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THE IMPACT OF INTERNATIONAL INVESTMENT AGREEMENTS ON FOREIGN DIRECT INVESTMENT: AN OVERVIEW OF EMPIRICAL STUDIES 1998–2014

IIA ISSUES NOTE

This working draft for a forthcoming IIA Issues Note invites investment and development stakeholders to engage in this topical debate. Posted on the investment policy hub's discussion platform, it encourages academics, policy makers and the community at large to help improve our common understanding on the empirical evidence and underlying policy issues. Lending itself to a multi-disciplinary approach to research and policymaking on investment and development issues and calling for further research across a wide range of methodologies, this process will also feed into the Multi-disciplinary Academic Conference that will take place during the forthcoming World Investment Forum (WIF), 13-16 October in Geneva. "Investing in sustainable development", the WIF's overall guiding motto, is the background against which this online peer-review process is taking place.

Key Messages

- Over the years, numerous empirical studies have assessed the impact of international investment agreements (IIAs), including bilateral investment treaties (BITs), on foreign direct investment (FDI) – with mixed results. A policy debate is now underway to reappraise previous findings and unsolved questions.
- An important consideration for the policy debate is the ultimate function of IIAs with respect to countries' overall development strategies. Attracting FDI is neither the prime - nor the only - role of IIAs.
- The point of departure for present research and policy analysis is that IIAs are one of several determinants of FDI, and their importance is likely to be contingent on other variables. Other host-country policy areas are also significant, and so are business facilitation initiatives and economic determinants. Since IIAs play a complementary role among several determinants, they cannot substitute for sound domestic policies, regulatory and institutional frameworks.
- Existing empirical studies of IIAs' impact on FDI provide heterogeneous results and have some limitations because of, among others, data and methodological challenges. The majority of studies conclude that IIAs have a positive impact on FDI. An empirical correlation does not necessarily imply causation, but most recent studies that address the so-called endogeneity problem are able to

establish a positive causal relationship between IIAs and FDI. More nuanced recent research finds that the content of IIAs matters: the FDI impact of IIAs is dependent on the presence of certain substantive treaty provisions. On the other hand, some empirical studies find no effect of IIAs on FDI flows.

- Across the board, empirical studies point to the importance of host country conditions. The quality of institutions, the level of political risk, or the development of the financial sector all influence companies' investment decisions.
- Properly understanding the potential impact of IIAs on FDI is important for defining their role in countries' investment policies and overall development strategies. Econometric studies can help, but also have limitations. Moreover, prominent counterfactuals (i.e. investment relationships that exist without being covered by IIAs) suggest that legal instruments' influence on economic matters are limited and that other determinants, in particular the economic ones, are more important. Still, the question of whether an IIA would improve such an investment relationship remains open.
- Finally, the role of IIAs has to be put into the broader context of countries' efforts to attract and benefit from FDI, with the ultimate objective to promote sustainable development. It is therefore important to consider the challenges that IIAs can give rise to, including with respect to potential constraints on policy space or exposure to investment litigation.
- What matters is the creation of a new generation of investment policies that places inclusive growth and sustainable development at the heart of efforts to attract and benefit from investment. UNCTAD's Investment Policy Framework for Sustainable Development (IPFSD) can assist policy makers in doing so.

Introduction

The regime of international investment agreements (IIAs) is undergoing a period of reflection, review and reform. In this context, an important policy debate is underway on the role of IIAs in promoting foreign direct investment (FDI). Thus, an important consideration is the ultimate function of IIAs with respect to countries' overall development strategies. Attracting FDI is neither the prime – nor the only – role of IIAs. Instead, the key function of IIAs is to contribute to predictability, stability and transparency in investment relations. In this regard, IIAs can help improve countries' regulatory and institutional frameworks, including by adding an international dimension to them. IIAs can reduce risks for foreign investors and, more generally, signal a better investment climate. Through all of this, IIAs can help facilitate cross-border investment flows, which, if managed properly, can help achieve sustainable development objectives.

The role of IIAs in promoting FDI has been the subject of a number of empirical studies. There are a significant number of econometric studies that address the question of the effectiveness of IIAs, and especially of bilateral investment treaties (BITs).

The purpose of this *IIA Issues Note* is twofold. First, to put the question of IIAs' impact on FDI into the broader perspective of what determines FDI flows; second, to present an overview of the diverse empirical literature on the relationship between IIAs and FDI (primarily econometric, but also touching on other methodologies), spanning papers published from the late 1990s to the present.

In so doing, this *IIA Issues Note* aims to inform policy makers, academia, and other investment and development stakeholders about the current state of this on-going debate, noting that further research – across a wide range of methodologies – is warranted.

The determinants of FDI and the role of IIAs

The determinants of FDI

Existing research and policy analysis suggest that FDI flows are influenced by a wide range of factors. These factors include a country's policy framework, its economic attractiveness (which depends on the motives of investors), and the business facilitation framework in place (Table 1).

Table 1. Host country determinants of FDI

Host Country determinants	Type of FDI classified by motives of TNCs	Principal economic determinants in host countries
I. Policy framework for FDI • Economic, political and social stability • Good governance • Policies on functioning and structure of markets(especially competition, M&A and simple, transparent reporting standards in line with international practise) • Protection of property rights (including intellectual property) • Industrial and regional policies; development of competitive clusters • Trade policy (tariffs and non-tariff barriers) and stable exchange rates • **International Investment Agreements**	A. Market-seeking	• Per capita income • Market size • Market growth • Access to regional/global markets
II. Economic determinants	B. Natural resource-seeking	• Access to raw materials
III. Business facilitation • Investment promotion • Investment incentives • Reduction of hassles costs • Availability of one-stop shop services • Provision of social amenities • Provision of after-investment services	C. Efficiency-seeking	• Different comparative advantages of countries • Better deployment of global resources
	D. Strategic asset-seeking	• Access to new competitive advantages • Availability of and access to skilled labour • Strategic infrastructure (e.g. oil pipelines, power grids)

Source: UNCTAD, 1998a and 2010.

The policy framework for FDI comprises all host-country policy areas that may be relevant to a foreign investor. These vary from one investment to the other. IIAs are only one element within the overall policy framework. While they are a part of the policy framework explicitly targeting FDI issues, other policy areas may be even more critical for a foreign company's investment decision.

Economic determinants differ according to the main motive of an investor: market-seeking FDI is driven by considerations of market size and growth, access to regional or global markets, or specific market structure characteristics. Resource/asset-seeking FDI is aimed at gaining access to raw material, skilled and/or unskilled labour, technology and other created assets, and infrastructure. Efficiency-seeking FDI is undertaken to rationalize elements of a transnational corporation's (TNC) global value chain (GVC) by accessing inputs (goods and services, including for trade and communication as well as skilled and unskilled labour) at lower costs and making use of economic cooperation and integration agreements for international production networks.

Finally, business facilitation measures (including promotional activities, incentive provisions, and other measures catering to TNCs' needs) may tilt the balance in favour of a location once other preconditions are in place.

The IIA regime as a determinant of FDI

The expected role of IIAs as determinants of FDI includes (UNCTAD, 2012):

- adding an international dimension to investment protection and by fostering stability, predictability and transparency, reinforce investor confidence and thus promote both investment and trade flows.
- promoting investment in other ways beyond granting investor protection. Some IIAs include commitments on the part of home countries to promote outward investment or to engage in collaborative initiatives for this purpose (although this is currently a small minority of treaties).
- helping to build and advertise a more attractive investment climate. By establishing international commitments, they can foster good governance and facilitate or support domestic reforms.

However, IIAs alone cannot turn a weak domestic investment climate into a strong one and they cannot guarantee the inflow of foreign investment. There is no mono-causal link between the conclusion of an IIA and FDI inflows; IIAs play a complementary role among many determinants that drive firms' investment decisions. Most importantly, IIAs cannot be a substitute for domestic policies and a sound national regulatory framework for investment.

Another important point relates to the type of IIAs a country has concluded. While BITs are self-standing and explicitly focused on issues of foreign investment, there are broader economic agreements where investment disciplines are just one element in a comprehensive treaty that encompasses trade in goods and services, and covers other aspects of economic cooperation ("other IIAs"). The latter can encourage FDI in additional ways, as they not only protect (and possibly provide access for) investment, but may also dismantle trade barriers, facilitate integration into GVCs, and lead to the creation of a larger market. These "other IIAs" with substantive investment provisions not only change the policy framework, but also affect the economic determinants of FDI. Currently, such treaties account for a very small percentage of all IIAs.

Empirical studies on the relationship between IIAs and FDI

The impact of IIAs on FDI flows has been the subject of empirical analyses for many years. Most of these studies focus on BITs. A comprehensive review of the literature since the late 1990s reveals two fundamental points (see the full analysis in the Annex).

- First, the majority of studies find a positive impact of IIAs on FDI. This also includes those studies that address the endogeneity problem (i.e. concerns about the direction of causality between IIAs and FDI, Box 1).
- Second, more nuanced recent research finds that the content of IIAs matters: IIAs positively influence FDI flows, provided that they include certain substantive provisions.

As ever more investment-related provisions are integrated into broader economic agreements, their coverage of a wide set of pertinent FDI determinants may be even more effective than BITs in attracting FDI; and research on them is growing accordingly.

The majority of econometric studies find a positive correlation between the presence of BITs and "other IIAs" and FDI. In their seminal paper, Neumayer and Spess (2005) used panel data for 119 countries over the period 1970 to 2001. They showed a positive effect of BITs on FDI inflows that is consistent and robust across various model specifications. The impact of BITs was found to be conditional on countries' institutional quality. Other early studies produced

similar results: Büthe and Milner (2004) used a sample of 122 developing countries from 1970 to 2000 and found a "predicted positive, statistically and substantially significant correlation between BITs and subsequent inward FDI into developing countries". Similarly, Egger and Pfaffermayr (2004) found that "BITs exert a positive and significant effect on outward FDI". More recent studies also demonstrate a positive impact of BITs on FDI: Berger et al. (2013) in their sample of 28 home and 83 host countries found a significant positive impact, as did Tortian (2012) who looked at FDI inflows into 20 Southeast European and Central Asian countries. A positive impact of BITs on FDI is also reported by Oh and Fratianni (2010), Guerin (2010), Kerner (2009), Banga (2008), Siegmann (2008), Tobin and Rose-Ackerman (2006) and Grosse and Trevino (2005). Some studies nuance these results. For example, Salacuse and Sullivan (2005) suggest that United States (US) BITs are more likely to induce FDI inflows than those concluded by other OECD countries. Tobin and Rose-Ackerman (2011) concluded that "BITs do attract FDI to developing countries, but … cannot entirely substitute for an otherwise weak investment environment". According to Pinto et al. (2010) ratified BITs have a significant and sizable effect on FDI flows but the impact is not stable and dissipates over time. Desbordes and Vicard (2009) mention that "the effect of BITs crucially depends on the quality of relations between the signatory countries".

Although an empirical correlation does not necessarily imply causation, most recent studies that address endogeneity find a positive causal relationship between IIAs and FDI. The causal relationship between IIAs and FDI might theoretically run in both directions. Not only may IIAs attract FDI, but countries may also sign IIAs with other countries with which they already have a strong FDI relationship. Such reverse causality, as well as the potential for omitted variables, creates endogeneity problems, which more recent empirical literature has sought to address (Box 1). Aisbett (2009) notes that papers that ignore reverse causality find, in general, greater effects on FDI. However, recent papers confirm that the positive relationship between BITs and FDI holds even if endogeneity is taken into account. For instance, Busse, Königer, and Nunnenkamp (2010) employ a gravity-type methodology and various model specifications, including an instrumental variable approach, and find that BITs do promote FDI flows to developing countries. Berger et al. (2013), also using a gravity model, covering the 1978-2004 period and 28 home and 83 host countries, come to the same conclusions. Egger and Merlo (2007), using an unbalanced panel covering 24 home and 28 host countries between 1980 and 2001, find a strong contribution in the first years of an IIA's existence. Colen et al. (2014), covering FDI stocks for 13 countries in the Commonwealth of Independent States (CIS) and in Central and Eastern Europe, clearly show a positive impact, but this impact varies by sector. Nevertheless, some papers dissent: e.g. the Peinhardt and Allee (2012) study on the impact of US BITs and Preferential Economic Agreements finds that very few countries have witnessed increased investment flows after signing such deals with the US, once endogeneity is accounted for. Similarly Aisbett (2009) tested OECD countries' investment flows and found that the "initial strong correlation between BITs and investment flows is not robust controlling for selection into BIT participation" (i.e. controlling for endogeneity).

Some studies found little – or no – effects of BITs on FDI. UNCTAD's (1998b) econometric study of a cross-sectional time-series model of the determinants of bilateral FDI inflows in 72 host countries over 23 years found that the relationship between BITs and FDI was weak – BITs could be expected to only "marginally increase" FDI. Hallward-Driemeier (2003) analyzed 20 years of bilateral FDI flows from OECD countries to developing countries with respect to several dependent variables (absolute amount of FDI, the ratio of FDI to host country GDP and the share of host country FDI in total FDI outflows of a home country) and found little evidence that BITs have stimulated additional FDI. Tobin and Rose-Ackerman

(2003) examined bilateral FDI flows between the US and 54 developing countries and found that, overall, the number of BITs has little impact on a country's ability to attract FDI. This result is also supported by Peinhardt and Allee (2008) and Gallagher and Birch (2006).

Box 1. Empirical challenges when analyzing the relationship between IIAs and FDI

Correlation versus causation. The decision to enter into an IIA may be endogenous to FDI. Generally speaking, *endogeneity* makes it hard to properly distinguish *causation* (an additional IIA "causes" an increase of FDI) from simple *correlation* (an additional IIA "is empirically associated" with an increase in FDI). There are two sources of endogeneity: reverse causality and omitted variables. *Reverse causality* originates from the fact that increasing FDI flows may increase the probability that countries will sign an IIA: the motivation and the rationale for entering into an IIA is stronger if the two parties are already related (or expect to be related) by substantial investment relationships. The problem of *omitted variables* arises as a third exogenous variable acts simultaneously on FDI and IIAs, making their relationship spurious: for example, positive changes to a host country's investment climate may at the same time stimulate more investment inflows and lead to a higher propensity to conclude BITs to ensure a safer legal framework for foreign investors.

Data limitations with respect to bilateral FDI. Most empirical studies rely on the classic gravity model, broadly adopted in the econometric literature on the determinants of FDI. In this class of models the *dependent* variable is represented by bilateral FDI (flows or stocks) between any two (source and host) countries. *Covariates* include a variable signaling the existence of a bilateral treaty between the countries of interest and a number of additional explanatory variables (acting as controls). These approaches face challenges from the limited availability of information on bilateral FDI. First, time-series of bilateral FDI data are available only for developed countries and a limited subset of developing countries. Second, focusing on developed countries leads to numerous "zeros" and "missing values" in the panel data (countries may have different reporting systems, for example reporting FDI only above a certain level, or may have started reporting bilateral FDI at different points in time).

These data limitations pose a number of challenges. First, data constraints *limit the scope of the empirical analysis* carried out. While many studies have investigated the impact of treaties between developed and developing countries ("North–South"), very limited attention has been given to the increasingly relevant "South–South" dimension for which bilateral investment data is poorer. Second, data limitations *make it difficult to generalize results* from a selected sample of reporting countries to a broader range of countries. Such a generalization may be affected by a *selection bias* due to systematic differences between countries that report and countries that do not report FDI data. Finally, *data limitations give rise to technical challenges*, e.g. those arising from the limited size of the statistical sample and the analytical treatment of zeros and missing values (especially in the presence of econometric models specified in logarithmic terms).

Also in terms of the explanatory variable, there are some major data challenges. Most studies employ an undifferentiated treatment of BITs, modeling them through a binary 0-1 variable. This approach ignores the fact that investment treaties contain different provisions, and their attractive capacity on FDI may depend on their content rather than their mere existence. The «black box» issue may be one of the key factors explaining the lack of conclusive evidence on the impact of BITs on FDI. Analytically the inclusion of the «content» of the BITs into the econometric analysis is not trivial as it requires a rigorous and comprehensive method to translate treatments' provisions the legal framework into quantifiable and operational metrics.

These data and methodological challenges, as well as the very nature of econometric studies to work on the basis of a simplified description of a complex reality, make it difficult to draw policy conclusions from existing econometric studies on this matter.

Source: UNCTAD.

The early literature does not pay attention to the substance of BITs and other IIAs (i.e. their content) which can significantly affect their impact on FDI. Analytically, the inclusion of the "content" of IIAs into an econometric analysis is difficult, as it requires a way to translate the legal framework into quantifiable and operational metrics. Some studies have gone this extra mile. For example, the national treatment clause was found to be important in order for BITs to be effective (Berger et al., 2013). Berger et al. (2011) show that any positive FDI effects of BITs can be attributed to ISDS provisions; however the effectiveness of this relationship remains elusive due to its sensitiveness to the model specification, in particular to the inclusion of Central and Eastern European countries. In addition, and not sufficiently empirically tested yet, the overall nature of IIAs may matter, in particular whether a treaty is limited to post-establishment treatment of investments, or also includes guarantees for the establishment stage. Pre-establishment IIAs, especially if they involve liberalization of access conditions for investors (i.e. if they result in liberalization at the domestic level), are more likely to lead to an increase of FDI flows. Currently, only about 10 per cent of all IIAs provide for pre-establishment protection.

The status of an IIA (e.g. whether and when it moved from signature to ratification and entry into force) also influences their effect on FDI. To have an impact on FDI, an IIA need not merely be signed but must also enter into force, after being ratified by both countries. By the end of 2013, about 77 per cent of concluded IIAs had entered into force. Haftel (2010) shows that only ratified BITs have a statistically significant effect on FDI. The effect of BITs on FDI may also not be stable over time, with the impact being stronger in the interval immediately after an agreement's entry into force, and dissipating over time. Egger and Merlo (2007) and Pinto et al. (2010) found that the effect of a BIT on FDI inflows is concentrated in the first years after its entry into force and is much weaker later.

The impact of "other IIAs", especially preferential trade and investment agreements (PTIAs), on FDI flows is stronger than the impact of BITs. The impact of preferential trade and investment agreements (PTIAs) on FDI inflows is generally found to be positive (Medvedev, 2012; Büthe and Milner, 2014; World Bank, 2005; Banga, 2003; and Dee and Gali, 2003; see also UNCTAD, 2009 and Te Velde and Bezemer, 2004, for a synopsis of studies). That is even more so when agreements are ratified and include ISDS mechanisms (Büthe and Milner, 2014). Berger et al. (2013) found a positive impact arising from regional trade agreements (RTAs) in cases where liberal admission rules were included. Peinhardt and Allee (2012), on the other hand, found little influence from US BITs and preferential economic agreements on US FDI flows.

An IIA might also have a higher impact on FDI flows if it forms part of a country's broader effort to attract FDI through other investment promotion activities (e.g. through investment promotion and facilitation measures etc.) or complementary regulatory and institutional reform (e.g. improving governance practices, reducing corruption, or building institutions).

However, it is difficult to disentangle the impact that various elements of PTIAs have on FDI. Lesher and Miroudot (2007) tried to overcome this through the construction of a composite index on the extensiveness of investment provisions in RTAs, and found this measure to have a significantly positive effect on FDI flows. Overall, the evidence, albeit based on a limited number of studies, suggests that the impact on FDI tends to be stronger for PTIAs than for BITs. This corresponds to the method by which the impact of IIAs on FDI is theorized: PTIAs influence a wider range of policy and economic determinants of FDI than BITs.

The host country environment and other factors shape the effectiveness of IIAs. The effectiveness of an IIA may also vary considerably depending on other host country factors, such as governance, institutional quality and political risk.

Neumayer and Spess (2005) and Siegmann (2008), in line with earlier results of Hallward-Driemeier (2003), show that the impact of BITs on FDI can depend on the institutional quality in the host country, while Yackee (2007) finds aspects of institutional quality – referring to them as part of political risk – to have the opposite effect. The latter may be in line with the results of Tobin and Rose-Ackerman (2003) which show that BITs are more effective in attracting FDI in relatively riskier countries. Similarly, Tortian (2012) shows that BITs do not play a strong role in FDI attraction where financial systems are well developed. Allee and Peinhardt (2011) find that the contribution of BITs to FDI attraction turns negative if countries are challenged through ISDS procedures and even more strongly so following a case in which the government loses.

Other approaches have been used to examine the impact of IIAs on FDI. Surveys, firm-level data, and transaction-level data produce mixed results. UNCTAD's 2007 survey found that for an overwhelming majority (70 per cent of the surveyed TNCs), IIAs play a role in the decision to invest in a host country (UNCTAD, 2007). Despite the difficulties to express the relationship between FDI and BITs in a single number, Bellak (2014) finds a statistically significant positive effect of 2 per cent increase of FDI (confidence interval: 1.4; 2.6 per cent), based on meta-analysis of empirical studies on inward and outward FDI flows and FDI stocks (309 observations). Bellak (2014) concludes that the effect derived is too small to be of practical relevance, given the volatility of FDI flows and stocks in general. Several studies use firm-level evidence of the impact of IIAs on individual firm's investment decisions. For example, Egger and Merlo (2012) use firm-level data on the activity of German transnational corporations (TNCs) to monitor their investments' responsiveness to BITs. They find that BITs have a positive effect on TNCs' foreign investment activity by both raising the number of TNCs that are active in a particular host country and increasing the number of plants, FDI stocks and fixed assets per firm. Following the idea that IIAs reduce political risk for foreign investors, Jandhyala and Weiner (2012) analyzed transaction-level data on the sale of petroleum reserves in 45 countries and found that TNCs pay higher prices for these assets in countries where they are protected by IIAs, pointing towards a risk adjustment in asset prices. Yackee (2011) also tried to "indirectly" measure the impact of BITs on FDI by means of the impact of investment treaties on the perceived political riskiness of host countries. The results of a regression analysis did not show significance. Yackee also highlighted that providers of political risk insurance (PRI) do not take BITs into account when determining their insurance conditions; neither "do in-house counsel in large US corporations view BITs as playing a major role in their companies' foreign investment decisions". Similarly, Poulsen (2010) also reports that investors rarely inquire about existing BITs before investing and that "treaties have very little impact on PRI providers' coverage and pricing policies".

Some cases appear to demonstrate a "counter-factual" in reality. Several large developing countries, such as Brazil, China, India or South Africa, are major recipients of FDI flows, including from countries with which they do not have an IIA relationship. While this points to the importance of FDI determinants other than IIAs (notably economic determinants such as market size, market growth, and resource endowments), it also underlines the limitations that legal instruments display in terms of influencing economic matters.

However, the picture is, again, more nuanced. Looking, for example, at US FDI stock in these countries – all countries that do not have IIAs with the US – the percentage share of US FDI stock is considerably lower than the average share of US FDI stock globally.[1] While this does not mean that FDI flows from the US would increase once and if an IIA with these countries would be concluded and

[1] While the US share in global inward FDI stock is around 25 per cent, for these four countries the US share only ranges between 5 and 15 per cent.

enter into force, it points to the likelihood that IIAs could play a role in determining investment location decisions.

Summary and outlook

Properly understanding the potential impact of IIAs on FDI can help define their role in countries' investment policies and development strategies. Equally, it is important to consider the challenges that IIAs give rise to, including their impact on policy space and the exposure to ISDS cases.

In terms of the former, the present *IIA Issues Note* has shown three things:

- ***First, locational decisions of foreign investments are determined by an array of factors,*** including those related to a host country's policy framework, the economic determinants and the motives of investors, and business facilitation measures. IIAs are an important part of the investment policy framework: they can foster predictability, stability and transparency; reduce risks for investors and signal a better investment climate. However, IIAs alone cannot turn a weak domestic investment climate into a strong one and they cannot guarantee the inflow of foreign investment. IIAs are only one element within the overall policy framework.
- ***Second, reviewing the literature on the impact of IIAs on FDI reveals that empirical studies provide heterogeneous results,*** among others because of significant data and methodological challenges. The majority of studies find a positive impact of IIAs on FDI, with some studies establishing a causal relationship between the two. More nuanced research finds that the content of IIAs matters: IIAs positively influence FDI flows, provided that they include certain substantive provisions and guarantees. The status of IIAs is also important: treaties that are in force have a greater impact than those that have only been signed. While it remains problematic to draw policy conclusions from econometric studies, these studies confirm the broad pathways through which IIAs are theorized to influence FDI flows: from the perspective of investors, BITs and other IIAs provide stability (e.g. the literature refers to risk reduction as a determining factor), protect investors (e.g. ISDS and national treatment clauses are found to be important as a co-determinants) and, more generally, contribute to a better investment climate.
- ***Third, the impact of IIAs is also conditional on, or mediated by, a number of other factors beyond the treaties themselves.*** The key factors identified in the literature are the sector and industry in which the FDI takes place, the country of origin of investors, the governance and institutions pertaining in host countries, and the life-cycle of an IIA (e.g. the size of impact is highest immediately after entry into force and then tails off). While these factors are undoubtedly important, whether and how they are treated in studies varies (e.g. in terms of how they are defined and specified or the metrics used).

There are a number of relevant aspects that are not addressed as extensively in the literature. Further, in some cases it is not possible to examine them with studies based on macro-panel data. These aspects include the specific motives of investors or the entry of investors through contractual forms other than FDI (such as contract manufacturing), which are increasingly important in international investment and trade (e.g. regarding GVCs). More research would help clarify these and other unresolved topics related to the impact of IIAs on FDI flows. Such studies would need to use variables grounded in commonly agreed conceptual frameworks, with transparent metrics facilitating the comparison of models and results. Such future research would also utilize a range of complementary methodologies, to fully tease out the nuances and details of IIAs' impact on FDI, and the relative importance of other factors.

Such more contextualized evidence is crucial for policy makers aiming to make best-possible choices when formulating their countries' strategic approach to international engagement on investment. Such more contextualized evidence can help better embed international investment policy making in countries' development strategy and aid in designing IIA provisions that maximize sustainable development benefits while minimizing risks.

These findings are particularly important at this critical juncture in treaty making, where the IIA regime is experiencing a period of reflection, review and reform. The challenges that IIAs have given rise to, including the concerns related to their development dimension, to the balance between the rights and obligations of investors and States, and to the systemic complexity of the IIA regime in general (UNCTAD, 2012) have led to a situation where almost all countries are parties to one or several IIAs, but many are dissatisfied with the current treaty regime (UNCTAD, 2014). Countries' efforts to address these challenges reveal four broad paths of action: (i) *maintain the status quo*, e.g. largely refraining from changes in the way countries enter into new IIA commitments; (ii) *implement selective adjustments*, e.g. modifying models for future treaties but leaving the treaty core and the body of existing treaties largely untouched; (iii) *disengage from the IIA regime*, e.g. unilaterally terminating existing treaties or denouncing multilateral arbitration conventions; and, finally, (iv) *undertake a systematic reform* to address the IIA regime's challenges in a holistic manner (UNCTAD, 2014).

Deciding which of these paths to pursue, and whether or not to have IIAs (and if so, in which shape or form) is a matter of choice for governments. Such decisions come with a number of trade-offs that will involve – as with any international treaty – giving up some policy space in return for benefits from the treaty partners. Such a decision is usually taken in a specific bilateral (less frequently, in a plurilateral) context, where the IIA is one piece of a broader picture determined by a variety of factors. These factors include, among others, the level of economic development of participating States, relative trade and investment positions, geopolitical factors, and the general approach to bilateral or regional economic cooperation. They can also include the role of IIAs as determinants of trade in the context of GVCs, and their usefulness for domestic (institutional) reform efforts. A country may be prepared to sacrifice some of its policy space and certain aspects of its sovereignty, if there is a prospect of larger benefits to be gained. Hence, in principle, countries would assess the costs and benefits of entering into an IIA in each case, and depending on the potential partner(s) involved.

In all of this, it is essential that governments take utmost care to ensure that these treaties contribute to, rather than impede, their countries' overall development strategies, including with respect to industrial policy, social and environmental objectives. Success in attracting and benefiting from investment depends not only on investment policy "stricto sensu" (i.e. entry and establishment rules, treatment and protection), both at the national and international levels, but on a host of investment-related policy areas ranging from tax and industrial policies to trade to environmental and labour market policies. These policy areas interact with each other and there is consequently a need for a coherent overall approach to make them conducive to sustainable development (UNCTAD, 2012). UNCTAD's Investment Policy Framework for Sustainable Development (IPFSD) can offer important guidance in this regard.

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ANNEX: A summary of selected econometric studies on the impact of BITs and PTIAs on FDI (in chronological order)

Source	Dependent variable	Period	Host and home countries	Explanatory variable related to BITs and PTIAs	Control variables	Econometric method	Econometric results	Conclusions
Büthe and Milner (2014)	FDI/GDP	1971-2007	122 countries; 3,067 country-year observations	• PTIAs in force • change in PTIAs in force • dispute settlement weighted PTIAs	• World Trade Organization (WTO) membership • trade/GDP • political stability indicators • market size • GDP growth • economic development	Error correction model	• The estimated effect of PTIAs in force is higher than for signed PTIAs. • The estimated coefficient of investment-weighted PTIAs is positive and significant.	• FDI increases occur for ratified PTIAs, not merely signed PTIAs. • PTIAs with investment clauses of dispute-settlement mechanisms attract more FDI.
Colen, Persyn and Guariso (2014)	Total FDI stocks in a country in a specific sector	1994-2009	13 countries in the former Soviet Union and Central and Eastern Europe	• Number of BITs by country	• Monthly wages in manufacturing • political institutional quality • inflation • trade openness • average capital stock per firm and capital/labour ratio	Fixed effects model	The study finds that especially for investments in the sectors of utilities and real estate, and to a lesser extent for banking and mining, BITs have a robust and economically significant effect on FDI stocks. For foreign investments in manufacturing and services, BITs seem not to play a major role in investment decisions.	BITs can be expected to be most effective in those sectors with large sunk costs, relatively low levels of firm-specific know-how and sectors that are politically sensitive to foreign ownership.
Berger, Busse, Nunnenkamp and Roy (2013)	Bilateral FDI flows	1978-2004	Home: 28 Developed Host: 83 developing countries	• Author-created BIT index	• Real GDP growth • inflation • trade openness • DTT • currency	Gravity model for determinants of FDI	RTAs and BITs have positive, significant impact on FDI flows only when NT provisions are included.	The presence of national treatment provisions has a strong, positive relationship with FDI, whereas ISDS mechanisms appear to play a much weaker role in determining FDI.
Egger and Merlo (2012)	Firm level data on the international activity of German TNCs in the host countries; target metrics of foreign activity: number of affiliates, employees, assets, turnover	1996-2005	German TNCs; 86 host countries	• Ratification of a BIT • signature of a BIT	• GDP of the host country • skilled labour endowments • capital-labour ratio • statutory tax rate of the host country • presence of double taxation treaties • presence of a PTIA	Poisson Fixed Effects Quasi Maximum Likelihood estimation	BITs (both signed and ratified) raise the number of multinational firms that are active in a particular host country. BITs have a positive effect on the number of plants per firm, as well as on FDI stocks and fixed assets per firm.	The presence of BITs increases the international activity of TNCs in the host country.
Medvedev (2012)	Net FDI inflows	1980-2003	143 economies	• Dummy for PTIAs joined	• GDP • trade openness • GNI • GDP growth • inflation • world FDI inflows	Panel estimation	PTIA-related variables establish a positive link between net FDI flows and preferential trade liberalization.	PTIA membership is associated with a positive change in net FDI inflows, and the FDI gains are increasing with the market size of the PTIA partners and their proximity to the host country.
Peinhardt and Allee (2012)	US outward FDI flows	1977-2007	United States as investor Host: 178 economies	• Dummy for year PTIA signed	• Lagged FDI	Time series intervention analysis	Agreements rarely have a statistically significant effect on US FDI flows.	US BITs and PTIAs rarely result in an increase in FDI.

Source	Dependent variable	Period	Host and home countries	Explanatory variable related to BITs and PTIAs	Control variables	Econometric method	Econometric results	Conclusions
Tortian (2012)	Bilateral outward FDI stock	1992-2010	Home: 20 OECD countries Host: 20 South East European, South Caucasus and Central Asian countries	• BIT existence	• Regional economic agreement dummies • GDP • growth • inflation • financial development • creditworthiness • natural resource endowments	Panel estimation	The BIT variable is highly significant in all specifications. Regional economic agreement variable is not significant. With the financial depth interaction term, the BIT variable loses its significance.	Ratification of BITs between OECD and EURASIA countries exert a highly significant positive effect on bilateral inward FDI. The Black Sea Economic Co-operation RTA had no impact on intra-regional FDI. BITs do not play a particularly strong role in increasing FDI in the case of well-developed financial systems.
Allee and Peinhardt (2011)	Net FDI inflows	1984-2007		Number of BITs concluded	• ICSID disputes • democracy • property rights • population • GDP per capita • GDP • financial openness • exchange rate volatility	Panel data, fixed effects	Governments accused of investment treaty violations before ICSID experience statistically and substantive reductions in FDI. All coefficient estimates for "lost" ICSID disputes are negative and significant.	BITs increase FDI into countries that sign them, but only if those countries are not subsequently challenged before ICSID. On the other hand, governments suffer notable losses of FDI when they are taken before ICSID and suffer even greater losses when they lose an ICSID dispute.
Berger, Busse, Nunnenkamp and Roy (2011)	Bilateral FDI flows (expressed as shares); three years average to smooth annual fluctuations	1978-2004	Home: 14 countries Host: 83 developing economies	• Ratified BIT without effective ISDS • ratified BIT with effective ISDS (the BIT contains strict ISDS provisions for the investor protection)	• Host country GDP and GDP growth • host country inflation • host country openness to trade • difference GDP per capita between home and host country • presence of DTT • presence of common currency • presence of a PTIA	Generalized Methods of Moments estimator with instrumental variables	Any positive FDI effects of BITs can be attributed to ISDS provisions. However the effectiveness of this relationship remains elusive due to its sensitiveness to the model specification, in particular to the inclusion of Central and Eastern European countries.	The results on the impact of BITs on FDI are quite elusive. The positive impact of BIT is limited to BITs with effective ISDS provisions. However the effectiveness of this relationship remains elusive due to its sensitiveness to the model specification, in particular to the inclusion of Central and Eastern European countries.
Tobin and Rose-Ackerman (2011)	Bilateral FDI data	1984-2007	97 host countries	• Ratified BITs				BITs do attract FDI, provided the host countries have strong domestic institutions.
Yackee (2011)	Political risk ratings of the host countries; three different metrics of political risk	Different time periods according to the metrics: - 1985-2003 - 1981-2003 - 1983-1997	Different sets of (host) developing economies according to the metrics: - 110 - 35 - 97	• Number of «strong» BITs signed by the country of interest (a BIT is classified as «strong» if it contains the state's pre-consent to investor-initiated arbitration for a wide range of disputes)	• GDP per capita • inflation rate • dummy variable for "mass expropriator" • state's birth year • democracy indicators	Two models tested: 1. Generalized Least Squares with Fixed Effects 2. Panel Corrected Standard Error	There is a statistically significant impact of BITs on countries' risk rating only for one of the three risk indicators tested.	BITs have a limited capacity to modify the risk profile of host countries (and thus to attract more investments).

Source	Dependent variable	Period	Host and home countries	Explanatory variable related to BITs and PTIAs	Control variables	Econometric method	Econometric results	Conclusions
Busse, Königer and Nunnenkamp (2010)	Bilateral FDI flows (expressed as shares); three years average to smooth annual fluctuations; version with «zero» and version without «zero»	1978-2004	Home: 28 countries Host: 83 developing economies excluding OFCs	• Presence of a ratified BIT between the two countries of interest	• Host country GDP and GDP growth • host country inflation • host country openness • difference GDP per capita between home and host country • presence of DTT • presence of common currency • presence of a PTIA • measure of overall capital openness	Different model specifications tested: 1. Ordinary Least Squares with fixed effects 2. Fixed Effects Poisson Pseudo Maximum Likelihood 3. Generalized Methods of Moments estimator with instrumental variables	Under all the model specifications and for both FDI specifications (with zeros and without zeros), the coefficient of the BIT variable remains positive and significant; in most cases at 5 or 1% level.	BITs do promote FDI flows to developing countries and they may even substitute for weak domestic institutions, though probably not for unilateral capital account liberalization.
Guerin (2010)	Bilateral FDI flows	1992-2004	Home: 14 OECD economies Host: 25 host middle income emerging markets	• Presence of a BIT between the two countries of interest	• Home and host country GDP • source and host country GDP per capita	Fixed-effects estimation (with country-pair fixed effects and country-and-time dummies)	BITs have a statistically significant and positive impact on FDI flows between the (14) OECD countries and their BIT partners. The estimated coefficient indicates that an additional BIT increases source country FDI by 1.3%.	BITs do promote FDI outflows from OECD countries to BIT partners.
Haftel (2010)	Bilateral flows from the United States to developing countries; expressed as percentage on the GDP of the host country	1977-2004	The United States as investor Host: 120 developing countries	• Signed BITs • BITs in force	• Host country GDP, GDP growth and GDP per capita • trade openness of host country • presence of PTIAs • host country political risk • political constraints and level of democracy • end of the cold war • distance between the US and host country	Fixed effect estimation	There is a positive impact of ratified BITs on FDI. The impact of ratified BITs is not only statistically significant (at least at 90% confidence) but also substantive: a jointly ratified BIT increases US foreign investment in the host country from 0.07 to 0.24% of the domestic GDP. In contrast, the impact of signed BITs is positive but not statistically significant.	The empirical analysis proves that only ratified BITs have statistically significant effects on FDI as they function as a costly signal of a pro-investment climate and of a credible commitment from the host country to the protection of FDI.
Oh and Fratianni (2010)	Bilateral FDI flows	1980-2005	148 countries	• Existence of a BIT • total number of BITs by the two countries	• GDP • population, common land border, distance, common language, common colonial heritage, common currency, members of same RTA • demographic, institutional and cultural variables	A gravity model estimated with fixed effect and Poisson quasi maximum likelihood estimator (QMLE)	There is a statistically significant and positive impact of BITs on FDI. The stock of BITs is subject to diminishing returns measured in terms of FDI flows.	TNCs find more value in investing where a bilateral treaty is in place.

Source	Dependent variable	Period	Host and home countries	Explanatory variable related to BITs and PTIAs	Control variables	Econometric method	Econometric results	Conclusions
Pinto, Pinto and Stier-Moses (2010)	Bilateral flows from the United States to ratifying economies	1970-2006	Home: United States Host: 67 countries that have ratified BITs with the United States	• Ratified BITs	• GDP per capita • trade openness • exchange rate • market size (population) • as part of a gravity model dummies for a common border and language between the United States and the host country • temporal dummies of four, five and ten years intervals since signing a BIT • lagged dependent variable	A gravity model	Ratified BITs have significant and sizable effect on FDI flows. Adding temporal dummies, however, reduces the size and significance level of BITs on outward US investment.	The effect of BITs on FDI is not stable. The effect dissipates over time. BITs and good domestic institutions are complementary in attracting FDI.
Desbordes and Vicard (2009)	Bilateral FDI stock	1991-2000	Home: 30 OECD countries Host: 32 non-OECD countries	• Entry into force of BITs	• Market size (GDP) • GDP per capita • quality of domestic institutions • quality of interstate relations	A gravity model using Poisson quasi maximum likelihood estimator (QMLE)	BITs have a greater effect when implemented between countries with political tensions while they have no significant effect between friendly countries.	BITs and good domestic institutions are complementary in attracting FDI.
Kerner (2009)	Bilateral (log) FDI at constant 2000 dollars	1982-2001	Home: OECD countries Host: 127 developing countries	• Ratified BITs and other IIAs with other OECD countries	• Market size (GDP) • saving rates • trade openness • presence of a PTIA • democracy	A gravity model with instrumental variable to tackle endogeneity problem.	When estimating with instrumental variables BITs are positively and significantly correlated with FDI inflows	BITs attract significant amounts of investment. BITs attract this investment from protected and unprotected investors.
Aisbett (2009)	Bilateral (log) inflows of FDI	1980-1999	28 developing countries; 29 OECD countries Less than 672 observations per year.	• Lagged BIT ratification	• Host and home country GDP • population • share of trade in GDP • the skill gap between host and home country	Fixed effects estimation	BITs are positively and significantly correlated with FDI inflows. But this does not imply that BITs cause large FDI increase (of up to 50%) because of endogeneity of BITs.	The lack of evidence on the impact of BITs on FDI is important information for countries weighing the cost and benefits of beginning or expanding BITs programmes.
Banga (2008)	FDI inflows based on approved FDI from developed and developing countries	1980-81 to 1999-2000; 1986-87 to 1996-97 for panel data for 10 host countries	15 host developing countries from South, East and South-East Asia; all home developed and developing countries	• FDI policies such as FDI liberalization, incentives, profit transfer and tariffs • total number of BITs and dummies for APEC and ASEAN investment agreements	• GDP and GDP growth • wages, education and labour productivity • cost of capital • exchange rate • infrastructure • debt and budget deficit	Random effects estimation	FDI policies are an important determinant of FDI inflows, especially the removal of restrictions. BITs play an important role in stimulating inflows, especially BITs with developed countries.	

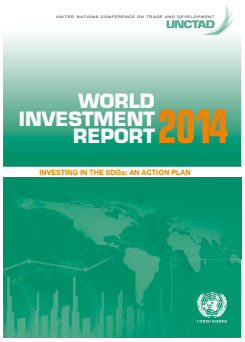
Source	Dependent variable	Period	Host and home countries	Explanatory variable related to BITs and PTIAs	Control variables	Econometric method	Econometric results	Conclusions
Peinhardt and Allee (2008)	Bilateral flows from the United States	1966-2007	178 host countries	• Entry into force of BITs, Trade and Investment Framework Agreements (TIFAs) and PTIAs	• Real GDP • GDP per capita • US trade agreements • membership in WTO, commitments to property rights	Fixed effect estimation of log-linear model	Depending on the model, PTIAs have stronger effect on FDI than TIFAs and BITs.	There is little evidence that US trade and investment agreements have effects on FDI.
Siegmann (2008)	Bilateral FDI flows	1980-2004	OECD countries as home and 62 developing countries as recipients	• Existence of a ratified BIT	• Gravity model: • GDP home, • GDP host, • population home, • population host, • overall trade home, • trade host, • skill difference	A gravity model; in addition a knowledge-capital model is tested	There is an empirically valid, positive influence of BITs and DTTs on FDI. The effect appears to range between 30 per cent and 40 per cent for BITs.	The effect of enforced BITs is distinct and strong, but the signature of a BIT does not appear to have a significant impact on FDI flows. A complementary relationship exists between BITs and institutional quality: BITs are more effective if they are enforced in an environment of high political stability and an effective legal system. The effectiveness of BITs appears to be greater, if both partner countries are ratifying members of the ICSID Convention. The macroeconomic environment of a host country appears to have no influence on a BIT's effectiveness. Likewise, exchange rate volatility, as well as currency crises appear to have no significant impact.
Lesher and Miroudot (2007)	Bilateral FDI flows	1990-2004	182	• Author-created BIT index • BIT dummy variables	• Distance • border • exchange rates • GDP	A gravity model for determinants of FDI	Investment provisions in RTAs are positively associated with investment flows. There is an insignificant effect of BITs on investment flows.	Substantive investment provisions in RTAs impact trade and FDI flows more profoundly or the combination of substantive investment rules and provisions liberalising other parts of the economy jointly impact trade and investment more significantly.
Yackee (2007)	As in Neumayer and Spess (2005), but adding a constant start to FDI share variable	1984-2003	Host developing countries and 18 home capital exporting countries	• A weighted count of BITs signed by capital importing countries with 18 capital-exporting countries • in addition to BITs, FCN treaties and FTAs with investment provisions	• As in Neumayer and Spess (2005), with trade openness replacing the number of FTAs	Same methodology as in Neumayer and Spess (2005), with some changes, e.g. excluding year dummies	The case for BITs is far weaker than suggested by Neumayer and Spess (2005). Small changes in methodology and model specifications make the BITs effect on FDI largely or entirely disappear. The institutional quality test shows an opposite conditional relationship than that found by Neumayer and Spess (2005).	

Source	Dependent variable	Period	Host and home countries	Explanatory variable related to BITs and PTIAs	Control variables	Econometric method	Econometric results	Conclusions
Egger and Merlo (2007)	Bilateral stocks of outward FDI	1980-2001	24 home and 28 host countries; 22 of the 28 host countries are OECD countries	• Dummy variable for BIT ratification (or conclusion)	• Once-lagged FDI stocks • joint size of home and host country markets in terms of GDP • home-to-host country relative GDP • home-to-host country skilled-labour endowment ratio	Generalised Method of Moments (GMM) estimation	The variable for BIT ratification has a positive and significant impact on outward FDI stocks. The short-run impact of BITs is smaller than the long-run impact.	There is a substantial difference between the existing positive short-run and long-run impact of BITs on FDI. Hence there is a need to take the dynamic nature of FDI more into account.
Tobin and Rose-Ackerman (2006)	Total FDI inflows into developing countries in constant 2000 dollars; OECD outflows to developing countries in constant dollars; five-year averages	1980-2003	137 developing countries (increased from 40 developing countries with all data, using best data predictions and other techniques)	• Total number of BITs • total number of BITs with developing countries • signed BITs • weighted and unweighted BITs index by the size of the home OECD country; interaction between host country BITs and total number of BITs in the world	• Political risk • GDP per capita • population • GDP growth • natural resource endowments • trade/GDP	Fixed-effects estimation	The number of BITs with high income countries has a positive and significant effect on FDI inflows. More worldwide BITs reduce the marginal benefit of an extra BIT to a host country.	As each extra BIT has decreasing benefits in terms of stimulating FDI inflows, host countries may be less eager to sign BITs over time.
Gallagher and Birch (2006)	Total FDI inflows; FDI inflows from the US	1980-2003	24 host countries from Latin America	• Total number of BITs • BITs with the US	• Inflation • GDP • total exports or exports/GDP • literacy rate • GDP per capita • GDP growth • number of privatizations	Fixed-effects estimation	Neither the total number of BITs nor BITs with the US have an independent and positive effect on total FDI inflows or inflows from the US.	It may not be worthwhile to carry the costs of BITs such as lifting performance requirements and applying broad expropriation rules.
Grosse and Trevino (2005)	Annual FDI inflows into a host country	1990-1999	13 host countries from Central and Eastern Europe	• A total number of BITs concluded by a host country • the impact of BITs was examined in the context of other institutional variables related to corruption, regulations on FDI and enterprises, privatization and political risk	• Inflation • currency valuation and market size	Standard multiple regression	BITs tend to stimulate inward FDI, together with the degree of enterprise reform and repatriation rules.	The finding should be of interest to international organizations and to host developing countries.

Source	Dependent variable	Period	Host and home countries	Explanatory variable related to BITs and PTIAs	Control variables	Econometric method	Econometric results	Conclusions
Neumayer and Spess (2005)	FDI inflows into a host country in constant 1996 US$; share of a host country's total inflows of developing countries	1970-2001 and 1984-2001 for some variables	119 developing countries; OECD countries	Number of BITs with OECD countries weighted by a share of a home country in world outward FDI flows	• Log of per capita GDP and population size • GDP growth rate • WTO membership • number of BITs with home countries • inflation rate • natural resource intensity • political stability • institutional quality • investment risk index • trade openness and secondary enrolment in sensitivity analysis	Random and fixed-effects estimations	A positive effect of BITs with developed countries on FDI was found, which is consistent and robust across various model specifications. Sometimes the effect depends on institutional quality.	The undertaking of the obligations contained in BITs by developing countries does have a desired payoff of higher FDI inflows. Developing countries that sign more BITs with developed countries receive more FDI. But it is impossible to tell if benefits from increased FDI inflows are higher than costs of BITs for developing countries.
Salacuse and Sullivan (2005)	1. Total FDI inflows (% changes) 2. Bilateral FDI flows from the US	1998, 1999 and 2000 1991-2000	More than 100 developing countries 31 developing countries; USA 300 observations	• A US BIT: a total number of BITs with other OECD countries; a total with developing countries • A BIT with the US; number of other OECD BITs	• Host country GDP • GDP per capita • real effective exchange rate • population • rule of law As above plus total FDI inflows.	Multivariate OLS and cross-sectional regression Fixed-effects estimation	US BITs have a large, positive and significant association with a host country's overall FDI inflows. The impact of other OECD BITs is weaker.	There is strong evidence that BITs have attained to a significant extent their stated goal of promoting FDI. It is better to sign BITs with higher protection standards (like those of US BITs).
Büthe and Milner (2004)	Annual inflows of FDI into host countries	1970-2000	Up to 122 host developing countries with a population over 1 million	• A total number of signed cumulative BITs	• Market size • economic development • economic growth • trade openness • domestic political constraints and political instability	Fixed effect analyses; additional tests for heteroskedasticity and autocorrelation	A statistically and substantially significant correlation between BITs and subsequent inward FDI into developing countries was found.	Each developing country has to weigh the costs of BITs against the benefits of increased FDI and possibly other benefits.
Egger and Pfaffermayr (2004)	Bilateral stocks of outward FDI in constant 1995 US dollars	1982-1997	19 home OECD countries (old and new) and 57 host countries (including 27 OECD countries)	• Signed BITs and ratified BITs between countries in the sample	• Country size (GDP) • factor endowments (tertiary enrolment) • trade and FDI friction and interaction terms In some specifications in addition (or instead): • European Union (EU) and North American Free Trade Agreement (NAFTA) membership • real GDP per capita or secondary school enrolment (for factor endowments)	Fixed-effects estimation	A positive impact of ratified BITs on FDI on bilateral stocks of FDI was established. In most of the cases the positive impact of even only signing BITs on outward FDI existed, although at a lower significance level.	Implemented BITs exert a positive and significant effect on real stocks of outward FDI.

Source	Dependent variable	Period	Host and home countries	Explanatory variable related to BITs and PTIAs	Control variables	Econometric method	Econometric results	Conclusions
Tobin and Rose-Ackerman (2003)	1. Total FDI inflows, 5-year averages; share of world inflows	1975-2000	45 developing countries	• Total number of BITs • number of BITs with high- and low-income countries	• Log of GDP per capita • population • fuels and ores exports • black market rate of exchange premia • aggregate political-risk • host country distance from equator	Fixed-effects estimation; on some cases random effects estimation is considered	BITs appear to have little impact on FDI. Negative effects at the high level of risk. Positive effect at the low level of risk. The majority of developing countries are in the high risk category.	
	2. FDI inflows from the US	1980-2000	48 developing countries	• A BIT with the US	Same specifications as above plus distance of host country from the US; exchange rate stability; skill differences	Fixed-effects estimation (in some cases pooled estimation)	Little relationship between a US BIT and inflows from the US. Where there is relationship it is weakly negative.	
Hallward-Driemeier (2003)	Bilateral flows of FDI; inflows/GDP; share of home country outflows	1980-2000	31 host developing countries; 20 OECD countries 537 pairs of countries	• Conclusion of a BIT	- The size of the host and home country - inflation - trade/GDP - skills gap - components of institutional quality from ICRG (legal system and corruption) In addition, transition to a market economy and the conclusion of NAFTA.	Fixed-effects estimations	No statistically significant effect of BITs on FDI inflows was found.	BITs are complements to good institutional quality rather than substitutes.
UNCTAD (1998b)	1. Bilateral FDI flows; share of host country in home country's total outflows; share of home country in total host country's FDI inflows	1971-1994	72 host developing countries; 14 OECD countries	• Conclusion of a BIT	• GDP of host country • population		BITs could cause small increase of FDI from a home partner country. But results are not robust. Small redirection of FDI to BIT partners.	BITs appear to play a minor and secondary role in influencing FDI flows.
	2. Total FDI inflows into a host country; FDI stocks; FDI/GDP	1995	133 host developing countries	• A total number of BITs concluded by a host country	• GDP • population • domestic investment of host countries	Cross-sectional stepwise regressions	BITs found to have a positive and statistically significant effect in three out of nine regressions.	

Source: UNCTAD.



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