

## HAVE BILATERAL INVESTMENT TREATIES INCREASED FDI INTO SOUTH ASIA?

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### ABSTRACT

*This paper econometrically investigates the effect of Bilateral Investment Treaties (BITs) on Foreign Direct Investment (FDI) into five South Asian countries. It employs an extensive panel data model to conclude that the BITs signed by Bangladesh, India, Pakistan, Nepal and Sri Lanka between 1970 and 2014 have not led to an increase in FDI--a result that is later established on theoretical grounds as well. When this conclusion is juxtaposed with compelling literature on the BIT's deleterious impact on domestic sovereignty and independent policy space, the scope for a pareto superior outcome is envisaged; and this outcome is shown to be a Nash equilibrium using an augmented prisoners' dilemma model with a provision for mutual cooperation.*

**KEYWORDS:** Bilateral investment treaties, Foreign direct investment, deleterious impact, Panel data model, Pareto superior outcome, Nash equilibrium

### INTRODUCTION

Since most structural determinants of FDI, especially of the market seeking variety, remain outside the direct control of short-term policymaking, two sets of measures acquire crucial significance for capital-deficient countries: unilateral regulatory changes, such as opening up previously restricted industries to foreign capital; and bilateral agreements in which states commit to binding obligations with respect to repatriating profits, dispute settlement etc. (Berger et al, 2013). A bilateral investment treaty, in establishing the terms and conditions for private investment by nationals and companies of one state in another state, falls within the latter category of policy instruments. This treaty has gained immense fervour amongst policymakers in the developing world, suggested by the fact that between 1990 and 2009, the number of BITs signed by developing countries increased from 200 to over 2000 (Colen et al, 2014). South Asian countries too have not shied away from jumping onto the bandwagon, and have signed an impressive total of 203 treaties till date, with India maintaining one of the largest BIT networks

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in the world. Surprisingly, then, there exists sparsely little evidence which attests to the treaty delivering on its number one objective for countries in this region, i.e. increasing inward foreign investment. A few studies have tackled this question from a national perspective, (Banga, 2003; Kathuria et al., 2016) while no author has yet investigated the promise of BITs for the entire South Asian region. As far as large sample studies are concerned, which use data for a number of developing countries, prevailing evidence is at best inconclusive. In this light, conducting a region level study for the SAARC complex becomes important, as also for four other reasons. First, despite being one of the world's fastest growing regions, it attracts the lowest amount of FDI as a percentage of GDP out of all developing regions. South Asia's economy is almost twice as large as Sub-Saharan Africa's, and yet over the 2000-11 decade, South Asia's average annual inward FDI flow of US\$18.3 billion was smaller than Sub-Saharan Africa's US\$19.4 billion (Gould et al., 2013). Therefore, policies with the potential of increasing FDI into this region's poverty-stricken countries acquire immediate relevance. Secondly, South Asia has not garnered enough attention from BIT scholars compared to what regions like Latin America, Eastern Europe and Africa have solicited from subject matter experts (Grosse and Trevino, 2005; Gallagher and Birch, 2006; UNECA, 2016). Thirdly, Gould et al. (2013) have highlighted certain idiosyncrasies of the SAARC region in terms of its determinants of FDI inflows, which should ideally precede an independent empirical investigation for South Asian countries by including the explanatory variables most relevant to South Asian FDI. Finally, given the vehement dissonance between studies that include large samples of developing countries (Sauvant and Sachs, 2009) it can be reasonably assumed that regional level studies might help solve this conundrum since a BIT is expected to play out differently in different parts of the world, while the determinants of FDI too might simultaneously vary over space<sup>1</sup> (Asiedu, 2002).

## BITS AND SOUTH ASIA: SOME STYLISED FACTS

### A Brief History of BITs

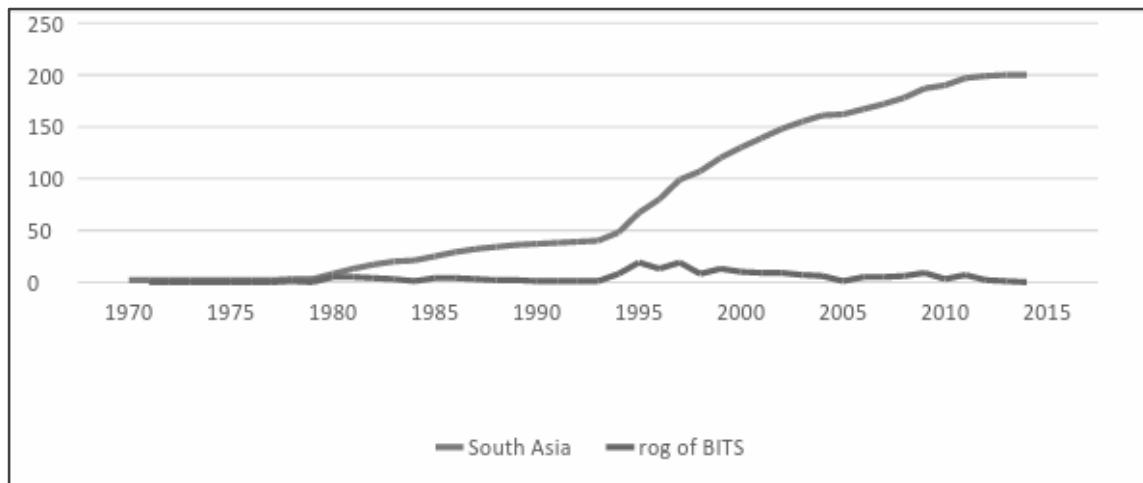
In the beginning of the 20th century, when most of the world was controlled by a small number of principal nations, the widespread consensus was that an investor's property must be protected in foreign lands through binding international laws. Hence the Hull rule was born, providing for appropriate compensation to the investor in case of their capital being expropriated (see Guzman, 1998). With the passage of time, erstwhile colonies became sovereign, and their views started becoming relevant to the framing of expropriation related laws. Having long experienced atrocities on the end of foreign powers, they were sceptical to openness, and with low international support, the Hull rule fell. Consequently, capital-exporting nations, which were fearful of their capital being expropriated in former colonies, started propagating the use of bilateral investment treaties. It was after the decline of Soviet Union that a sharp rise in the

number of BITs signed is noted. Two main reasons have been identified for the same--first, market ideology had emerged victorious with the fall of Soviet Union along with the economic success of several Washington consensus abiding East Asian economies; and secondly,due to the debt crises of the 1980s, FDI emerged as the only reliable source of capital (Guzman, 1998).

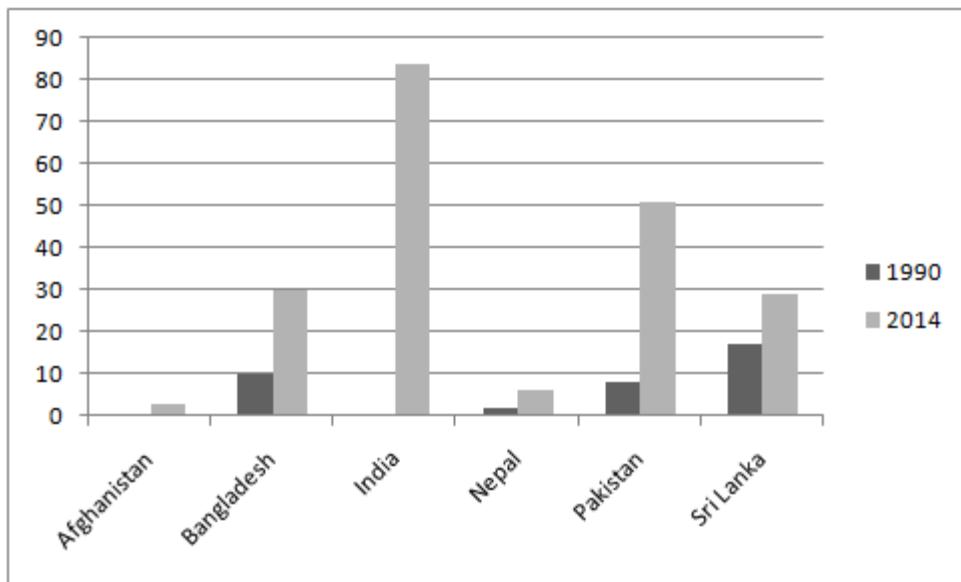
### Trends in South Asia

We see an upward trend in the BITs signed by countries in this region since the first ever treaty was negotiated between Pakistan and Germany in 1959. The number of BITs in South Asia saw a precipitous jump in the period 1979-82, and again after 1994. The growth rate of BITs has been falling since 2000, and has reached a stagnation post 2010. A similar stagnation was also witnessed from 1991-94 (see Figures 1 and 2).

**Figure 1: Rates of growth of BITs during 1970 - 2015**



Note : The lower line shows the rate of growth of all BITs signed while the upper line shows the faster rate of growth of BITs signed by South Asian countries, from 1970 to 2015.

**Figure 2 : Total BITs signed by SAARC countries during 1990-2014.**

Note: Bhutan and Maldives have not signed any BIT till date

### Costs Attached to BITs

As described in the introduction, BITs contain provisions to safeguard the interests of foreign investors. These provisions understandably have immense (negative) consequences for the sovereignty of nation states. If the government acts in a way that affects the profits of the investor protected under the treaty, no matter how beneficial that policy is to a nation's domestic priorities, the investor can sue the host country under an international tribunal(Hallward-Driemeier, 2003).

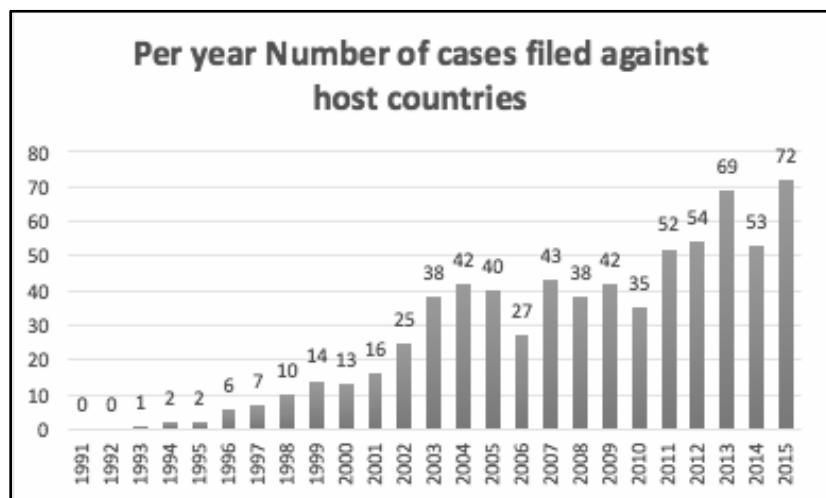
**Figure 3: Number of cases filed against host country by year**

Figure 3 shows that the number of cases filed against host countries- mostly developing and transition nations- have risen substantially. In 2015, as many as 72 cases were filed against the host countries. The general trend has been that around 50% of cases are settled in favour of investors, out of all the cases where judgments are passed by the international court.<sup>2</sup> An equally large number of cases are settled outside the court. Though the numbers are baffling, the nature of these judgements is even more disconcerting.

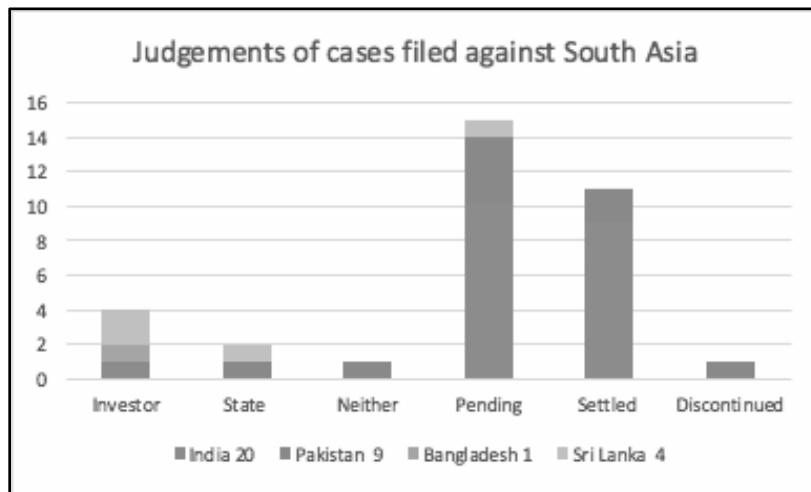
### **The judgments do not take context of economies into account.**

White industry claimed and was subsequently awarded interest payments from the Government of India (GoI) after the payment directed by the Indian Hotels Company Ltd. to GoI were delayed due to the Indian judicial system. The delay caused in this case was genuine and arguably unavoidable owing to the enormous load of pending cases with the Indian courts (Kathuria et al., 2016).

### **Restricts governments from modifying policies for the benefit of its citizens**

Firstly, the provisions of a BIT are usually defined in a very broad manner. Hence, they are liberally open to interpretation. Secondly, the arbitral tribunals convene ad hoc to decide on public policy matters. Given the divergence in arbitral practice and interpretation as well as the optimal confidentiality over proceedings that prevent transparency with little possibility of appeal or review, many legal experts question the validity of their decisions. This is even more so since many claims are against the public good. Thirdly, attempts by states to craft more balanced ISDS (Investor State Dispute Settlement) provisions that allow investors qualified access under terms outlined by the treaty are viewed as risky. The UNCTAD states in its IIA Pink Series that qualifying or limiting ISDS provisions could undermine the quality of ISDS as an investment promotion tool by reducing protective coverage under the treaty.

**Figure 4: Judgements of cases filed against South Asia**



### **Imposes high financial cost<sup>3</sup>**

The average claim in BIT arbitrations is now about \$492 million, with awards averaging \$81 million. Any assessment of the financial exposure must also account for the costs of settlement which again often exceed \$100 million. Even when 50% of the judgements are in favour of the investors, it causes a huge cost to host countries which are mostly developing, due to the above mentioned reasons.

*Cost infringed at South Asia:* For South Asia as a region, a total of 34 cases have been filed against its constituent nations. (Figure 4) While the majority of decisions is pending, the number of disputes settled in favour of investors is double the number of disputes settled in favour of state.

## **REVIEW OF LITERATURE**

There are several studies investigating the impact of BITs on FDI inflows. However, there is roughly an equal split between their conclusions with regard to the treaty's deliverance on its promised benefits. In the late 1990s, when BITs were the flavour of the day, very few studies, including by UNCTAD, were conducted to test their impact on FDI inflows into developing countries. And these studies have shed an unfavourable light on the BIT's impact on FDI inflows (UNCTAD, 1998; Hallward-Driemeier, 2003). In the early 2000s, a consensus emerged (among academics) that though the BIT might have some positive impact on FDI inflows, the effect was predominant in countries with already stable business environment and strong domestic institutions. This would not have gone down well with policymakers in developing countries who were willing to enter into these treaties and compromise on their sovereignty only because their countries lacked such strong and conducive institutions in the first place: their fancy was that the BIT would help them make up for it.

However, this (mild) consensus was jeopardised by Neumayer and Spess (2005) who concluded that BITs might also function as substitutes for poor host country institutional quality and hence increase FDI inflows into developing countries. A stronger theory, that merely signing a BIT sends a positive signal to foreign investors, and hence there is an accompanying increase in FDI even before the treaty is formally ratified, was also advanced around this time (Egger and Pfaffermayr, 2004). At a global level, it is argued that as worldwide BIT coverage goes up, overall FDI inflows to developing countries may increase (Rose-Ackerman, 2009). Additionally, two studies that were primarily regional in nature, and hence of special relevance for this paper, found a strong positive relationship between the total number of BITs concluded by the country and its FDI inflows. Grosse and Trevino (2005) looked at Central and Eastern Europe, while Gallagher and Birch (2006) studied the Latin American region.

A number of recent studies have additionally cast a positive light on the BIT. When individual provisions in the treaty are accounted for, it has been found that stronger treaties are more successful in stimulating higher FDI (Berger et al., 2013). Another recent paper, which includes unilateral capital account liberalisation as a confounding factor that could have led to the over estimation of the BIT's efficacy, concludes that though BITs have a lesser influence than what had been established previously, they are nevertheless successful in spurring FDI into developing nations (Busse et al', 2010). A German firm level study of BITs- the first of its kind- also concludes that BITs are a good bargain for countries seeking to increase foreign investment into their economy (Egger and Merlo, 2012).

Despite a number of studies pointing to the affirmative, we are still far from reaching a broad consensus regarding the BITs' effect on FDI. Aisbett (2007) has demonstrated the potential endogeneity that can arise when a large amount of FDI to a particular nation prompts investors to lobby their government to sign a BIT with the other country to secure their investments. This argument can significantly weaken the conclusions from previous studies that have not explicitly accounted for this observation, as most of them have not. The great chasm between academic studies leads one to survey investors and MNC's who actually undertake the foreign investments. Some surveys that have been conducted point to the almost universal ignorance of investors regarding the BIT. According to them, their investment decisions are majorly influenced by economic factors such as market size, growth and the regulatory climate, and very rarely depend on whether a BIT exists between their respective nations (World Bank, 2004).

Delving into the composition of FDI, it has also been argued that BITs are most effective at stimulating FDI into the natural resource sectors in developing countries and not in the employment intensive ones such as manufacturing--hence dulling the FDI's prospective contribution to both employment generation and technology transfer (Colen et al., 2014). Finally a meta analysis concludes that there is no significant evidence that BITs lead to a spurring of FDI (Bellak, 2015).

## **COMPARABILITY OF BITs ACROSS SOUTH ASIAN COUNTRIES**

BITs signed by different countries need not be uniform and may vary on various accounts like definitions of investment, administrative procedures, etc. Different BITs, on account of their specific provisions, are expected to have differential impact on FDI. For instance, "a broad definition of investment" by definition would be able to get more investment into the country. It is hence crucial to assess the characteristics of the BITs signed by South Asian countries before analyzing their impact on FDI inflows. The important characteristics of the BITs are shown in Table 1.

**Table 1: Common clauses in a BIT**

Characteristics of BIT	
Definition of investment	Narrow or Broad
Admission vs. establishment	Requires administrative approvals or is establishment based
National Treatment	Treatment to national vs. domestic investors is either “same” or “as favourable as” as “or no less favourable”
Most Favored Nation Clause	Scope of MFN clause is ‘broad’ or ‘narrow’
Fair and Equitable Treatment	Whether Fair and Equitable treatment is included in the treaty or not
Direct and Indirect Expropriation covered	Covers both direct and indirect expropriation or only direct expropriation
Free Transfer of investment-related funds	Ability to freely repatriate funds is available or not
Non-economic standards	Whether BIT seeks to protect human rights, environment, etc.
Investor-State Dispute Mechanism	Investor State dispute mechanism available or not
Umbrella clause	An umbrella clause extends the scope of the application of a BIT, and offers more protection to the investor
Temporal scope of application	Whether Treaty protection is extended to investments made before the entry into force of the agreement, or the coverage is restricted to the future

An interesting finding here is that the BITs signed by countries in the South Asian region have been broadly uniform, with only minor variations observed in the strength of clauses across countries (and partner nations). Allthese BITs have a broad definition of investment; are conservative for approvals as any investor decision to invest is subject to an administrative approval by the host state; allows free transfer of investment related funds; and investor state dispute mechanism is available. This point is important and worth highlighting since it will allow us to conduct a meaningful econometric investigation into the impact of BITs on FDI inflows into South Asia. In the absence of such homogeneity, we would have had to assume that all BITs, irrespective of the strength and reach of their provisions, have an identical effect in spurring investment flows. Clearly, this would have been a very strong simplification, since investment decisions are naturally expected to rely upon the nature of protections investors will get on entering a particular country.

## **DESCRIPTION OF THE DATA AND THE VARIABLES**

This paper analyses data for five of the eight SAARC nations--namely Bangladesh, India, Pakistan, Nepal and Sri Lanka. Bhutan and Maldives have not signed a BIT till date, while

Afghanistan's FDI data is publicly unavailable for the period 1990-2001. For the five countries that are studied, relevant data has been collected for a 45-year time period (1970-2014) as FDI data from UNCTAD is available only starting 1970. The bulk of these treaties were signed in this time range with only two South Asian countries signing a BIT before 1970.

In the subsequent panel data regression analysis, the dependent variable of interest is the *log of net FDI inflows* that has been collected from UNCTAD. Although this choice of dependent variable is fairly common in literature, papers have also used FDI/GDP, and inward FDI as a proportion of the total FDI to all developing countries, for assessing the impact of BITs on foreign investment inflows. Using these alternative specifications, sensitivity analyses are later conducted to test the obtained results. The primary independent variable is the *cumulative number of BITs signed* by a country--varying across both time and space ( $B_{it}$ ). As discussed above, the broad homogeneity of South Asian BITs permits us to use such an aggregated variable. The control variables that should ideally be included in the analysis (subject to availability of data) are chosen on the basis of comparable studies, though special attention is reserved for two reports identifying the determinants of FDI particularly for South Asian countries (Gould et al, 2013; Sahoo, 2006). All these variables vary across both time and space. They are succinctly summarised in Table 2.

**Table 2: Control variables**

Dependent Variable: Log of net FDI inflows				
Control Variable	Data Source	Theoretical significance	Expected sign of coefficient	Notes
Real GDP (constant 2010\$) (Y)	World Development Indicators	Proxy for market size	(+)	
Per capita growth rate (g)	World Development Indicators	Proxy for recent economic performance	(+)	Especially relevant for determining FDI inflows into smaller countries
Trade-GDP ratio (T)	World Development Indicators	Openness	(+)	

*Continued...*

Chinn-Ito Index (CI)	Chinn and Ito (2006)	Degree of capital account openness	(+)	Has also been used by Busse et al (2010) to account for the confounding influence of unilateral capital-account liberalisation.
Electric Power consumption (per capita) (I)	World Development Indicators	Proxy for Infrastructural development	(+)	Another common proxy- internet users (per 100 people) - starts from 1990.
Inflation rate ( $\pi$ )	World Development Indicators	Proxy for macroeconomic (in)stability	(-)	
Corruption Perception Index (CPI)	Transparency International	Measure of the administrative hassles faced by foreign investors	(-)	Gould et al (2013) have shown that governmental corruption is an important explanatory variable for FDI in this region

When the pair wise correlation coefficients for the explanatory variables are calculated, it is found that trade-GDP ratio and real GDP are significantly correlated for the above sample of countries. Since an arguably superior--and more relevant--measure of financial openness is available in terms of the Chinn-Ito index (see Chinn and Ito, 2006), trade-GDP ratio is dropped. Additionally, the corruption index and the inflation rate are dropped from the estimation owing to lack of data.<sup>4</sup> Bangladesh's inflation data is unavailable until 1986, while the corruption perception index has been calculated only 1995 onwards. Since 48 BITs (out of 203 in all) had been negotiated prior to 1995, including the index would lead to a significant loss of relevant data points. Finally, a fixed effects OLS panel data model is estimated. It is assumed that there will be certain time invariant factors such as geography, culture, colonial history etc. that should vary across the panel of countries but not over time. Fixed effects estimation would meaningfully account for this observation and is hence chosen over random effects. The Hausman test is also employed to corroborate this decision.

*Fitted Regression model:  $\ln FDI_{it} = \alpha + \beta_1 \ln Y_{it} + \beta_2 g_{it} + \beta_3 B_{it} + \beta_4 CI_{it} + \beta_5 I_{it} + \varepsilon_{it}$*

## RESULTS

**Table 3: Estimates of the effect of BIT on South Asian FDI**

Dependent Variable: Log of net FDI inflows				
Independent Variable	Coefficient	Standard Error	p-value	Significance
Log Real GDP	3.949	0.446	0.000	Yes
Per capita growth rate	0.070	0.042	0.100	Yes
Cumulative BITs signed	0.013	0.009	0.177	Not significant
Chinn-Ito Index	2.347	0.871	0.008	Yes
Per capita power consumption	-0.003	0.002	0.081	Yes (at 90%)
Constant	-79.961	10.653	-7.51	

The results of the estimation are summarized in Table 3. The cumulative BIT variable is insignificant at the standard 95% confidence level; it moreover has a high p-value of 0.177. The p-value remains high even when the ‘cumulative BITs signed’ variable is substituted by ‘cumulative BITs in force’. Importantly, the (in) significance of the BIT variable is not disturbed under certain other sensitivity analyses.<sup>5</sup> *Based on the above results, it would be safe to suggest that the bilateral investment treaties signed from 1970-2014 have not exerted a statistically significant impact on FDI inflows into the five South Asian countries studied in this paper.* Other control variables have coefficients agreeable with estimates from literature. These results are also in harmony with Gould et al. (2013), in so far as openness to capital flows is seen as a major determinant of FDI into South Asia: the coefficient of the Chinn-Ito index is estimated as a high 2.35. Interestingly, the coefficient on the infrastructure proxy is small, but negative.

A discussion of these results is attempted in the following section. Moreover, we also seek to identify certain areas where improvements can be made in future research work on this topic.

An analysis that looks at the impact of BITs on FDI across different sectors will be pertinent. Such a study would, however, require one to collate FDI data at a disaggregated level across all countries in the sample, which is usually difficult to find. Additionally, a viable transformation for converting negative FDI inflow data into positive values can be identified, which would help in preserving the data points lost as a result of taking log. A number of mathematical transformations were attempted in this paper but none of them succeeded in being empirically comparable to our FDI variable.<sup>6</sup>

## DISCUSSION OF RESULTS

Though these findings are in sharp contrast to the conclusions of studies which show that BITs increase FDI flow to developing countries, they should not surprise any reader educated in the theoretical foundations of the BIT-FDI linkage, and is aware of the idiosyncrasies of the South Asian region. Delving on the relevant theory and other ancillary studies, three brief arguments are advanced below to provide preliminary support to the empirical results. In particular, the findings of this paper are compared and contrasted with those achieved by Grosse and Trevino (2005) and Gallagher and Birch (2006) for Latin America and transition Europe, respectively.

(a) *BITs succeed in attracting investment only to particular sectors:* It has been shown that BITs are only effective in directing investments to sectors with large sunk costs, and to those which are politically sensitive to foreign ownership- for instance, utilities, real estate and mining. (Colen et al., 2014) However, most South Asian countries, especially India and Pakistan, have both covertly and overtly discouraged FDI into their capital intensive sectors (Sahoo, 2006), while East European and Latin American countries have taken a conspicuously contrarian route.

(b) *South Asia's lack of openness could not supersede any positive effect from BITs:* The South Asian region is unusually closed to cross-border financial flows--a fact evidenced by low values of the Chinn-Ito index for countries in this region. On the other hand, transition economies in Eastern Europe were swift at opening their capital accounts post the collapse of the USSR. It has been argued in literature, and especially in Gould et al. (2013), that openness to financial flows is a crucial pre-condition for high levels of FDI. In this context, the relative 'closedness' of SAARC economies to international capital flows could be the determining influence behind its low FDI to GDP ratios; any positive effect, if at all, from signing a BIT can be eclipsed as long as the economies do not gravitate towards higher openness.

(c) *Dynamic inconsistency concerns on part of the host government improve prospects from BITs:* South Asian countries generally enjoy a better reputation in front of foreign investors--atleast with regard to prospective expropriation of capital- in contrast to, say, countries with a communist past. Investors are particularly concerned about the presence or absence of a BIT

when they suspect that their prospective investment destination's government might expropriate their capital after having invested in that country (World Bank, 2004). Transition countries would quite naturally remain suspect for foreign investors from the capitalist world: their communist past should haunt prospective profit-seeking investors. It is perhaps for the same reason that China has grown as a leading player in the BIT revolution. For South Asian countries, however, which have often towed the IMF's line for most of their independent histories, such a concern is not very pertinent. There have not been any cases of outright capital expropriation in this region, unlike in, say, Latin America where Argentina has been involved in a host of arbitrations. Therefore, if the primary purpose of having a BIT is not met, in so far as the host country's credibility is high enough that foreign investors do not fear expropriation, signing a new BIT should not be expected to have a significantly positive effect on FDI inflows.

It has now been shown--both theoretically and empirically--that BITs have not, and prospectively would not, live up to their promise of stimulating FDI in the South Asian region. Though our study has looked at only Bangladesh, India, Nepal, Pakistan and Sri Lanka, we posit that these conclusions are likewise applicable to the other countries in this region owing to their broad institutional and structural similarities with the nations included in our sample.

A framework constructed by the London School of Economics for quantifying the effects of a BIT includes certain other costs and benefits accompanying BIT promulgation (Poulsen et al., 2013). It has been stated that BITs can also help investors from the developing world to be secured of their investments abroad. Such a consideration is not too relevant for SAARC countries since their FDI outflows are in large part directed towards countries already having strong institutions. Another benefit of the BIT is touted to be its 'depoliticization' of investment disputes. In the context of strained India-UK relations post the 2012 Vodafone controversy, such an argument invites ridicule (Kathuria et al., 2016). Even with a BIT existing between the two countries, a dispute between their respective governments could not be prevented.

## A MODEL FOR COOPERATION

We have shown above that BITs have not increased FDI inflows into South Asian countries. On the other hand, the loss of sovereignty accompanying a BIT's promulgation has been definitively illustrated and argued. Though it is difficult to assign a dollar value to the erosion of independent policy space, there is no doubt that erosion does indeed take place since it is enshrined in the very provisions of a BIT. We have also outlined above how the other promised benefits of BITs are not readily apparent for countries in this region. In this light, we recommend a prompt reversal of BIT policy on part of all governments in South Asia. India, by revising its model BIT--now with far fewer liberal provisions for foreign investors- has already taken a firm step in this direction. Though promising, we posit that a sterner stand towards BITs can help these countries become better off. In this section, we use a Prisoner's dilemma model to argue how a Pareto superior outcome can be achieved if South Asian countries decide to cooperate

amongst themselves by collectively shunning the BIT. Though we recognize the administrative and legal challenges that this would entail, the long term benefits from such an admittedly drastic step would make up for some of the short term hassles faced by SAARC countries. Moreover, it is high time that countries in this region acknowledge the fact that the BIT is not living up to its objective of enhancing FDI inflows.

The current situation, when most countries are using BIT as a policy instrument, is best modelled as a multi-player Prisoners' dilemma game. It is assumed that developing economies are competing for FDI, and through BITs they hope to attract a greater proportion of investment into them. In doing so, however, they are sacrificing their sovereignty to the hands of private investors. We then consider a case where all SAARC nations shun the BIT through a mutual and binding agreement.

There can be two situations--when BITs are signed and when BITs are not signed. The host country's purpose of signing BITs is to differentiate themselves and attract greater FDI. With time, competition among developing economies has become so fierce that they are providing ever more liberal provisions to foreign investors, notwithstanding the immense sovereignty cost accompanying stronger protection clauses. As we have elaborated before, the penalties imposed on developing countries, when they are awarded an unfavourable verdict under ISDS, adds to the monetary losses associated with BITs.

When no BITs are signed, the FDI function is written as:

$FDI_i = F(a)$ , where  $a$  is a vector signifying a country's real investment potential.

When BITs are signed, the country becomes more attractive to investors relative to other countries. Thus, the function changes and now becomes:

$FDI_i = D(v)$ , where  $D(v) > F(v)$  for all values of vector  $v$ .

For simplification, we assume a two-country world and all other factors, apart from initial infrastructure, to be the same in both the countries. Then the following game models this situation:

	No BITs	BITs
No BITs	$F(a_1), F(a_2)$	$F(a_1)-c_1,$ $D(a_2)+b$
BITs	$D(a_1)+b,$ $F(a_2)-c_2$	$D(a_1)-c_3,$ $D(a_2)-c_3$

The payoff matrix is explained as follows: When no country signs a BIT, then their payoffs are determined by their initial conditions. If only one country signs a BIT, then it succeeds in diverting additional investment into it. The positive effect of this change is partly negated by the sovereignty loss which occurs as a result of the BIT. The non-BIT signing country loses some investment due to diversion away from it, captured by the ' $-c_i$ ' term in the matrix. Finally, if both countries sign a BIT there is no differentiation. Though the functions change because now the credibility of the host country is better established, there is nonetheless loss of sovereignty.

When the following assumptions hold, the situation becomes a game of Prisoners' dilemma:

$F(a_i) > D(a_i) - c_3$  : The benefit to country  $i$  from both the countries not signing a BIT exceeds the benefit to country  $i$  from both countries signing a BIT. This assumption makes sense intuitively. When there are only two countries, investors have to invest in either of them. When both the countries sign BITs, there is no differentiation. Hence, there is only additional cost involved.

$D(a_1) + b > F(a_1)$  i.e. the BIT- when only one country signs it- is profitable to the signatory country

Moreover, it is assumed that  $c_3 < c_1, c_2$

Here, we see that the dominant strategy of each player is to sign a BIT:

When country  $j$  does not sign a BIT, it is better for country  $i$  to sign a BIT.

When country  $j$  signs a BIT, it is better for country  $i$  to sign a BIT.

Therefore, both the countries end up signing a BIT and in their race to the bottom, end up with an outcome which is pareto inferior to the outcome in which both countries do not sign BITs. For purposes of simplification, we can also represent the above situation as the following, where co-operation denotes choosing to not sign BITs and defection denotes signing a BIT to attract FDI:

	Cooperate	Defect
Cooperate	1, 1	-1, 2
Defect	2, -1	0, 0

The cooperative outcome can be achieved if provisions for a binding agreement that precludes each player from signing BITs are made among the 2 countries. Then each will have to bear a marginal cost of implementing the agreement,  $e$ , where  $e < 1$ . The implementation cost can be

understood as the one covering administrative expenses of implementing the agreement such as overseeing that no country has signed a BIT. The game is illustrated below as a two stage game:

Stage I: There are two options- either agreeing to the agreement or not. If all countries favour such an agreement, then the game ends and the individual payoffs are (1-e). If one member state declines to accept the above agreement, then the countries enter the second stage of the game.

Stage II: Assuming there is no agreement in Stage I, the countries have to decide whether to sign BITs (i.e. co-operate) or not (i.e. defect). As we have shown before in the Prisoners' dilemma setting, defecting i.e. continuing to sign BITs is a dominant strategy, and the countries will be expected to maintain the status quo.

We find a solution to the above two-stage game through backward induction and conclude that accepting this agreement on part of all member states is indeed the only subgame perfect Nash equilibrium of the game (refer to Diagram 1 in Appendix). In a dynamic setting, this game is repeated infinitely many times, where at each point a country decides whether to adhere to the agreement or not. If one country chooses to defect from its promise to abide, the others shall also defect in the following round and resume their BIT negotiations- making everyone worse off. This threat of tit for tat behaviour on part of the other player prevents the first player from defecting in any round. Hence, it is optimal for each country to abide by the agreement in each period, and for all periods. However, the conclusion of such an agreement requires one of the players i.e. countries, to take the initiative, much like the first mover in the Stackleberg game. In other words, the commitment to not sign a BIT and put forth the proposal of an agreement requires leadership and commitment from at least one player at the outset.

This rudimentary two-player game can be easily extended to an n-player game without changing the results. There are, however, several practical limitations to the execution of this agreement in a global context. Developing countries are scattered across the globe, while Olson (2009) has also shown that cooperation is possible only in small groups. Further, models in Spatial Prisoners' Dilemma point to a higher probability of cooperation when the players are situated close to each other.

We argue that even when only SAARC nations co-operate and enter into a binding agreement not to sign BITs, irrespective of the behaviour of other developing economies, SAARC countries attain a pareto superior outcome compared to the status quo because:

First, Oman (2000) has shown that most incentive based competition involves governments of neighbouring countries- a requirement which South Asian countries abide by.

Secondly, it has been proved by Escaith and Paunovic (2003) that investors first choose the region they wish to invest in, followed by the eventual destination of the investment.

We thus propose that South Asia must fight for investment as a block and not fight amongst itself for FDI, hence leading to a higher pool of long-term foreign capital for all its countries. Importantly, if South Asian countries choose to cooperate as outlined above; their FDI inflows will be conditional on their real investment potential. Since countries are not eying one big investment, but rather a host of investments, it is not the case that only one country from this region will get all the FDI. However, a somewhat equal distribution of FDI is only obtained when nations increase their spending on infrastructure development. From a political economy perspective, incurring such a cost is better for the long-term future of the economy, vis-a-vis the loss of sovereignty inflicted at the hands of profit-seeking investors. Therefore, we recommend that South Asian economies must not indulge in a race to sign BITs, but pursue structural reforms that will increase their potential to attract FDI. Through signing this binding agreement, SAARC countries would commit to co-operation in context of their BIT policies. Such a cooperative atmosphere also promises to be conducive for increased trade between South Asian countries in the near future.

## CONCLUSION

This paper has used a panel data analysis to show that the BITs concluded by South Asian countries between 1970 and 2014 have not led to an increase in FDI inflows into their territories. On the other hand, BITs have led to an erosion of the policy space available to SAARC governments by making even pro-public policies suspect to arbitration claims. Given the absence of any evidence supporting the BIT's proposed benefits, in conjunction with plentiful affirmation of its significant costs, we recommend that cooperation between South Asian countries- by means of collectively shunning the BIT as a policy instrument- leads to a Pareto improving outcome; it is also shown to be a stable Nash equilibrium.

**APPENDIX****A 1: Description of the data**

Variable		Mean	Std. Dev.	Min	Max	Observations
lnfdi	overall	18.18098	3.091417	6.907755	24.49387	N = 192
	between		2.169403	15.11774	20.86748	n = 5
	within		2.502908	7.365595	22.69103	T-bar = 38.4
lngdp	overall	24.68325	1.56506	21.94502	28.41976	N = 225
	between		1.604271	22.73861	27.06967	n = 5
	within		.617471	23.62108	26.03333	T = 45
pcygro~h	overall	2.649569	2.92547	-15.45171	8.75497	N = 225
	between		.8564067	1.968245	3.672009	n = 5
	within		2.822943	-14.78769	8.906549	T = 45
openness	overall	.182685	.1257919	0	.6969896	N = 219
	between		.0733292	.1099129	.3048579	n = 5
	within		.1073574	-.1221729	.5748167	T-bar = 43.8
bitssi~d	overall	15.61778	19.77701	0	84	N = 225
	between		8.688795	2.422222	24.66667	n = 5
	within		18.17868	-9.048889	74.95111	T = 45
power	overall	194.9077	167.9422	5.802544	765.0034	N = 215
	between		122.6315	45.78494	325.2148	n = 5
	within		126.9551	-32.31643	634.6964	T = 43

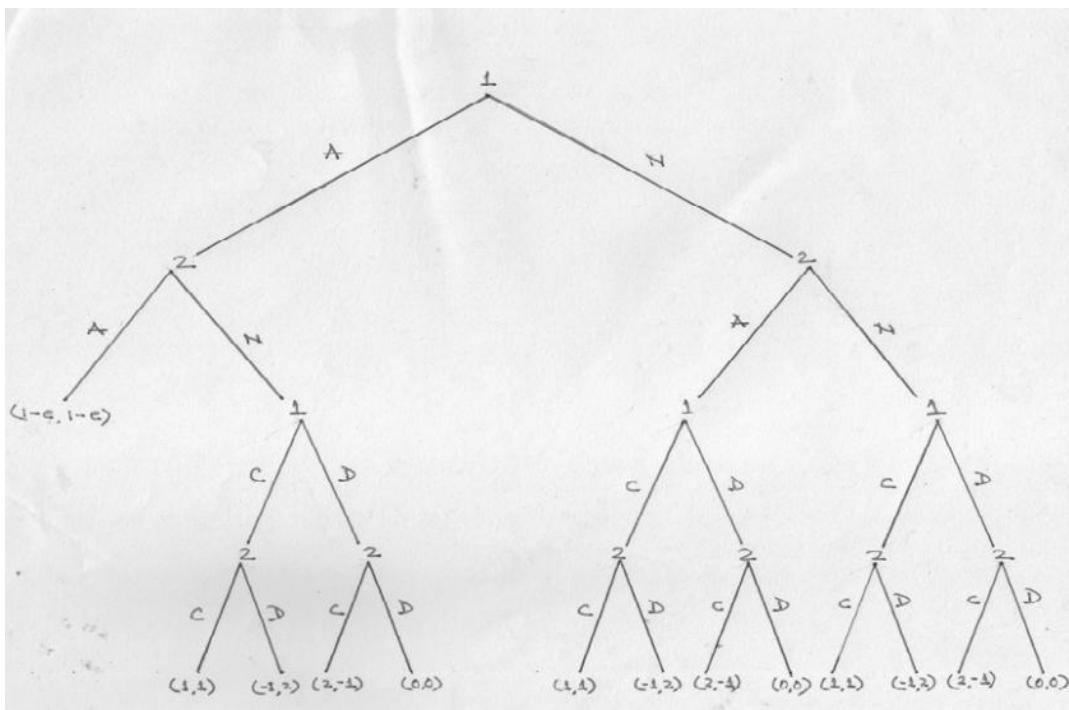
**A2: Results from fixed-effects estimation**

Fixed-effects (within) regression	Number of obs	=	182		
Group variable: id	Number of groups	=	5		
R-sq: within = 0.7863	Obs per group: min =	27			
between = 0.8863	avg =	36.4			
overall = 0.6131	max =	42			
	F(5, 172)	=	126.61		
corr(u_i, Xb) = -0.9090	Prob > F	=	0.0000		
lnfdi	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
lngdp	3.949464	.4462596	8.85	0.000	3.068614 4.830315
pcygrowth	.0701093	.0424147	1.65	0.100	-.0136111 .1538298
openness	2.347083	.8713796	2.69	0.008	.6271088 4.067058
bitsigned	.0131977	.0097375	1.36	0.177	-.0060227 .0324181
power	-.003898	.0022205	-1.76	0.081	-.0082809 .0004849
_cons	-79.96129	10.65321	-7.51	0.000	-100.9891 -58.93343
sigma_u	4.1754889				
sigma_e	1.1608222				
rho	.92825617				(fraction of variance due to u_i)
F test that all u_i=0:	F(4, 172)	=	18.05	Prob > F	= 0.0000

### A3: Results from Hausman Test

	Coefficients		
	(b)	(B)	(b-B)
	fixed	random	Differen
<hr/>			
>       sqrt(diag(V_b-V_B))			
>	fixed	random	Differen
>	S.E.		
>			
>       lngdp   3.949464 .8326066 3.1168			
> 58   .4322034			
> pcygrowth   .0701093 .0651492 .00496			
> 02   2.347083 3.494613 -1.14753			.
> openness   .0131977 .03158 -.0183823 .00125			
> bitssigned   -.003898 .005554 -.009452 .0016577			
<hr/>			
b = consistent under Ho and Ha; obtained from xtreg			
B = inconsistent under Ha, efficient under Ho; obtained from xtreg			
Test: Ho: difference in coefficients not systematic			
chi2(5) = (b-B)'[(V_b-V_B)^(-1)](b-B)			
= 22.62			
Prob>chi2 = 0.0004			
(V_b-V_B is not positive definite)			

### A4: Game Tree



Action A	Player consents to the binding agreement
Action N	Player does not consent to the binding agreement
Action C	Player co-operates or does not sign BITs in absence of a binding agreement
Action D	Player defects or does not sign BITs in absence of a binding contract

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## END NOTES

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<sup>1</sup>Another benefit of a region-level study is the increase in the number of data points vis-a-vis country-level investigations. Studies of the former kind will yield estimates which are more precise, and thus come with greater reliability.

<sup>2</sup>There is another reason why BIT arbitrations at International Centre for Settlement of Investment Disputes are inherently biased towards the developed. It has been found through conversations with subject matter experts that the legal conventions adopted at the tribunal more closely mirror the ones followed in the Western world. Lawyers from developing countries, usually trained in relying on precedence, are caught off guard when they find their counterparts arguing primarily on the back of logic and reason, with scant emphasis laid on precedence

<sup>3</sup>Empirical evidence on the extent of this sovereignty cost is difficult to find, partly because information is not in the public domain; counterfactuals are not available; and biases undermine the evidence base. (Cotula, 2014)

<sup>4</sup> Growth in money supply was tested, but was dropped later on conceptual grounds. Relevant data for fiscal deficit too is not available for the given time period. With regard to corruption, an alternate data source is World Bank's Control of Corruption and Political Stability data--used in Gould et al. (2013). However, it starts from 1996 and was hence not considered in the study

<sup>5</sup>Even with a different dependent variable- the FDI/GDP ratio-our results remain robust. In addition, including new variables in the model, or changing data sources for existing variables, had no effect on the sign/significance of the cumulative BIT variable

<sup>6</sup>We tried using the logarithmic transformation used in Neumayer and Spess (2005). An inordinate change in the test results led us to reject the same