Are You My Friend: How Preferential Trade Agreements Affect States’ Militarized Disputes and Political-Military Cooperation

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1 Introduction

As Leonardo Baccini notes in “The Economics and Politics of Preferential Trade Agreements,” the number of preferential trade agreements (PTAs) has rapidly increased from more than 100 in the 1990s to more than 700 in the present era (Baccini, 2019). Ranging from the ASEAN-China Free Trade Agreement (ACFTA) to the US-Japan Trade Agreement (USJTA), PTAs are ubiquitous (ASEAN, 2012 and USTR, 2019). Their popularity has led World Bank researchers to call them “a cornerstone of the international trade system” (Chauffour & Maur, 2011). A broad categorization, PTAs include both multilateral and bilateral agreements and vary in depth, ranging from “free trade” to the easing of specific tariffs. PTAs can encompasses a range of issues such as labor standards and intellectual property in addition to trade and foreign investment.

Yet, what are the trade effects of these consequential agreements? Prior literature has established that PTAs increase trade flow and FDI between states (Baccini et al., 2017 and Baccini, 2019). Indeed, Baier and Bergstrand find that free trade agreements (FTAs) – a subset of PTA – double trade between two countries after ten years (Baier & Bergstrand, 2014). Dür, Baccini, and Elsig show that PTAs increase trade flows on average but that the depth of the PTA matters, with deeper PTA’s being more trade producing. Similarly, Büthe and Milner find that stronger commitment mechanisms included in PTAs lead to more FDI (Büthe & Milner, 2014 and Dür et al., 2014). \(^1\)

We know that PTAs increase trade, but do they enhance cooperation beyond trade (Baccini et al., 2017 and Baccini, 2019)? Recent research has examined PTAs in terms of areas of cooperation beyond trade (Limão, 2016). As Rodrik discusses, FTAs have grown from merely economic vehicles into “regulatory rules and harmonization” (Rodrik, 2018). PTAs impact a host of non-trade issues human rights, environmental policy, and legal protections (Dür et al., 2014; Hafner-Burton, 2011; and Limão, 2005). These additional elements of PTAs are often associated with the PTAs “depth,” which is operationalized by Dür et al. For Dür et al., ”depth” is whether all tariff will be eliminated and the scope of cooperation beyond tariff reduction (Dür et al., 2014). Beyond

\(^1\)Note, an increase in trade flow does not necessarily mean an increase in welfare for the countries involved. A related literature analyzes whether customs unions - a type of PTAs - improve member states’ welfare. For example, see Freund, 2010; Kemp-Wan, 1976; Richardson, 1995; and Viner, 1950). The relative welfare of the states - and the societal benefits derived or not derived from PTAs - is outside the scope of this paper.
merely economic principles, this line of research demonstrates that trade agreements now include elements of cooperation outside the realm of trade.

Given that PTAs are both a vehicle for increased trade and FDI as well as a means for cooperation in areas other than trade, this paper examines an underexplored topic: how do PTAs effect states likelihood to engage in militarized disputes and political-military cooperation. Time and time again, scholars of international political economy and international relations have asked variations of does trade – or economic integration – promote peace (see Barbieri, 2005; Copeland, 2015; Gartzke, 2007; Farrell & Newman, 2019; Keshk et al, 2004; Mansfield & Pollins, 2003; Martin, 2008; and Oneal & Russett, 1999). Theoretically, according to commercial peace theory, closer economic ties raise the cost of conflict (Chen, forthcoming).² Chen argues how interdependence may promote peace in his forthcoming article on "extended dependence." Yet, others find that economic ties do not reduce the likelihood of conflict and examine how trade may continue even during conflict (Barbieri, 2005; Grinberg, 2019; and Keshk, 2004). Dale Copeland rejects the dichotomy and introduced the concept of "trade expectation theory," which holds that positive prospects about future trade can lead to peace while relative economic decline may lead to militarized conflict (Copeland, 2015).

If one believes the tenets of commercial peace theory, then PTAs should be the perfect vehicle to decrease militarized conflict and increase cooperation, since they not only increase trade but also lead to interstate cooperation in non-economic areas. This paper examines PTAs as a “most likely” case to test commercial peace theory. If commercial peace theory is correct, I expect to find less militarized disputes after states sign PTAs. Theoretically, a PTA should raise the cost of conflict, thereby decreasing a state’s likelihood to engage in a militarized dispute that may lead to conflict. As an extension of commercial peace theory, I hypothesize that states will also increase diplomatic and military cooperation after joining a PTA. With PTAs, states are incentivized to not only avoid conflict but affirmatively protect their positive relations by increasing diplomatic and

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²Supporters of commercial peace theory disagree on what type of economic tie leads to peace, with some arguing for trade as sufficient while others argue in terms of capital interdependence or FDI (Copeland, 2015; Gartzke et al., 2001; Oneal & Russett, 1999; and Vicard, 2012). Alternatively, capitalist peace literature argues that the proliferation of capitalism increases peace (Gartzke et al, 2001).
military cooperation, thereby raising the costs of conflict by cementing their relationship.

To that end, this paper asks two questions. First, after controlling for pre-treatment behavior, is there a substantively significant increase in political-military cooperation and a decrease in militarized disputes after states sign PTAs? Second, does variation in the depth of PTAs affect the levels of militarized disputes and political-military cooperation?

The paper offers a possible rationale for variation in the militarised disputes and political-military relationships in states with PTAs. I hypothesize that depth of PTA is indicative of the level of cooperation between states and that “deeper” PTAs lead to increased cooperation and decreased disputes. For depth, I use the definition operationalized by Dür et al. (Dür et al., 2014). To test this explanation, I use difference-in-differences estimators and a multiple linear regression to determine if PTAs impact states’ political-military relationships, likelihood of engaging in militarized disputes, and if depth of the PTA explains the variation within states with PTAs.

**The dependent variables**

The dependent variables of this paper are the volume of states’ militarized disputes and the strength of states’ political-military cooperation. I examine states relationships in dyadic form, even for multilateral PTAs. In order to measure the strength of states’ political-military relationships, I examine the states’ formal alliances, defense cooperation agreements, and diplomatic exchanges in dyadic form. To measure the likelihood of militarized disputes, I examine four categories: whether there was threat to use force, a display of force, the use of force, or interstate war. Therefore, the analysis examines not only war itself but also captures the escalation towards war and confrontational behavior. By studying the variation in these dependent variables, this paper contributes to an understanding of the role of PTAs in impacting states’ security relationships.

Even within PTAs, the range is striking. In thinking about deep PTAs, the North American Free Trade Agreement (NAFTA) provides an example of peaceable relations between countries with a deep PTA. However, the ASEAN-China Free Trade Agreement - although considered less deep than NAFTA - and China’s militarized disputes in the South China Sea provide an example of the continuation of hostilities even with a PTA. Yet, it takes no stretch of the imagination to
think of alternative narratives that could explain the militarized dispute in the case of ACFTA and lack thereof in the case of NAFTA. In order to test whether the PTA is a contributing factor, it is important to compare states with PTAs to states without PTAs who have parallel trends before treatment, as I will later explain with my difference-in-differences estimators.

This paper builds from Mansfield, Pevehouse and Bearce’s early work on the topic of PTAs and militarized disputes (Mansfield et al., 1999). Mansfield et al. found that states with PTAs were less likely to have militarized disputes from 1950 to 1985: 2.3% of dyadic pairs with PTAs and 3.2% without PTAs engaged in a militarized disputes. They found their results to be statistically significant using logit and probit models to show that presence of PTAs caused militarized disputes to be less likely. This paper disaggregates the type of militarized dispute, noting that a display of military force is very different than the onset of war. This research proposal also looks at political-military cooperation, as well as determine if PTA depth is a consequential factor. As Mansfield et al. states, this is an important topic for understanding interstate conflict. By examining the effect of PTAs on these security-related questions, the goal of this paper is test the linkages between international political economy and security.

2 What does the literature on PTAs tell us?

While this paper examines the political-military relations of states after joining a PTA, an important element is understanding the conditions that lead states to join PTAs in the first place. After all, this research must address and control for trends in states’ dyadic relations that predate the signing of a PTA.

Who joins PTAs? According to Mansfield and Milner, democracies are more likely to join PTAs than nondemocracies and, among democracies, the number of “veto players” within a state’s domestic context decreases the likelihood of a state joining a PTA (Mansfield & Milner, 2012). Indeed, PTAs may be viewed as a means for consolidating power. Liu and Orleans find that FTAs actually increase the sustainability of democracies by reducing authoritarian groups’ incentives to seek power (Liu & Orleans, 2014). They imply that unstable democratic governments are incen-
tivized to pursue FTAs in order to induce stability.

Another domestic element is that liberalizing countries are more likely to join PTAs, particularly with the United States or the European Union (Baccini & Urpelainen, 2014). Signing a PTA may help the state demonstrate a credible commitment towards liberalization. Manger and Shadlen also argue that developing states are incentivized to join North-South regional trade agreements due to “political trade dependence” (Manger & Shadlen, 2014). Manger also finds that, instead of predominantly being about liberalizing exports, PTAs are actually driven by the desire for foreign direct investment in North-South relationships and by the desires of multinational firms. The resulting relationship is used to gain advantages over other states (Manger, 2009).

In keeping with Manger’s findings on multinational firms, domestic actors are incentivized to lobby for PTAs. Firm-level research finds that PTAs benefit large firms seeking to move their supply chains off-shore, leading these firms to be involved in encouraging states to pursue PTAs in the first place (Baccini, 2019). Moreover, firms express different preferences on rules of origin which may allow for differing domestic coalitions for signing PTAs (Chase, 2008).

As important as who joins PTAs and why is who does not and why not. Hamanaka finds three mains reasons that states begin FTA negotiations but do not complete them, namely that (1) the countries do not have diplomatic missions with each other, (2) they are conducting multiple FTA negotiations with other states in parallel, and (3) there is a significant difference in most favored nation tariffs between two countries (Hamanaka, 2019). Regarding Hamanaka’s first point on diplomatic relations, Plouffe and van der Sterren argue that strong diplomatic relationships increase the likelihood of PTA ratification (Plouffe & van der Sterren, 2016). Both Hamanaka and Plouffe and van der Sterren’s findings may mean that political cooperation - as measured in this paper as diplomatic presence - may not change after a PTA since it is a precondition to signing.

Baier, Bergstrand, and Mariutto underscore that geopolitics does not appear to motivate states to join PTAs but their work does not dispute that a lack of military conflict and an increase in cooperation may be a secondary effect of PTAs. They find that states that have PTAs are likely to join more PTAs (Baier et al., 2014). Similarly, there is a contagion effect where, if a state’s
neighbor signs a PTA, the state is more likely to sign a PTA (Baldwin & Jaimovich, 2012). If this paper finds that PTAs increase cooperation and decrease militarized disputes, this creates possible implications for regional integration, as countries sign regional trade agreements (RTAs) with each other.

While the literature provides a comprehensive overview of why states may join PTAs, there is still a need for research into the secondary effects once they do. As previously discussed, the effects of PTAs extend beyond trade (see Dür et al., 2014; Hafner-Burton, 2011; Limão, 2005; Limão, 2016; and Rodrik, 2018). This led Nuno Limão to find that using trade agreements to achieve non-trade goals creates problems for global free trade by increasing costs associated with multilateral tariff reductions (Limão, 2007). His findings relate to a separate string of literature on PTAs examining whether they “carve up” the global economy, thereby portioning it into subsections and trading partners. Results are mixed with Carlo Piccardi and Lucia Tajoli finding no evidence of this occurring (Piccardi & Tajoli, 2015).

Despite providing valuable background on PTAs, Limão’s research still does not indicate the political-military secondary effects of PTAs - if there are any. Vicent Vicard found that ”deep” RTAs reduce the probability of war while “shallow” RTAs do not. He suggests that the desire for peaceable relations is a motivation for the creation of RTAs (Vicard, 2012). Vicard’s findings - along with Mansfield et al.’s findings - validates my hypothesis that PTAs may reduce the likelihood of conflict and still leaves open the question as to whether they increase political-military cooperation. However, Vicard does not disaggregate wars and different type of militarized disputes, which I propose doing.

Similarly, Julian Hinz argues that “big countries” may have geopolitical motivations for signing PTAs while “small countries” may be indifferent. He finds that the “mood” of a big country towards a smaller country is higher prior to joining a PTA. This paper cannot speak to states’ motivations, rather asks about outcomes: do states have less militarized disputes after a PTA and more cooperative political-military relations. If there is evidence that PTAs increase political-military cooperation between states, it is possible that a goal of a state may be to use PTAs to
engender better relations in the political-military domain.

Despite significant scholarship on PTAs, there is little research on their implications for conflict and political-military cooperation. While Vicard and Mansfield et al. began an initial foray into examining impact of PTAs on militarized disputes, their analysis could be clarified by detailing what type of militarized dispute, seeing if Vicard’s findings on RTAs apply to PTAs, further combining scholarship on depth of PTAs and conflict, and examining political-military cooperation, in keeping with this research proposal.

3 Rationales

Why would PTAs lead to a decrease in militarized disputes and an increase political-military cooperation? As commercial peace theory predicts, the economic benefits derived by states from economic integration raise the cost of conflict (Mansfield et al., 1999). Additionally, even if PTAs are not increasing a state’s welfare, the expectation that they will could cause the state to avoid the costly price of armed conflict, in keeping with Copeland’s “trade expectation” theory (Copeland, 2015). Moreover, as Gartzke, Li, and Boehmer describe, economic interdependence - in their case capital and monetary interdependence - may give states means other than conflict to communicate through costly signaling (Gartzke et al., 2001). Compliance or non-compliance with PTAs can be a means for states to signal their intentions, without resorting to armed conflict.

While these rationales may explain why states might avoid economic conflict after signing a PTA, why would signing PTAs increase political-military cooperation? First, if economic integration decreases a state’s incentives to conduct militarized disputes, then it may increase states’ likelihood of pursuing other measures that decrease the likelihood of disputes occurring, namely formal alliances, diplomatic exchanges, and DCAs. DCAs in particular are seen as “trust-building,” which further cements the states’ relationship and decreases the likelihood of conflict. This concept is not new: Matthew Jackson and Stephen Nei show how international trade leads to networks of military and trade alliances (Jackson & Nei, 2015). Second, the benefits of pursuing both PTAs and alliances are greater than only pursuing only alliances or only PTAs. It is well-established that
allies who have PTAs - or who specifically include economic cooperation in their alliances - have higher levels of trade than those who only have either a PTA or an alliance (Long & Leeds, 2006). As Mansfield and Rachel Bronson show, states that are in both PTAs and alliances engage in more trade than states that are only in one category (Mansfield & Bronson, 1997). However, it is important to note that their research is not causal and it may be other factors that explain the alliance, PTAs, and resulting trade advantages. Third, trade patterns affect states’ conception of economic security and states’ economic interests. In his analysis of Defense Cooperation Agreements (DCA), Brandon Kinne finds that bilateral trade significantly increases the probability that states have a DCA (Kinne, 2018).

Moreover, both the lack of militarized disputes and the increase in political-military cooperation likely depend on the depth of the PTA. Based on Vicard’s work on RTAs and Dürr et al.’s findings on the impact of depth, depth appears to increase economic integration between countries, therefore increasing both the costs of conflict and the incentives to cooperate in the political-military realm.

**Alternative explanations**

An alternative explanation is that the preconditions that lead states to form PTAs – not the PTAs themselves – decrease militarized conflict and increase political-military cooperation. The preconditions of closer political-military relations and lack of conflict may be critical to the creation of PTAs. In order to test for this, I examine the relative to change in the variables before and after a PTA is signed, as well as use parallel trends in my difference-in-differences estimator to compare states with PTAs to states with similar relations that did not pursue PTAs.

Another explanation is that PTAs and trade in general could be irrelevant to militarized disputes and cooperation in the political-military sphere. If this is the case, I expect to see no statistically significant results and will fail to reject the null hypothesis that PTAs are inconsequential in this regard. My explanations do not argue that PTAs are the main preventer of disputes or in increasing political-military relationships, rather that they can be a contributing factor. In his famous ”Rationalist Explanations for War,” James Fearon does not view trade as relevant to conflict (Fearon, 1995). Additionally, Katherine Barbieri finds that trade does not promote peace, while Omar M.
G. Keshk, Brian M. Pollins, and Rafael Reuveny fail to reject their null hypothesis that trade does not promote peace across a variety of models and datasets (Barbieri, 2005 & Keshk et al., 2004). An alternative tested by this paper is that trade – and PTAs proxy – neither effects the likelihood of militarized conflict nor cooperation in the political-military sphere.

Lastly, a third explanation is that PTAs are economic instruments with economic outcomes and do not have secondary impacts unless explicitly specified in the language of the PTA. If this is the case, I would expect to see no statistically significant change in levels of militarized disputes and political-military conflict upon the introduction of a PTA.

### 4 Operationalization

In order to examine the effect of PTAs, I use two sources for my dependent variables: the Correlates of War Database (COW). Design of Trade Agreements Database (DESTA) is the source for my independent variables. I then use difference-in-differences estimators and a multiple regression model to test my theory.

The DESTA dataset includes almost 790 agreements and spans 1948 to 2018 in dyadic form (Dür et al., 2014). These agreements include “customs unions, free trade agreements or partial free trade agreements.” I use these dyads to create my PTA treatment group. I also use the DESTA dataset to measure the “depth” of trade agreements. DESTA measures depth by focusing on seven provisions: across the board tariff reductions, services trade, investments, standards, public procurement, competition and intellectual property rights. It notes whether provisions on the second through seventh issues are included in a substantive way. PTAs are then evaluated on a scale of 0 through 7.

In order to measure the militarized conflict and the states’ political-military relationship, I use four COW datasets. The first – Militarized Interstate Disputes – notes whether states have to threatened to use forces, conducted a display of force, used force or went to war (Maoz et al., 2018). The data spans from 1816 to 2010. For the purposes of this paper, I test each level of dispute separately, since a display of force is very different than going to war. In the difference-in-
differences estimators, I use parallel trends to control for pre-PTA behavior. In the multiple linear regressions, I examine the average percent change of pre-PTA and post-PTA militarized disputes for each dyad ten years before and ten years after the PTA:

$$\Delta_M = \frac{M_2 - M_1}{M_1}$$

$\Delta_M$ is the average percentage change in militarized disputes after the PTA was introduced for each dyad pair. $M_2$ is the number of militarized disputes after the PTA was inked while $M_1$ is the number of militarized disputes before the PTA was signed. I chose not to lag these variables and count all disputes before the year that the PTA was signed as pre-PTA.

The second variable – Diplomatic Exchanges – measures whether the each state has a charge d’affaires, minister, ambassador, or unknown diplomatic presence in the other country (Bayer, 2006). For the purposes of this paper, I examine the change in whether a diplomatic exchange was established where previously absent within 10 years of the signing of a PTA. The dataset spans every 5 years from 1817 to 2005. I treat all types of diplomatic presence as the same since how the states are qualitatively coded – especially without sufficient information for the “unknown” diplomatic presence category – make it difficult to adequately determine whether a state has been “upgraded” before or after a PTA. No diplomatic exchange within the closest ten year period is coded as “0” while the presence of a diplomatic exchange is coded as “1”. The diplomatic exchanges variable shows whether (1) both states had a diplomatic presence in each other, (2) one state had a diplomatic presence in the other but the other state did not, or (3) neither state has a diplomatic presence in each other. For the difference-in-differences estimator, I examine parallel trends but for the multiple regression, I create the following variable for each dyad:

$$\Delta_{Dip} = (Dip_1 + Dip_2|D = 1) - (Dip_1 + Dip_2|D = 0)$$

$\Delta_D$ is the change in diplomatic exchanges for each dyad pair within the ten years before the PTA.
and ten years after the PTA. $Dip_1$ is the presence of a diplomatic exchange of any type in one of the countries in the dyad pair. $Dip_2$ is the presence of a diplomatic exchange in any of the countries in the dyad pair. $D = 0$ refers to ten years before the PTA is signed, while $D = 1$ refers to ten years after the PTA is signed.

The third variable – Formal Alliances – identifies bilateral or multilateral alliances that are defense pacts, neutrality or non-aggression treaties, or entente agreements from 1816 to 2012 (Gibler, 2009). The data is available in dyad form. For the purpose of this paper, I do not disaggregate type of alliance but focus on whether a state has entered into a formal alliance with its partner within 10 years of signing the PTA. All dyad pairs that signed an alliance within ten years after signing a PTA are coded as “1” while the rest are coded as “0”. I examine parallel trends for the difference-in-differences estimator but for the multiple regression, I create the following variable:

$$\Delta_{ally} = ally_2 - ally_1$$

$\Delta_{ally}$ refers to change in ally status, with $ally_1$ referring to whether the dyad was any type of allies before the PTA and $ally_1$ referring to whether the dyad was any type of allies after the PTA.

The fourth variable – Defense Cooperation – measures formal bilateral agreements between states known as defense cooperation agreements (DCAs) (Kinne, 2018). These include “defense policy coordination, joint military exercises, joint peacekeeping operations, defense-related research and development, joint weapons programs, procurement and arms trade, officer exchanges, joint working groups, etc.” The dataset spans from 1980 to 2011. In order to control for pre-PTA behavior for each dyad in the multiple regression, I express the relative increase in DCAs by taking the percentage change in DCAs between two countries ten years before and ten years after the PTA:

$$\Delta_{DCA} = \frac{DCA_2 - DCA_1}{DCA_1}$$

$\Delta_{DCA}$ is the percent change the number of DCAs for each dyad pair ten years before and ten
years after signing the PTA. $DCA_2$ refers to the number of DCAs within ten years after the PTA is signed while $DCA_1$ refers the number of DCAs within ten years before the PTA is signed. I am not lagging the DCAs since both the coordination of a PTA and of a DCA is a massive governmental undertaking so the effect is likely visible in both.

For covariates, I use World Bank’s World Integrated Trade Solutions data on trade flow relative to GDP as well as a Systemic Peace’s Polity Score (WITS, 2020 and Center for Systemic Peace, 2020). I expect to add additional covariates as I conduct my analysis.

5 Methodology

*Difference-in-Differences Estimators*

Given that the data is cross-section panel data, I employ difference-in-differences estimators to examine the impact of PTAs on the likelihood of militarized conflict and states’ political-military cooperation. difference-in-differences estimators allow me to examine if the PTA had an impact as opposed to the preexisting trends in the data. For the purpose of this paper, I employ a difference-in-differences estimators on each variable.

To use a difference-in-differences estimator, the data must meet both the stable unit treatment value assumption (SUTVA) and the parallel trends assumption. Written formally the parallel trends assumption states,

$$\mathbb{E}[Y_{i1}(0) - Y_{i0}(0)|G_i = 1] = \mathbb{E}[Y_{i1}(0) - Y_{i0}(0)|G_i = 0]$$

(Angrist & Pischke, 2009). In other words, the difference in potential outcomes for control of the treated and not treated populations would be the same before and after treatment. In the case of militarized disputes, this means that the both the states with PTAs and the the control group without PTAs display similar characteristics prior to the PTA and - had treatment group not signed PTAs - would have continued to behave the same as the control group.

An important element of parallel trends is finding an accurate control group. There is burgeoning literature on how to do so, which I will exploit in my analysis (see Ahlfeldt, 2018; Rambachan &
Roth, 2019; and Ryan et al, 2018). My control group will not be the entire population of dyadic country relationships, rather it will be countries that follow the same pre-treatment trends as my treatment group, thereby attempting to mitigate the selection bias of countries with PTAs having closer relationships prior to the introduction of the PTA. As the treatment group varies temporally, the control group may also differ temporally so long as the pre-treatment trend remains parallel. Should finding parallel trends be futile, I will explore the possibility of using synthetic controls.

After checking assumptions, I will conduct a difference-in-differences analysis for each variable of interest at each level of PTA depth. This is a total of forty-nine difference-in-differences models, as there are seven levels of depth and seven variables of interest, with four levels of militarized interstate dispute and three additional variables. I will add covariates such as trade flow relative to GDP and states’ polity scores. Below is an example of the difference-in-differences equation used in measuring interstate wars at PTAs with level 1 depth:

\[ Y_{w1} = \alpha + T_{t}\beta + D_{i}\gamma + T_{t}D_{i}\theta + X_{w1}^T\delta + \varepsilon_{w1} \]

\( D_i \) is a binary dummy indicator for whether the country dyad is in the treated group. \( T_t \) is a binary dummy indicator for whether the year of observation is before or after the state signs a PTA. \( X_{w1}^T\delta \) is the covariate matrix. \( \varepsilon_{w1} \) is the error term. I have not added fixed effects or clustering at this time. To validate my analysis, I will then conduct a series of robustness checks. These robustness checks include placebo tests lagging the dyad PTA pairs well before the signed the PTAs, as well as testing against placebo outcomes.

By using a difference-in-differences strategy, I am able to control for prior trends to see if the PTA impacts the likelihood of militarized conflict and states’ political-military relationships. One possible source of bias is if PTAs have a leading effect on states’ behavior; however, this should bias my analysis towards finding no results, thereby providing a hard test for the impact of PTAs.

**Multiple Linear Regression**

In addition to conducting a series of difference-in-differences tests, I will also use a series of
multiple regression models for each dependent variable. I will use the percentage change variables described above to measure if the introduction of PTA changes state behavior. The OLS equation can be written as:

\[ Y_{x_t} = \beta_1 PTA + \beta_8 x_{depth} + \beta_9 x_{trade} + \beta_{10} x_{polity} + \epsilon \]

For each dyad pair, \( x_t \) refers to the percentage change within ten years before and within ten years after the PTA in the number of incidences where there was a threat of the use of force, while \( \beta_{1 PTA} \) refers to the presence of a PTA. \( x_{depth} \) refers to the depth of the PTA agreement as categorized by Dür et al, while \( x_{trade} \) refers to the ratio of trade relative to GDP and \( x_{polity} \) refers to the states’ combined polity scores. \( \epsilon \) refers to the error term. I then conduct similar regressions across all dependent variables.

The benefit of running an OLS multiple regression – provided the assumptions for OLS hold – is that it allows me to test all variables for significance. The problem is that, while I include covariates and examine the relative increase before and after signing the PTA, the regression does not control for all pre-treatment behavior.

6 Implications

Do PTAs matter? While PTAs are commonly discussed in the international political economy literature, the relationship between PTAs and states’ foreign affairs is a neglected topic. As the number of PTAs globally experienced dramatic growth over the past few decades, much is left to be understood about their implications outside of the economic arena and potential secondary effects. This paper builds from Vicard and Mansfield et al.’s work by examining the relationship between PTAs and military conflict, as well as adding a cooperation element. By using a difference-in-differences model and comparing to states’ with similar pre-treatment trends, this paper hopes to control for states’ behavior prior to PTAs and examines the impact of the PTA itself.

This paper will not only contribute to the literature on PTAs but also to the intersection of international political economy and security studies more broadly, as scholars examine the effect of trade and cooperation dynamics on commercial peace. Indeed, PTAs provide a hard test for
commercial peace theory, since they contain both elements of trade and cooperation. If commercial peace is to be believed, then states with PTAs should be incentivized to be more peaceful and cooperative than states without PTAs.

If the paper finds a relationship between PTAs and a decrease in militarized disputes or an increase in political-military cooperation - as the theory suggests -, then it will provide further support for commercial peace theory and find that PTAs have secondary effects. If the paper fails to find a statistically significant decrease in militarized disputes or increase in political-military cooperation, then it fails to reject the null hypothesis that PTAs have no effect on either. While this paper does not provide a resolution to the decades old debate surrounding commercial peace theory, it does contribute to testing it and further develops the underexplored area of intersection of security studies and political economy.
References


