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COMMITMENT AND CREDIBILITY IN FDI

by

KATHLEEN “KATY” SULLIVAN
B.A. University of Central Florida 2016

A thesis submitted in partial fulfillment of the requirements
for the degree of Master of Arts
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Major Professor: Kerstin Hamann

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ABSTRACT

How can firms in foreign direct investment (FDI) best protect their assets from host government contract breach? FDI is the largest and most stable form of external financing to less developed countries (LDCs). It increases job growth, technological development, and efficiency in the host country, subsequently increasing economic development. Companies prefer to invest in countries that are less prone to contract breach. I propose that credibility of commitments can help explain variation in contract breach. I propose that firms are most likely to avoid contract breach when they are involved in supply chains and when the host country has a preferential trade agreement (PTA).

I measure this relationship using a difference of means test and logistic regression. Using data from 1992-2008 from the International Centre for Settlement of Investment Disputes (ICSID), I find that on average, the least amount of cases filed involved supply chains and PTAs. Only 4% of cases involved supply chains and PTAs, suggesting a protective force in FDI. The interaction between supply chains and PTAs has a significantly positive effect on investors winning their cases in the ICSID. My results suggest that in the event of a contract breach, my interaction variable of membership in supply chains and PTA's help investors protect their assets.

The implications of these findings are twofold. To safeguard their FDI, firms can ensure better protection from contract breach through supply chains. Furthermore, host countries can attract more FDI from PTAs. For future research, I suggest case study analysis as well as interviews with representatives from foreign firms that have dealt with contract breach.

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CHAPTER ONE: INTRODUCTION

Foreign direct investment (FDI) is crucial to the growth of less developed countries (LDCs). FDI is defined as the flow of private capital from a firm to a location residing outside the sovereign borders of its respective home country. A home country is simply the country from which a firm operates (Jensen, 2003). Among other options of external financing to LDCs, FDI has been the most abundant and robust in the wake of economic shocks over past ten years. Figure 1 illustrates how stable this source of income is for LDCs as compared to other forms of external financing. Of the five major sources of income to LDCs (including remittances, portfolio investment, bank loans, and official development assistance), FDI has been the largest and most stable. Bank loans have been the most turbulent, skyrocketing to nearly \$800 billion in 2006 and falling almost zero two years later. Portfolio investments have also been turbulent while never reaching the same amount as remittances (UNCTAD, 2018). Remittances and official developmental assistance have also been stable, but significantly less than FDI over time, as depicted in Figure 1. However, multinational corporations (MNCs) are at becoming increasingly disillusioned at investing in LDCs as they fear breach of contract on the part of the host country. Caseloads of contract breach in international investment courts increase each year (ICSID, 2018). Breach of contract in FDI involves either party in an agreement renegeing on their promises, in FDI this oftentimes means investors lose money consequently. Finding a means for investors to be more certain in their investments, then, is crucial for the future growth of FDI and by proxy development.

[Insert Figure 1 here]

The United Nations Conference on Trade and Development (UNCTAD) World Investment Report has assessed that FDI constitutes 24% of LDC's external financing in 2017. Since 2008, it has surpassed all other forms including remittances, portfolio investment, bank loans, and official development assistance (UNCTAD, 2018). LDCs have good reason to adopt policies to attract FDI. It increases job growth, technological development, and efficiency in the host country (Jensen, 2003).

Consequently, host countries, or countries experiencing the inflow of FDI, must successfully and continually attract FDI to propel economic development, all else equal. MNCs participating in FDI desire to avoid political risk, which is a viable concern in LDCs. Risks involved in LDCs include working with new or unstable regimes with little transparency and/or formality in the policymaking process. This results in uncertainty of future actions on the part of the host country, something an MNC desires to avoid (Jenson, 2008). Risks include breach of contract to outright expropriation of assets of an MNC (Johns and Wellhausen, 2016). When a host country reneges on a commitment, the affected MNC may litigate through international investment settlement dispute courts. The most relevant court is the International Centre for Settlement of Investment Disputes (ICSID), operated through the World Bank, which administered 279 cases in 2018 alone (ICSID, 2018). If MNCs fear a host government may breach their contract, they will be less inclined to invest. This is particularly troublesome for LDCs that depend on FDI so heavily for external financing. The credibility of commitments host governments make is crucial information for MNCs assessing investment prospects (Allee and Peinhardt, 2011).

Firms makes choices about foreign direct investment based on the ownership, location, and internalization (OLI) framework. Ownership refers to advantages a firm may have based on

a specific product, process, or brand recognition. Location deals with the variation of production or transportation costs related to a product or policies such as tariffs. Natural resources and the cost of labor also have to do with location. Finally, firms make choices in FDI based on internalization; it is the choice firms make to retain their ownership over their products and processes rather than selling patents and simply trading with other firms in different locations (Jensen, 2003; Dunning, 2001). They also make decisions based on the past actions of host governments. Commitments LDCs make in the form of trade agreements signal to potential investors how they may be treated in FDI. Trade agreements, especially involving multiple parties with clauses for dispute settlement mechanisms, increase the inflow of FDI to signatory countries (Büthe and Milner, 2014). Type of governance, or level of democratic development, is also a determining factor for firms' choices in investment. Countries with democratic regimes have lower levels of political risk as their executives are constrained by other branches of government and public opinion (Jensen, 2008).

Despite varying levels of host country development, not all firms are susceptible to the same level of political risk. Johns and Wellhausen (2016) find that firms engaged in FDI that are members of supply chains are better protected against government breach of contract than firms acting alone. Here, supply chains refer to the practice of business between firms that specialize at different stages of production of a good. These protections supply chains enjoy promote MNC's preferences for open trade (Meckling and Huges, 2017). Scholars in the field look at FDI from either the point of view of the host government or the firm. They ask how governments can attract more FDI or how firms can avoid contract breach. Both perspectives contribute to discerning what increases FDI. FDI is salient to the overall economic growth and development of LDCs.

One way to assess the growth of FDI is to analyze how firms can best protect themselves against government contract breach. When an MNC is confident that its assets will not be in jeopardy, it is free to invest where it pleases, within the realms of the OLI paradigm. How then, are firms best protected against government contract breach? Wellhausen (2015) poses that firms are better protected in host governments that have little diversity of the nationality of other investors. It follows that host governments with high levels of national diversity of investors have the power to treat firms' contracts differently and retain FDI inflow from other national investors. Host governments with low levels of nationality diversity of investors, on the other hand, do not have this luxury.

Knowing that trade agreements, level of democratic development, and supply chains all increase FDI, how are firms to protect themselves in host governments with high levels of investor diversity? Assuming that diversity increases with the inflow of FDI, this problem will only become more prevalent. Even firms protected in supply chains are vulnerable to contract breach. To illustrate, MAKAE Europe SARL, a French fashion retail firm, currently has a case pending with Saudi Arabia for "allegedly systematic and unwarranted harassment by the Government that led to the alleged destruction of the claimant's fashion retail business in the country" (UNCTAD, 2017). As a fashion retail firm, MAKAE is a member of a supply chain as it sources its garments from textile suppliers in China. MAKAE filed against Saudi Arabia on the grounds of a French-Saudi Arabian bilateral investment treaty (BIT) signed in 2002 (UNCTAD, 2017). Despite membership in a supply chain and the protection under a trade agreement, this particular firm was affected by contract breach and chose to litigate Saudi Arabia through the ICSID.

Existing FDI literature and trends fail to explain the discrepancy in commitment credibility of host countries despite variance in supply chain and trade agreement membership. Host countries will not decrease nationality diversity of investors as globalization continues to transform the international economy. If firms were to have more information on how to best protect their assets, they would take part in more FDI and consequently LDCs would have their best chance at development.

I offer a new approach at looking at the relationship between host countries and investors: the interaction of host country specific and firm specific factors. I find that when firms are part of a supply chains and the host country is a member of a trade agreement, firms are best protected against contract breach. An investor's membership in a supply chain imposes firm level credibility pressures on the host government; furthermore, a host government's membership in an international trade agreement imposes state level pressures not to break a contract. Pressures from the firm level include litigation and divestment from members in the supply chain. When a host country is sued in international courts like the ICSID, other firms are also dissuaded from investment for fear of future contract breach. On the state level, host countries involved in trade agreements that breach contracts lose credibility in their commitments.

Currently, literature analyzing FDI fails to recognize the effects that the interaction between supply chains and trade agreements have on contract breach. Quantitatively assessing the relationship between contract breach and the interaction between supply chains and trade agreements offers a few challenges. To date, there is no database of the universe of firms involved in FDI, supply chains, or breach of contract. The best way to study variation of contract breach involves using data from international court cases. I asses the descriptive statistics of cases filed through the ICSID that involve supply chains, trade agreements, and the interaction

between the two. I find that the least frequent category of cases filed involve firms in a supply chain with a trade agreement. While cases filed through the ICSID may denote breach of contract, this source does not account for all the events in which a host government has broken a contract and a firm has not retaliated through an international court. Consequently, I have an inherent selection bias when attempting to study the variation in host government contract breach, signaling that my results provide a conservative estimate.

I take a step further and propose that firms involved in supply chains and trade agreements are best at protecting their assets in the event of a contract breach. Assessing which variables are effective in determining when an investor wins an investor-state dispute, I find the interaction between supply chains and trade agreements to be significant. More specifically, I find that preferential trade agreements (PTAs) are more effective than bilateral trade agreements (BITs). The consequences of renegeing on a commitment between several countries are greater than one. All other individual factors are insignificant in the event of a contract breach.

Chapter One provides an overview of the significance of FDI and introduction to the question of how firms can best protect their assets from contract breach. Chapter Two introduces literature from FDI, including what scholars know about the nature of host governments, the nature of firms, and how they affect the inflow of FDI. I then describe the possible implications selection bias when studying trade agreements. Chapter Three illustrates my theoretical reasoning for how the interaction between supply chains and PTA's is significant in a firm's ability to protect their assets. Chapter Four describes my models and methods used to test this claim. I employ several mean comparison analyses to assess the prevalence of my interaction variables in ICSID cases. I also run probit models using the winner of an investment dispute (either the investor or the host government) as a dependent variable. Chapter Five relays results,

analyses, and limitations in my models. Finally, Chapter Six concludes with my findings, their implications, and suggestions for future research.

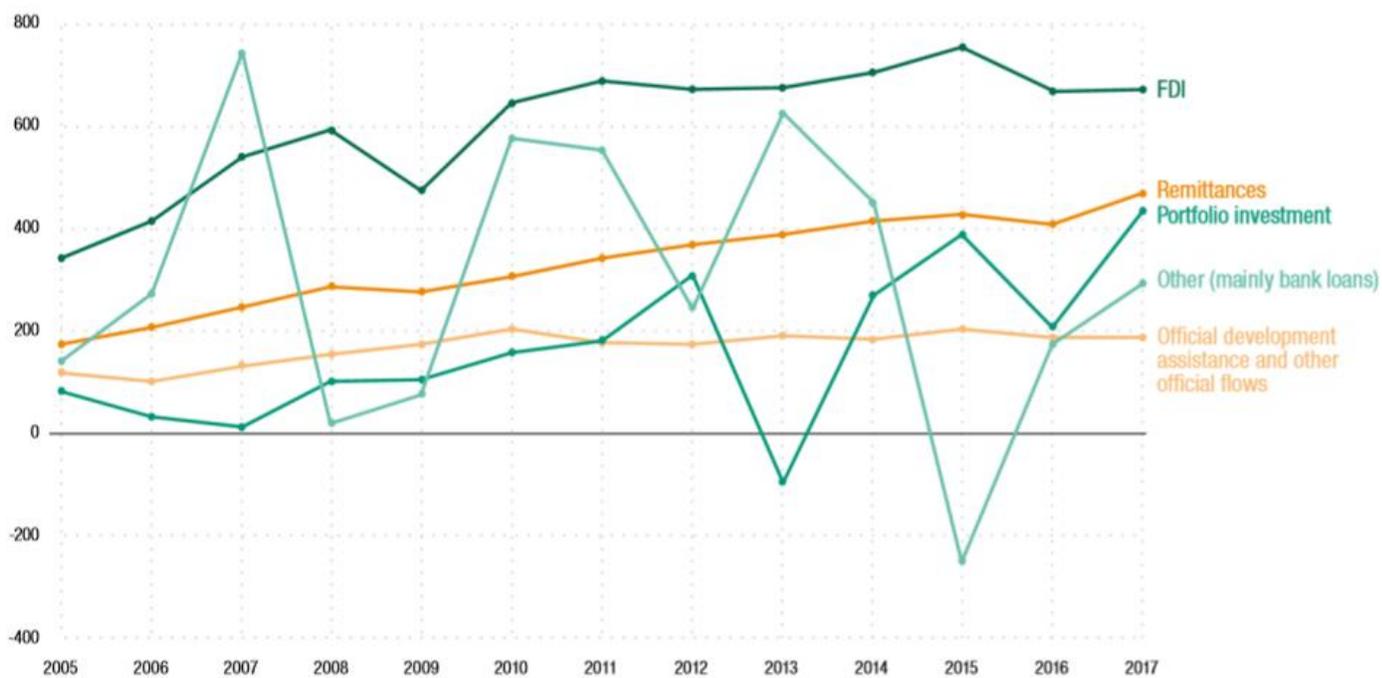


Figure 1. Sources of external finance, developing economies, 2005-2017 (Billions of dollars)
 Source: Reprinted with permission from UNCTAD, World Investment Report 2018

CHAPTER TWO: PROTECTION AGAINST BREACH OF CONTRACT

Host governments are inclined to break contracts for several reasons. The benefits of contract breach for a host government can be short term while the consequences are long term. Breaking a contract offers a quick, robust source of income to the host government. Depending on economic and political conditions, host governments abuse foreign investors for capital inflow and corruption. Developing countries are more often than not susceptible to the conditions in which this type of corruption occurs and therefore are most risky for FDI (Pinto and Zhu, 2008). In turn, to increase FDI at large, investors must find a way to protect themselves as best they can.

Trade Agreements

Trade agreements protect firms from the consequences of breach of contract. Trade agreements deal with several decision makers (including governments and investors) that negotiate and make concessions to write the rules of trade. The academic consensus is that international trade agreements promote FDI, especially in less developed countries (LDCs) (Büthe and Milner, 2008; Jensen, 2008). As the most prevalent types of trade agreements, Preferential Trade Agreements (PTAs) and Bilateral Investment Treaties (BITs) offer a framework for credible commitment. PTAs and BITs provide more credibility on the part of the host government to the investors as their promises are made public and available for use in a litigation process. A BIT is a written commitment between a host country and a home country restricting certain actions in international trade exclusive to the two signatories (Milner, 2014).

PTAs, on the other hand, are written agreements on trade involving several countries. PTAs usually involve several countries with specific conditions for trade that are more far reaching than multilateral trade agreements such as the World Trade Organization (WTO) (Büthe and Milner, 2008).

When a host government reneges on a commitment set forth in a trade agreement, there are international consequences. Trade agreements offer firms the protection through deterrence and the ability to invoke the agreement in a formal investment dispute settlement process (Büthe and Milner, 2014). A foreign firm conducting business with a host government without an international trade agreement lacks an international foot to stand on in defense of its investments.

When governments breach their contracts, foreign firms can sue the government through the International Centre for Settlement of Investment Disputes (ICSID), operated through the World Bank. Disregarding how the case is handled, the costs alone of being sued are high. Without a PTA or a BIT, investors will refrain from making new or continuing investment with the sued host government (Büthe and Milner, 2014). PTAs and BITs offer firms solid ground to sue governments when contracts are broken. Although their effectiveness has been contended, some scholars pose that PTAs are most successful in attracting FDI when they are enacted, strict, and have dispute settlement mechanisms. The impact of reputational costs at the hand of a BIT remain limited while PTAs involve more actors (Milner, 2014). The consequences of renegeing on a PTA include other states while a BIT is merely between the home state of a firm and the host government. As more actors are involved, PTAs have stronger consequences when it comes to international reputation than BIT's. Consequently, PTAs are more successful at attracting FDI than BITs (Büthe and Milner, 2014).

When a foreign firm enters a market with credible commitment, there is less fear of the host government breaking their contracts and firms feel more incentive to enter a new international market when credible commitments are put in place. Furthermore, they are more reliable to foreign firms than a host government's domestic policy since the international consequences of a contract breach for a host government are far greater when a trade agreement is involved than simply domestic measures (Büthe and Milner, 2008). Being taken to the ICSID will have economic and credibility related consequences for a host government that are significantly costly. When no trade agreement is put in place, the firm essentially operates at the mercy of the host governments and has minimal options for retaliation of contract breach.

When trade agreements cannot provide specific measures of credible commitments, MNCs are exposed to more political risks. Undemocratic LDCs with less diversified economies use FDI for corruption more so than any other type of host country (Pinto and Zhu, 2008). In these situations, firms are more susceptible to contract breach in the wake of corruption. Trade agreements not only protect firms in FDI, but they also deter factors that hinder political development at large, such as corruption (Pinto and Zhu, 2008).

Compliance and Selection Bias

Trade agreements lay forth the conditions for how firms and states should act in FDI. They also inform those involved of the consequences of breaking an agreement. I assess how successful firms involved in supply chains and PTAs are at preventing host government breach of contract and subsequently how successful they are at protecting their assets in the event of a contract breach.

Dealing with compliance poses some theoretical challenges. Scholars argue that the study of compliance with contractual agreements is vulnerable to selection biases. The main concern is that cooperation with trade agreements speaks little to the effectiveness of an agreement and more to the negotiating process. They contend that states sign treaties that enforces regulations that do not depart too far from their intended behavior (Downs et al, 1996). It follows that compliance with treaties is not the result of the threat of punishment, but the result of an ex ante bargaining process where states make agreements to continue behavior they would have displayed otherwise. Cooperation, then, is not a rarity attributed to the threat of punishment, but a rather managerial process. In other words, states only agree to do what they would have already been doing otherwise (Downs et al, 1996). They cite the abundance of compliance in trade agreements as a managerial feat rather than cooperation. This theory of compliance challenges much of FDI literature that praises the effectiveness of trade agreements and international courts. Nevertheless, FDI scholars argue that reputation and the credibility of commitments to be the primary catalyst for compliance; adherence to these promises rather than just agreement builds a state's reputation (Jensen, 2017). Furthermore, if states agree to terms that they do not intend on breaking, then there would be no purpose for the ICSID.

Büthe and Milner disagree with this theory of compliance. They counter that if international agreements were a result of compliance with policies states would have already enacted, then states' domestic policy must have already been pursuing liberal international trade policies to sign these agreements. Investors, then, make decisions relating to a given host country's domestic policies rather than membership in trade agreements. In this way, any effect trade agreements have on investor's decisions is spurious to a given host country's domestic policy (Büthe and Milner, 2008). Büthe and Milner test the effects of economically liberal

domestic policies by controlling for such policies while looking at the relationship between trade agreement membership and FDI. In three different models measuring favorable economic policies for trade (including trade openness, financial openness, and a good policy index) they find that trade agreements maintain (and in one case strengthens) its significance in increasing FDI (Büthe and Milner, 2008).

While scholars in the FDI literature note the significance of trade agreements like PTAs and BITs for establishing credible commitments, the consensus is leaning towards PTAs being more efficient than BITs. This is due to the greater consequences involved in renegeing on a commitment made to several actors rather than just one. Supply chains have deterrent effects on two counts. First, breaking a contract with one member of a supply chain invokes losses with all members of the change. These consequences are not only financially costly but also affect the host government's reputation in FDI moving forward. MNCs looking for prospective host countries will consider a host country's history of contract breach through open source information¹ (Holburn and Zelner, 2010). Second, any member of a supply chain can retaliate against a host government in the event of a breach of contract through arbitration. The ICSID is the most popular of international investment settlement dispute courts that publicly shares the proceedings of each case. These consequences are slightly more costly if the firm wins as the host government must pay an award; reputational costs increase as well as MNCs take into consideration the winners of these court cases (Büthe and Milner, 2014; Holburn and Zelner, 2010; Johns and Wellhausen, 2016).

¹ Sources of open source information include data from the World Bank (specifically the ICSID case database), the UNCTAD, and international business journals (Allee and Peindhardt, 2011).

When it comes to signaling commitments, formal agreements are more significant than gestures (Fuhrmann and Sechser, 2014). In FDI, this means that formal contracts like PTAs should be more successful in preventing contract breach than the material amount of investment. Consequently, firms do not need to expend much energy to signal their commitments. Simply being a part of a supply chain with a PTA and functioning cooperatively should be enough to act as a committed deterrent ally against a hostile host government. Foreign firms in supply chains with PTAs in risky host governments offset the threat of contract breach.

Nature of Firms

While trade agreements play an important role in the protection against contract breach, firm specific traits are also imperative. The nationality of the firm in FDI determines the degree to which a host government will respect its commitments. The type of product a firm produces also has a significant influence in its ability to protect its assets in risky host governments.

Nationality affects breach of contract in FDI on the side of the firm and the host government. Conational MNCs, or MNCs with the same home country investing in the same host country, are more resilient to contract breach than other firms. Conational firms rely on each other's legal expertise and shared bilateral relations with the host government. When a host government has inflow of FDI from many conational firms, the costs of contract breach increase as issues ensue with every firm connected through bilateral relations with the home country (Wellhausen, 2015). Conational MNCs enjoy lower transaction costs than other firms as well as more credible commitments from host governments (Holburn and Zelner 2010). Consequently, firms sharing home country nationality enjoy better protections against contract breach than firms investing in countries with high nationality diversity of investors.

Mergers and acquisitions of MNCs can give a firm multiple home country nationalities, therefore granting more opportunity for protection (Wellhausen, 2015). Conversely, host countries receiving inflow of FDI from individual MNCs of varying nationalities enjoy more power to expropriate firms. When the individual firms investing in a host country are of varying nationalities, the host country can pick and choose to breach contracts with firms of individual nationalities while retaining access to the benefits from firms of other nationalities. Essentially, a host country can “trade-off one nationality’s contract sanctity against other sources of current and future FDI” (Wellhausen, 2015).

The good that a firm produces has a twofold effect on protection against contract breach. Products in FDI determine whether a firm undergoes the consequences of the obsolescing bargain or the benefits of being a member of a supply chain. The obsolescing bargain refers to the negotiation process in situations where firms in specific industries are worse off *ex post* than *ex ante*. It follows that firms that conduct business industries with heavy initial investments (and therefore a more costly exit process), such as extraction of natural resources and infrastructure, have less power after contracts have been made with a host government in FDI (Wellhausen, 2015; Frieden, 1994). The obsolescing bargain situation allows host governments to take advantage of this costly exit process where the costs to a firm from contract breach can be less than exiting FDI entirely. Therefore, firms engaged in industries with high initial investments are more vulnerable to contract breach in FDI than others (Wellhausen, 2015).

Another way the type of good a firm produces determines its protection against contract breach pertains to membership in a supply chain. A supply chain is a network of firms that conducts business to produce a finished good. Each firm in the chain deals with the good at some intermediate level (Baccini et al, 2008). In FDI, host government contract breach with one link

affects the whole chain. Supply chains can act like a defense against contract breach as renegeing on commitments to one firm affects them all and incurs greater losses for all parties, host governments included (Johns and Wellhausen, 2016). When a host government decides to breach a contract with one firm on the global supply chain, it inadvertently breaches the contract of every firm involved in each stage of the product. The losses involved with losing business with the whole chain is far greater than the losses involved with one firm and is a strong deterrent to contract breach in international trade (Johns and Wellhausen, 2016). Consequently, interdependence between firms creates greater consequences for government breach of contract. Firms at each stage of production benefit from a global market more so than a merely domestic one (Meckling and Hughes, 2017). Of course, participation is limited to firms that produce intermediate goods. However, involvement in supply chains allows foreign firms to deter contract breach (Johns and Wellhausen, 2016). Thus, foreign firms engaged in global supply chains protect each other and their own investments.

Thus, FDI literature establishes several conditions for protection against breach of contract: participation in trade agreements (more specifically, PTAs), shared nationality between a firm's home country and host country, diversity of nationalities in inflow of FDI in a host country, industry type, and membership in a supply chain. Better protection against contract breach will promote FDI and inadvertently economic development of LDCs. How then, are firms to best protect their assets when the ICSID continues to receive more cases each year?

Previous authors in the field have identified various significant causal variables to a firm's ability to protect their assets in FDI. However, they fail to identify how cases such as MAKAE v Saudi Arabia end up in the ICSID when MAKAE is a member of a supply chain, has

a BIT with Saudi Arabia, and is in an industry that does not involve the obsolescing bargain. I find that ideas from alliance literature as inspiration to solve this puzzle².

FDI literature has not yet studied the interaction between trade agreements and supply chains. However, I pose that looking at how these variables affect contract breach can offer some predictive and explanatory power.

² Benson in 2011 conducted a study to determine which types of alliances are best at preventing militarized interstate dispute (MID). Creating a typology of alliance that evaluates whether an alliance is deterrent or compellent and whether an alliance is conditional or not, he finds that conditional deterrent alliances are best at preventing MID (Benson, 2011). In this case, the interaction between these two variables are significant. I take inspiration by looking at the interaction between deterrent and conditional concepts.

CHAPTER THREE: A THEORY OF CONTRACT BREACH

There are several explanations for host government behavior in FDI. Some theorists pose that trade agreements are significant when it comes to contract breach as they bind host governments to public commitments. Others contend that the type of industry itself that determines how a firm is treated (i.e. the obsolescing bargain). Furthermore, there are explanations as to which types of trade agreements are more effective than others (for example, Milner (2014) claims that PTA's are more effective than BIT's). Meanwhile, other scholars in the field contend that international commitments may not matter to some governments. A state may perform a cost benefit analysis and realize that the gains from breaking a contract with a foreign firm outweighs the consequences laid out in the trade agreement. Consequences are monetary and reputational: a firm can merely deinvest or decide to litigate the host government through an international investment dispute court. In this sense, there are certain situations where foreign firms may be more susceptible to contract breach than others.

The global supply chain theory helps explain which situations firms might be more protected in risky FDI. The protective nature of supply chains provides a better explanation of the growth of FDI than other factors such as regime type or industry type. Host governments are more reluctant to break a contract with a foreign firm in a supply chain for the fear of the losses spurred from breaking a contract with the whole chain. When a host government breaks a contract from a single operating foreign firm, whatever losses accrue (from withdrawal of investment to litigation) are usually from the single firm alone. However, when a contract is broken with a firm in a supply chain, those losses can be multiplied by other actors in the supply chain. Therefore, it is costlier to break a contract with a firm in a supply chain than one that

operates alone. This invokes a deterrent effect as a rational host government would not desire to exponentiate their losses.

Host countries continue to break contracts with MNCs involved in supply chains, have trade agreements, or even mixtures of the two. Evaluating the interaction between the variables will help fill this gap.

Theory

Supply chains not only dependent on business from the host country, but business from each other (Johns and Wellhausen, 2016). Their economic relationships in risky host countries deter contract breach via threats of economic losses and multiple arbitrations in international courts. The deterrent threat involved in FDI has to do with suing a host country for breach of contract. If a host country breaches a contract with a foreign firm, said firm can sue the host government through the International Centre for Settlement of Investment Disputes (ICSID).

The ICSID was created through Article 6 of the ICSID Convention Treaty that was ratified in 1966. Article 6 establishes requirements for an Administrative Council to create and enforce rules for arbitration and conciliation in international investment disputes. As an entity, it was created to “remove major impediments to the free international flows of private investment posed by non-commercial risks and the absence of specialized international methods for investment dispute settlement” (ICSID, 2012). The inaugural Administrative Council Chairman of the ICSID was also the President of the World Bank at the time, George Woods. The first meeting of the ICSID was held in February of 1967, where the Secretary-General was elected and provisional rules were discussed (Parra, 2012). The involvement of the World Bank with the

ICSID in its origins was designed to be limited. Delegates of the meeting discussed the role of the World Bank and came to the conclusion that the World Bank would “never be a part to proceedings under the ICSID Convention; nor would the Secretary-General, an administrative officer, have responsibility for the settlement of disputes” (Parra, 2012).

The first annual meeting of the ICSID was attended by most of its contracting states. The Chairman expressed his satisfaction that the ICSID has already become an entity that investors and states alike can trust to settle their disputes. He also noted that countries that have not yet signed would benefit greatly by an increase in investors (Parra, 2012). The Secretary General discussed a trend in increase in legislation promoting foreign investment after signing as a member of the ICSID. He also hinted that membership in the ICSID itself could one day replace the role of BITs (Parra, 2012).

By 1970, Italy, Belgium, and the UK had enacted several BITs using clauses referencing the ICSID for dispute settlement. The ICSID gained international notoriety for its role in dispute settlements and jurisdiction over an influx of investment contracts in its first two decades. In these years, the majority of cases dealt with industry and trade; energy and mining; and agriculture, fishing, and foster. The average length of a case at this time was a little less than three years (Parra, 2012). It has been important to the ICSID since its creation to render public as much information as they can about their casework. Their rigorous data entry and publication is the reason I am able to conduct my research today. Transparency in casework and outcomes also reinforces the accountability and credibility the institution has today in investment dispute settlement.

Accordingly, foreign firms in supply chains can deter host governments from breaking a contract by threat of litigation. Litigation is costly for a government fiscally and reputationally. If a government has been sued for contract breach, it becomes a less attractive prospect for further investment to other foreign firms (Büthe and Milner, 2014). This is especially costly to LDCs that depend on FDI for stable economic growth. Supply chains, therefore, play a strategic role in FDI. While MNCs certainly do not always see host governments as adversaries, they desire some protections when dealing with host governments with reputations for breach of contract. I argue that MNCs with membership in supply chains and trade agreements have a special, advantageous position in FDI.

PTAs refer to an agreement made between several states that specify how they will act in international trade. Provisions in these agreements describe how a firm is to act in the case of a contract breach and includes reputational costs to all parties involved. BITs are agreements between a foreign firm's home state and a host government that provide specific conditions as to how the firm shall be treated (Büthe and Milner, 2008). Trade agreements are the conditionality factor that lay out certain details of how states and firms will interact. PTAs are more effective than BITs as the costs are greater to the arbitrator in the case of a contract breach. PTAs have more severe international reputational costs as more actors are involved while the consequences from breaking BITs remain bilateral (Milner, 2014). I propose that MNCs involved in supply chains and trade agreements should be best suited to deter host government contract breach:

H₁: Host governments are less likely to break a contract with foreign firms involved in PTAs and supply chains than firms involved in just PTAs, just supply chains, or neither.

All firms have the capability to arbitrate a host government in the event of breach of contract. However, the outcome of an investor-state dispute is not guaranteed to be in the favor

of either actor. Consequently, the threat of litigation is not enough to sway host governments from breaking contracts with foreign firms.

Supply chains deter host governments from breaking contracts and the economic and reputational costs spread to every link in the chain (as opposed to just one in individual enterprise). Breaking a contract with a firm in a supply chain jeopardizes business with every firm involved. A contract broken with a firm that produces an intermediate good will inevitably affect the finished good and all businesses associated. PTAs also increase international reputational consequences under certain conditions. They specify how firms and host governments are to behave in FDI and the consequences of breach of contract. Therefore, I propose that firms in supply chains and trade agreements are not only best suited to prevent contract breach, but also best suited to protect their assets in the event of a contract breach. The second hypothesis follows:

H₂: In the event of a contract breach, firms that are involved in supply chains and trade agreements protect their assets more efficiently than those otherwise.

In the following section, I describe how I intend to test these hypotheses. I test my claims related to the interaction of supply chains and trade agreements using mean comparison analysis and probit regression. For both hypotheses, I propose that cases with firms involved in supply chains and trade agreements are significantly less prevalent in ICSID cases and more likely to win the cases they end up in compared to other firms.

CHAPTER FOUR: DATA AND METHODS

The dependent variable in this study pertains to contract breach in foreign direct investment (FDI). Breach of contract involves illegally changing previously specified terms with a firm. The most extreme form of contract breach is asset seizure or outright nationalization (Johns and Wellhausen, 2016). To measure breach of contract, the International Centre for Settlement of Investment Disputes (ICSID) database is used. The ICSID is a function of the World Bank established in 1966 as an outlet for firms and states to formally air their grievances (World Bank, 2018). Since its formation, 706 cases have been filed through the ICSID and stored in their data base that is open to the public. Each case contains detailed information including the subject of dispute, economic sector, instrument invoked, applicable rules, claimant nationality, respondent, and date registered (World Bank, 2018). The table below may be used as reference for the variables used to measure both hypotheses.

Deterring Breach of Contract

My first hypothesis assumes a relationship between the interaction of trade agreements and supply chains on the likelihood of government contract breach. There are two inherent empirical challenges: a) there exists no comprehensive list of supply chains and b) there is no comprehensive list of government breach of contract either. The latter invokes serious validity issues as it is a challenge to accurately measure the dependent variable: host government contract breach. Later, I explain how I approach the former issues using theoretical assumptions to measure supply chains. I also take an additional step to measure the effectiveness of this variable in protection of assets in the event of a contract breach with my second hypothesis.

My main explanatory variable is the interaction between PTAs and supply chains. FDI literature has marked the significance of these variables when it comes to minimizing political risk for MNCs. However, the effect of the combination of these two variables has never been considered. I hypothesize that this interaction variable has a negative effect on host government contract breach. While I cannot perform a full regression test as I do not have a valid measure of my dependent variable, I can look at the frequencies of cases filed through the ICSID. Using cases filed through the ICSID from 1987 to present, I assess how many of these cases were filed by firms involved in trade agreements, supply chains, and the interaction between the two.

Consequently, descriptive statistics for three variables are analyzed: for trade agreements, supply chains, and the interaction between the two. I use data from ICSID cases spanning from 1987 to present with an n group of 213. The first count will assess the prevalence of trade agreements in cases. This variable has three values: PTA (coded as 2), BIT (coded as 1), and neither (coded as 0). I expect PTAs to be far from the mean as they should have a better deterrent effect than the other values. PTAs involve interactional reputational costs that are far more severe than a mere BIT. The second analysis looks at the prevalence of supply chains in ICSID cases; I use a dummy variable coded 1 for supply chain and 0 for otherwise. The exact theoretical justifications for this coding can be found in the methods section for my regression testing. While assessing the descriptive statistics for the supply chain variable, I expect the mean to lean more towards 0 (no supply chain) as host governments should be deterred from the incremental losses invoked in breaking a link in the chain. I measure the interaction between the two variables by multiplying the trade agreements variable by the supply chain variable. Values at 0 represent cases that either do not involve a supply chain or do not involve a trade agreement, 1 represents cases that involve a supply chain and a BIT, and 2 represents cases that involve a

supply chain and a PTA. I expect the mean to be significantly less than two as supply chains with PTAs should be the most effective at deterring host government contract breach.

Protecting Assets in the Event of Breach of Contract

In assessing the relationship between host government contract breach and the interaction of supply chains and trade agreements, a regression analysis can convey more information than descriptive statistics. In order to examine this relationship in a more robust manner, I employ a different dependent variable: the event of a firm winning an investor state dispute. The ICSID database provides information on the winner of these cases. Either the state wins, the investor wins, there is a settlement of sorts, or the case is still pending. Cases where the investor wins measure the effectiveness of a firm to protect their assets from a host government's breach of contract. Cases where the state wins measure the inability of a firm to protect their assets. When an investor wins a case at the ICSID, the investor has effectively protected their investments in a formal court weighing contract breach. All other results (settlements and pending cases) are dropped as they do not measure the effectiveness of a firm to protect their assets and prevent further losses. I have also dropped cases that fall outside of the time frame of one of my control variables (specifically, nationality diversity which is limited to measuring 1992-2008). Consequently, there are a total of 231 observations from 1992-2008. Table 4 in the appendix displays a list of breaches by host country in my data, descending from highest to lowest.

While the most appropriate dependent variable for this study involves preventing a breach of contract in the first place, it is nearly impossible to measure. With the data available, I can assess which factors determine whether a firm protects their assets or not in the event of a

contract breach. Using the event of a firm winning an investor state dispute determines how well the protections of trade agreements and supply chains work after they have failed to prevent a contract breach. Filing a suit through the ICSID gives firms a chance to receive financial awards (usually to the tune of their losses from a breach of contract) and tarnish the reputation of the host country. When an investor wins a case through the ICSID, they successfully deter the state and protect their assets. Filing a case through the ICSID effectively has two results (for the purposes of this study): either the firm wins and they can successfully protect their assets or the state wins and further losses for the firm are incurred. Consequently, the dependent variable is coded 1 for cases where the investor has won and 0 for cases where the state has won. Table 2 displays a breakdown of investors and states winning cases. Of the 231 cases, investors won 108 while states won the other 123.

[Insert Table 2 here]

Investment Dispute Settlement

There is no comprehensive list of supply chains or contract breach, which invokes serious measurement issues. However, this does not mean that the interaction between supply chains and trade agreement cannot be tested. I propose that in the event of a contract breach, firms involved in supply chains and trade agreements are more effective at protecting assets. In other words, these firms are most likely to win investor-state dispute cases. However, before testing this assumption, a sense of how cases are filed must be established.

The ICSID has a specific process for how cases are filed and adjudicated. First, a firm must file for arbitration (in either English, French, or Spanish) and pay a nonrefundable lodging

fee of \$25,000. The ICSID then screens these requests through the approval of the Secretary-General based on the requirements specified in Article 25 of the ICSID Convention, Regulation, and Rules (ICSID, 2019). When the Secretary-General deems a case worthy of registration, the parties involved (the investor and state) have 60 days to appoint four members to a tribunal for a preliminary session. Each member of the tribunal must a) have a different nationality than the party involved and b) “have a moral character and recognized competence in the fields of law, commerce, industry or finance, who may be relied upon to exercise independent judgement” (ICSID, 2019). During the first session, a written and oral procedure are performed where the “jurisdiction, merits or damages may be heard separately or jointly” (ICSID, 2019). A deliberation follows where the tribunal makes a decision as to who the award goes to (the state or the investor). All decisions are made by a majority vote and are final with no appeal process afterwards (ICSID, 2019).

Explanatory Variables

The variation in ICSID case outcomes will be explained by three main variables: supply chains, trade agreements, and the interaction between the two. These variables are measured based on information provided from the ICSID. The interaction between the supply chain and the trade agreement variable will test the resilience of my hypothesis: firms in FDI are more likely to protect their assets in the case of a contract breach if they have both a trade agreement and membership in a supply chain. A list of all variables including description and data sources can be found in Table 1 at the end of this section.

Supply Chains The prevalence of supply chains is a difficult variable to quantify (see limitations section). In the best of all possible scenarios, an exhaustive list of all supply chains from 1992-2008 would be used to cross check if each individual firm is a member of one. Unfortunately, that does not exist. Consequently, coding supply chains for the purposes of this project must depend on its definition and information available. A firm's membership in a supply chain is derived from the production of an intermediate good. For example, producing components of an automobile requires trade with other firms to create a finished vehicle. Cooperating with other firms to make a finished product or even components is the definition of a supply chain (Johns and Wellhausen, 2016). Therefore, supply chain has been coded using a firm's investment type (provided from the ICSID). If a firm's investment deals with an intermediate (non-state sponsored) good (including the firms that deal with the finished good), it is coded 1 for supply chain. All other types of investments have been coded 0. From the 231 observations, 116 have been coded as a supply chain. The remaining 115 cases do not represent supply chains. Consequently, the dispersion of this variable is almost even between supply chains and otherwise (at 50.22% and 49.78% respectively). Regardless, I expect supply chains to have a positive correlation with investors winning cases.

Trade Agreements Trade agreements account for the conditions host governments agree to comply with in FDI. The ICSID provides information on instruments invoked, which refers to the legal ground on which the firm has filed a case against the host government. The cases in the ICSID have either had bilateral investment treaties (BIT's), preferential trade agreements (PTA's,) specific contracts with the governments, or employment of the host government's investment law. The FDI literature provides that PTA's and BIT's are most effective at preventing losses on the part of a firm due to international reputation and credibility.

Consequently, both PTA's and BIT's will be coded as individual dummy variables to test which is more apt at preventing losses. For the PTA variable, cases where a PTA has been invoked are coded as 1 and 0 otherwise. For the BIT variable, cases where a BIT has been invoked are coded as 1 and 0 otherwise. Out of the 231 observations, PTAs have been invoked 49 times and BIT's 140. These represent 21.21% and 60.61% respectively. BIT's, therefore, represent more cases in the ICSID database than PTA's. This could be a testament to their effectiveness or lack thereof. I expect both variables to have a positive correlation with investors winning cases. However, I do not expect their effects to be identical. PTAs have been proven to have a stronger relationship with the growth of FDI than BITs. Consequently, I expect PTAs to have a strong effect on the dependent variable than BITs as the reputational costs associated with the former are higher.

Interaction I predict that firms are most effective at preventing losses when they are part of a supply chain and have certain conditions. Consequently, measurement on this variable requires an interaction variable between the supply chain variable and each trade agreement variable (BIT and PTA). I will use two interaction variables: one for the interaction between supply chain and PTA and another for the interaction between supply chain and BIT. The PTA interaction variable represents 30 cases in the ICSID database, or 12.99%. The BIT interaction variable represents 69 cases in the database, or 29.87%. Once again, cases involving BIT's are more prevalent than PTA's in my sample of ICSID cases.

I expect both variables (the BIT-supply chain interaction and the PTA-supply chain interaction) to have a positive correlation with investors winning cases. However, I expect the PTA interaction variable to be stronger than the BIT variable for the same reason as the individual variable relationships. There are a total of 30 observations where firms have been both

a member of a supply chain and have invoked a PTA. There are 69 observations where firms have been both a member of a supply chain and have invoked a BIT.

[Insert Table 1 here]

Controls

To test the resilience of this model, I include control variables from FDI literature. Theorists conclude that the national diversity of investments, obsolescing bargain, and developmental factors all affect the ability of firms to protect their investments.

Nationality Host countries are less likely to breach a contract with a firm when there is little diversity of nationalities in the inflow of FDI (Wellhausen, 2015). To measure nationality, I employ a variable from a dataset created by the Organization for Economic Cooperation and Development (OECD) (Woodward, 2009). It measures the national diversity of FDI per country per year on a scale ranging from 1 to 10.6. The central tendency of nationality diversity of investment for host countries is 4.59 in this dataset. The histogram in Figure 2 illustrates the dispersion of this variable across ICSID cases. Half the cases deal with diversity less than 4.59, showing a slight positive skew. I expect a negative relationship between nationality diversity and the dependent variable.

[Insert Figure 3 here]

Obsolescing Bargain The relationship between industry type and contract breach is explained through the obsolescing bargain: certain agreements can become obsolete after the firm has made their investment, most often due to high initial costs (Jensen, 2008). For example,

oil firms may be able to form favorable contracts with governments *ad priori*. Due to the sheer cost of equipment, the losses of backing out of an investment can be larger than the losses from host government contract breach. Consequently, *ex ante*, the agreements have become obsolete. Industry type information provided by the ICSID is used to determine which cases involve an obsolescing bargain.

The more expensive the initial investment, the more incentivized the government is to breach the contract through the obsolescing bargain. Firms involved in agriculture, electric power, mining, oil and gas, real estate, and waste management have been coded 1 for having an obsolescing bargain (Wellhausen, 2015). All other investment types have been coded 0. In my sample of ICSID cases, 97 deal with the obsolescing bargain while the remaining 134 do not. Consequently, 41.99% of cases brought to the ICSID deal with firms that have high initial investment costs. I expect to see a negative relationship between obsolescing bargain and the dependent variable. While the literature identifies this relationship, I expect my interaction variable to have a stronger effect on the dependent variable.

Developmental indicators such as GDP, percent of GDP made of FDI, and democracy have been added as controls as well. FDI literature indicates that firms investing in less developed countries are more prone to contract breach on the part of the host country (Jensen, 2008). Consequently, these three variables have been included to add robustness to the models.

GDP This variable is measured using the World Bank's World Development Indicators dataset (World Bank, 2018). This interval variable is adjusted to represent billions of US dollars to its current value. The mean GDP from 1992 to 2008 is 743,210 million US Dollars. Firms should be more likely to protect their assets from more developed economies. Figure 3 illustrates that the majority of cases brought to the ICSID involve host countries with lower GDPs ie less

developed countries. Determining how investors can best protect their assets is crucial to continue future investments in these risky countries, fostering their development. I expect to see a positive relationship between GDP and the dependent variable.

[Insert Figure 4 here]

Percent GDP FDI Percent of GDP made of FDI is an indicator of the diversity of a host government's economy. This interval variable is also measured using the World Bank's World Development Indicators dataset (World Bank, 2018). Host governments that have a larger portion of their GDP made up of FDI should be less likely to break contracts and incur severe reputational costs with other foreign firms. Furthermore, firms should be more likely to protect their assets from governments involved with more FDI. The data from my sample of ICSID cases shows a mean value of 3.12% of GDP from FDI. The 75th percentile of the dispersion is at 5.95%, heavily skewing the data in a positive direction. The 25th percentile is 1.88% percent, concentrating the frequency between 2-6%. Consequently, the majority of cases brought to the ICSID involve host countries where about 2-6% of their GDP is from FDI. Figure 4 depicts this dispersion in a histogram. I expect a positive relationship with percent GDP made of FDI and the dependent variable.

[Insert Figure 5 here]

Democracy Some theorists also use level of democracy as a development indicator. MNCs view democracies to have better transparency in policy and can have a positive effect on the inflow of FDI. Democracies also have higher stakes in international credibility and reputations (Jensen, 2008). Therefore, host governments that are more democratic should be less likely to break contracts with firms in FDI. To measure democracy, Polity IV is employed. This

dataset measures democracy on a 10-point scale, those having higher scores have higher levels of democracy. Those with lower scores lean more towards autocracies (Marshall, et al, 2014). From my sample of ICSID cases, the mean democracy score is 6.54. Central tendency leans more towards democratic home countries as the 25th and 75th quartiles fall between 5 and 8, respectively. Figure 5 illustrates the dispersion of the democracy variable across ICSID cases. Countries with scores between 6 and 10 tend to represent a high frequency of ICSID cases from my sample. I expect to see a positive relationship between democracy level and the dependent variables. Firms should be better able to protect their assets against host governments that rank higher on the democratic scale rather than autocracies due to more transparent policymaking processes and more international credibility (Jensen, 2008).

[Insert Figure 6 here]

Model Specification

To assess the first hypothesis, I perform simple tabulate and lincom functions in Stata to observe the frequency of certain variables and significance of the mean in cases of contract breach. I look at the variation in trade agreements, supply chains, and the interaction between the two. While assessing trade agreements, I determine how many cases involved PTAs, BITs, or neither. For supply chains, I look at whether the case involved a supply chain or not using the theoretical coding described in the previous section for the second hypothesis. Finally, for the interaction assessment, I analyze how many cases are filed by firms that are a) not part of a supply chain, b) part of a supply chain and a BIT, or c) part of a supply chain and a PTA.

To test the second hypothesis, I employ a probit model as the dependent variable is binary and event driven. There are four models that test the effects the independent variables discussed above have on the outcome of an investor-state dispute. My interaction variable accounts for membership in a PTA and a supply chain. I do not employ an interaction variable with membership in a BIT as it is constitutently insignificant and weaker than the PTA interaction variable across each model. The first model accounts the most basic application of my second hypothesis:

H₂: In the event of a contract breach, firms that are involved in supply chains and trade agreements protect their assets more efficiently than those otherwise.

Model 1

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_1 X_2 + u$$

Model 1 tests the relationship between my interaction variable and the event of an investor winning a case at the ICSID. Y is the outcome of an investor-state dispute. β_0 is the coefficient, or the outcome of an investor-state dispute where all values are 0. X_1 represents supply chains (and β_1 is its respective effect on investors winning cases). X_2 is the value of PTA's while its beta coefficient is its effect on the dependent variable. β_3 is the interaction of the effects of supply chains and PTA's.

Model 2

$$Y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_1x_2 + \beta_4x_4 + \beta_5x_5 + u$$

Model 2 applies control variables for the firm specific conventional wisdom of the literature. Here, x_4 is the amount of nationality diversity in the inflow of foreign direct investment of a host government. Its corresponding beta coefficient represents its effects on the outcome of an investor state dispute. β_5x_5 accounts for the affect the obsolescing bargain has on the likelihood of the investor winning the dispute.

Model 3

$$Y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_1x_2 + \beta_6x_6 + \beta_7x_7 + \beta_8x_8 + u$$

Model 3 tests the effectiveness of my hypothesis using host government specific controls. β_6x_6 represents the GDP in US millions of each host country during its corresponding ICSID case year and the effects it has on the investor winning. x_7 is the percent of the GDP made up of FDI of each host country during its corresponding ICSID case year. Furthermore, each host country's polity score and its effect on the likelihood of an investor winning an ICSID case is represented by β_8x_8 .

Model 4

$$Y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \beta_3x_1x_2 + \beta_4x_4 + \beta_5x_5 + \beta_6x_6 + \beta_7x_7 + \beta_8x_8 + u$$

Model 4 tests my second hypothesis using controls from firm and host government specific assumptions. Here, nationality diversity, the obsolescing bargain, GDP, percent GDP from FDI, and democracy rating are all represented alongside my interaction variable. I argue

that the interaction of membership in a supply chain and a PTA will be the strongest, most significant determinant of an investor winning an ICSID case.

Table 1. Variables

Variable Name	Description	Coding	Source
Investor Wins	The even of an investor winning a case from the ICSID, either the investor or the state. Settlements and pending cases dropped.	1 = investor wins 0 = state wins	ICSID database
Supply Chain	Firms involved in supply chains from ICSID data.	1 = supply chain 0 = not supply chain	ICSID database
BIT	ICSID case filed using a BIT as an instrument invoked.	1 = BIT invoked 0 = no BIT invoked	ICSID database
PTA	ICSID case filed using a PTA as an instrument invoked.	1 = PTA invoked 0 = no PTA invoked	ICSID database
Supply Chain*PTA	Interaction between supply chain variable and PTA variable.	1 = supply chain and PTA 0 = all other cases	ICSID database
Supply Chain*BIT	Interaction between supply chain variable and BIT variable.	1 = supply chain and BIT 0 = all other cases	ICSID database
Nationality Diversity	Diversity of firm nationalities investing in a host country.	Scale from 1-10.6 where 1 is low diversity and 10.6 is high diversity.	OECD
Obsolescing Bargain	Firms with high initial investment costs (at the expense of the firm).	1 = high initial investment cost 0 = all other cases	ICSID database
GDP US Millions	GDP of each host country per ICSID case year.	Continuous in millions of current US dollars	World Bank
% GDP FDI	Percent GDP of host country made of FDI per ICSID case year.	Scale of 0-100 where 0 is 0% GDP FDI and 100 is 100% GDP FDI.	World Bank
Democracy	Polity score of host country per ICSID case year.	0-10 where 0 is complete autocracy and 10 is most democratic.	Polity IV

Table 2. Winner of Cases Dispersion

Winner	Freq.	Percent
Host Country	123	53.25
Investor	108	46.75
Total	231	100

Data Sources: ICSID, 2018

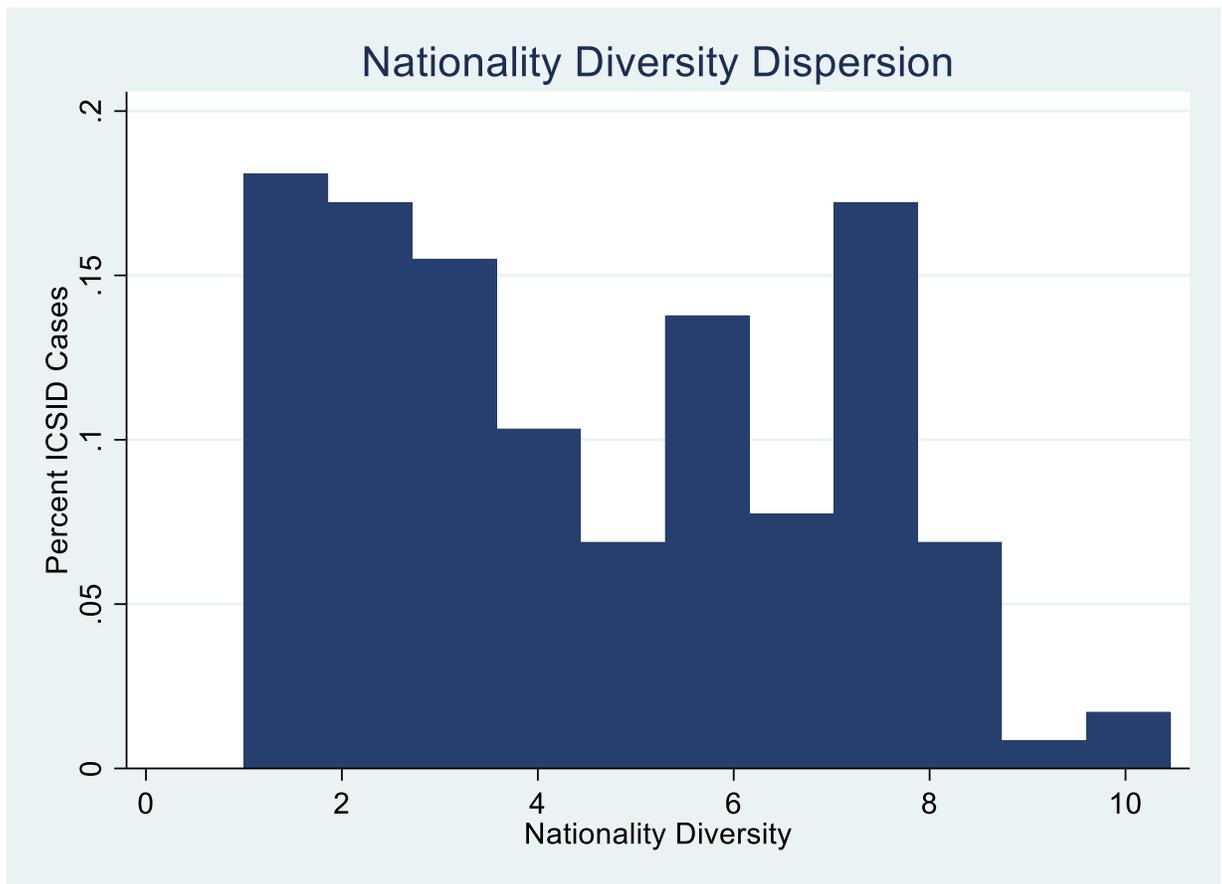


Figure 2. Nationality Diversity Dispersion

Data Sources: ICSID, 2018; OECD, 2009

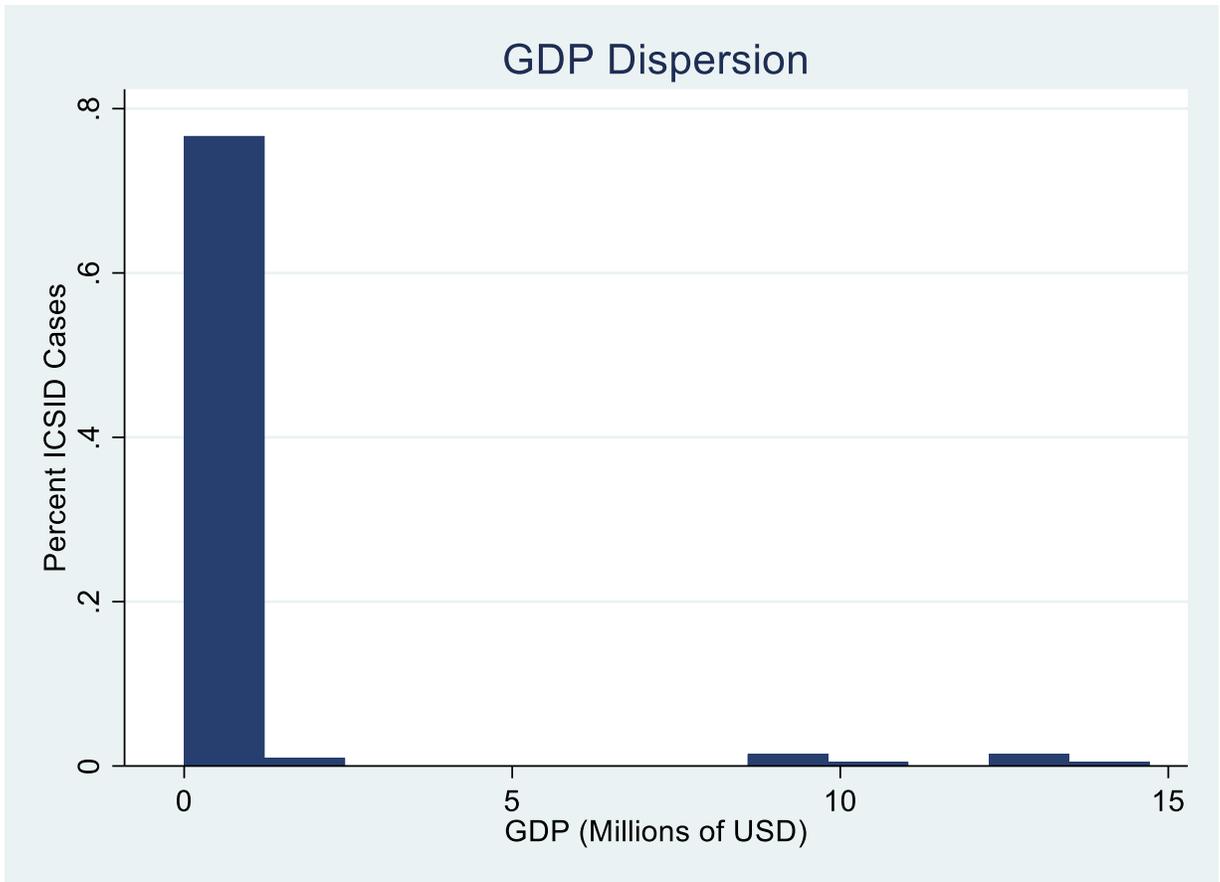


Figure 3. GDP Dispersion
Data Sources: ICSID, 2018; World Bank, 2018

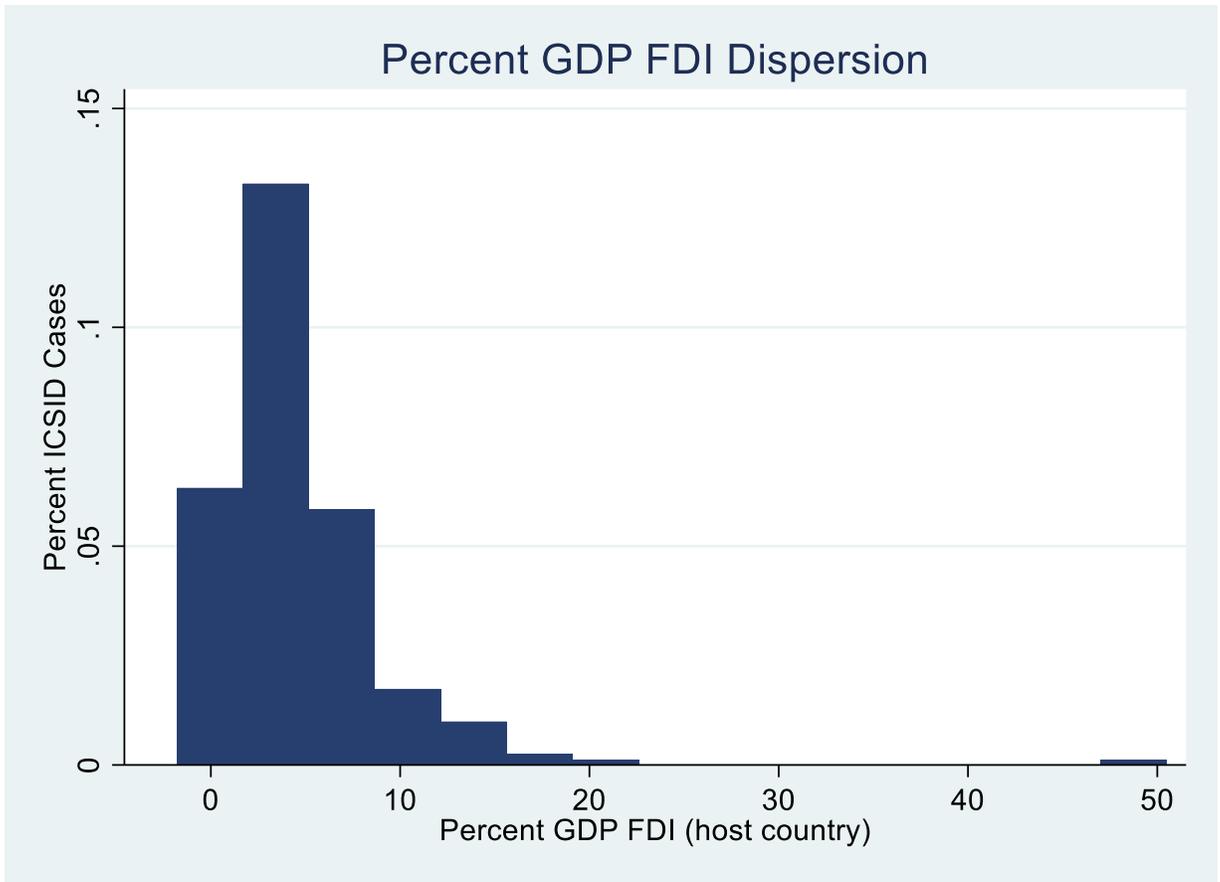


Figure 4. Percent GDP Dispersion
 Data Sources: ICSID, 2018; World Bank, 2018

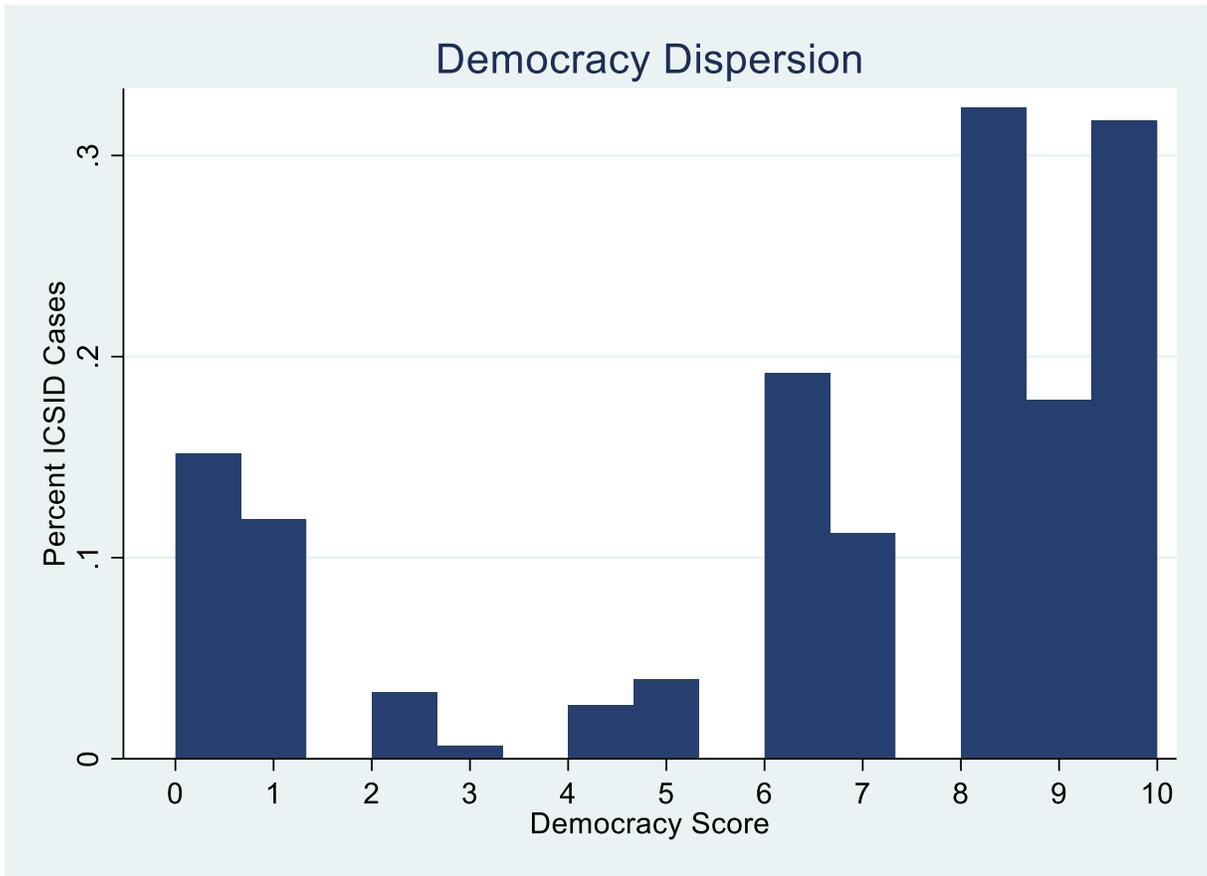


Figure 5. Democracy Dispersion
 Data Sources: ICSID, 2018; Polity IV, 2018

CHAPTER FIVE: RESULTS AND ANALYSIS

Deterring Breach of Contract

In exploring the relationship of the first hypothesis, I begin with assessing the frequency of trade agreements in ICSID cases. Figure 6 illustrates the variation of trade agreements in 513 ICSID cases since 1987. BITs are the most frequent group at a count of 369 (71.93% of cases). Cases that do not involve BITs or PTAs are the second most frequent at 110, or 21.44%. PTAs are the least prevalent at 6.63% of cases, or 34 out of 513. The sample mean is 0.85, denoting that BITs are most prevalent (as they are coded as 1). Testing a sample mean of 2 (denoting PTAs) against the sample results in a t ratio of -51.07 and a p-value of 0.000. This means that if the true mean was 2 (signifying PTAs as most prevalent), then a random sample from a population of ICSID cases would yield the results below 0.000 percent of the time. Consequently, it is highly unlikely that PTAs would be most prevalent.

[Insert Figure 6 here]

Figure 7 denotes the frequency of ICSID cases involving supply chains. 299 out of 513 cases, or 58.28% of cases involved supply chains as opposed to the 214 that did not. Running a lincom test to see the probability of the sample mean being zero results in a p-value of 0.000, denoting that it is highly unlikely that cases not involving supply chains are actually most prevalent. These findings do not support the assumption that supply chains have a deterrent effect on host governments from breaking contracts.

[Insert Figure 7 here]

Figure 8 illustrates the prevalence of the interaction between supply chains and trade agreements. My first hypothesis proposes that firms in supply chains and PTAs have a deterrent affect on host government contract breach. Consequently, I expect these firms to be least represented in ICSID cases. 290 out of the 513 cases either didn't involve a trade agreement or didn't involve a supply chain. 39.18% of cases deal with BITs and supply chains while only 4.29% of cases involve PTAs and supply chains. The mean of the interaction between trade agreements and supply chains is 0.48, falling between no trade agreements/no supply chain (0) and a supply chain with a BIT (1). When running a lincom test for a mean at the value of 2 (representing cases with PTAs and supply chains), the p-value is 0.000, denoting that the probability of this interaction variable representing the mean in this sample is highly unlikely. In other words, the mean from this sample of data and the assumption that the PTA*Supply Chain variable is the mean are statistically different. Unfortunately, due to the aforementioned measurement issues with the dependent variable (host government contract breach), I cannot do much more with the dependent variable of breach of contract.

[Insert Figure 8 here]

I move on to study what factors promote the likelihood of investors winning cases, as their arbitration claims are more legitimate in the event of winning a case. A caveat (discussed at more length in the limitations section) to these analyses is that I can only measure cases that have been brought to the ICSID. I do not have access to the universe of all breached contracts; instead, only cases where a firm has decided to litigate a host country through an international court in the event of a breach of contract. Furthermore, there are cases where the host government wins, signifying that a contract might not have been broken in the first place. Consequently, I assess

the relationship between these variables and a different dependent variable (winner of an investor-state dispute) in the following section.

Protecting Assets in the Event of Breach of Contract

Below is a detailed analysis of the results from the four models of probit testing. The strength and significance of the second hypothesis is assessed as well as the conventional knowledge and theory from FDI literature. Results from these models can be found in Table 3. The analysis is broken down by model for organizational purposes.

[Insert Table 3 here]

Model 1 is the most basic application of my second hypothesis. It tests the affect my interaction variable has on the likelihood of an investor winning an ICSID case alone. Without controlling for firm level or state level variables, the interaction of membership in a PTA and supply chain has a positive effect on the dependent variable. My interaction variable increases the likelihood of an investor winning an ICSID case by 0.485. The supply chain variable represents the effect of supply chains when PTA is 0. In this model, it has a negative relationship with investors winning. When supply chains are 0, the effect of PTA's on investors winning is negative and significance with a p-value of less than 0.05. Investors involved in a PTA but not a supply chain are -.738 less likely to win cases. Consequently, the interaction of supply chains and PTA's increases the chances of investors winning considerably. While this result is in line with the predictions of my second hypothesis, the pseudo r-squared is 0.0210, denoting that this variable alone account for roughly 2.1% of variation in the dependent variable.

The second model includes firm specific controls: nationality diversity and the obsolescing bargain. When accounting for these variables, the interaction variable gains a bit of strength, increasing from 0.485 to 0.610 in this model. The direction of the supply chain changes from negative to positive and loses some strength. In other words, when accounting for firm specific controls, the effect of supply chains on investors winning cases is positive across all values of membership in a PTA. While the PTA maintains its negative direction, it loses its significance and a bit of strength (having an effect of -0.738 in the first model and 0.547 in the second). The firm specific controls, on the other hand, are both significant with p-values less than 0.05 and have negative effects on the investor winning. All else equal, investors are 0.104 less likely to win their cases with every one unit increase of nationality diversity in the host country. Furthermore, they are 0.492 less likely to win cases when there is an obsolescing bargain. This model is more efficient than the first as the pseudo r-squared has increased to 0.0628. These three variables account for 6.3% of variation in an investor winning an ICSID case. There is a substantial drop in cases in this model from 135 to 231.

Model 3 explores the relationship between the dependent variable and my interaction variable while controlling for host government specific variables. In this model, the direction of my Supply Chain*PTA variable remains positive while increasing in strength and gaining significance (from 0.619 in the second model to 0.989 in the third). Its p-value is less than 0.10. The effect of supply chains when PTA is 0 switches back to negative at -0.166. The effect of PTA's when supply chain is 0 remains negative, but marginally gains strength in this model at 0.569. For every one million dollar increase in GDP of the host country, investors are 0.261 less likely to win their cases in the ICSID. The effects of percent GDP FDI are also negative, but weaker: for every one unit increase in percent GDP from FDI, investors are 0.0383 less likely to

win their cases. Democracy has a positive effect on investors winning at 0.0202. This model has a slightly larger pseudo r-squared 0.0643, denoting a marginal increase in explanation of variation of the dependent variable. The n group of this model increases from 135 in the second model to 165.

The fourth model tests my interaction terms with both firm specific and host country specific controls. The interaction variable maintains its significance and increase strength in this model at 1.250. All else equal, investors involved in supply chains and PTA's are 1.250 more likely to win cases in the ICSID. When no PTA's are involved, cases with supply chains are 0.0723 more likely to win cases. Conversely, when no supply chains are involved, cases with PTA's are 0.367 less likely to have investors win. The effect of GDP remains negative and decrease in strength marginally from -0.261 to -0.244. The effect of percent GDP FDI increases in strength slightly from -0.0383 to -0.0458. Democracy maintains its positive direction, but decreases in strength from 0.0202 to 0.0048. The firms specific variables, nationality diversity and obsolescing bargain, both lose their significance and strength in this model, but maintain their negative effect on the outcome of investors winning cases. This model has the highest explanatory power out of the four with a pseudo r-squared of 0.140. Consequently, these variables account for 14% of variation in the dependent variable. With the results from my probit analysis, I cannot accept the null hypothesis that the interaction between supply chains and PTA's has no effect on investors winning cases in the ICSID. This model has the highest drop in cases with an n-group of 104. A discussion and explanation of the variation in case numbers can be found in the limitations section.

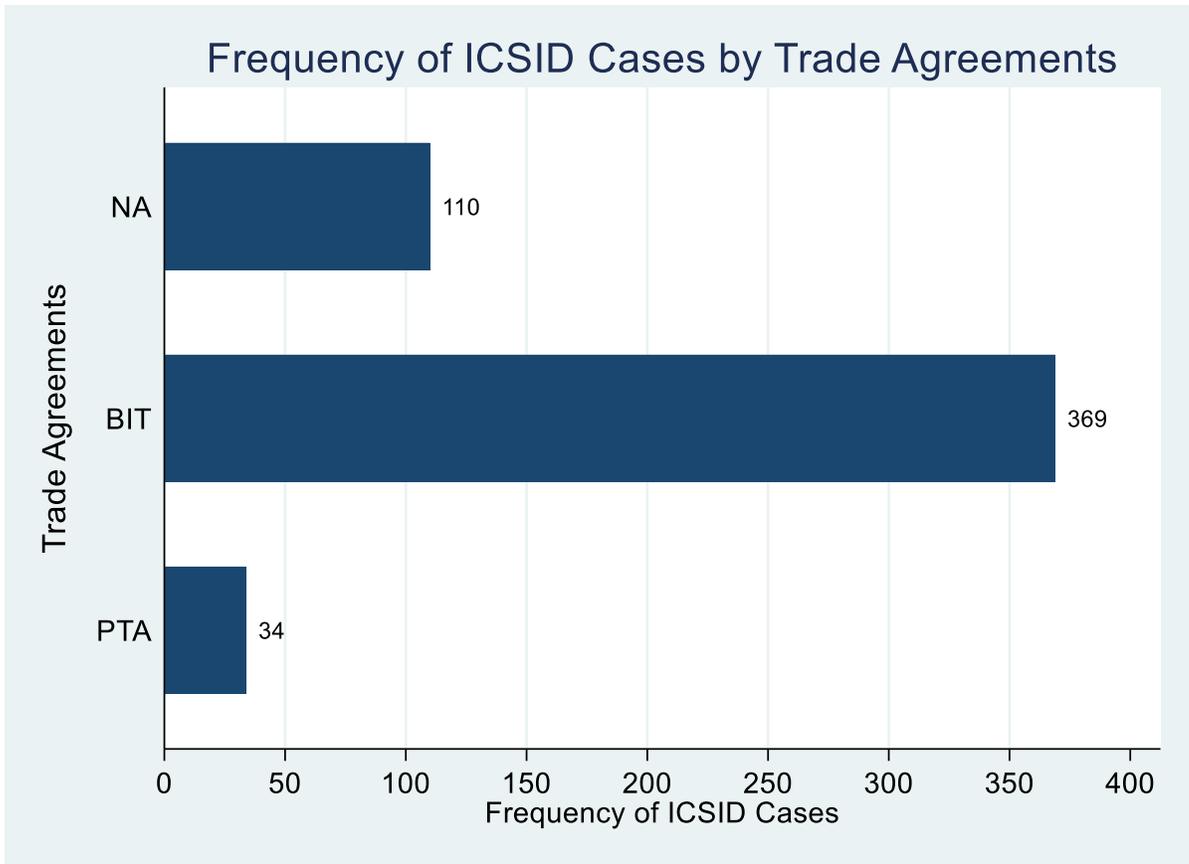


Figure 6. Frequency of ICSID Cases by Trade Agreements
Data Source: ICSID, 2018

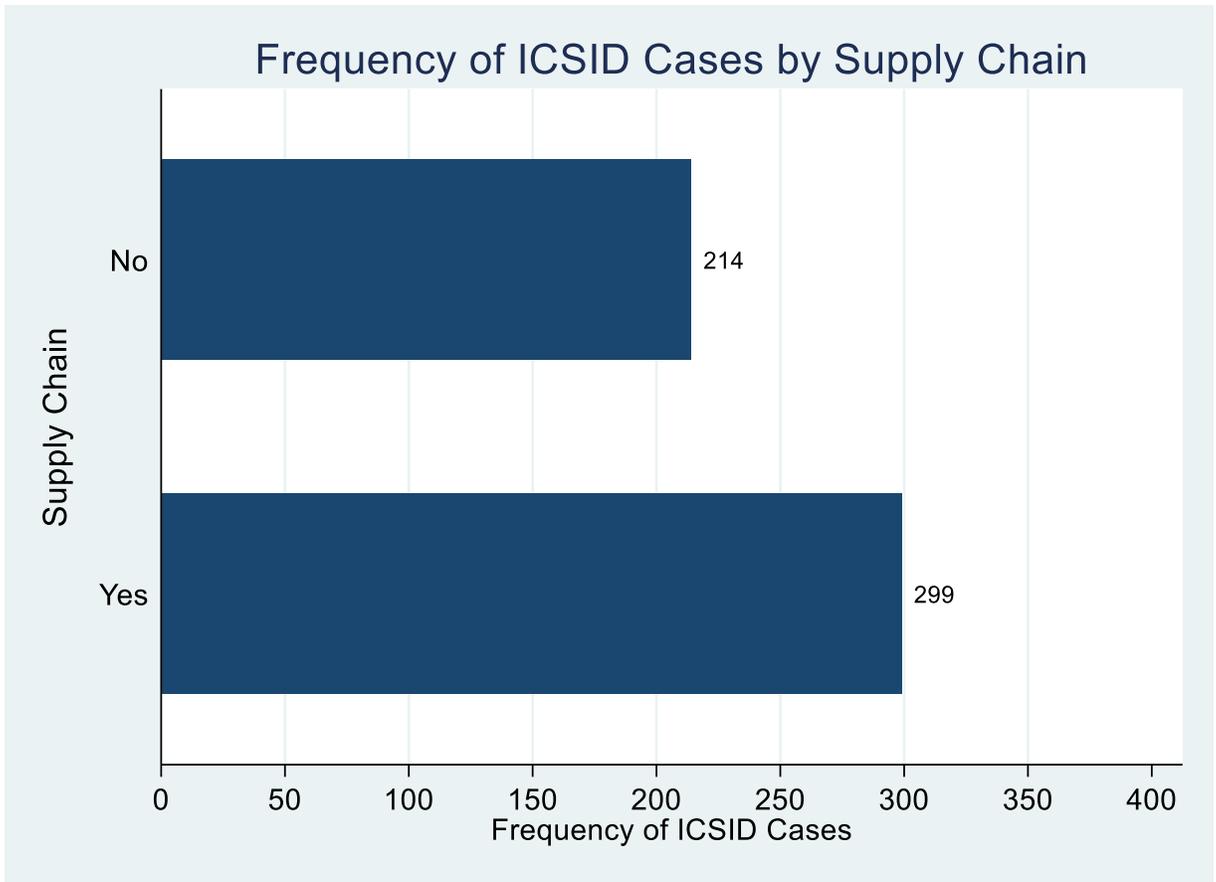


Figure 7. Frequency of ICSID Cases by Supply Chain
Data Source: ICSID, 2018

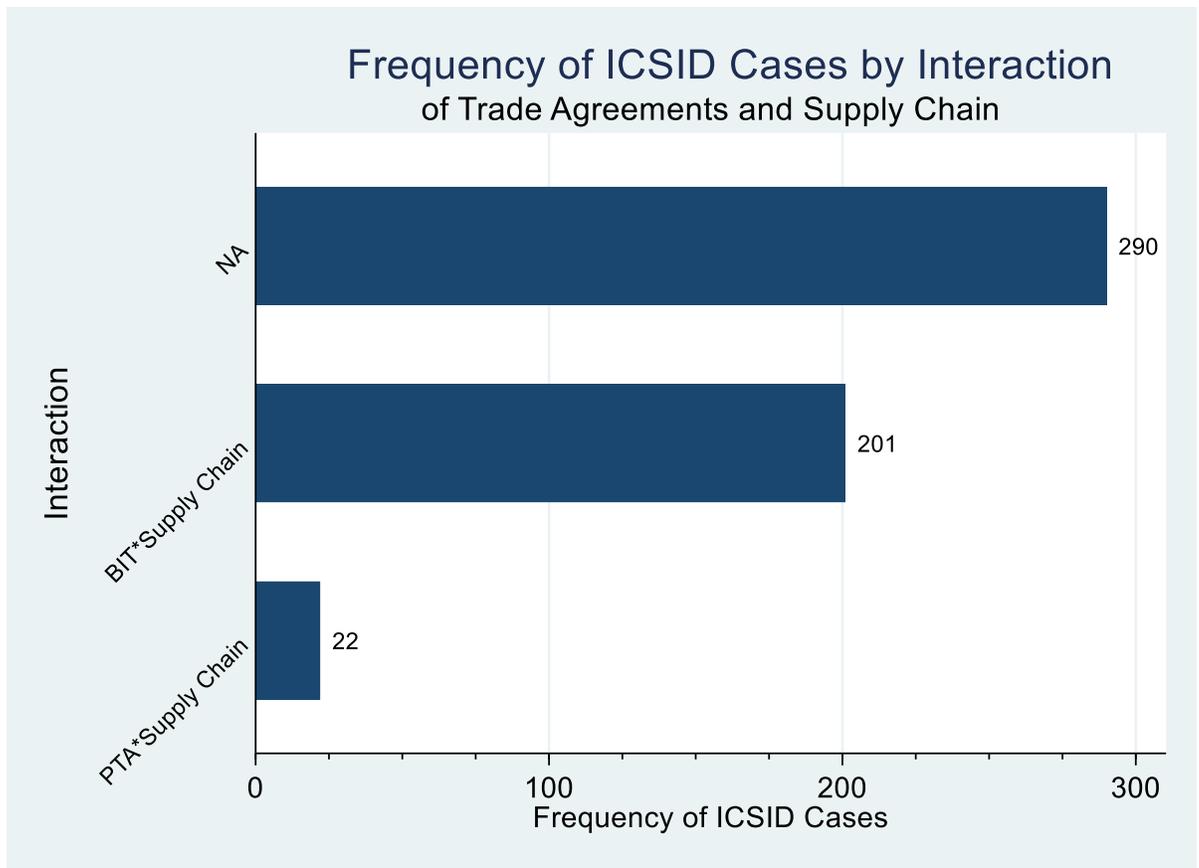


Figure 8. Frequency of ICSID Cases by Interaction of Trade Agreements and Supply Chain
Data Source: ICSID, 2018

Table 3. Likelihood of an Investor Winning ICSID Case

	(1)	(2)	(3)	(4)
Investor Wins	Model 1	Model 2	Model 3	Model 4
Supply Chain*PTA	0.485	0.610	0.989*	1.250*
	(0.430)	(0.503)	(0.555)	(0.686)
Supply Chain	-0.192	0.0168	-0.166	0.0723
	(0.186)	(0.281)	(0.224)	(0.322)
PTA	-0.738**	-0.547	-0.569	-0.367
	(0.335)	(0.385)	(0.439)	(0.540)
GDP US millions			-0.261	-0.244
			(0.175)	(0.150)
% GDP FDI			-0.0383	-0.0458
			(0.0276)	(0.0602)
Democracy			0.0202	0.00477
			(0.0316)	(0.0517)
Nationality Diversity		-0.104**		-0.0876
		(0.0486)		(0.0693)
Obsolescing Bargain		-0.492**		-0.318
		(0.250)		(0.303)
Constant	0.105	0.443	0.0930	0.409
	(0.128)	(0.286)	(0.265)	(0.414)
Observations	231	135	165	104
Pseudo R2	0.0210	0.0628	0.0643	0.140
Log Lik	-156.3	-85.15	-106	-60.01

Note: Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Data Sources: ICSID, 2018; World Bank, 2018; OECD, 2009; Polity IV, 2018

Limitations

There are several limitations to measuring the relationship between breach of contract and supply chains. The most prominent limitation to my research involved measurement validity. There is no database of breaches of contract to access in aptly measuring the dependent variable. Likewise, I cannot draw on a comprehensive list of supply chains to employ either.

To address this challenge, I use cases from the ICSID. The ICSID has a database of each case including variables pertaining to my research like industry type and instruments invoked. In measuring my first hypothesis, I use mean comparison analysis to determine how significant cases involving my interaction variable were not the mean. While my findings supported the first hypothesis, I cannot ignore that there is a selection bias of only choosing cases that go to the ICSID. In the universe of contract breaches in FDI, not all firms decide to arbitrate the host country responsible. There may be something specific to cases that go to the ICSID that I am missing. Consequently, I cannot reject the notion that there could be a spurious relationship between my dependent variable and interaction variable that I am unaware of in both hypotheses. With this lack of confidence, I cannot proclaim that my hypotheses were supported by my evidence, even with statistical significance. My analysis of the relationship between contract breach and the interaction of membership in supply chains and PTAs is lacking some validity due to these issues.

Similar constraints taint the validity of my supply chain variable. As there is no list of all past and present supply chains involved with the ICSID, I build upon theoretical assumptions to code a supply chain variable. These assumptions include coding for industry types that deal with intermediate goods, like oil and gas that requires several firms for extraction and refinement. The coding for this variable is not perfect, but it is the best alternative explored thus far. I have

consulted with professors of economics, international anti-bribery business organizations, librarians, economic affair officers from the United Nations Conference on Trade and Development (UNCTAD), and research centers for supply chain management. All have concluded that they are either unaware of any list of international supply chains or that it simply does not exist. In the future, finding a better way to code this variable would add significant validity to this research.

These measurement validity issues with my dependent variable and supply chain variable pose a serious challenge to my research. I cannot claim with complete certainty that the interaction between supply chains and PTAs have a significant effect on contract breach in FDI.

There is substantial variation in the number of cases for each model. Model 1 has the highest number of cases at 231 while the model 4 has the lowest at 104. I attribute this to the difficulty of having cases with data points at each value of each control. As I add control variables, I use different data sources that have some variation in data availability per case year. Model 1 has the highest number of cases (231) because its only source is the ICSID. Model 2 drops in cases slightly as I add in data from the OECD. Unfortunately, the OECD does not have available data for every country per case year. Model 3 has 165 cases; for every case year provided by ICSID, the World Bank had data points for 165 of those cases. When combining all three sources (ICSID, OECD, and World Bank), data points were available across the board for only 104 cases.

I also attribute limited availability of data to the nature of these cases. Table 4 in the appendix shows the break down of cases by country. The majority of cases deal with developing host countries, where data collection can be difficult and limited. Consequently, a significant amount of cases are dropped using three different data sources involving developing countries.

CHAPTER SIX: CONCLUSIONS

Influx in FDI offers LDCs their best shot at development. It is the largest, most stable form of external financing that these countries receive. Furthermore, it offers job growth, technological development, and innovation to host countries. Risk of contract breach poses a huge barrier to FDI as investors seek to minimize their losses. This risk is substantiated by the increase in caseload by the ICSID each year. The puzzle, then, is to find a way for MNCs to be more certain about the outcome of their investments, all else equal.

FDI literature assesses several variables and their effect on host government contract breach. They approach this relationship from either the perspective of the firm or the host country. Host country specific variables include factors like trade agreements signed, nationality diversity of investors, GDP, and democracy level. Firm specific variables involve industry type, which indicates the obsolescing bargain and supply chain variables alike. I take a new approach and look at the interaction of firm specific and host country specific variables. The host country specific variable I find most effective in my analysis is membership in a PTA. PTAs involve making commitments with several countries. Consequently, breaking multilateral promises threaten the credibility of commitments in future international relations. On the firm specific side, membership in supply chain threatens litigation and losses from all links in the chain the event of a contract breach. Therefore, looking at the interaction of membership in supply chains and PTAs assesses the strength of credibility a host country makes to the parties of the PTA and links in the supply chain. As the old adage goes, there is strength in numbers.

To assess the claims of my theory, I propose two hypotheses:

H₁: Host governments are less likely to break a contract with foreign firms involved in

PTAs and supply chains than firms involved in just PTAs, just supply chains, or neither.

H₂: In the event of a contract breach, firms that are involved in supply chains and trade agreements protect their assets more efficiently than those otherwise.

Using the data from the ICSID, World Bank, and OECD, I use quantitative methods to test my hypotheses. My conclusions on the test of each hypothesis can be found below.

Preventing Breach of Contract

The best test of my theory involves prevention of contract breach. If the interaction of supply chains and PTA's are strong enough to deter contract breach, then MNCs will feel more inclined to invest in FDI under these conditions. However, I encounter some measurement issues that threaten the validity of my tests. The main obstacle to measuring the effectiveness of my interaction variable against preventing contract breach is that contract breach is nearly impossible to measure.

To date, there is no database that contains a universe of all breaches of contract in FDI. I can only draw samples of contract breach from cases that have been formally filed through international dispute settlement courts. Consequently, I am missing all cases of contract breach that have not been formally filed. There could be something specific to cases that are formally filed that is skewing the outcome of my studies. To add more validity to this study in the future, it may be prudent to include some qualitative methods like interviews with representatives from MNCs sharing their experience in FDI. I will discuss this idea in towards the end of my conclusion.

Despite measurement validity issues, I ran mean comparison analysis tests on my sample of cases from the ICSID. When controlling for trade agreements (PTA's, BIT's, or none), I found that the mean significantly indicates that cases involving BIT's are most prevalent in the sample of ICSID cases. This could signify that BIT's are perhaps not effective in preventing contract breach, or that perhaps they are most often used as an instrument to sue host governments in the case of a contract breach. When controlling for cases involving supply chains and cases not involving supply chains, I found that the mean significantly denotes cases involving supply chains as most prevalent in the sample of ICSID cases. This result is not shocking as all links in a supply chain can threaten litigation in the event of a contract breach.

Finally, when controlling for the interaction between supply chains and BIT's, the interaction between supply chains and PTA's, and neither, I find that cases with no interaction were significantly the most prevalent. I ran a test to see if there was any possibility that cases with supply chains and PTA's could be the mean, and it was statistically insignificant. With the measurement validity issue in mind, I do not have enough evidence to reject the null hypothesis that there is no relationship between the interaction of supply chains and PTA's and prevention of contract breach. However, I can say that they are significantly the least prevalent type of case from ICSID cases.

Protecting Assets in the Event of Breach of Contract

The data I have lends itself more to analyzing deterrents of contract breaches that have already occurred. I propose that the interaction of membership in supply chains and PTA's not only helps prevent contract breach in the first place, but also helps cause investors to win in their

cases. Knowing that they have a legal foot to stand on in the ICSID, MNCs would be more inclined to take a second look at risky investments in FDI. From my sample of ICSID cases, I coded cases where the investor wins as my dependent variable. I run several models, assessing variables from the literature and my theory alike to test their strength in determining the outcome of an ICSID case.

In the most basic test of my hypothesis, where I ran my interaction terms against the dependent variable, there was a positive, insignificant with my interaction variable. Furthermore, the effect of PTA's when there is no supply chain involved is actually significant and negative, denoting that membership in a PTA alone decreases the likelihood of investors winning cases. With no controls, the interaction between membership in a supply chain and PTA have an insignificantly positive effect on the outcome of an investor winning an ICSID case. The findings of the first model does not support my hypothesis as the effect of the interaction variable is not significant.

When controlling for the firm specific variables, the controls themselves take on significance. The nationality diversity and the obsolescing bargain both had a significantly negative relationship with the event of an investor winning an ICSID case. The more diversity of nationalities investing in a host government the less likely an investor is to win an ICSID case. Likewise, if the firm involved in a case is in an industry with an obsolescing bargain, the investor is less likely to win an ICSID case. Furthermore, my interaction remains positive, yet still insignificant, increasing in strength marginally. These findings establish further confidence in the existing literature on FDI, but do not support my theory. Controlling for host government specific variables and my interaction variable yields no significant results. The direction of my interaction variable remains positive and increases in strength, however.

The third model involves host country specific variables. The interaction variable took on significance in this model and increased strength. Furthermore, the supply chain and PTA variable had a negative effect on the dependent variable, denoting that there is something special between the interaction of the two that creates a positive likelihood of investors winning cases. The GDP related variables have a negative effect on dependent variable while democracy score has a positive one. The pseudo r-squared of this model is stronger than the first and second.

In the final model, I include both firm specific and host government specific variables. In this model, my interaction variable is the strongest. Its relationship with the event of an investor winning an ICSID case is significant while all other controls lose significance. Furthermore, the pseudo r squared for this model is the strongest, denoting the most explanatory power out of models. I cannot reject the null hypothesis that there is no relationship between the interaction of membership in supply chains and preferential trade agreements and investors winning ICSID cases. While investors certainly do not hope for an outcome of perusing litigation in FDI, it helps to know what scenarios are safest for investment. Knowing that being part of a supply chain and investing in a country that is involved in a PTA is correlated with winning an ICSID case in the event of a contract breach removes uncertainty and risk.

Future Research and Alternate Methods

The findings of my research are not conclusive. In addressing my first hypothesis, I could not go far beyond mean comparison analysis and frequency studies. My findings tout that a significant minority of cases filed through the ICSID involve the interaction of supply chains and PTA's. I cannot say with certainty that this is the case for all iterations of host government

contract breach. In the future, qualitative case studies of MNC's from a variety of industries and home governments could add validity to my findings. Johns and Wellhausen have used this method to interview various firms who experienced contract breach while investing in riskier host countries. They found that supply chains are deterrent to contract breach (Johns and Wellhausen, 2016). I think that conducting similar research while focusing on the interaction of supply chains and PTA's could yield some interesting results. Furthermore, I think that doing some content analysis of PTA's and seeing which terms are most effective at preventing breach would be useful for investors moving forward.

While I have found a significant correlation between membership in supply chains and PTA's on investors winning ICSID cases, I cannot draw any certain conclusions about contract breach in general. Because my analysis is drawn from a sample of cases of contract breach filed through the ICSID, my results tell more about the ICSID process than contract breach itself. However, I have not yet found a method to aptly quantitatively measure contract breach. As I do not see a possibility of obtaining a database of the universe of contract breaches in the future, case studies could much to explain iterations of contract breach that have not been reported through international courts.

I have learned a lot about the variation in contract breach by analyzing this relationship through quantitative methods. It was satisfying to see some results in numbers, despite measurement validity issues. Seeing significance in the relationship between investors winning their cases and my theory was satisfying. Moving forward, I recommend case studies and interviews to asses this relationship in the future.

The findings of my analysis are useful for host governments and firms alike. For host governments, understanding what makes them attractive to FDI offers prospects for more

investment in the future. For firms, knowing that membership in supply chains and PTA's (on the part of the host government) can grant some semblance of certainty in an otherwise risky endeavor. The knowledge from my findings and what can be obtained from future research helps grow FDI and subsequently development of LDCs.

APPENDIX

Links to Data Sources

World Bank World Development Indicators (used for measurement of GDP and % GDP FDI):

<https://databank.worldbank.org/reports.aspx?source=world-development-indicators>

OECD (used for nationality diversity):

<https://data.oecd.org/fdi/outward-fdi-flows-by-partner-country.htm>

(example of similar use from Wellhausen, 2015):

<https://journals.sagepub.com/doi/abs/10.1177/0022002713503299>

Polity IV (used for democracy rating):

<https://www.systemicpeace.org/polityproject.html>

ICSID (used for all other variables):

<https://icsid.worldbank.org/en/Pages/cases/AdvancedSearch.aspx>

Frequency of Contract Breaches by Country

Table 4. Frequency of Contract Breaches by Country

Host Country	Cases	Percent
ARG	20	8.66
MEX	15	6.49
CZE	14	6.06
USA	11	4.76
UKR	10	4.33
ECU	9	3.9
EGY	9	3.9
RUS	8	3.46
POL	7	3.03
CAN	6	2.6
KAZ	6	2.6
SVK	6	2.6
TUR	6	2.6
GEO	5	2.16
ROM	5	2.16
VEN	5	2.16
PER	4	1.73
BGD	3	1.3
CAF	3	1.3
CHL	3	1.3
CRI	3	1.3
HUN	3	1.3
MDA	3	1.3
ALB	2	0.87
BGR	2	0.87
DZA	2	0.87
EST	2	0.87
GHA	2	0.87
HRV	2	0.87
JOR	2	0.87
KGZ	2	0.87
LBN	2	0.87
LVA	2	0.87
MYS	2	0.87
PRY	2	0.87
TZA	2	0.87
YEM	2	0.87
ARE	1	0.43
ARM	1	0.43

AZE	1	0.43
BDI	1	0.43
BFA	1	0.43
BLZ	1	0.43
ESP	1	0.43
FRA	1	0.43
GAB	1	0.43
GRD	1	0.43
GTM	1	0.43
HND	1	0.43
IDN	1	0.43
IND	1	0.43
IRN	1	0.43
KEN	1	0.43
KNA	1	0.43
LAO	1	0.43
LKA	1	0.43
LTU	1	0.43
MAR	1	0.43
MLI	1	0.43
MMR	1	0.43
MNG	1	0.43
PAK	1	0.43
PAN	1	0.43
PHL	1	0.43
SLV	1	0.43
SYC	1	0.43
TGO	1	0.43
THA	1	0.43
TJK	1	0.43
TKM	1	0.43
TTO	1	0.43
TUN	1	0.43
URY	1	0.43
UZB	1	0.43
ZAF	1	0.43
ZWE	1	0.43
Total	231	100

Data Source: ICSID, 2018

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