Rivalry or Revelry? Examining the Effect of Strategic Goods on Conflict Between Exporters

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Abstract

Trade is generally considered to have a pacifying effect on interstate conflict, but recent literature has identified cases where this relationship may not hold true. Moreover, there is no consensus regarding the role of economically and militarily vital strategic goods in shaping this dynamic. This study aims to contribute to this nuanced subject by proposing a new systematic approach to define and operationalize strategic goods, thereby explaining the variations observed in previous theories and empirical findings. Drawing on trade network theory and the literature on international cartels, I demonstrate how the export of similar strategic goods can foster peaceful relationships between rival exporters through the formation of cartels and the desire to avoid international intervention. These mechanisms suggest that conflicts should be less likely to arise between rival strategic goods exporters, and if they do occur, their duration should be shorter compared to other conflicts. Logistic regressions and a Cox Hazard Duration model are employed to assess this relationship empirically. This paper not only provides quantitative and argumentative contributions to the trade-conflict literature but also offers policymakers a fresh perspective on the future of significant international relationships, such as the trade rivalry between the United States and China.

Introduction

A state's choice between the classic economic example goods of guns and butter is illustrative of its comparative advantage, national priorities, and total production capabilities. Recent research suggests it may also alter its likelihood of interstate conflict. Exposed to a globalized world, a state may sell a portion of its production of guns or butter on the international market. This international trade is generally regarded as a pacifying force. It connects states through their pocketbooks and opens lines of indirect communication of intentions and resolve, generating powerful internal incentives and tools to prevent the outbreak of interstate conflict. As far back as Polachek (1980), scholars have hypothesized that whether a state was trading guns or butter would impact how each state has built its relationships. Guns, being the more valuable asset to the military with fewer substitutes, are viewed as more critical to the health and security of the state than butter. This makes guns a strategic good, often paired alongside the likes of metals, oil, electronics, and other armaments. The scholarship proposes mechanisms through which these strategic goods might increase or decrease the likelihood of conflict between a trade dyad, and the quantitative tests of these mechanisms have returned mixed results. Beyond dyadic trade, exporters who share similar export portfolios are more likely to initiate conflict against one another. However, strategic goods are not the driving force behind the relationship despite their pivotal position situated between markets and the security of a state (Chatagnier & Kavakli, 2017). Why can theory and quantitative testing not agree on the impact of strategic goods, and how do strategic goods affect conflict between rival exporters?

This paper dives into this controversy in the literature by re-examining the relationship between two states with similar export portfolios. I argue that strategic goods can explain why some exporters which share similar export portfolios do not experience conflict while others do.

Additionally, I believe prior mixed findings are primarily a result of poor quantitative operationalization of strategic goods. After presenting a new definition and operationalization of strategic goods, I build on trade network peace theory and international cartel literature to argue that high similarity of strategic goods exports between states reduces the likelihood of conflict between them and reduces conflict duration when it occurs. I support this with two causal mechanisms. First, states which produce strategic goods are ideally positioned to establish international cartels which provide incentives to cooperate with other producers to keep profits high. Second, the international community should work to prevent conflict between exporters of strategic goods because war could destabilize the price of one or more crucial resources around the world. When conflict does arise, the international community should quickly rally to mediate or otherwise resolve the conflict to ensure stable production. With the production of a rare good in their grasp and plenty of motivation for third parties to ensure a stable distribution of critical resources, states that export similar portfolios of strategic goods will find it more beneficial to cooperate or at least tolerate one another rather than start a war that will face stiff international resistance. In addition to novel hypotheses about the effect of strategic goods on the likelihood and duration of interstate conflicts, I add to the literature by refining the definition of strategic goods and proposing a detailed plan to assemble a dataset and derivative metrics which will better serve academic literature studying strategic resources going forward. Using these metrics, I describe in detail logistic and hazard duration models which investigate the magnitude, direction, and significance of strategic good export similarity's effect on conflict likelihood and duration.

The development of new strategic resources and the decline of old ones means that the control over strategic resources will continue to shift over time. Understanding why these shifts

may cause tensions to rise and predicting where it might happen next can help inform policymakers as they create long-term strategies to optimize the welfare and security of their state. A practical and current example of this relationship is the future of semiconductors and computer chips between the United States and China. Both countries want to secure domestic production of this resource as it becomes a necessity for economic and military functions. Recent increases in trade barriers and political tensions are signs of the degrading relationship between the two superpowers. Significant findings in this study would serve as welcome hope that economic forces will drive the U.S. and China to find common cooperative ground either by themselves or with the concerted help of the international community which could be devastated by a war between the world's two largest economies.

The first part of this paper will evaluate previous literature on international trade and conflict, specifically exploring how variation in the types of goods and relationships between the actors can impact the likelihood of conflict initiation. Next, I will describe a new definition for strategic goods, as well as an explanation and support for two hypotheses connecting the export of strategic goods and conflict. In addition, I will provide detailed plans for quantitative regression and hazard model analysis of the hypotheses. The paper concludes with a discussion of the implications of this research on academic or political decision-making in a new global economy.

Literature Review

The story of international trade and conflict begins with Pax Mercatoria and the potential for a less violent, more interconnected world as described by Polachek and Xiang (2010) and Gartzke, Li, and Boehmer (2001). Most scholarship agrees that increased trade generally leads to

less violent bilateral relationships. These two sets of authors offer competing explanations for the peace often observed between states that trade with one another; opportunity costs versus signaling. The opportunity cost theory argues that interdependence on trade increases the costs that states must pay to wage war via interruption of supply chains and trade relationships, in complete and incomplete scenarios (Gasiorowski & Polachek, 1982). Faced with higher costs, states may choose to back down from conflict and find peaceful solutions. Approaching the same phenomenon from a different angle, signaling theorists, led by Gartzke, argue that states use interconnected trade and financial markets to send costly signals which reduce uncertainty in bargaining before a conflict (Gartzke et al., 2001). Research has favored the opportunity cost mechanism, with a plurality of papers on the subject embracing the argument and empirical tests of the mechanisms finding more support for costs than signaling (Li & Reuveny, 2011; Polachek & Xiang, 2010). Therefore, the causal mechanisms in this paper are born from opportunity cost arguments, but there is room for future research to explore how signals are transmitted between rival exporters.

Crucial to this paper's focus, the opportunity costs faced by both producers and consumers of lost trade depend on the type of goods being traded (Dorussen, 2006). Producers and consumers may have different opportunity costs depending on how easily substitutable supply or demand can be found on the international market. Alternatively, non-essential goods may be able to have their facilities transferred into making other products or making essential products that were lost through an interruption of trade caused by conflict (Dorussen, 2006). This suggests that the most peaceful relations will occur between producers and consumers who trade in specialized, essential goods. Customer states will be especially aware of their reliance on their essential trading partner. Producer states may also be concerned with their asset-specific

production, but this will be less of a concern for products that are seen as more essential because there will be more accessible substitute demand.

Beyond dyadic trade relationships, states with concentrated trade webs have more to lose from conflict than states with a larger trade web. States with large trading networks that become involved in a conflict can rely on uninvolved partners to make up for any lost trade, reducing or even flipping the relationship between trade and conflict (Kleinberg et al., 2012). Chatagnier and Kavakli's 2017 paper breaks new ground in this literature by examining the relations of rival exporter dyads competing for international demand for their products. Their results show a significant relationship between export similarity measures and conflict likelihood, suggesting conflicts between states with similar exports is partly caused by competition for markets, building on the ideas of Li and Reuveny (2011). These results are explained by domestic corporate influence pushing a state towards a war that would hurt corporate competitors. Additionally, states fear that future economic gains of export competitors may lead to a shift in power between the two exporters as explained by Fearon (1995).

Building on export rivalry literature, I focus my argument on strategic goods. The study of these goods has remained an unsettled issue in the political economy literature because they are difficult to define and measure for each state over time (Levy & Barbieri, 2006). They are often described simply as goods that are closely related to the central operation of a state's military and economy (Goenner, 2010; Dorussen, 2006; Blanchard & Ripsman, 1996). They are further described as hard to substitute for, concentrated in a few countries, or rivalrous between nations depending on the article. Each article that evaluates the topic to an extent greater than a passing mention when discussing theoretical implications attempts to create a new system to better operationalize the nature of the goods. Blanchard and Ripsman (1996) uses a four-part test

and category system that leads to a case study of World War I. Goenner (2010) picks categories and SITC codes with various reasonable justifications for each one but does not claim to create a comprehensive list. Ding and Dafoe (2021) creates a detailed theoretical framework with three central factors that combine to define the strategic importance of an asset, but it is designed for theoretical consideration and makes no attempt to operationalize the idea for quantitative testing. Scholars may generally agree on the definition, but they struggle to consistently operationalize the idea to create a list of goods that are strategic. Crucially, no paper quantitatively tested a strategic goods measure that accounts for the change of strategic goods overtime, nor that what is strategic to one state may not be strategic to others. Conflict is international, but dialogue over strategic goods has overwhelmingly focused on conventional ideas of what is strategic to the largest and most powerful states. This has proved a detriment to the ability of quantitative testing to deliver satisfactory evaluations of how strategic goods affect interstate conflict.

Theoretically, Dorussen's findings discussed earlier suggest that trade of commonly defined strategic goods that are hard to replace should create peaceful dyads. Therefore, exporters of similar strategic goods portfolios should experience very little strategic goods trade of their own, having little to offer their counterpart, and thus have a lower opportunity cost to initiate war against one another. Strategic goods may even have differing effects inside of their ranks, where dyadic trade of commonly strategic goods such as energy and metals increases conflict likelihood while other goods that are harder to substitute with low demand elasticity create more peaceful relations (Goenner, 2010). Chatagnier and Kavakli (2017) use the same sample of strategic goods as Goenner, but find that strategic goods export portfolio similarity doesn't drive the positive relationship found between export portfolio similarity between two states and the likelihood of conflict between them. This is despite the national importance of

having thriving domestic strategic goods industries and the access to powerful politicians that strategic goods industry leaders likely have.

Far less literature has explored the relationship between interstate trade dependence and conflict duration, and the role of strategic goods in lengthening or shortening conflict has not been explored. Krustev (2006) provides a solid extension of commercial peace theory to conflict duration, generally finding support for the opportunity cost mechanism to shorten conflict duration. However, the general assumption that trade is cut off between enemies during wartime has pushed authors away from exploring these effects. Building on Lupu and Traag (2013), trade network theory explains how bilateral conflict has commercial consequences for third parties. This paper explores the gap in how some types of goods, specifically strategic goods, change the calculations for third parties when they consider intervening in a conflict, thereby affecting its duration.

Prior literature has established that trade is related to conflict in nuanced ways, but it has yet to agree on the role of strategic goods in that puzzle, offering inconclusive predictions and findings based on different definitions and poor operationalizations supported by data that is hamstrung by its low level of detail. This paper attempts to clear this confusion with new hypotheses explaining a somewhat counterintuitive pacifying effect of strategic good export similarity between competing exporters alongside a plan to create a new dataset and measures that correct for previous static mistakes in the operationalization of strategic goods.

Theory

The lack of a resilient and robust definition of strategic goods that takes into account the shift of strategic value over time and the tremendous variation in the needs of each state is

holding back the literature on the study of strategic goods as a subset of international trade. Therefore, I propose a new definition and accompanying data set of what strategic goods are which will aim to strike a balance between being useful for the practical study of strategic goods and solving these deficiencies.

Starting by addressing the criticism of strategic goods by Førland (1991), this new definition, henceforth known as time-state-strategic (TSS) goods, will be defined at the state level and evaluated every year. Defining the measure at the state level will allow the variable to adapt to the military and economic needs of each state. Previous measures, including the one from Goenner (2010), included broad categories of goods such as all varieties of warships and nuclear reactor materials in the list of strategic goods. As of 2021, only 32 states generated nuclear power, and landlocked states have little strategic use for warships. Goods such as oil will likely be strategic to all states, but other goods are not so universally needed for economic or military security. Thus, a state-level variable may improve the robustness of the results in many papers tackling the impact of strategic goods and prove to be a useful asset in future research. Second, redesignating this measure every year will make sure that advances in technology and changes to economic specialization will be accounted for. For example, the importance of computers and digital technologies has exponentially increased since the beginning of the UN dataset on exports and imports in the 1960s. Breaking down states' needs for strategic goods of all kinds over time will improve the accuracy of the measurement when working with data over long periods.

How will this new measure determine what is a strategic good at a state level? Previous attempts in literature are a good starting point. Prior lists have convincingly made broad generalizations about strategic goods because all states share some large percentage of what

goods they might consider important for their security. Goods such as aluminum, steel, and their downstream products will always be important for both civilian construction and military defense. A supply of small arms is crucial for any military, regardless of size. Similarly, electronics and their components are instrumental for essential economic and military functions. A new definition and corresponding measure should create a system similar to the measure of strategic assets in Ding and Dafoe (2021) which systematically defines that which we already have an intuitive sense for.

While creating a new definition, I assert that a good should only be considered strategic for a state if it is imported by that state. This assertion is centered on the idea that if a state produces a good in sufficient quantities such that it does not need to import, then the state is not going to make securing the import of that good a strategic priority. To be considered strategic, goods must be imported in some quantity by a state and fulfill one of three conditions: global rarity, fundamental military/economic importance, or critical consumption levels. Global rarity will be reflected by the total number of net exporters of that good globally. Intuitive thresholds are discussed later in the research design of this article, but suffice it to say that any product that is produced by just a handful of states around the world will be considered strategic. Strategic resources are called such because it is important to control them. Rare goods are more useful to control because importers have fewer suppliers to bargain with, giving the exporter leverage. Fundamental importance refers to the purpose that the product is used for by the particular state. Most products will have the same uses in all states. If those uses are integral to basic military or economic functions or priorities, the good is classified as strategic. This logic falls in line with previous lists of strategic goods which included goods such as non-ferrous metals, electronics, and warships (Goenner, 2010). The list of goods that can fulfill this section should be kept

diligently small with high standards for what constitutes fundamental importance. The list may look similar to the Class I list assembled by Blanchard and Ripsman which included goods, "that, if cut off, would quickly exert a serious adverse impact on a wide spectrum of national activities or a narrow range of highly critical activities" (Blanchard & Ripsman, 1996, p. 230). Finally, goods will be considered strategic for a state if they are consumed at uncommonly high levels by a particular state relative to its total trade or if the state consumes an uncommonly large percentage of the total global trade of a good. Importing so much of a good relative to a state's economy or the global market means that a good will be a focal point of domestic politics, foreign policy, and economic decision-making for that state. The global market condition covers items that may be generally low in value of trade, but that the state values significantly more than other states. The result of this new definition should be a list of goods for each state which that state highly values protecting the import of. Of course, this new TSS classification system of goods cannot be applied to the same experimental structure that Chatagnier and Kavakli (2017) used to explain conflict between rival exporters because many commonly strategic goods will not be strategic to the states which export them. Therefore, this paper will use a derivative measure of TSS to test export portfolio similarity which is defined later.

With a definition of strategic goods in place, the effect of their export on conflict likelihood can be discussed. With a steady domestic supply, I assume that exporters of strategic goods will not suffer the increased opportunity costs of war caused by the difficulties of securing imports of strategic goods during times of conflict. This assumption is vulnerable to misrepresenting goods that need imported components to construct; thankfully, most commonly strategic goods are raw goods from extraction processes. Alternatively, states can be assumed to possess at least a moderate stockpile for their own military or commercial reasons. Without

looming opportunity costs of war, states may be more likely to initiate conflict against rivals to solidify their position as a primary producer of a good that many states need, thereby cementing their global economic and political power. This logic can be expanded to the causal mechanisms suggested by Chatagnier and Kavakli (2017), namely the idea of domestic firms pushing political leaders toward war. Leaders of industries, especially commonly strategic industries like arms and energy, have the money and resources needed to establish themselves as elites in a state. These elites will have easier access to domestic political representatives, opening lines of influence and control that other stakeholders will struggle to replicate. If they think war is in the best interests of their business, they should have the means to implement the causal mechanism used to explain non-strategic goods' strong positive relationship with conflict.

On the contrary, I assert that there are two reasons to believe that states that export strategic goods may be more peaceful with each other; cartelization and external interference. Producers of strategic goods can more easily form cartels due to the rarity of the goods and importers' desperation to secure their import. Low price elasticity and export concentration are two common conditions that allow for cartels to form (Radetzki & Wårell, 2016). It is easy to see that many strategic goods fall under this category. Low price elasticity is the result of strong and consistent consumer demand, generally indicating that a product is a fundamental need without easy substitutes. In addition, using the TSS definition, many goods will be considered strategic if they are rare, often caused by predetermined geographic realities or historic specialization, ultimately satisfying the export concentration requirement to enable the formation of cartels. As a result, strategic goods are likely to have strong, consistent consumer demand and the formation of cartels is possible. International commodity cartels are incentivized to cooperate to achieve higher, more stable national incomes from strategic goods industries. This mechanism counters

that of Chatagnier and Kavakli, giving private executives reasons to push for tolerance of rivals rather than conflict.

Finally, importers of strategic goods have strong incentives to intervene to prevent conflict between strategic goods exporters which they rely on. Peaceful relations between trading partners are the liberal expected outcome, but this doesn't always play out (Maoz, 2009). The idea of international intervention is closely connected to the literature on international trading communities and their pacifying effects of trade on conflict within each community. Close-knit trading communities create peaceful relations between states via a lack of alternative trading partners or stronger methods of signaling intentions through trade. Connections between strategic goods producers are a part of this (Kleinberg et al., 2012; Dorussen & Ward, 2010). Because the supply of strategic goods is critical for states, they may also be tempted to acquire their supply from many different strategic resource suppliers, giving themselves alternative importers to buy from in case one of their partners experiences a crisis of some sort that inhibits exports. When indirect international trading communities are modeled, they can account for much of the explanatory power of alliances in preventing conflict (Lupu & Traag, 2013). Due to the rarity of strategic resources and the limited number of producers, I argue that strategic goods exporters will often find themselves bound indirectly through their trading partners. After all, Chatagnier and Kavakli (2017) identifies competition for the same consumers as a primary conflict motivator for states that share similar export portfolios. Customer states importing competing strategic resources have two reasons to prevent conflict between the producers (Lupu & Traag, 2013). First, to prevent the combatants from switching excess production of strategic goods to the production of weapons and armaments for the war, and, secondly, to prevent one exporter from destroying the other's production capacity which would reduce global export competition

and raise prices for strategic goods being imported. This argument can be emphasized in the case of strategic goods due to their critical nature. A key weakness of trading network peace theory is that international intervention requires states to solve a coordination problem amongst themselves regarding which state will first step up to intervene. Without an obvious leading state, a community might be stuck looking at one another while a conflict rages on. In the case of strategic goods, this is unlikely to occur because the inclusion of strategic goods raises the stakes for the importing states which then have higher motivation to solve their coordination problems quickly. Disruptions are dangerous militarily and economically to any nation that finds them to be strategic. From this logic, I derive a testable hypothesis;

Hypothesis 1: States with similar export portfolios of globally strategic goods are less likely to initiate a conflict with each other.

I also separate the three qualities of strategic goods to evaluate which ones might influence national tendency towards conflict more than others. Global rarity will impact all nations, leading producers to form cartels and consumers to value supply chain stability more highly. Therefore;

Hypothesis 2a: States with similar export portfolios of globally strategic rare goods are less likely to initiate a conflict with each other.

Strategic goods as defined by fundamental economic or military importance are not necessarily rare, making it harder to form cartels. I expect that a pacifying effect for these goods is created only through external intervention, but that external intervention is far more likely given the sensitive nature of the goods. States will be more willing to get involved to ensure stable supply chains.

Hypothesis 2b: States with similar export portfolios of globally strategic, fundamentally important goods are the least likely to initiate a conflict with each other.

Finally, a good that is strategic only because a particular state consumes it at abnormal levels will never be globally strategic. Producers of this good have extremely high leverage over particular states, but the consumer state also represents a significant portion of each producer's demand. With a tighter market, I expect that the conflict relationship will be mixed, but very few of these goods will even be globally strategic enough to be tested in Hypothesis 1 or Hypothesis 3.

Hypothesis 2c: States with similar export portfolios of globally strategic, critically consumed goods will have no significant relationship with conflict initiation.

A logical extension of the external intervention argument is its application to conflict duration. Interstate conflict duration is an underexplored outcome in the commercial peace theory literature. Building on the idea that states will work to prevent conflict between exporters of strategic goods, I argue that once a conflict has already begun, states may intervene between the combatants in an attempt to shorten the war for their own benefit. A drawn-out war could cause price shocks to strategic goods and potentially damage supply chains and industrial capacity in a way that would increase the prices of strategic goods for years to come. Recognizing that this is not in the best interests of the international community, we should expect wars between exporters of similar strategic goods export portfolios to be shortened by international conflict mediation or intervention.

Hypothesis 3: Conflicts between states that share similar export portfolios of globally strategic goods will be shorter than other conflicts.

Research Design

Assembling the dependent variable for this study will take several steps, and it is necessary to understand the data sources first. This research will draw on the most recent amended version of the UN Standard International Trade Classification (SITC) Revision 4 classifications and Feenstra et al. (2005) for world trade flows data divided at the SITC 4-digit level from 1962-2000. This relatively small range of years is a weakness of the model, and an updated dataset for world trade by SITC categories would help future studies draw conclusions that are more relevant to the current status quo of international trade.

First, each 4-digit SITC category of merchandise imported by a country is classified as strategic or not for that specific state each year of the data. A category is marked as strategic due to fulfilling one or more of the three attributes laid out previously: rarity, fundamental importance, and critical consumption levels. For rarity, any product that scores in the lowest five percent of goods for the quantity of global net exporters will be considered strategic for all states that import it.[1] This criterion does leave the measure open to some of the same flaws as previous measures which struggled with the low level of detail in trade data. In this case, that low level of detail may help. Strategic goods such as oil and metals which are shipped in their raw forms experience less aggregation than toys or other rare consumer goods which should not be considered strategic even if their production is limited to a few global producers. Fundamental importance will be judged through careful research of each 4-digit code. Goods will be included if the interruption of their trade would pose immediate risks to the operation of a state's military or economy. Finally, a good will be strategic for a state under the critical consumption criteria if

[1] Proposed thresholds come from the author's intuition. Fine-tuning of the thresholds should be expected once the data is assembled.

that good makes up at least ten percent of the state's total imports or the state imports at least five percent of the world's production of a good.[2]

Next, I calculate a new measure representing the global strategic importance of the good. This will be measured as a modified percentage of states that consider the good to be strategic. I call it a modified percentage because it is weighted by the log of each state's GDP. This weighting prevents goods that are only strategic to dozens of small island nations from being overrepresented while also curtailing the dominance of the American and Chinese economies if it had been weighted by GDP alone. It also represents the idea that a good that is strategic to powerful economies alone is more strategic on the global stage than a good that is only strategic to smaller economies. This measure produces strategic levels above 1.0 which unfortunately removes some of the ability to intuitively interpret the statistic. Any good that has a weighted strategic value of 0.8 or higher will be included in the list of globally strategic goods for each year. Globally strategic goods are coded into the data as a binary, so each good is either globally strategic or not for any given year. This creates a new list of globally strategic goods that can be compared to previous attempts to operationalize strategic goods by intuitively choosing SITC code categories. Figure 1 provides a stripped down example of how a good's global importance measure might be calculated for a given year using the equation below where n is the total number of states in the sample.

$$Weighted\ Percentage\ =\ \sum_{i=1}^{n} (Strategic\ \times\ LogGDP)\ \div\ n$$

[2] Proposed thresholds come from the author's intuition. Fine-tuning of the thresholds should be expected once the data is assembled.

		Steel Pipes		
State	Strategic	GDP	LogGDP	Weighted
US	1	23320	4.367729	4.367729
China	0	17730	4.248709	0
Japan	0	4910	3.691081	0
Jamaica	1	14	1.146128	1.146128
Chad	0	11	1.041393	0
Avg	0.4	Weighted Avg		1.102771

Figure 1 - An estimated example of the weighted strategic measurement

Armed with a new list of strategic goods, the analysis of the effect of export competition on interstate conflict between exporters follows the lead of Chatagnier and Kavakli (2017), calculating their measure of export similarity among globally strategic goods and non-globally strategic goods. For each state, there is a list that describes the proportion of total merchandise exports from that state accounted for by each of the 4-digit SITC code categories. It can be thought of as a measure of importance, representing each good's respective percentage of total exports. The measure of export similarity is found by calculating Pearson's r, a correlation coefficient, for each dyad-year relationship. If two states had exports of fifty-percent rice and fifty-percent raw steel products, they would have an export similarity measure of 1. If two states export none of the same goods and together account for every single type of exported goods, they will have a measure of -1. Most values will fall between slightly below 0 and 1. Given the results of Chatagnier and Kavakli (2017), I expect this measure to be positively related to the likelihood of conflict for non-globally strategic goods and negatively related to the likelihood of conflict for globally-strategic goods. Those categories (strategic and non-strategic) are two different lists that generate two different export portfolio similarities.

Turning now to the dependent variables, this paper will rely on the Correlates of War militarized interstate disputes (MID) data set (Ghosn et al., 2004; Maoz et al., 2019). The first dependent variable, conflict onset, is easily computed from the MID dataset. Conflict is coded as a 1 if the dyad has an active MID and 0 if not. Following previous literature, I include only MIDs where one side used force on the other or the MID had at least one fatality, excluding MIDs without force or fatalities to filter for significantly costly conflicts (Chatagnier & Kavakli, 2017). I also drop dyad-years where an MID already existed and no new MID is formed as the first hypothesis addresses conflict onset. For the third hypothesis and second dependent variable, I calculate the duration of each MID in weeks. Using weeks has the same effect as measuring days of conflict while allowing for a broader sample size because not all conflicts have specific dates available (Smith & Spaniel, 2019).

Conflict onset and conflict duration are two very different problems that require different control variables. The first hypothesis and model will utilize a standard logit regression to evaluate conflict onset at the dyad-year unit of analysis. Alongside MID conflict and export similarity of globally strategic and non-globally strategic goods will be control variables for dyadic trade dependence levels (Barbieri, 1996), the logged geographic distance between the dyad, if both states are democracies (defined as both having PolityIV scores greater than 6), geopolitical similarity as measured by UN voting records (Gartzke et al., 1999), and relative power in the dyad via dummy variables for major-major and major-minor power dyads as defined by the Correlates of War project. Most of these controls are picked from previous literature, primarily Chatagnier and Kavakli (2017). Trade dependence generally tends to reduce the likelihood of conflict and makes it less likely that two states share similar export portfolios. Logged geographic distance is important because states in the same region will have access to

the same natural resources and be more likely to fight. Geopolitical similarity will also likely correlate with both conflict likelihood and the type of economy and exports a state has. The same can be said for each type of power-dyad. I also include a dummy variable for the Cold War. Not only did global relations and trade warm and grow rapidly following the end of the Cold War, but the variable also serves as a dummy for the Persian Gulf War, when an international coalition headed by the unipolar U.S. stepped in to end and revert the results of a conflict between two exporters of oil, demonstrating the willingness of third parties to intervene in a war between strategic good exporters. Unfortunately, the data only extends ten years past the end of the Cold War. Nevertheless, I expect the variable to be positively associated with the likelihood of conflict. In the model, export similarity, trade dependence, and UN voting records are all lagged by one dyad year. This helps avoid simultaneity bias. The outbreak of war between the dyad early in a year could greatly impact the annual value. Tensions and conflicts are built up over time, and I believe the previous year's values of those variables best represent the relationship between them and the decisions by those states that lead to conflict. Hypotheses 2a, 2b, and 2c will be tested using the same logistic regression model and control variables. The only difference will be in the independent variable. The list of goods used to calculate strategic good export portfolio similarity will only include goods labeled as strategic for one of the three reasons corresponding to the hypothesis being tested.

To test the third hypothesis, I use a Cox Hazard Duration model and the dependent variable will be the duration of conflict measured in weeks. The variable of interest will be the export similarity of the dyad held constant at its value one year before the conflict's onset. The second hypothesis hinges on the idea that the international community will intervene in a conflict between strategic good producers. I believe this intervention is motivated by an expectation that

strategic good exports and similarity between that dyad would be returned to pre-war levels following the conflict. Control variables for this model follow previous literature studying interstate conflict duration. They include the previously mentioned relative dyad-power dummies, joint democracy, the start year of the conflict, logged geographic distance, and total actors involved in the MID (Smith & Spaniel, 2019; Krustev, 2006). The start year of the conflict is relevant because conflicts have become shorter over time. The total number of actors involved is a useful control because having more actors in a conflict can make finding a solution that satisfies all parties more difficult, increasing the duration of the conflict.

Implications and Conclusion

This paper details causal mechanisms to explain why exporting similar strategic goods as another state may pacify the dyadic relationship, decreasing the likelihood of conflict and decreasing the length of conflict should it occur. This is a relatively narrow exploration of a relationship practically ignored by the literature until Chatagnier and Kavakli (2017), especially when compared to papers outlining wide-reaching theories about conflict or trade interdependence. Nevertheless, it may help policymakers and academics better understand some of the most important economic relationships and further research into the nuanced effects of strategic goods.

The relationship between the United States and China escalated from economically cooperative to a full-blown trade war in just a few years under the Trump Administration. Much of the rhetoric that accompanies the political and economic tension is aggressive, but total trade between the states reached an all-time high in 2022. As the US and China race to build up and protect their semiconductor, electronics, and manufacturing industries, this paper foresees a more

peaceful relationship than popular narratives predict. The US and China are not just trade dependent on one another; they also will soon have common interests in protecting their global strategic trade. By becoming rival producers of certain groups, states may end up creating more incentives to cooperate than to fight. The potential conclusions from this research are more useful to policymakers around the world than previous attempts at analyzing strategic goods because the data set and analysis that I propose use available data to systematically define strategic goods rather than rely on estimates biased by a focus on Western military and economic needs. The causal mechanisms explained here also create questions for policymakers. For instance, how can policymakers and heads of state effectively signal their intent to intervene before a conflict between strategic goods exporters breaks out? How can states regulate international cartels to maintain the states' incentive to avoid conflict while keeping market prices at an efficient level? Answers to these questions may help preserve international peace and economic stability in the future.

Returning to academia, this paper offers an outline to create a data set that classifies strategic goods at the state level and varies that classification over time. A data set of this type is a more accurate representation of the variation in strategic value over time and space. It also ties in established lines of literature to further develop theoretical explanations of conflict between exporters. International cartel literature is especially underutilized by international trade authors. International cartels are powerful international institutions, and the desire to form them can cause ripples in markets even if most struggle to succeed in the way that OPEC has. Looking forward, with regional trade agreements replacing global agreements, international cartels may be able to exploit inconsistent regulation and have a bigger impact on conflict and trade going forward. On that topic, this paper could be extended to evaluate how regional strategic goods predict conflict

likelihood rather than global strategic goods. Competitive trade is the basis of the neo-liberal design for international markets, and more attention should be paid to the study of those competitors.

References

Barbieri, K. (1996). Economic interdependence: A path to peace or a source of interstate conflict? *Journal of Peace Research*, *33*(1), 29–49.

Blanchard, J. F., & Ripsman, N. M. (1996). Measuring economic interdependence: A geopolitical perspective. *Geopolitics and International Boundaries*, *1*(3), 225–246. https://doi.org/10.1080/13629379608407567

Chatagnier, J. T., & Kavaklı, K. C. (2017). From Economic Competition to Military Combat: Export Similarity and International Conflict. *The Journal of Conflict Resolution*, *61*(7), 1510–1536.

Ding, J., & Dafoe, A. (2021). The Logic of Strategic Assets: From Oil to AI. *Security Studies*, *30*(2), 182–212. https://doi.org/10.1080/09636412.2021.1915583

Dorussen, H. (2006). Heterogeneous trade interests and conflict: What you trade matters. *Journal of Conflict Resolution*, *50*(1), Article 1.

Dorussen, H., & Ward, H. (2010). Trade networks and the Kantian peace. *Journal of Peace Research*, *47*(1), 29–42.

Fearon, J. D. (1995). Rationalist Explanations for War. *International Organization*, *49*(3), Article 3.

Feenstra, R., Lipsey, R., Deng, H., Ma, A., & Mo, H. (2005). *World Trade Flows: 1962-2000* (No. w11040; p. w11040). National Bureau of Economic Research. https://doi.org/10.3386/w11040

Førland, T. E. (1991). “Economic Warfare” and “Strategic Goods”: A Conceptual Framework for Analyzing COCOM. *Journal of Peace Research*, *28*(2), 191–204.

Gartzke, E., Jo, D.-J., & Tucker, R. (1999). The Similarity of UN Policy Positions, 1946–96. *Hwww. Vanderbilt. Edu/~ Rtucker/Data/Affinity/Un/Similar*.

Gartzke, E., Li, Q., & Boehmer, C. (2001). Investing in the peace: Economic interdependence and international conflict. *International Organization*, *55*(2), Article 2.

Gasiorowski, M., & Polachek, S. W. (1982). Conflict and Interdependence: East-West Trade and Linkages in the Era of Detente. *Journal of Conflict Resolution*, *26*(4), Article 4. https://doi.org/10.1177/0022002782026004008

Ghosn, F., Palmer, G., & Bremer, S. A. (2004). The MID3 Data Set, 1993–2001: Procedures, Coding Rules, and Description. *Conflict Management and Peace Science*, *21*(2), 133–154.

Goenner, C. F. (2010). From toys to warships: Interdependence and the effects of disaggregated trade on militarized disputes. *Journal of Peace Research*, *47*(5), 547–559.

Kleinberg, K. B., Robinson, G., & French, S. L. (2012). Trade Concentration and Interstate Conflict. *The Journal of Politics*, *74*(2), 529–540. https://doi.org/10.1017/S0022381611001745

Krustev, V. L. (2006). Interdependence and the duration of militarized conflict. *Journal of Peace Research*, *43*(3), 243–260.

Levy, J. S., & Barbieri, K. (2004). Trading With the Enemy During Wartime. *Security Studies*, *13*(3), 1–47. https://doi.org/10.1080/09636410490914059

Li, Q., & Reuveny, R. (2011). Does trade prevent or promote interstate conflict initiation? *Journal of Peace Research*, *48*(4), Article 4.

Lupu, Y., & Traag, V. A. (2013). Trading Communities, the Networked Structure of International Relations, and the Kantian Peace. *Journal of Conflict Resolution*, *57*(6), 1011–1042. https://doi.org/10.1177/0022002712453708

Maoz, Z. (2009). The Effects of Strategic and Economic Interdependence on International Conflict Across Levels of Analysis. *American Journal of Political Science*, *53*(1), 223–240. https://doi.org/10.1111/j.1540-5907.2008.00367.x

Maoz, Z., Johnson, P. L., Kaplan, J., Ogunkoya, F., & Shreve, A. P. (2019). The Dyadic Militarized Interstate Disputes (MIDs) Dataset Version 3.0: Logic, Characteristics, and Comparisons to Alternative Datasets. *Journal of Conflict Resolution*, *63*(3), 811–835. https://doi.org/10.1177/0022002718784158

Polachek, S. W. (1980). Conflict and trade. *Journal of Conflict Resolution*, *24*(1), 55–78.

Polachek, S., & Xiang, J. (2010). How Opportunity Costs Decrease the Probability of War in an Incomplete Information Game. *International Organization*, *64*(1), Article 1. https://doi.org/10.1017/S002081830999018X

Radetzki, M., & Wårell, L. (2016). *A Handbook of Primary Commodities in the Global Economy* (2nd ed.). Cambridge University Press. https://doi.org/10.1017/9781316416945

Smith, B. C., & Spaniel, W. (2019). Militarized Disputes, Uncertainty, and Leader Tenure. *Journal of Conflict Resolution*, *63*(5), 1222–1252. https://doi.org/10.1177/0022002718789738