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Heterogeneous Effects of Bilateral Investment Treaties

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Abstract

Bilateral Investment Treaties (BITs) are an increasingly used policy instrument to encourage FDI inflows, particularly inflows into developing countries. In this paper we estimate a gravity model of FDI flows from a sample of OECD countries to a broader sample of developing economies, examining the impact of BITs on these flows. BITs are signed between highly heterogeneous country-pairs, with important differences found in terms of the institutional and economic distance between BIT signatories. These differences may help explain the mixed results on the effects of BITs on FDI flows in the existing literature, with our exploration of non-linearities in this relationship suggesting that the effects of BITs are increasing in the difference in GDP and GDP per capita between source and host. BITs appear to have no impact upon FDI flows for country-pairs that are too dissimilar in terms of the strength of their political institutions.

JEL codes: C21, F21

Keywords: Foreign Direct Investment, Bilateral Investment Treaties, Heterogeneous Effects

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1. Introduction

Flows of FDI have increased rapidly – more rapidly than trade flows – over the last three decades. According to the World Investment Report (2014) FDI inflows were around $400 million in 1995, $1.4 trillion in 2000 and, following slumps in the early 2000s and during the recent global financial crisis, rose to $1.45 trillion in 2013. While many of these flows of FDI have occurred among developed countries, a significant amount of FDI has flowed from developed to developing countries, with developing countries in Asia being important recipients. FDI is thought to benefit host countries through a number of channels. In addition to the inflow of capital, FDI is often accompanied by the movement of firm-specific assets such as technology, managerial ability, corporate governance and access to networks connecting foreign markets. FDI is also expected to encourage competition among domestic firms, hopefully increasing efficiency. Spillovers from FDI may be expected through the leakage of proprietary knowledge (Görg and Greenaway, 2004), and there is evidence to suggest the presence of employment and wage benefits (see for example Foster-McGregor et al, 2015).

While the causes of the dramatic increase in FDI flows are likely to be broad, this paper focusses on the role of policy, and in particular the role of Bilateral Investment Treaties (BITs), in impacting upon flows of FDI from the developed to the developing world. Since the first BIT was formed between (West) Germany and Pakistan in 1959 their popularity has increased significantly. At the end of the 1960s there were only 75 BITs in force. This increased to 167 by the end of the 1970s, 389 by the end of the 1980s, and today there are 2,954 BITs in existence, with 2,319 in force.[1] Investment agreements have become an important policy tool more generally with many proposed 'deep' Preferential Trade

[1] http://investmentpolicyhub.unctad.org/IIA, accessed on 12th July 2016.

Agreements (PTAs) including an investment chapter (e.g. the now moribund Trans-Pacific Partnership (TPP), EU-Canada, EU-India).

The aim of BITs is to encourage flows of FDI from generally high-income suppliers to lower-income recipients, which they do by guaranteeing certain levels of treatment for foreign investors. These include most-favoured country treatment, fair and equitable treatment for foreign investors, and the free transfer and repatriation of capital and profits (Dolzer and Stevens, 1995; UNCTAD, 1998). BIT partners also agree to be bound by dispute settlement provisions that are intended to ensure basic requirements of credible protection of property and contract rights, but which can result in foreign investors being granted greater security and better treatment than domestic investors (Vandevelde, 1998).[2] This asymmetric treatment in favour of foreign firms can cause excessive entry and investment by foreign firms relative to domestic firms.[3] The investor settlement procedure potentially involves considerable interference in domestic policy, with practically any public policy being subject to challenge.

By providing a credible commitment to foreign investors, individual host countries may be able to create a competitive advantage as long as not all potential hosts have signed such treaties. The costs of BITs in terms of reduced national sovereignty are generally justified if the competitive advantage developed by BITs encourages FDI inflows, and if these FDI inflows provide the benefits discussed above (Elkins et. al. 2004; Guzman, 1998; and Neumayer, 2005). The extent to which BITs actually encourage inward FDI is an empirical question, however.

[2] Through this mechanism foreign investors can avoid national legal systems, opting instead for international arbitration, where they can choose one of the three panellists, and where consensus is required for one of the other two (Elkins et al, 2004). Recently there has been a strong increase in the number of arbitration cases (Bellak, 2013) and the presence of international arbitrage clauses has caused concern amongst citizens in the EU regarding the proposed TTIP agreement.

[3] Aisbett et al (2009) show that BITs, by entitling foreign firms to compensation from expropriation, may encourage investment by high fixed cost foreign firms that would otherwise not enter a market, and that this entry may crowd out some relatively efficient domestic firms that would otherwise be in the market (p. 380). They further show that compensation may encourage over-investment and excessive entry in risky sectors.

The majority of the empirical literature testing the relationship between BIT formation and FDI inflows adopts the familiar gravity equation, relating bilateral FDI flows to standard gravity variables (e.g. distance and economic size) and a dummy variable taking the value one if a country-pair have formed a BIT (e.g. Hallward-Driemeier, 2003 and Salacuse and Sullivan, 2005). A related literature tests whether countries that sign BITs see an increase in aggregate FDI inflows (e.g. Tobin and Rose-Ackerman, 2005 and Neumayer and Spess, 2005). While, in principle, BITs only protect investors from the signatory states to whom binding commitments have been made, their existence may also signal that this host country protects the interests of foreign investors more generally. If this is the case, then BITs encourage FDI inflows from both BIT partners and non-BIT sources.

Whichever approach is adopted, there are a wide range of estimated effects in the literature, including studies which report positive, negative or insignificant effects of BIT formation. This point is emphasised in a recent meta-analysis of the relationship between BITs and FDI by Bellak (2013), who finds that 11% of the estimated coefficients on the BIT dummy are actually negative (2% being significantly so), with 76% of the coefficients being positive and significant. In addition, he finds that more recent studies have been more likely to find a negative coefficient and that the dispersion of the estimated coefficients has tended to increase over time. Bellak (2013) reports an un-weighted mean semi-elasticity of 17.6% in the papers he considers, but the standard deviation is found to be 37.4 with some estimates above 100% and others below -50%.

The literature has responded to this ambiguity in several ways. First there have been attempts to deal with the issue of endogeneity. Similar to the case of PTAs, endogeneity is expected due to the self-selection of countries into BITs. The coefficient on the BIT variable is likely to be biased due to omitted (unknown) determinants of bilateral investment costs. These omitted variables are likely to be correlated with the probability of being in a BIT, with BIT formation not being random but instead driven by several factors, including many of the unobserved factors excluded from the gravity equation explaining investment flows (Baldwin and Taglioni, 2006). In the context of PTAs a number of approaches have been adopted, including instrumental variables (Baier and Bergstrand, 2002), matching estimators (Baier and Bergstrand, 2009a) and difference in difference analysis (Egger et al, 2008). Baldwin and Taglioni (2006) amongst many others suggest that in the case of panel data the inclusion of country-pair fixed effects is an appropriate method of dealing with this particular endogeneity problem.

In the case of BITs, Aisbett (2009) controls for self-selection in her regression equations using country-pair fixed effects. She finds that the coefficient on her BIT dummy becomes smaller and insignificant as a result, though it should be noted that this study considers positive FDI flows only and is restricted to 28 low- and middle-income FDI host countries. Busse et al (2010) and Kerner (2009) control for endogeneity using an Instrumental Variables (IV) approach, instrumenting the BIT dummy with the number of BITs ratified by neighbouring countries, the number of BITs ratified by all other developing countries and the lag of the BIT variable. Their results indicate a positive impact of BITs on FDI flows, but using data that is not restricted to positive FDI flows.

Second, the apparent sensitivity of the results to whether only positive flows are included has been considered by Falvey and Foster-McGregor (2015). They use a matched difference-in-difference approach to test for the effects of BITs at the intensive (positive and negative separately) and extensive margins of FDI and find significant effects only at the extensive and negative intensive margins.[4]

[4] Including zero and negative FDI flows precludes a routine application of the log transformation to the FDI data. Two approaches have been employed. The first adds 1 to the zeroes before taking the log (thereby 'preserving the zero') and takes the log of the absolute value of a negative flow which is then included with a negative sign (e.g. Kerner, 2009). The second approach applies an inverse hyperbolic sine transformation

Third, Berger et al. (2013) relax the assumption that BITs are homogeneous and conduct a deeper investigation of the provisions of BITs (and PTAs). They focus on two investment provisions: (i) guarantees of market access for foreign investors by means of national treatment and most-favoured-nation treatment in the pre-establishment phase; and (ii) credible commitments against discriminatory and discretionary treatment by means of international dispute settlement mechanisms in the post-establishment phase. They conclude that liberal admission rules promote bilateral FDI, but that dispute settlement provisions play only a minor role.

Fourth, the impacts of international investment disputes on BIT-protected and unprotected FDI flows are becoming clearer. Allee and Peinhardt (2011) find that FDI flows to a developing host country decline if it is brought before the International Centre for Settlement of Investment Disputes (ICSID), particularly if the decision goes against it. This work is extended by Aisbett et al. (2017) who consider the effects of disputes and arbitration settlements on FDI flows from BIT partner and non-partner countries. They distinguish three functions that a BIT may serve to attract FDI – ‘a signal’ that this host is safe (this applies to all investors); ‘a deterrent’ against treaty violations by the host (this applies only to investments from BIT partners); and ‘insurance’ of compensation in the event of a violation (again this applies only to investments from BIT partners). Their results confirm their predictions from the ‘BITs as deterrent’ hypothesis. First, BITs signed before any dispute involving the host country have a positive impact on bilateral FDI flows. Second, bilateral FDI flows from unprotected sources fall less than those from BIT-partners following a dispute. Finally, the FDI boost a host receives from ratifying another BIT is smaller if it has been involved in a dispute. They conclude that BITs have a causal positive impact on FDI flows, but only for hosts who have not had a BIT claim brought to arbitration.

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directly to the data as explained below (e.g. Aisbett et al., 2017, and Berger et al., 2013). Both approaches produce very similar results.

Finally, some investigation has been conducted on how the effectiveness of BITs relates to the size of investment projects. Paniagua et al. (2015) decompose bilateral FDI flows into the number and the average size of investments projects in each flow. They apply a quantile regression in a gravity framework to data on bilateral firm-level Greenfield investments from 120 source countries to 161 host countries over the period 2003 to 2012. They conclude that a BIT can have a positive effect but only for average FDI levels above the median. Myburgh and Paniagua (2016) use a similar approach and find a BIT reduces (raises) FDI levels below (above) the median.

In this paper we explore whether the effects of BITs are non-linear. Understanding the environment in which BITs are likely to be effective is highly policy relevant, and may help in designing agreements that are more effective instruments for attracting FDI inflows to the developing world. BITs are signed between highly heterogeneous country-pairs, with important differences found in terms of the size (i.e. GDP), the level of development (i.e. per capita GDP) and the institutional constraints of BIT signatories. Our interest is in whether some of these differences could help explain the mixed results of the effects of BITs on FDI flows. We estimate a gravity equation of FDI flows from a sample of 22 OECD source countries to a broader sample of 101 lesser developed host economies. In our analysis we include zero and negative FDI flows (i.e. cases of disinvestment) and add controls for endogeneity and multilateral resistance.

To examine the issue of non-linearity in the relationship between BITs and FDI flows we stratify our BIT dummy variable by each of the three characteristics identified above for which we suspect a non-linear relationship may exist, allowing us to estimate separate coefficients on the BIT dummy for the different strata, an approach which allows us to search for non-linearities without imposing any strict functional form on them. Our results indicate that BITs have a positive (linear) effect on FDI flows from the OECD North to the developing South, with the effects found to be larger when zero and negative FDI flows are included. This suggests that at least part of the effect of BITs is to generate new or to renew disintegrating FDI relationships, a result that supports those of Falvey and Foster-McGregor (2015). Results further suggest the presence of non-linearities, with the effects of BITs found to be increasing in differences in the levels of GDP and GDP per capita between source and host country, and decreasing in the differences in political institutions between source and host.

The remainder of this paper is set out as follows: Section 2 describes the methodology adopted; Section 3 discusses the data used and provides initial descriptive statistics; Section 4 discusses the results; and Section 5 concludes.

2. Methodology

The starting point for our analysis is an augmented version of a fairly standard gravity model of the form:

$$\ln FDI_{ijt} = \gamma_1 BIT_{ijt} + \mathbf{X}_{ijt}\boldsymbol{\beta}' + \mu_{ij} + \tau_t + \varepsilon_{ijt} \quad (1)$$

with FDI_{ijt} being the flow of FDI from source country i to host country j at time t, BIT_{ijt} is a dummy variable taking the value 1 if the two countries i and j have a BIT in place at time t, $\mathbf{X}_{ijt}$ is a set of gravity and other variables included as controls, μ_{ij} and τ_t are country-pair and time fixed effects respectively that are included in various specifications, and ε_{ijt} is a well behaved error term. Time dummies are included to account for unobserved heterogeneity across time, while country-pair fixed effects are included to account for unobserved heterogeneity across country-pairs and to control for a potential self-selection problem – as discussed above – with both BIT formation and bilateral FDI flows being determined by other third factors.

The set of control variables that are included depend upon the specification, and in particular the set of fixed effects that are included, with country-pair specific variables unidentified in the case where country-pair fixed effects are included. The set of control variables includes the following variables: log distance between country-pairs ($\ln DIST_{ij}$); logged GDP of the source and host country ($\ln GDP_{it}$ and $\ln GDP_{jt}$); logged per capita GDP of the source and host country ($\ln GDPPC_{it}$ and $\ln GDPPC_{jt}$); dummy variables taking the value one if the country-pair share a common language ($ComLang$) or a common border ($Contig$), or if they have ever had a colonial relationship ($Colony$), if they are in the same PTA; and a variable capturing (absolute) differences in the strength of domestic political institutions between the source and host country ($POLDIF$). In addition, we include for both the source and host country an indicator of the number and importance of BITs with third countries, calculated as the share-weighted number of BITs with the shares being equal to the third countries' share in total GDP of the sample ($OtherBITs_{it}$ and $OtherBITs_{jt}$). Following a number of recent papers, including Cheong et al (2015), we also include indicators of the (dis)similarity of country-pairs, namely the log of the absolute difference in GDP ($\ln GDPDIF_{ijt}$) and GDP per capita ($\ln GDPPCDIF_{ijt}$) of the source and host country.

These last two variables are also used as stratifying variables when considering the non-linear effects of BITs on FDI flows. In the context of PTAs, Cheong et al (2015) argue that the type of and rationale for PTAs may well differ between similar and dissimilar countries. These possibilities also arise in the case of BITs. There already exists a literature investigating the potential complementarity or substitutability between BITs and domestic institutions. On one side are those who argue that BITs might seem more credible and be more effective in an environment of good political institutions (e.g. Hallward-Driemeier, 2003), while on the other side are those who argue that BITs might substitute for weaknesses in FDI recipient institutional quality (e.g. Neumayer and Spess, 2005).[5] Here we examine whether the effectiveness of BITs is sensitive to the *difference* in the quality of political institutions between source and host. Perhaps investors familiar with operating in an environment of low quality political institutions feel less need for BITs protection before investing in a host with similar institutions. If so then a BIT would become more effective the larger the difference in political institutions between source and host. Otherwise, if BITs and similarity in political institutions are complementary, then a BIT would be more effective the smaller the difference in political institutions between source and host.

In a similar vein, we investigate whether BITs are more or less effective between countries that are similar in their levels of development. It has been argued that differences in economic institutions broadly defined (including, for example, property rights enforcement, tolerance of corruption and barriers to business entry) are positively correlated with differences in economic performance (Acemoglu and Robinson, 2008). Relating the effectiveness of BITs to differences in development levels may then indicate whether BITs are a substitute or complement to differences in the quality of economic institutions (as opposed to the political institutions considered above).

Beyond this, differences in economic size may also matter. If economic size (as measured by GDP say) is highly correlated with national bargaining power in investment disputes, then we might anticipate that BITs, which employ arbitration in place of bargaining to settle such disputes, would be more successful in encouraging investment between countries of different size. Parties from the smaller partner (investors or the host government) may prefer international arbitration to unequal bargaining. The ‘BITs as deterrent’ effect established by Aisbett et al. (2017), while applicable to investors from both large and small source countries, may be of greater importance to the latter.

[5] The results of Myburgh and Paniagua (2016) suggest that foreign investors are less sensitive to host institutions if the host has ratified the Convention on Recognition and Enforcement of Foreign Arbitral Awards.

Alongside these control variables we include controls for interdependence amongst countries. Anderson and van Wincoop (2003) have shown that trade between two countries is decreasing in their bilateral trade costs relative to the corresponding average with all their partners, rather than to absolute trade costs, an effect they refer to as multilateral resistance. Paniagua (2011), amongst others, derives a theory-based gravity model for FDI flows and also obtains multilateral resistance terms, implying that third country variables can impact upon the flows and stocks of FDI between two countries. One way of capturing these multilateral resistance terms is through the inclusion of (time-varying) source and host country fixed effects. The inclusion of these fixed effects requires estimation of a large number of additional coefficients, and time-varying country-specific variables cannot be included alongside these fixed effects. An alternative approach is that of Baier and Bergstrand (2009b), who suggest controlling for multilateral resistance by including GDP-weighted exogenous variables as multilateral resistance controls. In a Monte Carlo analysis they find that coefficient estimates on their variables of interest using these theoretically-motivated exogenous multilateral resistance terms are almost identical to those obtained by Anderson and van Wincoop, who used a particular non-linear least squares methodology to account for the endogeneity of prices. In our analysis we employ both approaches, but because they produce similar outcomes we report stratification results using the Baier and Bergstrand (2009b) method only.[6]

Following the majority of the literature using the gravity equation, we wish to apply a log transformation to our FDI measures as a way of reducing the skewness of the distribution. A routine application of the log transformation will exclude from consideration the large number of zero flows along with the negative values of FDI flows which involve instances of

[6] We use distance, common language, common border and the PTA variable as exogenous variables. Results when including host-time fixed effects are available upon request from the authors.

reverse or dis-investment.[7] To retain the zero and negative observations in our analysis we therefore use the inverse hyperbolic sine transformation (for more details see Burbidge et al, 1988), which is defined as $\ln\left(y + \left(y^2 + 1\right)^{1/2}\right)$. Except for small values of y, this is approximately equal to $\ln(2) + \ln(y_i)$, meaning that coefficients can be interpreted in the same way as when using logs. This transformation has the advantage of being directly defined for zero and negative values.[8]

To capture the heterogeneous effects of BITs on FDI flows we initially adopt an approach to heterogeneity that has recently been used in the context of PTAs by Cheong et al (2015). In our case, the approach involves stratifying the BIT dummy, BIT_{ijt}, into 10 BIT dummies, BIT_{ijt}^{p} $(p = 1,2,3,\ldots,10)$, based on a variable that we believe may affect the relationship between BIT membership and FDI flows. Each of the 10 BIT dummy variables may have different coefficients, allowing for non-linearities without imposing any particular functional form. The resulting specification for the regression equation is:

$$\ln FDI_{ijt} = \sum_{p=1}^{10}\left(\gamma_i BIT_{ijt}^{p} + \delta_i D_{ijt}^{p}\right) + \mathbf{X}_{ijt}\boldsymbol{\beta}' + \mu_{ij} + \tau_t + \varepsilon_{ijt} \qquad (2)$$

where $BIT_{ijt}^{p} = BIT_{ijt} \times D_{ijt}^{p}$, and D_{ijt}^{p} is a dummy that takes the value one if the observation belongs to the pth stratum and zero otherwise. Cheong et al (2015) include the stratum dummy variables as independent variables in the regression since it also allows for the stratification of observations for which $BIT_{ijt} = 0$, meaning that the coefficients on the BIT_{ijt}^{p} variables can be interpreted as the within group p difference in FDI flows between those with and without a BIT. The stratification that we use is undertaken in two ways.

[7] In the literature on the gravity equation attempts have recently been made to deal with a form of endogeneity that arises due to the presence of zero trade flows. Helpman et al (2008) for example propose a modified Heckman selection type model, while Santos and Tenreyro (2006) suggest using a Pseudo Poisson Maximum Likelihood model. In our case neither of these approaches is feasible due to the presence of negative FDI flows. Our full sample of data consists of 9,218 observations with positive FDI flows, 2,975 observations with negative FDI flows, and 41,496 observations with zero flows.

[8] This transformation is also used by Aisbett et al. (2017) and Berger et al. (2013).

Firstly, we stratify according to centiles (centile stratification), meaning that we split our sample into ten groups, each with the same number of observations.[9] Secondly, we stratify according to the actual value (value stratification) of the variable of interest, meaning that we have a constant range of values within each group, but a different number of observations in each group.

As a more familiar alternative to this stratification approach we further estimate regression equations including interaction terms between the BIT dummy variable and the variables that we suspect may create non-linearities in the relationship between BITs and FDI flows. The advantage of this approach is the ease with which it is possible to include multiple interactions, i.e. interactions with numerous third variables. The disadvantage is that it imposes a particular form of non-linearity.

3. Data and Descriptive Analysis

In our analysis we consider FDI flows from a sample of 22 OECD source countries (i.e. the 'North') to a sample of up to 101 host countries (i.e. the 'South') over the period 1985-2011.[10] We consider unidirectional flows from the North to the South, with up to 2,222 observations per year.[11] Data on FDI is taken from the OECD's International Investment Statistics, which report data on bilateral FDI stocks (inward and outward stocks) and flows (inflows and outflows) for OECD reporting countries and a much larger sample of partner countries from 1982 onwards. We deflate the FDI data by the source country's GDP deflator.

[9] In reality, there will be a slightly different number of observations in each regime because of ties.

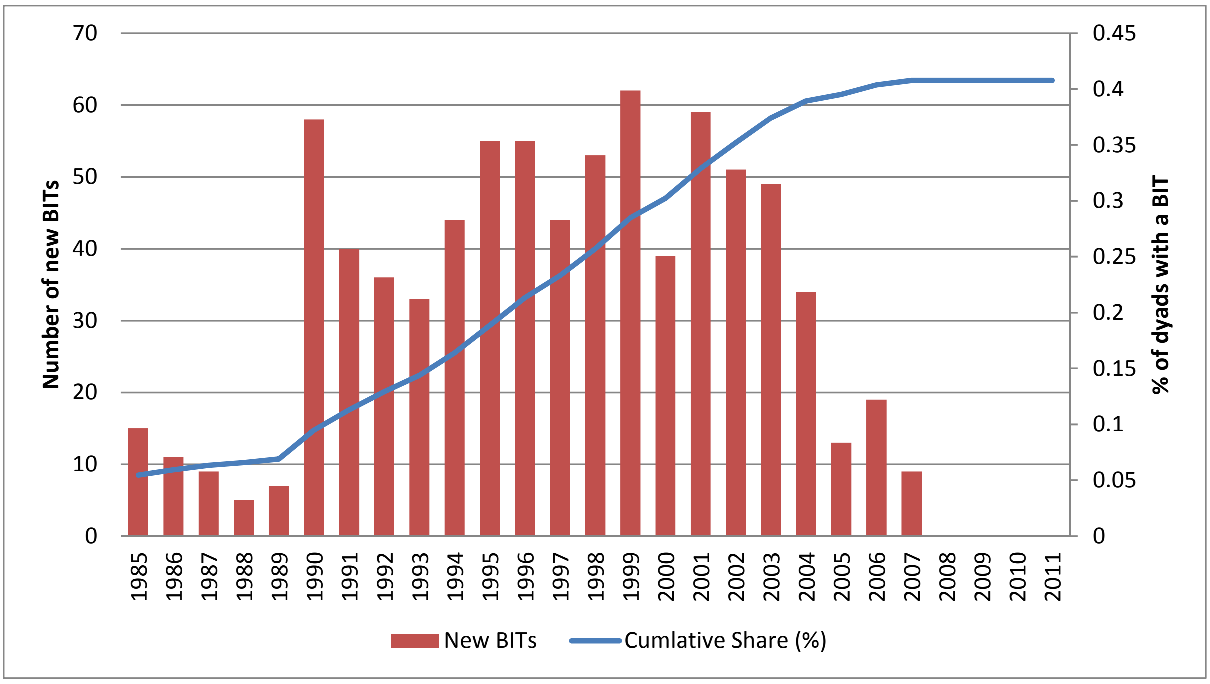
[10] The full sets of reporter and recipient countries included in the analysis are listed in the Appendix. While the OECD reports FDI data on up 248 host countries/territories/regions we are only able to include 101 in our sample. Firstly, we drop OECD countries as hosts, thus allowing us to concentrate on the impact of BITs on North-South FDI. Secondly, we are not able to include aggregated regions (e.g. Africa excluding North African countries). Thirdly, we are forced to drop a number of countries due to limited data availability for other variables. Fourthly, we exclude a number of countries that have relatively high per capita GDP (i.e. higher than that in the source countries) and that are financial offshore centres.

[11] In practice, this number is lower because of data availability. In the years up to 1991 the number is also lower due to some transition countries not yet being independent.

Data on BITs are taken from UNCTAD's Investment Policy Hub (http://investmentpolicyhub.unctad.org/IIA), with data on ratified BITs being used in the subsequent analysis.[12] To give some indication of how important BITs have become in our dataset, Figure 1 reports by year, data on the frequency of new BIT formation and the share of potential country-pairs (i.e. the maximum of 2,222) that are subject to a BIT. According to our data there were 121 BITs in place among our sample of countries prior to 1985, representing around 5.5% of total possible country-pairs covered by a BIT. Over the period considered, and during the 1990s and early 2000s in particular, a large number of new BITs were agreed (an average of 48 per year during the 1990s and 40.8 over the period 2000-2005). By the end of the period therefore, around 40% of the country-pairs were subject to a BIT.

[12] Unfortunately, this database doesn't give us a comparable indicator of the 'depth' of any agreement. We are thus only able to account for the presence of a BIT and not its depth.

Figure 1: BIT Formation over the Period 1985-2011



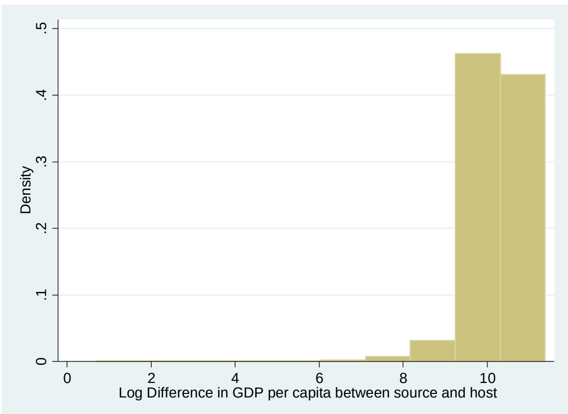
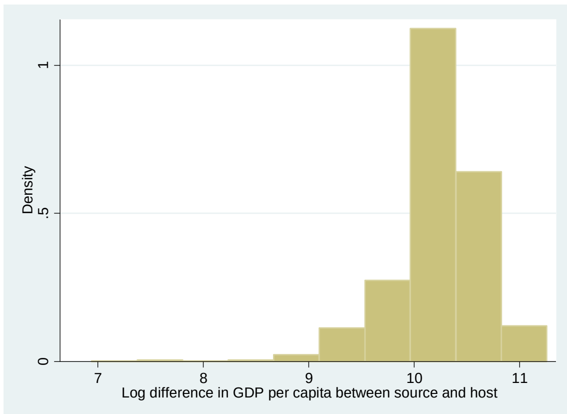
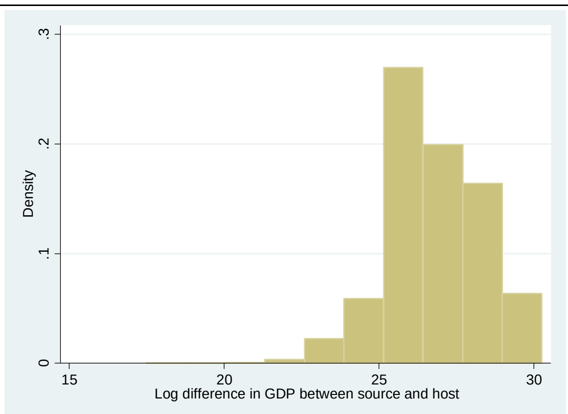
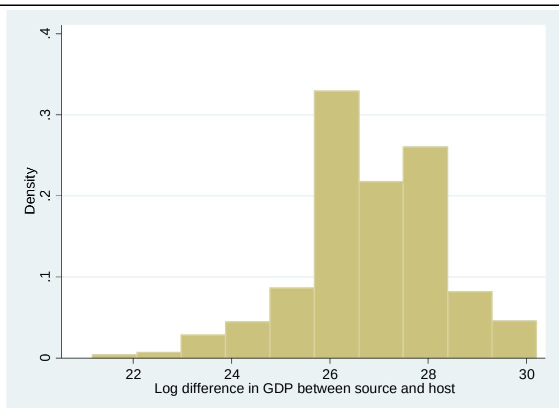
Data on GDP, GDP per capita and the GDP deflators are from the World Bank's World Development Indicators. Data on gravity determinants are from CEPII. Data on PTAs is taken from the Global Preferential Trade Agreements Database (http://wits.worldbank.org/gptad/), while the index of political rights was developed by Henisz (2000) and has recently been updated to 2011.[13] This index ranges between zero (the executive has complete discretion and can change policies at any time) and one (a change of existing policies is infeasible) and is an indicator of the ability of political institutions to make credible commitments to an existing policy regime. It is argued by both Henisz (2000) and Neumayer and Spess (2005) to be the political variable most relevant to potential investors.

Basic summary statistics are reported in Table A1 in the Appendix. Here however we focus on the distribution of our explanatory variables for years and country-pairs in which BITs

[13] Data can be downloaded from http://www-management.wharton.upenn.edu/henisz/ (accessed 16th October 2014)

were formed, examining whether there is evidence of significant dispersion in these variables or whether BITs tend to be signed between country-pairs that are similar in terms of these observables. Figure 2 reports for all observations (left hand column) and for BIT signing observations only (right hand column) histograms of the distribution of a subset of the explanatory variables included in our model. The figure indicates that BITs are signed between countries with widely differing GDPs and GDPs per capita. In the case of differences in political constraints between source and host we again see a high degree of variation in these differences across BIT country-pairs, though here differences in political constraints are relatively small for a large share of our BIT country-pairs.

Figure 2: Distribution of Data by Explanatory Variables

<table>
<tr><td>All Observations</td><td>BIT members</td></tr>
<tr><td>Difference in GDP per capita</td><td></td></tr>
<tr><td>
</td><td>
</td></tr>
<tr><td>Difference in GDP between Source and Host</td><td></td></tr>
<tr><td>
</td><td>
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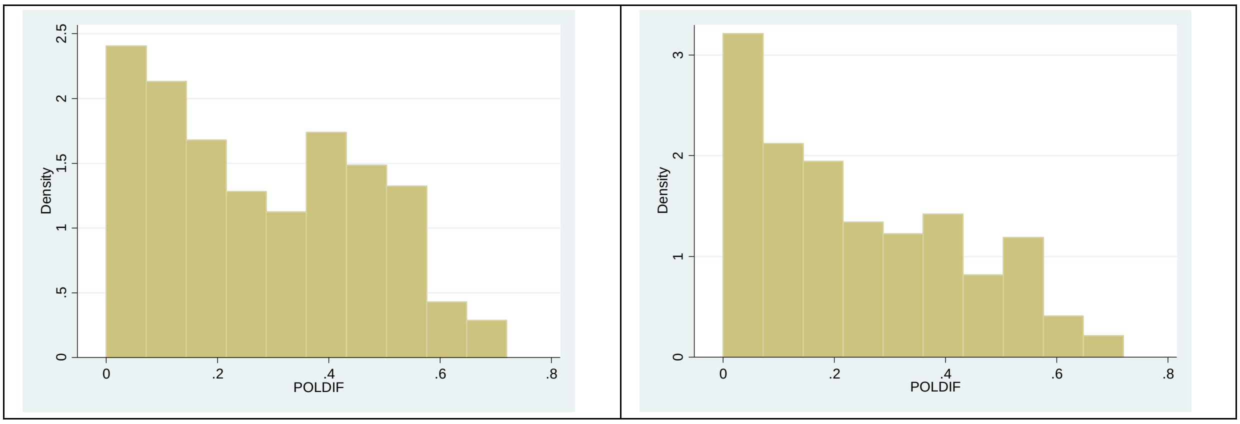

Notes: These figures report the distribution of data by explanatory variables, with the left hand column reporting the distribution for the full sample of observations and the right hand column reporting the distribution only for observations in which a BIT was formed.

4. Results

We begin our discussion of the results in Table 1, which reports the linear effects of BITs on FDI flows from OECD source to developing country host countries. The first three columns of Table 1 consider only observations with positive FDI flows using the standard log transformation, while the latter three cover all available observations using the inverse hyperbolic sine transformation that allows for the inclusion of zero and negative flows. For each of the two samples we report results including either the multilateral resistance controls of Baier and Bergstrand (2009b) or the approach of including host-time fixed effects to account for multilateral resistance, as well as specifications that include country-pair fixed effects to deal with the issue of self-selection. In this latter case, country-pair specific variables are not identified and are thus excluded from the regression specification, while host-time specific variables cannot be included when host-time fixed effects are included.[14]

If we restrict attention to positive FDI flows we find coefficients on logged GDP and logged per capita GDP of source and host countries that tend to be positive and significant (the

[14] In additional, unreported specifications we further control for other host specific variables such as openness (total trade/GDP) and inflation (Aisbett et al, 2017), as well as a dummy variable controlling for the existence of investment disputes against the host country (and its interaction with the BIT dummy variable) (Aisbett et al, 2017). The inclusion of these variables has a minimal impact on the BIT variable and are thus not reported in the paper. They are available upon request, however.

exceptions being for GDP of the source and GDP per capita of the host when country-pair fixed effects are included), consistent with results elsewhere in the literature. Coefficients on the logged absolute difference in GDP and GDP per capita tend to vary in sign and to be insignificant (the exception being for the per capita GDP difference when country-pair fixed effects are included). The coefficient on distance in the first column is negative and significant as expected. In this column, a common border and an existing colonial relationship are also found to enhance FDI flows, as are the (GDP weighted) number of BITs that the reporter has with third countries. We find coefficients on the BIT dummy that tend to be positive and significant (the exception being when host-time fixed effects are included). The significant coefficients tend to be quite stable, with a value around 0.165, suggesting an increase in FDI flows of around 18% (i.e. $\exp^{\gamma_1} - 1$).

The results on the control variables when considering all observations are broadly similar to those in the case of positive FDI flows. The major differences are the positive and significant impact of PTA membership on bilateral FDI flows, and the positive and significant coefficient on the variable capturing differences in political constraints when endogeneity is controlled for. This latter result implies that in our preferred specification (6) a larger difference between source and host political institutions encourages FDI. While counterintuitive, it should be borne in mind that the coefficient is only marginally significant (when significant), and not robust across specifications. When country-pair fixed effects are included we also observe positive and significant coefficients on the difference in GDP and GDP per capita, suggesting that FDI is larger for more dissimilar countries in terms of their GDP and GDP per capita.

Coefficients on the BIT dummy tend to be somewhat larger than the corresponding values in the case of positive FDI flows and remain significant. The estimated coefficients suggest that BITs are associated with an increase in FDI flows of between 22 and 35%, with the largest effects being found when both Baier and Bergstrand (2009b) multilateral resistance and country-pair fixed effects are controlled for. The larger effect of BITs found in the case of all FDI flows suggests that a significant part of the effect of BITs works by creating new and reinvigorating deteriorating FDI relationships.[15]

Table 1: Linear Regression Results

	Positive Flows Only			All FDI Flows		
	(1)	(2)	(3)	(4)	(5)	(6)
BIT	0.168*	0.078	0.163**	0.200***	0.200***	0.298***
	(0.0869)	(0.1010)	(0.0802)	(0.0587)	(0.0533)	(0.0546)
$\ln GDP_i$	0.729***	3.488***	3.598***	0.243***	0.090	-0.167
	(0.0668)	(1.0448)	(1.034)	(0.0486)	(0.3958)	(0.456)
$\ln GDP_j$	0.605***		-2.764***	0.281***		-1.113***
	(0.0328)		(0.466)	(0.0213)		(0.167)
$\ln GDPPC_i$	1.915***	-3.872***	-4.191***	0.319	-0.848	-1.083**
	(0.389)	(1.4009)	(1.369)	(0.244)	(0.5689)	(0.546)
$\ln GDPPC_j$	0.327***		3.654***	0.0132		1.398***
	(0.0560)		(0.418)	(0.0243)		(0.185)
$\ln GDPDIF$	-0.0321	0.0001	0.0497	-0.00489	0.080	0.210***
	(0.0537)	(0.0568)	(0.0612)	(0.0428)	(0.0741)	(0.0794)
$\ln GDPPCDIF$	-0.0973	0.155	0.916**	-0.109	0.293	0.587**
	(0.293)	(0.5714)	(0.427)	(0.218)	(0.3495)	(0.258)
$\ln Dist$	-0.811***			-0.266***		
	(0.104)			(0.0555)		
$Contig$	0.476			2.038**		
	(0.388)			(0.972)		
$ComLang$	0.329*			0.0412		
	(0.170)			(0.0596)		
$Colony$	1.054***			0.769***		
	(0.172)			(0.158)		
PTA	0.0668	-0.015	0.132	0.333***	0.252**	0.271***
	(0.153)	(0.1719)	(0.128)	(0.100)	(0.1249)	(0.0909)
$POLDIF$	0.543**	0.202	0.220	-0.0977	-0.135	0.122*
	(0.213)	(0.2136)	(0.146)	(0.0827)	(0.1168)	(0.0689)
$OtherBITs_i$	0.688***	2.001***	1.515***	0.476***	0.424***	0.250**
	(0.200)	(0.3163)	(0.311)	(0.0898)	(0.1135)	(0.121)
$OtherBITs_j$	0.103		0.168	0.0272		-0.0789
	(0.182)		(0.214)	(0.0841)		(0.0811)
Country-Pair Fixed Effects	No	Yes	Yes	No	Yes	Yes
Host-time fixed effects	No	Yes	No	No	Yes	No
BB MR Controls	Yes	No	Yes	Yes	No	Yes
Observations	8,902	8,902	8,902	53,373	53,373	53,373
R-squared	0.509	0.493	0.334	0.174	0.111	0.035
F-stat	45.13***	3.53***	34.72***	18.60***	2.61***	11.06***

Notes: The first three columns report results when considering only positive FDI flows (i.e. using the standard log transformation), with the latter three reporting results for all observations (using the inverse hyperbolic sine transformation). The different columns include different controls. All equations include time fixed effects, with the first and third columns of each group including the multilateral resistance controls of Baier and Bergstrand (2009b) and the second column controlling

[15] This outcome is consistent with Paniagua (2013), who concludes that a BIT deters bilateral disinvestments from Spain.

for multilateral resistance using host-time fixed effects. Standard errors clustered at the country-pair level are in parentheses; *** p<0.01, ** p<0.05, * p<0.1

Table 2 (3) reports the results from the centile (value) stratification. The split is made according to three variables: the logged value of the difference in the absolute value of per capita GDP (in constant prices) between source and host; the logged value of the difference in the absolute value of GDP (in constant prices) between source and host; and differences in the indicator of political constraints.[16] For each of these variables we split the observations into ten groups. The first three columns report results for the positive FDI flows, while the latter three report results for all observations as before. Since both stratifications produce very similar results we will discuss them together. When considering the positive FDI flows only we find few significant coefficients, consistent with the lack of a significant effect of BITs in the linear model when country-pair fixed effects are included. We thus concentrate on the case where all observations are included in the model, and here we do find evidence of heterogeneity across the different strata.

For strata based on differences in GDP between source and host we tend to find insignificant coefficients at lower strata, such that the 40% of observations with the smallest differences in GDP between source and host tend not to benefit from BITs. For higher strata the coefficients on the BIT term are consistently positive and significant, with the coefficients tending to increase in size as we move to higher strata. In the fifth stratum of Table 2 the results suggest that BITs increase FDI flows by around 19% – somewhat lower than the estimates of 22-35% found in the linear model – but this effect rises to over 100% in the 10th stratum. If we

[16] Note that, in our North-South sample there are no cases where the per capita GDP of a host is higher than that of a source, so that GDPPCDIF is always positive. But, while this is also true in the majority of cases for the GDP and the political constraints variables, there are instances where the value of the variable in the host is higher than that in the source. To test if it matters whether source or host has the higher value for these variables, we repeat the analysis using the simple difference in GDP and political constraints of source and host, (using the negative of the log of the absolute value in cases where the GDP difference is negative). The results (available on request) are very similar to those reported in the main text and are thus not included for reasons of brevity. This suggests that it is the cases where the source's value is greater than the host's value that are important for the outcome.

interpret differences in GDP as reflecting differences in bargaining power, then we conclude from these results that BITs are effective in promoting FDI when the difference in bargaining power between source and host is large.

When we look at the effects of BITs stratified by differences in GDP per capita of source and host we find a similar set of results. At lower strata, coefficients tend to be small and insignificant, but as we move to higher strata the coefficients become significant and from the sixth stratum onwards (seventh in the case of value stratification) the coefficients increase in size monotonically. Coefficients in the sixth stratum in Table 2 suggest that BITs increase FDI flows by around 18% (16% in the case of value stratification), while at the 10th stratum the effect is found to rise to 109%. If we take differences in GDP per capita as reflecting differences in economic institutions broadly interpreted, then these results imply that BITs are only effective at promoting bilateral FDI when differences in economic institutions are large. That is BITs are a substitute for weaker economic institutions in the host.

Finally, in these tables we consider the role of differences in political constraints in driving differences in the effect of BITs on FDI flows. Here we find significant and positive coefficients in the 8 lowest strata, with a range of estimated effects from 21% to 55% in Table 2. Where the difference in political constraints between the source and host are largest (i.e. strata 9 and 10), we observe an insignificant effect of BITs on FDI flows. These results suggest that BITs are only effective when differences in political institutions are not too large – i.e. that BITs are a complement to similar political institutions between source and host.

Table 2: Non-Linear Regression Results (Centile Stratification)

	Positive FDI Flows			All FDI Flows		
	$\ln GDPDIF$	$\ln GDPPCDIF$	$POLDIF$	$\ln GDPDIF$	$\ln GDPPCDIF$	$POLDIF$
BIT^1	0.316	0.833***	0.174*	-0.0132	0.0848	0.302***
	(0.276)	(0.261)	(0.0982)	(0.152)	(0.140)	(0.0993)
BIT^2	-0.00258	0.116	0.178*	0.168	0.285**	0.437***
	(0.241)	(0.214)	(0.108)	(0.147)	(0.145)	(0.0987)
BIT^3	-0.00962	0.239*	0.187*	-0.0731	0.0432	0.417***
	(0.252)	(0.135)	(0.112)	(0.136)	(0.113)	(0.0965)
BIT^4	-0.180	0.175	0.0968	0.160	0.131	0.300***
	(0.246)	(0.127)	(0.130)	(0.132)	(0.122)	(0.0967)
BIT^5	0.217	0.0197	0.143	0.172*	0.144	0.415***
	(0.197)	(0.118)	(0.128)	(0.103)	(0.0992)	(0.0997)
BIT^6	0.398**	-0.134	0.214*	0.250**	0.169*	0.192**
	(0.164)	(0.134)	(0.116)	(0.113)	(0.0998)	(0.0957)
BIT^7	0.605***	0.131	0.0952	0.428***	0.338***	0.293***
	(0.169)	(0.126)	(0.169)	(0.119)	(0.0872)	(0.104)
BIT^8	0.373***	0.199	0.306*	0.450***	0.423***	0.231**
	(0.139)	(0.146)	(0.163)	(0.120)	(0.0997)	(0.102)
BIT^9	-0.107	-0.0127	-0.104	0.284***	0.472***	0.125
	(0.113)	(0.165)	(0.187)	(0.107)	(0.122)	(0.109)
BIT^{10}	-0.172	0.0431	0.148	0.878***	0.736***	0.0833
	(0.178)	(0.240)	(0.186)	(0.274)	(0.135)	(0.0920)
Observations	8,902	8,902	8,902	53,373	53,373	53,373
R-squared	0.338	0.340	0.336	0.037	0.037	0.036
F-stat	27.87***	28.01***	27.17***	8.164***	8.145***	8.250***

Notes: Standard errors clustered at the country-pair level in parentheses; *** p<0.01, ** p<0.05, * p<0.1; All regressions include the set of regressors reported in Table 1 along with the MR controls of Baier and Bergstrand (2009b), time and country-pair fixed effects, along with the set of 10 stratum dummies and the stratum dummy-BIT interactions reported in the table.

Table 3: Non-Linear Regression Results (Value Stratification)

	Positive FDI Flows			All FDI Flows		
	$\ln GDPDIF$	$\ln GDPPCDI$	$POLDIF$	$\ln GDPDIF$	$\ln GDPPCDI$	$POLDIF$
BIT^1	0.202	0.483**	0.215**	-0.0134	0.0782	0.305***
	(0.248)	(0.207)	(0.109)	(0.153)	(0.140)	(0.100)
BIT^2	-0.0665	0.196	0.0524	0.169	0.311**	0.446***
	(0.192)	(0.142)	(0.113)	(0.147)	(0.144)	(0.0988)
BIT^3	0.253	0.232*	0.221*	-0.0704	0.0353	0.383***
	(0.166)	(0.124)	(0.113)	(0.135)	(0.113)	(0.0977)
BIT^4	0.331*	0.0669	0.177	0.157	0.133	0.330***
	(0.169)	(0.127)	(0.122)	(0.132)	(0.124)	(0.0963)
BIT^5	0.550***	0.0327	0.183	0.171*	0.150	0.399***
	(0.173)	(0.127)	(0.136)	(0.103)	(0.0987)	(0.0980)
BIT^6	0.390**	-0.163	0.0959	0.245**	0.151	0.167*
	(0.152)	(0.141)	(0.136)	(0.113)	(0.0992)	(0.0961)
BIT^7	-0.0979	0.0735	0.183	0.429***	0.339***	0.330***
	(0.170)	(0.131)	(0.124)	(0.120)	(0.0867)	(0.103)
BIT^8	-0.0580	0.258*	0.172	0.457***	0.417***	0.241**
	(0.133)	(0.144)	(0.136)	(0.120)	(0.0999)	(0.105)
BIT^9	-0.294**	0.0299	0.259*	0.279***	0.479***	0.140
	(0.139)	(0.162)	(0.146)	(0.106)	(0.122)	(0.103)
BIT^{10}	-0.138	0.0427	0.0332	0.881***	0.735***	0.0863
	(0.292)	(0.225)	(0.151)	(0.274)	(0.135)	(0.0917)
Observations	8,902	8,902	8,902	53,373	53,373	53,373
R-squared	0.339	0.339	0.336	0.037	0.037	0.036
F-stat	27.60***	26.67***	26.51***	8.182***	8.158***	8.279***

Notes: Standard errors clustered at the country-pair level in parentheses; *** p<0.01, ** p<0.05, * p<0.1; All regressions include the set of regressors reported in Table 1 along with the MR controls of Baier and Bergstrand (2009b), time and country-pair fixed effects, along with the set of 10 stratum dummies and the stratum dummy-BIT interactions reported in the table.

In Table 4 we report, as a test of robustness, results from introducing interactions between the ‘strata’ variables and the BIT dummy rather than using the stratification method. When considering the subsample of positive FDI flows only (columns 1-3) we again observe little evidence of a positive relationship between BITs and FDI. While the coefficient on the BIT variable is positive and significant when considering the interaction with per capita GDP differences, the coefficient on the interaction term is negative, significant and relatively large, implying that the effects of BITs quickly tend towards zero and eventually negative. Coefficients on the interactions are also negative in the case of GDP and political constraints differences, again suggesting that any positive effect of BITs is diminished as differences in GDP and in political constraints between source and host increase.

Table 4: Non-Linear Results (Interaction Terms)

	Positive FDI Flows			All FDI Flows		
	$\ln GDPDIF$	$\ln GDPPCDIF$	$POLDIF$	$\ln GDPDIF$	$\ln GDPPCDIF$	$POLDIF$
BIT	1.508	7.621***	0.181**	-3.654***	-4.063***	0.413***
	(1.467)	(2.428)	(0.0892)	(0.996)	(1.150)	(0.0716)
$\ln GDP_i$	3.430***	3.569***	3.592***	0.186	-0.471	-0.194
	(1.052)	(1.040)	(1.033)	(0.453)	(0.442)	(0.455)
$\ln GDP_j$	-2.779***	-2.776***	-2.756***	-1.102***	-1.084***	-1.100***
	(0.465)	(0.470)	(0.468)	(0.167)	(0.166)	(0.166)
$\ln GDPPC_i$	-4.110***	-4.599***	-4.194***	-1.275**	-0.362	-1.085**
	(1.377)	(1.399)	(1.369)	(0.547)	(0.563)	(0.544)
$\ln GDPPC_j$	3.668***	3.730***	3.649***	1.382***	1.338***	1.390***
	(0.418)	(0.419)	(0.419)	(0.185)	(0.184)	(0.185)
$\ln GDPDIF$	0.0857	0.0534	0.0495	0.137*	0.208***	0.211***
	(0.0757)	(0.0616)	(0.0611)	(0.0803)	(0.0789)	(0.0793)
$\ln GDPPCDIF$	0.914**	1.660***	0.920**	0.585**	0.191	0.622**
	(0.421)	(0.472)	(0.427)	(0.261)	(0.313)	(0.258)
PTA	0.125	0.126	0.130	0.279***	0.279***	0.263***
	(0.129)	(0.122)	(0.128)	(0.0908)	(0.0908)	(0.0904)
$POLDIF$	0.221	0.210	0.280	0.116*	0.124*	0.235***
	(0.146)	(0.146)	(0.219)	(0.0688)	(0.0690)	(0.0658)
$OtherBITs_i$	1.466***	1.581***	1.513***	0.344***	0.189	0.247**
	(0.317)	(0.316)	(0.311)	(0.117)	(0.119)	(0.121)
$OtherBITs_j$	0.167	0.147	0.166	-0.0546	-0.0662	-0.0842
	(0.216)	(0.208)	(0.214)	(0.0801)	(0.0808)	(0.0810)
$BIT \times \ln GDPDIF$	-0.0490			0.146***		
	(0.0531)			(0.0372)		
$BIT \times \ln GDPPCDIF$		-0.731***			0.422***	
		(0.237)			(0.112)	
$BIT \times POLDIF$			-0.0983			-0.481***
			(0.263)			(0.180)
Observations	8,902	8,902	8,902	53,373	53,373	53,373
R-squared	0.334	0.337	0.334	0.036	0.036	0.035
F-stat	34.17***	34.68***	33.95***	11.14***	10.85***	10.91***

Notes: Standard errors clustered at the country-pair level in parentheses; *** p<0.01, ** p<0.05, * p<0.1; All regressions include the MR controls of Baier and Bergstrand (2009b), time and country-pair fixed effect.

When considering all observations, we find a negative and significant coefficient on the BITs dummy when allowing interactions with GDP and GDP per capita. Coefficients on the interaction term are positive and significant however. In the case of GDP, the effect overall of BITs on FDI becomes positive at a logged per capita GDP difference of 25.03, which is somewhat below the mean value for the sample as a whole. In the case of GDP per capita, the overall effect of BITs on FDI becomes positive at a logged difference in GDP per capita of 9.63, which is again below the average for the sample as a whole. These results are quite consistent with those from the stratifications in Tables 2 and 3 therefore, where significantly positive effects of BITs begin to appear only around the centre of the distribution. In the case of differences in political constraints we find the opposite case, with a positive effect of the BIT variable and a negative coefficient on the interaction term. In this case, the effect of BITs is positive but diminishes as the difference in political constraints increases. This result is again consistent with the reported results from the stratification in Tables 2 and 3.

5. Conclusions

This paper considers the impact of BITs on bilateral FDI flows between a sample of developed source countries and a larger sample of developing host countries. Adopting a gravity model and being careful to deal with issues related to endogeneity and to include all margins – intensive (positive and negative) and extensive - of FDI flows we find evidence to suggest that BITs increase FDI flows from source to host countries. This evidence is found to be stronger when including the extensive and negative intensive margins, suggesting that an important part of the effect of BITs is likely to work by generating new or reinvigorating deteriorating FDI relationships.

However, the main contribution of the paper has been to consider non-linearities in the effects of BITs on FDI. In particular, we find consistent evidence that the effectiveness of BITs in encouraging bilateral FDI flows is increasing in the difference in GDP and GDP per capita between the source and host countries. The former result provides evidence consistent with the hypothesis that BITs are likely to be more successful in attracting FDI when there are larger differences in the bargaining strength of source and host.

If we interpret differences in income per capita as reflecting differences in economic institutions broadly defined (e.g. property rights protection and prevalence of corruption), then the latter result is consistent with the view that BITs can be more effective in encouraging bilateral FDI when source and host have larger differences in economic institutions. Of course differences in GDP per capita reflect differences in resources per capita as well as the efficiency with which these resources are employed (which will depend on the quality of a country's technologies as well as its economic institutions). Controlling for resource endowments and technology differences is therefore a priority if one wishes to explore the relationship between BITs and differences in economic institutions further.

Finally, our results suggest that the positive effect of BITs on bilateral FDI flows disappears when there are relatively large differences in the strength of political institutions between source and host countries. This implies that BITs are less effective in an environment of weak political institutions, and is thus supportive of a complementary relationship between domestic political institutions and BITs.

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Appendix

Country Sample

The North (source countries) are: Australia, Austria, Belgium, Canada, Switzerland, Germany, Denmark, Spain, Finland, France, the United Kingdom, Greece, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Sweden and the United States of America.

The South (host countries) are: Algeria, Argentina, Armenia, Azerbaijan, Bangladesh, Belize, Benin, Bhutan, Bolivia, Bosnia and Herzegovina, Botswana, Brazil, Bulgaria, Burkina Faso, Burundi, Cambodia, Cameroon, Central African Republic, Chad, Chile, China, Colombia, Costa Rica, Cote d'Ivoire, Croatia, Cuba, Djibouti, Dominican Republic, Ecuador, Egypt, El Salvador, Equatorial Guinea, Eritrea, Estonia, Ethiopia, Gabon, Gambia, Guatemala, Haiti, Honduras, India, Indonesia, Iran, Jordan, Kazakhstan, Kenya, Kyrgyzstan, Laos, Latvia, Lebanon, Lesotho, Liberia, Macedonia, Madagascar, Malawi, Malaysia, Mali, Malta, Mauritania, Mauritius, Mexico, Moldova, Mongolia, Montenegro, Morocco, Mozambique, Namibia, Nepal, Nicaragua, Pakistan, Paraguay, Peru, Philippines, Poland, Republic of Korea, Republic of the Congo, Rwanda, Senegal, Serbia, Sierra Leone, Slovakia, South Africa, Sri Lanka, Sudan, Swaziland, Syria, Tajikistan, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey, Turkmenistan, Uganda, Ukraine, Uruguay, Uzbekistan, Venezuela, Vietnam, Zambia.

Table A1: Summary Statistics

	All Observations					Positive FDI Flows Only				
	obs.	mean	s.d.	min	max	obs.	mean	s.d.	min	max
$\ln FDI\ Flow$	57,076	0.468	1.890	-9.462	10.309	9,218	3.807	2.259	0.002	10.309
BIT	57,076	0.262	0.439	0.000	1.000	9,218	0.618	0.486	0.000	1.000
$\ln GDP_i$	57,076	26.898	1.377	23.324	30.259	9,218	27.586	1.399	24.241	30.259
$\ln GDP_j$	55,826	23.291	1.868	18.461	29.065	9,182	24.947	1.776	18.461	29.065
$\ln GDPPC_i$	57,076	10.376	0.355	9.250	11.382	9,218	10.479	0.308	9.489	11.382
$\ln GDPPC_j$	55,716	7.187	1.170	3.913	10.038	9,116	7.845	1.064	3.913	10.038
$\ln GDPDIF$	55,826	26.788	1.506	17.486	30.259	9,182	27.413	1.607	17.486	30.259
$\ln GDPPCDIF$	55,716	10.288	0.408	5.128	11.380	9,116	10.341	0.391	5.128	11.380
$\ln Dist$	57,076	8.734	0.682	4.088	9.850	9,218	8.553	0.865	4.088	9.830
$Contig$	57,076	0.002	0.049	0.000	1.000	9,218	0.010	0.099	0.000	1.000
$ComLang$	57,076	0.129	0.335	0.000	1.000	9,218	0.110	0.313	0.000	1.000
$Colony$	57,076	0.038	0.191	0.000	1.000	9,218	0.094	0.292	0.000	1.000
$POLDIF$	54,518	0.273	0.186	0.000	0.720	9,012	0.211	0.165	0.000	0.720
PTA	57,076	0.109	0.312	0.000	1.000	9,218	0.275	0.447	0.000	1.000
$OtherBITs_i$	55,910	0.451	0.313	0.000	0.989	9,188	0.641	0.284	0.000	0.988
$OtherBITs_j$	57,076	0.260	0.253	0.000	0.937	9,218	0.404	0.265	0.000	0.937

Notes: this table reports the number of observations (obs.), mean, standard deviation (s.d.), minimum and maximum of our main variables of interest for the full sample and for the subsample of positive FDI flows.

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