         11
                avg =       17.625
                max =         19
```

```
Number of instruments =      577                Wald chi2(14)      =        63.54
                                                Prob > chi2        =        0.0000
```

One-step results

(Std. Err. adjusted for clustering on cdfin)

	Robust					
fdi_bilateral	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	

fdi_bilateral						
L1.	-.0236371	.1350194	-0.18	0.861	-.2882703	.2409961
bit	371.5581	567.165	0.66	0.512	-740.0648	1483.181
bit_star	691.2463	1064.708	0.65	0.516	-1395.542	2778.035
gdp	7.53e-10	3.78e-10	1.99	0.047	1.14e-11	1.49e-09
inflation	-.0401287	.0235711	-1.70	0.089	-.0863273	.0060699
population	-1.08e-06	1.54e-06	-0.70	0.484	-4.09e-06	1.94e-06
neer	-245.8197	83.57808	-2.94	0.003	-409.6298	-82.00973
resource_rent	18.97213	7.169042	2.65	0.008	4.921066	33.0232
tradeopen	1.591515	1.789086	0.89	0.374	-1.915029	5.09806
wgi	58.98409	1070.018	0.06	0.956	-2038.212	2156.181
polcon	234.6203	158.26	1.48	0.138	-75.56365	544.8042
wages	.5832389	.2213617	2.63	0.008	.1493779	1.0171
infrastructure	-69.70347	61.40391	-1.14	0.256	-190.0529	50.64599
bilateral_prop	352.0686	116.5647	3.02	0.003	123.6059	580.5313
fdiattract	806.4075	1389.156	0.58	0.562	-1916.288	3529.103

Instruments for differenced equation

GMM-type: L(2/.)fdi_bilateral L(2/.)bit L(2/.)bit_star

Standard: D.gdp D.inflation D.population D.neer D.resource_rent

D.tradeopen D.wgi D.polcon D.wages D.infrastructure

D.bilateral_prop D.fdiattract

xtabond fdi_bilateral gdp inflation neer resource_rent polcon wages infrastructure
bilateral_prop, lags(1) endogenous(bit, lag(0,.))
endogenous(bit_star,lag(0,.))nocons vce(robust)

Arellano-Bond dynamic panel-data estimation Number of obs = 3,807

Group variable: cdfin Number of groups = 216

Time variable: year

Obs per group:

min = 11

avg = 17.625

max = 19

Number of instruments = 573

Wald chi2(10) = 44.41

Prob > chi2 = 0.0000

One-step results

(Std. Err. adjusted for clustering on cdfin)

		Robust					
fdi_bilateral	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]		
fdi_bilateral							
L1.	-.0229395	.1353936	-0.17	0.865	-.2883061	.2424272	
bit	472.4111	600.8371	0.79	0.432	-705.208	1650.03	
bit_star	909.8283	1107.488	0.82	0.411	-1260.808	3080.465	
gdp	6.82e-10	3.05e-10	2.23	0.026	8.35e-11	1.28e-09	
inflation	-.0626502	.0292573	-2.14	0.032	-.1199935	-.005307	
neer	-233.2382	77.76477	-3.00	0.003	-385.6543	-80.82202	
resource_rent	20.21154	7.29079	2.77	0.006	5.921855	34.50122	
polcon	220.3587	164.8687	1.34	0.181	-102.778	543.4955	
wages	.6241252	.2195569	2.84	0.004	.1938017	1.054449	

infrastructure	-69.8342	61.70625	-1.13	0.258	-190.7762	51.10783
bilateral_prop	347.974	117.6769	2.96	0.003	117.3315	578.6165

Instruments for differenced equation

GMM-type: L(2/.)fdi_bilateral L(2/.)bit L(2/.)bit_star

Standard: D.gdp D.inflation D.neer D.resource_rent D.polcon D.wages

D.infrastructure D.bilateral_prop

Chapter 4: India's Experience with BITs

4.1 Background

India is witnessing an unprecedented surge in foreign investment in recent times. While many are hopeful that higher FDI would bring with it all the positive externalities associated with influx of capital and foreign partnerships, the actual impact remains to be seen. There has been a great deal of speculation that strong macro-economic fundamentals coupled with weakening markets elsewhere, drive this surge into India. However, for the current discussion it is also important to estimate what part of this inflow is attributable to the investor protection guarantees given as part of BITs signed with various FDI source countries. Whether such flows had a positive impact on domestic firms also needs to be ascertained.

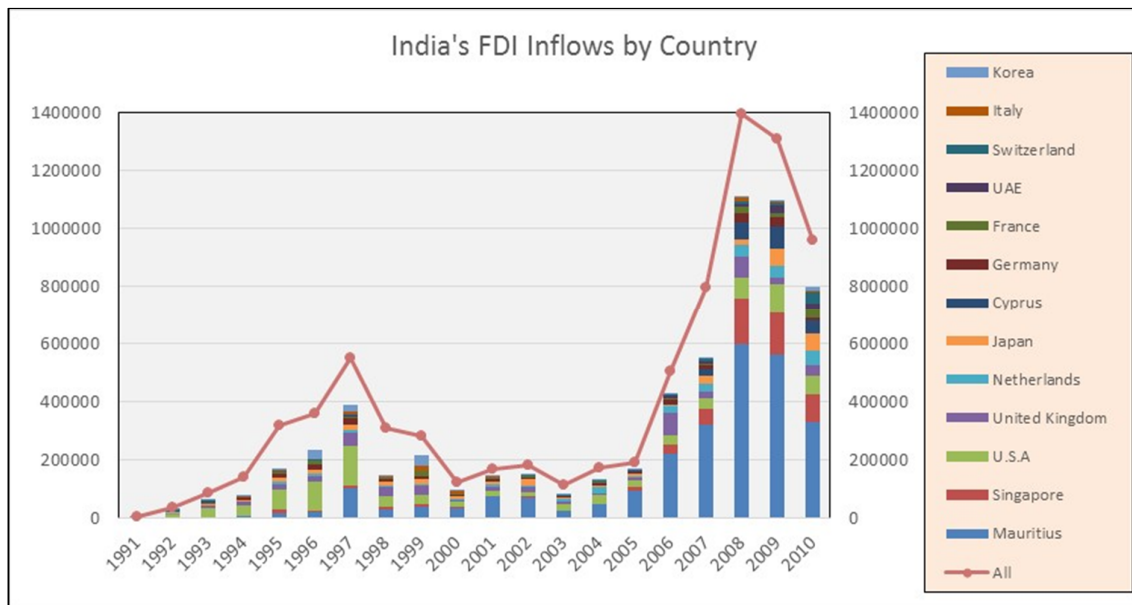
India had to incur the costs associated with BITs recently in the form of a mammoth out of court settlement in the case *Capital India Power Mauritius I and Energy Enterprises (Mauritius) Company v Government of India* and an award against India was given in the case of *White Industries Australia Limited v Government of India*. In this background, this evaluation would bring a much needed fresh perspective on where the Indian BIT programme needs to be headed.

A recent paper by Rao, et. al. (2014) is sceptical about the positive impact of the recent foreign capital inflows. They state that a large part of the FDI that went into the manufacturing sector (around 54%) was simply acquisition related. Acquisition related inflows, unaccompanied by substantial capacity expansion, might not help India with efficiency and productivity gains.

Another point to consider is the country source of FDI. Figure 4.1 shows the value and shares of various countries investing in India over time. While the recent surge is clearly visible, a large part of the investment is coming from tax havens such as Mauritius and Cyprus. A paper by Singh (2013) states that a significant share of foreign investments in India is routed through Mauritius taking advantage of favourable provisions in the India-

Mauritius Double Tax Avoidance Agreement (DTAA). Between April 2000 and May 2012, 38% of India's FDI flowed through Mauritius, of which 6% originated in the US. India is estimated to lose \$ 7 billion a year in taxes from off shore accounting, including in Mauritius. Additionally, these funds are more in the nature of re-invested earnings or Round-tripping investments and thus have little to no impact on the country's development. An interesting piece of research done by Rao and Dhar (2011) analysed individual FDI inflow details published by the Secretariat of Industrial Assistance(SIA), Gol during 2004-2009 and found that development oriented FDI accounted for just about 36% and 10% of total and manufacturing sector FDI, respectively. This figure was derived after identifying and removing private equity/venture capital/hedge fund equity flows and round-tripping investments from the total list of entries. Additionally, the authors defined development oriented FDI to be all investments made that have a potential to contribute to India's development process by establishing long-term interests and having positive feedback impacts across different sectors. A sectoral analysis showed that this FDI stream was the most significant in the telecommunications sector.

Figure 4.1: India's FDI Inflows



Source: DIPP, FDI Statistics, Various years

From the BIT perspective, an interesting paper by Ranjan (2014) states that the increase in FDI inflows has increased the exposure of India to BIT claims. Based on his analysis of all of

India's agreements relating to foreign investment, he states that India adopted a 'capital exporting' rather than a 'capital importing' BIT model. The earlier model or template BIT treaty for India contained elaborate substantive and procedural assurances for protection of foreign investment, with very few exceptions, reservations and carve-out provisions (Ranjan, 2014). The model BIT recognized that foreign investment would enjoy fair and equitable treatment, and not just national treatment; that the issue of compensation for expropriation would be decided as per the BIT and not by national laws; and that investment treaty arbitration would have jurisdiction over all substantive rights in BITs. All of which stack up against India in any situation of international arbitration.

To cite a specific example, while most of the Indian agreements contain the Fair and Equitable treatment (FET) provisions, very few define the normative content of the FET or provide any guidance regarding its meaning. In his paper, Ranjan (2014) states that this vague and expandable nature of the FET provision has made it extremely popular amongst foreign investors to challenge a wide array of host State's regulatory measures such as those related to privatization policy, monetary policy, or environmental protection. In fact, in the *White Industries vs Government of India* case, the ITA Tribunal held India guilty of not providing White Industries with an 'effective means' of asserting claims and enforcing rights, despite the fact that the India–Australia BIT does not mention or include such a duty for host States. This was made possible by relying on the MFN provision of the India–Australia BIT and borrowing the 'effective means' provision present in the India–Kuwait BIT.

Since the potential costs are so high, it becomes extremely important to look at the benefits that accrued from the signing of BITs by India. The benefits in this case need not just be increased quantum of FDI flows following BIT signing but also the percolation of possible positive externalities associated with FDI to a micro unit of the economy i.e. the firm.

4.2 Costs of BITs for India: An Exploration

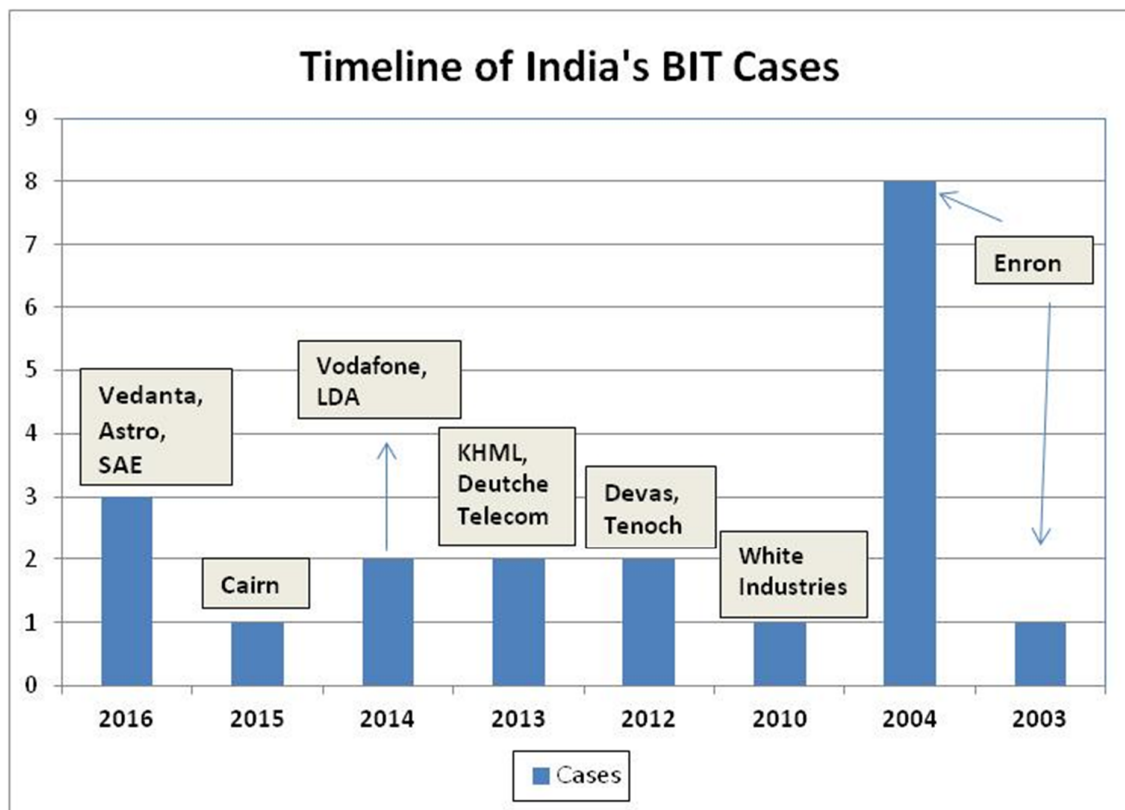
India is signatory to a large number of BITs. Till date, India has signed 82 agreements of which 72 are currently in force. A discussion on India's BIT design has already been done earlier. This section tries to take forward the issue of BIT design and connect it to the issue of costs of BIT for India. This section would thus highlight the contentious clauses that have

been problematic for India and how these have panned out over time. The changes made in the standard template agreements discussed earlier (Chapter 2) with the introduction of a new model BIT agreement have also been discussed. The different investor-states disputes to which India was a party are discussed as well.

4.2.1 India's Investor-State Dispute Settlement (ISDS) Cases

India has till now faced 20 cases as a respondent, i.e. with cases filed against the Government of India. Figure 4.2 below shows the timeline of different cases filed. Some of these important cases have been clubbed together issue wise to enable more nuanced understanding.

Figure 4.2: Timeline of India's BIT related cases



4.2.1.1 Legal Delays and Most Favoured Nation Principle (White Industries v/s GoI)

The dispute arose between Coal India and White Industries (WIAL) with the former withholding the latter's performance bonus and stopping it from encashing its bank guaran-

tee citing under-production as the reason. WIAL sought recourse from the International Chamber of Commerce's International Court of Arbitration. The court ruled that it was entitled to recover its bonus of A\$2.28 million and its bank guarantee of A\$2.77 million, but it must pay Coal India a penalty of A\$969,060 for under-production. However, WIAL could not get Coal India to pay due to protracted delays in India's legal process.

So, it filed a case under the India-Australia BIT, arguing that India's judicial delay contravened key treaty provisions, including the right to fair and equitable treatment, free transfer of funds, protection against expropriation, and the guarantee of an effective means to enforce rights and assert claims. WIAL reached into India's BIT with Kuwait, used the Most Favoured Nation provision in its treaty with Australia and strategically harnessed a India-Kuwait BIT clause that promised Kuwaiti investors an effective means of asserting claims and enforcing rights with respect to investment.

In keeping with BIT procedure, an international tribunal heard the case and ruled in 2011. It dismissed WIAL's other complaints, but it granted WIAL an award of over **\$4 million Australian dollars** with interest, and related court fees, conceding that India's failure to enable it to enforce its rights breached this country's BIT obligations to Australia.

4.2.1.2 *Corruption and Scams (KHML v/s Gol, Deutsche Telekom v/s Gol, Devas v/s Gol)*

A number of cases were filed following the 2G Scam where collusion was discovered in the grant of telecom licenses. While the discovery was made in 2008, it was only in 2012 when the Indian Supreme court cancelled 122 of such licences on corruption grounds. Many of the foreign companies whose licenses got cancelled alleged that this cancellation contravened India's BIT commitment to fully protect and expropriate investments. This was claimed despite the proof of corruption being established. Initially Sistema and Telenor served notices to the Government of India invoking provisions of agreements signed with Russia and Singapore respectively. However, they were later withdrawn. A case was however filed by KHML on the same grounds using the India-Mauritius BIT clauses as its basis.

On a similar vein, corruption charges were levied against Devas Multimedia when it entered into a contract with Antrix Corporation Ltd. (commercial arm of Indian Space Research Organisation (ISRO)). While corruption charges could not be proved by the two committees

that were investigating the allegation, they were able to point out a number of procedural lapses that had occurred. This led to the subsequent cancellation of the agreement between the two parties. Both Devas Multimedia and Deutsche Telekom (a shareholder in Devas) filed cases against Gol citing clauses of the India-Mauritius and India-Germany BITs alleging that the contract cancellation amounted to expropriation of assets. In 2015 the International Chamber of Commerce (ICC) tribunal found that the annulment of the agreement was “unlawful” and awarded Devas damages of nearly **Rs. 4400 crore.**

4.2.1.3 Changes in Taxation Regimes (Vodafone v/s Gol, Cairn v/s Gol, Vedanta v/s Gol)

The Vodafone case was filed against the Indian Government because of the retrospective application of the Capital Gains Tax introduced in the Finance Act, 2012. While the takeover of Hutchinson Essar by the company happened in 2007 in Cayman Islands (one of the tax havens), the Indian Government claimed that the deal involved assets located in the territory of India and is thus eligible for a tax liability. Vodafone has cited the India-Netherlands BIT clauses and alleged the Gol breached the provisions of fair and equitable treatment, full protection and security and indirect expropriation of investments.

Cases were also filed by Cairn UK Holdings Limited and Vedanta (shareholder in Cairn India) against the retrospective application of capital gains tax in 2015 on Cairn India’s operations in 2006-07. Cairn also objected to their alleged prohibition against selling its 10 per cent shareholding in Cairn India Limited.

4.2.1.4 Default on payment obligations (Bechtel v/s Gol, Standard Chartered Bank v/s Gol, Offshore Power v/s Gol, Erste Bank v/s Gol, Credit Suisse v/s Gol, Credit Lyonnais)

Dabhol was one of the largest foreign Investment projects in India when it was set up. A consortium of Enron, Bechtel and General Electric entered into a contractual agreement with the Maharashtra State Electricity Board (MSEB) for the construction and operation of the Dabhol power plant. A problem cropped up when despite assurances of power purchase, MSEB defaulted on its payment obligations. Dabhol Power Corporation then initiated arbitration proceedings against MSEB, Government of Maharashtra and Government of India citing the “alleged reversal in the energy policy of the local government between the beginning of the power project in which the claimants invested

and its intended consummation, as a result of political change in the Government". All of these cases (DPC shareholders and financiers) were settled out of court with the payment of **Rs. 1330 crore**.

4.3 Recent Modifications in India's Model BIT

India's economic needs and negotiating powers have changed dramatically over time. The 2015 modifications in the model BIT adopted by India need to be looked at in the light of lessons from different ISDS cases in preventing investors from "treaty shopping" for favourable provisions between agreements as well as protecting government policy space. As has been outlined above many of these BIT cases were filed even when the investors themselves were at fault on counts of corruption or when Gol was making changes in its own domestic taxation systems. It is also important at this juncture to recognize that India in addition to receiving inward foreign investment is now increasingly investing abroad. This therefore means that a severe dilution of investor rights might not also be an advisable course of action. Thus, a middle ground needs to be struck with respect to India's BIT design.

Following are some of the principal changes made in the 2015 version of the Model BIT:

- i. Treaty Rights and Protections Only for Genuine Foreign Direct Investors: The new model BIT stipulates that India would protect foreign direct investors with real and substantial business operations in the country. These investors would be characterized by a large and long-term commitment of capital and entrepreneurial risk-taking, a significant number of employees, developmental impacts, and a transfer of technological knowhow (Government of India, 2015). Additionally, only Investors with majority control in a locally-invested enterprise and direct control in its policy decisions and directorial/management appointments, will have treaty rights.
- ii. Clear Responsibilities for Investors and Their Home States: India's model text also places responsibilities on both investors and their home states to ensure responsible corporate conduct in its territory. In particular, signatory home states are required to act against investors found to be violating Indian laws.

- iii. Elimination of “Most Favoured Nation” Clause: India’s new framework has done away with the “Most Favoured Nation” provision. Though it grants foreign firms treatment on par with domestic ones, it commits to do so only in like circumstances. A clause prohibiting India from unilaterally changing laws and regulations that might impact an investment project from the signatory country is also missing.
- iv. International Arbitration Only as the Last Resort: Disputants must now resolve disputes domestically, resorting to international arbitration only after the exhaustion of all local remedies over a five-year period. This reverses the classic BIT emphasis on guaranteeing immediate international arbitration rights to foreign direct investors.
- v. Issues Exempted from Treaty Purview: India has expanded the list of treaty exemptions beyond the national security exemption permitted by the 1993 model BIT. Foreign firms cannot invoke treaty rights to block new host country policies/regulations relating to taxes, compulsory licensing, state subsidies, government procurement, public health and safety, environmental protection, and financial stability.

4.4 Dynamic Panel Data Model for Evaluating BIT Impact on FDI Flows in India

The first step to analysing the Indian experience with BITs would be to look at whether or not the signing of BITs has a positive inflow of FDI. As the data quoted earlier shows, India has received sustained flow of funds from abroad. However, it will be interesting to see whether BITs have at all had a significant impact on this flow. Also, following from the earlier section, it would be interesting to find if there has been a change in the impact of BIT (vis-à-vis FDI flows) post the first investor-state dispute lodged against India operating under the purview of a BIT.

In Chapter 2 earlier, a treatment effects model was used to derive the marginal impact of signing a BIT for FDI in a 41 developing countries’ global model. However in the following section, an alternative methodology i.e. a dynamic panel-data model has been used to study the impact of BIT ratifications’ impact on FDI flows. As mentioned earlier, there may be two-way causality between BITs and FDI. Thus to avoid an endogeneity bias, the dynamic panel

data model has been used that uses previous year's bilateral FDI value as an explanatory variable.

4.4.1 Econometric Model Framework

The dynamic panel data model framework is as follows:

$$y_{it} = \sum_{j=1}^p \alpha_j y_{i,t-j} + x_{it}\beta_1 + w_{it}\beta_2 + v_i + \epsilon_{it} \quad i = \{1, \dots, N\}; t = \{1, \dots, T_i\}$$

Where

$\alpha_1, \dots, \alpha_p$ are p parameters estimated, x_{it} are exogenous covariates, w_{it} are endogenous covariates, v_i are panel level effects, and ϵ_{it} are iid error terms.

The coefficients for different covariates are estimated using the Arellano and Bond (1991) generalised method of moments or GMM estimator. As mentioned earlier, in the Arellano and Bond Estimator, additional instruments are added for every period T, the instruments becomes $(y_{i1}, y_{i2}, \dots, y_{iT-2})$.

As there is strong likelihood of heteroscedasticity in the model, an alternative calculation of the variance-covariance matrix method has been used. STATA uses the Huber/White/sandwich estimator (or VCE (robust)) which is valid if the errors are independently distributed.

4.4.2 Data Selection

Despite their similar objective, explanatory variables have been interpreted differently from the Treatment Effects model developed earlier. The global treatment effects model focuses more on the choice of FDI host country made by difference sources and how the signing of BIT performs as an additional incentive for countries to invest. In the current model's case, the host country was the same i.e. India. Thus, inclusion of just host specific variables such as market size, governance, macroeconomic stability, would not have been very useful. Thus, the country model includes a number of variables that reflect source country characteristics as well. As before, the dependent variable in this model was the FDI flow from 18 developing countries to India over a period of 21 years i.e. 1990-2010. The data was taken from the OECD online FDI database.

The source country data used included per capita income, real interest rate, wage rates, and electricity consumption. The selection of variables draws upon the Linder hypothesis that postulates that similar countries, denoted by similarity in per capita incomes and capital embodied in production, trade more. While this hypothesis is typically applicable to trade flows, its suitability with respect to FDI flows was also examined. A per capita income difference variable was computed for different source countries and India. Since a measure of capital embodied in production was not readily available, a proxy variable in the form of difference in per capita electricity consumption was used.

The next set of variables used relate more to the potential profitability of business ventures for countries trying to set up business establishments in India. The variables constructed were the difference in real interest rate (as a proxy for rate of return on capital)¹⁸ and difference in average wage rates paid out. These two variables reflected important pull factors for foreign firms seeking to set up shop in a country.

As regards the source country's FDI flows, two additional variables have been considered. The first of these are the source country FDI invested globally. The idea is that source countries might target investing more in emerging markets as an investment strategy and the increase in FDI in the host country might be increasing because of that. The increased flow might be occurring independent of whether or not BITs had been signed. The second variable refers to the stock of FDI flows from a particular country to India till the year of analysis. This variable reflects the level of trust with countries that have already invested in India. This would be especially valid for investments made via the M&A route as links with specific domestic firms emerge over time.

As regards India specific factors, the variables that have been included are market size (per capita income), inflation and NEER as a measure of macroeconomic stability, trade openness as measure of propensity to export, etc. A complete list of variables used in the analysis are presented in Table 4.1.

As earlier, a BIT dummy variable was used based on whether or not a Bilateral Investment Agreement between various source countries and India is in place. To look at the impact of

¹⁸ When looked at from the perspective of the investor country, the interest rate offered by the developing country needs to be necessarily higher than the interest that the source country offers domestically (opportunity cost). Thus, while returns are dependent on a number of factors, the difference in interest rates has an important bearing on the decision to invest.

ISDS on FDI another dummy variable was created that switched from zero to one when the dataset year was beyond 2003. Another BIT-ISDS interaction term was created by multiplying the BIT dummy with the BIT_ISDS variable.

Table 4.1: Variables used in the Dynamic Panel Data Model

	Variables Used	Explanation
1.	Fdi_bilateral (level and Lag)	Bilateral FDI between India and 18 source countries in the current year and previous year
2.	Pcydiff	Difference in Per Capita Income between India and the 18 countries
3.	NEER	Exchange rate vis-à-vis USD
4.	Tradeopen	Trade as a share of GDP
5.	Intdiff	Difference in real interest rates between India and different source countries
6.	Wagediff	Difference in wage rates prevailing in India and different source countries
7.	Elecdiff	Difference in electricity consumption in India and the source countries
8.	Bilateral_prop	Bilateral trade between the two countries i.e. india and the source country, as a share of sum of global exports of the two countries
9.	Fdiattract	FDI attractiveness Index constructed from Doing Business Report data. It includes factors of contract enforcement, investor protection and difficulty in business operations
10.	Total_fdi_source	Total FDI invested by the source country globally
11.	Fdistock	Total stock of FDI invested in India from the source till that point in time
12.	Distcap	Distance between the country capital of the source country and New Delhi
13.	BIT	Dummy (0.1) based on whether a Bilateral Investment Agreement is signed between the partner countries
14.	Interactionbits	Interaction variable created by multiplying BIT and BIT_ISDS where BIT_ISDS=1 if year>=2003, 0 elsewhere

4.4.3 Model Results

A dynamic panel data model was used to derive the marginal impact of BITs on explaining FDI flows from various source countries to India. Results for three iterations of the model are presented in Table 4.2.

Among the exogenous variables, total global FDI flow (total_fdi_source) was found to be the most important determinant of bilateral FDI. It lends credence to the fact that a developed country looking towards investing more outside would raise its FDI stake in all countries that it has already invested in. Continuing with this storyline, even the variable for FDI stock was found to be positive and significant. It proves that developing countries which already have links established with the source country i.e. existing FDI stocks, would be benefited comparatively more.

Trade openness was found to have a positive impact on FDI flow. This would be important both from the point of view of FDI looking towards using domestic platforms to export internationally, as well as for FDI importing capital and intermediate goods for serving the FDI host country markets.

Higher exchange rates are shown to have a significant negative effect on FDI flows. Macroeconomic strength is directly correlated with stronger currency¹⁹. A strengthening local currency would therefore provide a signal for FDI looking towards investing in growing markets. Note that a strengthening currency would be a disincentive for FDI trying to use the host country as an exporting platform. But would be very attractive for FDI that is trying to capitalise on serving domestic market needs.

Some of the other explanatory variables reflect the motivations behind inbound FDI. From the results it would seem that FDI has shown characteristics of being tariff-jumping based on the coefficients for both distance (distcap) and bilateral proportion. The positive coefficient for distcap shows that FDI was received from countries that are located quite a distance away from India. Greater distance automatically hikes the transportation costs of exporting to India. This logic might also be used to interpret the negative coefficient for bilateral trade proportions. Countries that have higher levels of bilateral trade already have access to the domestic markets and need not invest to target the same. This conclusion however merits further investigation to be done as part of a future research paper.

¹⁹ As most currencies are market determined, macroeconomic stability is generally reflected in a strong currency. Also, in a panel data framework, the currency movements capture not just cross-sectional but inter-temporal variations as well. This implies that changing degree of macroeconomic performance of the same country over time is reflected in its exchange rate, not just how it fares with respect to other countries.

The model shows that there is a positive relation between BIT signing and per capita income difference. The results show India received more FDI from those countries that had a much higher per capita income level compared to its own. Countries that have similar per capita income levels would have larger overlaps of tastes and preferences. However it should be noted that India is a country with a very large population. Even though in per capita terms there might be large differences, the large population ensures that there would a significant market for all product qualities and design variations.

Wage rates were found to be a positive but insignificant determinants of FDI flowing into India. Countries that have high costs of production domestically (as reflected by higher labour costs) are more likely to look outside for comparatively cheaper labour resources. Electricity was also found to be an insignificant determinant of FDI flows.

The effect of interest rate differences were found to be positive and significant at the 10 per cent significance level. As interest rate differences could be thought of an indicator of the rate of return of investing in a particular country, it is no wonder that it turned out be significant.

The results show that BITs have a positive and significant impact on FDI flows. The marginal impact of signing each BIT over the study time period (1990-2008) was \$100-110 million per BIT per annum after accounting for all other explanatory variables.²⁰ It is interesting that the ISDS interaction term was found to be negative and highly significant. This result can be interpreted in two ways:

- (a) There were lesser flows from countries from whom BITs were signed before 2003, probably influenced by the dispute cases lodged.
- (b) Newer agreements signed post 2003 had a smaller impact on FDI than those signed before.

Of the 18 countries that have been considered in the database, India has signed BIT agreements with 14 of them. In this set of 14 countries, only the India-Finland BIT was signed on or after 2003. Thus, it would be safe to conclude that the fall in FDI post 2003

²⁰ We need to however recognise the fact that during the period that the number of BITs grew rapidly was also the period where there was a global surge in FDI. Therefore, the BIT variable might be picking up this phenomenon to a certain extent.

occurred because countries turned cautious because of the BIT-related dispute cases filed against India.

Table 4.2: Dynamic Panel Data Model Results for analyzing BIT impacts on FDI

Bilateral FDI	India FDI		
	Model 1	Model 2	Model 3
L1. fdi_bilateral	0.2569879 (0.2003736)	0.252738 (0.2000507)	0.2582567 (0.203791)
BIT	99.12604* (59.21804)	103.5107** (45.14858)	110.2544** (46.15233)
interactionbits	24.63354 (33.53935)	22.36935 (35.31868)	31.51704 (38.24221)
L1. interactionbits	-206.2417** (91.91531)	-192.9518** (95.1942)	-149.4152** (56.29326)
Trade	0.0000542 (0.0000355)	0.0000566 (0.0000358)	0.000057 (0.0000355)
NEER	-951.7053** (328.6887)	-975.7366** (316.8269)	-925.4468** (257.1768)
elec_india	0.1755805 (0.8934198)	0.5007137 (0.7201073)	
Pcydiff	0.0075491 (0.0130251)		
Wagediff	0.0158194 (0.0593991)		
Intdiff	6.572337* (3.584965)		
bilateral_prop	-427.2324 (277.741)	-444.8081 (289.9017)	-425.3816 (286.5507)
total_fdi_source	0.0030724** (0.0008596)	0.003089** (0.000866)	0.0030705** (0.0008486)
fdistock	0.0872313** (0.0276846)	0.0849194** (0.0294457)	0.0890229** (0.0330292)
distcap	0.0847439 (0.0680413)	0.1120905** (0.0338449)	0.1308831** (0.0416609)

Note: the figures in brackets represent standard errors

4.5 Impact of BIT on FDI quality at a Firm Level

The analysis presented above has shown that at the aggregate level the impact of BITs on India's FDI inflows has been positive. The next issue that needs to be studied is whether BITs have had a positive impact on the quality of FDI. To the extent that BITs lead to increased FDI flows, there is an additional investment stream flowing into the economy that would in all probability lead to increased capital formation. However, in addition to

providing an additional investment source to the economy, the FDI flowing in needs to generate positive externalities for the economy as well. This issue of quality of FDI stems from what is traditionally thought of as a 'good FDI' i.e. what is the FDI expected to do that would increase the welfare of the host economy.

The literature expounds the many ways in which FDI is thought to benefit the host. Foreign affiliates or multinational enterprises (MNEs) "bring in new technologies, in both disembodied and embodied forms, skills, marketing expertise and latest management practices from their parents into host countries. Knowledge resources spillover to domestic companies through various channels. Domestic firms tend to improve their technologies to meet increased competitive challenges thrown up by the entry of foreign affiliates and also learn from the demonstration of new technologies by them" (Pradhan, 2006). FDI spillovers can occur through many channels such as demonstration/imitation, labor mobility, exports, competition, and backward and forward linkages with domestic firms, some of which are discussed below.

On the flip side, it should be noted that the above positive impacts on the economy conform to a best-case scenario. In many cases FDI inflows have not led to the benefits outlined above. This may be because FDI flows are not uniform in character and could vary greatly depending upon the FDI home country, the host country resources, etc. Thus, even though theory outlines the possible benefits of FDI inflows, the actual benefits that accrue/would accrue to a developing country such as India may differ case-to-case and needs to be studied. It is particularly important to examine if the quality of FDI is influenced by entering into BITs.

While various papers constituting the existing literature has talked about the impact of FDI on specific characteristics of firms mentioned above such as export orientation, technology spill over, etc., none of these papers have gone into the question whether the existence of agreements such as BITs has led to an improvement in the quality dimension of FDI flow from a particular source country. The analysis presented in this section of the chapter thus seeks to fill a very important gap in the existing body of knowledge.

4.5.1 Theoretical Background

There are several perspectives on the concept of the quality of FDI and the ways they affect development and growth of host countries. Following are some of the important perspectives most often emphasized in the theoretical and empirical literature:

Sectoral Perspective on the Quality of FDI

It is said that “FDI into manufacturing sector and particularly into technology intensive industries constitutes higher quality FDI than the FDI flowing into extractive or natural resource-based sectors” (Pradhan, 2006). Due to their weak base in high-technology intensive sectors, for developing countries there is attractive possibility of FDI coming in and establishing vertical inter-firm linkages, generating technology and knowledge spillovers within the host economy (Kumar, 2002). The potential is lower for labour intensive industries where developing countries already have a well- developed production base. In these sectors, FDI tends to crowd out domestic enterprises due to their technological and other intangible assets superiority (Pradhan, 2006).

Localization of Production Perspective on the Quality of FDI

For host countries’ development, it is crucial that FDI not only comes into technology intensive sectors, but also that a large part of their production activities takes place locally. Localization of production in a FDI project includes both- its vertical integration in the host country, and its intensity of use of local raw materials and intermediates. Kumar (2002) and Pradhan (2006) argue that “the extent of knowledge transfer and its diffusion in the host country is proportional to the degree of vertical integration (measured as the proportion of value-added in sales), which in turn captures the extent of localization of production”.

Technological Perspective on the Quality of FDI

All technological activities done by foreign subsidiaries in the host country are an important aspect of the quality of FDI. This the reason for many host countries including India including technology transfer requirements for the entry of foreign firms. In some cases, only FDI projects showing a commitment to undertaking local research and

development (R&D) activities are ones permitted. It should however be kept in mind that the knowledge spillovers work only when foreign affiliates bring new technologies and skills to the host country and are engaged in sizeable knowledge creation activities (Pradhan, 2006).

Market-orientation Perspective on the Quality of FDI

Depending upon the markets that they seek to target, a FDI project can be classified as domestic market-seeking or export-oriented. While domestic market-seeking FDI is primarily inclined to serve the domestic market, the prime focus of export-oriented FDI is on regional or global export markets (Pradhan, 2006; Pradhan, Das and Paul, 2006). In this classification, export-oriented FDI is generally considered to be higher quality FDI than domestic market-seeking FDI. This is because the export-oriented FDI has “greater potential to generate strong links with local economy compared to domestic market oriented FDI given its motivation to exploit the locational advantages offered by the host county like low-cost labour, raw materials, components and parts, among other elements, for export activities”(Pradhan, 2006).²¹

Since the latter group of FDI is being motivated to serve the domestic market, they can erode the market share of domestic firms because of their superior assets bundles. On the contrary, export-oriented FDI may encourage downstream domestic investment by increasing demands for intermediate goods and since they primarily focus on the external market they are less likely to adversely affect their domestic counterparts (Pradhan, 2006).

4.5.2 Firm-level data and FDI Quality

For analysing the effect of BIT on the quality of FDI, it is important to look at firm level data. To carry out such an analysis, data from the ProwessIQ Company database have been used to build a panel data set of 5,069 Indian firms over the time period 1990-2014. The database was used to collect data on firm level parameters such as sales, profitability,

²¹ Note however there need not be any gains made with respect to forex earnings with FDI firms set up. There might be the case that rather than being net forex earning, such FDI turns forex spending as FDI firms tend to spend more on technical fees, royalties, imported raw materials, etc.

research and development expenditure, raw materials, energy consumed, etc. While ProwessIQ typically has data for 15186 manufacturing firms over the aforementioned data period, companies with data for less than 10 years were eliminated from the data set as part of the analysis.

The variable of crucial importance in the entire dataset relates to the data on foreign ownership. ProwessIQ provides information on company-wise foreign ownership patterns. Using this data, firms were characterized as foreign or domestic based on the percentage of foreign ownership (i.e. 10% of total equity or above). Once a firm was identified as being foreign, the nationality of principal foreign investor was determined. The identification of the source country has been done with the help of Capitaline company database as well as the Money Control website (www.moneycontrol.com), which helped in determining the ownership and nationality of the FDI source. Based on this data, a BIT variable was created that mapped out if and when a BIT was signed by this investor country and India. Data for Indian BITs signed was sourced from UNCTAD's IIA database.

Of the 5,069 firms used in the analysis, about 410 were identified as foreign. Of these 410 firms, information on source country FDI ownership was available for 278 firms. The small set of foreign firms is explained by the lack of data on nationality of principal foreign equity holder as well as its sporadic availability (data less than 10 years). These 410 firms represent various manufacturing sectors of the economy. Some of the major sectors that they belong to are: pharmaceuticals (37), transport equipment (33), chemical products (56), general purpose machinery (23), iron and steel (20), special purpose machinery (20), mineral products (18), plastics (16), etc.

4.5.2.1 Model Used

Since the database constructed is in the form of longitudinal data, panel data methods have been used to analyse the impact of BIT on various facets of BIT quality. The model used can be written as

$$y_{it} = \mu_t + \beta x_{it} + \gamma z_i + \alpha_i + \varepsilon_{it}$$

In other words, the various facets of FDI quality such as export orientation, technology intensity, etc. would be regressed against independent explanatory variables x that vary

across time (such as size, profitability, etc.) as well as variables z whose values stay the same such as incorporation year, foreign dummy, etc. α_i and ε_{it} are both error terms. ε_{it} is different for each firm at each point in time. α_i only varies across firms but not across time.

It is further assumed that α_i is uncorrelated with the x because no time-invariant variables are omitted, or because the variables that are omitted are not correlated with the variables that are in the model. Thus, a random effects model is used to provide estimates of both the β s and the γ s i.e. coefficients for both sets of explanatory variables.

It may be pointed here that the explanatory variable x includes a dummy variable for foreign firms based on equity holding of foreign promoters where foreign firm cut-off has been taken to be 10 percent equity ownership. It also includes an interaction term (`foreign_new`) between foreign firm dummy variable and the BIT dummy that takes into account when the BIT signed with a particular firm became operational.

It needs mentioning here that for two of the models, relating to namely – export intensity and technology orientation, a panel tobit model was also run. This was done because for most firms the dependent variable value was zero. Tobit model assumes that the observed data, or y_{it} , represents possibly censored version of y_{it}^* . As they are left censored, this would mean that:

$y = y^*$ if $y^* > 0$ and $y = 0$ if $y^* \leq 0$. Thus the model becomes

$$y_{it}^* = \mu_t + \beta x_{it} + \gamma z_i + \alpha_i + \varepsilon_{it} \text{ where } y = y^* \text{ if } y^* > 0 \text{ and } y = 0 \text{ if } y^* \leq 0$$

4.5.2.2 Model Particulars

To study the impact of BIT on FDI quality, four different facets of firm performance are looked at. The following model examines the BIT impact on firm-level export intensity, technology orientation, wage share and local content utilisation. The various explanatory variables used in the analysis are outlined in Table 4.3 below.

It is noteworthy that since the following is a micro-econometric analysis using firm level data, it is assumed that the BIT variable is exogenous. The Treatment Effects model was run in the larger macroeconomic case earlier because of the endogeneity issue and the direction

of causality between FDI and BIT. At the smaller firm level however, there is no such risk of endogeneity and firms can be assumed to have no significant influence on BIT signing. It is thus appropriate to use panel data methods for the collated database of firm particulars over time.

Table 4.3: Variables use in the Firm Level Analysis

	Variables	Construction	Explanation
1.	Size	Log(sales)	Denotes the size of the firm
2.	Lkratio	employee cost/net assets	Labour-capital ratio
3.	Xint	Exports/sales	Export Intensity
4.	Kint	Net assets/sales	Capital Intensity
5.	Wage share	Compensation to employees/sales	Labour Intensity
6.	Empl	Log(employees number)	Number of Employees in the firm
7.	Tech_intensity	(research expenditure+ technology royalties paid +forex expenditure on technology)/total expenditure	Technology Orientation
8.	Reer	Real effective exchange rate	Denotes exchange rates movements
9.	Power	Power consumption /expenditure	Energy consumption intensity
10.	Pat_L1	Profits after tax/sales	Profitability of the firm last year
11.	Local_mat	(raw material consumption-imported raw material)/total raw material	Local content in production
12.	Age of the firm	Current Year -Incorporation year	Denotes how old the firm is
13.	Selling_cost_intensity	Selling costs/total expenditure	Selling costs incurred
14.	Capimp	Import of capital goods /f_sales	Denotes how much of technology is imported

			from outside
15.	Foreign_new	Dummy=1 if fdi share>10% equity Dummy=0, otherwise	Denotes whether the firm is significantly controlled by foreign entities
16.	Foreign_firm	Dummy=1 if in any year fdi share>10% equity Dummy=0, otherwise	Denotes whether the firm is significantly controlled by foreign entities
17.	Bitint	Interaction term (BIT multiplied by foreign firm dummy i.e for_dum)	Denotes whether India has signed a BIT with the significant foreign entity

Note that wage share has been taken as the variable for understanding the FDI impact on employment creation. While data on employment in firms exists in ProwessIQ, it is reported by very few firms. The number of observations drops drastically when employment was used in any of the models. Additionally, while checking for observed selection bias, it was found that only the very large firms report their employment figures. Using employment would thus have skewed the modelling results.

Mentionable also is the difference between the Foreign_new and Foreign_firm dummies. Foreign_new turns one in whichever year a firm has greater than 10 per cent foreign equity ownership, and remains the same thereafter. Foreign_firm dummy converts to one for all years (1990-2014) if the firm had 10 per cent or higher FDI in any of the analysis years. Foreign firm dummy is therefore time invariant.

4.5.2.3 Earlier Studies

A number of recent studies exist that look at the effect of FDI on the performance of firms. Ghosh and Sinha Roy (2013) look at the impact of FDI on export performance. They find that ownership along with import of technology, in-house R&D, import of raw materials, and marketing, advertising and distribution costs are the major determining factors of firm-level exports. An older paper written by Kumar and Siddharthan (1993) found the presence of an inverted U-shaped relationship between firm size and export behaviour in Indian industries. They further found that a firm's technological activity favourably influences its export

behaviour only in medium and low technology industries. MNE affiliates in general do not exhibit significantly different export behaviour from other firms and tend to focus instead on the domestic markets. Similar results were also found by Pradhan and Abraham (2005) in their analysis. They note that while local market-oriented FDI may crowd out domestic firms and investments, export-oriented FDI can stimulate investment by generating demands for intermediate goods. They further found that export behaviour of foreign affiliates to be strongly correlated with their intensity to import raw material. They thus suggest that a liberal policy with respect to imports would encourage foreign firms to export further. Joseph and Reddy (2010) hypothesize that the presence of foreign firms improves the competitiveness and export orientation of domestically owned firms in developing countries through "horizontal spillovers" and "backward spillovers".

In a later paper, Ghosh and Sinha Roy (2014) analyse the impact of FDI on technology acquisition and labour demand. They find that foreign ownership did not have a significant role in determining firm-level labour demand. Also, that new technology acquisition by foreign firms is not labour displacing in the short run for major sectors. The issue of FDI and its role in determining wage and employment has been looked at by previous papers written by Pradhan et. al. (2004) and Banga (2005). While the former paper finds that foreign firms do not have an adverse effect on employment, Banga (2005) finds that higher FDI in an industry leads to higher wages and no effect on employment.

Petkova (2012) in her paper looks at the effect of FDI on firm productivity and growth. She finds there to be a positive relationship between foreign ownership and output, fixed assets and wage growth. She however does not find a significant relationship between FDI and enhanced productivity. A later paper by Goldar and Sharma (2015) however found a positive effect of FDI on firm productivity and medium term profitability. But they did not find any significant impact of FDI on export performance like the papers mentioned above.

4.6 Analysis Results

For each of the facets of FDI quality, the results are follows:

4.6.1 Export Intensity

Several international studies have highlighted the positive impact of MNEs on the export capacity of domestic firms. In the Indian case however results are still not supportive of this

conjecture. It is often stated that export activity involves costs associated with the establishment of distribution networks, transport infrastructures or knowledge of consumers' tastes in foreign markets, which MNEs are more able to afford. By following the export processes of foreign firms (through imitation or, in specific circumstances, through collaboration), domestic firms may reduce the entry costs into the foreign market. The gains obtained in this way may have favorable repercussions on the productive efficiency of domestic firms as well.

Table 4.4 below shows the results for export intensity analysis of firms. The results show that there is strong significant relationship between size and export intensity i.e. larger firms generally export more. Earlier studies such as Kumar and Siddharthan (1994), Aggarwal (2002); Kumar and Pradhan (2003) have all found firm size as an important determinant of export intensity of firms.

Also, firms that are more capital intensive in nature, as reflected by lower labour-capital ratios, were more likely to export. Firms with high-technology orientation are also expected to export more. A strong relationship between capital goods imports and export orientation was also seen.

Exchange rate movements (i.e. depreciation) were seen to have a positive impact on exports. Also, results show that companies that use more local content have a lesser likelihood of exporting. It could be that these firms using local inputs cater to domestic rather than international demand. Newer firms were found to be more export oriented than older firms as shown by the negative relationship. But the coefficient was not found to be significant. A positive significant relation was noticed between export intensity and selling and distribution costs as well.

It is interesting to note that foreign firms have a significantly lesser likelihood of exporting. In the four iterations of the model below, both `foreign_new` and `foreign_firm` dummies were applied. In all variations, the dummy for foreign firms showed a significant negative relationship. It would thus seem that most foreign firms operating in India for the study period were more geared towards catering to the Indian domestic market rather than exporting internationally. However, the BIT interaction term i.e. foreign firms that are under

the protection of BITs signed with India, was not found to be significant in the two variants. Even in the iterations where it was found to be significant, the coefficient had a negative sign which would imply that BITs had an additional impact on reducing export intensity. In other words, the existence of a BIT is not seen to add any impetus to the already existing propensity to export of firms. If anything, they were found to have a negative impact on exports.

Table 4.4: Impact of FDI and BIT on Export Intensity (Tobit Model)

Export Intensity (xint)	All Firms			
	Model 1	Model 2	Model 3	Model 4
Lkratio	-.0084565** (.0029881)	-0.0088152** (0.0029868)	-0.0092375** (0.0029847)	-0.0096417** (0.0029885)
Size	.0138191** (.0013307)	0.0137039** (0.0013302)	0.0141956** (0.0013234)	0.0141838** (0.0012754)
Age	-.0001901 (.0001764)	-0.0002662 (0.000175)	-0.0001344 (0.0001712)	0.0000334 (0.0001762)
local_mat	-.1477446** (.0054443)	-0.1475656** (0.0054457)	-0.1480717** (0.0054443)	
capimp	.0780526** (.0123913)	0.0792406** (0.0123937)	0.080578** (0.0123875)	0.138248** (0.011636)
Pat_L1	.0002953 (.0043886)	0.0004765 (0.00439)	0.0001901 (0.0043893)	
Reer	.0002033** (.0000571)	0.0001998** (0.0000571)		0.0002499** (0.0000445)
tech_intensity	.0873334 (.0783307)	0.0864732 (0.0783648)	0.0926665 (0.0783464)	0.1179951 (0.0783119)
Selling_cost intensity	.7325802** (.0333907)	0.727693** (0.0333676)	0.7306726** (0.0333614)	0.7482849** (0.0334341)
for_new	-.0148031** (.0037857)			-0.0137131** (0.0038943)
For_firm		-0.0420962** (0.0143479)	-0.043382** (0.0143837)	
bitint	-.0058479 (.0061507)	-0.0124501** (0.0057795)	-0.011308* (0.0057705)	0.0022591 (0.0060906)
_cons	.183585 (.0108672)	0.1921865** (0.0110448)	0.2058624** (0.0103402)	0.0519463** (0.0086095)
Observations	24,116	24,116	24,116	25,058

Note: the figures in brackets represent standard errors

4.6.2 Employee Cost Share:

One possible avenue for spillover could be domestic firms hiring workers who, having previously worked for an MNE, have knowledge and experience of the technology and are able to apply this in the domestic firm (Crespo and Fontoura, 2007). Bergman (2006) in her paper states that labour turnover is a spillover mechanism that may benefit the local industry, since circulation of the labour force enables some original knowledge to be transferred between the foreign and domestic firms. It is however very hard to map the effect of this sort of an intra-industry migration of workers. Using existing firm-level databases, I look at an alternate facet of employee welfare following enhanced FDI flows. The variable examined in this case is the marginal impact of foreign firms and BIT on enhancing wages and/or employment in the specific firm which received FDI. Table 4.5 below shows the results for panel regression runs on all firms using employee compensation shares as the dependent variable.

It is noteworthy that the wage share variable includes elements of both employment as well as wages/salaries. There are certain variables that have a direct link with higher salary levels of employees such as embodied skills, etc. associated with capital intensive industries that show up as a positive significant relationship. There are others that have a bearing on the number of people employed such as the age of the firm and the size. All results need to be interpreted keeping these two points in mind.

For my analysis, the results show that smaller firms are more likely to have higher wage shares as a proportion of output. Older firms (with earlier incorporation years) have higher wage share as well.

It is interesting that there is a positive and significant relationship between wage share and both technology orientation (more R&D investment, etc.) as well as power consumption. Higher technology orientation signifies greater complexities in the production process. These firms might be using more skilled labour and thus the wage shares might be high due to the higher salary typically given. A similar study done by OECD and ILO (2008) on Impact of FDI on wages and working conditions found that the positive wage effect spreads across not just the workers directly employed by MNEs, but workers working in domestic firms participating in the supply chains established by MNEs.

Capital imports were also seen to have a positive influence for all firms. This can be because firms that are more capital import based employ better skilled workers which translate into higher wage rates. The positive relationship between capital intensity and wage shares can also be explained using the same logic.

For wage share, both the foreign dummy term showed a significantly positive relationship in most versions of the model. This means that foreign firms are more likely have higher wage shares. However, foreign firms hailing from home countries that have signed BITs with India were not more likely to have higher wage shares. This is reflected by the insignificance of the BIT dummy's coefficient.

Table 4.5: Impact of FDI and BIT on Employee Cost Shares

Wageshare (Employee Share)	Cost	All Firms			
		Model 1	Model 2	Model 3	Model 4
size		-0.0015551** (0.0002909)		-0.0027264** (0.0002972)	
age					0.0009891** (0.0000396)
kint		0.0081911** (0.0002338)			0.0084323** (0.000229)
local_mat		0.005882** (0.0017213)	0.0071427** (0.0017537)	0.0047372** (0.0017698)	0.012593** (0.0016935)
capimp		0.01131** (0.0038198)	0.0284109** (0.003878)	0.0231297** (0.003913)	0.0233599** (0.0037513)
Pat_L1		-0.0344592** (0.0013682)	-0.0383091** (0.001403)	-0.0372876** (0.0014046)	-0.0347048** (0.0013459)
tech		0.1643123** (0.0241488)	0.1594938** (0.0247884)	0.1788398** (0.0248298)	0.1018079** (0.0238149)
xint		0.0084322** (0.002068)	0.0065324** (0.0021138)	0.0089908** (0.0021266)	0.0015069 (0.0020373)
selling		-0.1142317** (0.0105941)	-0.118107** (0.0109138)	-0.1195012** (0.0108936)	-0.104524** (0.0104565)
power		0.2582689** (0.0107415)	0.2763307** (0.0110539)	0.2731094** (0.011038)	0.244085** (0.0106083)
for_new		0.0085018** (0.0011423)	0.0068754** (0.0011621)	0.0085833** (0.0011747)	0.0014988 (0.0011383)
bitint		0.0008654 (0.0018901)	0.00000674 (0.0019357)	0.0019556 (0.0019435)	-0.0068437** (0.0018712)
_cons		0.0736324** (0.0028806)	0.0641086** (0.0016891)	0.0861991** (0.0029393)	0.0289539** (0.0020666)
Observations		24,004	23,974	24,006	23,974

4.6.3 Local Material Usage

An important channel for positive spillovers is the links that domestic firms establish in local markets as suppliers to MNEs (backward linkages) or customers of intermediate inputs produced by them (forward linkages). Crespo and Fontoura (2007) state that with increasing returns to scale, the presence of MNEs may benefit domestic suppliers if it increases the demand for local inputs. In their attempts to assure a certain level of quality, MNEs may also benefit domestic suppliers in several other ways: providing technical support for the improvement of the quality of goods, or for the introduction of innovations (e.g., through personnel training), providing support for the creation of productive infrastructure, and for the acquisition of raw materials, as well as providing organizational and management support (Crespo and Fontoura, 2007). The possible increase in the efficiency of domestic firms brought about by the competition among them to become MNE suppliers should also be considered. Regarding the channel of forward linkages, the most evident link is observed in the MNEs' supply of higher quality inputs possibly at a lower price to domestic producers of end-user consumer goods.

Since local content usage is an important first step to effectuate the abovementioned backward and forward linkages, the following model looks at the impact of FDI as well as other explanatory variables on local content usage of both domestic and foreign firms. The results are presented in Table 4.6.

The results show that both export orientation as well as size are negatively related with local content usage. Firms that are export intensive and/or larger in size use higher levels of imported materials. Newer firms are however seen to use lesser local inputs in their production processes. Firms that are more labour intensive (reflected by the $lkratio$) and have lesser technology orientation also show significantly higher usage of local materials. This is also reflected by the significantly negative association of capital imports with local content usage. A stronger currency is also associated with higher locally available material utilisation.

The strong positive association between power consumption and local content was both surprising and puzzling. Based on literature there should be strong correlation between

capital intensity, technology orientation and power consumption. However, the results show that while the relation with local content utilization is negative for both technology and capital intensity, it is positive for power consumption.

As regards the foreign variables, foreign firms are seen to be using lower level of local inputs in all iterations. However, they were significant in only two of the models. Interestingly, in all model iterations the signing of BITs shows up having a significantly negative impact on the usage of local products in the production process. The gains from BIT signing through spill-over effects thus seem to be very limited for Indian firms according to this result.

Table 4.6: FDI and BIT Impact on Local Content Usage

Local content usage (local_mat)	All Firms			
	Model 1	Model 2	Model 3	Model 4
Lkratio	0.0044985 (0.0033993)		0.0032823 (0.003719)	
Size	-0.0270659** (0.0011152)		-0.025322** (0.00115)	-0.0250764** (0.0011465)
Age		-0.0031791** (0.0001665)		
Xint			-0.2006552** (0.0081235)	-0.2014518** (0.0081227)
Compen		0.1523793** (0.0224738)		0.0932973** (0.0273017)
Kint	-0.0025947** (0.0004905)	-0.0020088** (0.0004939)	-0.0025186** (0.0009332)	-0.0033369** (0.0009572)
Capimp	-0.10075** (0.0136305)	-0.0783537** (0.013595)	-0.1090195** (0.0152072)	-0.1104707** (0.0151974)
Pat_L1	0.0035005 (0.004193)	-0.00065 (0.0042504)	-0.0056003 (0.0054506)	-0.0023416 (0.0055298)
Reer	-0.0002761** (0.0000611)	-0.0002892** (0.0000638)		
tech	-0.2073442** (0.0912743)	-0.2582377** (0.0916188)	-0.1590973* (0.0962045)	-0.1755448* (0.0962735)
Selling	0.0591369 (0.0391147)	0.049607 (0.0393582)	0.2178166** (0.0421805)	0.2278884** (0.042279)
Power	0.2591991** (0.0366207)	0.307188** (0.0371235)	0.3350565** (0.042729)	0.3107131** (0.0433048)
for_new	-0.0055662 (0.0044125)	-0.0045391 (0.0044695)	-0.0148175** (0.0045556)	-0.0153903** (0.0045539)
Bitint	-0.0609252** (0.0073302)	-0.0602107** (0.0073798)	-0.0633932** (0.0075171)	-0.0634189** (0.0075151)
_cons	1.012713** (0.0087585)	0.8925114** (0.0066236)	0.9987125** (0.0092236)	0.9918081** (0.0094554)
Observations	28,414	28,414	24,004	24,004

4.6.4 Technology Orientation

MNEs are usually found to be Research and Development (R&D) and capital intensive, hence a potential source of intra-industry spillover is the transfer of production and process technology from MNEs to the domestic companies. The foreign firms make the domestic players aware of the existence of the technology; and the presence of MNEs and resulting competition are likely to speed up the domestic firms' technology absorption (Bergman, 2006). Technology and productivity gaps between the foreign and local firm may stimulate spillover effects. If a technology gap exists, some differences in productivity and innovations between foreign owned and domestic firms should be expected. If the local firm is less productive than the foreign firm, there is a scope for it to catch up, by imitating the technology of foreign leaders. It is thus important to see whether there is an increase in technology orientation of a firm following increases in foreign investment in the Indian case. Table 4.7 below shows the results of technology orientation of firms regressed against various explanatory variables.

The results for technology and size show that larger size firms tend to have greater technology orientation as reflected by investment in R&D, etc. A positive relationship between technology orientation, capital imports and imported inputs required in the production process (reflected by low local material usage) was also seen. There was a significant positive relationship between previous year's profitability of firms and their investments in R&D. It seems that possibility of internal funding through profits spurs investments made in accessing/developing new technologies.

As expected, there is a significant impact of foreign firms in determining technology orientation. This was witnessed for models using both `for_new` and `for_firm` as the explanatory variables. An additional fillip to technology orientation is given post the signing of BIT as well. This can be read off from the significant positive coefficient for the BIT interaction dummy.

Table 4.7: FDI and BIT Impact on Technology Orientation of Firms

Technology Orientation (tech)	All Firms			
	Model 1	Model 2	Model 3	Model 4
Lkratio	-0.0000132 (0.0002388)		-0.00000785 (0.0002385)	
Size	0.0008727** (0.0000902)	0.0011611** (0.000093)	0.0008966** (0.0000898)	0.0011785** (0.0000928)
Age	0.00000911 (0.0000106)	-0.0000302** (0.0000109)	0.0000122 (0.0000105)	-0.0000272** (0.0000108)
Xint	-0.0002481 (0.0004915)	-0.0003614 (0.0004888)	-0.0001861 (0.0004908)	-0.0002941 (0.0004882)
local_mat	-0.002195** (0.000446)	-0.0023121** (0.0004445)	-0.0021834** (0.0004455)	-0.0023015** (0.0004441)
Compen		0.0192393** (0.0017209)		0.0192989** (0.0017705)
Kint				-0.0000237 (0.0000606)
Capimp	0.0069254** (0.0010424)	0.0064628** (0.0010399)	0.0068082** (0.0010421)	0.0063989** (0.0010446)
Pat_L1	0.0017081** (0.0003655)	0.0023477** (0.0003692)	0.0017035** (0.0003653)	0.0023363** (0.0003692)
Selling	0.0338366** (0.0026631)	0.0353211** (0.0026549)	0.0338826** (0.0026586)	0.0353107** (0.0026505)
for_new	0.00117** (0.000318)	0.0010709** (0.0003173)		
for_firm			0.0041887** (0.0006701)	0.0039405** (0.0006598)
Bitint	0.0008908* (0.0004991)	0.0009033* (0.0004975)	0.0009317** (0.0004735)	0.0009076* (0.0004722)
_cons	-0.0002107 (0.0007411)	-0.002691** (0.0007672)	-0.0010128 (0.0007451)	-0.0034054** (0.0007718)
Observations	24,116	24,118	24,116	24,116

Conclusion

This chapter tried to explore the impact of BITs on FDI flows to India. The first section tried to evaluate the costs that India had to incur as a result of signing BITs. It looked at the amounts paid by India for various out of court settlements and penalties charged when the arbitration was decided in favour of the investor. On the flip side, two separate modelling techniques were used to look at the benefits of BITs for India. The benefits that were looked at in this particular chapter included higher FDI (post BIT) and a more host-country development orientation of FDI that has already been invested into local firms in India. A dynamic panel data model was used to look the impact of bit signing on India's FDI flow. While this model was a variant of the larger global model used in Chapter 2, the novelty of the model was with respect to the several source country characteristics that were incorporated. This model thus looked at both the push (from the source country's side) as well as pull factors (from the host countries side) that influenced foreign investment flow. This model found that there has been a positive impact of BITs on FDI in India. It also showed that the marginal impact of signing a particular BIT has been as high as USD 100-110 million per BIT per annum for India. The results also showed that the number of ISDS cases lodged against India have led to a significant reduction in FDI from more economically developed BIT partner countries.

The second model(s) analysed in the paper related to issue of quality of FDI at the firm level using the fixed effects and Tobit panel data models. Chapter 3 earlier delved into the issue of BIT quality with the basic premise that BITs were not a single template agreement but differed based on various clauses and their stringency. This chapter too started off with the initial idea that all FDI were not the same, and they differed based on their welfare impacts on the host economy. This issue of quality of FDI was tackled through looking at the four dimensions of 'good' FDI generally discussed in the literature. This included improvements in firm export intensity, technological orientation, local content utilisation, and wage shares.

Using information from different firm level databases, the role of foreign (with more than 10% equity held by foreign entities) and BITs on these four FDI quality metrics was analysed. The results showed that foreign firms had a significant role in determining some of the FDI quality outcomes. The role of BITs was measured through the creation of an interaction

term for the foreign firms, which looked at whether or not the principal foreign entity invested in a particular firm belonged to a country with whom India has signed a BIT.

The results for the BIT interaction term showed that BITs have had a positive influence on two of the four FDI quality metrics. BITs were shown to have a negative influence on both export orientation and local content requirement. It thus seems that post-BIT, countries import a higher share of components (capital and intermediate inputs) and seek to largely serve the domestic market. The coefficient for BITs' impact on local content requirement was found to be significantly negative in all model iterations. A positive impact for BITs showed up in the models for employee cost shares and technology orientation. The positive coefficient for employee costs was found to be insignificant in all iterations. A strong impact of BITs on technology orientation of the firm was however noticed.

The data therefore seems to indicate that while positive BIT effects have been felt by firms, the potential for spillover effects seems to be low. Both local content requirement as well as employment impacts that are the vehicles of larger diffusion of beneficial effects of FDI have not been significantly influenced or even positively influenced by BITs. The technology orientation aspect however seems to be a positive fall-out of the heightened security for FDI following a BIT.

Annexure 4.1: India's BIT cases till date (as a respondent state)

No.	Year of initiation	Short case name	Summary	Outcome of original proceedings	Respondent State	Home State of investor
1	2016	Astro v. India	Investment: Investment in the Indian satellite TV company Sun Direct. Summary: Claims arising out of an allegedly unfair and biased criminal investigation by the Government relating to the suspected bribery by the claimant of Indian government officials.	Pending	India	United Kingdom
2	2016	South Asia Entertainment v. India	Investment: Investment in the Indian satellite TV company Sun Direct. Summary: Claims arising out of an allegedly unfair and biased criminal investigation by the Government relating to the suspected bribery by the claimant of Indian government officials.	Pending	India	Mauritius
3	2016	Vedanta v. India	Investment: 59.9% shareholding in Cairn India Limited, one of the largest oil and gas exploration companies in India. Summary: Claims arising out of a tax bill of approximately USD 3.29 billion, imposed by the Government on Cairn India Limited in 2015, for the alleged failure to pay taxes on capital gains arising from Cairn's operations in 2006-2007.	Pending	India	United Kingdom
4	2015	Cairn v. India	Investment: Interests in subsidiary Cairn UK Holdings Limited and 10 per cent shareholding in Cairn India Limited (CIL), one of the largest oil and gas exploration companies in India. Summary: Claims arising out of a draft assessment order issued by the Indian Income Tax Department addressed to the claimant's subsidiary, Cairn UK Holdings Limited, in respect of fiscal year 2006/7 in the amount of USD 1.6 billion plus any applicable	Pending	India	United Kingdom

			interest and penalties; and the alleged prohibition for the claimant to sell its 10 per cent shareholding in Cairn India Limited.			
5	2014	LDA v. India	<p>Investment: Shareholding in a joint venture with Indian port operator ABG Infralogistics to implement a project aimed at the mechanisation of berths at Haldia in West Bengal.</p> <p>Summary: Claims arising out of a series of measures by the Indian Government that allegedly prevented the effective implementation of a joint venture related to a port modernization project at Haldia, in the city of Kolkota, in which the claimant held stakes; including allegedly failing to provide protection and security to the project, and to obey court orders concerning the removal of equipment from the port.</p>	Pending	India	France
6	2014	Vodafone v. India	<p>Investment: Ownership of an Indian telecoms company.</p> <p>Summary: Claims arising out of a retrospective transaction tax imposed by the Government over claimant's acquisition of Indian-based Hutchison Whampoa telecoms business.</p>	Pending	India	Netherlands
7	2013	Deutsche Telekom v. India	<p>Investment: Indirect shareholding (20 per cent stake via a Singaporean subsidiary) in the Indian company Devas Multimedia, that had concluded contracts with Antrix - related to the Indian Space Research Organisation- for the launch and operation of two satellites.</p> <p>Summary: Claims arising out of the Government's cancellation of a contract concluded with Devas, a company in which the claimant held interests, concerning the provision of broadband services to Indian consumers.</p>	Pending	India	Germany
8	2013	KHML v. India	<p>Investment: Minority shareholding (27 per cent) in Loop Telecom, a telecommunications company that held twenty one 2G licences in India.</p> <p>Summary: Claims arising out of the cancellation by India's Supreme Court of a telecoms licence held by a company in which the claimant had invested, and its</p>	Pending	India	Mauritius

			reassignment through a public auction process.			
9	2012	Devas v. India	<p>Investment: Shareholding in Devas Multimedia Private Limited, an Indian company that had concluded a telecommunication contract with an Indian state entity under the control of the Indian Space Research Organization.</p> <p>Summary: Claims arising out of the alleged Government's cancellation of an agreement to lease capacity in the S-Band, part of the electromagnetic spectrum, for claimants' subsidiary to launch two satellites to provide multimedia services to mobile users across India.</p>	Pending	India	Mauritius
10	2012	Tenoch Holdings v. India	<p>Investment: Majority shareholding in the Indian telecoms company ByCell India.</p> <p>Summary: Claims arising out of the withdrawal by Indian authorities of an approval to grant frequency allocation licences to claimants' local telecoms company ByCell, after it had previously obtained clearance from India's Foreign Investment Board.</p>	Pending	India	Russian Federation Cyprus
11	2010	White Industries v. India	<p>Investment: Rights under certain contract concluded with a State-owned mining company, a bank guarantee and an ICC award rendered in White Industries' favor.</p> <p>Summary: Claims arising out of alleged judicial delays by the Government of India that left the claimant unable to enforce an ICC award for over nine years concerning a contractual dispute with Coal India, a State-owned mining entity.</p>	Decided in favour of investor	India	Australia
12	2004	ABN Amro v. India	<p>Investment: Creditor of loans associated with the financing of the Dabhol energy project in Maharashtra, India.</p> <p>Summary: Claims arising out of respondent's alleged failure to protect the investor's loans in the Dabhol combined cycle power plant project in India, the default of which resulted in significant losses to the claimant's financing of the failed project.</p>	Settled	India	Netherlands
13	2004	ANZEF v.	<p>Investment: Creditor of loans associated with the financing of the Dabhol energy project in Maharashtra, India.</p>	Settled	India	United

		India	Summary: Claims arising out of respondent's alleged failure to protect the investor's loans in the Dabhol combined cycle power plant project in India, the default of which resulted in significant losses to the claimant's financing of the failed project.			Kingdom
14	2004	BNP Paribas v. India	Investment: Creditor of loans associated with the financing of the Dabhol energy project in Maharashtra, India. Summary: Claims arising out of respondent's alleged failure to protect the investor's loans in the Dabhol combined cycle power plant project in India, the default of which resulted in significant losses to the claimant's financing of the failed project.	Settled	India	France
15	2004	Credit Lyonnais v. India	Investment: Creditor of loans associated with the financing of the Dabhol energy project in Maharashtra, India. Summary: Claims arising out of respondent's alleged failure to protect the investor's loans in the Dabhol combined cycle power plant project in India, the default of which resulted in significant losses to the claimant's financing of the failed project.	Settled	India	France
16	2004	Credit Suisse v. India	Investment: Creditor of loans associated with the financing of the Dabhol energy project in Maharashtra, India. Summary: Claims arising out of respondent's alleged failure to protect the investor's loans in the Dabhol combined cycle power plant project in India, the default of which resulted in significant losses to the claimant's financing of the failed project.	Settled	India	Switzerland
17	2004	Erste Bank v. India	Investment: Creditor of loans associated with the financing of the Dabhol energy project in Maharashtra, India. Summary: Claims arising out of respondent's alleged failure to protect the investor's loans in the Dabhol combined cycle power plant project in India, the default of which resulted in significant losses to the claimant's financing of the failed project.	Settled	India	Austria

18	2004	Offshore Power v. India	<p>Investment: Majority shareholding, through subsidiary company, of the Indian Dabhol Power Company.</p> <p>Summary: Claims arising out of respondent alleged failure to protect claimants' investment in the Dabhol power plant project in India, which resulted in significant losses to the claimants' financing of the failed project.</p>	Settled	India	Netherlands
19	2004	Standard Chartered Bank v. India	<p>Investment: Creditor of loans associated with the financing of the Dabhol energy project in Maharashtra, India.</p> <p>Summary: Claims arising out of respondent's alleged failure to protect the investor's loans in the Dabhol combined cycle power plant project in India, the default of which resulted in significant losses to the claimant's financing of the failed project.</p>	Settled	India	United Kingdom
20	2003	Bechtel v. India	<p>Investment: Shareholding in local corporations established to operate the Dabhol power project in the state of Maharashtra, India.</p> <p>Summary: Claims arising out of an alleged reversal in the energy policy of the local government between the beginning of the power project in which the claimants invested and its intended consummation, as a result of political change in the Government.</p>	Settled	India	Mauritius

Source: UNCTAD, Investment Policy Hub, Investment Dispute Settlement Navigator, various cases (<http://investmentpolicyhub.unctad.org/ISDS/CountryCases/72?partyRole=1>, <http://investmentpolicyhub.unctad.org/ISDS/CountryCases/203?partyRole=1>, <http://investmentpolicyhub.unctad.org/ISDS/CountryCases/148?partyRole=1>, <http://investmentpolicyhub.unctad.org/ISDS/CountryCases/12?partyRole=1>,)

Annexure 4.2: Impact of BITs on India's FDI Inflows

```
xtabond fdi_bilateral trade neer elec_india pcydiff intdiff bilateral_prop
total_fdi_source fdistock distcap, lags(1) endogenous(bit, lag(0,.))
endogenous(inteactionbits, lag(1,.)) vce(robust)
```

```
Arellano-Bond dynamic panel-data estimation    Number of obs    =    231
Group variable: cd1                            Number of groups =    17
Time variable: year
```

```
Obs per group:
min =    2
avg = 13.58824
max =    19
```

```
Number of instruments =    200                Wald chi2(13)    = 29038.54
                                                Prob > chi2      =    0.0000
```

One-step results

(Std. Err. adjusted for clustering on cd1)

		Robust				
fdi_bilateral	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	

fdi_bilateral						
L1.	.2574768	.1999573	1.29	0.198	-.1344323	.6493859
bit	93.47718	49.22636	1.90	0.058	-3.004704	189.9591
inteactionbits						
--.	26.10807	31.2753	0.83	0.404	-35.19039	87.40653
L1.	-205.5287	91.5693	-2.24	0.025	-385.0012	-26.05617
trade	.0000542	.0000354	1.53	0.125	-.0000151	.0001235
neer	-962.6433	312.5984	-3.08	0.002	-1575.325	-349.9618
elec_india	.2336271	.7659696	0.31	0.760	-1.267646	1.7349
pcydiff	.0087061	.0134833	0.65	0.518	-.0177206	.0351328
intdiff	6.768883	3.979143	1.70	0.089	-1.030095	14.56786
bilateral_prop	-430.5482	275.2926	-1.56	0.118	-970.1118	109.0154
total_fdi_source	.0030883	.0008232	3.75	0.000	.0014749	.0047018
fdistock	.0868772	.0283375	3.07	0.002	.0313368	.1424177

```

distcap | .0830156 .0672255 1.23 0.217 -.0487438 .2147751
_cons | 0 (omitted)

```

Instruments for differenced equation

GMM-type: L(2/.)fdi_bilateral L(2/.)bit L(2/.)L.inteactionbits

Standard: D.trade D.neer D.elec_india D.pcydiff D.intdiff

D.bilateral_prop D.total_fdi_source D.fdistock

Instruments for level equation

Standard: _cons

```

xtabond fdi_bilateral trade neer elec_india bilateral_prop total_fdi_source
fdistock distcap, lags(1) endogenous(bit, lag(0,.))endogenous(inteactionbits,
lag(1,.)) vce(robust)

```

Arellano-Bond dynamic panel-data estimation Number of obs = 231

Group variable: cd1 Number of groups = 17

Time variable: year

Obs per group:

min = 2

avg = 13.58824

max = 19

Number of instruments = 198

Wald chi2(11) = 3575.98

Prob > chi2 = 0.0000

One-step results

(Std. Err. adjusted for clustering on cd1)

```

-----
                |                Robust
fdi_bilateral |                Coef.  Std. Err.    z    P>|z|    [95% Conf. Interval]
-----+-----
fdi_bilateral |
L1. | .252738 .2000507 1.26 0.206  -.1393541  .6448302
|
bit | 103.5107 45.14858 2.29 0.022  15.02108  192.0003
|
inteactionbits |
--. | 22.36935 35.31868 0.63 0.527  -46.85398  91.59269
L1. | -192.9518 95.1942 -2.03 0.043  -379.529  -6.374652
|

```

trade		.0000566	.0000358	1.58	0.114	-.0000136	.0001268
neer		-975.7366	316.8269	-3.08	0.002	-1596.706	-354.7672
elec_india		.5007137	.7201073	0.70	0.487	-.9106708	1.912098
bilateral_prop		-444.8081	289.9017	-1.53	0.125	-1013.005	123.3888
total_fdi_source		.003089	.000866	3.57	0.000	.0013917	.0047863
fdistock		.0849194	.0294457	2.88	0.004	.0272069	.1426318
distcap		.1120905	.0338449	3.31	0.001	.0457558	.1784253
_cons		0	(omitted)				

Instruments for differenced equation

GMM-type: L(2/.)fdi_bilateral L(2/.)bit L(2/.)L.inteactionbits

Standard: D.trade D.neer D.elec_india D.bilateral_prop

D.total_fdi_source D.fdistock

Instruments for level equation

Standard: _cons

xtabond fdi_bilateral trade neer bilateral_prop total_fdi_source fdistock distcap,
lags(1) endogenous(bit, lag(0,.)) endogenous(inteactionbits, lag(1,.)) vce(robust)

Arellano-Bond dynamic panel-data estimation Number of obs = 231

Group variable: cd1 Number of groups = 17

Time variable: year

Obs per group:

min = 2

avg = 13.58824

max = 19

Number of instruments = 197 Wald chi2(10) = 2118.42

Prob > chi2 = 0.0000

One-step results

(Std. Err. adjusted for clustering on cd1)

		Robust				
fdi_bilateral		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
fdi_bilateral						
L1.		.2582567	.203791	1.27	0.205	-.1411663 .6576796
bit		110.2544	46.15233	2.39	0.017	19.79752 200.7113

inteactionbits							
--.	31.51704	38.24221	0.82	0.410	-43.43631	106.4704	
L1.	-149.4152	56.29326	-2.65	0.008	-259.748	-39.08245	
trade	.000057	.0000355	1.61	0.108	-.0000126	.0001265	
neer	-925.4468	257.1768	-3.60	0.000	-1429.504	-421.3895	
bilateral_prop	-425.3816	286.5507	-1.48	0.138	-987.0107	136.2475	
total_fdi_source	.0030705	.0008486	3.62	0.000	.0014073	.0047338	
fdistock	.0890229	.0330292	2.70	0.007	.0242868	.1537589	
distcap	.1308831	.0416609	3.14	0.002	.0492293	.212537	
_cons	0 (omitted)						

Instruments for differenced equation

GMM-type: L(2/.)fdi_bilateral L(2/.)bit L(2/.)L.inteactionbits

Standard: D.trade D.neer D.bilateral_prop D.total_fdi_source D.fdistock

Instruments for level equation

Standard: _cons

Annexure 4.3: Impact of BITs on FDI Quality

i. Export Intensity

```
xttobit xint size lnkratio tech_ort powercons profit reer
local_mat bitint for_dum, ll(0)
```

```
Random-effects tobit regression      Number of obs      =      21389
Group variable: co_codel            Number of groups   =      2150

Random effects u_i ~ Gaussian       Obs per group: min =         1
                                      avg =         9.9
                                      max =        20

Wald chi2(9)                        =    1095.12
Log likelihood = 5943.7416           Prob > chi2       =     0.0000
```

	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
xint						
size	.0244398	.0014553	16.79	0.000	.0215875	.0272922
lnkratio	-.0033674	.0020864	-1.61	0.107	-.0074567	.0007219
tech_ort	.4037575	.0599357	6.74	0.000	.2862857	.5212292
powercons	-.0099622	.0028791	-3.46	0.001	-.0156052	-.0043193
profit	.023912	.0095246	2.51	0.012	.0052441	.0425798
reer	-.000817	.0002143	-3.81	0.000	-.0012369	-.0003971
local_mat	-.1805863	.0076962	-23.46	0.000	-.1956705	-.1655021
bitint	.0105909	.0099891	1.06	0.289	-.0089875	.0301692
for_dum	.0395051	.0191618	2.06	0.039	.0019488	.0770615
_cons	.1307999	.0226275	5.78	0.000	.0864508	.175149

```

/sigma_u |   .2765983   .005184   53.36   0.000   .2664379   .2867588
/sigma_e |   .11203   .000685  163.55   0.000   .1106874   .1133726
-----+-----
      rho |   .8590715   .0047224               .8496092   .8681215
-----+-----

```

```

Observation summary:   6396  left-censored observations
                      14993  uncensored observations
                      0  right-censored observations

```

```

Random-effects tobit regression           Number of obs   =   3352
Group variable: co_code1                 Number of groups =   294

Random effects u_i ~ Gaussian            Obs per group: min =    1
                                           avg =   11.4
                                           max =   19

                                           Wald chi2(8)     =   141.49
Log likelihood = 1509.3926                Prob > chi2      =   0.0000

```

```

-----+-----
      xint |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-----+-----
      size |   .0339956   .0034634     9.82   0.000   .0272075   .0407837
lnlkratio |  -.0103191   .0053839    -1.92   0.055  -.0208713   .0002332
  tech_ort |   .0360201   .2617007     0.14   0.891  -.4769039   .548944
powercons |  -.002569   .0079196    -0.32   0.746  -.0180911   .0129531
  profit |  -.0062576   .0174538    -0.36   0.720  -.0404665   .0279513
    reer |  -.0023136   .0004681    -4.94   0.000  -.003231   -.0013961
local_mat |  -.0731259   .0183434    -3.99   0.000  -.1090783  -.0371735

```



```

bitint | .0073372 .0095377 0.77 0.442 -.0113563 .0260308
_cons | .1904776 .0510382 3.73 0.000 .0904445 .2905107
-----+-----
/sigma_u | .2348183 .0111 21.15 0.000 .2130626 .256574
/sigma_e | .102984 .0014793 69.62 0.000 .1000846 .1058833
-----+-----
rho | .8386851 .0133055 .8112357 .86339
-----

```

```

Observation summary:      670 left-censored observations
                          2682 uncensored observations
                          0 right-censored observations

```

ii. Wage share

```

. xtreg wageshare size capimports tech_ort incorporationyear powercons for_dum
bitint

```

```

Random-effects GLS regression           Number of obs   =   23199
Group variable: co_code1                Number of groups =   2106

R-sq:  within = 0.1147                  Obs per group: min =    1
      between = 0.1310                    avg =   11.0
      overall = 0.1068                    max =   20

Wald chi2(7) = 3048.25
corr(u_i, X) = 0 (assumed)              Prob > chi2     = 0.0000

```

```

-----+-----
wageshare |      Coef.   Std. Err.      z    P>|z|    [95% Conf. Interval]
-----+-----
size |  -.0148861   .0003018   -49.32  0.000   -.0154776   -.0142945

```

```

      capimports |   .0049164   .0092482    0.53   0.595   -.0132098   .0230426
      tech_ort   |   .1930018   .0186677   10.34   0.000   .1564138
.2295898
incorporationyear |  -.000167   .0000371   -4.50   0.000   -.0002398  -.0000943
      powercons |   .0113825   .0006879   16.55   0.000   .0100344   .0127307
      for_dum   |   .0256191   .005123    5.00   0.000   .0155782   .03566
      bitint    |   .018749   .0026889    6.97   0.000   .0134788   .0240192
      _cons     |   .4788442   .0735149    6.51   0.000   .3347576   .6229308
-----+-----
      sigma_u   |   .07713152
      sigma_e   |   .03922271
      rho       |   .79454006   (fraction of variance due to u_i)
-----+-----

```

```

. xtreg wageshare size capimports tech_ort incorporationyear powercons bitint if
for_dum==1

```

```

Random-effects GLS regression           Number of obs   =       3650
Group variable: co_code1                Number of groups =       300

R-sq:  within = 0.2359                  Obs per group:  min =         1
      between = 0.3118                                avg  =       12.2
      overall  = 0.2570                                max  =        20

                                           Wald chi2(6)    =    1159.44
corr(u_i, X) = 0 (assumed)              Prob > chi2     =     0.0000

```

```

-----+-----
      wageshare |      Coef.   Std. Err.      z    P>|z|      [95% Conf. Interval]
-----+-----

```

size		-.0334739	.0010429	-32.10	0.000	-.0355178	-.0314299
capimports		-.0987568	.0306417	-3.22	0.001	-.1588134	-.0387001
tech_ort		.515992	.112212	4.60	0.000	.2960606	
.7359233							
incorporationyear		-.001556	.0002557	-6.09	0.000	-.0020571	-.0010548
powercons		.0197513	.0029199	6.76	0.000	.0140285	.0254741
bitint		.0334996	.0033654	9.95	0.000	.0269035	.0400957
_cons		3.316915	.5052612	6.56	0.000	2.326621	4.307209
-----+-----							
sigma_u		.08293717					
sigma_e		.04816485					
rho		.74779898	(fraction of variance due to u_i)				

iii. Local Content Utilisation

```
xttobit local_mat xint size incorporationyear lnkratio tech_ort for_dum bitint,
ul(1)
```

Obtaining starting values for full model:

```
Iteration 0: log likelihood = 13952.038
Iteration 1: log likelihood = 13995.296
Iteration 2: log likelihood = 13995.415
Iteration 3: log likelihood = 13995.415
```

Fitting full model:

```
Iteration 0: log likelihood = 2889.3068
Iteration 1: log likelihood = 3845.4261
Iteration 2: log likelihood = 3881.1127
Iteration 3: log likelihood = 3881.7942
```


_cons		4.581326	1.444903	3.17	0.002	1.749369	7.413283
-----+-----							
/sigma_u		.2340871	.0109549	21.37	0.000	.2126158	.2555584
/sigma_e		.1195587	.0015654	76.37	0.000	.1164905	.1226269
-----+-----							
rho		.7931096	.0158585			.7606691	.8227926

iv. Technology Orientation

```
xtreg tech_ort size lnkratio powercons capimports xint profit import_mat for_dum
bitint
```

```
Random-effects GLS regression           Number of obs   =   21389
Group variable: co_codel                Number of groups =   2150

R-sq:  within = 0.0103                  Obs per group:  min =    1
      between = 0.0040                      avg   =    9.9
      overall  = 0.0057                      max   =   20

                                           Wald chi2(9)    =   198.21
corr(u_i, X) = 0 (assumed)              Prob > chi2     =   0.0000
```

tech_ort		Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
-----+-----						
size		-.0009325	.0001307	-7.14	0.000	-.0011886 - .0006764
lnkratio		.0016054	.0002105	7.63	0.000	.0011929 .002018
powercons		-.0001784	.0002528	-0.71	0.480	-.0006738 .000317

```

capimports | .0310641 .0036566 8.50 0.000 .0238972 .0382309
      xint | .0050121 .0010002 5.01 0.000 .0030517 .0069726
      profit | -.0001635 .0010154 -0.16 0.872 -.0021538 .0018267
import_mat | .0025464 .0008923 2.85 0.004 .0007975 .0042952
      for_dum | .0004537 .0013768 0.33 0.742 -.0022447 .0031522
      bitint | .000358 .0011558 0.31 0.757 -.0019074 .0026233
      _cons | .0102281 .0010213 10.01 0.000 .0082264 .0122298
-----+-----
      sigma_u | .01845712
      sigma_e | .01472675
      rho | .61101223 (fraction of variance due to u_i)
-----+-----

. xtreg tech_ort size lnlnratio powercons capimports xint profit import_mat bitint
if for_dum==1

Random-effects GLS regression              Number of obs   =       3352
Group variable: co_code1                  Number of groups =       294

R-sq:  within = 0.0111                    Obs per group: min =        1
      between = 0.1043                      avg =       11.4
      overall = 0.0577                      max =       19

                                           Wald chi2(8)    =       66.09
corr(u_i, X) = 0 (assumed)                 Prob > chi2     =       0.0000
-----+-----

      tech_ort |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-----+-----
      size | .0009757   .0001629     5.99  0.000   .0006565   .0012949
lnlnratio | .000104    .0002874     0.36  0.717  -.0004594   .0006674

```

powercons		-.0004451	.000422	-1.05	0.291	-.0012723	.000382
capimports		.0201694	.0051757	3.90	0.000	.0100251	.0303136
xint		-.0014935	.0012154	-1.23	0.219	-.0038757	.0008887
profit		.0003938	.0010169	0.39	0.699	-.0015992	.0023868
import_mat		.0004152	.0010976	0.38	0.705	-.0017361	.0025664
bitint		-.0006939	.0005377	-1.29	0.197	-.0017478	.0003599
_cons		.0007697	.0011778	0.65	0.513	-.0015387	.003078
-----+							
sigma_u		.00653789					
sigma_e		.00739757					
rho		.43854408	(fraction of variance due to u_i)				

5. Study Findings and Conclusion

The thesis started off with the basic premise that there are both costs as well as benefits associated with signing BITs for developing countries. As an investment guarantee, BITs serve to bridge the credibility gap for developing countries and help them attract more FDI than they could have done before. Increased FDI flows would thereupon bring them the associated positive externalities of technology transfer, improved productivity, etc. However there are costs associated with BITs. BITs are legal contracts and nuances of 'Fair and Equitable Treatment', 'MFN clauses' etc. seriously curb the sovereignty of the national governance systems with the threat of arbitration at every step. A wrong move on the part of the host country could lead to the threat of having to face investor-state disputes under international arbitration rules facilitated by the clauses contained in the BITs.

Each of the four hypotheses delved into in detail in this thesis takes this basic premise forward and builds on it further. The four hypotheses discussed were:

1. *Signing of bilateral investment agreements leads to increase in foreign direct investments*
2. *Treaties containing higher 'provisions for flexibility' would lead to greater inflows.*
3. *Provisions contained in South-South and North-South investment agreements differ significantly*
4. *the level of FDI performance varies significantly due the signing of investment agreements with source countries*

The three central chapters of this thesis sought to test these four hypotheses and get results from both the global and Indian standpoint. An overview of key results that were derived is presented below.

The first analysis chapter (Chapter 2) concentrated on analyzing whether or not BITs have had a significant impact on the flow of FDI to a country. In fact, Chapter 2 took the

discussion on bilateral investment agreement a step forward by looking at the issues of endogeneity and heterogeneity of Bilateral Investment Treaty (BIT) impacts on FDI as well. A treatment effects model was used that analyses the impact in the form of a two-stage model. The first level model looked at the determinants of entering into a BIT, and the second one looked at the decision on how much to invest once a BIT had been entered into. The model was further nuanced by assuming that the impact of BIT was heterogeneous. This heterogeneity meant that even after controlling for covariates, the impact of BIT on FDI across countries might differ because of certain unobservable factors.

In the 41 developing country sample that was looked at as part of the analysis, a strong positive relation between BITs and FDI inflows was found. The results showed that determinants of BITs and FDI were quite different. Countries with stronger histories of contract enforcement and investor protection were more likely to enter into BITs. Countries with larger skilled manpower, market size and poorer governance systems were also found to be more likely to enter into BITs. Stronger trade ties were also found to be an important determinant of whether a country would sign an agreement with a particular partner country or not.

As regards determinants of FDI, the results showed that there is a strong positive causal relationship between market size, resource availability, trade orientation, governance systems and FDI. Existence of strong trade ties was also found to be a significant determinant. These results follow what is traditionally known about determinants of FDI.

Lastly, the analysis results show that the marginal impact of signing an agreement could be as high as USD 220 million incremental FDI from the particular developed country partner and USD 68 million in aggregate per BIT. These are very significant sums and spell out the potential 'benefits' of entering into BITs for developing countries. It however needs mentioning that the higher volume of FDI need not in itself become a benefit. That depends on the net Balance of Payments effect of FDI investments, technology transfer outcomes, etc. These can be poor even when FDI volumes are large.

Both hypotheses Two and Three were tested out in the second analysis chapter (Chapter 3). This chapter looked at the issue of quality of BITs and analysed what were the different contentious clauses included in developing country BITs. The analysis also attempted to differentiate between the provisions contained in North-South and South-South Agreements. The analysis built on Haslam's 'Flexibility for Development' index for assessing BIT quality and using the index thus developed quantified and compared the quality of agreements.

To ensure adequate variation in treaties studied, the choice of sample countries and agreements was such that at least two developing countries from each continent were included. Some of the large countries receiving very high levels of FDI were also included in the sample. About 302 agreements ratified by the 12 sample countries were studied in total. These included 165 North-South agreements and 137 South-South agreements with 41 developing country partners.

This chapter looked at the quality of BITs and built a 'flexibility for development' index that could serve as a basis for assessing the impact of BITs. Many of the contentious BIT clauses were looked at and analyzed from a developing country point of view. This analysis also served as the basis for assigning weights to the quality index mentioned. The index gave higher weights to special and differential treatment clauses included in the agreement as also to leeway given in some of the contentious clauses such as transfer of funds, dispute settlement, fair and equitable treatment, etc.

The 302 agreements were specifically chosen as they were ratified by both a geographically as well as economically diverse set of countries. The analysis found that overtime the index measure of 'flexibility for development' has been increasing for countries. As expected South-South (SS) agreements scored higher in terms of flexibility when compared with North-South (NS) agreements. The mode value of the distribution²² was 0.725 which was much higher than the mode value of 0.675 noted for NS agreements. However, it was also found that a number of countries are entering into 'template' agreements with minimal

22 The mode is the value that appears most often in a set of data, i.e. the value that is most likely to be sampled.

level of deviations from one partner country to the next. This especially highlights the lack of careful thought given when developing countries are signing BITs.

Both econometric models i.e. threshold regression and dynamic panel data model, used to look at the impact of BITs for the select set of 12 developing countries seem to suggest that BIT quality is not an important criterion while deciding FDI flows. There is no conclusive proof that BITs that are stringent or flexible beyond a certain level attract more FDI. The dynamic panel results do show that the FDI flow following a more 'flexible' BIT is higher, the insignificance of its coefficients leads us to question its larger applicability. Thus, it is safe to conclude that BITs are generally seen by developed countries seeking to invest more as a 'template' document with certain key clauses in place. Any variations brought in the form of dispute settlement procure, sectoral exceptions, etc. through the treaty negotiation process do not seem to be of too much interest for investors looking for newer avenues.

The last analysis chapter (Chapter 4) had a strictly India focus and studied both hypotheses one and four from the Indian standpoint. It also looked at the costs of having BITs for India, going into the cases filed by foreign investors against the Indian government invoking certain provisions or clauses of the BITs.

The chapter assessed the marginal effect of a BIT on India's FDI inflows, distinctly separate from the impact of other macroeconomic variables such as per capita incomes, wages, exchange rates, etc. In addition, an attempt was made to examine the impact of BIT on certain performance indicators of manufacturing firms in India, focusing on the impact of foreign investment and how that impact is influenced by BITs. The impact of BITs on FDI quality was looked at from four vantage points—firm level export intensity, wage share in sales (to capture the employment generation impact), local materials usage and technology orientation. In each case, the marginal impact of foreign ownership and BIT signing was analysed.

As regards the costs that India had to incur as a result of signing BITs, the chapter looked at the amounts paid by India for various out of court settlements and penalties charged when the arbitration was decided in favour of the investor. On the flip side, two separate modelling techniques were used to look at the benefits of BITs for India. The benefits that

were looked at in this particular chapter included higher FDI levels (post BIT) and a more host-country development orientation of FDI, which has already been invested into local firms, in India. A dynamic panel data model was used to look the impact of bit signing on India's FDI flow. This model thus looked at both the push (from the source country's side) as well as pull factors (from the host countries side) that influenced foreign investment flow. This model found that there has been a positive impact of BITs on FDI in India. It showed that the marginal impact of signing a particular BIT has been as high as USD 100-110 million per BIT per annum for India. The results also showed that the number of ISDS cases lodged against India have led to a significant reduction in FDI from more economically developed BIT partner countries.

The second set of model(s) analysed in chapter four related to issue of quality of FDI at the firm level using the fixed effects and Tobit panel data models. The results for the BIT interaction term showed that BITs have had a positive influence on two of the four FDI quality metrics at a firm level. BITs were shown to have a negative influence on both export orientation and local content requirement. It thus seems that post-BIT, countries import a higher share of components (capital and intermediate inputs) and seek to largely serve the domestic market. The coefficient for BITs' impact on local content requirement was found to be significantly negative in all model iterations. A positive impact for BITs showed up in the models for employee cost shares and technology orientation. The positive coefficient for employee costs was found to be insignificant in all iterations. A strong impact of BITs on technology orientation of the firm was however noticed.

The data therefore seems to indicate that while positive BIT effects have been felt by firms, the potential for spillover effects seems to be low. Both local content requirement as well as employment impacts that are the vehicles of larger diffusion of beneficial effects of FDI have not been significantly influenced or even positively influenced by BITs. The technology orientation aspect however seems to be a positive fall-out of the heightened security for FDI following a BIT.

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