

SUBSTITUTING FOR RULE OF LAW: BILATERAL INVESTMENT TREATIES AND U.S. FIRMS' INVESTMENT IN DEVELOPING COUNTRIES

RESEARCH NOTE

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Abstract

By specifying investment terms between signatory countries, bilateral investment treaties (BITs) can encourage foreign direct investment (FDI). Theory and evidence are less conclusive, however, for whether BITs substitute for or complement host countries' rule of law institutions. In this note, we investigate the differential interactive impact of BITs and institutions on multinational corporations' (MNCs) FDI decisions along the intensive and extensive margins of investment, which we argue results from firms' varying risk tolerances. Using investment data from U.S. MNCs, we find that BITs substitute rather than complement institutions, but solely along the *intensive* margin of investment. The evidence suggests that, while BITs in weak states improve confidence such that existing firms deepen their investments, these agreements are not strong enough to compel new firms to take on potentially risky investments. The most substantial substitutive effects are associated with judicial constraints, reflecting the particular utility of BITs in places with poor judicial institutions. We also find evidence suggesting that firms' differential start-up costs can moderate these effects. Overall, these findings show that BITs disproportionately spur FDI in weak judicial environments, while simultaneously demonstrating the importance of considering variation by investment margin.

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1 Introduction

The links between bilateral investment treaties (BITs) and foreign direct investment (FDI) have been widely studied in international political economy. BITs solidify the investment relationship between two signatory countries by specifying investment terms and dispute resolution procedures, most notably through Investor-State Dispute Settlement (ISDS) mechanisms. ISDS enables foreign investors to directly sue host governments in international arbitration tribunals when they believe their treaty rights have been violated, bypassing domestic courts (Simmons 2014). Scholars have shown that, under certain conditions, BITs may stimulate FDI (see Pandya 2016 for a review of this literature). The theory and evidence are less conclusive, however, when it comes to the interactive impact between BITs and host countries' rule of law institutions. On the one hand, BITs may complement institutional strength by further securing investment in places with stronger rule of law (Tobin and Rose-Ackerman 2011), which are more likely to attract investment in the first place (Jensen 2003; Li and Resnick 2003). Through ISDS provisions, BITs may constrain executive power by increasing the ex post costs of policy reversals or discriminatory treatment of foreign investors (Allee and Peinhardt 2011). On the other hand, BITs may substitute for a host country's institutions (Neumayer and Spess 2005)—particularly judicial institutions (Ginsburg 2005)—which can create negative political externalities in the host country (e.g. Rosendorff and Shin 2015; Arias, Hollyer and Rosendorff 2018). Critics argue that the threat of ISDS litigation may deter legitimate regulatory actions and harm host country reputation in global investment markets (Bonnitcha, Poulsen and Waibel 2017). Establishing the empirical reality has normative implications for how international treaties affect the development of domestic political institutions, and raises questions about the balance between economic and political development.

In this research note, we empirically investigate the interactive impact of BITs and institutions on multinational corporations' (MNCs) FDI decisions by distinguishing between the intensive and extensive margins of investment. Broadly speaking, MNCs' engagement in FDI can take two distinct forms that economists typically refer to as the "intensive" and "extensive" margins. In the context of international investment, the extensive margin refers to the establishment of new investment re-

relationships—specifically, the attraction of first-time investors from source countries that previously had no investment presence in the host country. The intensive margin refers to the deepening or expansion of existing investment relationships—the growth in investment volume from source countries that are already present in the host market. This distinction between new entrants and existing investors is crucial for understanding the multifaceted effects of bilateral investment treaties on investment patterns. While these concepts of margins originate in trade economics (Chaney 2008; Helpman, Melitz and Rubinstein 2008; Spilker et al. 2018; Kim, Londregan and Ratkovic 2019), they provide valuable analytical precision when applied to investment flows (Nguyen 2019; Razin and Sadka 2007). Throughout this paper, we distinguish between BITs’ effects on attracting new foreign investors versus deepening investments from existing foreign investors, as these two margins may respond differently to changes in institutional environments and treaty protections.¹

In considering the potential interactive relationship between BITs and institutions, distinguishing between the intensive and extensive margins is important for gaining leverage in a literature that, to date, is replete with mixed results. Institutional mechanisms that may otherwise remain hidden in aggregated analyses might be revealed by examining more nuanced investment data. The extensive margin of investment represents a “stability threshold” of sorts, where the outcome of interest is whether BITs render institutionally deficient countries sufficiently secure for initial investment. The intensive margin, by contrast, signifies a “confidence deepening” mechanism, where BITs might encourage expanded commitments from firms that have already made the initial plunge.

Firms also have different underlying risk distributions that may covary with their marginal investment, and the strength of a host country’s institutions may differentially factor into firms’ investment decisions based on this sensitivity to political risks. We consider two broad categories of firms that may possess different risk tolerances: firms already operating within a host country (e.g. firms that are positioned to increase their intensive investment) and firms that have not yet chosen to enter (e.g. firms positioned to increase their extensive investment). Rather than a uniform impact, we expect that BIT implementation may differentially affect each type of firm due to their differing risk tolerances.

¹In order to explore MNC-level decisions, we rely on existing studies’ definitions of the intensive and extensive margins of FDI focusing on country-level FDI flows (e.g., Nguyen 2019)

We thus argue that theory and design must distinguish between the intensive and extensive margins of investment for presenting a complete picture of how BITs and host country institutions jointly affect FDI. Despite the theoretical and practical implications, however, the interactive effects of BITs on both margins of FDI have received scant attention so far.²

In this research note, we develop a theoretical environment in which firms that have and have not yet invested can react differently in the aftermath of BIT implementation. We then test whether BITs in countries with weak institutions increase FDI along the intensive and/or extensive margins of investment, examining the specific institutions that make the greatest difference.

Our empirical analysis utilizes a dataset of U.S. MNC investments in developing countries. We use this data rather than FDI flow and/or stock data based on balance of payments (BOP) statistics, despite such data being readily available and covering a large number of countries over a long time horizon. This is because such data is often not suitable for empirical studies on the effects of domestic institutions and especially BITs on FDI due to concerns about inconsistent reporting standards across countries, opaqueness about the source country of FDI, and the omission of local financing (Kerner and Lawrence 2014). Using U.S. MNC activities and assets instead allows researchers to mitigate the problems associated with BOP-based FDI measures and to better capture the effects of political risk (Kerner 2014).

Thus, by using data solely from the U.S.—the world’s largest source of FDI—we aim to more directly and precisely test the links between two signatory countries. By comparing the changes in the investment decisions of U.S. MNCs between pre- and post-BIT periods and those in countries without U.S. BIT implementation, our study aims to capture the direct effects of BITs. These are the effects that reassure potential investors from the given partner country by providing legalized protections, thus mitigating the more indirect and potentially confounding “signaling” effect of BITs that can encourage investment from all countries by indicating a favorable overall investment climate (e.g., Aisbett 2009; Egger and Pfaffermayr 2004).³ This data is particularly suitable given the standard

²A notable exception is Aisbett, Busse and Nunnenkamp (2018), who finds a positive effect of BITs on the intensive margin based on bilateral FDI flow data.

³In empirical analyses of the impact of BITs, especially where FDI flows are the dependent variable, distinguishing between these two mechanisms is a daunting task (Allee and Peinhardt 2011; Neumayer and Spess 2005), though Aisbett, Busse and Nunnenkamp (2018) suggest that comparing FDI response levels between BIT partners and non-partners

“model BIT” template that the U.S. uses globally, minimizing variation across host countries.

Our results first establish that BITs and rule of law institutions have a substitutive rather than a complementary effect on foreign investment *solely along the intensive margin of investment*. Rather than attracting new investors to institutionally deficient states, BITs increase the average assets invested. This evidence suggests that BITs and institutions have a nuanced, partial interactive impact: while BITs in weak states improve confidence such that existing firms deepen their investments, these agreements are not strong enough to compel new firms to take on potentially risky investments.

We then interrogate the specific institutional features that affect the interactive impact of BITs. We find that the most substantial substitutive effects are associated with judicial constraints, reflecting the particular utility of BITs in places with poor judicial institutions. Delving deeper into specific components of judicial institutional strength, we find that this substitutive effect holds for multiple measures of judicial compliance and judicial independence. These findings confirm that BITs substitute for institutional strength, particularly in states with weak judiciaries.

By providing evidence that BITs substitute for rule of law in attracting foreign investment, especially on the intensive margin of investment, this article seeks to make several contributions. First, we add to the evidence base of substitutive effects of international institutions and rule of law on foreign direct investment. We thus add to the growing body of evidence describing the unintentional political consequences of international institutions. BITs may lead to negative political externalities, such as disproportionately supporting weak regimes and reducing incentives for democratic development (e.g. [Arias, Hollyer and Rosendorff 2018](#)), though recent work also suggests that reduced support for autocrats can be an unintended consequence of FDI due to its distributional effects ([Rommel 2023](#)).

Second, the findings of this study provide empirical insight on the international investment treaty regime by accounting for differential effects of BITs by the intensive and extensive margins of investment. Existing studies on investment treaties predominantly investigate their impact on foreign direct investment, to somewhat mixed results.⁴ Recently, a growing body of scholarship has moved toward examining the diffusion of BITs (e.g. [Elkins, Guzman and Simmons 2006](#); [Poulsen 2014](#)) and

among developing host countries can help to discern the competing mechanisms behind BITs’ effects.

⁴See [Bonnitcha, Poulsen and Waibel \(2017\)](#) for a comprehensive review of these studies.

the impact of BITs beyond investment (e.g. Gertz 2018; Poulsen 2020), though a scholarly consensus has not yet been reached (Bonnitcha, Poulsen and Waibel 2017). This article helps contribute to these debates by providing new evidence for the interactive impact of BITs on FDI by specific host country institutional characteristics. Our data and research design—holding constant originating country and analyzing multiple margins of investment—yield findings that suggest that the interactive impact of BITs and institutions may be more nuanced in nature than previous work suggests, and may only materialize under certain conditions. These findings show that BITs are not a guaranteed solution for attracting investment to places with poor rule of law; instead, they may only improve the confidence of firms who have already accepted the risk of entering a judicially deficient country. Our approach also underscores the importance of focusing on judicial institutions when attempting to draw causal links between BITs and economic outcomes. Omnibus political measures can obscure the important variation in investment that BITs produce. Overall, this note opens new research avenues for probing the mechanisms connecting BITs to investment in developing countries and encourages further work examining the political consequences of international institutions.

2 Theory

2.1 BITs and the rule of law

Strong institutions are thought to encourage FDI because they reduce investment risk. Institutions that protect property rights can limit expropriation without recourse, institutions that constrain political actors can prevent volatile and disruptive policy behavior, and institutions that secure judicial independence can facilitate dispute resolution (Li, Owen and Mitchell 2018). Democratic features such as the protection of individual rights, high rates of political participation, and free and fair elections have also been shown to improve FDI inflows by reducing political and economic uncertainty (e.g.. Choi and Samy 2008).

Following these findings, and to the extent that institutions matter for investment,⁵ there are two

⁵See Arel-Bundock (2017, 427) for important findings and a review of literature suggesting that institutions are not necessarily associated with investment flows.

broad schools of thought for how BITs might interact with institutions. One view argues that BITs are most effective in host countries that already possess sufficient baseline institutional strength to honor agreements. In this line of reasoning, international institutions complement domestic institutions in rendering host countries attractive to foreign investors. BITs might only be seen as credible in environments where they can be enforced (i.e. places with strong rule of law), implying that BITs may be most effective in countries where they are least “needed” (Desbordes and Vicard 2009; Tobin and Rose-Ackerman 2011).

By contrast, the other line of reasoning contends that BITs may *substitute* for institutions in drawing investment to developing countries. This is because BITs are thought to serve similar purposes as institutions for the rule of law (Pandya 2014). The primary utility of BITs is that investing firms can file lawsuits against the host government using international courts when contracts are breached (Allee and Peinhardt 2010). BITs can help circumnavigate the risks of mercurial domestic institutions for contract enforcement by constraining host policy makers’ incentives and abilities to expropriate.

2.2 The intensive and extensive margins of investment

Why has there been mixed evidence to date of an interactive impact of BITs and rule of law? One possible explanation is that existing studies on the interactive effects of BITs predominantly focus on overall investment flows rather than more nuanced measures of investment. If MNC responses to BITs are indeed more subtle in nature, analyzing overall investments could mask important effects occurring solely along one margin of investment. In fact, recent studies suggest that MNCs must make investment decisions along two dimensions—whether or not to invest and the size of the investment—and economic and political determinants of FDI can affect these two dimensions in asymmetrical ways (e.g., Nguyen 2019; Davies, Siedschlag and Studnicka 2021).⁶ When it comes to the interactive effects of BITs, distinguishing between these two dimensions is particularly important. By evaluating the strength of political institutions and thereby political risks, some MNCs may decide to operate in the host country while others refrain given their sensitivity to risk. These two types of MNCs may

⁶Notably, we do not suggest that these two dimensions necessarily involve a two-stage decision process (i.e., which margin is determined first).

respond differently to BIT implementation in ways that could either complement or substitute for rule of law in the host country: firms already operating in the country can either *deepen* or *reduce* their investments post-BIT (the intensive margin) while firms that have not yet entered may choose to *launch* or *not launch* activities in a country after a BIT is implemented (the extensive margin).

Existing theory, however, does not give clear predictions for whether BITs are likely to affect the extensive or intensive margin of investment, or both, in drawing investment to developing countries with weak institutions.⁷ On the one hand, if BITs help to overcome firms' start-up costs of investing in weak states—hurdlng a “stability threshold” of sorts—we would hypothesize an increase in the extensive margin. Such firms may see entry as profitable once a BIT is signed, and this shift may be substantial in magnitude because the minimal risk threshold has been lowered, creating a discontinuity at that threshold.

On the other hand, firms already operating in the country may perceive their risk as further reduced by BITs, thereby solidifying their sense of security within the country and spurring investment on the intensive margin. However, the magnitude of these effects may be uncertain since firms' total return functions are typically assumed to be concave. That is, we might hypothesize an increase in intensive investment if costs decline with more institution protection, but the size of these effects remains an empirical question.

In this paper, we build upon the prior mixed evidence of the interactive impact of domestic institutions and BITs to test whether BITs are sufficient to spur new investors to countries with weak institutions and/or whether they may cause existing investors to deepen their investments. Do results reflect the hypothesized increases along both margins of investment, or could it be that the interactive impact of BITs and judicial institutions materializes along one dimension and not the other? This could indeed be the case depending on the underlying characteristics of firms that have invested—or that may eventually invest—in developing contexts.

Several factors might explain this divergence between firms that have already invested and firms that have not. Such firms may differ in terms of their risk tolerances, market evaluations, sizes, and

⁷Pinto and Weymouth (2016) are an exception in disaggregating the intensive and extensive margins, in their analysis of partisan cycles in outsourcing.

more. Regardless of the reason, the firms that have already invested in a given country pre-BIT are those who find it to be economically feasible and profitable even when accounting for the risk of expropriation. Formally, firm i will invest when $B_i = T_i - R_i > 0$ where B is the overall expected benefit, T is the total expected economic returns from their investments,⁸ and R is the expected value of losses due to expropriation for a given firm i . For firm e that has already invested in a country pre-BIT, $B_e^{pre} = T_e - R_e^{pre} > 0$, and for firm n that has not yet entered a country, $B_n^{pre} = T_n - R_n^{pre} < 0$.

BITs reduce the risk of expropriation in countries with weak institutional environments, and their impact on investment will depend on the amount they reduce this risk. The post-BIT risk of expropriation for firms that have already invested, R_e^{post} , is less than the pre-BIT risk R_e^{pre} . Thus, these firms' overall expected benefits post-BIT are higher than 0 ($B_e^{post} = T_e - R_e^{post} > 0$) as well as higher than before ($B_e^{post} > B_e^{pre}$). As a result, such firms invest in the country again (i.e., deepen their investments). In other words, when independently evaluating the risks and profitability of future investments in the post-BIT stage, firms that have already invested in the host country find the pursuit of FDI even more profitable. The theoretical implications are less clear for firms that did not invest prior to a BIT, however. While R_n^{post} is less than R_n^{pre} , it may not be sufficiently reduced such that B_n^{post} becomes positive. In other words, if $R_n^{post} > T_n$, these firms would continue to refrain from investing since the overall expected benefits B_n^{post} remain negative. In light of the multitude of reasons such firms may have had for not originally investing, and given the extant mixed evidence of the interactive impact of BITs and institutions, R_e^{post} may be unlikely to be sufficiently reduced by BITs such that investment increases in institutionally weak contexts. In this case, non-investing firms would be unlikely to enter a given country because of a BIT, while already-invested firms would deepen their investments.

The differential impact of BITs on intensive versus extensive margins may also reflect political economy dynamics in treaty formation. Multinational enterprises with established investments in host countries possess both the incentive and political connections to lobby for investment protection (Betz and Kerner 2016). These firms can leverage their economic importance in host markets and their political access in home countries to advocate for treaty-based protections (Johns and Wellhausen 2021). This lobbying channel helps explain why BITs primarily affect the intensive margin:

⁸We do not assume that BITs change T .

firms already operating in the host country view the institutionalization of investment relationships through BITs as a costly signal from host governments that warrants expanded investment. As [Buthe and Milner \(2014\)](#) demonstrate, multinational firms actively participate in the design and promotion of international investment agreements to secure their interests. This perspective complements our institutional substitution argument by highlighting the audience cost mechanism: when host governments sign BITs under lobbying pressure from existing investors, they incur potential audience costs not only for violations of judicial norms but also for breaching broader horizontal accountability arrangements. This helps explain our finding that BITs substitute not only for judicial institutions but also for other mechanisms of political constraint.

This paper empirically assesses which margins of investment BITs affect in countries with weak rule of law. If BITs substitute for rule of law institutions, we expect to see negative interaction effects between BITs and institutions in statistical models. Where these effects occur—in terms of both which institution(s) as well as which margin(s) of investment—will demonstrate the specific conditions under which BITs have this substitutive effect.

3 Research design

3.1 Data

We use data of U.S. MNC investment activities in developing countries,⁹ which comes from the U.S. Direct Investment Abroad (USDIA) initiative of the Bureau of Economic Analysis (BEA). As the predominant global exporter of FDI, constituting approximately 20% of worldwide outward FDI stock, U.S. investment patterns exert considerable influence within the global political economy. This prominence renders U.S. MNCs particularly consequential in influencing host country policy formulation and institutional development. Also, the U.S. implements a standardized “model BIT” template universally, with negligible variation across host countries. This standardization eliminates a significant source of potential confounding variation that would otherwise be present in cross-source

⁹We categorize countries as developed based on OECD membership.

country analyses, thereby enabling more precise isolation of the effects of host country institutional quality.¹⁰ Furthermore, our findings regarding U.S. firms likely represent the upper boundary of potential BIT effects, given their particular sensitivity to legal protections. These firms typically operate under rigorous domestic corporate governance standards and legal enforcement mechanisms, establishing baseline expectations for legal security that may exceed those of multinational corporations from jurisdictions with less developed legal systems. If U.S. firms—with their elevated institutional expectations—demonstrate primarily intensive margin responses to BITs in weak institutional environments, firms from countries with less sophisticated domestic legal frameworks might exhibit even more constrained extensive margin responses. These U.S.-specific characteristics provide an optimal context for examining the theoretical relationship between BITs and institutional frameworks.

The data spans U.S. firms' global operations from 1983 to 2012 and is aggregated at the host-country level, which allows us to test our country-level theory of substitutive effects between BITs and institutions.¹¹ To measure US MNCs' foreign investment decisions, we focus on two dimensions: the intensive and extensive margins of investment. We use the number of affiliates operating in the host country to capture the extensive margin of vertical FDI, which involves establishing an affiliate for production of input or final goods and subsequently importing from that affiliate (Pinto and Weymouth 2016).¹² To capture the intensive margin of vertical FDI, we use average total assets (measured in millions of constant 2010 USD), which measures the extent to which U.S. MNCs are invested in their affiliates.¹³ Detailed discussions on the U.S. BIT variable and our FDI margin indicators can be found

¹⁰The US model BIT underwent significant revisions in 2004 and 2012, creating variation in how these treaties interact with domestic rule of law institutions. The 2004 revision, responding to NAFTA Chapter 11 controversies, recalibrated investor protection and state regulatory autonomy (Vandeveldt 2017). Key changes included more precise language for protection standards, enhanced transparency for ISDS proceedings, and provisions for expedited review of frivolous claims (Johnson Jr and Gimblett 2011). The 2012 model further refined these approaches while strengthening labor and environmental standards, adding disciplines on state-owned enterprises, and expanding financial regulation exceptions (Johnson 2012). Access to ISDS also represents a particularly important dimension of this evolution. The 2004 model introduced a more structured approach to dispute settlement, while the 2012 model added provisions for expedited rejection of frivolous claims and encouraged alternative dispute resolution (Peinhardt and Wellhausen 2016).

¹¹Following Kerner and Lawrence (2014), we treat missing USDIA data as missing rather than as zeroes.

¹²While firms can import goods and production inputs from unaffiliated foreign suppliers, intra-firm trade is common—particularly for U.S. MNCs—and accounts for more than half of total imports (Bernard, Jensen and Schott 2009; Pinto and Weymouth 2016).

¹³Ideally, firm-level panel data tracking individual investors before and after BIT signing would allow direct observation of investment expansion by pre-existing firms. In the absence of such comprehensive microdata, we measure the intensive margin using average total assets invested by investors operating in the country. This approach, while imperfect, represents the best available proxy given data constraints. Importantly, our null findings on the number of affiliates help

in Appendix Section A2.

One of our two key independent variables for the interactive effect of interest is a binary indicator for the presence of a U.S. BIT in a given host country, coded 1 if a U.S. BIT is in force there that year. To capture the other key variable, the institutional strength of host countries, we rely on several measures. We use the executive constraints measure from Polity IV to specifically quantify institutional constraints on executive authority. We additionally utilize the political constraints variable from the POLCON database to gauge the level of institutional constraints on policy changes (Henisz 2000). Last, to conceptualize the constraints placed via judicial institutions—through which we argue BITs are most likely to affect investment decisions—we use the V-Dem indicator for judicial constraints (Coppedge et al. 2017). This variable measures the extent to which court rulings and constitutional powers constrain executive decisions as well as the judicial system’s overall level of independence.¹⁴ For deeper analysis of the particular constraints for which BITs might substitute, we also use V-Dem sub-indicators for political constraints.

These institutional measures are conceptually distinct: executive constraints broadly measure checks on executive authority; veto players capture the number and ideological alignment of institutional actors whose agreement is necessary for policy change; and judicial constraints specifically measure judicial independence and power relative to the executive. Similar effects across these measures would suggest that BITs may serve as substitutes for multiple accountability mechanisms within domestic political systems. This points to a broader argument: BITs may substitute not only for weak rule of law but for more autocratic governance structures generally. As (Jensen et al. 2012) suggest, international economic agreements can provide external commitment mechanisms that compensate for various institutional weaknesses. Summary statistics for our main dependent and explanatory variables are presented in Appendix Table A1.

mitigate concerns about composition effects driving our intensive margin results.

¹⁴The judicial constraint indicator is constructed from several sub-indicators of judicial institutional strength, including measures for the executive’s respect of the constitution, overall judicial compliance, high court compliance, and high and lower court independence.

3.2 Estimation strategy

To directly test the substitutive effect of BITs and institutions on MNC activities, we focus on U.S. BITs and MNCs. This approach allows us to compare differences in U.S. MNCs' investments between countries that did and did not sign a U.S. BIT, pre- and post-U.S. BIT implementation, examining variation by host-country institutional strength.

We use OLS with country and year fixed effects and use robust standard errors clustered at the country level to account for heteroskedasticity and within-unit correlation.¹⁵ For all models, we also include a series of control variables to account for the potential confounding influences of FDI that past studies have suggested (e.g. [Pandya 2014](#)). This includes a binary indicator for U.S. preferential trade agreements (PTAs),¹⁶ as well as controls for logged real GDP per capita, logged population, share of urban population (as a percentage of total population), trade openness (the sum of imports and exports as a percentage of GDP), the number of non-US BITs (logged),¹⁷ and natural resource rents (as a percentage of GDP).

This empirical strategy relies on the assumption that changes in U.S. MNC investments in countries that never signed a U.S. BIT are an appropriate counterfactual to changes in countries that signed a BIT, prior to signing the BIT. To check if U.S. MNCs' activities vary in the countries that signed a U.S. BIT and those that did not, we estimate the impact of future U.S. BIT implementation on our dependent variables, measured one, three, five, and seven years ahead of actual BIT implementation. The results, presented in [Appendix A4](#), reflect non-distinctive trends between the two comparison groups.

¹⁵For models with the number of affiliates as the outcome (a count variable), we also estimate a negative binomial model to account for overdispersion, with bootstrapped standard errors at the country level. These models yield substantively similar results to those presented in the main body.

¹⁶This includes regional trade agreements such as the North American Free Trade Agreement (NAFTA).

¹⁷U.S. MNCs may benefit from BITs between the host country and non-U.S. country in which their subsidiary operates ([Buthe and Milner 2009](#)). To account for this possibility, we control for the number of BITs signed by the host country with non-U.S. partners.

4 BITs substitute for institutional constraints along the intensive margin

Figure 1 displays the magnitude of the interaction coefficient at different values of the institutional constraints indicators (executive constraints, political constraints, and judicial constraints), based on the estimation results presented in Appendix Section A3.¹⁸ These figures lend support to the findings of substitution effects on the intensive margin.¹⁹ The marginal effects on the intensive margin decrease as institutional constraints increase and are statistically significant for the low and high values of all of the institutional constraint variables. The marginal effects on the extensive margin, by contrast, are statistically indistinguishable from 0 at all levels of constraints, though the slope trends slightly downward. Overall, the sum of evidence suggests that U.S. firms increase the intensity of their investments in countries with weaker institutional constraints as a result of BIT implementation.

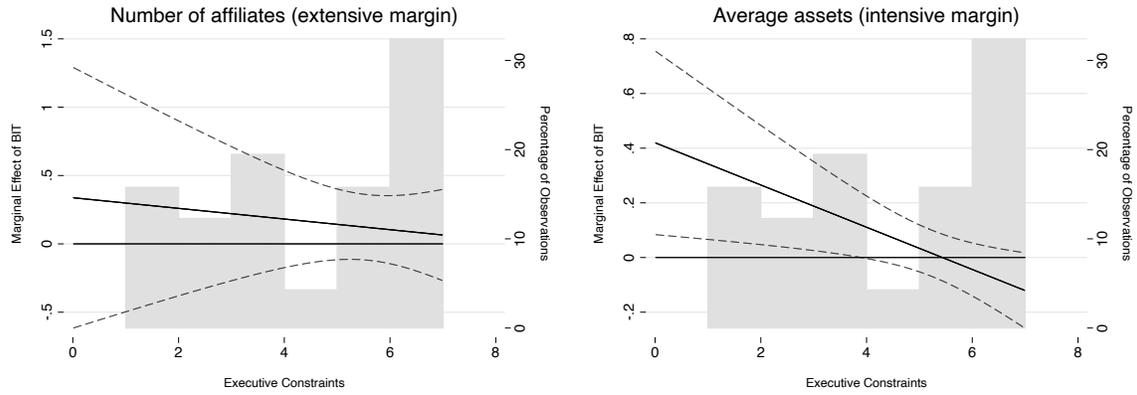
To contextualize the effect sizes: For political constraints, US BITs increase average affiliate assets by approximately 22.5% in countries with weak constraints (one standard deviation below the mean), while slightly decreasing assets (-3.2%) in countries with strong constraints (one standard deviation above the mean)—a difference of 25.7 percentage points.²⁰ The pattern is more pronounced for executive constraints: US BITs increase average assets by approximately 30.5% in countries with weak executive constraints, but decrease assets by 4.1% in countries with strong constraints—a swing of 34.6 percentage points. Most intriguingly, for judicial constraints, US BITs increase average assets by 30.5% in countries with weak judicial systems, but decrease assets by 9.5% in countries with strong judicial constraints—a substantial 40 percentage point difference across the institutional spectrum. These findings provide nuanced insights regarding the impact of BITs. BITs appear to function as partial rather than complete substitutes for domestic institutions. That is, they appear to reassure existing investors but do not move the needle for firms yet to enter. Rather than fundamentally trans-

¹⁸Marginal effects plots for Polity score are presented in Appendix A5.

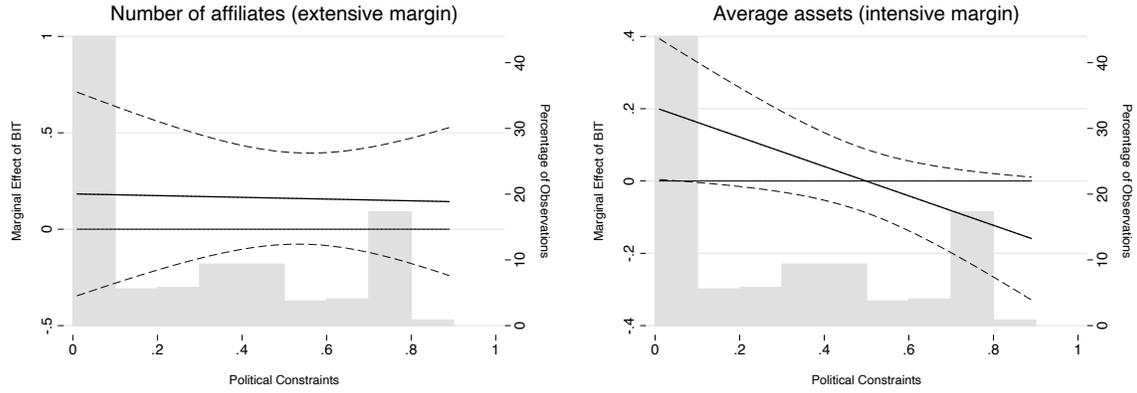
¹⁹The histograms presented in the figures also show that the common support assumption is held.

²⁰These marginal effects were calculated from our log-linear regression model using the formula: $[\exp(\hat{\beta}_{\text{BIT}} + \hat{\beta}_{\text{interaction}} \times \text{institutional_constraint_value}) - 1] \times 100\%$, where $\hat{\beta}_{\text{BIT}}$ is the estimated coefficient for US BIT and $\hat{\beta}_{\text{interaction}}$ is the estimated coefficient for the interaction term. The formula converts the log-scale coefficients to percentage changes in the original scale of average affiliate assets.

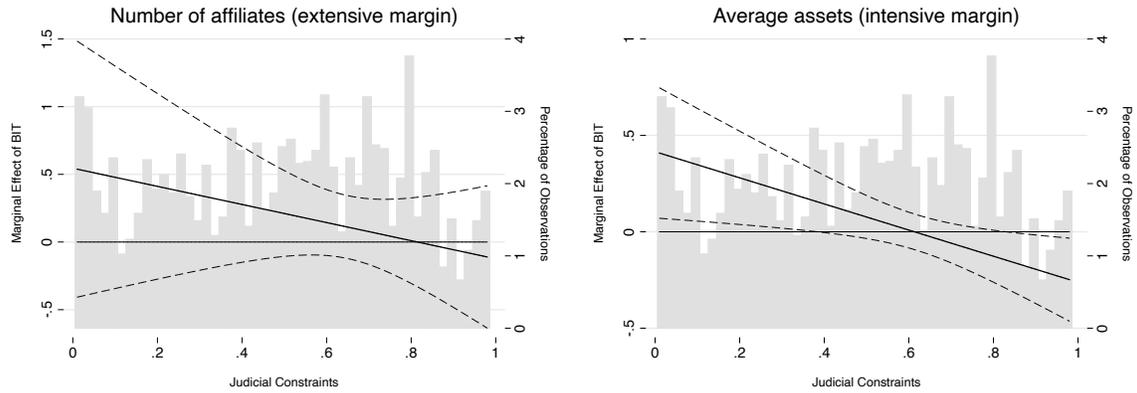
Marginal Effects of BITs over Executive Constraints



Marginal Effects of BITs over Political Constraints



Marginal Effects of BITs over Judicial Constraints



Notes: Dotted lines represent 90% confidence intervals.

Figure 1: Marginal Effects of BITs over Executive Constraints (Top) / Political Constraints (Middle) / Judicial Constraints (Bottom) on the Number of Affiliates (Left) and Assets (Right)

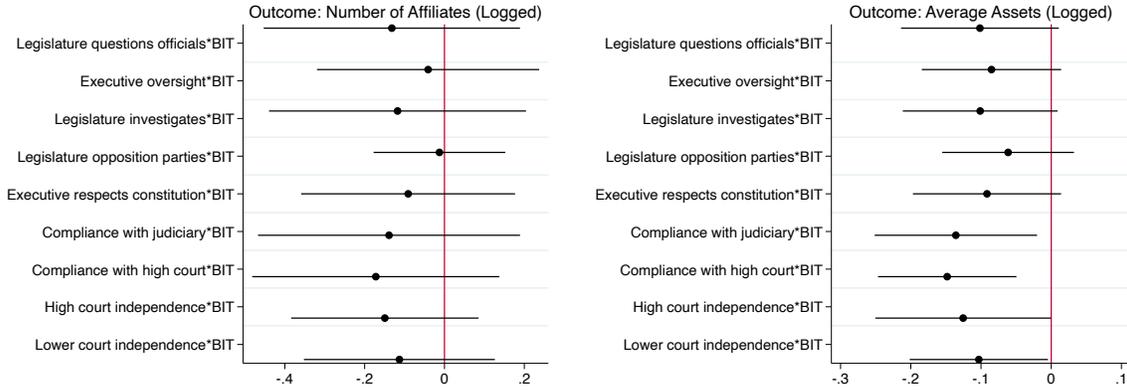
form the institutional environment, BITs might instead disproportionately enhance the security of only existing investments.

While the above results provide evidence that the effects of BITs depend on the strength of institutional constraints in a host country along the intensive margin of investment, for which specific institutional constraints do BITs substitute in attracting investment from a BIT partner country? For a deeper exploration of the specific institutional features that firms value (or do not value), we reestimate the models using primary components of the institutional constraints index that encompass three core institutions that moderate political risk: legislatures, executives, and courts. To maximize robustness, we utilize nine sub-indicators for institutional constraints from the V-Dem dataset: legislative power to question executive branch officials, executive oversight, legislative power to investigate the executive's actions, opposition parties' power to investigate and exercise oversight over the governing party, executive branch officials' respect for the constitution, judicial compliance, high court compliance, and high and lower court independence. Specifically, we estimate our main models by using sub-indicators for institutional constraints and their interaction terms with U.S. BITs.

In Figure 2, we report the estimated coefficients and confidence intervals for the interaction terms between the BIT indicator and each of the sub-indicators. Each of the coefficients is based on separately estimated models.²¹ We again find no evidence of a substitutive effect along the extensive margin for any of the interactions of interest. For the intensive margin of investment, however, we find negative and statistically significant coefficients for the interactions between BITs and indicators of judicial constraints. Indeed, for all judicial sub-indicators (compliance with the judiciary, compliance with higher courts, high and low court independence), the estimated coefficients for the interactive effects are consistently negative and statistically significant. These results reinforce the notion that international dispute settlement constitutes a core feature of BITs that can facilitate foreign investment by providing a credible international commitment device to constrain expropriation (e.g., Allee and Peinhardt 2010; Frenkel and Walter 2019). BITs substitute for the desirable judicial strength that investors seek, mitigating the risks typically associated with investing in weak institutional environments. We again find that these interactive effects are pronounced in the intensive

²¹We also present the marginal effect plots in Appendix Section A5.

margin, implying that BITs can provide sufficient institutional support to substitute for weak judicial systems primarily for the firms already operating in the country. These effects are not sizable enough to significantly draw new firms to invest.



Notes: Coefficient plots for the interaction terms between a binary BIT indicator and the indicators for political constraints. Point estimates are presented with 90% confidence intervals.

Figure 2: Interactive effects of BITs and political constraints

When it comes to temporal dimensions of BIT effects, while a signaling effect may occur relatively quickly after signing, as investors interpret treaty conclusion as indicating host government commitment to investment protection (Buthe and Milner 2014), the full substitution effect which includes the institutional substitution mechanism likely develops gradually as investors observe how the treaty functions in practice. To empirically check the timing effects, we estimated models with BIT variables lagged at t-1, t-3, and t-5 years. The results, presented in Appendix Section A11, suggest that BITs begin functioning as institutional substitutes relatively quickly (within the first year) and maintain this role for at least five years, though the magnitude of the substitution effect may fluctuate slightly over time.

To check if our main findings are susceptible to common selection problems, we employ the Arellano and Bond generalized method of moments (GMM) system models (Arellano and Bond 1991), in line with other studies of FDI (e.g. Kerner 2009; Tobin and Rose-Ackerman 2011; Buthe and Milner 2014). Details on the GMM estimations are presented in Appendix Section A8.²² We also

²²We present GMM as a complementary rather than primary estimation strategy due to the inherent difficulty in finding an ideal instrument that is uncorrelated with the error term but sufficiently correlated with our key independent variable

estimate effects using binary indicators for U.S. BIT or U.S. PTA with investment provisions, which may function as equivalent representations of international investment treaties. As an additional robustness check, we re-estimated our main models using the V-Dem’s Equal Access to Justice Index. This index captures the degree to which citizens have secure and effective access to justice, potentially enabling them to hold MNCs accountable within the domestic legal system. The results of these supplementary estimations are presented in Appendix Section A8 and A9, and A10, revealing that the core findings of our study are unchanged. Finally, in Appendix Section A12, we extend our theory to hypothesize the role that firms’ differential start-up costs play, and conduct initial, exploratory analyses to test the observable implications of this theoretical extension.

5 Conclusion

The findings of this study have implications for research that attempts to estimate the impact of BITs on investment by bundling investment outcomes together; without distinguishing between the extensive and intensive margins of investment, important variation in the impact of BITs may go undetected. Additionally, by providing evidence that BITs can in certain circumstances substitute for judicial institutions, we contribute to a growing body of work that demonstrates the unintended political consequences of international institutions (e.g. [Arias, Hollyer and Rosendorff 2018](#)). Our findings imply that the potential political consequences of investment agreements merit deeper consideration before states implement them.

Although we use data from U.S. MNCs and BITs, the U.S. is the world’s largest exporter of FDI, and the data and analyses presented in this paper thus represent a sizable portion of the world’s FDI. Furthermore, because other significant FDI exporters follow similar patterns of investment agreements and investment—and are likely to be affected by tensions and forces similar to those experienced by U.S. MNCs—these patterns of investment might mirror trends in other contexts as well. For example, EU member states are a major source of global FDI and place significant priority on

(U.S. BIT in force). Still, following [Kerner \(2009\)](#) and [Tobin and Rose-Ackerman \(2011\)](#), we use the average number of (U.S.) BITs signed in neighboring countries as an instrument in the GMM estimation and also estimate system GMM models suggested by [Busse, Königer and Nunnenkamp \(2010\)](#). These supplementary models yield substantively similar findings as our main estimations.

stability and predictability. Japanese MNCs are likewise known for their risk aversion and may thus face similar pressures. Still, we recognize that because the U.S. holds a unique position in the global political economy, and because U.S. firms might be particularly sensitive to legal protections, that the results presented in this manuscript might represent an upper bound of the potential effects of BITs. While we believe our findings remain important even if they only apply to U.S. MNCs, future research would be well served by using fine-grained data from other FDI exporters to examine the substitutive effect of BITs and institutions.

This article highlights several additional areas for future work on international institutions to explore. For example, while an implication of our findings is that BITs stifle democratic development, additional research is needed to directly test whether investment agreements reduce the likelihood of democratic consolidation. Additionally, finer-grained firm data could be used to distinguish between alternate political economy mechanisms that might be included in the presented estimates, including the impact of multinationals' lobbying efforts and political connections in treaty formation. Future work should also consider the role of BIT compliance and how disputes between countries and firms after BIT implementation subsequently shape the intensive and extensive margins of investment.

One possible explanation for the lack of statistically significant effects on the extensive margin may relate to sectoral differences in investment regulations. Host countries may maintain varying degrees of openness across economic sectors, with some industries being more protected from foreign entry than others. These sectoral policies may create binding constraints on new investor entry that BITs cannot easily overcome. Due to data limitations, we cannot directly test this hypothesis in the current study, as our cross-national FDI data lacks consistent sectoral disaggregation. Future research with more fine-grained sectoral data could examine whether BITs' effects on the extensive margin vary by industry, particularly in sectors with different levels of regulatory barriers or strategic importance to host governments.

Last but not least, while our results provide strong evidence for intensive margin effects, we acknowledge measurement limitations imposed by data constraints. The ideal approach would involve tracking investment changes at the individual firm level across countries and time, which is not feasible with current cross-country data. Future research using firm-level panel data from specific coun-

tries could further validate this mechanism by directly tracking how pre-existing investors respond to BIT signing compared to potential new entrants, potentially revealing additional heterogeneity in responses across firm characteristics, sectors, and institutional contexts.

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