

Opening New Doors: Economic Sanctions, Coerciveness, and Third-Party State

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Abstract

What role do strategic third-party states play in the sanction-sending state's decision to implement and enforce economic sanctions? The effects of sanction-busters on the success or failure of economic sanctions have been well-studied. However, this paper argues that the impact of sanction-busting on economic sanctions begins earlier, at the stage where the sanction-sending state decides whether to initiate economic sanctions. Strategic third-party states, regardless of their motivations, could influence the sanctioner's decision to move ahead with sanctions through potential sanction-busting activities. These third parties are also in turn incentivized by the willingness of the sanctioning state to enforce economic sanctions and punish sanction-busting activities. Using a game-theoretic model, I demonstrate the sanction-sender's need to balance between the cost it would incur from electing to enforce economic sanctions under the presence of a strategic third-party state and benefits that it would gain from achieving its sanction goals. I then indirectly empirically test the implications of the model through a new method: time-series triplet matching, an extension of Imai et al.'s (2021) time series matching model.

Introduction

In 2018, the United States declined to sanction Saudi Arabia for the killing of journalist and regime critic Jamal Khashoggi in 2018. The then-administration of Donald Trump was explicitly concerned that Russia and China, which had their eyes set on becoming more important player in the Middle East, would step in and fill the gap for arms if the U.S. imposes arms sanctions on Riyadh (Reichmann, 2018). This would potentially alienate an important strategic partner and risk Washington's longest-running relationship in the region. Despite the Saudi Crown Prince's alleged involvement, therefore, the White House vetoed a bill to suspend arms sales to Saudi Arabia for the extra-judicial killing (and for atrocities committed in Yemen).

Putting aside whether the geopolitical considerations were accurate, the example is an unusually high-profile and clear case where economic sanctions were not implemented for strategic reasons. However, even when economic sanctions are implemented, sanctioning states could choose to not enforce them. In 2021, President Joseph Biden's administration granted a sanction waiver to Nord Stream AG, though the pro-Kremlin company was deemed to have committed sanctionable offenses by the State Department. Secretary of State Anthony Blinken cited national interest as the reason for immediately waiving sanctions on the firm. More recently, Congress voted for an amendment that waived sanctions against India and allowed Delhi to purchase Russia's S-400 missile defense system without being subject to the Countering America's Adversaries Through Sanctions Act (CAATSA) and its secondary sanction stipulation in 2022. Even when the sanctioner has high stakes in ensuring the success of sanctions, or at least in giving the perception that sanctions matter, carve-outs are often made for third-party states.

These examples underscore the complexity in the strategic calculus that contributes to the imposition and enforcement of sanctions. Foreign policy does not take place in a vacuum, and the decision-making process to implement negative sanctions does not just involve the sanction sender and the target. This paper highlights the significance of considering a factor that

has thus far not been thoroughly explored in the sanctions literature – that of strategic third-party states.

Strategic interaction between non-cooperative third-party states and the sanction sender determines whether economic sanctions are imposed or enforced. Given the importance of the sanction-buster's actions on the ability and willingness of the sender state to coerce the target, whether and when third-party states sanction-bust should be examined more closely. Although most work on the topic has found sanction-busters to be motivated by economic concerns (Early, 2012), I propose that a selection process has already occurred prior to the sanction-busting taking place. The sender state, as a rational actor, chooses to impose sanctions only when it knows with a certain degree of certainty that it will not be penalized for its actions, and that the imposition of economic sanctions is worthwhile. Third-party states that intend to spoil sanctions for security and geopolitically motivated reasons may therefore not have the chance to do so because the sender state would not go through with the sanctions in the first place. Through a game-theoretic model, I illustrate the calculus of a sender state that accounts for the presence of third-party states seeking to profit politically from sanctions.

In making that argument, this paper aims to achieve two things. First, it highlights the importance of accounting for strategic third-party states in the international realm. Current sanctions literature has provided a great foundation to understand when and how states sanction-bust, and when and how enforcements of sanction violations occur. However, the costs and benefits that drive third-party states' decision-making calculus is not as well-understood. It may not always be worthwhile for third-party states to sanction-bust given the potential enforcement of the sanctioning state. Second, it provides a framework for thinking about the different types of third-party state actors, and how their motivations, particularly their grand strategic concerns, interact with the sanctioning state's decision-making calculus to reach an equilibrium response.

However, testing the effect of third-party state actors is an extremely challenging proposition. If the theory, laid out in detail in the next section, is correct, then economic sanctions should, under certain conditions, either not occur or not be enforced. Both are hard, if not impossible, to observe consistently with available data. I approach the problem by developing a new matching method that combines time series matching (Imai et al., 2021), which has wide applications in political science since its induction, with the statistical method of triplet matching (Nattino et al., 2021). This allows me to test whether the threat and imposition of economic sanctions affects third-party states' affinity towards the United States.

Considering when sanctioning states would choose to not impose or not enforce implemented sanctions is not a purely intellectual exercise. Though that consideration underlines a selection problem that has downstream implications for the conclusions drawn by the sanctions literature. This is concerning given that scholars have found that economic sanctions often lead to severe negative consequences on the ground for the target state's population, such as shorter life expectancy, increased oppression, worse rights for women, and decreased access to health and social welfare (Aloosh et al., 2019; Drury & Peksen, 2014; Gutmann et al., 2021; Lucena Carneiro & Apolinário, 2016). Beyond the issues arising from selection bias, with sanctions becoming ever more prevalent, it is also critical for policymakers to understand how third-party states behave, and to recognize how that behavior in turn affects the actions of the sanction-sending state. By considering in-depth what factors go into the calculus of each actor, policymakers may be better able to identify the elements that they could control and manipulate in order to achieve a more desirable foreign policy outcome.

Theory

The potential sanction sender has three choices at the outset of trying to resolve any issue. It could choose not to impose sanctions, to impose but not enforce sanctions, or to impose and enforce sanctions. To understand the logic that leads to one or the other of these outcomes, a more in-depth examination of the decision-making process of the sender state must be conducted. Given that the sanction-sender's initial choice establishes whether sanctions occur

and the path they will take if they do, what factors go into the sender state's decision to implement sanctions must be determined. This paper argues that the variation in selective enforcement and the lack of implementation of economic sanctions is driven in part by the presence and actions of non-economically motivated non-cooperative third-party states.

The Third-Party Factor

Before delving into how third-party states could impact the decisions of the sanction sender, it is important to first consider the types of non-cooperative third-party state actors and their impact on any sanction that the sender state imposes.

In accordance with current literature on sanction-busting, there are two types of third-party states: those who spoil sanctions for economic reasons, and those who are motivated by what they see as a strategic opening to gain benefits in the non-economic realms of international relations. Sanctions often provide lucrative opportunities for well-positioned third-party states to reap economic benefits. For example, third-party states who have existing ties to the target (and a record of sanction-busting) are more likely to see an increase in foreign direct investment from companies in the sanction-sending state (Barry & Kleinberg, 2015). Furthermore, Early (2012) found that third-party states that may benefit economically from becoming sanction-busters would do so despite alliance ties with the sanction sender, highlighting the strong economic incentives that exist for third-party states to engage in sanction-busting activity.

Third-party states motivated by non-economic reasons for spoiling sanctions are different. Such countries are capable of inflicting geopolitical costs on the sanction sender. For them, the main concerns, in addition to economic benefits from sanction busting, are influence, security (both internal and external), and projection of power. Of course, economic constraints and considerations may play a role, especially since these types of third-party states frequently offer economic incentives to the target to achieve their goals. However, the benefits that drive the geopolitically-focused sanction-busters are not economic in the sense that states that fall into

this sub-category are not attempting to recoup their costs financially. Instead, they rely on the strategic gains that spoiling the sender's sanctions may bring down the road to balance out the potential up-front economic cost of forming or deepening ties with the target.

Geopolitical sanction-busters could be further separated into two types, each corresponding to a different set of examples raised at the outset of this paper. The first are rival third-party states, countries that would actively seek to exploit economic sanctions to expand their sphere of influence or to undercut the sanction-sending state politically. With respect to U.S. sanctions, countries in this category include Russia and China. This type of geopolitical sanction busters inflict cost on the sender state through closer ties with and expanded influence in the target state.

The second type of third-party states are allies and strategic partners. While these states would sanction-bust for economic reasons (and prior research had shown that allies are in fact more likely to sanction-bust due to the political cover their relationship with the sanction sender provides), their actions can also be motivated by grand strategic or non-economic concerns. Their interests may not be directly in contention with the sanctioner's. However, due to their relationship with the sender state, they are capable of inflicting geopolitical cost on the sanctioner. This type of third-party state may choose to distance itself from the sanctioning state along other foreign policy dimensions in response to damages to its interest from sanctions or, more concerningly for the sender, turn to or draw closer to rival states. One example is the E.U.'s discussion of the move towards de-dollarization in the wake of the U.S. pulling out of the Joint Comprehensive Plan of Action and the threat of American secondary sanctions. States that fall into this category are, for the United States, India, and Turkey, among others.

Both types of non-cooperative third-party states, economically- or geopolitically-motivated, stand to gain from the severance of economic ties between the sender and the target in the context of sanctions. More importantly, both have significant bearings on the sender state's decision to implement sanctions. The third-party state, should it decide to sanction-bust

regardless of motive, could influence the sender's calculus through two mechanisms: (i) changing the anticipated coerciveness of the sanctions and (ii) changing the anticipated pain that the sender of the sanction might have to endure if it goes ahead with its threat.

Coercive leverage, the ability of the sanctioning state to impose economic pain, is at the core of understanding the success and failure of economic sanctions. Anticipated or perceived coercive leverage, in particular, can have large impact on the decisions that sanction-senders make at the outset. This is why sanctions tend to succeed in the threat, rather than the imposition, stage (Bapat et al., 2013).

By providing alternative markets or sources for sanctioned products, non-cooperative third-party states always decrease the anticipated coerciveness of sanctions. However, in some circumstances, they may also impose an additional cost on the sender state separate from decreased sanction efficacy. This cost is a direct cost that the actions of a strategic third-party state causes the sender to incur, as opposed to the indirect cost of negatively influencing sanction coerciveness. As previously discussed, there are two types of third parties. The first, driven purely by desire for economic gains, influences the coerciveness, and therefore the probability of success, of the sanction sender. More problematic for the sanction sender is the third-party state driven by political or security interests. These types of third-party states tend to have broader foreign policy goals that conflict with the sender state's (for example the Soviet Union during the Cold War and China today for the United States). Through sanction-busting, the geopolitically motivated third-party states could benefit themselves and further their foreign policy goals. The opportunity for a third party to enrich itself through harming the foreign policy interests of the sender state is a direct cost that the sender will have to consider.

There is already empirical evidence that security concerns related to competing alternate trade partners are salient for the sender state when they debate whether to sanction a particular target. Kohno et al. (2021) conducted a survey of the Japanese public and found that there is less support for halting aid when a third-party state with competing security interests is waiting in

the wings. The research demonstrates, at least among the public, that concerns about sanctions go beyond worries of job loss and economic costs, which was previously tested (Heinrich et al., 2017), and extend to considerations that sanctions may allow a third party to profit to the detriment of the sender.

This makes it clear that rational strategic actors who are deliberating imposing sanctions must assess not only the likely reaction of targets but also the potential behavior of relevant third-party states. Not taking the presence of strategic third-party states into consideration is problematic in two ways. Firstly, it overestimates the coerciveness of economic sanctions. States targeted with economic sanctions, especially those whose leaders are resolved to not acquiesce to the sanctioner's demands, tend to try to find alternative partners. Whatever method the target state uses to do so invariably decreases the economic pressure that sanction-sending states are applying. However, current works do not account for this, potentially leading to an overestimation of the costs of severing economic ties.

Furthermore, disregarding geopolitically motivated third parties ignores a key component of the sender state's decision calculus. If the sanction sending government only considers the reaction of the target, it would solely need to balance between the cost of sanctions to itself and the potential success of its sanction. The latter is dependent on the target's ability to find suitable alternatives. In this case, the sender state's best alternative is to optimize between the self-inflicted costs of sanctions and the benefits it would gain should the target state capitulate and alter its behavior. On the other hand, if the sanctioning state must account for the presence of a third-party state that may use sanctions as an opportunity to make strategic inroads with the target, the decision-making process would look different. Although cutting off economic ties to the target state could induce the target to alter its behavior, the sender state also provides an opportunity for an alternate trade partner to step in and fill the void. This will harm the sender state through decreasing the potential for sanction success and by benefiting a third-party state that may have opposing interests. In this case, the sanction-sending government's utility is determined not just by the likelihood that its sanction would succeed (and the costs of

implementing sanctions), but also by the added cost of ceding foreign policy grounds to a possible competitor.

Third-Party States and the Sanction Sender

How do the existence and actions of third-party states impact the sender's initial decisions? To answer the question, the costs and benefits that the sender and the third-party states must balance have to be considered. For the sanctioner, the benefit of enacting sanctions stems from the gains of successfully changing the target behavior. Conversely, the costs that the sender state has to incur, aside from the direct costs associated with breaking off economic ties with the target, include the costs that a sanction-busting third-party state may inflict.

For the third-party state, sanction-busting's benefits must be weighed against the costs. Sanction-busting behavior comes with two downsides. The first is the non-tangible costs associated with sanction-busting. This type of costs limits the baseline willingness of the third-party state to sanction-bust and exists regardless of the sender-state's actions. Factors that fall into this category include reputational cost and domestic constraints. The second is possible punishment from the sanctioning state. This cost is, of course, dependent on the choices of the sender state. Should the sanction-sender enforce sanctions or punish the third party for sanction-busting, the third party would incur a cost. This cost could be economic, political, or both.

However, the willingness of the sanctioner to punish the third-party state or to enforce sanctions is also conditional. Monitoring and enforcement take effort. To ensure that the sanction it implemented is enforced, the sanctioner must first be able to investigate and determine whether sanction-busting activities are taking place. This is difficult, as sanction busters tend to not carry out their activities publicly and monitoring would involve the sanction-sender devoting some resources. Following through with enforcement is also costly. There are also costs associated with punishment.

Given the costs, for the sanctioning state, some sanctions may not be worth enforcing. I posit that part of the variation in the willingness to enforce rests on how much the sanction issue matters for the sanctioning state's interests. This is different from how much the sender state gains in changing the behavior of the target state. Rather, it hinges on two factors: issue saliency and domestic costs. How salient the issue under sanctions is for the sender state has been shown to affect sanction outcome. Ang & Peksen (2007), Bapat et al. (2013), and Whang (2010), among others, have demonstrated that issue saliency is positively associated with sanction initiation and, under certain conditions, sanction outcome. For example, while the sanction-sender could potentially benefit equally from shifting the target state's actions on human rights issues and security issues, the latter is more immediately important for the interests of the sender state. Intuitively, the more important the sanction issue is to the sender state, the more likely the sanction-sending state is to both impose and enforce economic sanctions.

The other determinant of sanction imposition for the sender state is the domestic audience cost. The public in the sanctioning state could affect the willingness of the government to pursue sanctions. Past research on the topic, including Whang's (2011) and Drury's (2001), highlight the potential benefits that leaders could gain through sanction imposition. Whilst enacting sanctions could increase support for leaders, non-implementation could also be politically costly domestically. Domestic pressure could force policymakers to impose economic sanctions. However, sanction implementation does not always lead to sanction enforcement. Imposition is easily observable by the public; enforcement is not. When a third-party state capable of inflicting high geopolitical cost on the sender state exists and the domestic cost of sanction imposition is high enough, sanction-senders would apply sanctions that they have no intention of following through. One prominent example is George H.W. Bush's approach to the Tiananmen sanctions. After the Tiananmen Incident, the American public, as well as the Legislative Branch, pressured the White House to sanction Beijing. Bush was originally resistant to enacting sanctions for fear that the U.S.S.R would benefit from tensions in the U.S.-China relationship. So, the administration never took enforcement seriously and even sent a secret envoy to China to communicate the president's lack of willingness to enforce the sanctions. A high domestic audience cost, therefore,

could lead the sanction-sender to impose economic sanctions. However, the threat of geopolitical cost from third-party states seeking to take advantage of the severed ties between the sender and the target could lead to non-enforcement of sanctions.

This paper makes a few contributions. First, it focuses on the roles that third-party states play as strategic actors, giving agency to a previously overlooked stakeholder. This is a departure from previous research that assume third-party states are passive recipients of redirected trade and finance or as willing new partners in all cases, open to establishing or deepening economic ties with the target. Third-party states do not extend help in all cases. Depending on the benefits that it would gain and the costs that it may incur, the third-party state may instead choose to forego the opportunity to sanction-bust.

Moreover, this paper recognizes that the set of relevant third-party states, particularly those with strategic concerns in mind, encompasses a far wider set of countries than simply those that have pre-existing ties to the target state. Conditional on what motivates the third-party's actions, this paper delineates between the different types of third-party states and shows why strategically motivated third-party states would in certain circumstances elicit different responses from the sender compared with economically motivated ones.

Broadly, this paper hopes to highlight the limits of coerciveness measured as economic interdependence in sanctions. Although interdependence could capture the reduction in the sender state's sanction coerciveness, it does not consider non-economically motivated third parties and how their presence may influence the decisions of the sender state and thereby in essence reduce the sender's ability to coerce targets.

There are a few scope conditions to this framework. First, it does not explicitly consider sanctions that are carried out and enforced through international institutions. International institutions do provide platforms for states to implement multilateral sanctions and, depending on the type of institution, could affect sanction efficacy (Bapat et al., 2013; Miers & Morgan,

2002). Although sanctioning coalitions can lead to issues specifically related to multilateralism, such as coordination and enforcement problems (Drezner, 2000; Miers & Morgan, 2002), the decision to implement and enforce sanctions are still conditioned on each individual state's calculus. Joining an existing multilateral sanctioning regime or relying on international organizations to coordinate the actions of their members could alleviate some of the costs associated with sanction implementation and enforcement, but they do not fundamentally alter the cost-benefit analysis that the sanctioner must make. Thus, for the purpose of this paper, introducing international institutions as another player in the game between the sanctioning and third-party states would add complexity to the theory without adding significantly more insight.

Second, underlying my theory is the assumption that the sanctioning state is aware, more or less, of which third-party states would engage in sanction-busting activities and whether they are purely economically motivated. Of course, while there is always uncertainty surrounding what could happen, sanctioners, particularly the U.S., tend to be aware of who the potential geopolitical sanction-busters could be. For example, Washington is aware that any move to sever economic ties with its allies in the Middle East could create an opening for Russia, while China would potentially benefit from any negative sanctions in Southeast Asia. However, once we move away from great powers, potential geopolitical sanction-busters become less clear. Therefore, my paper is scoped to great powers as sanction senders. Although, given that the US alone imposes 57% of economic sanctions (according to the TIES dataset), my theory still covers most of the sanction episodes in the world.

Third, I recognize that the theory simplifies the sanctioning process. Whether and how to implement sanctions is a dynamic process. Sanctioning states could change their minds on sanction enforcement at any point in time after sanctions are implemented. Temporally, this paper does narrow the lens to examine just one point in time and focuses on the decision of the sanctioner at the outset. I do not claim that the strategic process vanishes after the initial imposition decision. However, how the sanction sender's calculations evolve over time is outside the scope of this paper.

Lastly, while this paper stresses the instrumental value of economic sanctions, it is important, at this juncture, to note that symbolic sanctions, or those implemented in response to a domestic audience, fall into the scope of the theory as well. In fact, I argue that symbolic sanctions are already included in the model through the cost and issue saliency terms (as will be evident in the next section), and symbolic sanctions primarily affect only the willingness for the sanctioning state to enforce economic sanctions.

Model

The model aims to illustrate the impact that the actions of the third-party state would have on the decision-making process of the sender. In line with the theory outlined in the previous section, the model focuses on the *initial* stages of sanction imposition and enforcement. Further, it is focused on non-economically motivated sanction-busting behavior.

The model is meant to capture only the cost-benefit calculus of the sender and the third-party state. As such, it does not overtly include or consider the response of the country targeted by the sanction. The model assumes that the target would always attempt to alleviate the economic pressure it is facing from the sanctions and try find alternate partners to make up for the shortfall caused by the sender state's severance of economic ties.¹ Hence, the probability of sanction success in the model is solely determined by the interdependence and coerciveness, which varies depending on the actions of the third-party, between the target and the sender.

A model is essential to answering the research question outlined in this paper for two reasons. Firstly, some of the costs that the sender state bears are difficult to observe. For example, it is challenging to determine how much the sender state may "lose out" when a third-party state motivated by security and strategic reasons sanction-busts. A game-theoretic approach enables

¹ Tie establishment is costly, and just as the third-party state may find sanction-busting not worthwhile, so the target may find the cost of creating new or deepening existing relations with a would-be third-party state too high relative to the benefits it would gain. This is also an important piece to the interdependence and coerciveness puzzle, and I plan to further explore the dynamic in another paper. However, for the purposes of this paper the target state is assumed to always be willing to reach out to the third-party state.

us to observe how these costs could lead to observed outcomes. Second, the decision to impose and enforce economic sanctions is highly complex. Through a formal model we could isolate and identify specific mechanisms in the sanctioning process.

Model Setup

There are two actors in the game of sequential and complete information. The sender, denoted S , and the third-party state, D . To reflect the different paths that sanctions could take, this model includes three stages. First, S decides whether to implement sanctions (I) or not ($\sim I$). If S elects against imposing sanctions, the game ends. However, if S chooses to implement sanctions, the game moves on to the next stage where D can choose to carry out sanction-busting activities (B) or refrain from doing so ($\sim B$). If the third-party state chooses to not sanction bust, the game ends. In this scenario I assume that the sanctioner will always enforce sanctions. Otherwise, the game moves on to the next, and last, stage where the sanction sender decides between enforcing sanctions (E) or not ($\sim E$). The sequence of the game, as well as the payoffs that each player would receive, is illustrated in Figure 1.

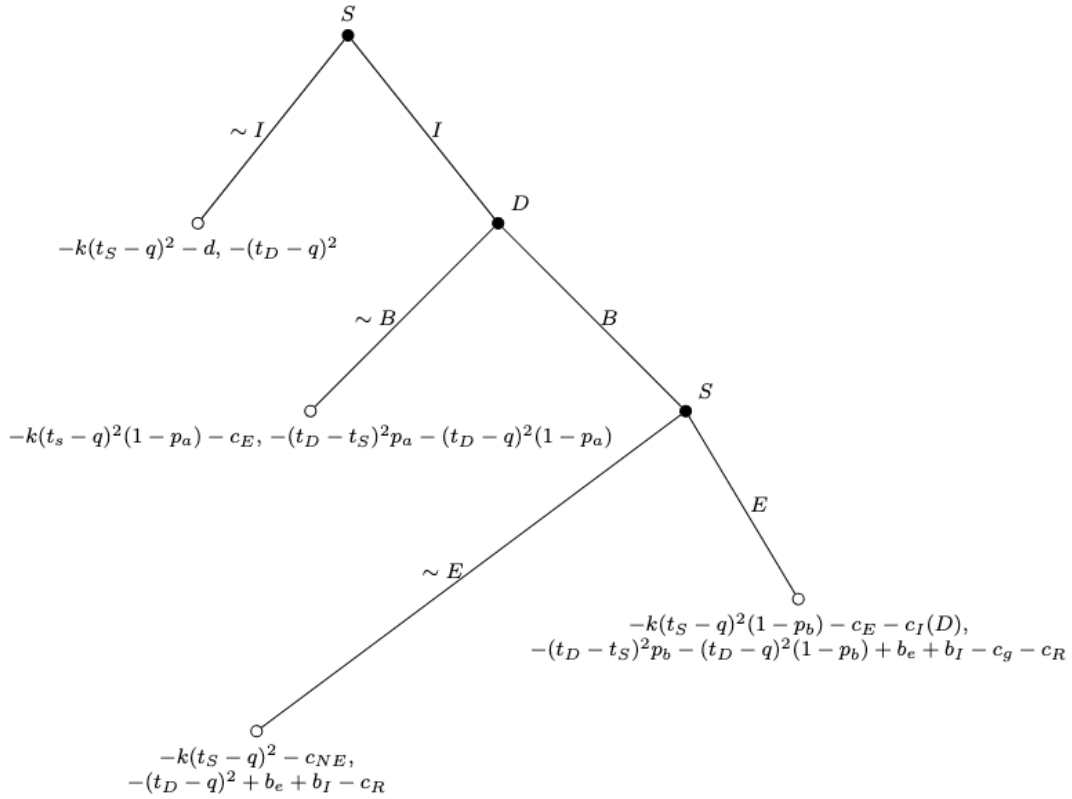


Figure 1: Third-Party State Intervention

The two actors have ideal outcome policies specifically related to the issue that economic sanctions are intended to solve. These ideal policy preference points are denoted by t_S and t_D , both of which lie on a one-dimensional policy space $T \subset R$. The status quo policy outcome is q . For this game I make no assumptions about the relative positions of t_S and t_D since for any given sanction episode and the issue involved each state could hold a wide range of preferences. However, for the sake of clarity and without loss of generalizability, in the two-player game I assume that t_S falls to the right of t_D . Therefore, the distance between the two players' ideal policy points can be represented by $\Delta_t = t_S - t_D$. Furthermore, I set the status quo point $q = 0$. From this, how much each of the players benefit from moving the policy away from status quo

and towards their preferred policy points is represented by the quadratic loss functions $-(t_S)^2$ and $-(t_D)^2$, respectively. Lastly, I scale the ideal policy points so that t_S , t_D , and q all fall between $[-1,1]$.

The utility of the sanction-sending state deriving from the policy is also modified by the saliency of the sanction issue, represented by the multiplier $k \geq 0$. The more prominent the issue is to the sender state, the larger the multiplier. Saliency is different from the distance from status quo for the sender state. An issue could be highly salient for the decision-makers in the sanctioning state but still bring little substantive benefit in the event of sanction success, broadly defined. China's 2010 sanctions on Norway after the latter awarded Chinese dissident Liu Xiaobo the Nobel Peace Prize is one such example.

Any imposed sanction has the probability $p_j, j \in \{a, b\}$ of success, where p_a and p_b denote the probability of success when the third-party state does not engage in busting and when it does, respectively. Therefore, $p_a \geq p_b$, as sanctions without the involvement of a sanction-buster should have a higher probability of succeeding. The probability of sanction success is a function of the economic leverage that the sanctioning state has over the target. In the case of this model, p_a is determined by the direct economic leverage the sanctioning state has over the target, while p_b is determined by the direct economic leverage the sanctioning state has over the target minus the increase in trade between the third-party state and the target.

Any time sanctions are implemented and enforced, the sanction sender must bear the cost of sanctions, denoted c_E . This cost term encompasses all domestic costs, be they economic, political, or social, that come from engaging in sanctions. Examples of what might contribute to c_E include domestic opposition or lobbying against economic sanctions, as well as the usual economic considerations of trade or financial losses, which have been discussed by previous research (Allen, 2008; D. Lektzian & Souva, 2003).²

² One concern is that the cost of economic sanctions is the same for the sender state whether it enforced sanctions with or without sanction-busting by the third party. It is possible that the sanction sender's domestic cost for enforcing sanctions could change after D chooses to sanction-bust. However, the only thing that would change is

Should the sanction-sender decide not to enforce economic sanctions, it would incur a cost, c_{NE} . This cost stems from several factors. These include reputational costs and a reduction in a state's credibility in convincing other states that it would enforce economic sanctions in the future, such as the signaling effect raised by Lacy & Niou (2004), as well as domestic audience costs for failing to punish sanction-busters. It is important to note that economic sanctions, particularly ones where the sanctioning state is not the U.S., are spottily enforced.

The next cost that the sanction sender could sustain is what I term the "international" cost, denoted as $c_I(D)$. This occurs when the third-party state is driven by non-economic motivations, and would only be borne by the sender if it enforces sanctions after sanction-busting actions by the third party have taken place. Substantively, one can think of the international cost as the real losses that the sanctioning state would incur from the third-party state's sanction busting. Some of these include less influence over the target state, loss of strategically important military bases, decreased closeness of relations or cooperation for future agreements, and so on. This cost could also be incurred through alienation of allies and strategic partners for the sanctioning state.³ Lastly, the sanction-sender could also sustain one further cost, d , which denotes the domestic cost that the sanctioning state incurs when it chooses to not impose sanctions at all.

The third-party states' payoffs are composed of four additional parameters. The first two are the benefits that it would gain by engaging in sanction-busting behavior. The first, b_e , denotes the economic benefit of sanction-busting. This benefit exists for both types of third-party states, and reflects that fact that regardless of motivation, sanction-busting tends to bring economic benefits to the sanction buster. The second type of benefit is the strategic benefit that the

reduce the attractiveness of enforcement, and it would not alter how the main parameters of interest, $c_I(D_i)$ and b_e and $b_I * 1_{type=strategic}$ affect the decision of the sender state.

³ I chose not to model for different types of geopolitical costs. Although the theory states that the mechanisms for the third-party rival state and strategic partners/allies to inflict geopolitical cost are different, the difference is only in how the parameter is generated, but not its existence or the role it plays in the model. Further, I make no assumptions with regards to which type of third-party state exacts a larger geopolitical cost on the target. Thus, separating out the different costs does not add much more information to the model.

security and influence-motivated type of third parties receive from spoiling sanctions and it is denoted b_I .

The last two parameters associated with the third-party state capture the cost it would experience. The first is the reputational cost to the sanction-buster. This exists regardless of whether the sender state decides to enforce sanctions and is denoted c_E . The second is from sanction-busting if the sender state decides to enforce sanctions, denoted c_g . The sanction sender could decide to punish the third-party state, whether through enacting secondary sanctions or other non-sanction related measures.

Implications

The solution concept is subgame perfection, and the model is solved through backwards induction in the usual way. The detailed solution of the model can be found in the appendix to this paper, along with the full set of comparative statics. Here, I highlight the most relevant implications of the theory. Below, I use more or less likely as a shorthand for the size of the parameter space for which these equilibrium holds being larger or smaller.

Implication 1: When the third-party state (D) sanction-busts (B) for geopolitical reasons, S is less likely to impose economic sanctions.

As shown in the proof in the appendix, S would be less likely to implement economic sanctions if D engages in sanction-busting for geopolitical reasons conditional on enforcement being a better choice than non-enforcement for S. However, from the comparative statics, the higher the geopolitical cost, $c_I(D)$, the less likely the sanctioning state would be to impose economic sanctions.

Implication 2: When the domestic cost of non-imposition of sanctions (d) increases, the likelihood of seeing sanctions increases.

From the model, it is clear that when the domestic cost for not imposing economic sanctions increases, the incentive to impose sanctions increases and thus we are more likely to observe economic sanctions. One corollary of this is that when the geopolitical cost $c_i(D)$ is high, under certain conditions the sanctioning state would impose sanctions, but would not enforce the sanctions were sanction-busting to occur.

Implication 3: When the issue under sanction is more salient or important to the sender state (S), the third-party state (D) is less likely to engage in sanction-busting.

As the issue under sanction increases in importance for the sanction-sender, S is more likely to enforce sanctions, which in turn leads to a decrease in willingness to sanction-bust for the third-party state (D).⁴

Japan and Economic Sanctions

To underscore the mechanisms at play in the model, I conduct a mini case study and examine Japan's attitude towards economic sanctions for India in 1998 and Myanmar in 2021. These are meant to be illustrative examples, included here to highlight the mechanisms that underlie the model and clarify the theory in a concrete manner. The case study is not intended to be a rigorous test for the model's implications. As such, the examples are selected for their clarity.

The two cases examined here looks at when third-party states could affect the sanctioning state's decision to impose economic sanctions (Implication 1). They provide comparison between a geopolitical context where there is a rival state with strong strategic interest in the target, and one where Japan's main competitor in the region has little to no opportunity in gaining geopolitically. Both contexts were where the target state engaged in activity that was widely condemned by the international community, including Tokyo's allies, and where China was

⁴ This is evident from both the comparative statics and the simulated results, which can be found in the Appendix.

Japan's geopolitical rival. Furthermore, Japan has or had substantial investments and economic interests in both India in 1998 and Myanmar in 2021. By 1997, car manufacturers Honda and Toyota, both had plants in India, while major Japanese companies such as Kirin, Suzuki and Toyota have partnerships or plants in Myanmar. Japan was also the largest Official Development Aid (ODA) donor to India, with bilateral aid commitments running at around US \$1 billion annually in the 1990's (Wadhva, 1998). Similarly, Japan is Myanmar's largest OECD ODA donor. In 2019, Japan provided US \$1.74 billion in development aid (Tobita, 2021).

Japan Sanction on India in 1998

In May 1998, India drew widespread condemnation from the international community as it carried out the Pokhran-II nuclear tests, a series of five nuclear bomb test explosions conducted by the Indian Army. Though the tests enjoyed high domestic support, with an opinion poll showing that 91% of those surveyed approved of the first series of tests, the reception by the international community was chillier. Then-President Clinton announced wide-ranging sanctions soon after the last two of the tests, and Japan soon followed suit (Burns, 1998), announcing its intentions to cut aid to India. In doing so, it joined forces with other countries such as Germany, Sweden, and Denmark in suspending official development aid.

Turning to the potential third-party state that could cause Japan to hesitate in imposing sanctions, it is important to examine the perception of Tokyo towards China and its likelihood of exploiting sanctions for its own geopolitical gains.⁵ Despite enjoying a relatively cordial relationship in the 1980's, by the mid 1990's, Japan viewed China as a potential threat, and was suspicious of its geopolitical ambitions. From 1995-1997 Japan even suspended its foreign aid to China due to nuclear tests carried out by Beijing in 1995 (Katada, 2001). Therefore, were China

⁵ There were other third-parties that may have played a role in the dynamic. The United Kingdom, France, and Russia chose not to condemn India, and did not impose sanctions. However, it is likely that Japan considered the geopolitical costs of these sanction-busters to be negligible (Japan was enjoying relatively cordial relations with Russia at the time). Namely, for Japan, $c_I(D)$ is extremely low in the cases of these specific sanction-busters.

to engage in sanction-busting activities, it would have been highly likely that Japan would not have gone forward with the sanctions.

However, China was not interested in busting sanctions or playing a spoiler role. In fact, China's ideal point was highly aligned with Japan's, as well as the other sanctioners'. China became one of the most vociferous critics of the nuclear tests, particularly after the publication of Indian Prime Minister Atal Behari Bajpayee's letter to President Bill Clinton, where he justified the tests by citing China as the major reason that the tests were conducted (Acharya, 1999). Given China's reaction and the circumstances surrounding the nuclear tests, it is likely that Japan determined that China would not play a spoiler role in the sanctions.

Japanese Inaction in Myanmar in 2021

In early 2021, Myanmar's military overthrew the democratically elected government in a bloody coup. While the military junta found itself subject to sanctions from countries around the world, including again Japan's ally the United States, Japan withstood international pressure to impose its own sanctions and cut off its considerable aid. Myanmar is an important partner, both in terms of trade and politically, for Japan in Southeast Asia, and Tokyo, hesitant of providing an opening for China to make inroads in the country, went against the tide by continuing its relationship with Naypyidaw despite undermining the U.S.'s sanctions.⁶

The major difference in the Myanmar case was China and Beijing's potential reaction to a Japanese sanction on Myanmar. Although China was not entirely satisfied with the military takeover (Myanmar's military is highly mistrustful of China, and Beijing enjoyed more cordial relations with the ousted Aung San Suu Kyi), it adopted a policy of non-interference, blocking a United Nations resolution to condemn the coup. China has exhibited a strong interest in expanding its influence in Southeast Asia. Geopolitically, Myanmar provides a corridor that allows

⁶ Although Japan did not impose sanctions, it did temporarily halt negotiations for new aid. However, currently allocated aid and resources are allowed to be used, and projects are continued, and as such it stopped short of implementing aid sanctions.

China to access the Indian Ocean through its southwestern provinces. Moreover, Myanmar is rich in the natural resources that China seeks, including oil. Economically, China is one of Myanmar's largest investors, and it also recently signed agreements for multiple projects with Myanmar under the Belt and Road Initiative.

China's intent to exploit sanctions was very clear, and indeed it has continued, and even increased economic with Myanmar. In spite of China's veto of the U.N. resolution, Beijing's real ideal point is probably more aligned with Japan's than it is with the military junta's. However, the benefits of sanction-busting are large enough that it supersedes the loss that remaining at the status quo would bring to China. In other words, although the coup was somewhat costly for China given its relationship with the ousted government, it still stood to gain geopolitically from any rupture in the Japan-Myanmar tie. Given that Japan knows that China will increase its economic engagement with Myanmar, and that its geopolitical position in Southeast Asia may erode if it severs relations with the military generals, it is reasonable that Japan would choose to not impose economic sanctions.

The two cases demonstrate the role that the presence of a sanction-busting third-party state plays in the sender's decision to impose economic sanctions. In the Indian case, China was not interested in sanction-busting, and indeed Sino-Indian relations hit a low point immediately after the nuclear tests. In the Myanmar context, Japan was unwilling to impose sanctions due to China's substantial geopolitical interests in the region (and its own potential loss of influence).

Empirical Test

In an ideal world, I would be able to test each of the implications of my model empirically. Unfortunately, current data does not allow me to do so. I cannot, for example, directly measure loss of geopolitical influence or domestic costs. While I could theoretically proxy for the variables that I need, the numerous variables that need to be proxied means that measurement and conceptualization errors may hinder the validity of the tests. This is notwithstanding the fact that some factors, such as issue salience, may not have even readily available proxies.

However, there is one major observable inference I could draw from the model, particularly with regards to *Implication 1*. The first implication states that sanctioning states are less likely to impose economic sanctions when geopolitically motivated third-party states exist. Unfortunately, it is challenging to a priori assess the presence of geopolitical costs. Nonetheless, we might imagine that if a third-party state sanction-busts for no-economic reasons, geopolitical costs should be observable post-sanction imposition. There are a few ways geopolitical costs could manifest itself. These include decreasing engagement with the sanction sender or extending and increasing ties to the target. In the context of U.S. sanctions, one such effect we may observe if a rival third-party state exists is lower affinity for the U.S. and lower willingness to cooperate with Washington on foreign policy priorities.

Voting behavior in the UN General Assembly is one potential symptom of states engaging in non-economic sanction-busting activity. Relevant third-party states could inflict geopolitical costs by acting contrary to, or at least non in alignment with, American interests. In that case, if the foreign policy preference distance between the sanction-sender and the third-party states increases post-sanctions, we may infer that the third party was motivated by geopolitical interests. However, from the model we know that when potential geopolitically motivated sanction-busting third-party states exist, sanction imposition is less likely. This means that imposed sanctions are ones where either no geopolitically motivated sanction-busting states exist or where geopolitical costs are low. In other words, if sanctions lead to an increase in foreign policy preference distance, then that suggests the theory is incorrect. This gives the following hypothesis:

Hypothesis 1: Imposed economic sanctions will not increase the foreign policy preference distance between strategic third-party states and the sanctioning state.

There are a few points to note. First, voting with or against the U.S. in the U.N. is not the only, or perhaps even the most important way, that third-party states could inflict geopolitical

cost on the sanctioning states. However, given data availability and observability, it is the channel that is most consistent and comparable across time. Second, while “distancing” is one of the ways that potential sanction-busters could inflict cost on the sender, when it occurs it does not always mean that sanction-busting is taking place. “Distancing” could also take occur without the presence of sanction-busting activity. After all, economic foreign policy is just one dimension that could impact the relationship between two states. This concern, however, is addressed partially through the method introduced in the following section. However, particularly for allies and strategic partners if geopolitical sanction-busting takes place, “distancing” should be observed.⁷

It is also important to note that this test is only intended to assess the first stage of the model; namely, imposition. Unfortunately, it is much more difficult to empirically analyze enforcement. Enforcement is not only subject to geopolitical considerations, but it is also influenced by resource constraints. Early & Preble (2020) noted that the Office of Foreign Assets Control must selectively (but strategically) enforce economic sanctions due to limited time and budget. Further, enforcement strategies may change from administration to administration. Identifying when non-enforcement is intentional due to geopolitical considerations, intentional due to resource constraints, or unintentional due to oversight or lack of monitoring capacity is, would be extremely challenging with existing observational data.

To conduct the empirical analysis, I limit the sanction cases to U.S. sanctions. I do so for two reasons. First, the U.S. is by far the most prolific sanction-sending state, making up most sanction cases worldwide. The United States participates in 47% of all sanctions imposed, and in 51% of all unilateral sanctions implemented.⁸ Second, the U.S. has the means to enforce

⁷ This is less likely to be the case for the case of the rival state for two reasons. First, geopolitical rivals are usually already positioned farther away from the sanctioning state. This provides a hard ceiling to how much more distance the geopolitical rival could put on the sender. Second, the geopolitical cost lost from the geopolitical rival’s sanction-busting stems from it expanding its influence on the target. However, the target would already be more inclined to distance itself from the sender state, making it more difficult to measure the impact of rival third parties.

⁸ Calculated using the EUSANCT database.

economic sanctions, as well as the willpower, which is not something that could be said necessarily for other sending states.

Extending Time Series Matching

_____ If my theory holds, then no significant movement away from the United States by relevant stakeholders should be observed after the imposition of economic sanctions. However, there are many reasons why no effects are observed. As discussed above, a country's affinity towards the United States may change year to year conditional on a large number of factors. The lack of change in affinity towards the U.S. could therefore be due to unobservable variables that cancel out the negative effects of sanction imposition on the third-party state's relationship with Washington. These could include new trade deals, shifting regional competition, regime change, and domestic economic circumstance. More practically, null effects could easily result from statistical issues such as endogeneity or misspecification of the model. Therefore, it is critical to subject the data to the most rigorous test possible.

Before proceeding, it is particularly important to note here that the treated countries are *not* the target states. Because the theory is focused on the effects of third-party states on the sanction dynamic, the relevant third-party state actors are the ones receiving the "treatment" of sanctions threats and implementations. These "relevant actors" are specific to each sanction episode and are state actors that are willing and capable of inflicting geopolitical cost on the sanction-sending state.

Matching is an invaluable tool for political scientists working with observational data who seek to reduce bias in evaluating the effect of a particular treatment. In this case, one way to ensure that the third-party country affected by U.S. sanction imposition did not distance itself from Washington *because of the enacted U.S. sanction* is to compare it with another state that is as similar to it as possible, and only different in that it was not impacted by U.S. sanctions. Unfortunately, to make a challenging task even more difficult, Washington very frequently

utilizes sanctions against other states to achieve its foreign policy goals. This means that a given relevant third-party state could have, at any point previously in time, been affected by U.S. sanctions. This would potentially alter how the third-party state react to the implementation of new sanctions. For instance, the third-party state may seek to inflict exponentially more geopolitical cost on Washington; or it could go the opposite route. Regardless, because we cannot account for how being affected by multiple sanctions may influence a third-party state's actions, it is critical that we also account for the "treatment" history of states.

Imai et al.'s (2021) time series matching method ensures that each unit is matched first on treatment history up to a prespecified number of time units. Then, the matched set is refined based on traditional matching methods, and a difference-in-differences estimator is applied to adjust for a possible time trend. Although extremely helpful in accounting for the pitfalls of attempting to conduct empirical analysis on time-series cross-section data whose units are a) sampled repeatedly and b) have varied treatment histories, it does not completely solve the methodological problems faced by this paper.

One common challenge for any empirical test that looks at the effects of economic sanctions faces is selection bias. Specifically critical is the problem of sanction threat versus sanction imposition. It has been well-documented in literature that the threat stage of any sanction episode is distinct from the imposition stage. Sanctions are more likely to success at the threat stage because target states are forward-looking. Those that expect they would not have the resolve to withstand economic sanctions would alter their behavior. On the other hand, states that have higher resolve or have better ability to withstand sanctions, perceived or otherwise, are the ones that would choose to not capitulate in the threat stage. Sanction efficacy, however, poses less of a concern here. Rather, it is the potential signaling effect of sanction threats. Outside of their impact on sanction outcome, sanction threats also serve as potential signals to a wide variety of audiences from the public in target states to other countries considering engaging in behavior undesirable to the sender (Grauvogel et al., 2017; Lacy & Niou, 2004; D. J. Lektzian & Sprecher, 2007). It is not farfetched, therefore, to believe that sanction

threats could also impact third-party states' affinity towards the sanction sender. However, there is no basis to determine whether and how the effect of a threatened sanction differs from that of an imposed sanction.

Thus, to fully account for the effect of sanction threats, I build on time series matching and combine it with a statistical matching method called triplet matching (Nattino et al., 2021). In triplet matching, the most similar units are matched from two treatment groups. Then, holding the two units constant, the closest unit from the third treatment group is matched. This process is then repeated until the optimal match is found. Combining the two methods results in a novel matching method that I term Time Series Triplet Matching. In the next few paragraphs, I will explain the application of Time Series Triplet Matching using the context at hand. The technical notes for the method can be found in the appendix.

For the purpose of this paper, I first determine the two treatments. A country receives Treatment 1 when it is the relevant audience of a U.S. sanction *threat*. It receives Treatment 2 when it is the relevant audience of an *imposed* U.S. sanction. The temporal unit is year. Treatment only occurs the year that the sanction is threatened and/or imposed. If the third-party state received both treatments in the same year, then it is coded as receiving Treatment 2, since theoretically an imposed sanction should have greater negative impact on the third-party state than a threatened sanction. This means that the same sanction episode could provide either one treatment or two depending on the timing of the threat and imposition of sanctions. For example, if the U.S. both threatened and imposed sanctions on country A in 1995, the relevant actors are coded as having received Treatment 2 in 1995. However, if the U.S. threatened country A with sanctions in 1995, but did not impose sanctions until 1997, then the relevant actors are coded as having received Treatment 1 in 1995 and Treatment 2 in 1997. In a similar vein, there is no additional treatment group for countries that are relevant actors in two or more sanctions threatened or imposed in the same year. This means that if the U.S. threatened countries A and B with sanctions in 1980, the relevant actors are coded as having received Treatment 1 only once in 1980.

After coding for the type of treatment, if any, each state received each year, I then identify sets of countries that have the same exact treatment history over some number of years. Given the problem with potentially over-splitting the sample, which I will elaborate on later, in time-series triplet matching, I only look at a two-year treatment history. Therefore, for each year I can establish different sets of countries that have the same treatment history over the past two years. Then, within these sets of countries, I apply triplet matching to assess the effects that the two types of treatments have.

The challenge, then, is to determine which countries are receiving treatment in any given sanction episode. Again, I need to identify which countries are ones capable of inflicting geopolitical cost on the United States. To do so, I primarily focus on allies and strategic partners. This is for two reasons. It allows for a comparatively straightforward determination of who the set of relevant third-party states are. The other option is to go through each sanction and judge by the context of the sanctions and the state of the international system to individually determine which countries are most likely to be the third-party state actors defined in the game. However, this is difficult to scale, and could also result in inconsistent coding of relevant actors given the narrative surrounding each sanction needs to be examined. Second, and relatedly, this allows me to focus the analysis. While strategic partners and allies are not solely the only influential state actors, they are third parties that the U.S. needs to consistently consider.⁹ Moreover, this set of states have the potential to vary across sanction episodes depending on the year and the target state. Geopolitical rivals, on the other hand, are less likely to vary through time, especially based on observable criteria.

I include in the list of treated countries states that, in any given year, have formal alliances with the United States (as determined by the Correlates of War Formal Alliances Dataset). This is a very stringent criterion and includes only a small set of third-party states. However, strategic

⁹ Unfortunately, this demarcation also means that it is an easier test for me, since the geopolitical cost that strategic partners and allies can inflict on the U.S. is probably lower than a rival state's, particularly one that is actively expanding such as China.

partners are as important, if not potentially more so, in this dynamic. Unfortunately, there is no hard definition of or determination for which countries count as strategic partners. Strategic partners generally are states in loose alignment with the U.S., and additionally may participate in structured engagement, pursue joint ventures, or cooperate across multiple dimensions (Parameswaran, 2014). These, however, are challenging to distinguish from existing data. As a first cut, I proxy strategic partners as states that the U.S. has exported more than \$50 million in arms to in any given year.¹⁰ As Yarhi-Milo et al. (2016) have pointed out, arms transfers complement alliances since the former a) requires less commitment, b) could be adjusted within a short span of time, and c) provides ex ante signal of commitment by the sending state. The signal is further dependent on the size of the transfer, the type of arms transferred, and whether such transfer is institutionalized. Thus, while this is a rather crude categorization, I believe that it does serve to identify strategic partners. These two are based on the third-party state's ability to inflict geopolitical cost. However, whether geopolitical costs would be likely is also dependent on third-party states willingness, which in turn is conditional on the third-party state's relationship with the target state. Those that also have close ties, economic and non-economic, to the target have more incentive to engage in sanction-busting. Therefore, I refine the states selected using above criteria by only choosing those who also fulfill one of the following conditions: a) are formal allies of the target state or b) is part of a bilateral, plurilateral, or regional trade agreement with the target state.¹¹

This method provides two main benefits for the analysis of sanctions. First, by integrating triplet matching into time series matching, it becomes possible to isolate the individual effects of sanction threat and imposition. This is especially useful for sanction episodes where only either a threat was issued or where there was no threat stage. Second, this method allows for temporal flexibility. There is variation in the timing of sanction imposition, which could range from shortly after sanctions are threatened to years after a sanction episode was initiated. Some sanctions do

¹⁰ Source: SIPRI Arms Transfer Dataset

¹¹ Alternative ways to select which third-party states are willing to inflict geopolitical cost include energy dependence. However, data coverage for industry-specific export-imports necessitates discarding observations before 1980. Data for determining whether a trade agreement exists is taken from the Design of Trade Agreements (DESTA) dataset.

not even have a threat stage, which is something that time-series triplet matching could account for. Unfortunately, this method does necessitate the assumption that assignment to each treatment group is relatively random.¹² This potentially poses a problem for the application to sanctions, since, while not necessarily always the case, imposition tends to follow threat. Two factors could potentially alleviate this concern. First, who the relevant actors are vary temporally. Second, the treatment assignment mechanism means that Treatment 2 may not necessarily follow Treatment 1. A different sanction episode could have been initiated between threat and imposition, and some cases either do not have Treatment 1 or Treatment 2.¹³

Sanction cases are drawn from the EUSANCT database. The database includes sanctions imposed by the U.S., the E.U. and the U.N. from 1950 to 2015. Given data availability, I restrict the data to sanction episodes from 1960 to 2016. This covers 275 sanction episodes. Again, I only include sanction cases where the U.S. was a participant. The outcome, foreign policy preferences, is proxied by UNGA voting data (Bailey et al., 2017). The latent dimension captured by Bailey et al.'s measure is "satisfaction with the U.S.-led global order." Although this is a general concept, and may not equally apply to all sanction cases, I argue that it is an appropriate measure for two reasons. First, I have already narrowed the set of sanction cases I am examining to U.S. sanctions. Thus, the measure is an adequate proxy to at least estimate the broad impact of sanctions on the target's amenability towards the U.S. Second, the UNGA voting data gives me the longest range of dates possible, allowing me to include the maximum number of observations. The outcome is a binary variable indicating whether the relevant third-party state's foreign policy preference distance relative to the United States' increased from the previous year.

¹² Nattino et al. (2021) examined patient outcome based on the initial assignment to non-trauma centers (NTC), or level I and II trauma centers (TC1 and TC2). Because the assignment to TC1 and TC2 is primarily based on geographic proximity (i.e., where the patient was when the medical emergency occurred), independence could be assumed. However, assignment to NTC and TCs are likely to be non-random.

¹³ The larger concern is that the treatment is dependent on the group of states that would be potentially treated. Although this may be problematic in other contexts, I believe that this is not contradictory to my theory. After all, this would demonstrate that regardless of who receives treatment there should be no significant effect.

Figure 2 visualizes each country's treatment group assignment for each year throughout time. Again, if a country is the relevant audience for a threatened sanction in any given year, it is coded as receiving Treatment 1. If it is the relevant audience for an imposed sanction, it is coded as receiving Treatment 2. Otherwise, it is coded as not receiving any treatment. Figure 3 shows the distribution of matched set sizes. The red bars indicate matched set sizes of one and two. Since triplet matching requires at least three units, those matched sets are discarded in the next step of the analysis.



Figure 2: Visualization of treatment groups through time.

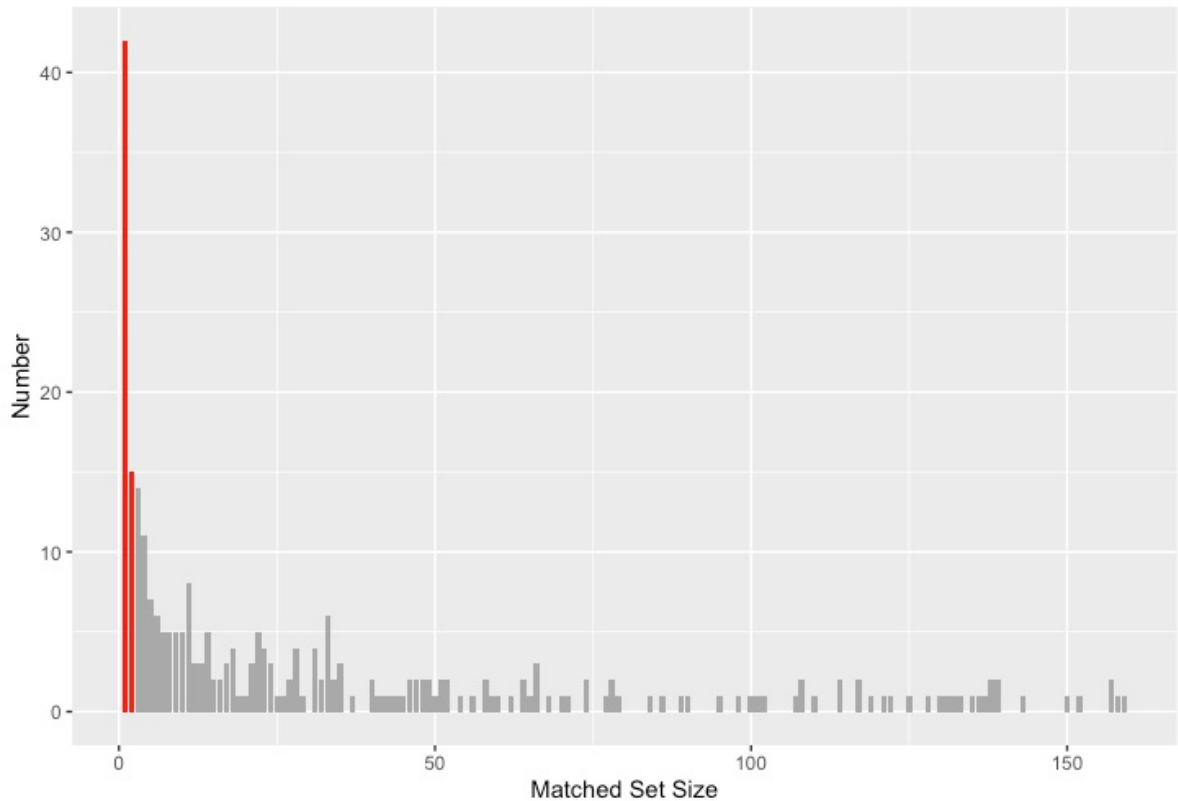


Figure 3: Distribution of sets of matches based on treatment history.

After the first round of matching based on treatment history, I drop the matched groups that do not contain at least one observation in each treatment group.¹⁴ I refine the remaining matched sets by matching subjects based on their propensity scores. Again, because of the way I assigned treatment, the propensity score model includes variables likely to contribute to a state’s likelihood of being a relevant actor in a sanction episode. I include four variables in the propensity score model: total trade with the U.S., regime type, involvement in inter- or intrastate conflict, and amount of foreign aid received from Washington.¹⁵ The operationalization for these variables is included in the Appendix.

¹⁴ After this step, 38 treatment groups remain.

¹⁵ Due to the way the treatments are coded, these variables are not sanction or target specific, but rather are characteristics specific to the treated state or the relationship between the treated state and the United States.

Like triplet matching, time-series triplet matching also uses of Fisher's sharp null. In this null hypothesis, the treatment is expected to have no effect on all the countries within each matched set. Failure to reject Fisher's sharp null means that sanction imposition and threat do not affect the treated countries' affinity towards the United States. Using Fisher's sharp null adds to the validity of the results, since the null must hold for each unit in the analysis. Because there are three treatment groups, calculating the p-value associated with Fisher's sharp null is a three-step process. Two comparisons need to be made in order. The first is between Treatment 0 (no sanctions) and Treatments 1 and 2 (sanction threat and imposition). The Mantel-Haenszel statistic is used for the first test. The second is between Treatment 1 and Treatment 2, and it is performed using McNemar's statistic. Lastly, the two results are combined into a single case through Fisher's method.

Figure 4 shows the p-values for the three tests, Mantel-Haenszel, McNemar's and Fisher's, for the matched sets. In each of the matched sets within which triplet matching takes place, the p-values are far larger than the threshold 0.1. Hence, we cannot reject Fisher's sharp null. This is a good indication that sanction imposition and treatment do not have a causal effect on the relevant third-party states' affinity for the United States. This is in line with what we would expect from Hypothesis 1. Because Fisher's null cannot be rejected, however, I do not further estimate the treatment effects for sanction threat and imposition.

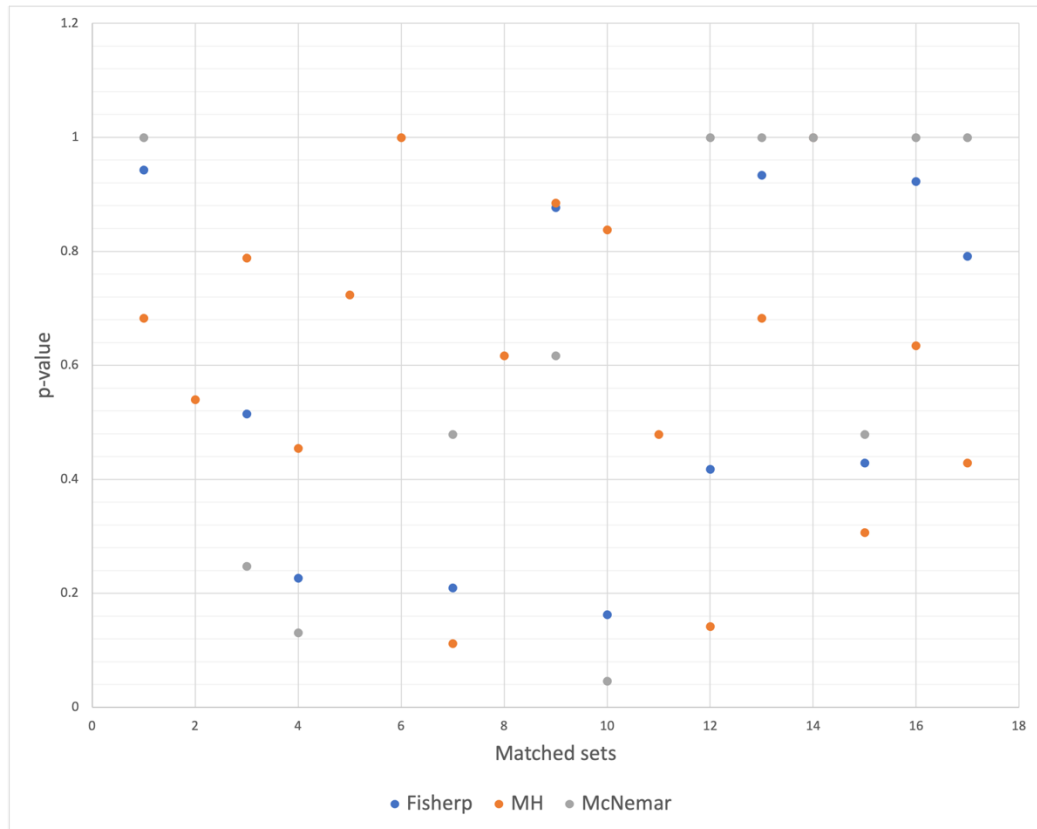


Figure 4: P-value of matched sets.

Although time series treatment matching allows for more than two treatment arms and gives us the best match possible conditional on treatment history, there are downsides. First, time-series triplet matching in its current form is only applicable to analysis that have a binary outcome.¹⁶ This means that continuous dependent variables need to be converted to binary form, thus potentially losing some of the measurement's nuances. Second, and perhaps more significantly, triplet matching must be carried out within smaller sets of observations. Imai et al.'s time series matching creates matched sets based on treatment history with only one treatment; however, time series triplet matching includes two treatments in addition to the control group. This means that, all else equal, time-series triplet matching would result in smaller matched sets than time series matching. After matching on history, each matched set could contain very few observations, hindering the utility of propensity score matching. This problem is compounded

¹⁶ There is a plan to extend time-series triplet matching to allow for a continuous outcome.

by the fact that within each matched set the observations are further split into three groups, which may not be equally distributed. If a matched group does not contain units in all three treatment groups, triplet matching cannot be carried out.

Due to these concerns, in the Appendix I also include results from time series matching where I use the same selection method for relevant third-party state actors and the same variables for propensity score matching. However, I combine sanction threat and sanction imposition into one treatment. Like the result of time-series triplet matching, the threat and/or imposition of U.S. sanctions has no significant impact on the relevant third-party states' affinity towards Washington. This holds true for both the short run (one-year post-sanction) and the long run (five years post-sanction).

Conclusion and Future Research

I have shown that the imposition and enforcement of economic sanctions are impacted by the presence of strategic third-party states. That sanction-senders are selecting out of sanction impositions or enforcement when there is a third-party state that may be motivated by geopolitical reasons to sanction-bust is something that has not yet been explored thoroughly by current sanction-busting literature. Yet, as the United States' track record in imposing and enforcing economic sanctions has shown, geopolitically motivated sanction-busters exist, and their influence can be felt even before sanctions are imposed. Through time-series triplet matching, I demonstrate that threatened and imposed sanctions do not lead to "distancing" from the United States on the part of relevant third-party actors.

Selection effects are extremely challenging to study. Although the approaches taken in this paper to shed some light on the determinants of U.S. sanction imposition are not perfect, they do provide preliminary evidence that sender states select into sanctions that are not geographically costly. Future work could examine some of the mechanisms laid out in the model that were not addressed in this paper. For instance, it would be interesting to see whether

Implication 3 holds in the real world, and whether third-party states do engage in less sanction-busting when the sanction issue is more salient to the sender state.

Another line of inquiry could focus on tie-establishment between the third-party state and the target. As previously mentioned, tie-establishment is not a costless process. In this paper, I assume that the target would always be willing to establish economic ties with a third-party state. However, third-party states are strategic actors as well, and the trilateral relationship between the sender, target, and the third-party should be looked into further.

Lastly, I believe that time-series triplet matching provides a potent tool of analysis for political science. In studying international relations, some contexts may require the accounting of an additional treatment arm. More narrowly in the context of economic sanctions, this method allows us to parse out the consequences of economic sanctions on the target state population in a more nuanced manner. The method does need to be further refined and developed. Extending time-series triplet matching to allow for continuous outcomes is the next step in the process.

Bibliography:

- Acharya, A. (1999). *Sino-Indian Relations since Pokhran II on JSTOR*. https://www-jstor-org.proxy.lib.duke.edu/stable/4408041?seq=1#metadata_info_tab_contents
- Allen, S. H. (2008). The Domestic Political Costs of Economic Sanctions. *Journal of Conflict Resolution*, 52(6), 916–944. <https://doi.org/10.1177/0022002708325044>
- Aloosh, M., Salavati, A., & Aloosh, A. (2019). Economic sanctions threaten population health: The case of Iran. *Public Health*, 169, 10–13. <https://doi.org/10.1016/j.puhe.2019.01.006>
- Ang, A. U.-J., & Peksen, D. (2007). When Do Economic Sanctions Work?: Asymmetric Perceptions, Issue Salience, and Outcomes. *Political Research Quarterly*, 60(1), 135–145. <https://doi.org/10.1177/1065912906298632>
- Bailey, M. A., Strezhnev, A., & Voeten, E. (2017). Estimating Dynamic State Preferences from United Nations Voting Data. *Journal of Conflict Resolution*, 61(2), 430–456. <https://doi.org/10.1177/0022002715595700>
- Bapat, N. A., Heinrich, T., Kobayashi, Y., & Morgan, T. C. (2013). Determinants of Sanctions Effectiveness: Sensitivity Analysis Using New Data. *International Interactions*, 39(1), 79–98. <https://doi.org/10.1080/03050629.2013.751298>
- Barry, C. M., & Kleinberg, K. B. (2015). Profiting from Sanctions: Economic Coercion and US Foreign Direct Investment in Third-Party States. *International Organization*, 69(4), 881–912. <https://doi.org/10.1017/S002081831500017X>
- Burns, J. (1998). *India Sets Off 2 More Nuclear Blasts; U.S. and Japan Impose Sanctions*. New York Times Archive.

[https://archive.nytimes.com/www.nytimes.com/library/world/asia/051498india-
nuke.html](https://archive.nytimes.com/www.nytimes.com/library/world/asia/051498india-
nuke.html)

- Drezner, D. W. (2000). Bargaining, Enforcement, and Multilateral Sanctions: When is Cooperation Counterproductive? *International Organization*, 54(1), 73–102.
- Drury, A. C. (2001). Sanctions as Coercive Diplomacy: The U.S. President's Decision to Initiate Economic Sanctions. *Political Research Quarterly*, 54(3), 485–508.
<https://doi.org/10.1177/106591290105400301>
- Drury, A. C., & Peksen, D. (2014). Women and economic statecraft: The negative impact international economic sanctions visit on women. *European Journal of International Relations*, 20(2), 463–490. <https://doi.org/10.1177/1354066112448200>
- Early, B. R. (2012). Alliances and Trade with Sanctioned States: A Study of U.S. Economic Sanctions, 1950–2000. *Journal of Conflict Resolution*, 56(3), 547–572.
<https://doi.org/10.1177/0022002711420961>
- Early, B. R., & Preble, K. A. (2020). Going Fishing versus Hunting Whales: Explaining Changes in How the US Enforces Economic Sanctions. *Security Studies*, 29(2), 231–267.
<https://doi.org/10.1080/09636412.2020.1722850>
- Grauvogel, J., Licht, A. A., & von Soest, C. (2017). Sanctions and Signals: How International Sanction Threats Trigger Domestic Protest in Targeted Regimes. *International Studies Quarterly*, 61(1), 86–97. <https://doi.org/10.1093/isq/sqw044>
- Gutmann, J., Neuenkirch, M., & Neumeier, F. (2021). Sanctioned to Death? The Impact of Economic Sanctions on Life Expectancy and its Gender Gap. *The Journal of Development Studies*, 57(1), 139–162. <https://doi.org/10.1080/00220388.2020.1746277>

- Heinrich, T., Kobayashi, Y., & Peterson, T. M. (2017). Sanction Consequences and Citizen Support: A Survey Experiment. *International Studies Quarterly*, 61(1), 98–106.
<https://doi.org/10.1093/isq/sqw019>
- Imai, K., Kim, I. S., & Wang, E. H. (n.d.). Matching Methods for Causal Inference with Time-Series Cross-Sectional Data. *American Journal of Political Science*, n/a(n/a).
<https://doi.org/10.1111/ajps.12685>
- Katada, S. (2001). Why did Japan suspend foreign aid to China? Japan's foreign aid decision-making and sources of aid sanction. *Social Science Japan Journal*, 4(1), 39–58.
<https://doi.org/10.1093/ssjj/4.1.39>
- Kohno, M., Montinola, G. R., Winters, M. S., & Kato, G. (2021). Donor Competition and Public Support for Foreign Aid Sanctions. *Political Research Quarterly*, 74(1), 212–227.
<https://doi.org/10.1177/1065912919897837>
- Lacy, D., & Niou, E. M. S. (2004). A Theory of Economic Sanctions and Issue Linkage: The Roles of Preferences, Information, and Threats. *The Journal of Politics*, 66(1), 25–42.
<https://doi.org/10.1046/j.1468-2508.2004.00140.x>
- Lektzian, D. J., & Sprecher, C. M. (2007). Sanctions, Signals, and Militarized Conflict. *American Journal of Political Science*, 51(2), 415–431. <https://doi.org/10.1111/j.1540-5907.2007.00259.x>
- Lektzian, D., & Souva, M. (2003). The Economic Peace Between Democracies: Economic Sanctions and Domestic Institutions. *Journal of Peace Research*, 40(6), 641–660.
<https://doi.org/10.1177/00223433030406002>

- Lucena Carneiro, C., & Apolinário, L. (2016). Targeted Versus Conventional Economic Sanctions: What Is at Stake for Human Rights? *International Interactions*, 42(4), 565–589.
<https://doi.org/10.1080/03050629.2015.1036989>
- Miers, A., & Morgan, T. (2002). Multilateral Sanctions and Foreign Policy Success: Can Too Many Cooks Spoil the Broth? *International Interactions*, 28(2), 117–136.
<https://doi.org/10.1080/03050620212099>
- Nattino, G., Lu, B., Shi, J., Lemeshow, S., & Xiang, H. (2021). Triplet Matching for Estimating Causal Effects With Three Treatment Arms: A Comparative Study of Mortality by Trauma Center Level. *Journal of the American Statistical Association*, 116(533), 44–53.
<https://doi.org/10.1080/01621459.2020.1737078>
- Parameswaran, P. (2014). Explaining US Strategic Partnerships in the Asia-Pacific Region: Origins, Developments and Prospects. *Contemporary Southeast Asia*, 36(2), 262–289.
- Reichmann, D. (2018, November 20). *Trump: U.S. won't punish "great ally" Saudi Arabia despite "horrible" Khashoggi killing*. PBS NewsHour.
<https://www.pbs.org/newshour/world/trump-u-s-wont-punish-great-ally-saudi-arabia-despite-horrible-khashoggi-killing>
- Tobita, R. (2021). *Japan ready to freeze all Myanmar development aid: Motegi*. Nikkei Asia.
<https://asia.nikkei.com/Editor-s-Picks/Interview/Japan-ready-to-freeze-all-Myanmar-development-aid-Motegi>
- Wadhva, C. D. (1998). Costs of Economic Sanctions: Aftermath of Pokhran II. *Economic and Political Weekly*, 33(26), 1604–1607.

Whang, T. (2010). Structural estimation of economic sanctions: From initiation to outcomes.

Journal of Peace Research, 47(5), 561–573. <https://doi.org/10.1177/0022343310376868>

Whang, T. (2011). Playing to the Home Crowd? Symbolic Use of Economic Sanctions in the

United States¹. *International Studies Quarterly*, 55(3), 787–801.

<https://doi.org/10.1111/j.1468-2478.2011.00668.x>

Yarhi-Milo, K., Lanoszka, A., & Cooper, Z. (2016). To Arm or to Ally? The Patron's Dilemma and

the Strategic Logic of Arms Transfers and Alliances. *International Security*, 41(2), 90–139.

https://doi.org/10.1162/ISEC_a_00250

Appendix A – Model Solution

The baseline model is solved through backwards induction.

S will choose Enforce over Not Enforce when

$$-k(t_S - q)^2(1 - p_b) - c_E - c_I(D) \geq -k(t_S - q)^2 - c_{NE}$$

After algebraic rearrangement:

$$kp_b(t_S - q)^2 - c_E - c_I(D) + c_{NE} \geq 0$$

This results in the following comparative statics:

$$\frac{\partial}{\partial k} = p_b(t_S - q)^2 \geq 0$$

$$\frac{\partial}{\partial p_b} = k(t_S - q)^2 > 0$$

$$\frac{\partial}{\partial c_E} = -1 < 0$$

$$\frac{\partial}{\partial c_I(D)} = -1 < 0$$

$$\frac{\partial}{\partial c_{NE}} = 1 > 0$$

$$\frac{\partial}{\partial (t_S - q)^2} = kp_b > 0$$

D will choose to sanction bust (B) over not sanction busting (~B), conditional on S enforcing sanctions (E) when

$$\begin{aligned} & -(t_D - t_S)^2 p_b - (t_D - q)^2(1 - p_b) + b_e + b_I - c_g - c_R \\ & \geq -(t_D - t_S)^2 p_a - (t_D - q)^2(1 - p_a) \end{aligned}$$

After algebraic rearrangement:

$$(p_a - p_b)(t_D - t_S)^2 + (-p_a + p_b)(t_D - q)^2 + b_e + b_I - c_g - c_R \geq 0$$

From this we can obtain the following comparative statics:

$$\frac{\partial}{\partial b_e} = 1 > 0$$

$$\frac{\partial}{\partial c_R} = -1 < 0$$

$$\frac{\partial}{\partial b_l} = 1 > 0$$

$$\frac{\partial}{\partial c_g} = -1 < 0$$

The comparative statics for the ideal point distances (from each other and from the status quo) are presented through simulation.

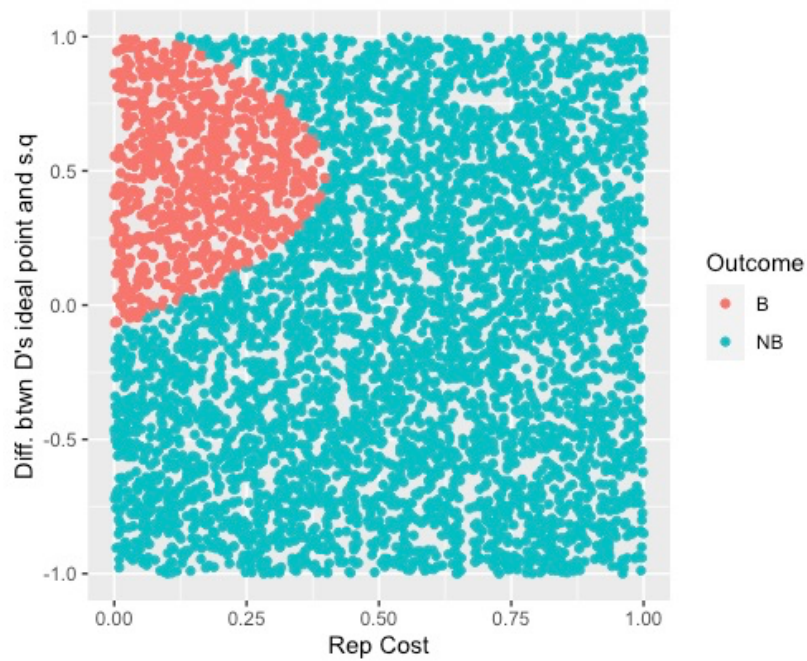


Figure A1: Simulated outcome (for busting vs. not busting conditional on S enforcing) for $t_D - q$, plotted against reputational cost, c_R . Values of other parameters held constant at: $p_a = 0.7$, $p_b = 0.1$, $q = 0$, $c_E = 0.1$, $c_g = 0.3$, $c_{NE} = 0.4$, $b_e = 0.5$, $b_l = 0.5$, $c_l = 0.4$, $k = 3$

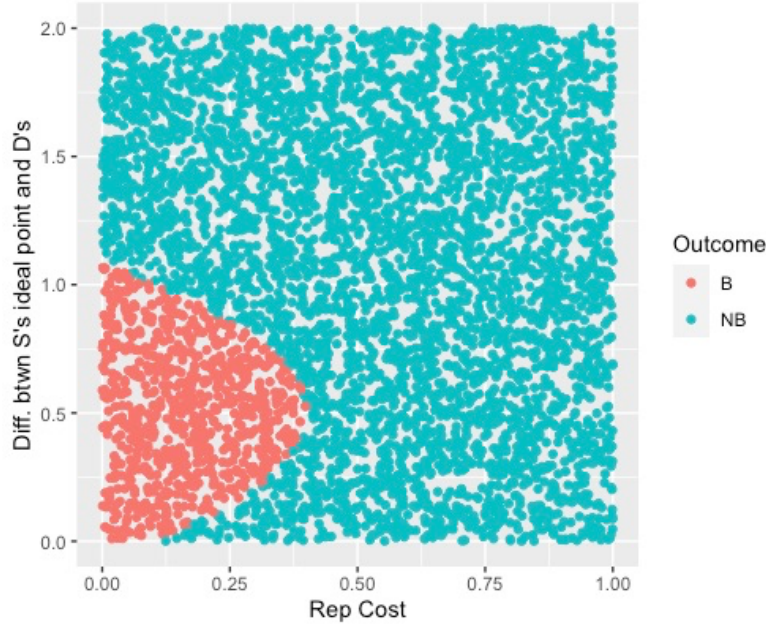


Figure A2: Simulated outcome (for busting vs. not busting conditional on S enforcing) for $t_S - t_D$, plotted against reputational cost, c_R . Values of other parameters held constant at: $p_a = 0.7$, $p_b = 0.1$, $q = 0$, $c_E = 0.1$, $c_g = 0.3$, $c_{NE} = 0.4$, $b_e = 0.5$, $b_l = 0.5$, $c_l = 0.4$, $k = 3$

D will choose to sanction bust (B) over not sanction busting ($\sim B$), conditional on S not enforcing sanctions ($\sim E$) when

$$-(t_D - q)^2 + b_e + b_l - c_R \geq -(t_D - t_S)^2 p_a - (t_D - q)^2 (1 - p_a)$$

After algebraic rearrangement:

$$(t_D - q)^2 p_a + (t_D - t_S)^2 p_a + b_e + b_l - c_R \geq 0$$

From this inequality, we get the following comparative statics:

$$\frac{\partial}{\partial b_e} = 1 > 0$$

$$\frac{\partial}{\partial b_l} = 1 > 0$$

$$\frac{\partial}{\partial c_R} = -1 < 0$$

$$\frac{\partial}{\partial p_a} = (t_D - q)^2 + (t_D - t_S)^2 \geq 0$$

The comparative statics for the ideal point distances (from each other and from the status quo) are presented through simulation.

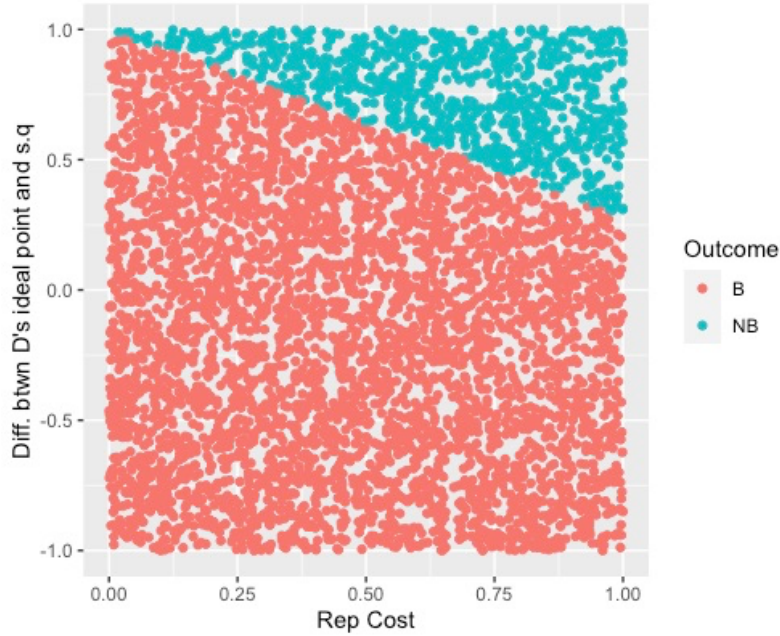


Figure A3: Simulated outcome (for busting vs. not busting conditional on S not enforcing) for $t_D - q$, plotted against reputational cost, c_R . Values of other parameters held constant at: $p_a = 0.7$, $p_b = 0.1$, $q = 0$, $c_E = 0.1$, $c_g = 0.5$, $c_{NE} = 0.1$, $b_e = 0.5$, $b_l = 0.2$, $c_l = 0.4$, $k = 3$

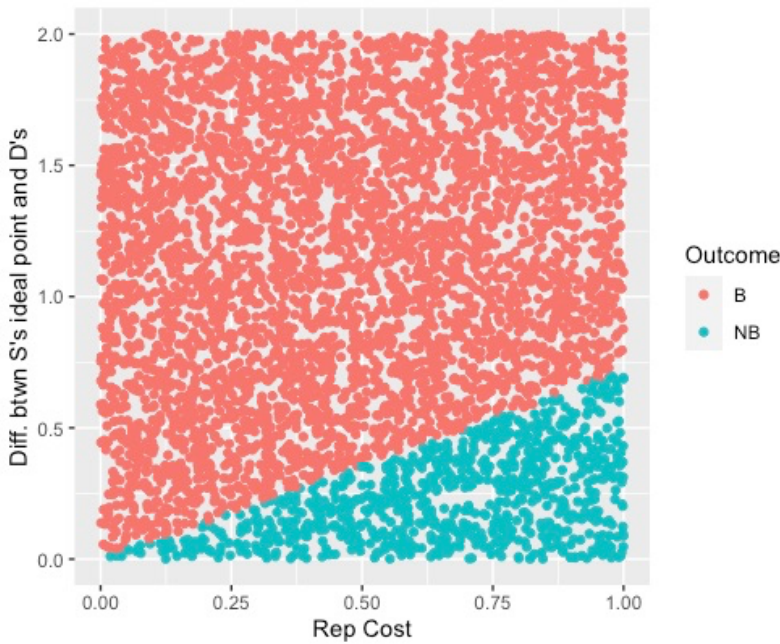


Figure A4: Simulated outcome (for busting vs. not busting conditional on S not enforcing) for $t_S - t_D$, plotted against reputational cost, c_R . Values of other parameters held constant at: $p_a = 0.7$, $p_b = 0.1$, $q = 0$, $c_E = 0.1$, $c_g = 0.5$, $c_{NE} = 0.1$, $b_e = 0.5$, $b_l = 0.2$, $c_l = 0.4$, $k = 3$

S will choose to not implement sanctions ($\sim I$) over implementing sanctions (I), conditional on D choosing to not sanction bust ($\sim B$) when

$$-k(t_S - q)^2 - d > -k(t_S - q)^2(1 - p_a) - c_E \geq 0$$

After algebraic rearrangement we get:

$$-kp_a(t_S - q)^2 + c_E - d \geq 0$$

From the above inequality we can obtain the following comparative statics:

$$\frac{\partial}{\partial k} = -p_a(t_S - q)^2 \leq 0$$

$$\frac{\partial}{\partial (t_S - q)^2} = -kp_a \leq 0$$

$$\frac{\partial}{\partial p_a} = -k(t_S - q)^2 \leq 0$$

$$\frac{\partial}{\partial c_E} = 1 > 0$$

S will choose to not implement sanctions (~I) over implementing sanctions (I), conditional on *D* choosing to sanction bust (B) when¹⁷

$$-k(t_S - q)^2 \geq -k(t_S - q)^2(1 - p_b) - c_E - c_I(D)$$

After algebraic rearrangement we get:

$$-kp_b(t_S - q)^2 + c_E + c_I(D) \geq 0$$

From the above equation we obtain the following comparative statics:

$$\frac{\partial}{\partial k} = -p_b(t_S - q)^2 \leq 0$$

$$\frac{\partial}{\partial p_b} = -k(t_S - q)^2 \leq 0$$

$$\frac{\partial}{\partial (t_S - q)^2} = -kp_b \leq 0$$

$$\frac{\partial}{\partial c_E} = 1 > 0$$

$$\frac{\partial}{\partial c_I(D)} > 0$$

It is also interesting to note how issue salience, or the parameter k , indirectly affects *D*'s willingness to sanction-bust through increasing *S*'s willingness to enforce. For example:

¹⁷ *S* will never choose to not enforce sanctions if *D* sanction busts, because $-k(t_S - q)^2$ is always greater than $-k(t_S - q)^2 - c_{NE}$

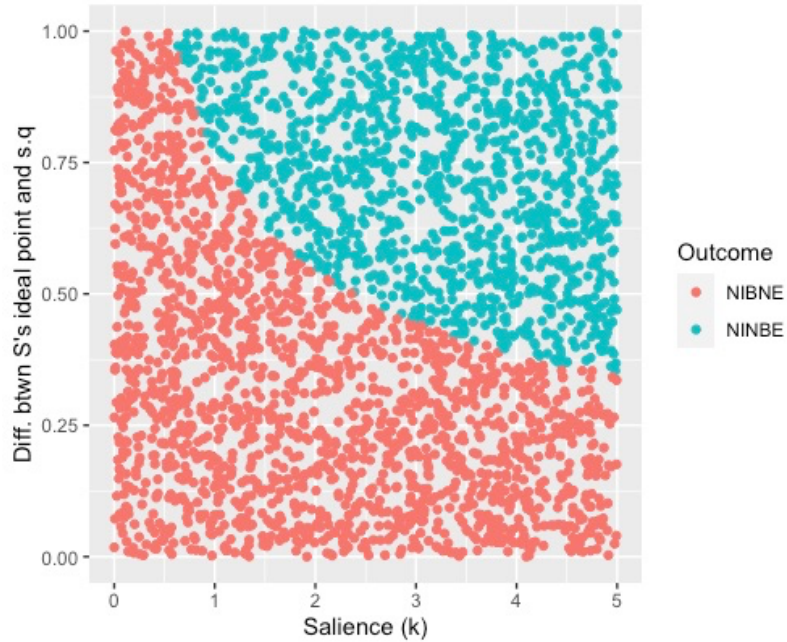


Figure A5: Simulated outcome for $|t_s - q|$, plotted against salience, k . Values of other parameters held constant at: $p_a = 0.8$, $p_b = 0.5$, $q = 0$, $c_E = 3$, $c_R = 2$, $c_g = 3.5$, $c_{NE} = 3$, $b_e = 1.5$, $b_I = 2.5$, $c_I = 0.3$

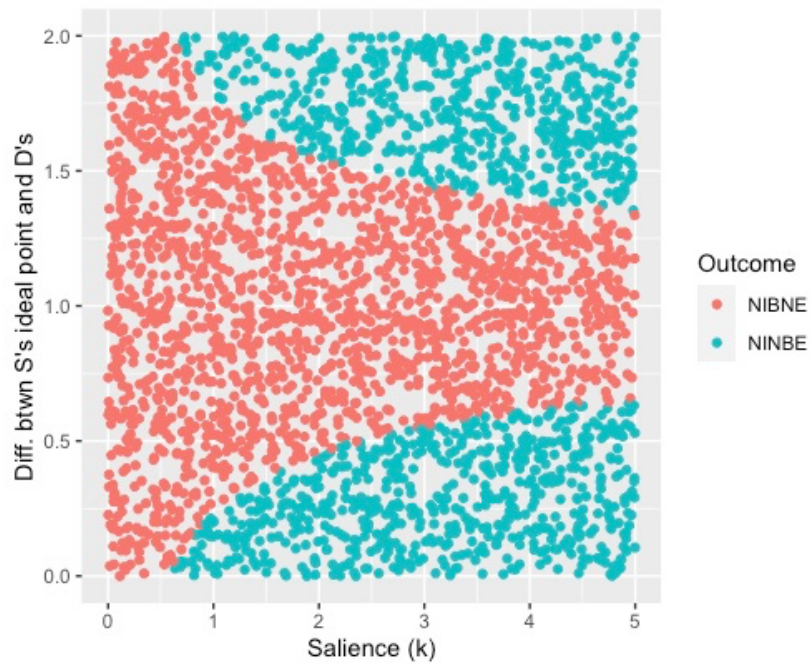


Figure A6: Simulated outcome for $t_s - t_D$, plotted against salience, k . Values of other parameters held constant at: $p_a = 0.8$, $p_b = 0.5$, $q = 0$, $c_E = 3$, $c_R = 2$, $c_g = 3.5$, $c_{NE} = 3$, $b_e = 1.5$, $b_I = 2.5$, $c_I = 0.3$

Appendix B –Triplet Matching

Triplet matching enables matching across three treatment arms through an iterative matching algorithm. First, two of the three treatment groups are selected, and the units in the two groups matched. Then, units that received the third treatment are optimally matched with the matched pairs in the previous step. Because the matched “triplets” are determined by the selection of the two initial treatment groups, there may be new sets of matches that would generate smaller total distance. Thus, the first two steps are repeated twice more, each time with a different initial pair of treatment groups. Figure B1 is a graphical representation of what the match would be like for one set of triplets. In Figure B1, I started by matching groups 1 and 2 first. As can be seen in Figure B2 when I match groups 1 and 3 first, the resulting set of triplets is different, even when I initially started out with the same unit in group 1.

To combine the two methods, I first identify the three treatment groups. For the purpose of this paper, the three groups are sanction threat, sanction imposition, and no sanction/threat. The next subsection will expand on this and discuss the recipients of the treatments. Then, I create matched sets based on treatment history. Like time series matching, the observations are only included in the matched set if their treatment history is the same for a specified time span. The only exception is that there is now an additional treatment to account for. Figure B3 shows what the matched set would look like in six time periods with a three-year treatment history. Two sets are matched from treatment history. In $t = 6$, countries B, C, and F make up one matched set, while countries B, D, and E make up another in $t = 5$. Once the matched sets are identified, for each matched set where all three treatment groups exist, I carry out triplet matching through the iterative process. From there, if the treatments significantly affect the outcome, I estimate the average treatment effect of the treatments.

There are two downsides to this method. First, time-series triplet matching in its current form is only applicable to analysis that have a binary outcome.¹⁸ This means that continuous

¹⁸ There is a plan to extend time-series triplet matching to allow for a continuous outcome.

dependent variables need to be converted. Another is that triplet matching has to be carried out within smaller sets of observations. Imai et al.'s time series matching creates matched sets based on treatment history with only one treatment; however, time series triplet matching includes two treatments in addition to the control group. Because there are two treatments, the probability that two units would have the same treatment history is lower compared to when there is only one treatment. This means that, all else equal, time-series triplet matching would result in smaller matched sets than time series matching. In other words, some treatment groups after matching could contain very few observations. This problem is compounded by the fact that within each matched set the observations are further split into three groups, which may not be equally distributed. If a matched group does not contain units in all three treatment groups, triplet matching cannot be carried out. Figure B4 provides a graphical representation of the process of splitting samples. As such, a large enough sample size is needed to implement the method.

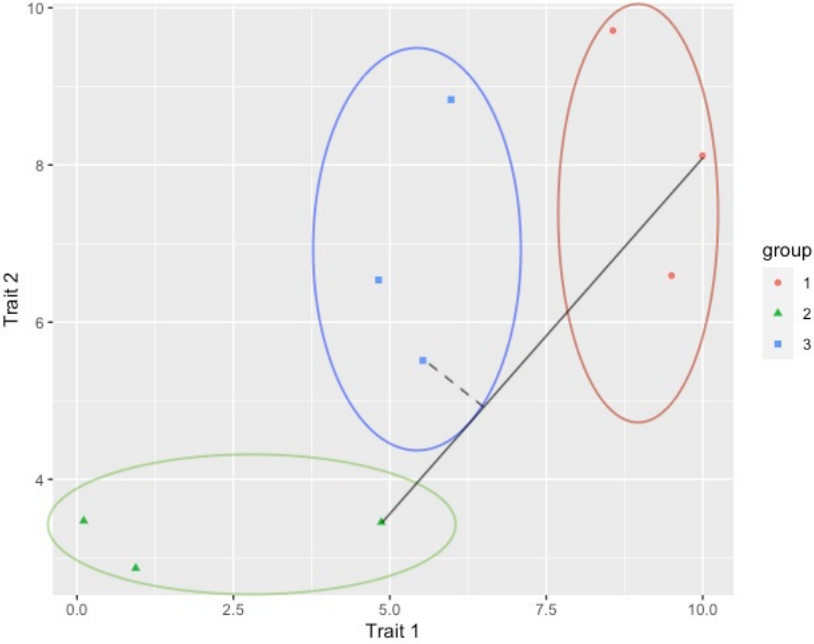


Figure B1: Graphical representation of triplet matching

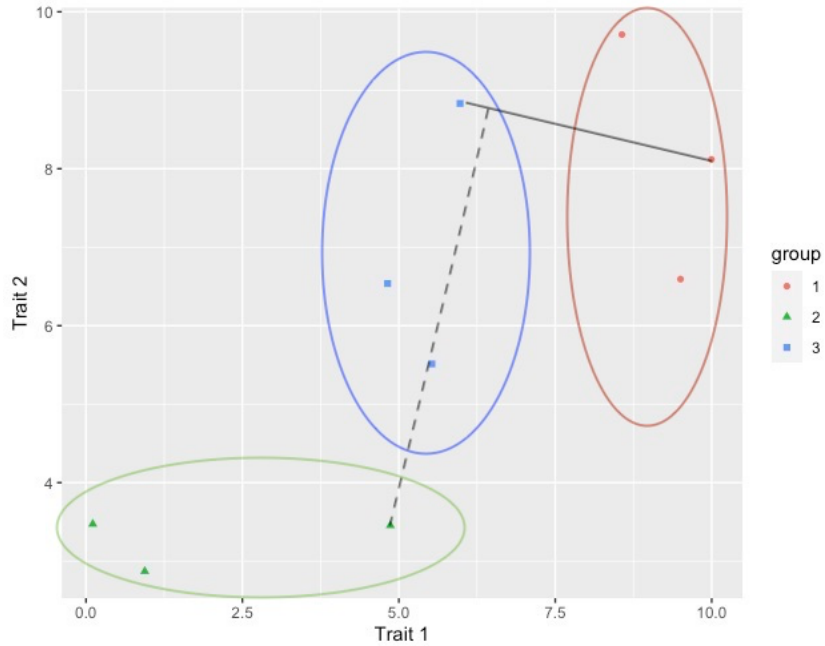


Figure B2: Graphical representation of triplet matching, second set.

	A	B	C	D	E	F
t=6	2	1	2	1	0	0
t=5	0	2	2	1	0	2
t=4	2	0	0	0	0	0
t=3	1	0	0	0	0	0
t=2	2	0	2	0	0	1
t=1	0	1	0	2	0	2

Figure B3: Demonstration of matching based on treatment history. The stars indicate the units matched by treatment history in t=5, while the circles indicate the units matched by treatment history in t=6.

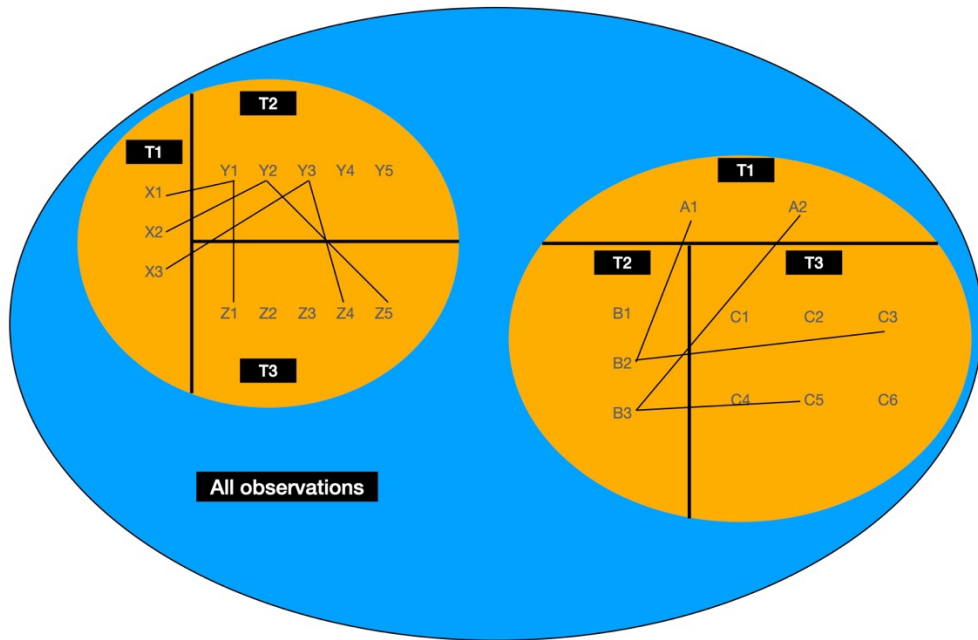


Figure B4: Graphical representation of time-series triplet matching

Appendix C –Empirics

Propensity Score Matching Variables

Variable	Operationalization	Source
Total trade with U.S.	Logged total trade flow	COW Dyadic Trade
Regime type	Polyarchy	V-Dem
Involvement in interstate/intrastate conflict	Binary, 0 = No conflict, 1 = Conflict	PRIO Armed Conflict Dataset
Foreign aid from U.S.	Logged disbursed aid	ForeignAssistance.gov

Time Series Matching Results

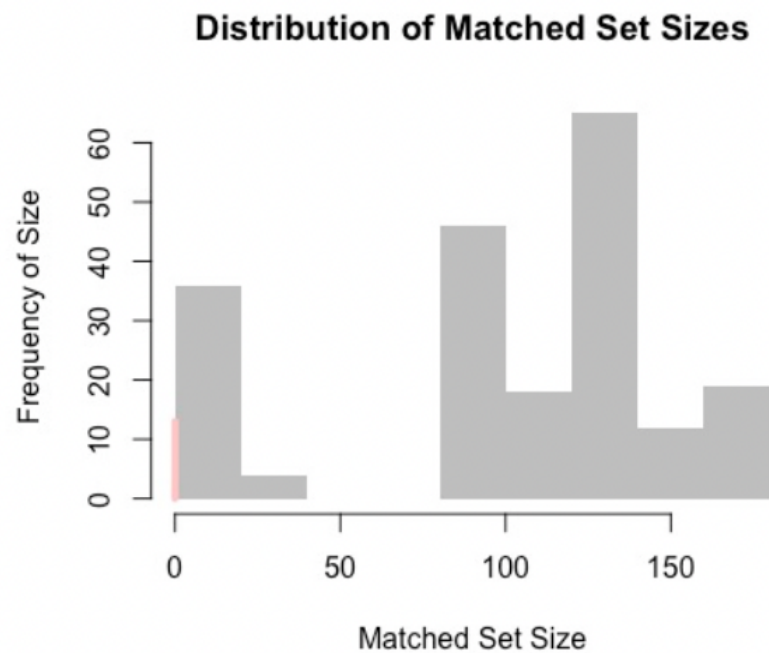


Figure C1: Size of Matched Sets Time Series Matching

Estimated Effects of Treatment Over Time

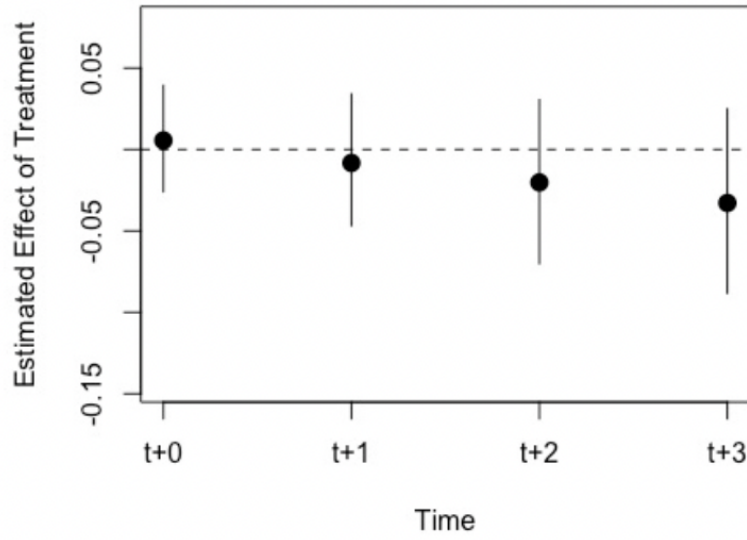


Figure C2: Estimated Effects of Sanction Threat/Imposition on Third-Party State's affinity towards the U.S.