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The International Trade Effects of Bilateral Investment Treaties*

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Abstract

We study the international trade effects of bilateral investment treaties (BITs) and compare them to those of regional trade agreements (RTAs). We find that a BIT increases bilateral international trade flows by similar amounts as an RTA if the RTA contains an investment chapter. BITs have larger international trade effects than RTAs without an investment chapter. Results are robust to controlling for the effects of unilateral investment laws. They imply that evaluations of trade and investment agreements should also consider investment regulation.

JEL-Classification: F13, F14, F15, F23, F53, K33

Keywords: Bilateral investment treaties, regional trade agreements, international trade, structural gravity.

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1 Introduction

International trade is increasingly driven by multinational firms which operate along global value chains. The concomitant increase in intermediate goods trade, intra-firm trade, and foreign direct investment renders trade more susceptible to investment regulation. The WTO’s focus on “shallow integration” via market access cannot adequately address these new realities, see Antràs and Staiger (2012). Policy makers have reacted by engaging in “deep integration”, i.e., trade and investment liberalization outside the WTO, using three policy instruments: Deep RTAs, i.e., RTAs with investment chapters, bilateral investment treaties (BITs), and unilateral policy reform, see Baldwin (2011).¹ While the international trade effects of RTAs are well studied, we know little about the effects of BITs. The literature has focussed on RTAs or BITs in isolation, and abstracted from unilateral investment policies, see, e.g., Swenson (2008).² We estimate the international trade effects of these three instruments within a structural gravity framework.

Trade and investment are linked: Exporters may require investment in the export market to create a distribution network, see Arkolakis (2010). Offshoring models like Grossman and Rossi-Hansberg (2008) imply that a reduction in the cost of operating a plant abroad brought about by a BIT leads to an increase in trade flows, hence BITs can reduce effective trade costs. If investment is not seen as secure due to political risks of expropriation or uncertainty about legal protections, firms may not invest, leading to less trade. BITs may alleviate these issues. BITs can also alleviate hold-up problems between buyers and sellers of specialized intermediate inputs, increasing bilateral trade volumes, see Ornelas et al. (2018).³

We find that BITs significantly increase aggregate international trade flows, similar to RTAs which contain an investment chapter, but more than RTAs without them. Our results stress the importance of investment regulation for international trade.

¹For an early discussion of deep integration, see Lawrence (1996).

²Boffa et al. (2019) study the effects of BITs on value added trade. We study the effect of BITs on goods shipments. Value added trade flows report value added of an exporting country in the final consumption destination, but not the intermediate goods shipments along a multi-country value chain. We therefore use gross-value trade which contains all shipments between all countries.

³The effects of BITs on pure exporting firms are less clear. Aggregate trade flows, however, are largely driven by intra-firm trade of large, multinational firms, see, e.g., Antràs and Yeaple (2014).

2 Empirical Strategy and Data

We use Poisson Pseudo Maximum Likelihood to estimate a state-of-the-art⁴ structural gravity specification:

$$X_{ijt} = \exp(\eta_{it} + v_{jt} + \beta_1 RTA_{ijt} + \beta_2 BIT_{ijt} + \xi_{ij} + \epsilon_{ijt}) \quad (1)$$

X_{ijt} denotes aggregate merchandise trade flows from country i to country j in year t , including international and domestic trade from the EORA26 database by Lenzen et al. (2012, 2013) for 172 countries from 1990 to 2015. η_{it} and v_{jt} are exporter \times year and importer \times year fixed effects which control for multilateral resistance terms and ξ_{ij} is a directional bilateral fixed effect to control for the endogeneity of trade and investment policy. RTA_{ijt} is 1 if a country pair has a regional trade agreement in t , and 0 otherwise, from Mario Larch’s Regional Trade Agreements Database by Egger and Larch (2008).⁵ BIT_{ijt} is a dummy which is 1 if a country pair has a ratified BIT in t . We use information on BITs and country-specific unilateral investment laws from UNCTAD’s Investment Policy Hub.⁶ RTA_{ijt} and BIT_{ijt} are 0 for domestic trade, i.e., β_1 and β_2 represent the international trade effects of RTAs and BITs, see Heid et al. (2020). Information on investment chapters in RTAs are from the DESTA database by Dür et al. (2014). We use three-way clustered standard errors (exporter, importer, year) following Egger and Tarlea (2015).

3 Results

3.1 International Trade Effects of BITs

We present results in Table 1. Column (1) reproduces gravity models used in the literature, estimating an international trade-creating effect of RTAs of 36%.⁷ Column (2) swaps RTA_{ijt} with BIT_{ijt} . BITs increase international trade by 42%. When adding both regressors simultaneously in column (3), RTAs and BITs increase international trade by 31% and 37%, but this difference is not statistically significant. BIT_{ijt} is 1 for ratified BITs. As ratification takes time, international trade may increase already for signed BITs. Column (4) therefore swaps BIT_{ijt} with BIT_{ijt}^{signed} which is 1 once a BIT is signed. Results remain similar. It may be that the effects of an RTA are larger when the country pair also has a BIT. Column (5) therefore adds an interaction, but it is not significant. Some

⁴See Yotov et al. (2016).

⁵See <https://www.ewf.uni-bayreuth.de/en/research/RTA-data/index.html>. We use version `rta_20181107.dta`.

⁶See <https://investmentpolicy.unctad.org/>.

⁷For dummy variable k , the marginal effect is given by $(e^{\beta_k} - 1) \times 100$.

RTAs contain an investment chapter. If BITs have positive international trade effects, then RTAs with an investment chapter should have larger international trade effects than RTAs without them. For column (6), we construct $RTA_{ijt}^{+Invest.ch.}$, a dummy which is 1 if an RTA contains an investment chapter. In line with this reasoning, an investment chapter nearly doubles the international trade effects of an RTA. Still, BITs increase international trade by 39%. To control for trends in country-pair-specific trade costs and trade policy, we interact our directional country-pair-specific fixed effects with a trend in column (7), following Bergstrand et al. (2015). Results are robust. In column (8), we test whether the effect of BITs differs with the level of economic development. We follow Boffa et al. (2019) and allow for different effects for OECD member (“North”) and non-member (“South”) countries. $BIT_{ijt}^{North-South}$ is a dummy indicating a BIT between an exporting country from the North and an importing country from the South, and similarly for the other three possibilities, and reestimate column (7). We cannot reject the hypothesis that a BIT has the same effect, independent of the level of development (p -value 0.43).

Table 1: International Trade Effects of BITs

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	RTA	BIT	RTA & BIT	Signed BIT	Interaction	RTA with Investment Chapter	Country-Pair Trends	North - South
RTA_{ijt}	0.307*** (0.081)		0.268*** (0.072)	0.280*** (0.073)	0.259*** (0.082)	0.192** (0.095)	0.198** (0.097)	0.193** (0.096)
BIT_{ijt}		0.352*** (0.076)	0.312*** (0.064)		0.305*** (0.069)	0.329*** (0.066)	0.346*** (0.068)	
BIT_{ijt}^{signed}				0.316*** (0.073)				
$BIT_{ijt}^{North-South}$								0.279*** (0.076)
$BIT_{ijt}^{South-North}$								0.318*** (0.069)
$BIT_{ijt}^{North-North}$								0.332*** (0.064)
$BIT_{ijt}^{South-South}$								0.427*** (0.143)
$BIT_{ijt} \times RTA_{ijt}$					0.021 (0.070)			
$RTA_{ijt}^{+Invest.ch.}$						0.144** (0.064)	0.158** (0.065)	0.142** (0.063)
N	769184	769184	769184	769184	769184	769184	769184	769184

Notes: Table reports structural gravity estimates using PPML for 172 countries from 1990 to 2015. Dependent variable are trade flows, X_{ijt} , including domestic trade. Regressions include exporter-year, importer-year, and directional country-pair fixed effects except column (7) which interacts directional country-pair fixed effects with a trend. Three-way clustered standard errors (importer, exporter, year) in parentheses. * for $p < 0.1$, ** for $p < 0.05$, and *** for $p < 0.01$.

Table 2: International Trade Effects of BITs and Unilateral Investment Laws

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	RTA	BIT	RTA & BIT	Signed BIT	Interaction	RTA with Investment Chapter	Country-Pair Trends	North - South
RTA_{ijt}	0.268*** (0.074)		0.239*** (0.069)	0.248*** (0.069)	0.225*** (0.076)	0.190** (0.092)	0.198** (0.094)	0.190** (0.092)
BIT_{ijt}		0.291*** (0.059)	0.259*** (0.052)		0.247*** (0.056)	0.273*** (0.054)	0.287*** (0.055)	
BIT_{ijt}^{signed}				0.268*** (0.060)				
$BIT_{ijt}^{North-South}$								0.229*** (0.065)
$BIT_{ijt}^{South-North}$								0.261*** (0.057)
$BIT_{ijt}^{North-North}$								0.283*** (0.061)
$BIT_{ijt}^{South-South}$								0.356*** (0.122)
$BIT_{ijt} \times RTA_{ijt}$					0.033 (0.062)			
$RTA_{ijt}^{+Invest.ch.}$						0.096 (0.060)	0.106* (0.060)	0.095 (0.059)
$(Investment\ law)_{it}$	0.352*** (0.074)	0.340*** (0.069)	0.320*** (0.060)	0.326*** (0.061)	0.320*** (0.060)	0.302*** (0.062)	0.329*** (0.064)	0.301*** (0.061)
N	769184	769184	769184	769184	769184	769184	769184	769184

Notes: Table reports structural gravity estimates using PPML for 172 countries from 1990 to 2015. Dependent variable are trade flows, X_{ijt} , including domestic trade. Regressions include exporter-year, importer-year, and directional country-pair fixed effects except column (7) which interacts directional country-pair fixed effects with a trend. Three-way clustered standard errors (importer, exporter, year) in parentheses. * for $p < 0.1$, ** for $p < 0.05$, and *** for $p < 0.01$. *** for $p < 0.01$.

3.2 Controlling for Unilateral Investment Laws

Countries which sign BITs may simply provide a better investment environment to firms in general, and BIT_{ijt} may pick up this effect. Unilateral investment laws may be an attractive alternative to BITs as they can be changed unilaterally without reneging on an international treaty. This sovereignty advantage may make investor protection less credible, and therefore lead to lower trade effects. As our data contain domestic trade flows, we can control for the international trade effects of investment laws, see Heid et al. (2020). We present results in Table 2 which is organized as Table 1 but adds $(Investment\ law)_{it}$, a dummy which is 1 for all international trade flows of country i if it has an investment law in year t . Across all specifications, investment laws significantly increase international trade. BITs have an international trade effect of similar size as investment laws. OLS delivers similar results, see Heid and Vozzo (2020).

3.3 Sectoral Effects

Table 3 reports results from estimating the specification of column (7) from Table 2 separately for each 2-digit sector. BITs and domestic investment laws have significant and sizeable positive effects on international trade across all sectors. Effects of RTAs, with and without investment chapters, are not significant in all sectors. Across all sectors,

investment protection of some form increases international trade.

Table 3: Sectoral Trade Effects of BITs and Unilateral Investment Laws

	(1) Agriculture	(2) Fishing	(3) Mining and Quarrying	(4) Food and Beverages	(5) Textiles and Wearing Apparel	(6) Wood and Paper
RTA_{ijt}	0.221** (0.093)	0.196 (0.140)	0.020 (0.079)	0.103 (0.072)	0.305* (0.157)	0.155* (0.094)
BIT_{ijt}	0.285*** (0.075)	0.296*** (0.097)	0.147*** (0.046)	0.246*** (0.050)	0.115*** (0.040)	0.240*** (0.046)
$RTA_{ijt}^{+Invest.ch.}$	0.142** (0.065)	0.105 (0.089)	0.144 (0.119)	0.205*** (0.048)	0.056 (0.091)	0.206*** (0.051)
$(Investment\ law)_{it}$	0.376*** (0.058)	0.422*** (0.103)	0.223* (0.127)	0.359*** (0.042)	0.343*** (0.033)	0.271*** (0.050)
N	769184	769184	769184	769184	769184	769184
	(7) Petroleum, Chemical and Non-Metallic Mineral Products	(8) Metal Products	(9) Electrical and Machinery	(10) Transport Equipment	(11) Other Manufacturing	
RTA_{ijt}	0.148** (0.068)	0.241** (0.102)	0.201* (0.117)	0.225** (0.088)	0.087 (0.100)	
BIT_{ijt}	0.280*** (0.049)	0.413*** (0.104)	0.182*** (0.044)	0.209*** (0.053)	0.179*** (0.050)	
$RTA_{ijt}^{+Invest.ch.}$	0.141*** (0.042)	0.131*** (0.050)	0.042 (0.088)	0.134*** (0.032)	0.151** (0.061)	
$(Investment\ law)_{it}$	0.276*** (0.079)	0.259*** (0.093)	0.369*** (0.068)	0.183** (0.072)	0.368*** (0.042)	
N	769184	769184	769184	769184	769184	

Notes: Table reports structural gravity estimates using PPML for 172 countries from 1990 to 2015 at the 2-digit sector-level. Dependent variable are sectoral merchandise trade flows, X_{ijt} , including domestic trade. Regressions use the same specification as in column (7) in Table 2, i.e., they include exporter-year and importer-year fixed effects and directional country-pair-specific time trends. Three-way clustered standard errors (importer, exporter, year) in parentheses. * for $p < 0.1$, ** for $p < 0.05$, and *** for $p < 0.01$.

4 Conclusion

“Mega-regional” trade agreements like the Transatlantic Trade and Investment Partnership (TTIP) or the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) aim at trade and investment liberalization. Our results imply that evaluations of such agreements that go beyond “shallow” RTAs underestimate their effects if they ignore their investment policies.

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