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International investment agreements and foreign direct investment: A survey

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Abstract

This paper reviews the relationship between international investment agreements (IIAs) and foreign direct investment (FDI). It is organised in two parts. The first part explores the generic structure of IIAs and highlights the components that are particularly relevant to FDI. It then gives an overview of the specific content of investment treaties using a representative treaty sample over the period 1980–2020. The second part is devoted to surveying theoretical and empirical work on the impact of IIAs on FDI, while highlighting issues with the measurement of FDI, missing FDI data and effect identification due to endogeneity problems. A key difference from earlier surveys is that this article differentiates between IIAs depending on their content and takes this differentiation into account in the measurement of IIAs and their effects on FDI.

KEYWORDS

BITs, endogeneity, FDI, IIAs, missing data, panel data

1 | INTRODUCTION

In 2020, the universe of international investment agreements (IIAs) reached a total of 3360 agreements, including 2943 bilateral investment treaties (BITs) and 417 treaties with investment provisions (TIPs; UNCTAD, 2021). BITs are self-standing instruments focused on the

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protection of foreign investment concluded between two countries or economies. TIPs comprise comprehensive trade and economic cooperation agreements with a chapter on investment protection; and other economic cooperation agreements with some provisions on investment.¹ These two can also be described as free trade agreements (FTAs) with provisions on investment. Among them, the most significant for the purposes of the present discussion are comprehensive trade and investment agreements with a chapter on investment, hereinafter CTIAs. An example of such a treaty is the EU-Canada Comprehensive Economic and Trade Agreement (CETA) or the United States-Mexico-Canada Agreement (USMCA), and its predecessor, the North American Free Trade Agreement (NAFTA). TIPs also comprise plurilateral self-standing investment agreements, hereinafter other investment agreements (OIAs), such as the Comprehensive Investment Agreement of the Association of Southeast Nations (ASEAN) and the Energy Charter Treaty (ECT). Figure 1 shows the evolution of the number of BITs and other IIAs signed (cumulative and per year) from 1980 to 2020. According to

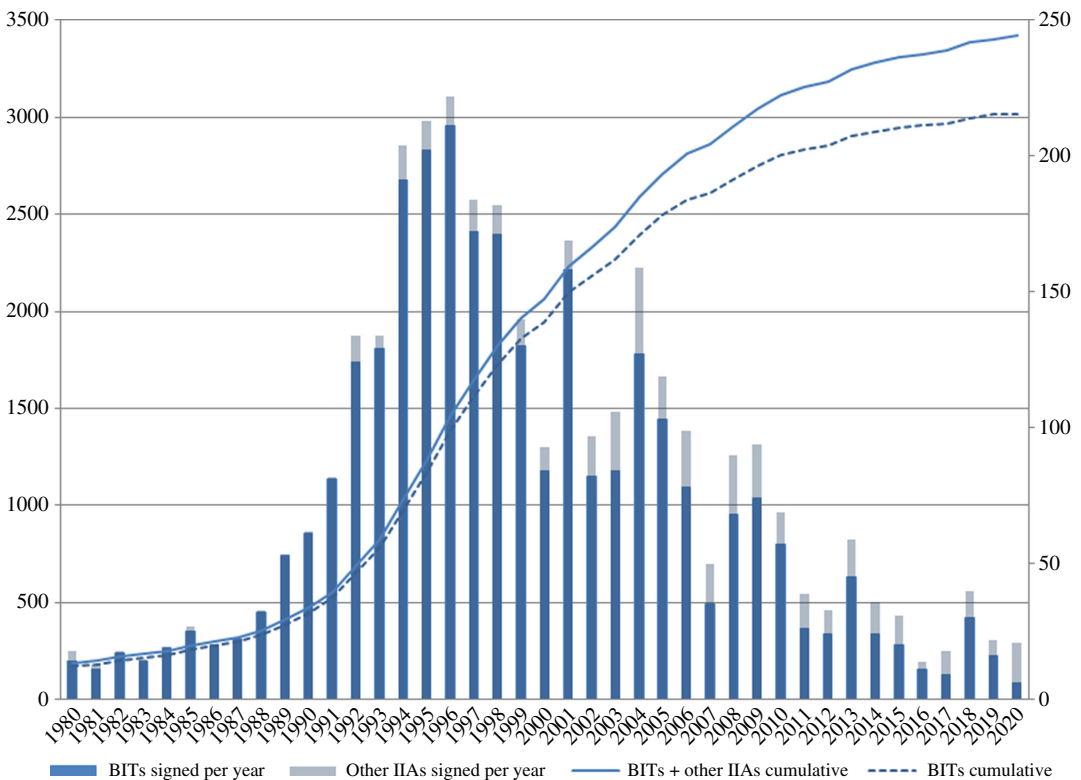


FIGURE 1 Number of BITs and other IIAs per year and cumulative, 1980–2020.

Source: UNCTAD. [Colour figure can be viewed at wileyonlinelibrary.com]

¹The term “comprehensive trade and investment agreements” is broadly synonymous with the following: comprehensive economic cooperation agreements, economic partnership agreements (EPAs), comprehensive trade agreements, preferential trade and investment agreements (PTIAs). Another type of treaty worth mentioning are cooperation and facilitation investment agreements (CFIAs), a type of treaty that Brazil has been signing since 2015. UNCTAD at first classified CFIAs as TIPs, but now such treaties are classified as BITs. This is also the approach we follow. “Mega-regionals” is yet another term that has gained currency in recent years to refer to treaties that involve large regions, be they bilateral treaties (e.g., the EU-Canada Comprehensive Economic and Trade Agreement (CETA)) or plurilateral treaties (e.g., the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)).

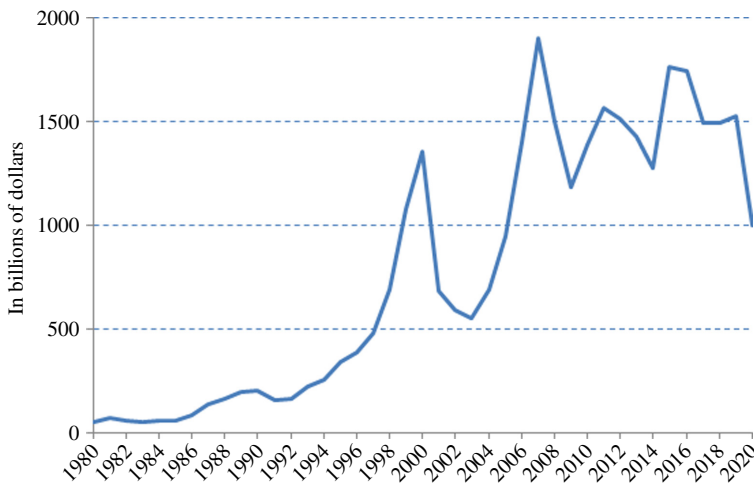


FIGURE 2 FDI inflows, 1980–2020.

Source: UNCTAD. [Colour figure can be viewed at wileyonlinelibrary.com]

Figure 2, the conclusion of new IIAs went hand in hand with an overall continuous increase in foreign direct investment (FDI) inflows (measured in current US dollars) since the 1980s, both seeing a sharp acceleration from the 1990s onwards.

On the whole, the purpose and *raison d'être* of IIAs is the promotion and protection of foreign investments. The protection element is typically uncontroversial: investment agreements contain substantive protections, such as most-favoured-nation treatment, national treatment, fair and equitable treatment, the requirement to compensate for an expropriation, and the guarantee of free transfers of capital. In case of a violation of a treaty's substantive protections, aggrieved investors are on most occasions granted access to an investor-state dispute settlement (ISDS) mechanism, where they can claim against the violating host state. This aspect has been present in almost all treaties since the late 1980s, and recourse to ISDS in the event of a dispute has become more frequent in recent years.² Figure 3 illustrates this significant evolution in relation to cases at the International Centre for Settlement of Investment Disputes (ICSID) as well as non-ICSID cases over the last 30 years. Nonetheless, the investment promotion element of IIAs remains somewhat elusive. Do IIAs fulfil their professed role and actually encourage foreign investment flows? Over time, and especially in the last 15 years, states have been re-examining the content and pertinence of their IIAs and international investment law has entered a period of 'reflection, review and reform' (UNCTAD, 2014). The question then and now is not only what the impact of these agreements on investment is but also what impact the reform of investment treaties itself can have on investment.

²The term 'comprehensive trade and investment agreements' is broadly synonymous with the following: comprehensive economic cooperation agreements, economic partnership agreements (EPAs), comprehensive trade agreements, preferential trade and investment agreements (PTIAs). Another type of treaty worth mentioning are cooperation and facilitation investment agreements (CFIAs), a type of treaty that Brazil has been signing since 2015. UNCTAD at first classified CFIAs as TIPs, but now such treaties are classified as BITs. This is also the approach we follow. 'Mega-regionals' is yet another term that has gained currency in recent years to refer to treaties that involve large regions, be they bilateral treaties (e.g. the EU-Canada Comprehensive Economic and Trade Agreement (CETA)) or plurilateral treaties (e.g. the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)).

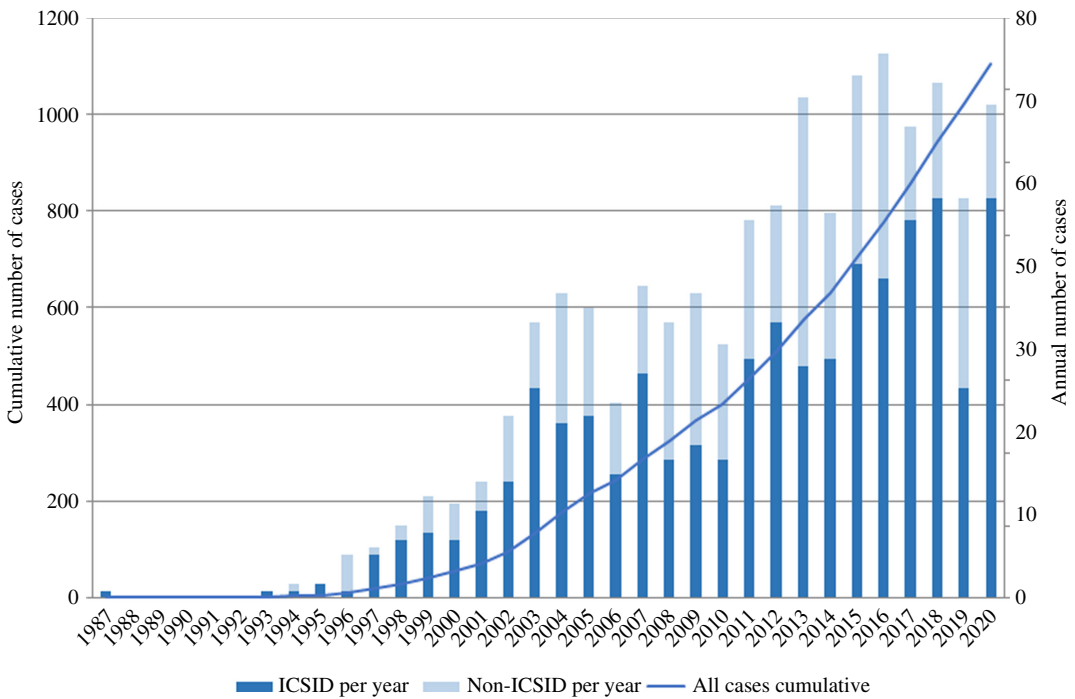


FIGURE 3 ICSID and Non-ICSID cases per year and cumulative, 1987–2020.

Source: UNCTAD. [Colour figure can be viewed at [wileyonlinelibrary.com](https://onlinelibrary.wiley.com/doi/10.1111/weec.13429)]

Only few surveys are available on the determinants of multinational enterprise (MNE) activity and they are often focused on particular aspects of the literature only, see Faeth (2009). These are even rarer with regard to the impact of IIAs on MNEs. UNCTAD (2014) is an exception. In contrast with these earlier surveys, this article offers a comprehensive study of the impact of IIAs on MNEs. It does so by first actually reviewing the actual content of IIAs that can have an impact on MNEs. Subsequently, it focuses on work providing theoretical guidance on the role of IIAs for MNEs as well as related empirical evidence. Specifically, it pays attention to different forms of MNE activity – such as horizontal or vertical organisations – and it highlights issues of identification such as from IIA heterogeneity, IIA endogeneity, treaty overlap between IIAs and other agreements, missing data on MNE outcomes, etc. The latter is done by organising the survey of earlier work on the impact of IIAs on MNEs according to a theoretical and an empirical section. More precisely, this survey is organised as follows. Section 2 explores the content of IIAs, focusing on the components that are particularly relevant to MNEs. To give an empirical overview of the content of investment treaties, we studied a sample of more than 1000 IIAs from 63 countries over the period 1980–2020. Section 3 discusses the theoretical and empirical backgrounds of the impact of IIAs on MNEs. The article concludes with some final remarks and an outlook on remaining challenges and interesting future research.

2 | THE DESIGN OF IIAS

In discussing the design of IIAs, it is useful to distinguish generic elements in their organisation from the specifics of treaty content. We will consider these in two separate subsections.

As to treaty content, it is useful to do so along the lines of a comparison of BITs, CTIAs and OIAs.

2.1 | The generic structure of investment treaties

The structure and design of IIAs differs depending on the type of IIA, the time of its conclusion and the contracting states.³ Usually, these factors cannot be isolated but function in combination. Broadly-speaking, investment chapters in IIAs are similar in structure and content to BITs. A typical BIT has the following structure and provisions:

Title and preamble

These are significant because they encapsulate a treaty's object and purpose (Dolzer & Stevens, 1995; Salacuse, 2015). New generation IIAs tend to contain longer preambles than their predecessors did, taking into account public policy interests (Titi, 2014; UNCTAD, 2015);

Scope and definitions

These determine the type of investment, the investors and types of disputes that are covered by the IIA (Dolzer & Schreuer, 2012; Newcomb & Paradell, 2009; OECD, 2008; Salacuse, 2015; Sornarajah, 2010; Titi, 2019a; UNCTAD, 2011);

Investment protections, including eventual provisions on admission and establishment

This is the part of the investment treaty that presents the substantive protections to which foreign investors are entitled. At the very basic level, investment treaties generally offer investors: (1) national treatment, that is, a promise that they will not be discriminated against when compared to national investors; (2) most-favoured-nation treatment, that is, a promise that they will not be discriminated against when compared to other foreign investors; some categories of treaties – North American treaties, new generation treaties and CTIAs as opposed to BITs – tend to offer national treatment and the most-favoured-nation treatment at market access, that is, to prospective investment, as well as to established investment; (3) fair and equitable treatment; (4) full protection and security – in North American treaties, fair and equitable treatment and full protection and security are generally equated with the minimum standard of the treatment of aliens under customary international law; (5) protection in case of expropriation, including protection in case of an indirect expropriation; (6) free transfers of capital; (7) compensation for losses; the latter provisions relate specifically to harm done to investments as a result of armed conflict or other situations of unrest; (8) prohibition of performance requirements (the latter provision originates in North American treaty practice and it is gaining currency in new treaties; Dolzer & Schreuer, 2012; Kläger, 2011; McLachlan et al., 2017; Newcomb & Paradell, 2009; Reinisch, 2008; Salacuse, 2015; Sornarajah, 2010; Titi, 2019a; UNCTAD, 2012a, 2012b);

³In this section, the history and content of the evolution of IIAs are not discussed. We focus solely on the structure of investment treaties, especially BITs. On the history and evolution, see Vandeveld (2009), who gives an overview since the colonial era.

Exceptions and the right to regulate

This has been a feature of North American treaties since the early to mid-2000s and it is more generally and more insistently a feature of new generation IIAs (Titi, 2015). Exceptions, or the right to regulate, allow a state to digress from its obligation to guarantee investment protections in exceptional circumstances, such as in the case of a national security situation or to protect legitimate public welfare objectives (Titi, 2014, 2018a);

Investor-state dispute settlement

While not a universal feature of IIAs, it is one of investment agreements' most significant elements, in that it allows a foreign investor to turn to investment arbitration against its host state for alleged violations of an investment standard. ISDS does away with the traditional need for recourse to diplomatic protection from an investor's home state and gives the investor a direct right of action before an international tribunal (Dolzer & Schreuer, 2012; Newcomb & Paradell, 2009). ISDS has received a lot of criticism in recent years (Alvarez, 2011; UNCTAD, 2015). In response to this criticism, several reform efforts are underway (UNCTAD, 2015; Weber & Titi, 2015). Reform efforts include the European Union's proposal for the establishment of an investment court system to replace investment arbitration and current multilateral negotiations under the aegis of UNCITRAL Working Group III (Kaufmann-Kohler & Potestà, 2016; Titi, 2017, 2018b, 2019b). IIAs typically also include state-state dispute settlement provisions;

Final provisions

These include provisions concerning the lifecycle of the investment treaty, including entry into force, duration and termination.

With a universe of more than 3300 IIAs, and taking into account the multiple provisions and possibilities of different phrasing, it becomes readily obvious that one IIA from the next can vary considerably. The immediate outcome is that different investors receive different investment protections, although it may be possible to identify a relative convergence towards a new model offering greater public policy space (Titi, 2014, 2015).

A few issues remain when one considers the accessibility of IIAs not only to academic scholars but also to politicians and policy makers, investors, as well as lawyers. First of all, not all IIAs are publicly available. Second, not all IIAs are drafted (or available) in one of the major languages of the world. For example, the 2823 treaties used in the translation study of Sugisaki et al. (2016) came originally in 29 different languages. While it is common for some countries such as China to not only draft their treaties in Chinese but also in English, this is not true across the board. Overall, about 73% of the IIAs are originally available (at least) in English, about 10% (at least) in French but not in English, 6% (at least) in Spanish but not in English or French, and about 3% (at least) in Arabic and 3% (at least) in Russian but not in the aforementioned languages. The rest – approximately 5% of IIAs whose texts are available at all – are drafted only in other languages than those already mentioned. This does not only make an encompassing analysis of IIA content difficult, but also obscures the very existence and the content of a number of IIAs, though admittedly in countries of minor economic importance.

From an econometrics viewpoint a systematic classification of treaty content considerably facilitates a computer-assisted analysis of such content. Recently, Rao (2017) extracted and analysed titled and untitled treaty articles (34,524 and 10,047 snippets respectively) of 2823 IIAs. The corresponding classification led to the following frequency and text weights

for 10 categories of treaty content per treaty as per Salacuse (2015), with frequencies in rounded percentages for the average IIA covered between 1959 and 2015⁴: (1) treaty title and statement of purpose: 6%; (2) scope of application of investment treaties: 7%; (3) conditions for the entry of foreign investment and investors: 3%; (4) general standards of treatment of foreign investments and investors: 9%; (5) monetary transfers: 10%; (6) expropriation and dispossession: 17%; (7) operational and other conditions: 26%; (8) losses from armed conflict or international disorder: 13%; (9) treaty exceptions, modifications, terminations: 11%; and (10) dispute settlement: 5%. According to this outcome, for the average treaty and conclusion year, operational and other conditions (7) take up the largest share of text, but clarifications and regulations about losses from expropriation and dispossession (6) as well as armed conflict or international disorder also feature quite prominently.

2.2 | The specifics of IIA content in a comparison of BITs, CTIAs and OIAs

To have a descriptive overview of the structure of investment treaties presented in the previous subsection, and before examining the theoretical and empirical literature on the subject, we consider a representative IIA sample. We selected 63 countries (see Table 1), including 34 out of the 36 members of the OECD list in 2019, representing the biggest part of total FDI flows. More precisely, between 1980 and 2019, on average 68% of the total amount of inward FDI and 85% of the total amount of outward FDI involve an OECD member state (see Figure 4). In addition, the 63 countries of our sample, of which not all are OECD members (see Table 2), include most of the major economies in Europe, North America, Asia (China, Hong Kong, India, Russia, Taiwan, etc.), Latin America (Argentina, Brazil, etc.). Finally, our sample includes all G20 members.⁵

More than 1000 treaties signed by at least one of the 63 selected states were accessed through UNCTAD's IIA Navigator. More than 990 of these treaties were BITs. Among the latter, about 60 treaties are either not available or they are available in languages other than English, French, German, Italian or Spanish. Finally, the available information concerns 937 BITs and 98 TIPs. The latter category comprises 67 CTIAs and 31 OIAs. For BITs, the bell-shaped profile in Figure 5 should be compared to that in Figure 1. This comparison shows that the 937 BITs examined are representative of the evolution of the agreements signed during the period.

As Table 3 shows, the majority of treaties concern bilateral relations between OECD countries and non-OECD countries (60.9% and 22.6%, if we consider only those concluded between OECD member countries). In total, 83.5% of the BITs signed during the period involve at least one OECD member country. This predominance reflects the traditional tendency to protect FDI from developed countries but also to increase the attractiveness of often developing host countries as investment destinations. In addition, our sample shows that 60.3% (565) of the BITs were concluded between 1990 and 1999. This percentage then becomes 18.3% (172 treaties) in the first decade of the 2000s, to

⁴Note that these percentages add up to more than 100% due to the nonlinear structure of the weights obtained from the machine-learning algorithm. However, they still illustrate the relative importance of the respective aspects in IIA-treaty texts.

⁵The G20 members are Argentina, Australia, Brazil, Canada, China, European Union, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, United Kingdom and United States of America.

TABLE 1 List of the countries selected.

	Code	Country	BITs + other treaties^a	Code	Country	BITs + other treaties^a
1	DZA	Algeria	45 (29) + 7 (5)	33	KOR	94 (89) + 24 (19)
2	ARG	Argentina	55 (49) + 18 (14)	34	KWT	85 (70) + 12 (6)
3	AUS	Australia	15 (15) + 23 (21)	35	MYS	66 (54) + 26 (22)
4	AUT	Austria	60 (58) + 72 (57)	36	MEX	32 (31) + 16 (15)
5	BEL	Belgium	90 (71) + 72 (57)	37	MAR	72 (50) + 10 (8)
6	LUX	Luxembourg	92 (71) + 72 (57)	38	NLD	81 (79) + 72 (57)
7	BOL	Bolivia	7 (6) + 10 (6)	39	NZL	4 (2) + 17 (15)
8	BRA	Brazil	26 (2) + 19 (14)	40	NOR	15 (14) + 32 (30)
9	BGR	Bulgaria	53 (46) + 72 (57)	41	PAN	24 (20) + 13 (11)
10	CAN	Canada	32 (37) + 21 (17)	42	PER	27 (27) + 31 (23)
11	CHL	Chile	46 (34) + 34 (27)	43	PHL	37 (31) + 17 (15)
12	CHN	China	124 (107) + 24 (19)	44	POL	38 (38) + 72 (57)
13	COL	Colombia	16 (7) + 21 (17)	45	PRT	53 (44) + 72 (57)
14	CRI	Costa Rica	21 (14) + 18 (16)	46	ROU	75 (74) + 72 (57)
15	CZE	Czech Republic	76 (74) + 72 (57)	47	RUS	78 (62) + 6 (6)
16	DNK	Denmark	43 (40) + 72 (57)	48	SAU	24 (21) + 13 (8)
17	ECU	Ecuador	5 (2) + 11 (8)	49	SGP	38 (38) + 37 (31)
18	EGY	Egypt	100 (72) + 14 (11)	50	SVK	43 (43) + 72 (57)
19	EST	Estonia	23 (23) + 73 (58)	51	SVN	26 (25) + 72 (57)
20	FIN	Finland	68 (64) + 72 (57)	52	ZAF	38 (11) + 11 (8)
21	FRA	France	98 (95) + 72 (57)	53	ESP	70 (64) + 72 (57)
22	DEU	Germany	121 (119) + 72 (57)	54	SWE	63 (61) + 72 (57)
23	GRC	Greece	42 (40) + 72 (57)	55	CHE	112 (111) + 37 (35)
24	HKG	Hong Kong	20 (20) + 7 (7)	56	TWN	24 (16) + 6 (6)

(Continues)

TABLE 1 (Continued)

	Code	Country	BITs + other treaties ^a	Code	Country	BITs + other treaties ^a
25	HUN	<i>Hungary</i>	48 (47) + 72 (57)	THA	Thailand	39 (36) + 24 (21)
26	ISL	<i>Iceland</i>	8 (8) + 34 (31)	TUR	<i>Turkey</i>	107 (81) + 21 (17)
27	IND	India	12 (8) + 13 (9)	UKR	Ukraine	72 (65) + 7 (5)
28	IDN	Indonesia	41 (26) + 21 (16)	ARE	United Arab Emirates	89 (53) + 12 (6)
29	IRL	<i>Ireland</i>	0 + 72 (57)	GBR	United Kingdom	102 (91) + 29 (1)
30	ISR	<i>Israel</i>	38 (35) + 7 (5)	USA	United States	45 (39) + 69 (50)
31	ITA	<i>Italy</i>	67 (55) + 71 (56)	VEN	Venezuela	27 (25) + 5 (5)
32	JPN	<i>Japan</i>	35 (31) + 22 (19)			

Note: The countries in bold italics are the 34 out of 36 OECD member states as of 2019.

Belgium and Luxembourg have been signing jointly investment treaties as part of the Belgium-Luxembourg Economic Union (BLEU). We identified an apparent exception: the bilateral investment treaty concluded under Belgium and Indonesia on 15 January 1970.

A number of BITs were concluded by Czechoslovakia. In light of its separation in 1992 into the Czech Republic and Slovakia, BITs that had been signed by Czechoslovakia were taken into account for both the Czech Republic and Slovakia.

^aThe numbers in parenthesis indicate the number of treaties in force. The summary numbers here are the total numbers found in UNCTAD's IIA Navigator. Discrepancies may exist with the number of treaties that appear within each country. Some of them may have been modified.

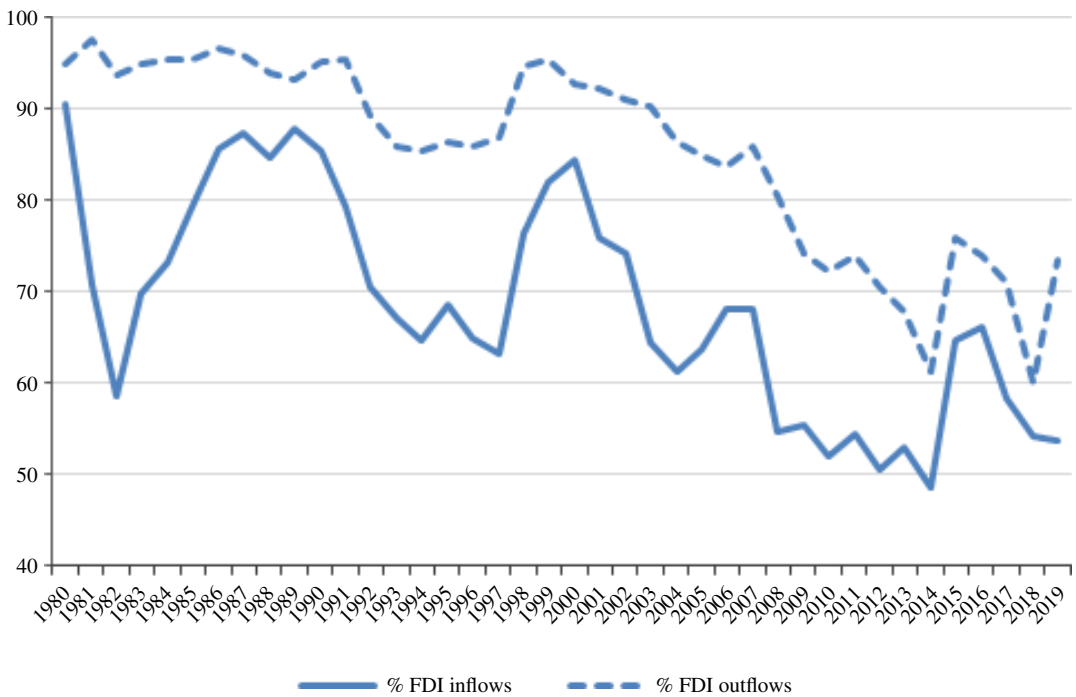


FIGURE 4 Evolution of FDI inflow and outflow shares of the OECD countries, 1980–2019.

Source: UNCTAD. [Colour figure can be viewed at wileyonlinelibrary.com]

TABLE 2 Categorisation of selected countries by continent.

	Number of countries	Thereof members of OECD
Africa	4 (6.35%)	0
America	13 (20.64%) <i>NA:2–CA:4–SA: 7</i>	4 (11.76%) <i>NA:2–CA:1–SA: 1</i>
Asia	16 (25.40%)	4 (11.76%)
Europe	28 (44.44%)	24 (70.60%)
Oceania	2 (3.17%)	2 (5.88%)
Total	63 (100%)	34 (100%)

Abbreviations: CA, Central America; NA, North America; SA, South America.

fall to 4.7% (44 treaties) in the following decade. This decrease is partly due to the increasing popularity of CTIAs. The latter are often regional or plurilateral in scope. They therefore bring together several countries under the cover of a single treaty. In other words, BITs are partly being replaced by plurilateral or regional CTIAs. Table 3 also demonstrates the strong increase in the popularity of this type of treaty during the first two decades of the 21st century. As already explained and as this table shows, 67 CTIAs and 31 OIAs were also studied for this article. In total, the substantive and procedural provisions of 1035 investment treaties were analysed.⁶

⁶Research data are not shared.

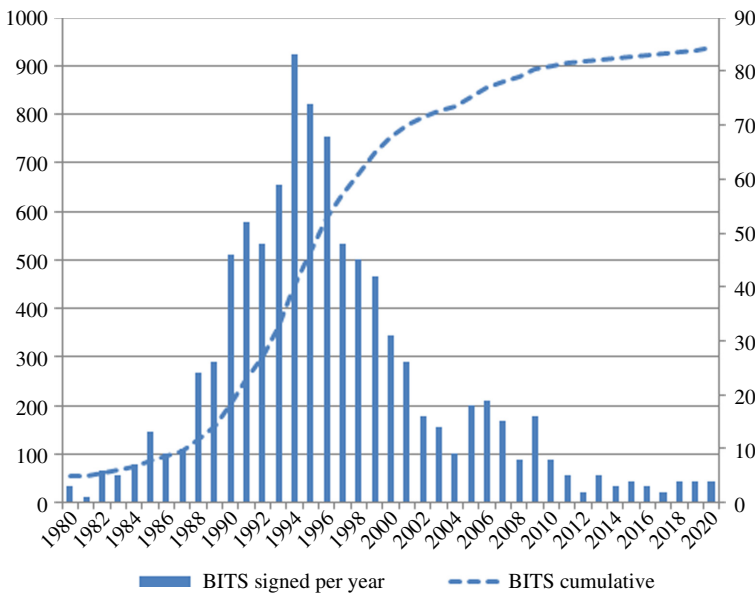


FIGURE 5 Number of BITs examined per year and cumulative, 1980–2020. [Colour figure can be viewed at wileyonlinelibrary.com]

2.2.1 | Ratification and entry into force

According to [Table 3](#), BITs have good chances of being ratified once signed. The most likely to be ratified are BITs signed between OECD countries. Only six out of 212 BITs concluded between OECD countries were not ratified for the period 1960–2020, that is, more than 97%. Treaties concluded between OECD and non-OECD countries were ratified at a somewhat lower yet still considerably high rate: out of 571 BITs, 524 were ratified and only 47 were not. In other words, approximately 92% of these treaties have been ratified. Finally, BITs concluded between non-OECD countries have slightly lower ratification rates. Out of 154 such treaties signed over the period 1960–2020, 131 were ratified, that is, a ratification rate of almost 85%. This ratification rate is a little lower than the rate that corresponds to all BITs (91.9%). On average, these treaties were ratified 23.3 months or almost 2 years after signature. The average time required for ratification does not vary significantly depending on the identity of the countries that have signed the treaty in question (19 months on average for BITs signed between OECD countries; 26.8 months on average for BITs signed between an OECD country and a non-OECD country; and, 21.6 months on average for BITs signed between non-OECD countries).

Like BITs, most CTIAs are also ratified (90% in our sample; [Table 3](#)). The time necessary between signature and ratification varies according to the configurations of bilateral relations. For CTIAs between OECD countries, it took an average of 11.1 months from signature to ratification. Over the period 2000–2009, the number of months between signature and ratification was 15.8. The time that elapses on average between signature and ratification is longer for CTIAs that do not involve an OECD member state. For example, for CTIAs concluded between non-OECD countries, the average time from signature to ratification is 17 months. Overall, the average timeframe for all CTIAs in our sample is 21 months from signature to ratification, a little lower than the equivalent timeframe for BITs.

TABLE 3 Descriptive statistics on bits, CTIAs and OIAs examined over the period 1980–2020.

	BITs into force				CTIAs into force				OIAs into force				
	BITs signed		Average number of months ^a		CTIAs signed		Average number of months ^a		OIAs signed		Average number of months ^a		
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	
Between OECD countries	9	1	17.9	15.6	0	0	0	0	0	0	0	0	
Before 1980	8	1	17.9	15.6	0	0	0	0	0	0	0	0	
1980–1989	35	0	20.4	16	0	0	0	0	0	0	0	0	
1990–1999	143	4	24.8	18.2	3	0	11.3	4	0	0	0	0	
2000–2009	23	0	25.2	13.9	6	0	15.8	19.8	2	0	5.5	0.7	
2010–2020	2	1	19	0	5	0	8.9	6	2	1	24	0	
Total	212 (22.6%)	206 (23.9%)	19 (7.9%)	14.3 (21.7%)	14 (21.7%)	0 (0%)	11.1 (11.1%)	11.7 (12.9%)	4 (12.9%)	3 (12.5%)	1 (14.3%)	14.8 (14.8%)	0.5 (0.5%)
Between OECD and non-OECD countries	42	0	19	17.1	0	0	0	0	0	0	0	0	
Before 1980	42	0	19	17.1	0	0	0	0	0	0	0	0	
1980–1989	60	1	31.3	30.9	0	0	0	0	0	0	0	0	
1990–1999	333	25	26.7	26.8	0	0	0	0	0	0	0	0	
2000–2009	109	10	27.6	22.3	13	13	24	20.5	8	8	7.9	7.3	
2010–2020	27	16	29.8	12.0	15	5	17	17.8	2	2	4.5	0.5	

(Continues)

TABLE 3 (Continued)

	BITs into force				CTIAs into force				OIAs into force				
	BITs signed	Yes	No	Average number of months ^a	CTIAs signed	Yes	No	Average number of months ^a	OIAs signed	Yes	No	Average number of months ^a	σ
Total	571 (60.9%)	524 (60.9%)	47 (61.8%)	26.8	28 (40%)	23 (40.3%)	5 (50%)	20.5	10 (32.2%)	10 (41.7%)	0 (0%)	6.2	5.17
Between non-OECD countries	1	1	0	7	0	0	0	0	0	0	0	0	0
Before 1980													
1980–1989	9	8	1	25.8	0	0	0	0	0	0	0	0	0
1990–1999	89	86	3	28.7	0	0	0	0	0	0	0	0	0
2000–2009	40	31	9	24.9	4	4	0	11	1	1	0	1	0
2010–2020	15	5	10	21.8	6	5	1	23	1	1	0	0	0
Total	154 (16.5%)	131 (15.2%)	23 (30.3%)	21.6	10 (16.7%)	9 (15.8%)	1 (10%)	17	2 (6.5%)	2 (8.3%)	0 (0%)	1	0
Total	937 (100%)	861 (91.9%)	76 (8.1%)	23.3	19.1								
Between OECD countries – REIOS													
Before 1980					0	0	0	0	0	0	0	0	0
1980–1989					0	0	0	0	0	0	0	0	0
1990–1999					0	0	0	0	0	0	0	0	0
2000–2009					1	1	0	52	2	2	0	5.5	5
2010–2020					3	1	2	21	0	0	0	0	0

TABLE 3 (Continued)

	BITs into force			CTIAs into force			OIAs into force			Average number of months ^a	σ
	BITs signed	Yes		CTIAs signed	Yes		OIAs signed	Yes			
		No	Yes		No	Yes		No	Yes		
Between non-OECD countries – REIOs											
Total		4 (5%)	2 (3.5%)	2 (20%)	2 (6.5)	2 (8.3%)	0 (0%)	2 (28.6%)	0 (0%)	5.5	5
Before 1980		0	0	0	0	0	0	0	0	0	0
1980–1989		0	0	0	0	0	0	0	0	0	0
1990–1999		0	0	0	0	0	0	0	0	0	0
2000–2009		3	3	0	40.3	39.8	1	1	0	4	0
2010–2020		6	4	2	17.2	5.3	3	1	2	24	0
Total		9 (13.3%)	7 (12.3%)	2 (20%)	28.8	28.4	4 (12.9%)	2 (8.3%)	2 (28.6%)	14	0
Within-REIOs											
Before 1980		0	0	0	0	0	0	0	0	0	0
1980–1989		0	0	0	0	0	3	3	0	31.7	41
1990–1999		1	1	0	13	0	2	1	1	39	0
2000–2009		1	1	0	11	0	3	1	2	35	0
2010–2020		0	0	0	0	0	1	0	1	0	0
Total		2 (3.3%)	2 (3.5%)	0 (0%)	12	0	9 (29%)	5 (20.9%)	4 (57.1%)	35.2	23.7
Total		67 (100%)	57 (90%)	10 (10%)	21.0	15.1	31 (100%)	24 (77.5%)	7 (22.5%)	18.2	10.1

REIO means Regional Economic Integration Organisation, such as ASEAN, EU or EFTA.

^aBefore entry into force.

By comparison, OIAs were ratified at the lower rate of 77.5% (Table 3). The average delay is 18.2 months between signature and ratification, knowing that the longest average delay concerns investment agreements signed within a regional economic integration organisation (REIO), which took an average of 35.2 months to be ratified.

2.2.2 | Treaty clauses

Definition of investment

Tables 4–6 present IIAs' substantive and procedural protections respectively for BITs, CTIAs and OIAs. As Table 4 shows, the vast majority of BITs contain an 'open' definition of investment.⁷ Only eight BITs, 0.8% of the sample, include a 'closed' definition. Six BITs (0.6%) contain no definition of the term 'investment'. These are old treaties, signed in the 1960s and 1970s, between OECD and non-OECD countries.

As in the case of BITs, most CTIAs in our sample contain an 'open' definition of the term 'investment' (Table 5). Fifty nine of the 67 CTIAs, or 88%, contain an 'open' definition of investment. This leaves 7.4% of the CTIAs with a 'closed' definition and 4.5% without any definition of the term. 96.8% of the OIAs contain a definition of the term 'investment' too (Table 6). Twenty six agreements include an 'open' definition of 'investment' (83.9%) and four agreements a 'closed' definition.

Tables 4–6 also show whether the investment treaties that include a definition of the term 'investment' exclude certain types of assets or transactions from its scope. This is particularly important in the case of treaties with an 'open' definition of the term investment, since such a definition greatly extends the scope of the treaty. Carve-outs or exclusions, when they exist, precisely limit the scope of the treaty by excluding certain categories of assets or transactions which would otherwise be protected. The exclusions of certain types of assets or transactions tend to concern new treaties. For this reason, the exclusions in our sample are few, but correspond to new trends.

For example, 7% of the BITs signed between OECD countries, 7.2% of the BITs concluded between an OECD country and a non-OECD country, and 9.1% of the BITs signed between non-OECD countries have carve-outs, when they contain a definition of the term 'investment'. In total, 70 BITs containing an 'open' definition of the term investment and three BITs with a 'closed' definition exclude certain types of assets. Another example concerns OIAs, which in their majority do not provide specific exclusions from the definition of the term, whether it is 'open' (18 out of 26) or 'closed' (3 out of 4).

National treatment

Table 4 shows that the majority of BITs (just over 65%) offer national treatment only in the 'post-establishment' phase. Concretely, these are 165 BITs signed between OECD countries, 435 BITs signed between an OECD country and a non-OECD country, and 104 BITs signed between non-OECD countries out of the 937 BITs included in our sample. An important number of BITs do not offer investors the national treatment standard, reserving a potentially more favourable treatment for national investors.

⁷An 'open' definition of the term investment provides examples of types of assets covered by the investment treaty instead of naming these assets in an exhaustive manner ('closed' definition).

TABLE 4 Substantive and procedural standards examined BITs.

	Between OECD countries	Between OECD–non-OECD countries	Between non-OECD countries	Total
Definition of investment				
Open				
Exclusions				
Yes	15 (7%)	37 (7.2%)	14 (9.1%)	70
No	197 (93%)	516 (90.4%)	140 (90.9%)	853
Closed				
Exclusions				
Yes	0	4 (0.7%)	0	4
No	0	4 (0.7%)	0	4
NA	0	6 (1%)	0	6
Total	212 (100%)	571 (100%)	154 (100%)	937
National treat.				
Post	165 (77.8%)	435 (76.2%)	104 (67.5%)	704
Pre & Post	5 (2.4%)	28 (4.9%)	4 (2.6%)	37
NA	42 (19.8%)	108 (18.9%)	46 (28.9%)	196
Total	212 (100%)	571 (100%)	154 (100%)	937
Indirect expro.				
Yes	204 (96.2%)	548 (96%)	139 (90.2%)	897
Yes + A	2 (0.8%)	17 (3%)	7 (4.6%)	26
No	6 (3%)	6 (1%)	8 (5.2%)	14
Total	212 (100%)	571 (100%)	154 (100%)	937
Exceptions				
Public welfare				
Art.	6 (2.8%)	43 (7.5%)	13 (8.4%)	62
Chap.	0	0	0	0
No	206 (97.2%)	528 (92.5%)	141 (91.6%)	875
Total	212 (100%)	571 (100%)	154 (100%)	937
Ess. sec.				
Yes	14 (6.6%)	68 (11.9%)	25 (16.2%)	107
No	198 (93.4%)	503 (88.1%)	129 (83.8%)	830
Total	212 (100%)	571 (100%)	154 (100%)	937
R. to R.				
Yes	2 (1%)	6 (1%)	5 (3.2%)	13
No	210 (99%)	565 (99%)	149 (96.8%)	924
Total	212 (100%)	571 (100%)	154 (100%)	937

(Continues)

TABLE 4 (Continued)

	Between OECD countries	Between OECD–non-OECD countries	Between non-OECD countries	Total
Access to ISDS				
ICSID	58 (27.3%)	146 (25.6%)	30 (19.5%)	234
Other	16 (7.5%)	83 (14.5%)	29 (18.8%)	129
Both	131 (61.8%)	313 (54.8%)	85 (55.2%)	528
Inv. court	0	0	0	0
No	7 (3.4%)	29 (5.1%)	10 (6.5%)	46
Total	212 (100%)	571 (100%)	154 (100%)	937
Inst. mec.				
Yes	2 (1%)	23 (4%)	8 (5.2%)	33
No	210 (99%)	548 (96%)	146 (94.8%)	904
Total	212 (100%)	571 (100%)	154 (100%)	937

Note: Definition of investment—open yes (exclude specific assets)—Closed yes (exclude specific assets); National treat.—National treatment; Indirect expro.—Indirect expropriation—Yes + A (Annex); Exceptions—Ess. sec. means Essential security—Art. means Article—Chap. means Chapter; R. to R.—right to regulate; Access to ISDS—other means Other arbitration rules—Inv. court means Investment court; Inst. mec.—institutional mechanisms.

Abbreviation: NA, non-available.

Unlike BITs, most CTIAs grant national treatment not only ‘post-establishment’ but also in the ‘pre-establishment’ phase (Table 5). Fifty five of the CTIAs in our sample (82.1%) fall into this category. This is not surprising, since CTIAs combine investment protections with provisions on market access, which is often linked to the protection of investment activities in the ‘pre-establishment’ phase. 15% of the CTIAs in our sample (10 treaties) offer national treatment only in the ‘post-establishment’ phrase, while the remainder 3% do not grant national treatment.

The majority of OIAs too grant national treatment both ‘pre-’ and ‘post-establishment’ (Table 6). While three out of the 31 OIAs in our sample do not grant national treatment at all, nine OIAs grant national treatment in the ‘post-establishment’ phase, and, significantly, 29 OIAs accord national treatment in the ‘pre-establishment’ phase as well as in the ‘post-establishment’ phase. OIAs that offer national treatment in both phases are mainly OIAs concluded between REIOs and OECD countries, OIAs concluded between non-OECD countries (however, in both cases, these are only two agreements), the OIAs concluded between OECD countries and non-OECD countries, and those concluded between OECD countries.

Indirect expropriation

Tables 4–6 also show that the majority of investment treaties protect investors in case of an indirect expropriation, although most of them do not contain an interpretive annex specifying how to distinguish between direct expropriation and indirect expropriation. In particular, such annexes contain a type of clause that incorporates some form of the police powers doctrine and provide that, except in rare cases, non-discriminatory measures of a party designed and applied for the protection of public welfare objectives, such as public health, security, and the environment, do not constitute an indirect expropriation. The latter type of clause may sometimes exist in the treaty article on expropriation but most often it is found in an annex.

TABLE 5 Substantive and procedural standards examined CTIAs.

	Between OECD countries	Between OECD and non-OECD countries	Between non-OECD countries	Between OECD countries and REIO	Between non-OECD countries and REIO	Total
Definition of investment						
Open						
Exclusions						
Yes	8 (57.1%)	12 (42.9%)	5 (50%)	4 (100%)	1 (11.1%)	30
No	4 (28.6%)	14 (50%)	5 (50%)	0	6 (66.7%)	29
Closed						
Exclusions						
Yes	2 (14.3%)	2 (7.1%)	0	0	0	4
No	0	0	0	0	1 (50%)	1
NA	0	0	0	0	2 (22.2%)	3
Total	14 (100%)	28 (100%)	10 (100%)	4 (100%)	9 (100%)	67
National treat						
Post	2 (14.3%)	3 (10.7%)	0	0	5 (55.6%)	10
Pre & Post	12 (85.7%)	25 (89.3%)	9 (90%)	4 (100%)	4 (44.4%)	55
NA	0	0	1 (10%)	0	1 (50%)	2
Total	14 (100%)	28 (100%)	10 (100%)	4 (100%)	9 (100%)	67
Indirect expro.						
Yes	5 (35.7%)	2 (7.1%)	3 (30%)	0	2 (22.2%)	13
Yes + A	9 (64.3%)	23 (82.2%)	7 (70%)	4 (100%)	1 (11.1%)	44
No	0	3 (10.7%)	0	0	6 (66.7%)	10
Total	14 (100%)	28 (100%)	10 (100%)	4 (100%)	9 (100%)	67

(Continues)

TABLE 5 (Continued)

	Between OECD countries	Between OECD and non-OECD countries	Between non-OECD countries	Between OECD countries and REIO	Between non-OECD countries and REIO	Total
Exceptions						
Public welfare						
Art.	2 (14.3%)	5 (17.9%)	2 (20%)	0	5 (55.6%)	15
Chap.	8 (57.1%)	17 (60.7%)	4 (40%)	4 (100%)	2 (22.2%)	35
No	4 (28.6%)	6 (21.4%)	4 (40%)	0	2 (22.2%)	17
Total	14 (100%)	28 (100%)	10 (100%)	4 (100%)	9 (100%)	67
Ess. Sec.						
Yes	11 (78.6%)	22 (78.6%)	6 (60%)	4 (100%)	8 (88.9%)	52
No	3 (21.4%)	6 (21.4%)	4 (40%)	0	1 (11.1%)	15
Total	14 (100%)	28 (100%)	10 (100%)	4 (100%)	9 (100%)	67
R. to R.						
Yes	1 (7.1%)	4 (14.3%)	0	2 (50%)	6 (66.7%)	13
No	13 (92.9%)	24 (85.7%)	10 (100%)	2 (50%)	3 (33.3%)	54
Total	14 (100%)	28 (100%)	10 (100%)	4 (100%)	9 (100%)	67
Access to ISDS						
ICSID	0	0	0	0	0	0
Other	1 (7.1%)	1 (3.6%)	0	0	6 (66.7%)	8
Both	11 (78.6%)	26 (92.8%)	10 (100%)	2 (50%)	2 (22.2%)	51
Inv. Court	0	0	0	1 (25%)	0	1
No	2 (14.3%)	1 (3.6%)	0	1 (25%)	1 (11.1%)	7
Total	14 (100%)	28 (100%)	10 (100%)	4 (100%)	9 (100%)	67
Inst. mec.						
Yes	5 (35.7%)	9 (32.1%)	0	0	6 (66.7%)	20
No	9 (64.3%)	19 (67.9%)	10 (100%)	4 (100%)	3 (33.3%)	47
Total	14 (100%)	28 (100%)	10 (100%)	4 (100%)	9 (100%)	67

TABLE 6 Substantive and procedural standards examined OIAs.

	Between OECD countries	Between OECD and non-OECD countries	Between non-OECD countries	Between OECD countries and REIO	Between non-OECD countries and REIO	Within-REIO	Total
Definition of investment							
Open							
Exclusions							
Yes	1 (25%)	3 (30%)	0	1 (50%)	2 (50%)	1 (11.1%)	8
No	2 (50%)	5 (50%)	2 (100%)	1 (50%)	2 (50%)	6 (66.7%)	18
Closed							
Exclusions							
Yes	1 (25%)	0	0	0	0	0	1
No	0	1 (10%)	0	0	0	2 (22.2%)	3
NA			0	0	0	0	1
Total	4 (100%)	10 (100%)	2 (100%)	2 (100%)	4 (100%)	9 (100%)	31
National treat.							
Post	1 (25%)	2 (20%)	0	0	3 (75%)	3 (33.3%)	9
Pre & Post	3 (75%)	8 (80%)	2 (100%)	2 (100%)	1 (25%)	3 (33.3%)	19
NA	0	0	0	0	0	3 (33.3%)	3
Total	4 (100%)	10 (100%)	2 (100%)	2 (100%)	4 (100%)	9 (100%)	31
Indirect expro.							
Yes	3 (75%)	6 (60%)	0	2 (100%)	2 (50%)	4 (44.4%)	17
Yes + A	1 (25%)	3 (30%)	2 (100%)	0	2 (50%)	1 (11.2%)	9
No	0	1 (10%)	0	0	0	4 (44.4%)	5
Total	4 (100%)	10 (100%)	2 (100%)	2 (100%)	4 (100%)	9 (100%)	31
Exceptions							
Public welfare							

(Continues)

TABLE 6 (Continued)

	Between OECD countries	Between OECD and non-OECD countries	Between non-OECD countries	Between OECD countries and REIO	Between non-OECD countries and REIO	Within-REIO	Total
Art.	3 (75%)	2 (20%)	2 (100%)	2 (100%)	3 (75%)	4 (44.4%)	16
Chap.	0	0	0	0	0	0	0
No	1 (25%)	8 (80%)	0	0	1 (25%)	5 (55.6%)	15
Total	4 (100%)	10 (100%)	2 (100%)	2 (100%)	4 (100%)	9 (100%)	31
Ess. Sec.							
Yes	3 (75%)	5 (50%)	2 (100%)	2 (100%)	4 (100%)	5 (55.6%)	21
No	1 (25%)	5 (50%)	0	0	0	4 (44.4%)	10
Total	4 (100%)	10 (100%)	2 (100%)	2 (100%)	4 (100%)	9 (100%)	31
R. to R.							
Yes	1 (25%)	0	0	0	0	2 (22.2%)	3
No	3 (75%)	10 (100%)	2 (100%)	2 (100%)	4 (100%)	7 (77.8%)	28
Total	4 (100%)	10 (100%)	2 (100%)	2 (100%)	4 (100%)	9 (100%)	31
Access to ISDS							
ICSID	0	1 (10%)	0	0	1 (25%)	0	2
Other	0	1 (10%)	0	1 (50%)	0	3 (33.3%)	5
Both	3 (75%)	7 (70%)	1 (50%)	1 (50%)	2 (50%)	5 (55.6%)	19
Inv. Court	0	0	0	0	0	0	0
No	1 (25%)	1 (10%)	1 (50%)	0	1 (25%)	1 (11.1%)	5
Total	10 (100%)	2 (100%)	2 (100%)	4 (100%)	9 (100%)	31	
Inst. mec.							
Yes	2 (50%)	6 (60%)	1 (50%)	2 (100%)	4 (100%)	3 (33.3%)	18
No	2 (50%)	4 (40%)	1 (50%)	0	0	6 (66.7%)	13
Total	4 (100%)	10 (100%)	2 (100%)	2 (100%)	4 (100%)	9 (100%)	31

Of the 937 BITs in our sample, 923 (or 98.5%) protect in case of an indirect expropriation. Of these, 96.2% are BITs signed between OECD countries, 96% are BITs signed between an OECD country and a non-OECD country and 90.2% are BITs signed between non-OECD countries. Out of the 937 BITs, 95.7% (897) protect in the event of indirect expropriation but do not contain an interpretive annex. Out of these 897 treaties, 96.2% were signed between OECD countries, 96% between an OECD country and a non-OECD country, and 90.2% between non-OECD countries. 26 BITs in our sample provide protection in case of indirect expropriation and contain an annex such as the one described above. This corresponds to just over 2.5% of the BITs in our sample, a low percentage but which is explained by the fact that the clause providing that a non-discriminatory measure designed and applied for the protection of legitimate public welfare objectives does not constitute an indirect expropriation is gaining currency in recent treaties. Only 14 BITs in our sample do not contain specific protection for the case of an indirect expropriation, that is, 1.5%, which corresponds to six BITs signed between OECD countries and non-OECD countries and eight BITs signed between non-OECD countries.

By contrast, most CTIAs protect investors in the event of indirect expropriation and also contain an interpretive annex to specify that non-discriminatory measures taken for public welfare objectives do not constitute an indirect expropriation. These are 44 CTIAs (65.7%) in our sample. Thirteen CTIAs (19.4%) protect in the event of indirect expropriation but do not include an annex. Ten CTIAs (15%) do not protect in case of indirect expropriation.

A total of 26 of the OIAs in our sample provide protection in case of indirect expropriation (almost 84% of agreements) and only five do not. Of these agreements, 17 (65.4%) protect in the event of indirect expropriation without including an interpretative annex and the remainder 34.6% contain an interpretative annex or provisions equivalent to those usually included in the annex.

Exceptions and the right to regulate

Tables 4–6 also map the presence of general exceptions for the protection of public welfare objectives, security exceptions – better known as ‘essential security interests’ exceptions – and references to the right to regulate in IIAs.

The majority of BITs do not include general exceptions for the protection of public welfare objectives. This is particularly true for BITs signed between OECD countries: 97.2% of them, that is, 206 BITs, do not contain such an exception. 92.5% of the BITs signed between an OECD country and a non-OECD country and 91.6% of the BITs signed between non-OECD countries also do not contain such exceptions. This does not mean that these treaties do not contain other exceptions. A relatively small number of BITs, 107 out of 937 treaties, contain an essential security interests exception. The occurrence of this type of exception varies between 6.6% (BITs signed between OECD countries), 11.9% (BITs signed between an OECD country and a non-OECD country) and 16.2% (BITs concluded between non-OECD countries). Finally, BITs do not generally make reference to the right to regulate. This is not surprising, since the right to regulate is mentioned only in very new treaties.

By contrast, 74.6% of the CTIAs in our sample contain exceptions for public welfare objectives. Of these, one-third (15 treaties) contain exceptions in one article and the remainder (35 treaties) contain a chapter with public interest exceptions that apply to the entire treaty, including the chapter on investments. A small number of agreements (25.4%) do not contain exceptions for the public interest. The majority of CTIAs in our sample also contain security exceptions. These are 52 CTIAs (77.6%), which leaves only 22.4% without security exceptions.

Unlike BITs, where the explicit phrase ‘right to regulate’ is almost always absent, 19.4% of the CTIAs refer to the state's right to regulate. Although this percentage remains small, it must be stressed yet again that it is only new treaties that explicitly mention the right of the state to regulate.

Of the 31 OIAs in our sample, 16 contain exceptions for the public interest (included in one treaty article) and 15 do not include such exceptions. Most of the OIAs in our sample contain exceptions for essential security interests. These are 21 out of 31 agreements. 9.67% of the OIAs mention the state's right to regulate.

Access to investor-state dispute settlement

The great innovation of investment treaties is that not only they offer substantive investment protections but they also give investors the means to enforce these protections, by granting them direct access to dispute resolution mechanisms at the international level, such as arbitration under the ICSID Convention or arbitration under the UNCITRAL Arbitration Rules and, more recently, an investment court system.⁸ We have classified treaties into four categories: (1) treaties that provide access to arbitration under the ICSID Convention; (2) treaties that provide access to arbitration under other procedural rules, such as the UNCITRAL Arbitration Rules or the Arbitration Rules of the International Chamber of Commerce; (3) treaties that provide access to arbitration under the ICSID Convention and under at least one other set of arbitration rules; (4) treaties that do not provide access to arbitration. These data are presented in [Tables 4–6](#).

The breakdown of the BITs in relation to ISDS is as follows: 25.3% of the BITs in our sample (i.e. 234 treaties) give access to arbitration under the ICSID Convention but not to other types of dispute settlement at the international level. BITs concluded between OECD countries often give access to arbitration under the ICSID Convention, to the exclusion of other types of dispute settlement (27.3% of the BITs concluded between OECD countries). This is more rarely the case in BITs concluded between non-OECD countries (19.5%).

13.8% of the BITs in our sample (i.e. 129 BITs) provide investors with access to some type of arbitration other than ICSID Convention arbitration. This could be, for example, arbitration under the ICSID Additional Facility Rules, arbitration under the UNCITRAL Arbitration Rules or arbitration under the Arbitration Rules of the International Chamber of Commerce. This type of clause is more frequent in BITs concluded between non-OECD countries (18.8%) and less frequent in BITs concluded between two OECD countries (7.5%).

Most BITs provide access to arbitration both under the ICSID Convention and arbitration under other arbitration rules. In our sample, this is the case of 61.8% of the BITs concluded between OECD countries; 54.8% of the BITs signed between an OECD country and a non-OECD country; and 55.2% of the BITs signed between non-OECD countries. This is not surprising but it is significant in that it shows that the majority of BITs offer investors a choice between different

⁸In our study, we focused on dispute settlement at the international level, rather than on dispute settlement at the national level, even if recourse to local courts was provided for in the treaty. The investor always has the option of going to the local courts and tribunals of the host country, even if the treaty does not make such provision. Also, so-called ‘soft’ dispute resolution mechanisms, such as consultations between the disputing parties or more broadly, amicable settlement, were not taken into account. These dispute settlement mechanisms depend on the goodwill of the parties and are not certain to be successful. Even when they are successful, the ‘settlement’ takes the form of a non-binding decision, so it is not possible to ensure that it will be complied with. In this area, things could change with the Singapore Convention on Mediation, although a certain doubt remains as to whether this Convention applies to investment disputes.



types of dispute resolution – or rather between different types of arbitration. A treaty that provides for several types of arbitration allows the investor to choose the type of arbitration that suits it the most.

Finally, some BITs do not provide access to arbitration. This used to be the case with some old treaties, but not exclusively. Some new treaties too do not provide access to ISDS. Treaties based on the Brazilian investment treaty model ‘replace’ the ISDS mechanism with dispute prevention mechanisms, such as ombudsmen. This mechanism is taken into account under the category ‘institutional mechanisms’. Another example worth mentioning is the USMCA, which provides for investor-state arbitration in the relations between two out of its three parties.

As in the case of BITs, most of the CTIAs (76.1%) provide access both to arbitration under the ICSID Convention and to dispute settlement under other arbitration rules. The investment treaty concluded between the European Union and Singapore (formerly a CTIA but which has since been amended to become a standalone ‘investment protection agreement’, IPA) provides access to a new mechanism for the settlement of investment disputes, an international investment court. Such a mechanism could become important in the future. Finally, seven CTIAs do not provide for any dispute settlement mechanism at the international level.

As with BITs and CTIAs, the majority of OIAs also provide access to both arbitration under the ICSID Convention and other types of arbitration. This is the case for 19 out of the 31 OIAs (61.3%). Five agreements provide access to a type of arbitration other than arbitration under the ICSID Convention and another five agreements do not provide access to dispute settlement at the international level. Two agreements only give access to arbitration under the ICSID Convention.

Institutional mechanisms

Finally, [Tables 4–6](#) map the presence of institutional mechanisms in IIAs.⁹ Institutional mechanisms are rare in BITs, they are present in only 3.5% of the BITs in our sample. CTIAs are more likely to contain institutional mechanisms, although their number is still limited. Only 20 of the CTIAs (29.8%) in our sample establish an institutional mechanism. These are CTIAs concluded between OECD countries (four treaties) and CTIAs signed between non-OECD countries and a regional integration organisation. OIAs are the only category in our sample where the number of treaties that set in place institutional mechanisms is higher than the number of treaties that do not (18 out of 31 OIAs, or 58%).

In short, this section has offered an overview of the respective content of BITs, CTIAs, and OIAs, but also of other aspects such as their entry into force, on the basis of new research into more than 1000 investment treaties conducted for this article. Although these different types of treaties contain broadly similar provisions, differences do exist (such as with respect to national treatment and institutional mechanisms) and they are worth exploring further in order to understand whether or how they impact FDI flows and whether some are preferable to others. The analysis of their content provides a basis for future research.

⁹The term refers to institutions created by the investment treaty to assist with its implementation, including by promoting and facilitating foreign investment, such as treaty commissions overseeing the functioning of the treaty and the previously mentioned ombudsmen.

3 | THE LITERATURE ON IIA EFFECTS ON FDI

In this section, we provide an overview of theoretical as well as empirical work on the role of IIAs for MNE activity. We devote separate subsections to these two strands of work.

3.1 | Theoretical background

With regard to theoretical work on IIA effects, we distinguish between two older, eclectic schools of thought and a modern approach rooted in general-equilibrium theory.

3.1.1 | The OLI framework of multinational enterprises

Ownership, location and internalisation are the three keywords behind the acronym OLI in the so-called eclectic paradigm, coined by Dunning (1977). The framework, which is closely related to the rationalisation of multinational enterprises (MNEs) in Hymer (1976), states that FDI by a firm – in terms of setting up new affiliates through greenfield investment or integrating existing ones into the firm through merger and acquisition – is valuable under three conditions: (i) there are advantages from owning an entity because it creates a unique access to resources (factors, knowledge and materials) or a market (an existing customer base, knowledge about sales and distribution networks, etc.), (ii) it is beneficial because of its location (customer- or input-market or transport-network accessibility), or (iii) it is beneficial due to integration (reduced communication frictions, alignment of objectives, information asymmetries, etc.).

As the OLI framework is eclectic, it does not specifically address the role of IIAs in attracting FDI. However, one could pinpoint aspects of IIAs – such as their potential cost-reducing effect in case of an expropriation – that would suggest that all three elements in OLI would be positively related to their existence: IIAs might raise ownership advantages, increase the attractiveness of the location of signatory countries for affiliates as well as headquarters, and make an integration of units there through either greenfield investments or mergers and acquisitions.

However, as the OLI framework is an informal construct, exact mechanisms in relation to the direct and indirect effects of IIAs on outcomes related to foreign investments cannot be identified. As said, one might conclude that several provisions in IIAs would make FDIs more attractive, but whether the effects mainly affect extensive affiliate margins (the number of affiliates per parent and host country), or extensive parent margins (the number of foreign parent companies setting up affiliates in host countries), or intensive investment margins (the scope of investments for a given number or parent and affiliate companies) is unclear. Moreover, it is unclear to which extent IIAs lead to a creation of new investments and to which extent they merely divert activities between potential host countries.

3.1.2 | The ‘grand bargain’ hypothesis

Akin to the OLI framework, the ‘grand bargain’ hypothesis, introduced by Salacuse and Sullivan (2005), conjectures that IIAs should stimulate FDI. The three key goals of IIAs are to protect existing FDI, to promote future FDI, and to liberalise markets. A ‘great bargain’ between the interests of the parent country and its foreign investors, on the one hand, and the host



country, on the other hand, can be achieved as long as the resulting benefits from IIAs can be split and all parties involved take some share.

The risk of foreign assets being expropriated is deemed to be higher in less developed countries (LDCs) than in developed ones (DCs). In other words, the expropriation-related costs of investing in LDCs are higher on average than the ones of investing in DCs. The latter view was nourished by expropriations in the 1960s and 1970s as, for example, mentioned in Lipson (1985). Conditional on other factors, the emergence of IIAs could then be seen as a stimulus to foreign investments between signatory countries, particularly from DCs to LDCs.

The mixed evidence on the effects of IIAs on FDI in particular from DCs in LDCs led to doubts about the existence of the 'grand bargain' and the asymmetry in rent sharing between DC investors and LDC hosts (see Jacobs, 2017).

However, if the benefits of IIAs are one-sided and this is foreseen by all signatory parties, contract theory would suggest that IIAs are not signed in this case. In the case that the asymmetry in the rent distribution was not foreseen, the lack of a stimulating effect of IIAs on FDI is puzzling for the following reasons. First, firms (foreign affiliates as well as parent companies) tend to be heterogeneous and in the absence of an IIA we would think that a 'marginal' foreign affiliate exists that just breaks even when accounting for the fixed investment costs (plus probabilistic expropriation costs). Then, an increase in the benefits to existing MNEs in a market should make that marginal affiliate more profitable. With some constraint on the finances within firms, this should increase the rate of return on investments within the firm in that particular location relative to others and, hence, attract relatively more FDI there. The latter is an argument in favour of positive IIA effects at the intensive FDI margin (i.e. among a given set of parent companies and affiliates). Second, eventually, if a pre-IIA marginal foreign affiliate becomes more profitable with an IIA, there might be space for additional foreign-affiliate entrants. The latter is an argument about positive IIA effects at the extensive FDI margin (i.e. on the number of parent companies and affiliates active in a host country). In order for IIA effects to be neutralised, the pro-competitive effects of increased FDI from entering parent and affiliate firms in a host country should be as strong as to reduce effects at the intensive FDI margin to the same extent. The latter would not happen in most economic models of MNEs. Therefore, the neutrality of FDI and multinational activity in response to IIAs remains puzzling from this viewpoint.

Clearly, while negative effects of IIAs on investment may be hard if not impossible to explain, the question remains open whether they have positive economic effects through delivering a reduction of risks and related costs. While empirically, they appear to do so on average, this will not necessarily be the case everywhere. For example, Yackee (2008) provides survey-based evidence that can create doubts as to the effects of IIAs (in particular, of BITs). At least for the United States (which may be able to leverage a degree of political pressure on many host countries, which is beyond reach for most other economies), Yackee's results suggest that BITs are not overly important to investors. And that squares with results, for example, regarding their impact on US investment responses to BITs with Latin American countries (see Gallagher & Birch, 2006). In any case, a consistently positive average effect of IIAs in panel data and time series on the extensive margin of investment found in recent work together with the mixed evidence from survey and cross section data needs to be digested in future work. In particular, an analysis of the heterogeneity of IIA effects depending on signatory-country, firm, and other characteristics may be capable of opening the black box of the heterogeneity in results.

3.1.3 | Models with economies of scale at the headquarters level

New trade theory models of MNEs distinguish between two types of basic forms and combinations thereof. These forms are vertically and horizontally organised MNEs.

In a nutshell, vertical MNEs do different things in parent and host countries (e.g. research and management in the parent country and production in host countries). Hence, they are said to fully unbundle activities that are otherwise carried out under one (plant) roof in single-unit firms and to maximally entertain specialisation gains across the entities within a firm (see Markusen, 2002). Contrary to that, horizontal MNEs produce output in all locations in which they operate (across all affiliates and the parent company). Therefore, horizontal MNEs exploit specialisation gains to a lesser extent than vertical MNEs across the various firm locations (see Markusen, 2002). Recent work distinguishes between horizontal and vertical MNE activity in two alternative ways: by considering the identical (for horizontal MNEs) versus differential (for vertical MNEs) sector affiliations of the parent firm and the various affiliate firms (see Alfaro & Charlton, 2009); measuring input flows directly between the entities within an MNE (see Liu, 2021).

The distribution of the costs associated with typical headquarters activities and typical production activities are key to understanding which countries will most likely attract headquarters and which ones will host affiliates of vertical MNEs. The distribution of costs is less important for horizontal MNEs, because they will enter markets with foreign affiliates, mainly if these markets are large enough. However, what matters for any type of MNE are the fixed foreign-affiliate set-up costs. The higher those are, the less likely firms are to want and afford to set up foreign affiliates in a market (see Bergstrand & Egger, 2007; Carr et al., 2001).

Set-up costs of MNEs in general and specifically of foreign affiliates involve knowledge capital and physical capital even in the absence of any political, institutional, and risk-related barriers. Beyond those, a number of policies affect the regulation and promotion of FDI. And this is, where IIAs belong as policy instruments which affect foreign investment through their impact on the fixed affiliate costs. Investment liberalisation stimulates the activity of MNEs relative to that of (trading or only locally active) non-MNE companies. Markusen (2002) provides a first analysis regarding the effects of investment liberalisation not only on MNE activity as such but also on vertical versus horizontal MNEs. Sachs and Sauvant (2009) highlight two domains through which IIAs matter specifically in this context:

Regulatory framework

Policies that are favourable to foreign investors (good governance, economic, political and social stability, stable exchange rates, tariffs and non-tariff barriers). IIAs form part of a host state's regulatory framework. They incorporate provisions, for example, on market access, investment protection and ISDS. In turn, the protection of investment (tangible and intangible assets), especially when backed up with ISDS, can have an indirect impact on the host country's regulatory framework by encouraging respect for the rule of law through compliance with an IIA.

Investment promotion

Policies which either promote or facilitate investment directly. Investment facilitation can take place, among others, through local laws, investment promotion agencies (IPAs) and ombudsmen. Specifically, investment promotion and facilitation involves, among others, the granting of investment incentives, special economic zones, concession certificates, and investor guides on doing business in the host country (Sachs & Sauvant, 2009; UNCTAD, 2017, 2018). But

investment promotion also includes preventing and settling disputes between investors and the host state before they reach claim status, such as through the establishment of an investment ombudsman (Titi, 2016; UNCTAD, 2010). To differing extents, IIAs provide for investment promotion and facilitation. UNCTAD has consistently encouraged the inclusion of investment facilitation provisions in IIAs and more broadly investment/business facilitation in host countries (UNCTAD, 2008, 2014, 2016).

In this spirit, some earlier work assessed the role of IIAs in general-equilibrium models. One key feature of these models was that firms could choose between being an exporter or an MNE, between being a vertical and a horizontal MNE, and about where to locate the headquarters of the foreign affiliates. Moreover, they could choose between the quantity of output and the size of their operations. Overall, this provides for a detailed map of the mechanisms behind and the directions and magnitudes of IIA effects on various outcomes related to MNE activity. Such outcomes are the number of headquarters and affiliates present in a market, the value of assets across host markets, and the foreign affiliate sales and repatriated profits across markets, even by category of MNEs.

Egger et al. (2007a, 2007b) provided the first study in this domain, and they particularly focused on effects related to bilateral and multilateral investment liberalisation. Bilateral investment liberalisation may be associated with what we call IIAs, here, and it includes BITs, IIAs that come in the form of investment chapters in trade agreements, including treaties such as the China-EU comprehensive agreement on investment (see Egger, 2021). Multilateral investment agreements include treaties such as the once-envisaged multilateral agreement on investment (MAI).

What the studies by Egger et al. (2007a, 2007b) suggest is the following. First, IIAs have positive effects *ceteris paribus* on FDI in otherwise attractive host countries and raise the number of foreign affiliates as well as foreign headquarters that are active there. Second, bilateral liberalisation attempts induce diversion effects (in a beggar-thy-neighbour sense), as investments are attracted to one location and taken away from another in the absence of such preferential investment liberalisations. Multilateral agreements do not have such first-order diversion effects. Third, IIAs induce stronger positive effects on DC parent countries' MNE activity in LDC host countries, if they are coupled with trade agreements. For MNE activity among DCs the opposite is true.¹⁰

However, whether IIAs are adopted or not is following mere economic calculus in that work. More specifically, whether countries implement IIAs or trade agreements is assumed to depend on whether consumer rents are maximised or not. However, one could debate whether the signing of IIAs follows this rationale or adheres to some rent-seeking on the part of policy makers or interest groups (see Cotula, 2021; Poulsen, 2015). However, the empirical analysis in Bergstrand and Egger (2013), which is focused on bilateral investment liberalisation through IIAs, provides quite strong empirical support for the consumer-welfare-maximising rationale behind the signing and ratification of IIAs: such agreements tend to be found most likely among countries where a utilitarian planner would also have implemented them.

¹⁰Collie (2011) proposes an oligopoly model and finds that multilateral trade liberalisation may lead firms to switch from exporting to undertaking export-platform FDI when the interregional transport costs are high. In that case, the switch to FDI may lead to an increase in the volume of trade.

3.2 | Empirical evidence

Empirical models of effects of IIAs on MNE activity or FDI are typically based either on cross-section data or on panel data. Using i to index a cross-sectional unit (commonly a country or a country pair) and t to index time (commonly years). Customary empirical models then are of the form

$$\text{MNE}_{i(t)} = \text{IIA}_{i(t)}\alpha + \text{Controls}_{i(t)}\beta + u_{i(t)},$$

where $\text{MNE}_{i(t)}$ is a measure of MNE activity in i (and t), $\text{IIA}_{i(t)}$ is either a scalar or a row vector of IIA measures, $\text{Controls}_{i(t)}$ is a row vector of control variables, $u_{i(t)}$ is a residual term that may include variance components of fixed effects, and α and β are conformable unknown parameter vectors.

In most of the empirical studies, $\text{MNE}_{i(t)}$ measures the log of FDI flows or stocks in i . These are either flows or stocks from the rest of the world when i is a host country or ones between a home and a host country when i is a country pair. If $\text{MNE}_{i(t)}$ is the log of FDI from the home country in i to the host country in i and $\text{IIA}_{i(t)}$ is a binary indicator, which is unity whenever the pair in i signed or ratified an IIA and zero otherwise, then α measures the semi-elasticity of IIA signature or ratification.

In what follows, we survey most of the empirical work on the subject, differentiating between some broader classes of studies that appear important to separate. In a first subsection, we focus on the large body of research which treated IIA membership with a binary indicator variable and focused on FDI as outcome. In a second subsection, we summarise work which considered the heterogeneity of effects of IIAs depending on their simultaneous occurrence with other liberalisation policies, as well as work which considered IIA effects on non-FDI outcomes. The latter is inspired by the idea that MNEs do not exist for the purpose of investing abroad but for generating profits from such investments. And such profits may accrue to local sales or trade. Hence, we would expect IIA effects to interact with ones that stem from trade-agreement membership or from tax agreements which themselves have important consequences for the profitability of FDI. Moreover, since MNEs sell output in the host country and eventually elsewhere through trade, other MNE outcomes than just FDI are foreign affiliate sales (see Carr et al., 2001), exports of goods and services, numbers of foreign affiliates controlled by parent companies in a host country, the number of mergers, etc. Finally, we summarise work which opened the black box of IIAs, distinguished IIAs by content according to the treaty text, and considered heterogeneous effects on MNE outcomes depending on IIA type.

3.2.1 | Binary IIA effects on FDI

Chaisse and Bellak (2011) conducted a meta-study-type analysis based on 795 semi-elasticities reflecting percentage changes of FDI flows or stocks in response to BIT membership (i.e., one specific but large group of IIAs), which they collected from 34 earlier studies. Of those 795 numbers, only 511 were positive while 284 were negative (and they did not use those).

Of the 511 positive semi-elasticities, only 388 were statistically significant. The majority of the latter were obtained by regressing FDI stocks or flows on a binary BIT indicator. The latter involves country-pair data on FDI stocks or flows as a dependent variable. The rest of the studies used unilateral FDI stocks or flows, and then some cumulative (count) measure of BITs was used as a regressor (see, e.g. Büthe & Milner, 2009; Chen et al., 2017; Frenkel & Walter, 2019, do so for

a time series of Chinese inward and outward FDI alone). It appears that BIT (and other IIA) effects are easier to identify (due to a reduced aggregation bias) when using country-pair data than when using unilateral FDI data.¹¹

Guerin (2011) uses panel data of 14 OECD countries as reporters (parents), 25 middle-income emerging market economies as partners (hosts) and annual variation over the period 1992–2004. This dataset covers over 90% of EU's FDI outflows, and IIAs are included through a binary BIT indicator. The coefficient on the latter enters the empirical models with a positive sign and has statistically significant fixed effects, random effects, and pooled ordinary least-squares models.

Hartmann and Spruk (2020) focus on the random timing of 44 unilateral BIT terminations on the part of India in the quarter years between 2013 and 2019. Note that their study differs from others with the focus on terminations and the use of quarterly rather than annual data on bilateral FDI in India from 138 parent countries. The merit of the study lies in seeking quasi-randomisation from the exact timing of treaty terminations. Using a difference-in-difference estimation strategy, they identify sizable reductions in the range of 14%–28% in response to the terminations.

Egger and Merlo (2007), Berger et al. (2011) or Frenkel and Walter (2019) use dynamic models to consider adjustment costs in the determination of IIAs on FDI. Overall, the results tend to be qualitatively similar to the ones of fixed effects estimators. However, there is a concern that small-sample and weak-instrument problems affect the precision of associated estimates. The latter problem is clearly not specific to the analysis of (IIA and other) treatment effects on (FDI) outcome.

Some of the earlier work distinguished between the signature and ratification of IIAs (see, e.g. Desbordes, 2016; Egger & Pfaffermayr, 2004). Overall, there is some tendency for the effects to be more consistently positive for the ratification than for the signature of IIAs, but there is also some evidence of anticipation effects on FDI prior to ratification (see Egger & Pfaffermayr, 2004).

3.2.2 | IIA effects on outcomes other than FDI and interactive effects of IIAs with other agreements

A key concern with measuring MNE activity in terms of FDI is that the value of assets alone – in particular, when measured by the book value of an investment – may be misrepresentative of the relative importance of MNE activity in terms of sales, value added, employment, and other fundamental economic aggregates. In particular, this is the case as the association of FDI with those other outcome variables may vary across countries as well as across sectors. In this respect, Davies and Markusen (2021) document that the geographical distribution of activity of MNEs measured in terms of different outcomes differs vastly across countries and across sectors.

¹¹Note that many studies use the log of bilateral FDI with a binary IIA indicator to estimate the semi-elasticity of interest. Note also that, when using the log of unilateral FDI in a host country and a count of BIT memberships, the functional form of the implicit relationship for country pairs must be different, because log bilateral FDI does not aggregate up to log unilateral FDI under preservation of the functional form of the right-hand side of the empirical model.

One concern with the identification of IIA effects on MNE activity is that they are not implemented in isolation but in a wider policy context. Whenever IIAs exist in parallel with other agreements, such as trade agreements (Baltagi et al., 2008), tax treaties (Blonigen & Davies, 2004), or monetary unions (Schiavo, 2007), and/or with different national policies, such as tax reforms or investment promotion, the question is raised how much of an impact can be attributed to them. As such other policies typically vary in the same dimensions as IIAs, their impact on MNE outcomes cannot be controlled for by using fixed effects in estimation. This section reviews work addressing these specific concerns.

Non-FDI outcomes

Egger and Merlo (2012) use census data on the outward activity of Germany's MNEs from Deutsche Bundesbank. They consider investments of German MNEs across 86 unique host countries over the period of 1996–2005 using fixed-effects panel regressions. Moreover, the focus on outcome variables such as the number of parents, the number of affiliates per parent, the number of employees per parent, and other outcomes, such as FDI, assets, turnover, and the number of sectors covered per parent, host country and year. They find that the parent and affiliate extensive margins per host country increase in response to signing an IIA, and there is an additional incremental effect upon ratification. The FDI and assets held per firm increase only after ratification, and turnover does not appear to respond at all. These results suggest that they are important effects at the extensive parent and affiliate margin which are hidden in aggregate FDI statistics.

Egger and Wamser (2013) consider trade agreements, IIAs, and double-taxation treaties alone and in combination with each other in determining FDI stocks but also bilateral trade flows in goods and services in a very large panel dataset of country pairs and time periods. Specifically, they consider the simultaneous endogeneity of these types of agreement when estimating their treatment effects on economic outcomes using endogenous-multivariate-treatment fixed-effects models. The results support the view of a broad 'cross-issue' importance of those agreements for economic outcomes. Egger and Wamser argue that MNEs do not invest for investment's sake but they sell output in the host country and elsewhere. Knowing that MNEs account for a large share of assets, sales, trade, employment, etc., they hypothesise that everything promoting or facilitating MNE activity should stimulate MNE-related outcomes indirectly. In line with this conjecture, they find that IIAs and also double-taxation treaties – either of them directly targeting MNE activity – induce quantitatively important effects not only on FDI but also on trade flows in goods and services. On average, these effects are even bigger than those of some trade agreements (most of which tend to be low).

Bhagwat et al. (2021) use merger and acquisition data from SDC's World Merger and Acquisitions database for all country pairs available in the database over the years 1980–2014. Specifically, they consider effects on the probability of any merger and acquisition at a point in time from a parent country in a host country. Controlling for country-pair fixed effects, they identify sizable positive (percentage-point) effects on this extensive margin of foreign investment. Note that, in contrast to work using FDI as the dependent variable, which is typically measured as some historical book value that is updated depending on the parent country's statistical practices, this measure is about real investment choices. As most work uses some log-transformed measure of FDI, it cannot address effects of IIAs on first investments for country pairs where there was none prior to the IIA. Hence, the mentioned result of Bhagwat et al. (2021) is outside of the scope of most earlier works on IIA effects on foreign investment. They also find that the number of deals



increases with a similar sensitivity (semi-elasticity) as the aforementioned margin does, and the value of deals increases somewhat less elastically. All these results are statistically significant.

Interactive effects with other agreements

Two questions emerge with regard to IIAs as one element in the set of preferential international economic integration instruments (which in a broad sense include goods-trade and services-trade agreements, IIAs, double-taxation treaties, but even currency unions). First, are IIAs introduced in full independence of other integration agreements or is there some interdependency? Second, do IIAs interact with other preferential international economic integration agreements in affecting economic outcomes?

Essentially, the first question is one about the endogeneity of IIAs and their conclusion with potential interdependence with other types of international agreements. Tobin and Busch (2010) provided an analysis suggesting that there were systematic determinants of IIAs (in their case, BITs). Moreover, they showed that BITs were more likely concluded among countries that already were members of a trade agreement. Egger and Wamser (2013) considered an interdependence of IIAs, trade agreements, double-taxation treaties, and even currency unions, and they showed that there were interdependencies between them conditional and unconditional on observables that explained their occurrence quite well in multivariate fixed-country-pair-effects probability models.

The second question is about outcome effects of IIAs and it raises two subquestions, namely whether and how IIAs interact with other types of agreements to affect foreign investment, and to which extent IIAs (in possible interaction with other types of agreements) have an impact on other international economic outcomes, such as trade flows. In this regard, Egger and Wamser (2013) find that in stimulating FDI, IIAs interact in interesting ways with other types of agreements such as trade agreements and double-taxation treaties. Their empirical results suggest that IIAs can eventually only unfold their full investment-stimulating effect when they are combined with trade and tax agreements. However, they also find that IIAs (BITs and trade agreements with investment chapters) induce significant causal effects on bilateral trade flows in goods and services. In fact, BITs have generally larger effects on trade flows in goods than the average trade agreement does (and the same is true for double-taxation treaties). The latter has been reconfirmed by Heid and Vozzo (2020).

3.2.3 | Heterogeneous IIA effects depending on treaty content

As systematic, machine-learning-assisted analysis of legal texts is a recent innovation, interdisciplinary work at the interface of legal studies and economics on IIAs has only become recently available as well. As a consequence, a relatively small body of work hitherto entertained the variation in the content between treaties to identify effects of different aspects in MNE activity. Relative to what we presented in terms of treaty content at the outset, most of the earlier work on specific aspects measures content relatively crudely in terms of the presence of specific chapters in IIAs.

Berger et al. (2011) use systems GMM and panel data on bilateral outward FDI flows. They find that BITs increase FDI in the full sample on average. This is especially the case of BITs that include ISDS clauses.

Chaisse and Bellak (2011, 2015) develop what they call the BITSel index of IIAs. They distinguish between 11 categories of provisions that are defined in Table 2 in Chaisse and Bellak (2011): Definition of investment; Admission versus establishment; National treatment; Most favoured nation treatment; Expropriation and indirect expropriation; Fair and equitable treatment; Non-economic standards;

Transfer of investment-related funds out of the host state; ISDS; Umbrella clause; Temporal scope of application. In light of the scope of provisions, they define several BITSel indicators: the BITSel Liberalisation Quality Indicator; the BITSel Anti-discrimination Quality Indicator; the BITSel Breadth Quality Indicator; the BITSel Regulatory Constraint Quality Indicator; the BITSel ISDS Quality Indicator; and the BITSel Average Quality Indicator. Each one of those indicators is bounded and takes on a real-number value between 1 (low quality) and two (high quality).¹²

Both Nguyen et al. (2014) and Desbordes (2016) employ versions of Chaisse and Bellak's BITSel index in studying foreign investments. Nguyen et al. (2014) analyse the impact of BITs in (log) FDI inflows over time from various source countries and into Vietnam using random effects estimators. Upon analysing the treaty text of 57 BITs of Vietnam, they find a statistically significant and positive impact of the BITSel index on FDI inflows. Hence, their findings suggest that BITs that mark deeper liberalisation steps induce larger effects on FDI. Desbordes (2016) employs data on the number of greenfield investment deals from the Financial Times' fDi Markets database and the number of merger and acquisition deals from Bureau van Dijk's Zephyr database. He uses cumulative deal numbers over the period 2004–2010 and defines BIT indicators which are unity, if a BIT was present, or specific BIT provisions were active for at least 2 years during the observation period. In an alternative set of regressions, he analyses effects of BIT and non-BIT (other-IIA) indicators on greenfield and brownfield investment deals in a similar way. One advantage of this approach is that deal numbers have a clear extensive margin interpretation and they do not have to be analysed in conjunction with volume and pricing effects, which is the case when using aggregate FDI statistics, as is common. Another advantage is the distinction between greenfield and brownfield investment deals. Clearly, a disadvantage is that the accumulation of deals over time requires the use of cross-section as opposed to panel methods. Moreover, the same aggregation in conjunction with the imprecision in the measurement of the year of inception of a BIT implies that time-aggregation biases may affect the results. The results support positive and significant effects of BITs on the number of deals, especially, if the BITs have a large liberalisation scope (measured by Chaisse and Bellak's aggregate BITSel indicator). Moreover, Desbordes (2016) distinguishes between five classes of BIT provisions (pertaining to entry, treatment, scope, protection, and ISDS) that have a positive and statistically significant impact on FDI deals, with the provisions on entry and ISDS having the largest effects. When controlling for all types of provisions simultaneously, only ISDS provisions matter in a statistically significant way. This finding is reminiscent of the conclusions in Berger et al. (2011). Overall, the effects appear to be similar for greenfield and brownfield deals and for manufacturing versus services versus resource sectors. Some of the results in Desbordes (2016) suggest that non-BIT IIAs (i.e. investment provisions that are combined with trade liberalisation) may have larger effects on the number of FDI deals than simple BITs do.

Sirr et al. (2017) allow for effects on vertical and horizontal FDI to be different. They focus on the horizontal and vertical FDI by US MNEs abroad using data from the Bureau of Economic Analysis for investments in 28 developing and transition countries over the period 1999–2008. Using (random effects) generalised-least-squares models on country-year data, they find that BITs increase both vertical and horizontal FDI but their impact on the former is stronger than on the latter. Interestingly, their findings suggest that a greater expropriation risk in the host

¹²Like Chaisse and Bellak (2015), Alschner and Skougarevskiy (2016) analyse the textual similarity between investment treaties. In particular, this serves to determine differences in model treaties and the variation in legal treaty content.

country, a higher index for law and order in the host country, but a lower government stability all tend to reduce the positive impact of a BIT on vertical relative to horizontal FDI.

Falvey and Foster-McGregor (2018) focus on North–South bilateral FDI to analyse the effect of BITs using a country-pair-year difference-in-difference estimation strategy. They found an overall sizable and positive impact of BITs on FDI from DCs to LDCs. However, that effect appeared to be entirely driven by changes at the extensive country margin. Hence, the stimulus on FDI mainly materialised among DC-LDC country pairs without any FDI prior to a BIT. They interpreted these results as being consistent with the view that BITs had an impact primarily where an insufficient degree of protection was offered prior to the implementation of the BIT.

Also Jacobs and Ostergard (2019) emphasise that BITs are vastly different in terms of their content. While all of them address similar investment issues, they vary in their approach to them. Treating them as being the same (e.g. with a single-binary-indicator approach) induces measurement error and may lead to biased estimates and conclusions. They stress that BITs vary to a large degree across countries with respect to the exceptions, the transfers, and the treatment specified in them. The time variation is much smaller but not zero either. They give the following examples with regard to the categories they call Exceptions, Transfers, Treatment, and Broad treatment. For example, BITs of the United States contain strong protections for Transfers, Treatment and Broad Treatment, but weak ones for Exceptions. BITs of Norway are strong on Exceptions and Transfers but weaker on Treatment and Broad Treatment. And BITs of France are strong on Exceptions and Broad Treatment, weak on Treatment, and average on Transfers. They acknowledge that understanding the drivers of and exact reason behind stronger versus weaker protections by country is not well understood and would be interesting to study. To the best of our knowledge, their categorisation of BITs was not used so far to study effects on FDI.

Frenkel and Walter (2019) distil eight dispute settlement indicators based on 15 coded provisions on international dispute settlement either with a value of 0 (low provision strength) or 1 (high provision strength). They sum those up to obtain a BIT index score for each BIT which takes on integer values between 0 and 8. Based on the latter, they construct what they call a “BIT-index average.” The latter takes a higher index value for ‘higher-quality’ BITs (ones with better dispute settlement provisions). Note that when using both the number of BITs as well as the BIT index average for those BITs in regressions, the total impact of BITs consists of the (parameter-weighted) sum of the two metrics. As explanatory variables, they use hyperbolic-sine-transformed unilateral inward flows or stocks of FDI of 186 host countries over the period 1970–2016 for FDI inflows (1981–2016 for FDI inward stocks).¹³ As they use unilateral FDI data, they have to aggregate all originally bilateral data, in particular, the mentioned eight dispute settlement variables. In a complementary analysis, they use bilateral FDI flows and stocks of 180 host countries and 6013 country-pairs for the years 2001–12. In the unilateral analysis, they use both the aggregate number of BITs by host country and year and the average score value of the combined dispute settlement BIT index as explanatory variables.¹⁴ They find particularly significant positive effects on (transformed) inward FDI flows and stocks in developing countries. Effects on developed countries are somewhat smaller. This result, and

¹³The hyperbolic-sine transformation was also employed by Pence (2006) and Aisbett et al. (2018) because of one advantage over the log-transformation: it does not lead to a loss of zero-FDI or negative-FDI observations. Note that FDI flows can be negative in a year if net divestments were negative.

¹⁴As mentioned above, one would not arrive at such an aggregation when aggregating bilateral hyperbolic-sine-transformed FDI data and bilateral BIT information, as, akin to the log transformation, the hyperbolic-sine transformation is a nonlinear operation.

average for a relatively large cross section of countries, is interesting to the extent that, for example, Gallagher and Birch (2006) had not found any significant effects of BITs on outward investments of the United States to Latin American countries. In the country-pair analysis, Frenkel and Walter (2019) use either the binary BIT indicator or the BIT index score, and they confirm the findings that (1) what they described as 'higher quality' BITs are better for inward FDI and (2) the effects are larger and statistically more significant for less developed countries than for developed countries.

Hartmann and Spruk (2020)¹⁵ found that the detrimental effects of BIT terminations on quarterly inward FDI to India emerged in particular on FDI from parent countries, where the quality of the legal institutions was different from those of India.

Uttama (2021) employs data on IIA content from UNCTAD's (2020) Investment Policy Hub to pay attention to the heterogeneity of IIAs. Specifically, the author uses binary indicators identifying whether there is a BIT or a non-BIT IIA and cumulative numbers of the provisions in a BIT of any kind or a non-BIT IIA of any kind. Moreover, the cumulative number of provisions of three kinds are distinguished with regard to BITs: provisions on investment protection, provisions on investment promotion, and provisions on investment facilitation. Uttama focuses on annual data on bilateral FDI (stocks and flows) between all 16 countries out of which 10 are ASEAN members and the remaining six are other Regional Comprehensive Economic Partnership (RCEP) countries and territories during the period of 2009–2018. Including simultaneously the aforementioned indicators leads to some collinearity, but the variables with the largest positive parameters are the counts of investment promotion, followed by the investment facilitation measure. Overall, IIAs tend to have investment-creating effects within ASEAN, inward-investment-creating effects from outside of ASEAN, and outward-direct investment diverting effects to non-ASEAN economies.

Li et al. (2021) use data from Bureau van Dijk's Zephyr database to study the merger and acquisition choices of Chinese firms in 86 host countries over the period 2005–2017 as a function of BITs. They estimate significant positive effects of BITs on Chinese mergers and acquisitions abroad which is particularly coming from foreign investments by non-state-owned enterprises.

3.3 | Empirical problems

An analysis of the effects of IIAs on MNE activity struggles with challenges that have to do both with the measurement of MNE outcomes and with IIAs themselves. This subsection addresses a smorgasboard of these issues. The most important problems are posed by MNE-outcome measurements, by missing data on outcomes as well as on IIAs and their content, and by the endogeneity of IIAs and their content.

3.3.1 | Foreign-investment-outcome measurement

One major challenge with foreign investment data is their scarcity. In principle, we do have a complete list of IIAs, which covers more than a century in terms of signature and ratification and the parties involved. We have relatively-high-quality trade data for more than half of a century

¹⁵Data and other results were already mentioned in subsection 3.2.1.

and many countries and country pairs. However, in spite of the widely acknowledged importance of MNEs, relatively long (covering many years) and wide (covering many country pairs) panel data on MNE activity are not easily available. However, the latter would be important to have, because IIAs have become more similar in content to each other over time, and their content varied to a much larger content several decades ago.

Until recently, UNCTAD had published and made available panel data on bilateral FDI (stocks and flows) covering many country pairs starting from the early 1970s. However, this data service is not continued anymore. Now, the IMF and the OECD provide such data, but for a much shorter and more recent time period. Except for the OECD and some financial databases focusing on mergers and acquisitions, no international institution provides activity data (e.g. numbers of affiliates or companies) which would enable an analysis of real activity over longer time spans. The latter is an issue, because the delineation of financial from real transactions is not possible and transparent on the basis of aggregate country-pair data on FDI. Moreover, the reporting standards on FDI have changed considerably over time. For example, even in the early 2000s the OECD's Foreign Direct Investment Statistics Yearbooks informed about very heterogeneous threshold values for FDI to be recorded by national central banks around the globe. Standards have been converging, but, for example, Germany's reporting threshold is still different from that of other EU member states. The cleanest possible identification of effects and measurement of a broad range of MNE outcomes is probably guaranteed when using data from just one home country (see, e.g. Egger & Merlo, 2012, for firm-level census data from Germany).

In any case, an inspection of earlier results indicates that whenever aggregate FDI flows or stocks had been used as outcome measures, the effects of IIAs showed up less consistently positive than when numbers of takeovers, MNE deals, number of parent companies, etc., had been used. This may be evidence of some measurement problem when using aggregate FDI statistics that are not only affected by heterogeneous reporting standards but also by heterogeneous standards in updating asset values and in differentiating between real (e.g. numbers of investments) versus nominal (values of investments) margins but also extensive versus intensive margins (changes of pre-existing versus new investments through entry and exit).

3.3.2 | Missing outcome and IIA data

Another issue is that MNE data and, to a much lesser extent, IIA data are missing. Missing MNE data are not to be viewed as evidence of zero foreign investments at the country-pair level, even less so than in the case of trade. The reasons for missing values are the aforementioned reporting thresholds but also data-confidentiality regulations. For example, the latter entail that even aggregate FDI in a host country will only be reported if the number of foreign investors exceeds a certain number, irrespective of the investment value. In addition, this number varies across data providers (mostly central banks). Therefore, the risk that host-country FDI data are missing varies across home countries for two reasons: heterogeneous threshold-level investments and heterogeneous data-confidentiality regulations. Overall, bilateral FDI data contain numerous missing values and (false) zeros, especially where having data would be important, namely for DC FDI in LDCs and in emerging markets. This is where many new IIAs have been concluded in recent years.

But even the data on IIAs are incomplete. A few BITs cannot be found anymore. And some IIAs are written in languages for which text analysis – as conducted by human efforts in mapping

IAs at UNCTAD or digitally by the Trade Institute at the University of Bern in Switzerland – had not been done or developed. As a consequence, the legal, political scientific, and economic analysis of treaty content is largely focused on those IAs that are available in widely-spoken languages.

3.3.3 | IIA endogeneity

One concern with IAs is that they are not concluded at random. A few studies do treat them as endogenous in the sense of them being systematically influenced by other, fundamental economic and political factors. Tobin and Busch (2010) present a study, which focuses on political economy determinants of IAs, whereas Bergstrand and Egger (2013) and Egger and Wamser (2013) focus, respectively, on the economic determinants behind IAs alone and behind IAs and other types of agreements.

In determining FDI (and other MNE-related outcomes), a minority of studies considers IIA membership as an endogenous determinant. In this regard, one might consider that perhaps the stronger source of endogeneity (or simultaneity) of IAs as a determinant of FDI is the country or country-pair variation in the data. The study of Bergstrand and Egger (2013) illustrates that a large part of the cross-sectional variation in binary IIA membership is explained by more or less the same set of determinants that also explain FDI (and other MNE-related outcomes). However, the consideration of panel data and country or country-pair fixed effects offers an opportunity to condition on all time-invariant joint drivers of both IIA membership and foreign investment (see Aisbett, 2009; Egger & Pfaffermayr, 2004; Egger & Wamser, 2013). What is comforting in this regard is that analyses that focus on host countries, where IAs were signed prior to there being any foreign investment (from a given parent country) tend to find positive first investment effects (see, e.g. Bhagwat et al., 2021). Studies that condition on the initial level of parent and affiliate companies present in a market tend to find that a new IIA increases the number of parent and affiliate companies after its inception (see Egger & Merlo, 2012) and reduces it after its abandonment (see Hartmann & Spruk, 2020).

However, studies that do consider the endogeneity of IAs even in the time-series dimension of the data tend to find that doing so matters quantitatively (see Bhagwat et al., 2021; Desbordes, 2016; Egger & Pfaffermayr, 2004; Egger & Wamser, 2013).

What will be challenging in the future is the consideration of endogenous individual provisions in IAs, as finding identifying (and exclusive) instruments for specific regulations related to treatment, expropriation, exceptions, or ISDS, to name a few, may be challenging but necessary, particularly with cross-sectional data and analyses.

4 | CONCLUSION

IAs are one of the most significant policy instruments to target FDI at the country-pair level. This literature survey attests to a large degree of heterogeneity regarding the empirical results on the impact of IAs on FDI in earlier work. Such heterogeneity raises significant challenges with respect to data, specification, and methodology.

Many if not most scholars conclude that IAs impact FDI flows. However, some studies rely on signed IAs – irrespective of whether they entered into force or not – while others rely on IAs in force only. We would expect the corresponding effects to differ, so long as anticipation effects

are weaker than the effects of IIAs in force. Moreover, the heterogeneity of investment protection standards within IIAs is quite stark. This leads to the conclusion that not all IIAs should necessarily have the same effects. Some studies show that the content of IIAs matters: notably, the presence of certain substantive and procedural protections impacts FDI flows. The results of these empirical studies are broadly concordant with the assumption that guarantees of investment protection matters to foreign investors. For example, granting national treatment at the pre-establishment stage opens the market to investors who otherwise may have been unable to establish their business in the host state. Or, 'good conduct' obligations, such as the expropriation standard or fair and equitable treatment, that IIAs impose on host states and the consequent political risk reduction create an improved investment climate. Access to ISDS emboldens investors in their ventures abroad, making them confident that IIAs grant them enforceable legal rights.

How IIAs impact FDI flows has to be evaluated within the broader investment framework. The literature has identified key factors beyond the IIAs themselves, notably the sector and industry of the FDI, the investor's home country, governance and institutions in the host country, and the life-cycle of the IIA (its impact is at its highest when it enters into force and it subsides with time). However, studies differ in terms of how they take these factors into account and indeed in terms of the metrics they use.

Finally, for the econometrician, the empirical analysis of data on FDI and its determinants, such as IIAs, is particularly interesting. Such data are available for many countries over time, and economic theory establishing robust foundations for model specification is well-established and still thriving. The high dimensionality of the data on both FDI and IIAs – which are at least double-indexed (across country pairs) or triple-indexed (across country pairs over time), in addition to the fact that FDI and IIAs come in different shapes and forms – permits a rich treatment of fixed effects, dynamics, cross-sectional interdependence, and other issues, and eventually calls for putting in place novel methods that have not yet been developed. This will allow, for example, to better control for omitted variable biases. In any case, paying more attention to the inherent heterogeneity of FDIs as well as IIAs in future work appears desirable and can provide a host of novel insights, enriching the debate on IIA effects on FDI.

In particular, what seems relevant for future research is to focus on the real economic effects of IIAs. Most of the earlier work studied IIA effects on FDI only. However, to the extent that FDI replaces domestic investments in host countries or that FDI from countries with IIAs replaces FDI from other economies, why should we care? Ultimately, what is relevant are effects on direct investment net of crowding, and effects on the sales, trade, employment, and productivity of firms. There is a dearth of evidence regarding the latter which we should aspire to fill as more and better data become available.

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DATA AVAILABILITY STATEMENT

We will make all data available upon acceptance of the article. We do not use any proprietary data.

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