FOREIGN DIRECT INVESTMENT AND INSTITUTIONAL DIVERSITY IN TRADE AGREEMENTS
Credibility, Commitment, and Economic Flows in the Developing World, 1971–2007

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I. INTRODUCTION

DEVELOPING country governments have increasingly sought to attract foreign direct investments (FDI),[1] as they have come to regard FDI as an important engine of economic growth.[2] FDI flows into developing economies have increased substantially over the years: in 2012 they exceeded $700 billion, accounting for more than half of all global FDI inflows for the first time.[3] The importance of these flows for developing countries has grown from an average of barely 1 percent of GDP in the 1970s to over 3 percent of GDP in recent years, although the extent and speed of the change has differed across countries.

* For constructive criticisms on earlier versions, we thank Todd Allee, Leonardo Baccini, Stephen Chaudoin, Christina Davis, Joanne Gowa, Raymond Hicks, Amaney Jamal, Kris Johnson, Daniel Kono, Edmund Malesky, Ed Mansfield, Layna Mosley, Nate Jensen, Clint Peinhardt, Beth Simmons, Randy Stone, and members of the audience at a presentation at the annual meetings of the APSA and ISA, at Rochester and Yale Universities, and at the Conference on Multinationals in Krakow, June 2011, as well as the editors and reviewers for *World Politics*. We also thank Nancy Brune, Jose Antonio Cheibub, Witold Henisz, Jon Pevehouse, the World Bank (WDI), and UNCTAD for making data available to us; and Torben Behmer, Tammy Hwang, Danielle Lupton, and Raymond Hicks for research assistance.

[1] Kobrin 2005; Oman 2000.

[2] Under certain conditions FDI can increase growth: Blomström, Lipsey, and Zejan 1994; Alfaro et al. 2010; Tang, Selvanathan, and Selvanathan 2008.

[3] UNCTAD 2013, esp. xiii, 2–4. The $703 billion of FDI into developing countries amounted to 52 percent of global FDI and declined by less than 5 percent vis-à-vis 2012, whereas global FDI flows decreased by 18 percent; FDI flows into transition economies accounted for an additional 6.5 percent of global FDI in 2012. As recently as 2005, inward FDI flows to developing countries amounted to $334 billion (in current dollars) and accounted for only 36 percent of all FDI flows; see UNCTAD 2006, xvii. FDI is defined as "an investment involving a long-term relationship and reflecting a lasting interest and control by a resident entity in one economy ([the] foreign direct investor or parent enterprise) in an enterprise resident in an economy other than that of the foreign direct investor . . ." (UNCTAD 2003, 231).

World Politics 66, no. 1 (January 2014), 88–122

doi: 10.1017/S0043887113000336

How can governments attract FDI? Some recent studies have focused on changes in domestic institutions, others on joining international organizations;[4] this article focuses on developing country governments' use of international trade agreements to attract foreign investors. In a recent analysis of FDI flows into 120 developing countries, Büthe and Milner provide systematic empirical support for the hypothesis that preferential trade agreements boost FDI.[5] Others have also shown a significant positive correlation between PTAs and FDI inflows,[6] and there is much anecdotal evidence to suggest that countries sign trade agreements not only to increase trade flows but also often to attract foreign investment. Turkey, for instance, has sought EU membership in part to attract greater foreign direct investment,[7] and the Chinese pursuit of WTO membership was reportedly motivated more by a desire to attract further FDI than by a desire to boost Chinese exports.[8]

While the positive empirical association between PTAs and FDI is well established, the reasons for it are less clear. Büthe and Milner develop a theoretical explanation that emphasizes the political logic of PTAs. Increases in the number of preferential trade agreements to which a country is a party lead to increased FDI, they argue, because these agreements allow a country to make more credible commitments to liberal economic policies than if the country chose such policies unilaterally through the domestic political process. A more purely economic explanation, however, may seem equally plausible: PTAs might attract foreign investors simply because they guarantee access to a larger market. To examine this possibility, we weigh each PTA by the size of the market to which the PTA gives access. As a preliminary analysis, we then reestimate the main models from our 2008 article using the market size-weighted measures of PTAs instead of, or in addition to, a country's cumulative number of PTAs. Table 1 shows the resulting estimates using an error correction specification.[9]

If PTAs affected FDI primarily by increasing the size of the market, we would expect the weighted measures to have a large, statistically significant effect. The estimated coefficients for the market size-weighted measures, however, miss conventional levels of statistical significance

[4] For example, Daude and Stein 2007; Dreher and Voigt 2011.

[5] Büthe and Milner 2008.

[6] For example, Blonigen and Piger 2011. Kenyon and Margalit 2013 provide firm-level experimental support of the PTA-FDI linkage. For an alternate viewpoint, see Peinhardt and Allee 2012.

[7] Barysch 2005.

[8] For example, Hong 2008; Ianchovichina and Walmsley 2005; Xinhua News Agency 2001.

[9] We analyze FDI through 2007 using error correction models. The same substantive results obtain when we restrict the sample or use OLS with detrended data, as in Büthe and Milner 2008.

TABLE 1
POLITICAL AND ECONOMIC LOGIC OF PTAS:
PTAS VS. MARKET SIZE–WEIGHTED PTAS[a]

	Model P	*Model E1*	*Model E2*	*Model PE1*	*Model PE2*
Lagged FDI/GDP	−0.608***	−0.604***	−0.605***	−0.608***	−0.609***
	(.122)	(.122)	(.123)	(.122)	(.123)
PTAs in Force	0.166**			0.164**	0.155**
	(.0678)			(.0765)	(.0632)
PTAs in Force Weighted by Partners' GDP		$9.08e^{-14}$		$1.14e^{-14}$	
		($5.56e^{-14}$)		($5.69e^{-14}$)	
PTAs in Force Weighted by Partners' GDP Ratio			0.000633		0.000413
			(.000631)		(.000608)
GATT (Only) Membership	0.340	0.468	0.470	0.340	0.343
	(.325)	(.331)	(.337)	(.325)	(.327)
WTO Membership	0.871**	1.15***	1.12***	0.867**	0.833**
	(.374)	(.363)	(.381)	(.374)	(.392)
BITs in Force	0.00624	0.0163	0.0211	0.00582	0.00672
	(.0139)	(.0172)	(.0162)	(.0146)	(.0138)
Trade (X + M) as % of GDP	0.0152**	0.0143**	0.0133**	0.0153**	0.0148**
	(.00615)	(.00626)	(.00629)	(.00614)	(.00610)
Domestic Political Constraints	−0.339	−0.357	−0.385	−0.339	−0.343
	(.397)	(.401)	(.411)	(.395)	(.397)
Political Instability	−0.0133	−0.0115	−0.0121	−0.0135	−0.0130
	(.0118)	(.0129)	(.0131)	(.012)	(.0118)
Market Size	0.695	0.814	0.787*	0.695	0.640
	(.496)	(.508)	(.451)	(.495)	(.445)
Economic Development	−0.860	−0.964*	−0.773	−0.862	−0.754
	(.564)	(.574)	(.482)	(.559)	(.496)
GDP Growth	0.353	0.341	0.329	0.352	0.340
	(.672)	(.665)	(.649)	(.673)	(.658)
Δ PTAs in Force	0.0706			0.0821	0.0447
	(.0947)			(.104)	(.101)
Δ PTAs in Force Weighted by Partners' GDP		$1.23e^{-14}$		$-3.09e^{-14}$	
		($4.64e^{-14}$)		($5.39e^{-14}$)	
Δ PTAs in Force Weighted by Partners' GDP Ratio			0.00104		0.000905
			(.00113)		(.00115)
Δ GATT	0.175	0.196	0.184	0.171	0.160
	(.362)	(.369)	(.368)	(.362)	(.361)
Δ WTO	0.393	0.474	0.446	0.386	0.362
	(.422)	(.432)	(.427)	(.421)	(.417)
Δ BITs in Force	0.0432	0.0402	0.0453	0.0427	0.0453
	(.0477)	(.0479)	(.0475)	(.0483)	(.0480)
Δ Trade (X + M) as % of GDP	0.0402***	0.0402***	0.0396***	0.0402***	0.0401***
	(.0118)	(.0118)	(.0119)	(.0118)	(.0118)
Δ Political Constraints	0.409	0.378	0.317	0.417	0.365
	(.367)	(.370)	(.380)	(.368)	(.372)

TABLE 1 *cont.*

	Model P	*Model E1*	*Model E2*	*Model PE1*	*Model PE2*
Δ Political Instability	−0.00965	−0.00876	−0.00899	−0.00981	−0.00959
	(.0137)	(.0141)	(.0141)	(.0137)	(.0137)
Δ Market Size	−19.0	−19.9	−18.82	−19.1	−18.1
	(52.7)	(52.7)	(51.4)	(52.7)	(51.4)
Δ Economic Development	−32.9	−31.0	−29.6	−32.8	−31.4
	(68.5)	(67.6)	(65.7)	(68.6)	(66.8)
Δ GDP Growth	0.299	0.283	0.272	0.298	0.286
	(.645)	(.637)	(.621)	(.646)	(.631)
constant	−6.38	−7.28	−8.11	−6.37	−6.22
	(7.23)	(7.09)	(7.12)	(7.14)	(7.13)
R^2	0.3183	0.3158	0.3162	0.3184	0.3191

[a] Error correction model estimates based on model 9 in Büthe and Milner 2008; all estimates rounded to three significant figures. In parentheses, standard errors clustered on country. Years covered: 1971–2007; $N = 3067$; n (clusters = countries) = 122. Country fixed effects included, but not shown. All level variables lagged one year; change variables measured from time t-1 to time t. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; two-tailed tests. Unit of observation is the country-year (country *i*; year *t*). PTAs IN FORCE (used in model P) seeks to capture the political (credible commitment) logic of PTAs' effect on FDI. It is a count of country *i*'s PTAs that have entered into force at the end of year *t*. PTAs IN FORCE WEIGHTED BY PARTNERS' GDP (used in models E1 and PE1) seeks to capture the size of the *additional* market (beyond country *i*'s domestic market) to which foreign investors in country *i* have access thanks to country *i*'s trade agreements, treating all gains in market size as equal. For this measure, we calculated, for each PTA of country *i*, in year *t*, the sum total GDP of country *i*'s partner countries in that PTA (excluding country *i*), then calculated the sum of all the resulting market size gains for all PTAs in force for country *i* at the end of year *t*. PTAs IN FORCE WEIGHTED BY PARTNERS' GDP RATIO (used in models E2 and PE2) seeks to capture the size of the additional market *relative* to country *i*'s domestic market. Here, we first calculated, for each PTA of country *i* in year *t*, the sum of country *i*'s partner countries' GDP divided by country *i*'s own GDP, then calculated the sum of the resulting ratios for all of country *i*'s PTAs in force at the end of year *t*.

when they enter by themselves (models E1 and E2), and they are completely insignificant when they enter jointly with the count of the FDI host country's cumulative PTAs (models PE1 and PE2). This lack of empirical support for a purely economic explanation suggests that a closer look at the political logic of FDIs is in order.

In this article, we scrutinize the claim that trade agreements attract FDI because they allow developing country governments to make credible commitments to policies that foreign investors like. We do this by examining three features of PTAs that should increase a government's credibility with investors more than just signing a PTA:[10] whether or not the negotiated agreements actually enter into force, whether agreements

[10] Credibility is defined in a variety of ways; we follow Martin's (2000, 14) conceptualization of credibility, which emphasizes beliefs: "a commitment is credible if . . . it [is] rational for actors to do what they say they will."

have clauses concerning the inducement or protection of investment, and whether they have dispute-settlement mechanisms (DSM). PTAs vary in these details, and we argue that the differences matter for a government's ability to achieve greater credibility with investors.

In Section II, we develop our theoretical argument linking the institutional differences across trade agreements to the credibility of a government's commitments vis-à-vis (ultimately) foreign investors. In Section III, we test our claims in a statistical analysis of FDI flows into 122 developing and transition economies from 1971 to 2007. After controlling for other factors, we show that ratification and the specific institutional features of PTAs matter. PTAs with terms that enhance a host government's credibility induce greater FDI. In the conclusion, Section IV, we discuss some implications for the design of international agreements and for credible commitment claims in international politics.

II. Theory and Hypotheses

FDI, Political Risk, and PTAs

For firms considering foreign direct investments, the problems of the obsolescing bargain and time inconsistency result in at least three types of political risks: expropriation, contract, and policy risks.[11] Each of them entails the host country changing some aspect of the relationship, thus reducing the profitability or value of the investment to the company. Firms may therefore hesitate to undertake an investment unless the government commits to leaving the terms unchanged. Institutional mechanisms that allow governments to make such commitments credibly can, we argue, reduce all three kinds of political risks, reassure investors, and increase FDI.

Until the 1970s, when most FDI in developing countries was natural resource investment with inherently very high asset specificity, outright expropriation was the primary risk for FDI.[12] In recent decades host governments have largely foresworn outright expropriation, partly because the shift toward vertical and services FDI has rendered such direct threats to property rights less effective: expropriating assets that are part of an MNC's global production chain leave a government with greatly depreciated assets.[13] Yet, although outright expropriation is now

[11] As Kesternich and Schnitzer 2010, 208, point out: "MNEs can try to insure against political risk, but they can never do so fully."

[12] Bergsten, Horst, and Moran 1978; Piper 1979; Truitt 1970.

[13] Aggregate FDI data that distinguishes between horizontal and vertical FDI is not readily available, but as of 1994, about 30 percent of US multinational activity was related to vertical investment, and most research suggests that this percentage has grown significantly since; see Chor et al. 2008.

rare, it is not unheard of.[14] Investment clauses in PTAs can alleviate firms' concerns about expropriation by specifying (strictly limited) conditions under which expropriation is permissible and establishing mechanisms to ensure that expropriated foreign investors will be compensated.

Contract risk refers to the risk that investment contracts (signed with host governments or with host country firms) might not be carried out as the foreign firm expected. Such risks may result from the fact that contracts are inherently incomplete, but they may also occur because of corrupt host governments or weak judiciaries.[15] Firms in the host country, for instance, might renege on their contractual obligations and the multinational may fear that the host country's judiciary will not uphold the foreign firm's rights. Dispute-settlement mechanisms in PTAs can alleviate these concerns by making third parties responsible for adjudication of contract disputes, thus reducing this risk to multinationals.

Policy risk refers to the possibility that host governments will alter policies that the multinational had counted on in making its investments. Since foreign direct investments are not perfectly mobile, governments may be tempted to extract a greater share of the benefits through subtle measures, such as changes in regulation, taxation, tariffs, and fees, or selective law enforcement. For instance, trade restrictions may force MNCs to buy inputs from noncompetitive domestic suppliers; or regulatory measures may force them to borrow capital from noncompetitive domestic lenders. Since there are myriad mechanisms for changing the terms of an investment, PTAs can alleviate foreign investors' wariness by incorporating broad commitments to nondiscrimination against foreign investors or the most-favored-nation (MFN) treatment of foreign investments.

Trade Agreements as Commitment Devices That Lower Political Risks

We argue that trade agreements may boost FDI because they have both economic and political effects that enable governments to reassure foreign investors.[16] Crucially, trade agreements not only commit a country to reducing tariffs but often also include commitments to refrain from a range of interventions in the market that might affect foreign investors.

[14] See Minor 1994; Li 2009a. Two countries that have recently practiced expropriation are Venezuela and Zimbabwe.

[15] Egger and Winner 2003.

[16] Firms can also decrease the amount of political risk they face through business decisions they make. See Dorobantu, Henisz, and Nartey 2012; Eaton and Gersovitz 1984; Henisz 2014; Kesternich and Schnitzer 2010.

Some even include provisions specifically regarding the treatment of FDI. In other words, PTAs often combine commitments to open markets and liberal economic policies.[17] As Tang and Wei note, "one way a country can acquire strong commitment to pro-growth policy reforms and convince investors that it has done so is by making the commitment a part of its international obligations."[18] A policy change that violates those commitments, then, not only has domestic ramifications but also constitutes a breach of international obligations that should make the commitments more costly to break.[19]

International institutionalization may boost the credibility of commitments to liberal economic policies through various mechanisms.[20] Most important, trade agreements often establish dispute-settlement mechanisms that make it easier to establish a violation of PTA commitments and thus make violating one's commitments to economically liberal policies more costly ex post.[21] The dispute-settlement procedures of the WTO illustrate such mechanisms for multilateral trade agreements. Its panels (or its Appellate Body, if the panel decision is appealed) authorize economic sanctions against a government found to have indeed violated its WTO commitments—and they publicly render final decisions about the merits reasonably quickly. Many PTAs contain dispute-settlement mechanisms that work similarly, providing powerful tools to bring about a return to compliant behavior by governments that violate their commitments.[22] If this credibility argument is right, the effects of a trade agreement should grow over time as a country's commitment becomes increasingly apparent.

An example is useful to show how multinational firms can use investment clauses or dispute-settlement mechanisms of trade agreements to limit or block government interventions that threaten the firms' investments. In a recent case, brought before an arbitration panel of the International Center for Settlement of Investment Disputes

[17] Büthe and Milner 2008.

[18] Tang and Wei 2009, 216.

[19] Keohane 1989, 5–6; Morrow 1999; Simmons 2000a, 821–22.

[20] PTAs could also be signaling mechanisms. Signing an agreement can be costly if there is domestic opposition. Only governments that want to uphold the agreement should then be willing to sign, thus signaling their types. Dreher, Mikosch, and Voigt 2010 use a signaling model.

[21] In addition, PTAs often creating mechanisms that make it easier for private economic actors to solicit assistance from their home government to bring diplomatic pressure to bear on "a government that is considering or engaging in rule violation"; Simmons 2000a, 821. See also Cortell and Davis 1996.

[22] For example, Davis and Bermeo 2009. PTAs as commitment devices also matter because violating an institutionalized commitment—or not making amends to correct a violation that has occurred—also damages a country's reputation for keeping commitments, making future cooperation on the same and other issues more difficult and perhaps impossible; see Abbott and Snidal 2000, 427; Simmons 2000b, 594; see also Tomz 2007b.

(ICSID) in April 2009, Pacific Rim Mining Corporation, a Canadian multinational, turned to the dispute-settlement provisions of the Central America Free Trade Agreement (CAFTA) to force the government of El Salvador to issue it permits for the development of the El Dorado gold mine that it had bought in 2002.[23] In bringing the issue before ICSID, Pacific Rim alleged that its $77 million investment in the exploration of the mining site had been rendered worthless by the Salvadorian government's indefinite delay in issuing permits that, according to Pacific Rim, should have been issued several years earlier, had the same criteria been applied as in other, previous cases. The company therefore accused the government of breaching the "fair and equitable treatment" clauses of the investment chapter of CAFTA (as well as El Salvador's domestic laws concerning foreign investments). As of this writing, the case is pending before the ICSID panel, but regardless of the final outcome, the appearance of violations of PTA commitments has already been costly for El Salvador: its persistent difficulties with foreign investors, especially in the mining sector, have led to a decline in FDI since the Pacific Rim case was filed.[24] These ex post costs of reneging suggest that PTAs with these institutional features can increase the credibility of commitments that governments enshrine in trade agreements.

In this article, we focus on differences among PTAs that affect their ability to serve as credible commitment mechanisms for governments. Specifically, we expect three institutional features to make some agreements more credible commitments in the eyes of multinational firms, thereby reducing the risks that they face.[25]

[23] Archibold 2011; Crowell and Moring 2009; Crowell and Moring 2010; Crowell and Moring 2011; Dewey and LeBoeuf 2011; ICSID 2011; Peterson 2011a; Peterson 2011b.

[24] Vancouver-headquartered Pacific Rim brought the claim under CAFTA based on having a US subsidiary that, however, was relocated from the Cayman Islands to the United States only in 2008, prompting El Salvador to challenge the company's standing (its ability to bring a case under CAFTA). Several attempts by the Salvadorian government to have the case dismissed on jurisdictional grounds failed. However, in what might be considered an early example of the pushback noted by Simmons 2014, the CAFTA investment chapter contains (very unusually) "denial of benefits" provisions (Art.10.12) that allow any party to deny the benefits of the chapter to entities that have "no substantial business activities" in the territory of any of the other parties to the treaty. After repeated attempts by El Salvador to invoke that article, the ICSID panel ruled in June 2012 that, while Pacific Rim might have had insufficient business activities in the United States at the time of the alleged violation to invoke CAFTA, it was nonetheless a "US company," so that the ICSID panel would still rule on the merits of Pacific Rim's claims under a broad reading of "Salvadoran and international law"; see Lazenby 2012; Kosich 2013; Peterson 2012. The ruling on the merits is pending.

[25] We take the design of trade agreements as exogenously given and ask about their impact on economic flows (other research has tried to explain the design of these agreements; see, for example, Hawkins et al. 2006; Koremenos, Lipson, and Snidal 2001; Koremenos 2005). This analytical strategy risks decreasing the likelihood of finding empirical support for our argument: governments with especially poor reputations vis-à-vis foreign investors may most need to establish greater credibility and hence may be willing to sign stricter agreements. But since they have worse reputations, they may still receive less foreign investment than an otherwise comparable country that signs less strict agreements; Tomz 2007b.

Agreements in Force vs. Signed Agreement

As Haftel has pointed out, the entry into force—rather than the mere signing—of international agreements makes the commitments undertaken in such agreements legally binding and hence more credible.[26] For many countries, domestic ratification by the FDI host government also increases the credibility of commitments since reneging on a ratified agreement means violating a commitment that is binding under both international and domestic law.[27] The recently resolved NAFTA dispute over the operation of Mexican trucks in the United States illustrates this political logic: after NAFTA ruled the US failure to remove its restrictions on Mexican trucks a violation of NAFTA in 2001, Mexico was able to pursue its claims for their actual removal in ways that were more costly for the United States because Congress had ratified NAFTA.[28]

The average time between signing and entry into force for all agreements for which we have data is 325 days, with considerable variance around that mean, including thirteen PTAs for which the delay was more than 1,000 days. Since only PTAs that are in force constitute a legally binding commitment, we expect a greater effect on FDI from PTAs that have entered into force.

Investment Clauses

Some trade agreements do not mention foreign investment at all. Some mention the signatories' desire to see increased foreign investment and the intent to treat it favorably. Some go further and include provisions that explicitly commit the parties to the agreement to protect and foster foreign investment. Such investment clauses in PTAs now often exceed the provisions in bilateral investment treaties (BITs) examined by Allee and Peinhardt and by Simmons in this symposium.[29] And even when they only duplicate the terms of BITs, they may be viewed as more credible since they are tied to trade flows.[30] If so, they should induce more investment than is produced by PTAs that contain no investment provisions.

[26] Haftel 2010.

[27] As Martin 2000 has argued, once an agreement is ratified domestically, the majority of the legislature, which has voted for it, becomes a force for its implementation and hence makes it more likely that a country will comply with its obligations in the agreement.

[28] Appelbaum 2011; Williamson 2011; Dept of Commerce 2013.

[29] Allee and Peinhardt 2014; Simmons 2014.

[30] We do not focus on the FDI effects of BITs. Other research has shown them to have had an important effect on FDI through at least 2000; Büthe and Milner 2008; Kerner 2009; Neumayer and Spess 2005. Tobin and Busch 2010 find that BITs may increase the likelihood of a PTA between the signatories; Ziegler 2011 shows that investment clauses in PTAs tend to be more extensive than those in BITs.

Why do (some) PTAs have investment clauses? Investments in developing countries are now often part of a firm's global production chain. Multinationals use facilities in developing countries for certain parts of their production or service operations, especially those in which the developing country has a relative abundance of resources, such as low-skill labor. The firms then import inputs into the developing country and export more processed goods and services out of it. These production chains tightly link the multinationals' trade and investment flows.[31] Trade agreements have therefore become a more prominent arena for addressing investment issues.[32]

Investment clauses should have even greater power to reassure if they contain not only general commitments to foster FDI but specific provisions regarding the treatment of foreign investors. Article 1102 of the NAFTA agreement (part of its investment chapter), for example, promises what is known as national treatment: "Each Party shall accord to investors of another Party treatment no less favorable than that it accords, in like circumstances, to its own investors with respect to the establishment, acquisition, expansion, management, conduct, operation, and sale or other disposition of investments." In addition, NAFTA commits the governments to MFN treatment; that is, "each Party shall accord to investors of another Party treatment no less favorable than it accords, in like circumstances, to investors of any other Party or of a non-Party with respect to the establishment, acquisition, expansion, management, conduct, operation, and sale or other disposition of investments" (Article 1103). By contrast, the EFTA-Mexico PTA of 2000, for example, has an investment provision (section V) that offers some assurances regarding FDI, but makes no mention of MFN or national treatment. Its provisions are thus weaker than those in NAFTA.

Dispute-Settlement Procedures

PTAs exhibit substantial institutional variation regarding dispute settlement—generally an important source of variation among international economic agreements, as discussed by Allee and Peinhardt in this symposium.[33] Having PTAs with DSMs raises the costs of reneging for the host government and thus can reassure investors who, because of the tight link between trade and investment, are often also exporters and importers for the FDI host country. Once a dispute is launched, the host

[31] Recent research (Irarrazabal, Moxnes, and Opromolla 2010) shows that trade barriers hurt both trade flows and foreign investment.

[32] See also Berger et al. 2013; Lesher and Miroudot 2007.

[33] Allee and Peinhardt 2014.

government finds its public image and its reputation damaged, on top of facing high legal expenses. If the case goes to final judgment and the host state loses, it must pay some form of compensation. But even short of this outcome, there is still the harm to the state's reputation and standing in public opinion that comes with being the target of a dispute.[34] The fact that countries frequently time the launch of trade disputes to coincide with the national election campaign of an opposing government suggests that they understand the reputational and material costs of these disputes for host countries.[35] Furthermore, dispute-settlement procedures sometimes even give firms "standing," that is, allow firms to initiate a dispute and thus give them agenda-setting power vis-à-vis the governments.[36] DSMs thus raise the costs to a host state of violating an agreement. Such costs should deter host states from infringing on foreign investments; and knowing this, foreign firms should feel reassured that their investments are not facing political risks.

PTAs' dispute-settlement provisions differ, however. Some PTAs make no mention of DSMs. Others have lengthy procedures for handling disputes but do not provide for outside adjudication. The 1998 free trade agreement between Jordan and Egypt, for instance, devotes an entire article (Article 20 in Chapter 2) to setting up a joint trade committee, but it only constitutes an intergovernmental mechanism for resolving conflicts of interest; otherwise, such conflicts are to be resolved through domestic judicial institutions. This type of provision should encourage investors but only to the extent that they expect the other countries' domestic courts to be impartial (or their own government to be supportive and powerful intergovernmentally). Yet other PTAs allow for third-party adjudication. NAFTA, the EFTA-Singapore PTA, and a number of other PTAs, for example, allow the WTO to be the forum for dispute settlement. With a third party as arbiter of the case, firms might feel even more reassured that the government will not take steps that are detrimental to their investment.

In sum, we expect that PTAs that include DSMs will lead to more FDI than otherwise; and PTAs that use third-party adjudication should attract even more FDI, as they raise the costs for host governments even more. We expect these effects to persist over the long run as well, since a country's credibility should grow over time.

[34] Tomz 2007a.

[35] Chaudoin 2014.

[36] In some PTAs, such as the agreement establishing the COMESA Free Trade Area in Africa, such rights apply to all provisions of the treaty (Article 26, subject to having "exhausted local remedies in the national courts or tribunals of the Member State"). Other PTAs, such as NAFTA, set up a separate investor-state DSM specifically for the investment provisions.

The theoretical discussion above leads to three specific hypotheses.

H_1 PTAs that have been ratified domestically and entered into force will induce more FDI than PTAs that have merely been signed by the governments after international negotiations.

H_2 PTAs with investment clauses will attract more FDI than PTAs without them.

H_{2a} PTAs with stricter investment clauses will attract more FDI than those with basic clauses.

H_3 PTAs with dispute settlement mechanisms will attract more FDI than PTAs without DSMs.

H_{3a} PTAs with strong DSMs, which provide for third-party adjudication, will attract more FDI than those with weak DSMs.

III. Empirical Analysis

Data on FDI and PTAs

We examine these hypotheses through statistical analyses of inward FDI flows into developing countries since 1971,[37] that is, the sum of new direct investments in a given "host" country by investors that are foreign to the host country, net of direct investments withdrawn by foreign capital owners.[38] The unit of observation is the country-year. Our dependent variable is net inward FDI as a percentage of GDP to eliminate the need to deflate and improve comparability across countries and time.[39] We have updated and extended the data through 2007,[40] which substantially lengthens the time series (to a maximum length of thirty-seven years per country) and makes the sample used in our main analyses almost one-third (31.3 percent) larger than the sample used for our earlier analyses.

Another important empirical contribution is that we have gathered data not just on when a PTA was signed but also on each PTA's domestic ratification and when it entered into force. This allows us to distinguish trade agreements that have entered into force from those that have merely been signed but have not (yet) entered into force. While most PTAs enter into force soon after they are signed, the delay between signature and entry into force ranges from a few months to more than

[37] Data on FDI flows into developing countries start in 1970. Because a lagged dependent variable is included as a regressor in error correction models, our analyses start in 1971.

[38] We thus analyze aggregate FDI. In an unrelated research project on FDI, conducted concurrently with ours, Berger et al. 2013 analyze the effect of specific provisions in BITs and PTAs on bilateral FDI flows from 1978 to 2004 with substantively similar results.

[39] Our data come from the online version of UNCTAD 2011. Among the robustness checks, we use the (log of the) amount of inward FDI flows in constant dollars as an alternative dependent variable.

[40] The coups component of our measure of political instability has been omitted by the Arthur Banks data set in recent years, making 2007 the last year that we could include.

ten years. For each of our 3,067 country-year observations, we record both the cumulative number of the country's PTAs that have entered into force by the end of the year and the cumulative number of PTAs the country has only signed by the end of the year. For 551 of these observations, one or more PTAs have been signed but not yet entered into force.[41]

In addition, we have coded each PTA's specific provisions. Figure 1 shows the total number of active PTAs as well as the percentage of them with an investment or DSM provision.[42] If the PTA contains some clause concerning foreign direct investment but nothing more specific, it is coded as containing only a "basic" investment clause. If it includes specific provisions to foster and protect bilateral or multilateral foreign investment—such as national treatment, most-favored-nation treatment, or an investment chapter with sanctions for violations—then the PTA is coded as having "strict" investment clauses.

Our coding of the overall DSM provisions in PTAs follows a similar logic. PTAs with dispute-settlement mechanisms that give the complaining party the right to have the dispute adjudicated by a third party are coded as having a "strong" DSM; PTAs with a DSM that does not allow for third-party adjudication are coded as containing only a "weak" DSM.[43] As is apparent from Figure 1, DSMs are more prevalent than investment provisions.[44]

In sum, PTAs vary in whether they contain provisions for dispute settlement and investment and in the strength of those provisions. We now turn to analyzing whether these differences matter to foreign investors.

Estimation Strategy

PTAs may have short-term or persistent effects on FDI. We expect the effects to be most significant in the long run because the country's credibility should grow over time. To model these (possible) dynamic effects over time—and allow for long-term equilibria between our key variables—we use error correction models (ECMs) to estimate the effect of trade agreements on FDI. These powerful dynamic models, which are equivalent to autoregressive distributed lag (ADL) models after a straightforward mathematical transformation,[45] also provide a safe-

[41] Table A1 in the appendix provides summary statistics.

[42] Our new data set of PTAs contains data on 385 PTAs through 2007. Büthe and Milner 2008 used data on 254 PTAs ending in 1999 (from Pevehouse, see Mansfield, Milner, and Pevehouse 2007; Mansfield, Milner, and Pevehouse 2008).

[43] In the discussion below, we also refer to these as PTAs having a "basic" versus a "strong" DSM.

[44] PTAs with investment clauses tend to include third-party adjudication (correlation 0.56).

[45] De Boef and Keele 2008.

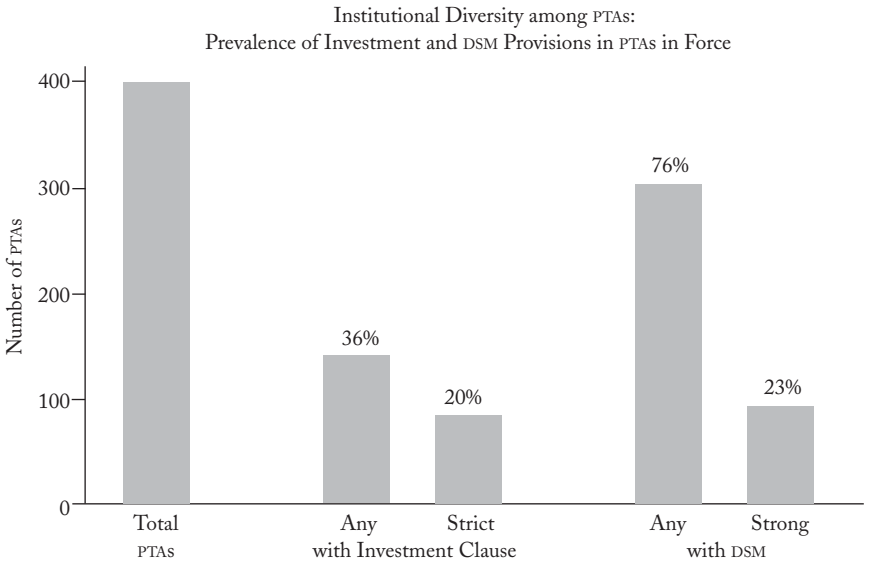

FIGURE 1
PTAs BY DSM AND INVESTMENT PROVISIONS

guard against spurious correlation that might arise in time series analysis when variables are trending together.[46]

Error correction models are customarily estimated using changes in (rather than the level of) the variable of interest as the dependent variable—in our case, change in FDI from year *t-1* to year *t*—which is less prone to serial correlation than level of FDI in year *t*. The right-hand side of the ECM equation then includes the lagged level of FDI (that is, the lag of the untransformed, original dependent variable), which serves as a safeguard against possible endogeneity, as well as both the lagged level and the change from time *t-1* to time *t* for each of the independent variables.[47] This ECM specification provides powerful tools for understanding dynamic processes.[48] Specifically, for PTAs in force,

[46] We also estimated the models using OLS, GLS, and other standard methods, as discussed among the robustness checks below.

[47] Our models also include country fixed effects, which allows us to deal with endogeneity to some extent. Any omitted variable that is driving both FDI and PTAs that varies across countries is controlled for in this setup. Our coefficients therefore provide estimates of within-country effects.

[48] Our argument makes predictions about a positive long-run effect of PTAs on FDI rather than predicting a short-term spike in FDI upon the entry into force.

the coefficient for the change measure (Δ *PTAS IN FORCE*) provides an estimate of the immediate effect of having a new PTA enter into force. The coefficient for the (1-period lagged) level variable *PTAS IN FORCE*, by contrast, provides an estimate of the short-run effect of the cumulative number of PTAs in force. Moreover, the estimated effect of the level of each independent variable persists over time via the lagged dependent variable. In Tables 2–4 we also report the long-run propensity (LRP) for the level variables in the last model.

Baseline Findings: PTAs Signed and In Force

We start by reestimating model 9 from Büthe and Milner's original analysis as an ECM and with our new data.[49] The key independent variable is *SIGNED PTAS*, a measure of the cumulative number of PTAs signed by the FDI-receiving country. We include separate variables for *GATT (ONLY) MEMBERSHIP* and *WTO MEMBERSHIP*, each of which is coded 1 for every year in which the country is a member of GATT or WTO, respectively (and 0 otherwise). The model also includes standard control variables,[50] as well as a measure of *TRADE OPENNESS* (the sum of exports and imports as a percentage of the country's GDP). This widely used indirect measure of trade policy, measuring actual trade flows, captures the aggregate effect of a broad range of trade restrictions (including regulatory and other nontariff barriers to trade), which governments might put into place to protect domestic firms or extract rents.[51] As is standard in error correction models, we also include a change variable for each measure, that is, the change in value from year *t–1* to *t*.[52]

[49] Büthe and Milner 2008. We focus on their model 9 as the most comprehensive model that can be estimated without significant loss of sample size. It differs from the baseline model in Büthe and Milner 2008 (their model 4) by differentiating between GATT and WTO and including trade openness, both of which appeared warranted.

[50] Three control variables capture political determinants of inward FDI flows into developing countries: *SIGNED BITS* (the number of bilateral investment treaties that a country has signed; see Busse, Königer, and Nunnenkamp 2010; Büthe and Milner 2009; Haftel 2010; Kerner 2009; and Neumayer and Spess 2005), *DOMESTIC POLITICAL CONSTRAINTS* (Henisz 2000, esp. 4–11, 27–30) preference-weighted measure of the number of veto players in a country's domestic political system), and *POLITICAL INSTABILITY* (the composite measure from Banks's (1999) data set of political events that indicate political violence and instability. The model also includes three standard economic control variables: the host country's *MARKET SIZE* (log of the population), the level of *ECONOMIC DEVELOPMENT* (log of per capita GDP in constant dollars), and *GDP GROWTH* (the percentage change in the country's real GDP from the previous year). Data for the economic control variables were downloaded from the World Bank's *World Development Indicators* database in February 2010. The main results do not depend upon the inclusion of any of the control variables.

[51] See, for example, Kono 2006; Mansfield and Busch 1995; and Naoi 2009. As expected, it is positively correlated with our measures of trade agreements, but the correlation is below 0.3, suggesting that multicollinearity should not be a major issue.

[52] To conserve space in Tables 2–4, we omit the estimated coefficients for the insignificant first differences of the control variables (that is, change in each of the control variables from *t–1* to time *t*), since these effects are not of theoretical interest for our analysis.

Column 1 in Table 2 estimates this model for the same countries and time period covered by the original analysis.[53] In model 1a, we then reestimate the model for the full sample, extending the time series to 2007, the most recent year for which we have data for all of the control variables. The maximum number of signed PTAs for any country-year in our sample thus increases from fourteen in the analysis for 1971–2000 to twenty-one in the analysis for 1971–2007.[54] The estimated coefficients for models 1 and 1a confirm that signing PTAs allows developing countries to attract substantially and statistically significantly greater inward FDI flows.

We have argued that international agreements should constrain governments mostly when they are binding. Commitments undertaken in an international agreement are binding under international law only after the agreement has been ratified by the signatory states and notifications of ratification have been exchanged.[55] In model 2 we therefore replace the single measure of signed PTAs with two measures: *PTAS IN FORCE* (the number of PTAs that a country has signed and ratified and that have entered into force); and, to allow for any possible additional effect on FDI by PTAs that have only been signed but not (yet) entered into force, we also include the number of *PTAS ONLY SIGNED*.[56] We also replace the measure of signed bilateral investment treaties (BITs) with two measures, following the same logic; all other variables remain unchanged.[57]

The estimated effect of PTAS IN FORCE in model 2 in Table 2 is larger than the estimated effect for the undifferentiated measure of signed PTAs in model 1a.[58] By contrast, the PTAs that a country has signed, but that have not yet entered into force, appear to have no effect on FDI. Since it is clearly PTAS IN FORCE rather than PTAS ONLY SIGNED that are affecting FDI, we drop the signed-only measure in model 3 and subsequent models.[59] In the penultimate column of Table 2, we show the long-run propensity (LRP) effect of PTAS IN FORCE, which is also highly significant. Substantively, the LRP of 0.274 means that ratifying

[53] Büthe and Milner 2008, 755. We lose 189 observations due to the inclusion of the change variables in the ECMs and due to missing data in WDI, mostly for the economic controls for some country-years in the latest (February 2010) update of WDI.

[54] The mean has increased from 2.5 to 3.2 PTAs/country.

[55] In multilateral agreements, it is often specified that the agreement enters into force—for the subset of countries that have ratified it—once a minimum number of signatories have ratified it (and have deposited a legal instrument to that effect).

[56] Note that the number of signed-only PTAs is 0 for 2,516 and 1 for 405 of the 3,067 observations in our sample, since most PTAs enter into force within a few months after they are signed. Consequently, the two measures are correlated only at 0.13.

[57] The findings for PTAs hold irrespective of whether the change in measuring BITs is made or not.

[58] The difference is due to differentiating between signed-only PTAs and PTAs in force, not due to estimating the model for the longer time period 1971–2007.

[59] If *PTAS ONLY SIGNED* is included in the subsequent models, it does not attain significance, either.

TABLE 2
SIGNED VS. IN-FORCE AGREEMENTS[a]

	Model 1	*Model 1a*	*Model 2*	*Model 3*	*LRP (3)*	*GMM (3)*
Lagged FDI/GDP	−0.653***	−0.608***	−0.608***	−0.608***		0.751***
	(.0477)	(.122)	(.122)	(.122)		(.0775)
Signed PTAs	0.166**	0.157**				
	(.0667)	(.0664)				
PTAs in Force			0.168**	0.166**	0.274***	0.0492*
			(.0718)	(.0678)	(.0860)	(.0252)
PTAs Only Signed			0.125			
			(.162)			
GATT (Only)	0.443*	0.374	0.382	0.340	0.560	−0.154
Membership	(.265)	(.319)	(.323)	(.325)	(.544)	(.0999)
WTO Membership	1.01***	0.894**	0.884**	0.871**	1.433**	0.339*
	(.359)	(.375)	(.378)	(.374)	(.700)	(.195)
Signed BITs	0.0119	0.00939				
	(.0108)	(.0125)				
BITs in Force			0.00659	0.00624	0.0103	0.00932
			(.0143)	(.0139)	(.0217)	(.00860)
BITs Signed Only			0.0161			
			(.0302)			
Trade (X + M) as	0.0195**	0.0150**	0.0152**	0.0152**	0.0250***	0.00880***
% of GDP	(.00764)	(.00614)	(.00619)	(.00615)	(.009)	(.00303)
Domestic Political	0.0564	−0.374	−0.383	−0.339	−0.559	0.0857
Constraints	(.322)	(.412)	(.413)	(.397)	(.659)	(.239)
Political Instability	−0.0123	−0.00916	−0.00932	−0.0133	−0.0219	−0.00217
	(.0116)	(.0127)	(.0127)	(.0118)	(.0210)	(.00672)
Market Size	−0.636*	0.538	0.512	0.695	1.14*	0.0100
	(.374)	(.475)	(.439)	(.496)	(.676)	(.0553)
Economic	−0.499	−0.970	−0.958	−0.860	−1.42*	−0.0806*
Development	(.347)	(.588)	(.583)	(.564)	(.741)	(.0451)
GDP Growth	−0.175	0.348	0.349	0.353	0.580	0.00512
	(.111)	(.668)	(.671)	(.672)	(1.00)	(.00864)
Δ Signed PTAs	0.152	−0.0474				
	(.147)	(.0743)				
Δ PTAs in Force			−0.0629	0.0706		
			(.167)	(.0947)		
Δ PTAs Only Signed			−0.0409			
			(.0734)			
Δ Trade (X + M) as	0.0249***	0.0402***	0.0404***	0.0402***		
% of GDP	(.00777)	(.0118)	(.0119)	(.0118)		
Constant	12.5*	−3.20	−2.89	−6.38		0.144
	(6.85)	(7.03)	(6.54)	(7.23)		(1.01)
R^2	0.3319	0.3193	0.3194	0.3183		
Clusters	120	122	122	122		
N	2335	3067	3067	3067	3067	3191

[a] Error correction models with robust standard errors clustered on country; general methods of moments (GMM) models implemented using xtabond2 (version 3.3.2) in Stata 12. All estimates rounded to three significant figures. All models, except GMM, contain country fixed effects (not shown). All level variables lagged one year; change variables measured from time t-1 to time t. Insignificant estimated coefficients for change in control variables omitted from table to save space. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; two-tailed tests. Years covered: 1971–2000 for model 1; 1971–2007 for models 1a, 2, and 3.

one new PTA leads to an increase in FDI equivalent to 0.274 percent of GDP over approximately five years. While an increase of 0.274 percent might not seem large, the mean FDI inflow as a percentage of GDP for the sample is 2.21 percent, suggesting a substantial boost in FDI for each PTA that goes into force. The number of PTAs *in force* is thus a strong and statistically significant predictor of inward FDI flows, supporting our hypothesis that the greater credibility of the commitments enshrined in PTAs that have entered into force increases a country's attractiveness to foreign direct investors.[60]

Institutional Diversity I: Variations in Investment Clauses

In considering institutional diversity among PTAs, we first focus on whether or not they have investment clauses and how strict such clauses are. To capture this institutional variation, we start by creating a *2-category investment-weighted measure of PTAs*, which gives extra weight to PTAs that contain any investment clause. Specifically, in tallying a country's PTAs-in-force for this measure, we add a 2 for every PTA that contains an investment clause and a 1 for every PTA without such provisions. A country that is a party to three PTAs in a given year, of which two have investment clauses, would therefore have a score of five on the 2-CATEGORY INVESTMENT-WEIGHTED measure of PTAs. Our argument leads us to expect a positive, statistically significant coefficient for this measure.

In model 4 of Table 3, we use this 2-CATEGORY INVESTMENT-WEIGHTED measure of PTAs instead of our standard measure of cumulative PTAs IN FORCE. The estimated coefficient for the weighted measure is positive and strongly statistically significant. To compare the total effect of PTAs-in-force in general (from model 3 in Table 2) with the total effect of PTAs with and without investment clauses (from model 4 of Table 3), one has to compare the values of the long-run propensity (LRP) for the PTA variables. The cumulative long-run effect estimate for model 3 is 0.274 and thus greater than the one calculated for the 2-CATEGORY INVESTMENT-WEIGHTED measure of PTAs in model 4, which is 0.200. This means that PTAs without investment clauses boost inward FDI less than we estimated for PTAs in force on average, but PTAs with investment provisions boost inward FDI flows more than we estimated for PTAs in force on average.[61] WTO membership remains a substantively and statistically significant predictor of inward FDI, as does trade openness; none of the other variables changes significantly.

[60] We will discuss the estimates in the last column (xtabond) among robustness checks, below.

[61] Given the weights used in the construction of the index, the estimated LRP must be multiplied by two to arrive at the estimated effect of an additional PTA with investment provisions.

TABLE 3
INVESTMENT CLAUSES IN PTAs[a]

	Model 4	*Model 5*	*Model 6*	*LRP (6)*	*GMM (6)*
Lagged FDI/GDP	−0.608***	−0.608***	−0.608***		0.765***
	(.122)	(.122)	(.122)		(.0779)
Inv-Weighted PTAs (2-Category Measure)	0.121***				
	(.0436)				
PTAs with Investment Clauses		0.241**			
		(.0983)			
PTAs without Investment Clauses		0.131			
		(.0970)			
Inv-Weighted PTAs (3-Category Measure)			0.0963***	0.158***	0.0347**
			(.0336)	(.0461)	(.0141)
GATT (Only) Membership	0.386	0.385	0.425	0.700	−0.145
	(.316)	(.351)	(.317)	(.525)	(.102)
WTO Membership	0.860**	0.849**	0.891**	1.47**	0.242
	(.352)	(.360)	(.344)	(.635)	(.199)
BITs in Force	0.00894	0.00842	0.0109	0.0180	0.0102
	(.0150)	(.0130)	(.0155)	(.0232)	(.00871)
Trade (X + M) as % of GDP	0.0151**	0.0152**	0.0150**	0.0247***	0.00881***
	(.00616)	(.00615)	(.00617)	(.00926)	(.00297)
Domestic Political Constraints	−0.305	−0.310	−0.305	−0.502	0.121
	(.402)	(.423)	(.403)	(.670)	(.246)
Political Instability	−0.0131	−0.0136	−0.0133	−0.0220	−0.00115
	(.0115)	(.0114)	(.0114)	(.0204)	(.00666)
Market Size	0.590	0.592	0.568	0.935	0.0156
	(.491)	(.536)	(.489)	(.691)	(.0544)
Economic Development	−0.868	−0.862	−0.873	−1.44**	−0.0836*
	(.564)	(.556)	(.560)	(.730)	(.0448)
GDP Growth	0.345	0.350	0.343	0.564	0.00600
	(.669)	(.672)	(.667)	(.996)	(.00865)
Δ in inv-Weighted PTAs (2-Category Measure)	0.0232				
	(.0707)				
Δ in PTAs with Investment Clauses		−0.0278			
		(.200)			
Δ in PTAs without Investment Clause		0.0992			
		(.122)			
Δ in inv-Weighted PTAs (3-Category Measure)			−0.00676		
			(.0584)		
Δ Trade (X + M) as % of GDP	0.0405***	0.0406***	0.0406***		
	(.0118)	(.0118)	(.0119)		

TABLE 3 *cont.*

	Model 4	*Model 5*	*Model 6*	*LRP (6)*	*GMM (6)*
Constant	−4.65	−4.73	−4.24		0.0306
	(7.19)	(7.78)	(7.16)		(1.01)
R^2	0.3186	0.3188	0.3187		
n (clusters)	122	122	122		
N	3067	3067	3067	3067	3191

[a] Error correction models with robust standard errors clustered on country; GMM estimation implemented using xtabond2 (version 3.3.2) in Stata 12; years covered: 1971–2007. All estimates rounded to three significant figures. All models, except GMM, contain country fixed effects (not shown). All level variables lagged one year; change variables measured from time t-1 to time t. Estimated coefficients for change in control variables omitted from table to save space. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; two-tailed tests.

In model 5, we replace the 2-CATEGORY INVESTMENT-WEIGHTED measure of PTAs with two separate variables. There are numerous advantages to using a single weighted index rather than multiple measures, but using separate measures provides an important robustness check, especially since the index by construction forces a particular relationship upon PTAs with investment clauses relative to PTAs without investment clauses. The estimated coefficients support the relative weight given to PTAs with and without investment clauses in the index construction. And the difference between PTAs with and without such clauses matters. Statistically, the estimated coefficient for the PTAs without investment clauses is positive but not significant, whereas the estimated effect of PTAs with investment clauses is strongly significant.

In model 6, we differentiate further, using the distinction between basic and strict investment provisions to encode a *3-CATEGORY INVESTMENT-WEIGHTED index of PTAs*. In constructing this index, PTAs without any mention of investment are given a weight of 1, PTAs with basic investment provisions are given a weight of 2, and PTAs with strict investment provisions are given a weight of 3. Consequently, a country with three PTAs (in a given year), of which one contains strict investment clauses, one contains weak investment provisions, and the third makes no mention of investment, would be given a score of 6. The logic of our argument again suggests a positive, statistically significant coefficient for the level (though not necessarily for the short-term change) of this measure in ECMs. And indeed we estimate a strongly significant positive coefficient for the 3-CATEGORY INVESTMENT-WEIGHTED index of PTAs. Substantively, the estimated coefficient implies a smaller increase in FDI for PTAs with no investment clause than estimated in model 2 for PTAs in general, but a similar increase for PTAs with weak investment clauses, and a greater increase in FDI for PTAs with strict investment clauses

relative to PTAs on average. Having an LRP of 0.158 means that moving from a PTA without an investment clause to one with a strict investment clause increases FDI as a percentage of GDP by 0.316 (0.158*2) over about five years—an increase equal to about 14 percent of the mean level of FDI inflows for our entire sample.

In sum, the inclusion of investment clauses in PTAs, as well as the stringency of those clauses, makes a real difference for attracting FDI, consistent with our argument about PTAs as commitment devices.

Institutional Diversity II: Variations in Dispute-Settlement Procedures

Similar findings emerge from the analysis of provisions for the settlement of disputes.[62] As with investment clauses, we create several measures of PTAs weighted by the existence and strength of provisions for a dispute-settlement mechanism. Our *2-CATEGORY MEASURE OF DSM-WEIGHTED PTAS* is a count of the number of PTAs (in force for the country in question), weighted based on whether or not each PTA establishes a dispute-settlement mechanism. In model 7 of Table 4, we use this measure (encoded just like the 2-category investment-weighted measure of PTAs) instead of our standard measure of cumulative PTAs-in-force.

We find this 2-CATEGORY-DSM-WEIGHTED measure to be highly statistically significant. We estimate for this measure a long-run propensity of 0.158, which suggests that a PTA without DSM provisions boosts inward FDI less, but a PTA with DSM provisions boosts inward FDI flows slightly more than estimated for PTAs on average based on model 3. WTO (but not GATT) membership remains a significant positive predictor of inward FDI, as does trade openness.

Next, in model 8 in Table 4, we replace the DSM-weighted index with two separate variables. The first is a count of the number of PTAs in force without any DSM provisions for a given country in a given year. The second variable measures the number of PTAs in force *with* any kind of DSM provisions. The estimated coefficients are in magnitude consistent with the coefficient estimated for the DSM-weighted measure in model 7, but while the estimated effect of PTAs with DSMs is positive and highly statistically significant, the estimated effect of PTAs without DSMs is clearly insignificant. The cumulative long-run effect (LRP) of PTAs with DSMs is also positive and significant, unlike the LRP for PTAs with no DSM. Another way to assess the substantive significance,

[62] We test for the effect of having procedures for dispute settlement in PTAs separately from our analysis of investment provisions because PTAs with dispute-settlement provisions are highly correlated with PTAs with investment provisions.

TABLE 4
DSM PROVISIONS IN PTAs[a]

	Model 7	*Model 8*	*Model 9*	*LRP (9)*	*GMM (9)*
Lagged FDI/GDP	−0.608***	−0.608***	−0.607***		0.749***
	(.122)	(.122)	(.122)		(.0739)
DSM-Weighted PTAs (2-Category Measure)	0.0963***				
	(.0359)				
PTAs with DSM Provisions		0.199***			
		(.0694)			
PTAs without DSM Provisions		0.0930			
		(.157)			
DSM-Weighted PTAs (3-Category Measure)			0.0766***	0.126***	0.0305**
			(.0286)	(.0362)	(.0138)
GATT (Only) Membership	0.359	0.357	0.383	0.630	−0.171*
	(.319)	(.337)	(.322)	(.535)	(.101)
WTO Membership	0.855**	0.844**	0.898**	1.48**	0.313
	(.364)	(.361)	(.364)	(.677)	(.193)
BITs in Force	0.00623	0.00651	0.00751	0.0124	0.00818
	(.0142)	(.0138)	(.0144)	(.0222)	(.00835)
Trade (X + M) as % of GDP	0.0153**	0.0153**	0.0150**	0.0247***	0.00928***
	(.00614)	(.00615)	(.00616)	(.00919)	(.00302)
Domestic Political Constraints	−0.348	−0.350	−0.381	−0.626	0.0811
	(.397)	(.386)	(.394)	(.654)	(.235)
Political Instability	−0.0133	−0.0134	−0.0126	−0.0207	−0.00310
	(.0118)	(.0119)	(.0118)	(.0209)	(.00674)
Market Size	0.687	0.673	0.733	1.21*	0.0195
	(.500)	(.505)	(.502)	(.675)	(.0561)
Economic Development	−0.879	−0.881	−0.923	−1.52**	−0.0926**
	(.567)	(.556)	(.570)	(.736)	(.0445)
GDP Growth	0.350	0.351	0.348	0.573	0.00500
	(.671)	(.672)	(.669)	(.997)	(.00870)
Δ in DSM-Weighted PTAs (2-Category Measure)	0.0254				
	(.0458)				
Δ in PTAs with DSM Provisions		0.00896			
		(.0833)			
Δ in PTAs without DSM Provisions		0.214			
		(.268)			
Δ in DSM-Weighted PTAs (3-Category Measure)			0.0222		
			(.0370)		
Δ Trade (X + M) as % of GDP	0.0403***	0.0402***	0.0402***		
	(.0118)	(.0117)	(.0118)		
Constant	−6.10	−5.87	−6.47		0.0626
	(7.22)	(7.41)	(7.22)		(1.02)

TABLE 4 *cont.*

	Model 7	*Model 8*	*Model 9*	*LRP (9)*	*GMM (9)*
R^2	0.3185	0.3188	0.3181		
n (clusters)	122	122	122		
N	3067	3067	3067	3067	3191

[a] Error correction models with robust standard errors clustered on country; GMM estimation implemented using xtabond2 (version 3.3.2) in Stata 12; years covered: 1971-2007. All estimates rounded to three significant figures. All models, except GMM, contain country fixed effects. All level variables lagged one year; change variables measured from time t-1 to time t. Insignificant estimated coefficients for change in control variables omitted from table to save space. * $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$; two-tailed tests.

given that the two measures (PTAS with and without DSM) have different distributions, is to calculate the effect of a one standard deviation increase from the mean of each variable, holding all else constant. Such an increase in the number of PTAs with no DSM provision is estimated to increase inward FDI by 0.21 percent of the host country's GDP, whereas a one standard deviation increase in the number of PTAs with a DSM is estimated to boost inward FDI by 0.71 percent of GDP.

In model 9 of Table 4, we differentiate further, using the distinction between weak and strong DSM provisions to create a *3-CATEGORY index of DSM-WEIGHTED PTAs.* Strong DSMs are distinguished by allowing the states that participate in the PTA to take a dispute to a third-party panel/arbitrator. Here, PTAs without a DSM are given a weight of 1, PTAs with weak DSM provisions are given a weight of 2, and PTAs that entail a strong DSM are given a weight of 3. A country with one of each of these PTAs in force in a given year would thus score a 6 on this measure. We estimate a positive and highly statistically significant coefficient for this 3-CATEGORY DSM-WEIGHTED measure. The estimated LRP of 0.126 means that moving from a PTA without any DSM to one with a strong DSM increases FDI as a percentage of GDP by 0.252 (0.126*2) over about five years. Since the mean of FDI inflows as a percentage of GDP for the sample is only 2.21 percent, this implies that a PTA that moves from having no DSM to having a strict DSM boosts FDI as a percentage of GDP by about 11.4 percent as compared to the mean.

In sum, the specific provisions in PTAs matter for their ability to attract FDI. PTAs that include dispute-settlement mechanisms and are therefore easier to enforce boost FDI more than PTAs without DSM, consistent with our argument about PTAs as commitment devices. And the greater credibility attached to PTAs with stronger DSMs appears to lead to even higher levels of FDI, as it reassures private investors about a country's likely future policy. Institutional variation matters.

Propensity Score Matching: The Effect of PTA Investment Provisions on FDI Flows

To add concreteness, we use propensity score matching to compare countries that entered into a PTA with investment provisions to very similar countries that entered into a PTA without an investment provision. Building on the statistical analysis, we matched countries on GDP and GDP per capita (both in constant dollars), GDP growth, population, domestic political institutions, BITs in force, region, and year. This allows us to compare closely matched pairs (in which both countries have signed a PTA, but only one includes an investment clause), without the need to "control" for those variables as alternative explanations of the level of inward FDI flows. In a sense we are "treating" one country with a stricter PTA than an otherwise most similar country in the control group to see whether we can identify a causal effect. Figure 2 shows the results for all twenty-seven matched pairs. In the two years before the PTA in question enters into force, FDI flows are roughly the same for the countries, but once some enter into a PTA with no investment clause while others enter into one with at least basic clauses, they start to diverge: the countries with PTAs having at least basic investment clauses bring in much more FDI over the next five years.

This general pattern was confirmed when we examined more closely several pairs of countries from the same region during the same time periods. This technique pairs, for instance, Romania, which in 1993 entered into a hubs-and-spokes agreement with the European Community and adopted its strict investment provisions, with Russia, which in 1993 entered into a PTA without investment provisions with Armenia, Kyrgyzstan, and Moldova. The former experienced large increases in FDI as a percentage of GDP, while the latter's FDI ratio rose only weakly in the years after the agreement went in to effect. Similarly, our matching takes Syria in 2002, when its agreement with Jordan containing strict investment provisions entered into force, and pairs it with Kuwait in 1998, when its Greater Arab Free Trade Agreement, which had no investment provisions, entered into force. Syria showed much larger FDI inflows than Kuwait over the next five years. We find similar results for Guatemala after 1996, when it ratified the Association of Caribbean States trade agreement that contained a basic investment clause, when paired with Uruguay, which in 1991 entered Mercosur with no investment provisions. Likewise, after the Association of Caribbean States agreement with a basic investment clause entered into force for Panama in 1996, it received greater FDI inflows than Ecuador in the five-year period after 2005, when Mercosur entered into force for

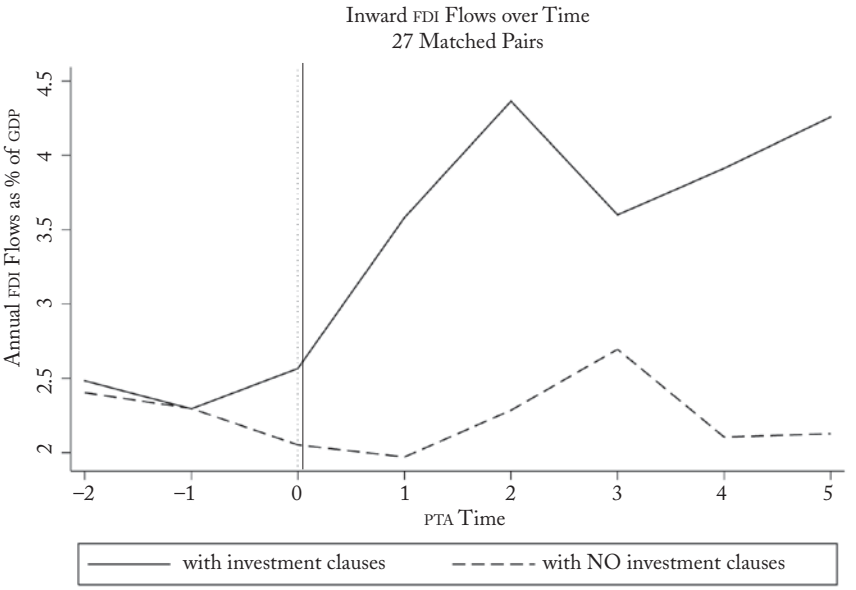

FIGURE 2
MATCHED CASES OF COUNTRIES' FDI INFLOWS, PTAS WITH AND WITHOUT INVESTMENT CLAUSES

Ecuador. A final example is Niger after 1974, when the West African Economic Community agreement with its strict investment provisions entered into force; in terms of FDI inflows, Niger then outperformed over the next five years when compared with Lesotho in 1980, when the Southern African Development Coordination Conference (SADCC) entered into force with no investment provisions.

In sum, when we compare closely matched cases in the five years after a PTA enters into force, where propensity score matching is used to control for other critical influences on FDI, we again find that PTAs with investment provisions attract significantly more FDI than PTAs without such provisions, suggesting that investment provisions in PTAs indeed have an important effect on foreign investors.

ADDITIONAL ROBUSTNESS CHECKS

We have subjected the above findings to a series of robustness checks. First, we reestimated the models using various alternative estimation methods, including OLS with clustered standard errors, OLS with panel-corrected standard errors (PCSE), and feasible generalized least squares

(FGLS) estimation, allowing for an autoregressive (AR1) process.[63] Our main findings are robust to the use of these alternative methods.[64]

In order to safeguard against possible endogeneity problems, we ran a series of dynamic panel data models. Using the generalized method of moments (GMM) estimator, we estimate Arellano-Bond (1991) system regressions; the results are reported in the last column of Tables 2–4. One way to deal with endogeneity is to instrument for the endogenous independent variables. A key problem is finding an adequate instrument because most variables that affect the endogenous variable will also affect the dependent variable. The Arellano-Bond estimator uses lags of the endogenous independent variables as instruments for the endogenous variable. For this robustness check, we assumed that the PTA variables, BITs, GATT/WTO, trade openness, and lagged FDI inflows are endogenous in our models.[65] Using this estimator requires testing for whether the independent variables and the instruments are exogenous: for our models, we cannot reject the null hypothesis that the independent variables are all exogenous (the Sargan and Hansen J test are all insignificant). In addition, the tests for autocorrelation show none present after the models are estimated. Finally, the models show that the PTA measures, now purged of endogeneity, are still positively and significantly related to FDI inflows.

Another series of robustness checks involved using the log of the amount of inward FDI in constant dollars, rather than FDI as a percentage of GDP as our dependent variable.[66] There has been debate in the field over which measure of FDI flows to use; we examine both.[67] Specifically, we reestimated all of our models in Tables 1–4 for the alternative dependent variable (constructed as described in footnote 66). Our results are largely sustained for the PTA variables. This suggests that our findings are robust to the form of the dependent variable we use.

[63] Following Büthe and Milner 2008 for these robustness checks, we detrended all variables that exhibited a significant trend to deal with the violation of the Gauss-Markov assumptions that is inherent when there are trends in the data and to avoid spurious correlation. These models also included country fixed effects to control for unobserved and time-invariant cross-national differences.

[64] The addition of year fixed effects or a time trend to our error correction models also does not change our main results for the PTA variables.

[65] We include lags of one year for the GATT/WTO, two years for lagged FDI, and four years for BITs and PTAs. To minimize the problem of instrument multiplication, we collapse all instruments. Finally, because we are interested in the levels of these variables rather than their change, we focus the instruments on the levels rather than the change.

[66] Taking the log of negative numbers or zero returns a missing value, which would lead to a very substantial loss of cases from the sample. While there is no single, agreed-upon way to deal with this, we consider Osborne's (2002) and Li's (2009b) preferred method to be most suitable to minimizing the loss of observations. Consequently, we created the dependent variable for these analyses by adding one to the absolute value of FDI flows and then taking the log. This ensures that there are no values between 0 and 1. For country-years with negative inward FDI flows, we then added a negative sign to the logged value.

[67] See Choi 2009a; Li 2009b; and Choi 2009b.

In order to examine the assumption that PTAs affect FDI in a linear fashion, we also added a quadratic term to all the models in the tables (PTAs and PTAs squared).[68] We found that the quadratic term was not close to standard levels of significance and did not improve the fit of the model. Thus we do not see evidence of decreasing marginal returns from our PTA variables; more agreements and stronger terms add credibility.

As a further step, using our original data and analysis, we differentiated among the PTAs by signatories, distinguishing those PTAs signed by a developing FDI host country with a major power from all other PTAs. We wanted to see in particular whether it is PTAs with the United States, the EU, or Japan that are driving our result: do these PTAs have more credibility than others? The results were surprising. When we omitted the PTAs with the US, the EU, and Japan, the resulting PTA measure remained largely significant. When we included a separate measure for the number of PTAs signed with the US, the EU, or Japan, it was by and large insignificant. These last two results suggest that it is not particular countries that are driving these results. Rather, it is the trade agreement itself and its provisions that matter.

We also considered whether another domestic policy indicator, the degree of a country's financial openness, might affect investors' expectations about a country's credibility. We used Brune's *FINANCIAL OPENNESS INDEX*, which measures the extent to which a country restricts capital account transactions, based on IMF reports.[69] The coefficient estimated for the FINANCIAL OPENNESS INDEX, however, is never close to any conventional threshold of statistical significance, and including this variable does not alter our main results.

Finally, we restricted the sample by excluding various subsets of countries and even entire regions to ensure that the results are not unduly driven by FDI flows into particular countries or regions; the results are largely unchanged. We then reestimated models 1–9 with the combined GATT/WTO variable to ensure that none of the findings depend upon making the GATT/WTO distinction; they do not. And we replaced Henisz's measure of political constraints with alternative measures of domestic political institutions to ensure that none of our main findings depend upon the use of this particular measure of domestic institutions; they do not.[70]

[68] See, for example, Tobin and Busch 2010 for possible reasons to expect a curvilinear relationship.
[69] See Brune 2007; Johnston et al. 1999.
[70] The alternative measure of domestic institutions (POLITY) also was not significant itself. Including the left-right orientation of the governments had no effect and was not significant, either.

IV. Conclusion

We have examined the link between specific institutional features of trade agreements and foreign direct investment flows. We have scrutinized the claim that such international economic agreements enable governments of developing countries to attract more FDI by allowing them to make more credible commitments to policies sought by foreign investors. We began by developing a theoretical argument about institutional differences across international trade agreements, focused on their suitability to make credible commitments. We hypothesized that FDI flows into developing countries should therefore be systematically correlated with certain institutional features across PTAs: more FDI should be expected to go to countries with PTAs that have entered into force, to countries with PTAs that contain stricter investment provisions, and to countries with PTAs that contain stronger dispute-settlement mechanisms.

Our statistical analyses, supplemented by numerous robustness checks, provide strong empirical support for our central hypotheses. These analyses are made possible by a new data set, which allows us to distinguish between agreements that have been merely signed and agreements that have entered into force, and to differentiate between PTAs based on key provisions. Our research yields two main findings.

First, most of the FDI increase previously attributed to signed agreements can in fact be attributed to the agreements that have entered into force through domestic ratification, thus making the commitment binding and more credible. This finding has important implications for the literature on the politics of international agreements more broadly, especially the literature on the economic consequences of BITs, much of which continues to simply analyze signed BITs even though the lag between signature and entry into force is on average much longer and more variable than for PTAs, and several hundred BITs by now seem certain never to get ratified.

Second, institutional differences matter: PTAs with investment clauses or with dispute-settlement mechanisms attract more FDI than PTAs without such provisions, and PTAs with stricter clauses lead to even more investment. In other words, suitably designed international institutions can enhance the credibility of commitments made by governments to other governments and to private actors. We also find that it is important to focus on the persistent as well as the short-term effects: these institutionalized commitments can provide developing countries with substantially greater access to capital flows over time, albeit at real costs in terms of lost policy autonomy—with important implications for

democratic governance as discussed by Simmons in her contribution to this symposium.[71] The design of international agreements matters.

Our research also has broader implications. For scholars of institutions, our work provides further evidence of the importance of the institutional context in which political and policy commitments are undertaken. Even scholars and policymakers who are interested only in domestic policy would do well to consider the possibility of changing or "locking in" policy through international institutions. We have focused here on the economic consequences of certain institutional characteristics, specifically for governments seeking to attract foreign capital. To do so, we have largely treated institutional variation—for instance, the variable strength of the dispute-settlement mechanisms—as exogenously given (though we relaxed this assumption in robustness checks). Yet, if enshrining commitments in international agreements is as effective or possibly even more effective than locking in policy domestically,[72] then much more research is needed on the inherently political processes through which that institutional variation is determined. Allee and Peinhardt as well as Simmons advance this research agenda, primarily by emphasizing the international dimension.[73] Both provide evidence, for instance, that lower GDP growth in developing countries, which increases their desire or need to attract more FDI while weakening them vis-à-vis capital-exporting countries, increases their propensity to sign BITs with more stringent provisions. Equally or even more important, however, are the domestic distributional implications of locking in economic policy, which calls for more research on the domestic politics of the institutional variation in international economic agreements.

Second, our findings suggest that the specific provisions of international economic agreements and the resulting institutional diversity across agreements have consequences not just for the relations between governments but also, very importantly, for private economic actors. Our research suggests additional reasons why seemingly secondary provisions, such as for a dispute-settlement mechanism, are often contentious and why negotiations over such provisions can be so difficult.[74] For scholars who seek to explain the initial design of international agreements, indirect consequences—such as the investment consequences of international trade agreements—may warrant greater attention.

Finally, our research contributes to the empirical literature on international law.[75] We show not only that international law matters but

[71] Simmons 2014.
[72] See, for example, Moe 2005.
[73] Allee and Peinhardt 2014; Simmons 2014.
[74] See also Koremenos 2007.
[75] For a recent, comprehensive review, see Ginsburg and Shaffer 2009.

also that it has political implications for the relationship between governments and international investors. The design of international institutions can then have important implications for policymakers seeking to promote economic development.

Appendix

Table A1
Summary Statistics

	N	*Mean*	*Std. Dev.*	*Min*	*Max*
FDI/GDP	3067	2.213	4.481	−25.680	92.104
Signed PTAs	3067	3.350	3.041	0	21
PTAs in Force	3067	3.113	2.814	0	19
PTAs Signed Only	3067	0.237	0.749	−5	10
Inv-Weighted PTAs (2-Category measure)	3067	4.229	3.664	0	27
Inv-Weighted PTAs (3-Category measure)	3067	5.051	4.392	0	39
PTAs without Inv. Provisions	3067	1.998	2.443	0	16
PTAs with Inv. Provisions	3067	1.115	1.332	0	12
DSM-Weighted PTAs (2-Category measure)	3067	5.159	4.844	0	36
DSM-Weighted PTAs (3-Category measure)	3067	5.489	5.412	0	43
PTAs without DSM Provisions	3067	1.067	1.370	0	10
PTAs with DSM Provisions	3067	2.046	2.179	0	17
GATT/WTO Membership	3067	0.672	0.470	0	1
GATT (only) Membership	3067	0.382	0.486	0	1
WTO Membership	3067	0.290	0.454	0	1
Signed BITs	3067	10.393	15.219	0	118
BITs Signed Only	3067	3.265	4.899	0	37
BITs in Force	3067	7.127	11.684	0	92
Domestic Political Constraints	3067	0.190	0.212	0	0.73
Political Instability	3067	2.239	4.417	0	49
Market Size	3067	16.150	1.384	13.816	20.988
Economic Development	3067	6.821	1.236	4.390	10.749
GDP Growth	3067	3.685	6.329	−50.248	106.280
Trade (X + M) as % of GDP	3067	67.322	37.365	6.320	428.459

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