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# Economic sanctions and opportunism

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ABSTRACT

Sanctions busting refers to instances where third-party states increase their material support for states targeted by economic sanctions by increasing trade as well as foreign aid and investment, which, in turn, minimize the economic costs that sanctions imposed on target states. This concept privileges the sender and contributes to the "sender bias" inherent in the literature on economic sanctions. My dissertation instead argues that the terms *sanctions opportunism* may better reflect the nature of the processes at work when third-party states engage in sanctions busting either for commercial profit or as a "black knight" (or a combination of them both). As my research reveals, economic sanctions impact trade between not only the sender and target but also third-party states, many of whom are impacted when economic sanctions disrupt important economic linkages. This dissertation explores how third-party states respond to the imposition of economic sanctions and arms embargoes and how these third-party states engage in *opportunism*. I explore the various forms of sanctions opportunism by using the European Union as a critical case to understand how and why this behavior occurs. I also explore opportunism from the vantage point of the target state to show how some states targeted by sanctions create more potential for opportunism than other sanctioned states. Utilizing descriptive statistics and regression analyses across three chapters, I show how European and EU member states engage in opportunism when economic sanctions and arms embargoes are imposed on their trading partners. I further demonstrate that the European Union can both dampen sanctions opportunism through the creation of its Single European Market or exacerbate sanctions opportunism through supranational policies, such as the Common Position on arms exports, that accelerate a "race away from Brussels" that undermines interstate cooperation that international institutions are meant to facilitate.

ACKNOWLEDGEMENTS

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# Preface

      I came to the study of economic sanctions somewhat circuitously. During my first master's degree program in Rome, Italy, I found it puzzling that the United States had all these supposed allies, yet these allies engaged in a lot of what I now refer to as "opportunism": the ways in which countries capitalize off the effects of policies – like economic sanctions – created by other states. A lot of this opportunism, as my dissertation explores, has undermined US foreign policy and EU foreign and security policy. In the US case, a lot of this undermining comes not from states we might naively assume are or have always been enemies, such as Russia and China, but from other NATO members. For the EU, one might not expect that the very members of the EU, while undermining binding EU law, are, through their opportunism, undermining international peace.

      My first thesis focused on how instability in the Middle East and North Africa pushed Italian foreign policy to be consultative through multilateral organizations and how the strength of this "norm of multilateralism" in Italian foreign policy varies depending on not only US administrations but also Italian domestic politics and regional (in)stability in places where Italy had significant economic interests, such as North Africa and the Middle East. What I learned from this completing this thesis is that Italian foreign policy straddled a narrow line between Europeanism and Atlanticism while also juggling its own tumultuous domestic politics. While the United States was imposing sanctions on Egypt, Libya, Iran, and Iraq, Italy maintained robust trade and economic relationships with many US 'adversaries.' I found this puzzling: why would a state, a middle power, attempt to navigate so many competing demands? I found that Italian foreign policy preferred multilateral approaches to dealing with regional instability, especially in the Middle East and North Africa. I argue that this norm developed largely from the destabilizing

effects of the Suez Crisis. Through a reading of diplomatic cables and other documentary evidence, I attempted to show Italy's dependence on energy supplies and other trade through the canal, which, in the 1950s, was a vital chokepoint that, when blocked, had the potential to wreak havoc on Italy's and Europe's post-WWII recovery. I began to understand the reticence of many European countries for the use of economic sanctions. Many of Europe's most important firms rely on exports, and economic sanctions create significant barriers for export-driven economies like those in Europe.

In my second thesis during my time at Northwestern, I shifted my focus away from Europe to understanding US policies of isolation and when those policies can – if at all - change. Countries like Cuba, Iran, and North Korea are not only heavily sanctioned by the United States but also have or have had minimal diplomatic relations. China remained a relative pariah of the international community until Richard Nixon opened up to China and visited Mao Zedong in 1972. Cuba, which is only a stone's throw from the southern Florida Keys, has had only the barest of diplomatic relations with the United States until the Obama Administration's thaw towards Cuba and subsequent visit to Cuba. After the Iranian revolution, the United States severed diplomatic ties with Iran despite decades of warm relations as part of the United States' 'twin pillar' strategy. During the Obama Administration, despite the ratcheting up of US sanctions, a US and Iranian leader not only shook hands at the United Nations but also had several phone calls. US diplomacy coupled with US efforts to punish the foreign financial sector paved the way for the signing of the Joint Comprehensive Plan of Action (JCPOA). Why did the US change its policies toward China, Iran, and Cuba after long periods of diplomatic and economic isolation?

Utilizing theory of punctuated equilibrium developed by Baumgartner and Jones (2009), I showed how focusing events from the international system have the potential to trigger change in longstanding US policies of isolation under certain conditions. In the case of China, the development of Chinese nuclear weapons and potential war with the Soviet Union pushed the US to rethink its China position, which culminated in a new US policy that sought to pull China away from the orbit of the Soviet Union. What my thesis helped me to see is how intransigent US foreign policy is and how difficult it is to find the political will and opportunity to overturn US statutes that create economic sanctions or roll back US regulations.

From these projects, what I began to notice is that US foreign policy is complicated just as much by third-party opportunists as it is by the 'troublemakers' in the international system. While my dissertation focuses on opportunism that presents itself when economic sanctions are imposed, opportunistic behavior on the part of third parties exists in other issue areas, too. For example, when the United States invaded Iraq and toppled Saddam Hussein's regime, countries in the region that had shunned Iraq or had a long-standing enmity, such as Iran, have seen their diplomatic and political influence grow while the US' struggles. The efforts of the US at toppling Saddam Hussein created a vacuum that provided opportunities for former enemies of Iraq to make in-roads with the new Iraqi governments, ostensibly complicating the US' nation building efforts. US military and diplomatic statecraft may also create opportunities for opportunism on the part of not only US enemies but also US allies, who may benefit through their use of economic, military, and/or diplomatic statecraft. Opportunism also assumes many other forms, even in the economic realm. The creation of blocking mechanisms, special purpose vehicles, and other alternative methods for settling trade that reverse the dollarization of the international

economy also reflect forms of opportunism that seek to weaken US economic dominance while benefiting currencies, trade, and economies of both US enemies and allies.

My dissertation focuses solely on how economic statecraft vis-a-vis economic sanctions can create opportunities and how states capitalize on these opportunities through sanctions busting trade or arms embargoes. Exploring state behavior through trade brings with it an implicit assumption that the interests of states vary when domestic factors are taken seriously. Firms may have their own imperatives that drive them to engage in opportunistic behaviors at the expense of the state. At other times, states and firms may share interests in common that also lead to opportunism – such dynamics may be more prevalent when firms rely on the state for licenses to export, especially strategic goods.

Understanding when states take advantage of these opportunities or are constrained by these opportunities has not been addressed in the literature. At the foundation of this problem, at least with respect to economic sanctions, is the nature of the target state. As Peksen (2019) has argued, much of the literature focuses on the sender and the actions the sender takes or fails to take when it comes to particular policies and sanctions regimes. However, the literature on economic sanctions more broadly has not yet considered the actions of other actors. The burgeoning literature on sanctions busting (Barry and Kleinberg 2015; Caruso 2003; Early 2015; Early and Jadoon 2016) has sought to highlight the role of third-party states in aiding target states through increased FDI, trade, and foreign aid. Still, work needs to be done to improve our understanding of the target itself in understanding how this opportunistic behavior varies and impacts the success of sanctions. It is my hope that this dissertation makes some progress toward improving this understanding.

# Chapter 1. Economic sanctions and opportunism

When the permanent members of the United Nations (UN) Security Council plus Germany negotiated and then signed the Joint Comprehensive Plan of Action (JCPOA) with Iran in December 2015, the efforts by all involved culminated in a hopeful resolution to Iran's efforts to develop nuclear capabilities. The threat of and use of economic sanctions by the United States and the European Union played an integral role in not only bringing Iran to the negotiating table but also in getting Iran to sign the deal (Cronberg 2017a, 2017b; Brockmann and Preble 2021; Tarock 2016). Since the Iranian revolution in 1979, the United States has imposed unilateral economic sanctions on Iran while European countries, stalwart allies of the United States, have maintained robust trade ties with Iran. The diverging policy interests of the US and European countries and the EU are unsurprising, and it is not unusual for the US and Europe to disagree on the scope of economic sanctions (Early and Preble 2017). European trade has historically undercut the effectiveness of US economic sanctions not just on Iran, which has perturbed US lawmakers and foreign policymakers, but also Cuba and Russia. Given Europe's reliance on energy exports from Russia and Iran and European trade linkages to Cuba, it is not surprising that Europe's economic interests roil US-EU relations. Such an outcome should be expected as sender states are often more eager to impose coercive measures on adversaries and more reluctant to coerce (and impose costs on) friends and allies (Drezner 1999, 4).

Studies have shown that sanctions busting is not always purposeful or criminal. Trade-based sanctions busting is often accidental (Early 2016), but, as is often the case, the rules that firms must follow in maintaining compliance can be costly to learn, difficult to adhere to, and often lead to significant fines by US authorities (Early and Preble 2020b, 2020a). Enforcement actions published by the United States' Office of Foreign Assets Control (OFAC) often puts

companies on notice for engaging in conspiracies to undermine US foreign economic policy

(OFAC 2021), and companies – sometimes with the complicit and quiet support of their home

countries – help facilitate trade-based sanctions busting (Early 2015). While data on compliance

and enforcement actions is limited (US enforcement data only begins in 2003), US sanctions

regimes have paid particular attention to the third-party states and how they undermine US

sanctions programs. US and European foreign policymakers have often clashed over the US' use

of secondary sanctions and its extraterritorial application of US law (Davidson 1997), which

often lead to unintended consequences such as over-compliance and an inability to provide

humanitarian aid and assistance (Brockmann and Preble 2021).

My dissertation seeks to understand Europe's opportunistic behavior in the face of

economic sanctions while exploring how European countries respond to the imposition of

economic sanctions and the extent to which Europe engages in trade-based sanctions busting and

arms embargo busting. The "sender bias" in the literature has focused on how economic

sanctions are viewed primarily in how they are effective relative to the sender state (Peksen

2019). As Peksen (2019) argues, interpretations of this nature fail to capture the full extent of the

behavior of other actors involved. The focus on the ways in which sender states flex their

economic power through the use of economic statecraft, "governmental influence attempts

relying primarily on resources that have a reasonable semblance of a market price in terms of

money" (D. A. Baldwin 1985, 30), fails to take into account how this exercise of power often

fails to impact third-party state's efforts to undermine economic sanctions through opportunistic

behaviors.

Sanctions opportunism refers to how states and their constituents capitalize on the

positive externalities created by economic sanctions. Lake (1996, 13–14) argues that

opportunism is "ubiquitous in international relations," which he describes as "a self-seeking behavior 'with guile'" (Lake 1996, 13; Williamson 1985, 30) that is "a trait common to all actors." (1996, 13). Variation exists in opportunistic behaviors through three pathways: abandonment, entrapment, and exploitation. Abandonment refers to the abrogation of agreements where one state refuses to live up to its commitments agreed upon by both states. Entrapment refers to the ways in which a state's partners push them into engaging in unwanted behaviors, such as wars or other conflicts that they may have otherwise avoided but now cannot. States can also be exploited where one state derives a benefit from its relationship with another state without sharing or distributing those benefits equally if at all (Lake 1996, 13-14). In many instances, however, economic sanctions are imposed unilaterally and often without feedback or consultations from partners. If one accepts the premise that opportunism is ubiquitous in international relations, then opportunism is akin to how constructivists see anarchy (Wendt 1992) – it is what states make of it when states (or firms) choose to capitalize on these openings to advance their interests (or profits), behaviors which most certainly vary across not only states but also the events that generate these opportunities. Thus, my research seeks to study this variation in opportunistic behavior via sanctions busting and arms embargo busting trade.

My dissertation contributes a more nuanced understanding of how and why this opportunistic behavior via sanctions busting or arms embargo busting trade occurs outside of alliance or security frameworks, which may not explicitly cover economic relations nor bind firms in third-party states. Maoz et al. (2007, 103) theorizes that opportunism is more likely to occur when relationships are imbalanced due to a lack of "'liberal' ties" (2007, 103). These "liberal ties" refer to trade interdependence, mutual membership in international organizations and institutions, and political affinity, which are plentiful between the United States and Europe,

for example. European countries and Japan routinely take advantage of opportunities to undermine US economic sanctions. While the variables of the Kantian tripod (Russett and Oneal 2001) may be successful at preventing imbalanced relations in the military realm, these constraints may operate in counterintuitive ways in other issue areas or realms, especially when the interests between states are purely economic or the constraining effects themselves impose unforeseen economic and political costs for members of alliances and their constituents.

Several sanctions busting states, for example, are not partners of the sender state (although many are). Alliances, however, do not consign third-party states to uphold sanctions automatically. Issues of trust and how trust is understood between friends, allies, and adversaries in international relations may also play a role (Hoffman 2002). The US' use of secondary and extraterritorial sanctions, for example, has occurred *because of the behavior of key US allies in Europe* and elsewhere (Brockmann and Preble 2021; Erästö 2020). Does friendship lend itself to opportunistic behavior because the opportunity costs for forgoing friendship are too high for sender states to disregard?

Building off the work of (2015), Barry and Kleinberg (2015), Caruso (2003, 2005), Early (2009, 2011, 2015), and Early and Spice (2015), I explore the impact of sanctions opportunism via sanctions busting trade. Chapter 1 begins by focusing on the nature of the target state to first understand third-party state preferences and how those preferences that lead to sanctions busting trade impact the economic sanctions in place. I find across aggregated trade flows that firms overall prefer target state firms with medium-sized economies, likely due to the better terms of trade, which occurs due to competition among sanctioned states with medium-sized economies, most of which are also targeted by economic sanctions. Disaggregating trade across agricultural goods, mineral fuels, and machinery/transport equipment shows that target states with medium-

sized economies are attractive to sanctions busters only across agricultural goods. Target states with medium-sized economies may present unique challenges given that these states may be more attractive to trade-based sanctions busters. The type of trade that firms are conducting between states may also play an important factor in whether sanctions are effective. These findings may be important for policymakers seeking to develop more resilient sanctions regimes that bring about more timely and effective policy change on the part of the target state.

In the second chapter, I turn toward the European Union to understand the impact of the common market on the likelihood of engaging in sanctions busting. Studies on sanctions busting highlight Europe's penchant for sanctions opportunism (Caruso 2003; Early 2015; Early and Spice 2015). Yet while European and European Union member states *do engage in significant trade-based sanctions busting*, European firms, I argue, utilize sanctions busting as a last resort. In my analysis, I show that over time, the opportunism that occurs declines even as the potential for opportunism increases as the use of sanctions grows. While the EU is often cited for its sanctions busting activities and is typically coded as the most prolific sanctions busters in the international system, situating European Union member states within the common market and attempting to account for this market is important for understanding the dynamics behind sanctions busting. Few scholars attempt to control or account for opportunities of sanctions busting and intra-EU trade share when studying European sanctions busting. The literature on economic sanctions in Europe is nascent (Giumelli 2010, 2011; Giumelli, Hoffmann, and Książczaková 2021; Portela 2005, 2011) and also largely unexplored.

Utilizing a multilevel logistic regression, I show – along with aggregate trade flows – that increases in the share of intra-EU trade reduce the likelihood of trade-based sanctions busting. I theorize that firms are risk-averse and avoid political and economic costs when safer and less

risky opportunities are available and take a "path of least resistance."[1] I argue that firms in the EU chose this path of least resistance by trading first with EU member countries whenever possible. The EU offers an inviting and enticing option for European firms when faced with barriers associated with economic sanctions. First, the proximity of EU members and well-developed infrastructure makes the movement of goods throughout the EU less costly than container shipping to far-distant ports. Firms are going to prioritize profit without risk whenever it is possible, choosing a path of least resistance, rather than the risks of the economic and political costs firms face should they be caught engaging in sanctions busting trade.

What the second chapter attempts to communicate is that the commercial imperatives that drive sanctions busting are most likely conditional on the presence of opportunities for trade in Europe and the extent to which such intra-EU trade is more profitable than the commercial opportunities of sanctions busting trade. Given the increase in activity in how the US government attempts to enforce secondary sanctions against EU firms since the passage of the Helms-Burton Act in the United States in the 1990s (Huber 1996b; Leogrande 1997; Smis and van der Borght 1999), firms in the EU have an incentive to pursue *easier* opportunities with the Single European Market. This common market has grown significantly since the EU's founding in 1957, and the Treaty of European Union (Maastricht) in 1993 made the common market more attractive as EU competences in trade and commerce aligned under the aegis of the European Commission and other EU supranational institutions.

Chapter 3 explores whether arms embargoes are effective are reducing the transfer of European trade in modern conventional weapons (MCWs) and what motivates European and

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[1] See Iran Watch (2021), 'Why companies around the world are reversing course on Iran business?' for examples of risk aversion, especially from medium-large to large EU enterprises: https://www.iranwatch.org/our-publications/policy-briefs/how-companies-around-world-are-reversing-course-iran-business.

European Union states to sell weapons to embargoed states despite a legally binding Common Position. The puzzle motivating this chapter is that if the EU is such an ardent supporter of arms reductions and human rights, why do we see so many European MCWs sold to embargoed states and governments of questionable human rights, and why does arms export harmonization fail to develop? The literature on the arms trade falls into two broad categories: scholars who focus on arms embargoes, the arms trade more generally, and the effectiveness of arms embargoes (Bräuner 2013; Brzoska 2009; Erickson 2013) and scholars that focus on normative concerns (Erickson 2015; Perkins and Neumayer 2010; Yanik 2006). There also exists a substantial body of work from NGOs, think tanks, and advocacy groups as well that focus on the effects of both the licit and illicit arms trade networks (Amnesty International, Oxfam, and International Action Network on Small Arms 2006; Azarova and Trevisan 2020; Control Arms 2006; Stockholm International Peace Research Institute (SIPRI) 2018).

My last paper is an empirical study that shows how arms embargoes, while seemingly effective, are undermined by the EU's Common Position on arms exports. I contend that arms export harmonization fails to occur as EU member states "race away from Brussels" to preserve their control over this key policy domain. I generate a spatial lag variable that attempts to capture the impact of the Common Position on arms export competition within the EU. When EU countries harmonize policies, harmful competition should be reduced or eliminated (Holzinger and Sommerer 2011). If the Common Position *were effective* at harmonizing EU policy, then the spatial lag that captures the competitive impact should be flat or decline. My analysis shows the opposite, showing that the EU's Common Position stimulates intra-EU competition. This finding is puzzling given that the EU's Common Position differs minimally from the former EU Code of Conduct with the latter being only politically binding while the former is legally binding. I infer

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that the greater levels of transparency in arms exports and the sharing of that information across the EU exacerbate intra-EU competition.

Overall, my dissertation research explores variation not only in why and how sanctions busting occurs but also in whether third-party states behave opportunistically when economic sanctions are imposed. All three studies seek to contribute to the literature's understandings of how sanctions and arms embargo busting operate while contributing new knowledge to our understandings of the processes and how they work in both theory and practice.

# Chapter 2. "Just Right": The Goldilocks Theory of Sanctions Busting's Causes and Impact

## Abstract

Research on economic sanctions and sanctions busting has largely ignored the target state. The lack of attention to the target begs the question: when is sanctions busting trade impactful and when is it not? I develop two time-series cross-sectional data sets using UN Comtrade data between 1963-2011 to show how variation in the target state's economic size impacts the likelihood of sanctions busting occurring. I develop a "Goldilocks'" theory of target choice, arguing that economically medium-sized target states with GDPs (economic sizes) ranging from $11.6 billion to $127 billion have a higher likelihood of sanctions busting and being "just right" in attracting trade-based sanctions busters and providing lucrative commercial opportunities as targets compete with one another through sanctions busting trade. Utilizing regression analysis and descriptive statistics, I find that smaller- and larger-sized economic targets not only benefit less from sanctions busting trade but also are less likely to be candidates for sanctions busting compared to medium-sized targets. Also, there is variation across industries engaging in sanctions busting when trade is disaggregated. I connect this analysis to larger debates in the literature on the effectiveness of economic sanctions and demonstrate that sanctions busting trade is typically more impactful for target states with medium-sized economies. This analysis shows that there is considerable variation in who is a candidate for sanctions busting but also in the impact of sanctions busting trade in providing material support to target states.

Sanctions busting trade is a perennial problem for states and multilateral organizations that rely on economic sanctions to threaten, cajole, and coerce offending states to change their behavior. Sanctions busting occurs when a third-party state increases its economic engagement with a state targeted by economic sanctions. Sanctions busting can occur via trade (Caruso 2003, 2005; Early 2009, 2011, 2015), foreign direct investment (Barry and Kleinberg 2015), and foreign aid (Early 2015; Early and Jadoon 2016). Sanctioned states, known as target states, rely on sanctions busters to mitigate the pain caused by economic sanctions imposed by the sender state. Yet the little is known about *why* some states targeted by economic sanctions are selected over others for sanctions busting trade. How does this target state variation impact when a third-party state will engage in trade-based sanctions busting with a target? Why does a third-party state choose to engage in sanctions busting with one target and not another especially if the commercial and economic gains can be sizable? Is sanctions busting trade always impactful in all situations?

This chapter seeks to explain which targets present avenues for opportunistic behavior via sanctions busting trade by showing how the very states that are more likely to be targeted by economic sanctions are also more likely to be recipients of sanctions busting trade. In essence, the very policies meant to deter and coerce target states lead to behaviors that undermine the effectiveness of economic sanctions via sanctions busting trade. Sanctions busting trade thus undermines the very policies designed to bring about desired change. In a sense, economic sanctions are self-defeating as they appear to stimulate opportunistic behavior of third-party states and their firms.

Research has highlighted a multitude of cases that serve as examples of the impact of sanctions busting trade. While economic sanctions create network effects that create positive

externalities that take the form of commercial opportunities for third-party states (Kaempfer and Lowenberg 1988), the actions of sanctions busters potentially prolong sanctions episodes, hinder the ability of economic sanctions to achieve their goals, and undermine the policy's chance of success. Third-party states engaging in sanctions busting can also profit by serving as trade intermediaries (like UAE in the Turkey-Iran gold-for-oil scheme) or can negotiate better terms of trade for its exports or imports from the target state. North Korea's ability to resist US and UN sanctions would not be so successful without the efforts of Chinese foreign aid and Chinese firms delivering needed trade and supplies (Early 2015; Kim 2021; Reilly 2014). Iran, which has been under the thumb of blistering US sanctions for decades, has been able to mitigate the effects of US economic sanctions quite successfully despite the humanitarian costs US sanctions, in particular, impose (Brockmann and Preble 2021). An oil-for-gold scheme involving Turkey and the United Arab Emirates (UAE) provided Iran with the ability to export one of its most prized commodities while also being able to take payments in gold (Early 2015), a highly fungible commodity on the international market that Iran could use to facilitate and guarantee trade. The efforts by China, Turkey, and the UAE are not uncommon when economic sanctions are imposed as third-party states seeking to capitalize off the commercial opportunities that developed as sanctions are imposed.

Care should be taken to associate sanctions busting not only with US "adversaries" like China and Russia seeking to undermine US interests but also key US allies. European and EU member states are some of the most notorious sanctions busters (Early 2015; Preble 2020). European sanctions busting with Cuba and then Iran served as the impetus for US secondary and extraterritorial sanctions. After a diplomatic firestorm, the United States backed away from extraterritorial applications of US law and Europe shelved (at least temporarily) its blocking

regulations (Huber 1996a; Sherman 1998). Japan, a staunch supporter of the United States, has also engaged in significant sanctions busting. Its foreign aid and trade to North Korea served as inducements to resolve longstanding issues related to Japanese abductees, to which North Korea eventually admitted (Preble and Willis 2021).

Studies on sanctions busting have not focused much attention on the target state and often view the target state as a lucrative commercial opportunity or enterprising intermediary for third-party states seeking to capitalize on the network effects, which presumes that these effects impact targets in much the same way. Yet the economic qualities and opportunities that target states provide to commercially adventurous third parties are varied and impact when and where sanctions busting occurs. These impacts have an effect on the success or failure of economic sanctions. Thus, the second part of this analysis connects to the larger debates on the effectiveness of economic sanctions.

I argue that firms in third-party states have preferences when it comes to target states with whom they engage economically and a preference for sanctioned trading partners that are "medium-sized" economies. To explain this preference, I develop a "Goldilocks" theory of target choice, which argues that states with medium-sized economies are "just right" for firms of third-party sanctions busting states. Target states with medium-sized economies are not only more frequently sanctioned but may also compete with one another for sanctions busting relief from similar major trading partners. Because of this competition, asymmetrical terms of trade arise either because they are offered by the target state or can be exacted by sanctions busting third parties. Firms in sanctioned states with smaller and larger economies are not only unlikely to offer much in the way of commercial opportunity to third-party states but may be unable to

compete – as the case with targets with smaller economies – or unwilling to complete – as is the case with targets with larger economies.

In testing the theory, I analyze which target states are selected as sanctions busting partners by firms in third-party states using trade flows. I construct two time-series cross-sectional data sets using aggregate trade flows and disaggregated trade flows from 1963-2011 using Harvard University's *Atlas of Economic Complexity*[2] (Growth Lab at Harvard University 2021). I then conduct a series of logistic regressions to test the likelihood of sanctions busting. I find that as target states increase from small to medium-sized economies, the likelihood of sanctions busting increases. However, as the target state's economic size passes $65.2 billion GDP (in current USD), the likelihood that the target will be the recipient of sanctions busting trade begins to decline. I also find that sanctions busting trade to target states with medium-sized economies is significantly more impactful than sanctions busting trade to targets that are smaller or larger.

From a policy perspective, the insights developed in this paper serve to better understand the impact of sanctions busting trade and how regulatory agencies responsible for implementing sanctions and sanctions enforcement design policies to preserve the effectiveness of such policies. While it may seem intuitive to infer smaller economies stand the most to gain from sanctions busting trade, they may offer fewer incentives and enticements to third-party states as they are often more remote and lack infrastructure for trade. Conversely, states with extremely large economies may make the imposition of economic sanctions futile as these countries are better able to absorb the costs of economic sanctions. Medium-sized economies represent a real challenge to policymakers as this analysis shows; the impact of sanctions busting trade is greatest

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[2] The cleaned data are available for free to download from Harvard Dataverse:
https://dataverse.harvard.edu/dataverse/atlas.

for these types of states. This finding has implications for how sanctions are imposed and enforced. Not only are medium-sized economies more likely to receive sanctions busting support, but states within this category are also more likely to be sanctioned, making the problem particularly acute for policymakers.

The paper proceeds as follows. Section 2 offers a review of the literature on sanctions busting by showing how scholarship on sanctions busting has failed to consider to importance of the target state. Section 3 provides a discussion of the "Goldilocks" theory of target choice, where I discuss how medium-sized economies are often "just right" for sanctions busters when compared to smaller and larger economies. Section 4 discusses the data and methodology used to test the theory and hypotheses developed here while Section 5 provides a discussion of the results.

## 2.1. Target states and sanctions effectiveness – an unexplored puzzle?

The study of economic sanctions and sanctions busting has paid scant attention to the target state. The literature on economic sanctions sees the target state as an actor in the international system whose behavior must be corrected through the imposition of targeted or broad economic sanctions with a focus on whether the target moves closer to a sender's demand. This development in the literature has led to what Peksen (2019) calls a sender-bias interpretation in the literature that ignores how the target responds, particularly in ways that are not in line with "senders' demands" (2019, 641). This "sender bias" makes it difficult to assess the effectiveness of economic sanctions, especially in cases where the target state may respond in other ways. Given the importance of economic sanctions as a policy tool (Peksen 2019), understanding the role and impact of the target state pushes scholars to explore the other side of the coin. The debate that has raged on in the literature on whether sanctions work and the fact

that they are a powerful, versatile, and useful policy tool (Early and Preble 2021) – or not (Pape 1997, 1998; Elliott 1997, 1998) – has also dominated the literature. Scholars have attempted to shift the focus in the literature away from discussions of "*whether* sanctions work" to understanding "*when* or *under what conditions* sanctions work" (Ang and Peksen 2007; C.-P. Li 1993). While this has improved the understanding of the target's role in the sanctions effectiveness debate, the target remains secondary. The study of sanctions busting has paid slightly more attention to the role of the target state, but the literature devotes far greater attention to the impact of third parties on the sender's economic sanction and has yet to explore third-party state's preferences and the impact of sanctions busting trade beyond the sender.

Early's work on sanctions busting (2015) has demonstrated that wealthier target states are less likely to rely on or need sanctions busting and has shown how the probability of sanctions busting declines as the target's economic size increases, which intuits the target states with the smallest economies are more likely to be the recipients of trade-based sanctions busting. This finding is reflected in the statistical analyses conducted across various studies of sanctions busting (Early 2009, 2015; Early and Spice 2015): wealthier target states can likely hold their own against economic sanctions given their economic size and diverse portfolio of trading partners. However, the distribution of sanctions busting (Figure 1) shows a marked concentration of sanctions busting around target states whose economic size at the center of the distribution of economic size. The negative impact on the probability of sanctions busting as target states become wealthier appears less plausible. Do senders have a predilection for imposing sanctions on target states whose economies are average in size relative to the smallest and largest economies or do target states with medium- or average-sized economies offer greater opportunities for commercially profitable sanctions busting trade?

Sanctions Busting Events Across Target's Economic Size

| | Smallest | | Medium | | Largest |
|---|---|---|---|---|---|
| *ln GDP* | 11.45-13.84 | 13.85-16.26 | 16.27-18.66 | 18.67-21.07 | 21.08-23.43 |
| *GDP* | $93.1m-1.02b | $1.03b-11.5b | $11.6b-127b | $128b-1.41t | $1.42t-14.9t |
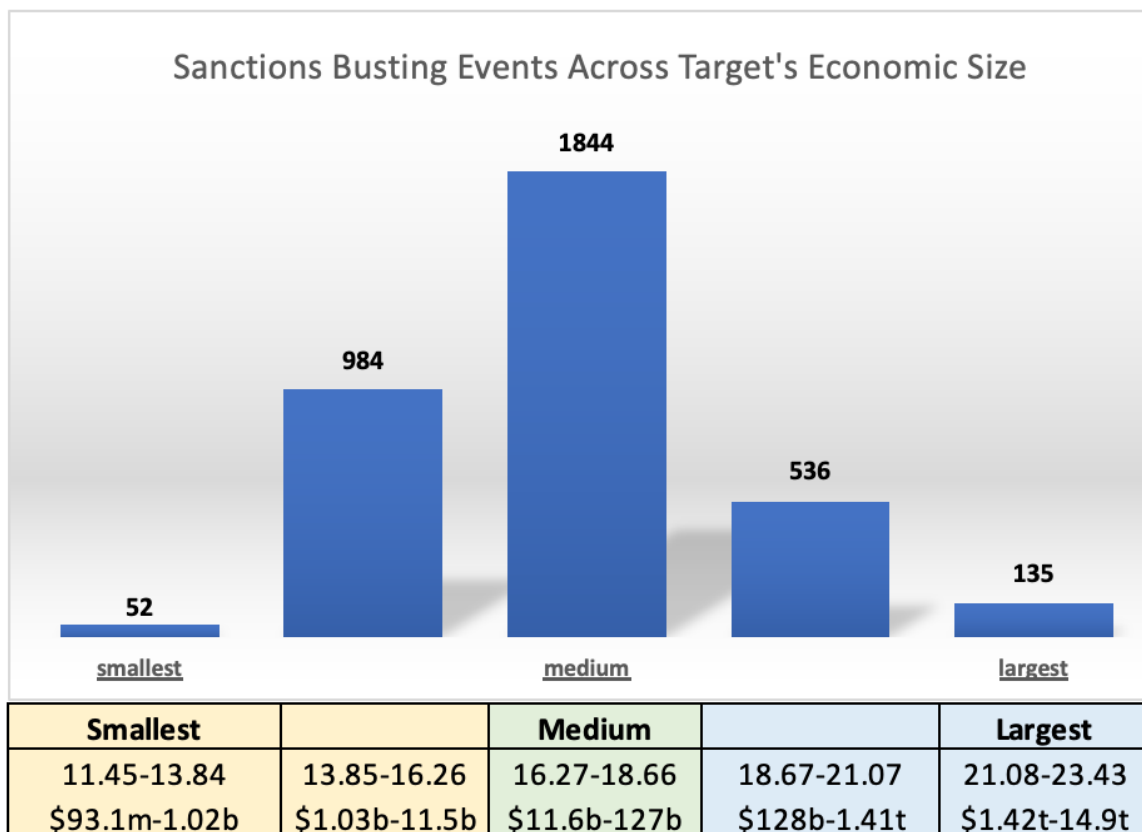
*Figure 1. Economic categories across range of GDP using mean (16.26) and standard deviation (2.41).* I broadly define five categories of economic size – smallest to largest – based on the logged values of GDP of all states – sanctioned or otherwise – in the international system from 1963-2011.[3] The range of logged GDP values in the data for target states from 1963-2011 ranges from a low of 9.11 ($9 million USD) to a high of 23.43 ($14.9 trillion) (Gleditsch 2014). To generate the categories, I first calculate the mean and standard deviation of the ln GDP for the entire set of countries, which is 16.26 and 2.41, respectively. I then use the standard deviation to create five categories ranging from target states with the smallest economies to those with the largest economies.

In answering this question, scholars are faced with shortcomings through state-centric approaches. As Morgan and Bapat (2003) argue, economic sanctions are imposed on states but states themselves do not engage in trade. Instead, they facilitate trade. Trade and the activities surrounding the movement of goods is conducted by firms in both the sender and target state, who often pay the price for political errors committed by their respective governments. When

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[3] There is a sixth category below 93.1 million, but these countries are not sanctioned and are not a part of the data set. These smallest countries in terms of economic size *are used* in calculating the mean and standard deviation.

economic sanctions are imposed, the pain generated by economic sanctions creates costs that are borne not by states but by firms and consumers in the target state. The state may be insulated or be able to insulate itself from the impact and effects of economic sanctions. This logic implies that there exists significant variation in how sanctions impact target states and how target states along with their firms and consumers find ways to overcome the damage caused by economic sanctions. Just as some states are more likely to be the target of economic sanctions, others are also more likely to be the recipient of sanctions busting trade to offset the economic damage caused by economic sanctions. The variation encountered in when and how states are sanctioned should also be present in the form of sanctions busting assistance. Firms and consumers in target states ultimately benefit from sanctions busting trade with firms in third-party states, but these benefits, too, should vary across time, sanctions regimes, and targets.

The literature on the effectiveness of sanctions has focused on whether sanctions achieve their outcomes with scant attention paid to the support that target states receive. The case of Libya is an excellent example often touted as a sanctions success while also serving to underscore the complex motivations that led to Libya renouncing its WMD program (namely chemical weapons) and rejoining the international community (Nephew 2018). However, the analysis downplays the economic support sanctions busters provided in helping Libya – whether purposefully or accidentally – mitigate the painful costs associated with economic sanctions. Given Libya's isolation and the international community's disdain for Gadhafi's regime, the main European partners – France, Italy, Spain, Germany, and the UK along with Turkey – provided considerable support via sanctions busting trade. The Libya case highlights how there is considerable variation in sanctions busting support and the impact of that support in supporting Libya's regime. As the case of Libya demonstrates, the number of states providing sanctions

busting trade does not always correlate with significant levels of trade. While sanctions busting is problematic and undermines the effectiveness of economic sanctions, a stronger understanding of how sanctions busting undermines economic sanctions is important. As many countries (the United States, in particular) struggle with providing adequate resources to enforce economic sanctions (Early and Preble 2020b), understanding the impact of sanctions busting trade can provide benefits to when and how economic sanctions can be enforced.

## 2.2. A "Goldilocks" Theory of the Sanctions Busting Choice

Target states show variation in their economic size, and economic sanctions are imposed on a multitude of target states ranging from the target state with smaller economies such as Equatorial Guinea to target states with the largest of economies like China (Figure 2). In any given year, potential commercial opportunities to exploit exist across all the target states' economic sizes. Third-party states have a choice in where they direct their trade in any given year. I argue that third-party states have preferences when it comes to the target states they choose when exploiting commercial opportunities. Like Goldilocks searching for the most comfortable bed, chair, or the 'not-too-hot' bowl of porridge, sanctions busting third-party states seek out those target states that are "just right."

**Number of sanctions regimes in force against targets, by economic size**
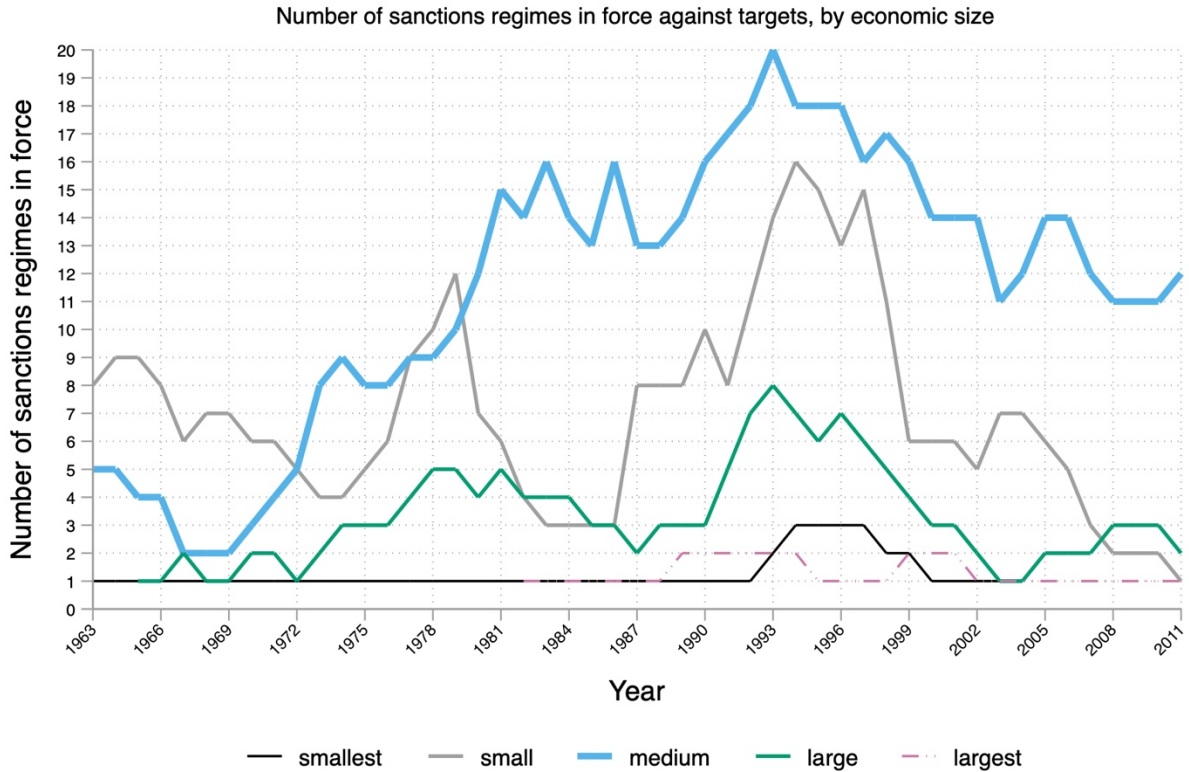


Figure 2. The number of sanctions cases across time by economic size. In any given year, there are several economic sanctions in force across targets of varying economic size.

I develop a "Goldilocks" theory of target choice, which argues that medium-sized economies are "just right" relative to target states with smaller or larger economies. Smaller economies may offer few commercially profitable or viable opportunities for several reasons. First, sanctioned smaller economies with GDPs less than $3 billion may offer few lucrative commercial opportunities. For many states targeted by sanctions whose current GDP is less than $8.93 billion, foreign direct investment typically remains low. FDI in Burundi, for example, remained at zero during the period when it was the target of sanctions (1996-1999) while otherwise remaining low and rarely exceeding $1 million (and in some cases has negative values) (World Bank 2019). Second, several target states with smaller economies are landlocked and have no seaports, which may make the logistics and planning for trade more cumbersome and costly (Arvis, Raballand, and Marteau 2010) and offer few incentives for sanctions busting trade

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despite potential for high returns. When sanctions busting *does occur*, these smaller economies rely more heavily on their neighbors for sanctions busting trade. El Salvador, which was sanctioned between 1977-1993, engaged in sanctions busting trade with six states, yet contiguous neighbor Guatemala provided 41% of the sanctions busting trade that occurred. I hypothesize (**H₁**) that target states with smaller economies — GDPs less than $11.5 billion — should lead to lower probabilities of sanctions busting for third-party states relative to target states with medium-sized economies.

Target states with larger economies, on the other hand, have significantly more to offer given their larger economies, yet their larger economic size may also make sanctions busting opportunities less profitable and more difficult to realize. I argue that there are several reasons that economically larger target states are less attractive. First, larger states typically have diverse trading portfolios. The sheer number of trading partners means that economically larger target states are likely to be less reliant on a single country or market for trade, which may lower the demand for sanctions busting trade. The plethora of trading partners also means that target states of the larger and largest economic size may make them more immune to profiteering through imbalanced terms of trade with third-party states. Second, target states with larger economies may have larger domestic markets where lost trade can be diverted, which may also result in a crowding out of potential sanctions busters who must now compete with domestic firms. Such competition may make sanctions busting trade less profitable and more costly to realize. Lastly, target states with larger economies may be too prized for firms in sender states to abandon and thus sanctions busting commercial opportunities fail to materialize as the network effects expected by the economic sanctions never materialize. Thus, I hypothesize (**H₂**) that target states with large economic sizes, those target states with economies larger than $128 billion USD,

should lead to lower probabilities of sanctions busting for third-party states relative to target states with medium-sized economies.

Like Goldilocks, firms and constituents in sanctions busting third-party states are faced with a conundrum in finding the commercial opportunities that are "just right." Target states with smaller economies lack profitable commercial opportunities due to a lack of infrastructure and logistics or geographic remoteness. Target states with larger economies have an abundance of trade linkages, domestic firms may crowd out sanctions busters, or sender states' firms may never leave. Where do sanctions busting states turn?

I argue that target states with medium-sized economies are "just right" for sanctions busting firms in third-party states. What explains these "just right" conditions? Target states with medium-sized economies are sanctioned more frequently (Figure 2) than targets with smaller- or larger-sized economies and firms in target states with medium-sized economies compete against each other for relief from economic sanctions from the same major trading partners. Firms in target states with medium-sized economies may be in a better position to offer favorable terms of trade to firms in third-party states or be willing to be held hostage to unfavorable terms of trade due to the competition and need for respite from the economic costs of sanctions busting. The failure to offer or accept asymmetric terms of trade heavily favoring firms in third-party states may push needed trade to other targets. Therefore, I hypothesize (**H₃**) that target states with medium-sized economies are "just right" for sanctions busting trade. These target states whose economies lie within this "sweet spot" [4] of $11.6 billion-$127 billion should, all else being equal, lead to higher probabilities of sanctions busting trade for third-party states relative to target states with small and large economies.

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[4] See William Safire's (2007) discussion of the term "sweet spot":
https://www.nytimes.com/2007/04/01/magazine/01wwln-safire.t.html

## 2.3. Data and Methods

I create two data sets that rely on UN Comtrade from Harvard University's Growth Lab. These data are cleaned using the Bustos-Yildrim Method from 1963-2010. This method corrects import values to make trade flows between importers and exporters more comparable, generates an index of reliability based on how consistent the trade totals are reported over time, and, lastly, generates an estimate of trade values being reported. The data are available in two different classification systems – the Harmonized System (HS) and the Standard International Trade Classification (SITC), revision 2 (Growth Lab at Harvard University 2021). I utilize the SITC trade classification system given its longer time horizon.

The first data set considers aggregate data flows whereas the second data set breaks down the data to the industry level. I disaggregate the data as a robustness check to show that the sanctions busting increased and then decreasing is reflected at all levels of the data. I define an industry "…as a group of trade goods that, while not identical…, can generally be considered substitutes by consumers (a group in which we include firms as well as individuals)" (Thies and Peterson 2016, 25) and rely on the same 4-digit SITC classification. Because of the volume of data in each sector,[5] I only disaggregate data across three sectors: agricultural, mineral fuels (oil, gas, coal, etc.), and machinery and transport equipment. I choose these product classes for three reasons. First, agricultural goods are traded by every region in the world and play an integral part in the world economy. While countries can subsist without machinery and transport equipment or even forgo oil for other forms of energy production, agricultural goods are one commodity that states must produce themselves or get from others. The protected nature of agricultural trade

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[5] SITC trade data at the 4-digit level involves extremely large data sets that are cumbersome to manipulate, making a complete study across all nine disaggregated sectors difficult. Future iterations of the project will seek to incorporate all 10 sectors beyond those studied here.

historically along with the subsidies provided by governments around the world to their

agricultural sectors (Paiva 2008) makes it an important sector to explore in this paper. Second,

oil and gas trade feature prominently in the foreign policies of many states (Cole 2016;

Thorarinsson 2018; Newnham 2011; Yetiv 2010), and these sectors are frequently the target of

economic sanctions, particularly US economic sanctions (Brown 2020). The dependence that

many states have on oil imports (and exports) may become even more critical in the presence of

economic sanctions. Third, the flow of machinery and transport equipment shows that exports,

which originate in more developed economies, flows to both developed and developing

countries.

Given that many firms engaged in manufacturing are highly integrated within the global

economy and rely on the global economy for raw materials as well as markets for their goods

(Golikova and Kuznetsov 2017), economic sanctions will generate high opportunity costs for

firms engaged in producing goods under this commodity classification. If the intra-industry

nature of the trade is present, states may also be pressured to preserve these types of flows for

consumers (firms and individuals) to satisfy demand. Also, firms manufacturing goods in this

product class face significant adjustment costs as retooling factories and reconfiguring

workforces may be impractical or not cost-effective. Illustrating this, economic sanctions have

been shown to impact employment in the manufacturing sector (Allen 2008; Gibbons 1999).

*2.3.1. Sanctions Cases*

I utilize the sanctions event data created by Hufbauer et al. (2009, 2012), using data from

*Economic Sanctions Reconsidered* (3rd edition), as well as post-2000 cases published on the PIIE

website, which consists of 144 unique sanctions cases between 1963-2011. Hufbauer et al.'s data

is utilized in order to compare these findings with those of previous works (Early 2009, 2011,

2015; Early and Spice 2015). Economic sanctions profiled in the data consist of unilateral

sanctions imposed by a single state as well as multilateral sanctions. The duration of each

sanctions event is captured with sanctions events, on average, lasting 10.25 years while ranging

from a low of 1 year (Canada) to a high of 62 years (North Korea). I code senders of economic

sanctions and exclude them from the analysis so that the dyads in the data contain one sanctions

busting state and one target state across 144 sanctions cases.

*2.3.2. Dependent Variable*

I account for sanctions busting by creating two measures, a dichotomous variable (Early

2015; Early and Spice 2015) and a continuous one adapted from the dichotomous measure. I

code the dichotomous sanctions busting dependent variable using UN Comtrade data from 1963-

2010 (United Nations, n.d.), which contains dyadic trade flows between states at the four-digit

product level. Because the 4-digit product level contains 269 unique product codes across the

three trade codes utilized for this analysis (agricultural goods, mineral fuels, and machinery and

transport equipment), the data set at the 4-digit level contains over 48 million observations,

making data analysis cumbersome.

The data set provided by UN Comtrade disaggregates trade flows along nine Standard

International Trade Classifications (SITC, revision 2), although only three are utilized for this

study: agricultural goods (SITC 0), mineral fuels (SITC 3), and machinery and transport

equipment (SITC 7). These broad single-digit codes are then broken down further into two-digit

subcategories of goods and then to the industry level at the four-digit level. I code sanctions

busting across both aggregate trade and 4-digit commodity code representing industries (Thies

and Peterson 2016) by adapting the methodology developed by Early (Early 2015, 2009, 2011;

Early and Spice 2015). For sanctions busting to have occurred (coded "1"), total imports *or*

exports either in the aggregate or within each industry exchanged within the dyad must be 5% or more from the year in which sanctions were imposed as well as account for at least 5% of the target's total trade in the aggregate or within each industry, depending on the data set's level of aggregation.

The impact of sanctions busting trade can be captured by using trade flows that push beyond status quo trading relationships. The key to impactful sanctions busting is through significant increases in trade to the target on the part of a target state's major trading partners (Early 2015, 24). Thus, I seek to capture these significant increases in order to gauge the impact of sanctions busting trade. For the continuous measure of sanctions busting for both aggregated and disaggregated trading, I first code all trade with the target that accounted for 5% or more of the target's total trade. For those states where the trade with the target falls below 5%, the amount of sanctions busting trade is coded as $0.00. I next calculate the baseline level of trade at the time that sanctions were imposed on the target state and then subtract this baseline value from the exports and imports traded with the target. I then calculate the percent change of each year above or below the baseline and then code those instances where the total trade is at least 5% or more above this baseline for both imports and exports. Instances where neither the imports nor exports did not increase at least 5% over the baseline level trade are also coded $0.00. For all remaining observations of sanctions busting trade where the level of trade is *both* greater than 5% of the target's total trade *and* the imports *or* exports are at least 5% above the baseline, I then add the total imports and exports above the baseline for the remaining sanctions busting observations.

Sanctions busting trade ranges from a low of $149,498 to a high of $305 billion. I then rescale this variable to millions of dollars. I then divide the total sanctions busting trade in

millions by the target's GDP to develop a measure of sanctions busting effectiveness and multiply by 100 to generate a percentage, which ranges from 0 to 0.39. This value is used in the last section of the paper to show how the effectiveness of sanctions busting trade varies across targets.

For aggregate trade flows, sanctions busting occurs 3,551 times out of 82,915 observations, accounting for 4.2% of the total observations in the data. The breakdown of disaggregated sanctions busting can be found in Appendix 1. One-hundred eighty-five states in the international system have industries that engaged in sanctions busting trade, from just one instance of sanctions busting for Saint Kitts and Nevis in 2000 to more than 91,000 instances of sanctions busting for Germany (including West Germany). These instances of sanctions busting are pooled from the 269 industries in the agricultural, mineral fuel, and machinery/transport equipment sectors operating from trading states in the international system. Table 1 shows the top-20 states engaging in sanctions busting.

The use of the disaggregated coding allows for the control of the type of trade relationship between the third-party and target state by looking at which goods are exchanged across industries (intra-industry trade) and those in which the direction of trade occurs only in one direction (inter-industry trade). In aggregated analyses of sanctions busting in previous studies (Early and Spice 2015; Early 2015), sanctions busting occurred in about 2.6% of the observations. Once the trade is disaggregated, the share of sanctions busting incidents increases. Of the 4,049,672 observations in the data set, the share of sanctions busting events ranges from a low of 11% for other motor vehicle parts to a high of 72% for electric current. Overall, sanctions busting occurs 781,459 times, comprising 19% of the observations. At the industry level,

sanctions busting is much more prevalent, especially if firms are eager to maintain market share

and dominance in overseas markets or seek vital imports for consumer markets at home.

Table 1. Top 20 Sanctions Busting States, aggregate trade flows

| Sanctions Buster | Instances of Sanctions Busting |
|---|---|
| Germany | 494 |
| Japan | 373 |
| France | 305 |
| Italy | 243 |
| United Kingdom | 217 |
| China | 194 |
| United States | 174 |
| Spain | 104 |
| Singapore | 96 |
| South Korea | 83 |
| India | 81 |
| Brazil | 74 |
| Netherlands | 73 |
| Turkey | 72 |
| Saudi Arabia | 70 |
| Canada | 67 |
| Russia | 65 |
| Belgium | 61 |
| Thailand | 57 |
| Iran | 35 |

Table 2. Top 20 Sanctions Busting States, disaggregated trade flows

| Third-party states | Instances of sanctions busting across industries (pooled) | Rank | Rank (Early 2015) |
|---|---|---|---|
| Germany | 91,217 | 1 | 1[6] |
| United Kingdom | 59,136 | 2 | 5 |
| Japan | 58,454 | 3 | 1 |
| Italy | 56,629 | 4 | 3 |
| France | 53,549 | 5 | 4 |
| Netherlands | 29,406 | 6 | 13 |
| China | 25,551 | 7 | 7 |
| United States | 21,504 | 8 | n/a[7] |
| Spain | 18,229 | 9 | -- |
| Belgium | 17,878 | 10 | -- |
| Singapore | 17,698 | 11 | 12 |
| Switzerland | 14,964 | 12 | -- |
| Sweden | 14,807 | 13 | -- |
| Canada | 13,541 | 14 | -- |
| Brazil | 13,302 | 15 | 8 |
| South Korea | 11,615 | 16 | 9 |
| Russia | 10,969 | 17 | 10 |
| Denmark | 10,717 | 18 | -- |
| Turkey | 10,100 | 19 | -- |
| Australia | 10,014 | 20 | -- |

Disaggregating trade to the industry-level shows some departures from the analysis presented by Early (2015), although it should be noted Early's analysis begins in 1950 and stops in 2002 whereas this study begins later (1963) and concludes in 2010.[8] For example, Saudi Arabia, Thailand, and India are no longer in the top 15 or top 20. India ranks 21, Thailand 24, and Saudi Arabia 25. At the industry level, these three countries may lack the industrial and production

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[6] In Early's (2015) analysis, Germany and West Germany's sanctions busting were not combined. I have combined the sanctions busting activity of both Germanies in Early's analysis to make it more comparable to the analysis presented here.
[7] Early (2015) did not look at instances of sanctions busting by the US toward non-US sanctions regimes.
[8] UN Comtrade data using SITC (rev. 2) begins in 1962; the Harmonized System (HS) begins in 1988.

base for sanctions busting to occur with greater frequency. The United States, when it is a third-party to sanctions it has not imposed, ranks 8. Several European countries also appear as active sanctions busting at the industry level, which corroborates findings that economic sanctions increased trade between Japan and the EU and target states (Yang et al. 2004). When trade is aggregated, these countries do not rank highly, which may indicate that more developed economies can cut trade in some sectors while upping their trade in others, a tactic that China has been accused of doing to disguise their sanctions busting trade with North Korea (Early 2015).

### 2.3.3. Independent variables[9]

To test whether the target's economic size influences sanctions busting, I utilize aggregated trade data and trade data disaggregated across three trade classifications – agricultural goods, mineral fuels, and machinery and transport equipment. I employ three variables that have been shown to increase the potential for sanctions busting trade: commercial dependence, commercial openness, and economic size (Early 2015). Economic size is reflected in both the third-party state's GDP and target state's GDP, both of which are log-transformed and lagged one year. For the target state's GDP, which is the key variable of interest, I create quadratic and cubic versions to test for statistical significance across two of the three models. I surmise that as the target's GDP becomes larger, it becomes a more attractive target for sanctions busting compared to economically smaller sanctioned states. However, as the target state's economic size gets larger, the likelihood of sanctions busting begins to decline. Because sanctions busting

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[9]Democracy variables from the Polity V Project have not been included due to missingness for key sanctioned states, which causes several key sanctions events (Lebanon, Yemen) to fall out of the data set. Several notable third-party states (such as Germany and several Eastern European countries) also cause a large number of observations to be removed due to listwise deletion, reducing the size and representativeness of the trade data. I have included these regressions in the online appendix.

is associated with wealthier states (see Table 1), I expect that sanctions busting's probability will

grow as the third-party state's economic size (ln GDP) increases and control for this.

Commercial dependence is calculated along the 269 industries in the SITC system

outlined in Appendix 1 or at the industry level using disaggregated trade flows. To calculate the

commercial dependence for each trade type, I divide the total imports and exports of each

industry as a share of the third-party state's total trade in that good (lagged one year) *across all*

*countries* using data from the UN Comtrade data set (United Nations, 2018). The commercial

dependence can be calculated for each yearly exchange of goods in each product code within the

dyad. Commercial dependence should capture the costs and difficulties third-party states face in

potentially being cut off from key markets and the supply of key products, taking on a value

between 0 and 1 (0 for no commercial dependence and 1 for complete dependence). The more

dependent a third-party state is on trade with the target, the less likely the third-party state may

cooperate with economic sanctions (Early 2015).

Commercial openness measures the importance of international trade to a third-party

state's economy and is calculated using the aggregate trade as a ratio to each state's GDP (in

millions of current USD), which is also lagged one year. Also known as trade openness, several

measures have been devised to calculate how open a country's economy is to world trade with

higher values indicating more openness (Squalli and Wilson 2011; Gartzke and Li 2003).

Imports and export data is taken from the UN Comtrade data while GDP in millions of current

USD is taken from Gleditsch (2014, 2002). I control for distance in the model using the

minimum distance between states (Weidmann, Kuse, and Gleditsch 2010; Gleditsch and Ward

2001) and apply the inverse hyperbolic sine to transform the values due to the presence of zeroes

(Bellemare and Wichman 2020). The duration of the sanctions events is controlled for and is

calculated using data from Hufbauer et al. (2009, 2012); longer sanctions events typically

increase the sender's difficulty in maintaining pressure on third-party states to avoid sanctions

busting.

I also utilize the Correlates of War (COW) alliance membership data (4.1) to code

whether a defense pact exists between the third-party and target state (Gibler 2009). Alliances

have been shown to increase the likelihood of sanctions busting (Early 2012). Lastly, I also

include a *Years of No Busting* variable to control for each year a third-party state does not engage

in sanctions busting during any given sanctions event, and a *Years of No Busting* and its

respective polynomials has been constructed for each of the three commodity types. The longer a

state goes without engaging in sanctions busting, the less likely it should do so. From this

variable, I also construct a cubed and squared version, which accounts for any potential temporal

dependence in the model (Carter and Signorino 2010).

## 2.4. Results

The results of the three logistic regressions are presented below. Model 1 contains no

polynomials whereas Model 2 and Model 3 both contain quadratic and cubic polynomials for the

target state's economic size, respectively. Each regression uses the same sample of data

consisting of 81,133 observations between 1963-2011. Previous studies on sanctions busting

(Early 2009, 2011, 2015) have noted that as the target state becomes wealthier that the likelihood

of sanctions busting declines. As Figure 2 revealed, the upside-U shape indicates that the

relationship between the target state's economic size and the instances of sanctions busting is not

reflective of a linear relationship. In looking at the bar graph in Figure 2, it would be difficult to

draw a line of best fit that would take into account the non-linear nature of the relationship

between the target's economic size and the incidents of sanctions busting.

Table 3. Logistic Regression Results using Aggregate Trade Data

| | (1) No polynomial | (2) Quadratic | (3) Cubic |
|---|---|---|---|
| Commercial Dependence | 0.0589[*] (0.009) | 0.0637* (0.009) | 0.0620* (0.009) |
| Commercial Openness | 1.729* (0.374) | 1.786* (0.407) | 1.703* (0.373) |
| Economic Size, 3rd Party | 0.797* (0.037) | 0.595* (0.038) | 8.644 * (0.038) |
| Economic Size, Target | -0.149[*] (0.0475) | 0.461 (0.510) | 7.642[*] (4.091) |
| Economic Size, Target$^2$ | | -0.0173 (0.0134) | -0.437[*] (0.207) |
| Economic Size, Target$^3$ | | | 0.00809[*] (0.00400) |
| Minimum Distance | -0.255[*] (0.0210) | -0.255[*] (0.0209) | -0.255* (0.0211) |
| Sanctions Duration | 0.0831[*] (0.0251) | 0.0818[*] (0.0251) | 0.0822[*] (0.0251) |
| Defense Pact between 3P and Target | 0.477* (0.220) | 0.485[*] (0.221) | 0.486[*] (0.223) |
| Years of No Busting | -1.169[*] (0.0680) | -1.172[*] (0.0672) | -1.170[*] (0.0697) |
| Years of No Busting$^2$ | 8.133[*] (0.934) | 8.180[*] (0.899) | 8.127[*] (0.984) |
| Years of No Busting$^3$ | -0.184[*] (0.0381) | -0.185[*] (0.0364) | -0.184[*] (0.0403) |
| Intercept | -12.75[*] (1.227) | -19.20[*] (4.543) | -64.75[*] (23.08) |
| N | 82915 | 82915 | 82915 |

| pseudo $R^2$ | 0.46 | 0.46 | 0.46 |
|---|---|---|---|
| Log-likelihood | -7923.4 | -7923.4 | -7897.7 |
| AIC | 15868.7 | 15849.6 | 15821 |
| BIC | 15971.4 | 15961.5 | 15942.5 |

Clustered standard errors by sanctions case in parentheses; [*] $p < 0.05$

The results of the regression largely align with previous studies on sanctions busting, which reported a negative coefficient for the target state's economic size (Early 2009, 2011, 2015). Economically larger target states should rely less on sanctions busting trade. The negative effect, however, also posits that poorer countries are more dependent on sanctions busting trade, although Figure 2 would call this logic into question as these states are much less attractive to third-party states. To account for this relationship in the data, I add squared and cubed terms for the target's economic size; the effects of the target state's economic size no longer display a negative relationship in the log odds. As Figure 4 reveals, the probability of sanctions busting is conditional on the size of the target's economy. As the target state's economy grows, the likelihood of sanctions busting rises, peaks, and then begins to decline as the target's economic size increases. As the size of the target state approaches $6 billion, the target is more likely to be a candidate for sanctions busting. In fact, target states between $6 billion and $102 billion have the highest probabilities of sanctions busting.

As the target's economic size increases and surpasses $102 billion, the likelihood of sanctions busting occurring declines, and the target becomes a less attractive candidate for sanctions busting trade, reflective of the fact that target states with larger economic sizes may offer fewer sanctions busting commercial opportunities for third-party states. At the larger extreme values (between $6-11 trillion), the likelihood of sanctions busting is the lowest when compared to medium-sized economies and roughly on par with smaller-sized economies.
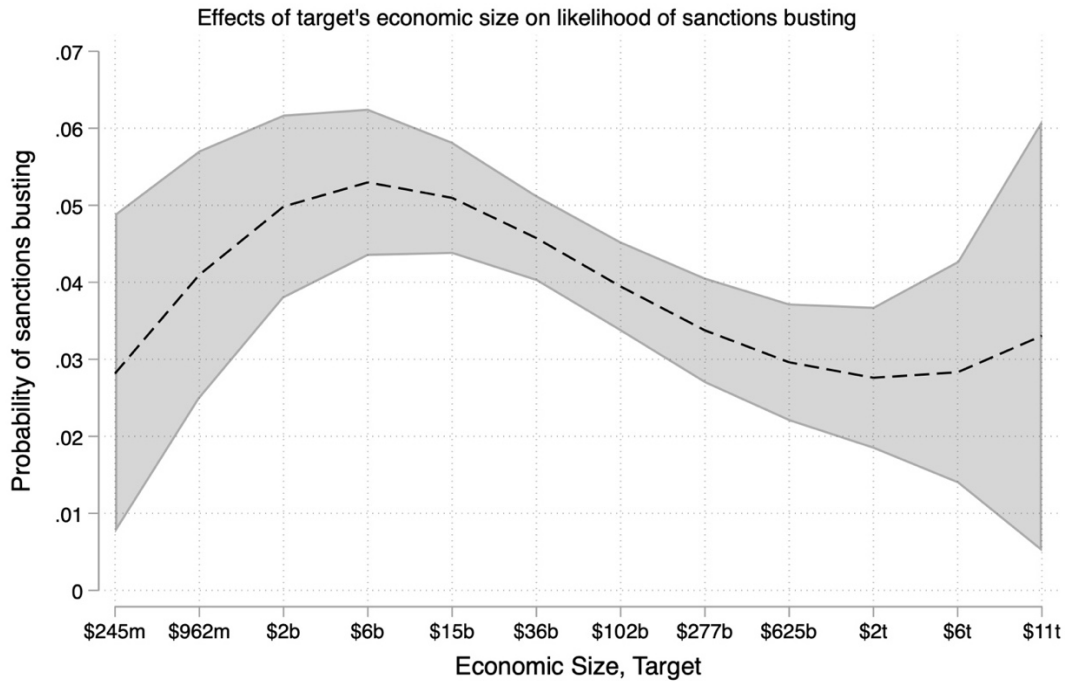
Figure 4. Predicted probability of sanctions busting as a function of the target's economic size as ln GDP with 95% confidence intervals using an observed values approach. The *x*-axis has been transformed to dollar amounts.

Table 4 shows the regression results when trade is disaggregated across three broad sectors. What is now evident is that there is variation in the likelihood of sanctions busting as the type of industries and goods changes. For agricultural goods, medium-sized economies are more likely to be the target of sanctions busting, which is consistent with the results discussed in the aggregate trade section. Figure 5a shows a sharp peak as the target state's economic size falls within the range of the "sweet spot" between ln GDP of 16 to 17 or between \$11.6-24b USD. While the greatest probability of sanctions busting is highest when the target's economic size is smaller for trade in mineral fuels and machinery and transport equipment, this may be misleading given that the incidents of sanctions busting below \$6 billion are less than 5% of the total observations of sanctions busting in the data. Machinery and transport equipment display the same distribution with less than 5% of the total observations of sanctions busting below \$6

billion. While the lines do not show the same upside-down "U" shape seen in Figure 5a, there is a similar sharp decline in the likelihood of sanctions busting as the target state's economic size increases. While predicted probability for both mineral fuels and machinery/transport equipment lack the upside-down "U" shaped curve, the likelihood of engaging in trade-based sanctions busting around the "sweet spot" is roughly identical for all three types of trade with a predicted probability of roughly 30 percent.

**Table 4. Logistic Regression Results of Sanctions Busting Across Sectors**

| | Agricultural Goods | Mineral Fuels | Machinery/Transport Equipment |
|---|---|---|---|
| Commercial Dependence$_{\text{3rd Party}}$ | 2.28 *** (0.10) | 2.11 *** (0.10) | 2.19 *** (0.18) |
| Commercial Openness$_{\text{3rd Party}}$ | 0.27 *** (0.06) | 0.18 * (0.09) | 0.26 * (0.12) |
| Economic Size$_{\text{3rd Party}}$ | 0.35 *** (0.03) | 0.36 *** (0.03) | 0.52 *** (0.03) |
| Economic Size$_{\text{Target}}$ | 4.04 * (1.62) | -0.14 *** (0.03) | -0.13 *** (0.03) |
| Economic Size$^2_{\text{Target}}$ | -0.22 * (0.09) | | |
| Economic Size$^3_{\text{Target}}$ | 0.003 * (0.002) | | |
| Defense Pact between 3rd Party and Target | 0.30 ** (0.11) | 0.27 * (0.12) | 0.34 * (0.16) |
| Duration (years) | 0.05 *** (0.01) | 0.05 *** (0.01) | 0.04 ** (0.01) |
| Minimum Distance | -0.12 *** (0.01) | -0.12 *** (0.01) | -0.11 *** (0.02) |
| Years of No Busting | -0.64 *** (0.06) | -0.67 *** (0.08) | -0.66 *** (0.05) |
| Years of No Busting$^2$ | 4.27 *** (0.77) | 4.44 *** (0.97) | 5.29 *** (0.64) |
| Years of No Busting$^3$ | -0.10 *** (0.03) | -0.11 ** (0.03) | -0.15 *** (0.03) |
| Constant | -30.41 ** (9.74) | -5.10 *** (0.73) | -8.39 *** (0.88) |

| | | | |
|---|---|---|---|
| AIC | 672,115.53 | 81,210.42 | 1,709,299.56 |
| BIC | 672,269.10 | 81,316.94 | 1,709,441.37 |
| Log Likelihood | -336,044.76 | -40,594.21 | -854,638.78 |
| Deviance | 672,089.53 | 81,188.42 | 1,709,277.56 |
| Observations | 997,875 | 118,612 | 2,933,185 |

Clustered standard errors by sanctions case in parentheses; [*] $p < 0.05$

Disaggregation of the data may help to expand theories of sanctions busting by showing that the motivation for engaging in this activity varies across the types of industries and the goods being exchanged. While the data presented here only represent three sectors, similar variation across industries may also be apparent in other types of goods being traded and requires further examination. The extremely large data sets for trade disaggregated to the industry and firm level are challenging and often result in data sets with observations of several hundred million. In the three sectors profiled here (agriculture, mineral fuels, and machinery and transport equipment), industries operating in these sectors share the same likelihood of sanctions busting relative to their economic size, especially for target states with medium-sized economies. What is clear from all the figures, however, is that the commercial advantages of medium-sized economies are a particular draw to sanctions busting states in all three sectors.

Third-party states appear more likely to engage in sanctions busting of agricultural goods with medium-sized economies followed by mineral fuels and lastly machinery and transport equipment. Because sanctions busting is less likely to occur when the target state's economy is very large, commercially favorable terms for third-party states engaged in the export of trade for machinery and transport equipment are more likely to be present when trading with medium-sized economies, which are more likely to be able to support the increased trading costs. Target states with larger economies may be unwilling to pay higher prices; given their large trade profiles and increased supply base from which to choose, these states will simply seek out other

firms for their needs. The same dynamic may also apply to economically larger third-party

importers who may simply find alternative sources and substitutions from other trading partners.



Predicted Probabilities of Target State's Economic Size

95% confidence intervals; a=agricultural goods, b=mineral fuels, c=machinery/transport equip.
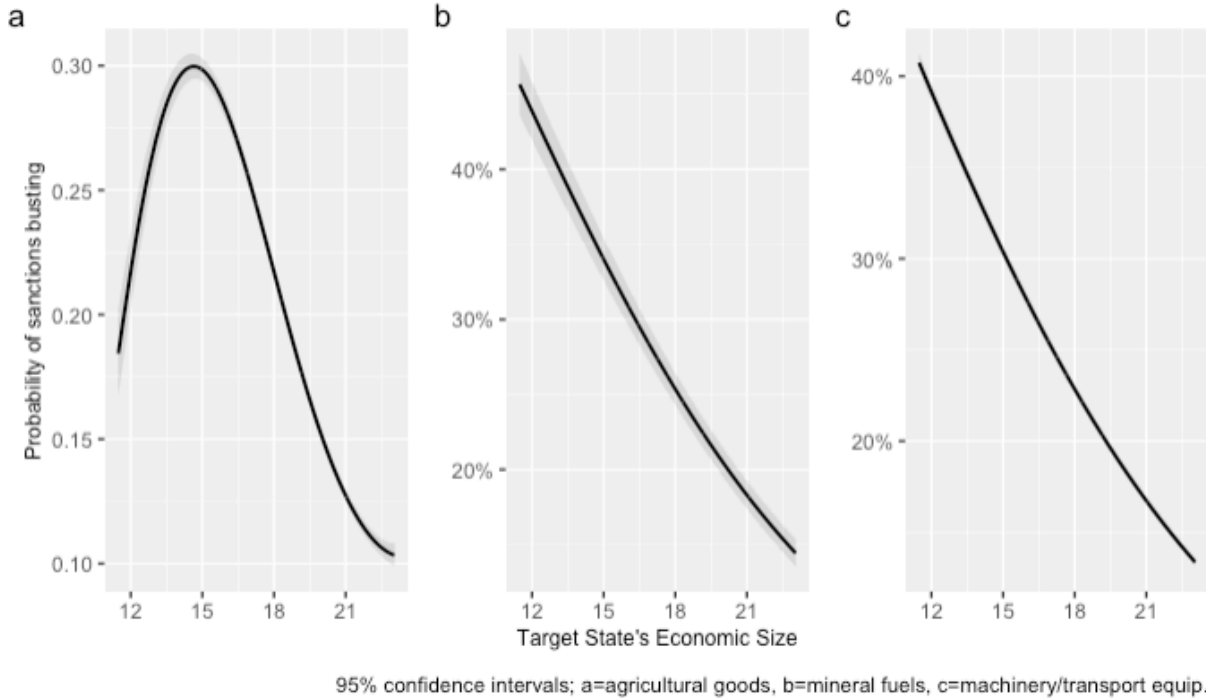
Figure 5a-5c. Predicted probability of sanctions busting across agricultural goods (a), mineral fuels (b), and machinery and transport equipment (c) as a function of the target's economic size (ln GDP) with 95% confidence intervals. The *x*-axis represents the ln GDP.

## 2.5. The impact of sanctions busting trade

In the regression analysis above, I showed how the probability of sanctions busting is

conditional on the economic the size of the target state with target states with medium-sized

economies being more likely to receive sanctions busting assistance. Turning now to the

continuous measure of sanctions busting trade, smaller and larger economies appear to attract

few sanctions busters. The purpose of this section is show that, along with variation in third-

party preferences for target states, there is also variation in the impact of sanctions busting trade.

Because medium-sized targets are more frequently sanctioned than other sized target states, there is also considerable variation in the impacts of sanctions busting trade across target states, too. While Early (2011) has shown that a greater number of sanctions busters increased the failure of economic sanctions, I demonstrate that the quantity of sanctions busters may over- or underestimate the effects of sanctions busting trade. I devise a measure that represents the share of sanctions busting trade relative to the target's overall economic size using current GDP. If sanctions busting trade is impactful, it should represent a larger share of the target state's overall economic size in any given year. When sanctions busting trade is less impactful, it represents a lower share of the target state's overall economic size in any given year.

This measurement makes comparison across sanctions cases more comparable given that $10 million USD in sanctions busting trade would have different impacts across different targets. In other words, $10 million USD in sanctions busting trade would be modestly impactful in Equitorial Guinea but almost neglible for the United States. Across the 144 sanctions cases in the data, the average impact of sanctions busting trade is roughly 0.005% of the target's GDP. What comes from the analysis below is that target states whose GDPs fall in the "sweet spot" between $11.6 billion to $127 billion benefit more from sanctions busting trade than smaller and larger economically sized targets.

Hufbauer et al. (2009), for example, attempt to capture the "economic pain" the sanctions have inflicted on the target. The analysis presented below compares the impacts of sanctions busting trade across states with small, medium, and large economic sizes. As this analysis demonstrates, small and large economies benefit little (with one exception) from sanctions busting trade. Smaller economies lack commercial opportunities for the most part (with Liberia being a notable exception despite the trouble with its seaport and infrastructure). Larger

economies typically have more diverse trade profiles and can weather the loss of the sender state's trade. The larger economy may also crowd out international trade from the commercial opportunities that are generated, making larger economies less attractive for all but a handful of the wealthiest and largest sanctions busting states.

Figure 6, for example, shows the effectiveness of sanctions busting trade on Suriname with the United States, Brazil, and Norway engaged in sanctions busting trade the most often. As the figure indicates, the amount of sanctions trade relative to that state's economic size is rather small. While the number of sanctions busters engaging with the target state increases over time, the effect of sanctions busting trade remains fairly flat. This finding may be indicative of the lack of commercial opportunities available to firms in either Suriname or its sanctions busters. Figure 7, which shows the impact of sanctions busting trade on Equatorial Guinea, shows similar dynamics to Suriname: few sanctions busters and little impact on undermining the economic sanctions.

This is not to say that smaller economies do not benefit from sanctions busting trade. Figure 8 shows the effects of sanctions busting trade during the period of economic sanctions imposed on Liberia between 1992 and 2006. In the case of Liberia, sanctions busting trade has a significant impact on mitigating the impact of economic sanctions, driven largely through trade with Belgium, South Korea, Singapore, France, Belgium, and Italy. What draws these sanctions busters to Liberia versus the other two smaller economies of Equatorial Guinea and Suriname? Liberia's diamond trade, while also serving as a transit point for other diamonds in the region, may be attractive to firms engaging in sanctions busting trade. In 1995, according to Harvard's *Atlas of Economic Complexity*, which provides a means of visualizing cleaned UN Comtrade data (the same data used in this analysis), diamonds (non-industrial, not mounted or set) were

Liberia's largest export to the tune of $324 million followed by $106 million in ships, boats, and

other vessels (which were also its largest import).
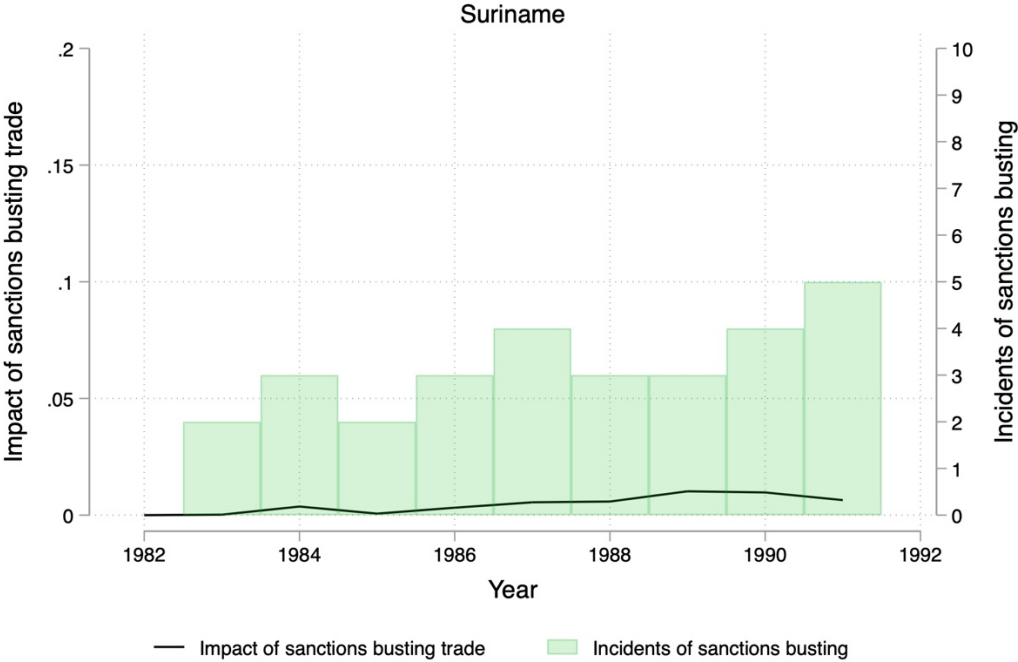


Figure 6. Impact of sanctions busting trade on economic sanctions imposed on Suriname, 1982-
1992.
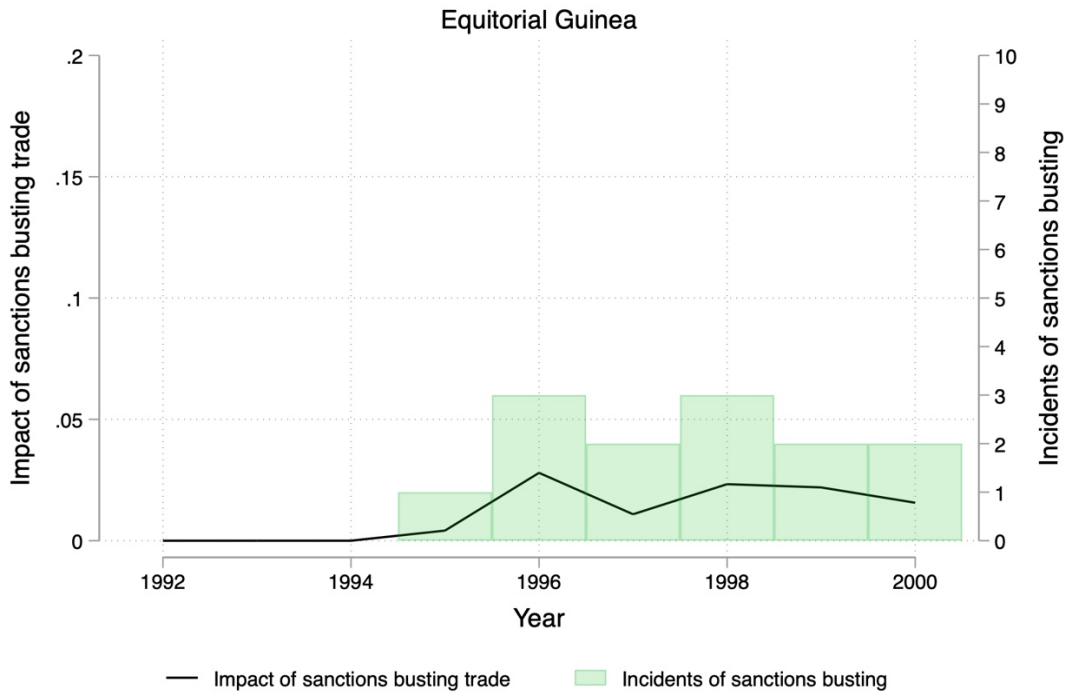
Figure 7. Impact of sanctions busting trade on economic sanctions imposed on Equatorial Guinea, 1992-2000.
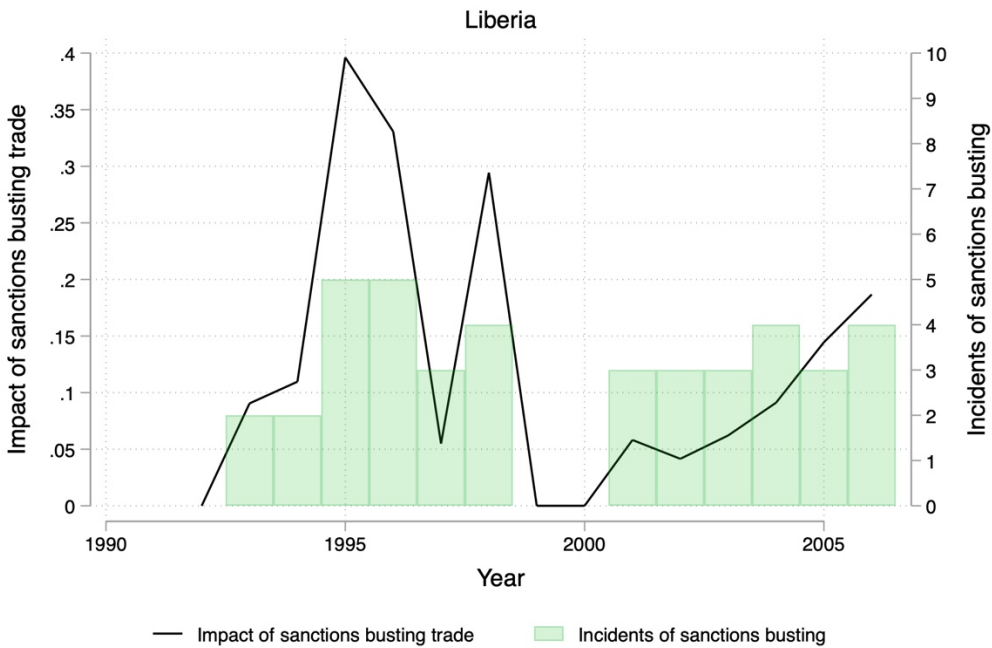


Figure 8. Impact of sanctions busting trade on economic sanctions imposed on Liberia, 1982-1992.
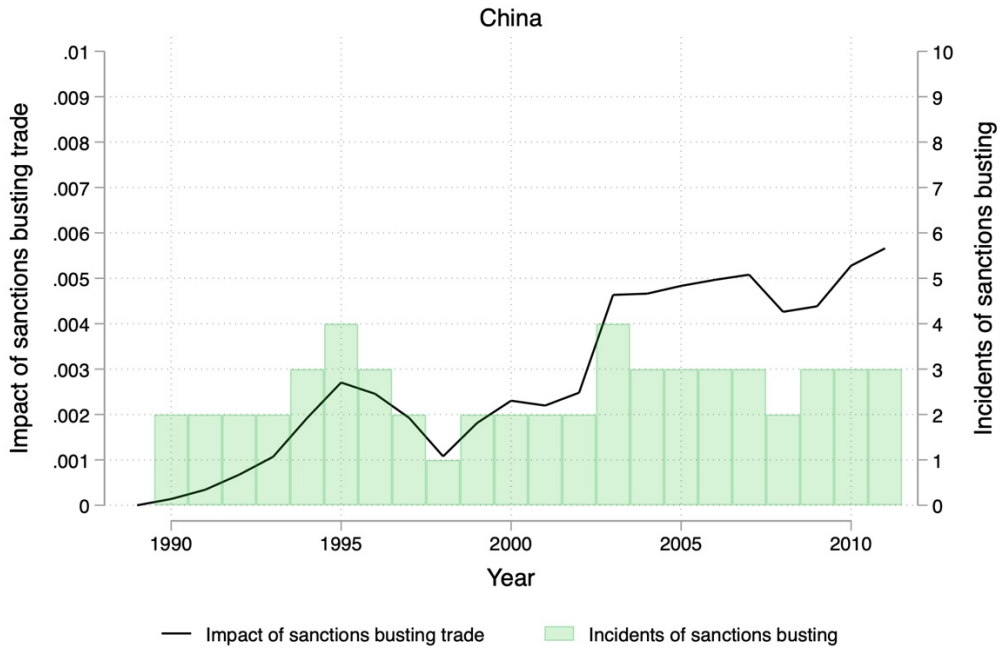
Figure 9. Impact of sanctions busting trade on economic sanctions imposed on China, 1989-2011.



Figure 10. Impact of sanctions busting trade on economic sanctions imposed on the Soviet Union (Russia), 1975-1995.

Figures 9 and 10 swing to the other end of the spectrum by looking at the two significantly larger economies of China and Russia, two states sanctioned by the United States for human rights violations and immigration policy change, respectively. In both cases, sanctions busting trade is hardly impactful when compared to the sanctions busting trade conducted with the smaller-sized economies profiled above.

While the effects of sanctions busting trade increase as China's economy develops through the 1990s and 2000s, China's diverse array of trading partners makes it less reliant on any single state or groups of states for support. Starting in 1998, the number of states providing sanctions busting trade in any given year hovers between 2-3 states, but the level of trade increases. Yet for both Russia and China, the impact of sanctions busting trade remains low between 0.001-0.004% of both countries' GDPs. For China, however, the increasing impact of sanctions busting trade may reflect an increase of commercial opportunities for German, South Korean, Taiwanese, and Japanese firms as China's development and economic growth accelerated in the late 1980s (McNally 2012; Vohra 1994). Russian trade (Figure 10) remains largely flat across time, which may reflect a lack of commercial opportunities as the number of sanctions busting states declines from a high of 9 in the early 1970s to just four by 1995. Given the trade profiles of both countries with a highly diversified trading portfolio of import and export markets, especially with Japan, China, Italy, and Germany, sanctions busting trade likely provides little benefit to either country.

Turning to the medium-sized economies – that is, those economies in the "sweet spot" between $11.6 billion to $127 billion where sanctions busting occurs more frequently, I discuss the impacts of sanctions busting trade. Hufbauer et al. (2009) score the Libya case as a sanctions success with a modestly high success score of 12 out of a possible 16 points. I would argue that

Libya represents a textbook case of how sanctions busting trade can undermine the efficacy of economic sanctions. Imposed by the United States in 1978 to punish Libya's then-leader Gadhafi as well as to halt Libya's nuclear ambitions, the economic sanctions lasted for more than 20 years until efforts by the US and UK to bring Libya back into the international community culminated in the destruction of Libya's chemical weapons and reparations to victims of the Lockerbie Bombing. Figure 11 shows the effects of sanctions busting trade with the left *y*-axis representing sanctions busting trade as a share of Libya's GDP. Sanctions busting trade far exceeds the target state's mean value of 0.005%. Libya's oil reserves and its proximity to Europe, where most of Libya's sanctions busting support originated, helps to explain why US economic sanctions on Libya were less impactful. Not only does the impact of sanctions busting trade remain well above the average but there is a reliable cadre of sanctions busting states providing aid. By 1998, sanctions busting trade begins to rise to levels not seen since the 1980s, demonstrating Libya's ability to weather the loss of trade caused by the imposition of economic sanctions (Nephew 2018).
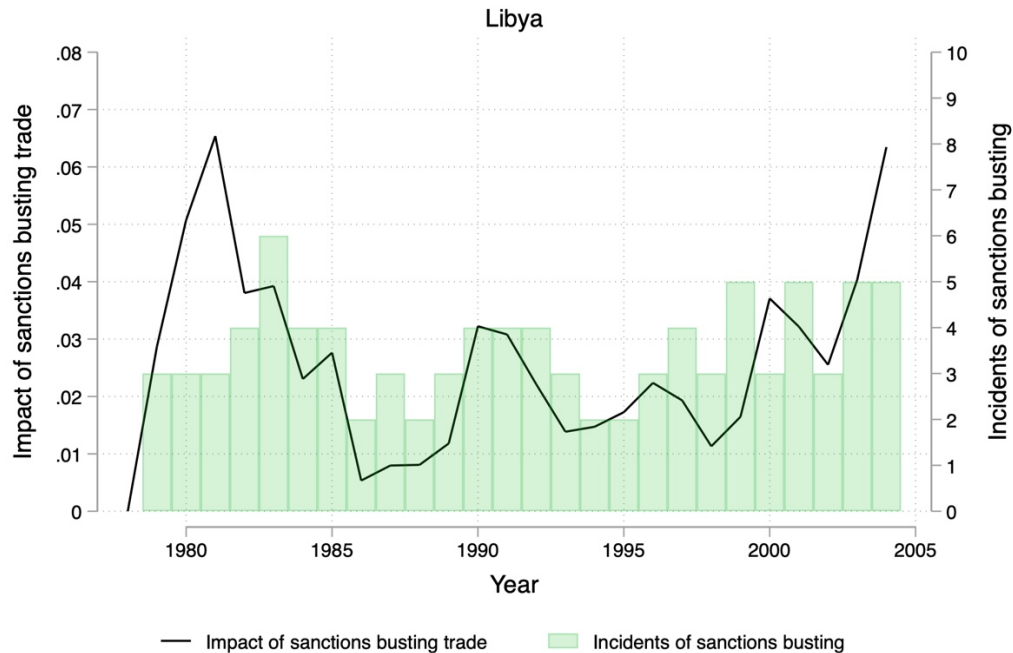
Figure 11. Impact of sanctions busting trade on economic sanctions imposed on Libya, 1978-2004.

Figure 12 shows the impact of sanctions busting trade in Cuba. The mid-1970s showed a decline in the number of active sanctions busters with sanctions busting trade originating only from Canada, Japan, Spain, and Russia. This period in the Cuba sanctions regime is an example of "black knight" support. Russian (or Soviet) trade with Cuba is nearly twice that of the other countries, on average, and the impact of its sanctions busting trade is nearly two times that of the other sanctions busters. While the former Soviet Union provides substantial trade and political support to Cuba, Canada, Japan, and Spain had significant commercial interests to protect and cultivate. Japan, especially, has much to protect give that it was Cuba's largest non-Communist trading partner during the Cold War (Hosoda 2010; Rodriguez Rodriguez 2018; Wilkinson 2009). The Canadians, for example, also sought not only to demonstrate their independence from US foreign policy and chart an independent Canadian course while also taking advantage of markets vacated by US companies due to the embargo (Rodriguez Rodriguez 2018). Conversely,

Spain pushed to preserve its access to Cuban markets by leveraging its agreement with the US to host military bases on Spanish soil to avoid US efforts to isolate Cuba (Hosoda 2010).

Another observation to point out is that as the Cold War began to thaw, the impact of sanctions busting trade declined to almost zero as third-party states reduced sanctions busting trade. After 1990, though, sanctions busting trade accelerates, which may explain US efforts to impose – for the first time – secondary sanctions coupled with extraterritorial application to stymie European trade that sought to fill the vacuum left when Cuba's Communist trading partners abandoned it.
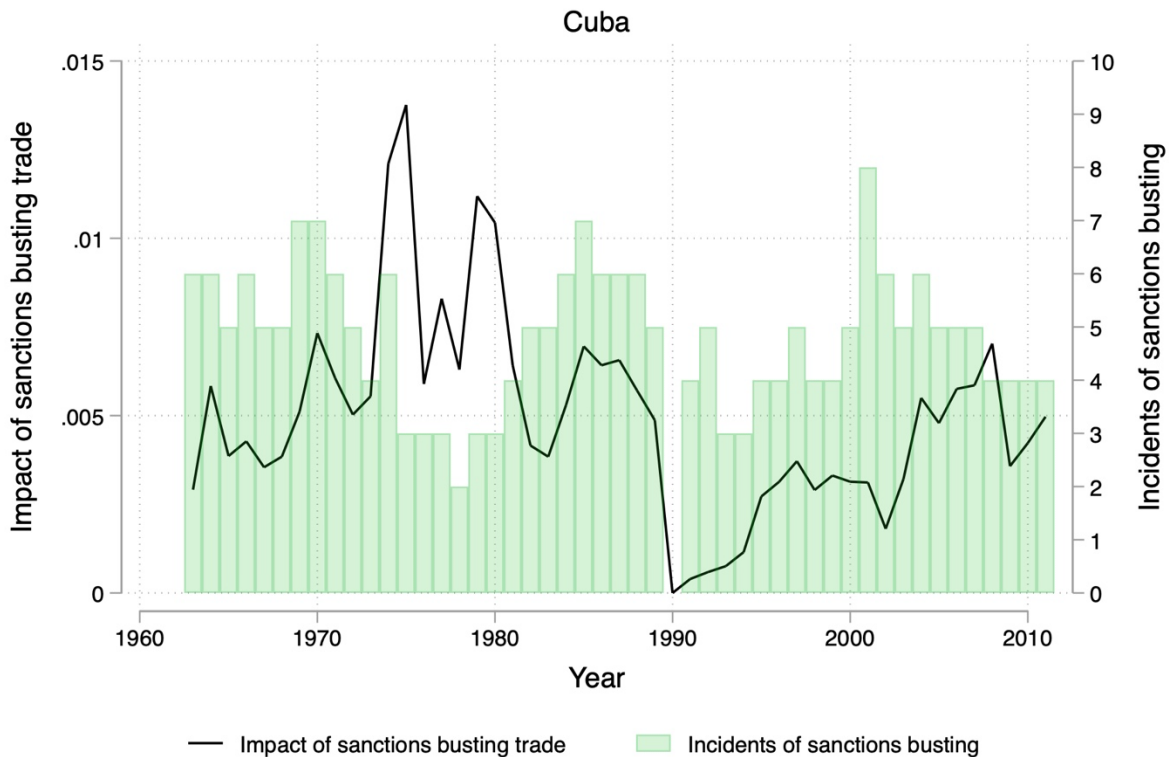


Figure 12. Impact of sanctions busting trade on economic sanctions imposed on Cuba, 1955-present.

After the end of the Cold War, Cuba's "black knight" support from the Soviet Union vanishes and is replaced by some of its former Cold War era trading partners as well as Mexico, France, Italy, the Netherlands, which depended on the commercial opportunities that Cuba's markets

provided. Firms in these countries filled the vacuum left as the former Soviet Union turned

inward as the Iron Curtain began to fall. China has also pursued commercial opportunities, but a

significant portion of Chinese economic interactions with Cuba took the form of trade credits and

aid-based support. These credits provided Cuba with over $1 billion but had to be used to

purchase Chinese goods (Early 2015, 190–96; LeoGrande 2015, 955).

While Cuban aid is lower than the aid supplied to Libya as reflected in the impact

measure, a noticeable difference between Cuba and Libya and the smaller- and larger-sized

economies is not just the increase in the number of sanctions busting opportunities but also the

substantive economic contributions that this trade makes relative to the economic size of these

medium-sized economies. Sanctions busting trade toward Cuba in 1975 is three times the mean

effects of sanctions busting trade of 0.005 while sanctions busting directed toward Libya is six

times higher than the mean.


## 2.6. Discussion

This analysis has attempted to show the variation in sanctions busting toward target states as well

as the importance of quantifying the impact of sanctions busting trade beyond trade flows from

the third party to the target state. In the regression analysis presented at the start of this section, I

showed that the likelihood of sanctions busting increased as the target state's economic size

moved toward the sweet spot of $11.6 billion to $127 billion and then declining as the target

state becomes wealthier. The analysis presented at the start of this section confirms *Hypotheses*$_{1-3}$. In the aggregate, medium-sized economies are more likely to be targets of sanctions busting

with economically smaller and larger target states less likely to be the target of sanctions busting.

Across specific sectors, only agricultural goods display the same upside-down "U" pattern to the

predicted probabilities present in the aggregate trade flows. Further research is necessary to understand whether the effects of the target's economic size impact other types of goods. As the descriptive analysis that followed also indicated, economically large states (themselves more likely to also be sanctions busters) receive little material benefit from sanctions busting trade given the lack of sanctions busters taking advantage of potential commercial opportunities. Economically larger target states are unlikely to need the political or material support of "black knights" or commercially motivated sanctions busters. Smaller states, when sanctions busters are willing to take the risk, benefit only slightly more than larger economies and in some instances even medium-sized economies, with Liberia being a notable exception. States that have unique resources, such as oil or diamonds, for example, are strong exceptions to the rule. Quantifying the impact of sanctions busting trade beyond trade flows allows for a visual representation of the impact of sanctions busting trade but also devises a measure that is comparable across states and sanctions regimes.

## 2.7. Conclusion

Understanding the effects and impacts of sanctions busting requires a greater knowledge of the role that target states play. From the analysis presented here, different states present different sets of opportunities for third-party states seeking to capitalize on the imposition of economic sanctions. Opportunistic behavior that third-party states engage in is likely conditional on particular qualities of the target state, and the economic opportunities that target states are able to provide are likely conditional on the economic size of the target state with smaller states and larger states being less attractive to third-party states. Target states whose economic size resides 1 standard deviation above and below the mean may represent conditions that are "just right" for opportunistic behavior on the part of third-party states. Like Goldilocks seeking the

porridge that is not too hot or too cold, target states residing in this range represent opportunities that other targets may be unable to provide.

When the target states reside in the "sweet spot" range of economic size (see Figure 1), sanctions busting trade is potent in the way in which it undermines the effectiveness of economic sanctions. Because this range of target state is also sanctioned more frequently than other types of economically sized targets, understanding the role and impact of sanctions trade for this group of states may help policymakers devise more effective policies to bring about capitulation of target states but also minimize the need for resource-intensive investigations typical of sanctions enforcement.

While previous work (Early 2011) has highlighted the impact that the *number* of sanctions busters has on the likelihood of sanctions success, understanding the impact of sanctions busting trade provides further nuance to the sanctions effectiveness debate and whether sanctions busting matters in all cases. In many cases, it is not the quantity of sanctions busters at work but the trade they are providing to third-party states relative to the economic size of the target. Policymakers should pay greater attention not only to the state being sanctioned but also to those states whose firms may provide support that undermines the economic impact that sanctions are meant to deliver. The way in which sanctions are employed appears to undermine their usage owing to the competition for sanctions busting trade among the most sanctioned targets. The use of economic sanctions, especially by countries like the United States and international organizations like the European Union, may require more targeted approaches that make target states with medium-sized economies less attractive targets for sanctions busting trade.

## Appendix 1: Standard International Trade Classification Codes ("Industries") and instances of inter- and intra-industry sanctions busting trade

| | | Sanctions Busting | | | |
| Description | SITC Code | Inter- | Intra- | Obs. | % |
| --- | --- | --- | --- | --- | --- |
| Live animals, bovines | 0011 | 745 | 152 | 4437 | 20% |
| Live animals, sheeps and goats | 0012 | 576 | 113 | 3150 | 22% |
| Live animals, swine | 0013 | 255 | 56 | 1687 | 18% |
| Live animals, poultry | 0014 | 1,318 | 195 | 7865 | 19% |
| Live animals, horses, donkeys, etc. | 0015 | 505 | 316 | 5390 | 15% |
| Live animals, other types for food | 0019 | 171 | 70 | 1417 | 17% |
| Meat, bovines | 0111 | 1,452 | 266 | 10611 | 16% |
| Meat, sheep and goats | 0112 | 834 | 87 | 5132 | 18% |
| Meat, swine (pork) | 0113 | 917 | 147 | 5938 | 18% |
| Poultry, dead (for food) | 0114 | 1,183 | 182 | 9229 | 15% |
| Meat, horse, mules, etc. | 0115 | 196 | 29 | 1326 | 17% |
| Edible offal | 0116 | 1,080 | 136 | 6411 | 19% |
| Other types of meat | 0118 | 617 | 183 | 5311 | 15% |
| Bacon, ham, salted pork | 0121 | 727 | 100 | 4526 | 18% |
| Meat, edible offal, salted, smoked, brined | 0129 | 458 | 106 | 3243 | 17% |
| Meat and fish extracts | 0141 | 440 | 283 | 6473 | 11% |
| Sausages, meat | 0142 | 1,315 | 212 | 8277 | 18% |
| Other prepared/preserved meat, meat offals | 0149 | 1,503 | 405 | 14476 | 13% |
| Milk and cream, fresh | 0223 | 1,119 | 226 | 8166 | 16% |
| Milk and cream, preserved, concentrated, sweetened | 0224 | 2,201 | 405 | 19299 | 14% |
| Butter | 0230 | 1,473 | 187 | 10296 | 16% |
| Cheese and curd | 0240 | 1,655 | 428 | 13125 | 16% |
| Eggs, in shell | 0251 | 1,095 | 261 | 7601 | 18% |
| Eggs, not in shell | 0252 | 545 | 175 | 4165 | 17% |
| Fish, fresh or chilled (living or dead, no fillets) | 0341 | 861 | 698 | 13679 | 11% |
| Fish, frozen (not fillets) | 0342 | 1,168 | 915 | 16390 | 13% |
| Fish fillets, fresh or chilled | 0343 | 617 | 309 | 6427 | 14% |
| Fish fillets, frozen | 0344 | 1,068 | 480 | 10468 | 15% |
| Fish, dried, salted, smoked | 0350 | 1,104 | 469 | 11188 | 14% |
| Crustaceans, mollusks, live or dead, in shell | 0360 | 1,054 | 738 | 16874 | 11% |
| Fish, caviar and caviar substitutes | 0371 | 1,385 | 673 | 19108 | 11% |

| | | | | | |
|---|---|---|---|---|---|
| Crustaceans, mollusks, prepared or presereved | 0372 | 846 | 513 | 11612 | 12% |
| Durum wheat, unmilled | 0411 | 622 | 67 | 3902 | 18% |
| Other wheat | 0412 | 1,017 | 116 | 6134 | 18% |
| Rice in husk, husked | 0421 | 773 | 96 | 6355 | 14% |
| Rice, milled or semi-milled | 0422 | 1,343 | 193 | 13945 | 11% |
| Barley, unmilled | 0430 | 693 | 134 | 3840 | 22% |
| Corn, unmilled | 0440 | 899 | 201 | 8087 | 14% |
| Rye, unmilled | 0451 | 136 | 27 | 834 | 20% |
| Oats, unmilled | 0452 | 293 | 52 | 1883 | 18% |
| Buckwheat, millet, other grains/cereals | 0459 | 736 | 166 | 6819 | 13% |
| Wheat/meslin flour | 0460 | 1,526 | 176 | 10708 | 16% |
| Other cereals and flours | 0470 | 863 | 277 | 7758 | 15% |
| Cereal grains, worked or prepped (breakfast foods) | 0481 | 1,153 | 509 | 11495 | 14% |
| Malt, malt flour | 0482 | 1,215 | 112 | 5670 | 23% |
| Macaroni, spaghetti, similar products | 0483 | 1,443 | 284 | 12553 | 14% |
| Bakery products (breads, biscuits, cakes) | 0484 | 1,755 | 776 | 23148 | 11% |
| Malt extract | 0488 | 1,643 | 478 | 15937 | 13% |
| Potatoes, fresh or chilled (no sweet potatoes) | 0541 | 1,061 | 309 | 8208 | 17% |
| Beans, peas, lentils, legumes | 0542 | 1,487 | 647 | 18456 | 12% |
| Tomatoes, fresh or chilled | 0544 | 768 | 125 | 5179 | 17% |
| Other fresh/chilled vegetables | 0545 | 1,207 | 790 | 18158 | 11% |
| Frozen vegetables | 0546 | 1,202 | 654 | 13260 | 14% |
| Vegetale products, roots, tubers for human food (fresh/dried) | 0548 | 949 | 544 | 11265 | 13% |
| Vegetables, dried, dehydrated | 0561 | 1,080 | 694 | 13198 | 13% |
| Flour, potatotes, fruits, vegetables | 0564 | 850 | 379 | 8039 | 15% |
| Vegetables, prepared and preserved | 0565 | 1,345 | 974 | 23392 | 10% |
| Oranges, mandarins, similar citrus fruits | 0571 | 1,372 | 152 | 9821 | 16% |
| Other citrus fruits | 0572 | 1,395 | 157 | 9490 | 16% |
| Bananas, dried or fresh | 0573 | 903 | 118 | 8537 | 12% |
| Apples, fresh | 0574 | 1,203 | 152 | 9213 | 15% |
| Grapes, fresh or dried | 0575 | 1,196 | 277 | 14214 | 10% |
| Figs, fresh or dried | 0576 | 713 | 261 | 7439 | 13% |
| Edible nuts, fresh or dried (exccluding those for oils) | 0577 | 1,279 | 579 | 19373 | 10% |
| Fruit, fresh or dried | 0579 | 1,199 | 1,158 | 23201 | 10% |
| Fruits, peels, and parts of plants, preserved by sugar | 0582 | 820 | 241 | 6537 | 16% |
| Jams, jellies, marmalades | 0583 | 1,218 | 661 | 14628 | 13% |

| | | | | | |
|---|---|---|---|---|---|
| Fruit or vegetable juices | 0585 | 1,226 | 898 | 19299 | 11% |
| Fruit, temporarily preserved | 0586 | 876 | 433 | 8705 | 15% |
| Fruit, fresh, prepared,or preserved | 0589 | 1,204 | 800 | 20058 | 10% |
| Raw sugar, beet and cane | 0611 | 971 | 70 | 7497 | 14% |
| Refined sugar and other products (no syrup) | 0612 | 1,576 | 236 | 12843 | 14% |
| Molasses | 0615 | 967 | 139 | 5505 | 20% |
| Natural honey | 0616 | 1,160 | 195 | 8035 | 17% |
| Sugars and syrups, including honey and caramel | 0619 | 1,540 | 407 | 13539 | 14% |
| Sugar confectionery and other sugar preparations | 0620 | 1,550 | 860 | 23178 | 10% |
| Coffee, green or roasted | 0711 | 1,502 | 497 | 21833 | 9% |
| Coffee extracts, essences, concentrates | 0712 | 1,462 | 511 | 13945 | 14% |
| Cocoa beans, raw or roasted | 0721 | 738 | 48 | 5577 | 14% |
| Cocoa powder, unsweetened | 0722 | 1,284 | 160 | 8096 | 18% |
| Cocoa butter and cocoa paste | 0723 | 869 | 165 | 5807 | 18% |
| Chocolate and other food preparations of cocoa | 0730 | 1,727 | 734 | 18743 | 13% |
| Tea | 0741 | 1,201 | 401 | 18501 | 9% |
| Mate | 0742 | 252 | 8 | 1262 | 21% |
| Pepper and pimento (ground or not) | 0751 | 1,205 | 505 | 14945 | 11% |
| Spices (excluding pepper and pimento) | 0752 | 1,417 | 902 | 24651 | 9% |
| Hay and fodder | 0811 | 730 | 208 | 5628 | 17% |
| Bran, pollard, sharps, and other by products | 0812 | 653 | 159 | 4544 | 18% |
| Oil seed cake, meal, and other vegetables | 0813 | 1,213 | 223 | 9127 | 16% |
| Meat and fish meal, not for human consumption | 0814 | 1,163 | 203 | 8148 | 17% |
| Food waste and animal feed | 0819 | 1,400 | 786 | 16712 | 13% |
| Lard and poultry fat | 0913 | 322 | 110 | 2273 | 19% |
| Margarine, imitation lard | 0914 | 1,455 | 239 | 9819 | 17% |
| Edible products and preparations | 0980 | 1,456 | 1,563 | 35592 | 8% |
| Anthracite coal, not agglomerated | 3221 | 693 | 128 | 4763 | 17% |
| Other coal, not agglomerated | 3222 | 824 | 174 | 5600 | 18% |
| Lignite | 3223 | 166 | 21 | 1003 | 19% |
| Peat | 3224 | 766 | 77 | 3425 | 25% |
| Briquettes | 3231 | 285 | 60 | 2288 | 15% |
| Coke and semicoke | 3232 | 875 | 307 | 7902 | 15% |
| Crude petroleum and oils | 3330 | 1,336 | 129 | 8246 | 18% |
| Refined petroleum products | 3340 | 1,016 | 1,681 | 31540 | 9% |
| Petroleum jelly and mineral waxes | 3351 | 1,443 | 426 | 14524 | 13% |
| Mineral tars | 3352 | 881 | 412 | 8971 | 14% |

| | | | | | |
|---|---|---|---|---|---|
| Pitch and coke | 3353 | 591 | 217 | 5369 | 15% |
| Petroleum bitumen | 3354 | 1,127 | 429 | 12087 | 13% |
| Petroleum gases and gaseous hydrocarbons (liquified) | 3413 | 1,028 | 296 | 8019 | 17% |
| Petroleum gases and gaseous hydrocarbons (gaseous) | 3414 | 507 | 105 | 3330 | 18% |
| Coal gas, water gas, other gases | 3415 | 115 | 16 | 701 | 19% |
| Electric current | 3510 | 166 | 158 | 810 | 40% |
| Steam generating boilers | 7111 | 1,272 | 246 | 11099 | 14% |
| Boiler house plant | 7112 | 857 | 202 | 7508 | 14% |
| Parts for boilers and auxiliary plant | 7119 | 1,362 | 300 | 13017 | 13% |
| Steam powered units (not steam tractors) | 7126 | 586 | 217 | 5608 | 14% |
| Agricultural machinery and appliances | 7129 | 1,009 | 512 | 9554 | 16% |
| Internal combustion piston engines for aircraft | 7131 | 663 | 491 | 9607 | 12% |
| Motor vehicle piston engines | 7132 | 1,497 | 735 | 20424 | 11% |
| Internal combustion piston engines, marine propulsion | 7133 | 1,433 | 561 | 15609 | 13% |
| Internal combustion piston engines, nes | 7138 | 1,546 | 669 | 20152 | 11% |
| Piston engine parts | 7139 | 1,521 | 1,303 | 32947 | 9% |
| Reaction engines | 7144 | 355 | 479 | 6255 | 13% |
| Gas turbines | 7148 | 518 | 522 | 7342 | 14% |
| Office machines | 7149 | 758 | 949 | 12848 | 13% |
| Motors and generators, direct current | 7161 | 1,517 | 897 | 22016 | 11% |
| Electric motors, generators (not direct current) | 7162 | 1,602 | 1,255 | 30660 | 9% |
| Rotary converters | 7163 | 864 | 438 | 10428 | 12% |
| Parts of rotating electric plant | 7169 | 1,391 | 844 | 21528 | 10% |
| Nuclear reactors, and parts thereof | 7187 | 299 | 104 | 2548 | 16% |
| Engines and motors (wind, hot air engines, water wheels) | 7188 | 1,446 | 791 | 18609 | 12% |
| Agricultural and horticultural machinery for soil preparation | 7211 | 1,568 | 553 | 18786 | 11% |
| Harvesting and threshing machines, fodder presses (lawn mowers, for example) | 7212 | 1,630 | 643 | 19482 | 12% |
| Dairy machinery | 7213 | 1,272 | 369 | 9988 | 16% |
| Agrulcultural machines and appliances, nes | 7219 | 1,717 | 513 | 16652 | 13% |
| Tractors, track-laying | 7223 | 678 | 169 | 7103 | 12% |
| Tractors, wheeled | 7224 | 1,681 | 368 | 18013 | 11% |
| Road rollers, mechanically propelled | 7233 | 1,268 | 348 | 12135 | 13% |
| Construction and mining machinery | 7234 | 1,817 | 981 | 26336 | 11% |
| Construction machinery parts | 7239 | 1,286 | 1,079 | 26749 | 9% |

53

| | | | | | |
|---|---|---|---|---|---|
| Sewing machines, needles, and parts | 7243 | 1,653 | 758 | 22255 | 11% |
| Machines for extruding man-made textiles, spinning, etc. | 7244 | 1,536 | 884 | 19153 | 13% |
| Weaving and knitting machines | 7245 | 1,516 | 779 | 17245 | 13% |
| Auxiliary machinery | 7246 | 1,594 | 981 | 19245 | 13% |
| Textile machinery, nes for cleaning, cutting | 7247 | 1,707 | 864 | 21744 | 12% |
| Machinery for preparing, tanning, working leather, etc. and parts | 7248 | 1,196 | 472 | 12788 | 13% |
| Machinery for making, finishing, cellulose pulp, paper, paperboard | 7251 | 1,039 | 378 | 9542 | 15% |
| Machinery for making paper pulp, paper, paperboard; cutting machines | 7252 | 1,660 | 538 | 15328 | 14% |
| Parts for machinery making paper pulp, paper, cellulose pulp, etc. | 7259 | 1,308 | 754 | 13866 | 15% |
| Type-setting machinery | 7263 | 1,401 | 554 | 14125 | 14% |
| Printing presses | 7264 | 1,551 | 434 | 14136 | 14% |
| Other printing machinery | 7267 | 1,667 | 542 | 16339 | 14% |
| Bookbinding machinery | 7268 | 1,360 | 406 | 12576 | 14% |
| Parts fofr typesetting, bookbinding, other printing machinery | 7269 | 1,409 | 802 | 17028 | 13% |
| Machinery for milling grain, working cereals, and parts for | 7271 | 1,712 | 452 | 16505 | 13% |
| Other food processing machinery and parts | 7272 | 1,735 | 1,031 | 26147 | 11% |
| Machine tools for specialized industries | 7281 | 1,580 | 941 | 24085 | 10% |
| Other mineral working machinery | 7283 | 1,774 | 795 | 23979 | 11% |
| Machinery for specialized industries and parts | 7284 | 1,676 | 1,542 | 34544 | 9% |
| Metal cutting machine-tools | 7361 | 1,879 | 1,018 | 24901 | 12% |
| Metal forming machine-tools | 7362 | 1,583 | 845 | 20182 | 12% |
| Other machine-tools for working metal or metal carbides | 7367 | 1,509 | 697 | 17907 | 12% |
| Work holders, dividing heads for machine tools | 7368 | 1,324 | 697 | 16053 | 13% |
| Parts for machine tools beginning with 736 | 7369 | 1,590 | 1,006 | 21395 | 12% |
| Metallurgy and foundry equipment | 7371 | 1,111 | 433 | 10918 | 14% |
| Rolling mills, rolls, and parts | 7372 | 1,216 | 504 | 12386 | 14% |
| Welding, brazing, cutting machines and appliances, parts | 7373 | 1,633 | 939 | 23731 | 11% |
| Gas generators and parts | 7411 | 1,180 | 410 | 11555 | 14% |
| Furnace burners, strokers, and parts | 7412 | 1,600 | 575 | 16120 | 13% |
| Industry and laboratory furnaces | 7413 | 1,709 | 885 | 22989 | 11% |
| Non-domestic refrigerators | 7414 | 2,036 | 890 | 26499 | 11% |

| Description | Code | | | | |
|---|---|---|---|---|---|
| Air conditioning machines and parts thereof | 7415 | 1,911 | 801 | 26268 | 10% |
| Machinery, plant, laboratory equipment for heating and cooling | 7416 | 1,916 | 1,020 | 27370 | 11% |
| Reciprocating pumps | 7421 | 1,688 | 965 | 23873 | 11% |
| Centrifugal pumps | 7422 | 1,852 | 791 | 22561 | 12% |
| Rotary pumps | 7423 | 1,503 | 692 | 18369 | 12% |
| Other pumps for liquids and liquid elevators | 7428 | 1,616 | 1,173 | 28336 | 10% |
| Parts of pumps and liquid elevators | 7429 | 1,752 | 1,136 | 26503 | 11% |
| Air pumps, vacuum pumps, and air or gas compressors | 7431 | 1,762 | 1,278 | 29545 | 10% |
| Parts, nes of pumps and compressors | 7432 | 1,701 | 1,074 | 22813 | 12% |
| Free-piston generators for gas turbines | 7433 | 362 | 348 | 6528 | 11% |
| Fans, blowers and the like, and parts thereof, nes | 7434 | 1,731 | 802 | 21563 | 12% |
| Centrifuges | 7435 | 1,492 | 619 | 16577 | 13% |
| Filtering and purifying machinery, apparatus for liquids and gases | 7436 | 2,098 | 1,089 | 30000 | 11% |
| Parts, nes of the machines falling within headings 7435 and 7436 | 7439 | 1,996 | 1,003 | 23187 | 13% |
| Work trucks, of the type use in factories, dock areas, etc | 7441 | 1,817 | 771 | 21270 | 12% |
| Lifting, handling, loading machinery, telphers and conveyors | 7442 | 1,842 | 1,057 | 28673 | 10% |
| Parts, nes of the machinery falling within heading 7442 | 7449 | 1,600 | 860 | 22779 | 11% |
| Power hand tools, pneumatic or non-electric, and parts thereof, nes | 7451 | 1,684 | 730 | 20545 | 12% |
| Other non-electrical machines and parts thereof, nes | 7452 | 1,709 | 1,350 | 33357 | 9% |
| Ball, roller or needle roller bearings | 7491 | 1,888 | 934 | 27431 | 10% |
| Cocks, valves and similar appliances, for pipes boiler shells, etc | 7492 | 1,741 | 1,568 | 34041 | 10% |
| Shaft, crank, bearing housing, pulley and pulley blocks, etc | 7493 | 1,661 | 1,451 | 30466 | 10% |
| Other non-electric parts and accessories of machinery, nes | 7499 | 1,748 | 1,542 | 32048 | 10% |
| Typewriters; cheque-writing machines | 7511 | 1,377 | 360 | 14272 | 12% |
| Calculating, accounting, cash registers, ticketing, etc, machines | 7512 | 1,481 | 533 | 17917 | 11% |
| Office machines, nes | 7518 | 1,850 | 697 | 23550 | 11% |
| Analogue and hybrid data processing machines | 7521 | 905 | 510 | 12189 | 12% |

| | | | | | |
|---|---|---|---|---|---|
| Complete digital data processing machines | 7522 | 1,383 | 949 | 22308 | 10% |
| Complete digital central processing units; digital processors | 7523 | 1,319 | 856 | 18968 | 11% |
| Digital central storage units, separately consigned | 7524 | 398 | 390 | 5936 | 13% |
| Peripheral units, including control and adapting units | 7525 | 1,308 | 1,311 | 23996 | 11% |
| Off-line data processing equipment, nes | 7528 | 1,362 | 975 | 20724 | 11% |
| Parts, nes of and accessories for machines of headings 7511 or 7518 | 7591 | 1,661 | 737 | 19665 | 12% |
| Parts, nes of and accessories for machines of headings 7512 and 752 | 7599 | 1,059 | 1,373 | 27422 | 9% |
| Television receivers, colour | 7611 | 1,459 | 693 | 22759 | 9% |
| Television receivers, monochrome | 7612 | 966 | 340 | 11457 | 11% |
| Radio receivers for motor-vehicles | 7621 | 1,276 | 369 | 13892 | 12% |
| Portable radio receivers | 7622 | 1,214 | 334 | 15796 | 10% |
| Other radio receivers | 7628 | 1,410 | 404 | 17041 | 11% |
| Gramophones and record players, electric | 7631 | 976 | 325 | 10596 | 12% |
| Other sound recording and reproducer, nes; video recorders | 7638 | 1,574 | 670 | 22875 | 10% |
| Electrical line telephonic and telegraphic apparatus | 7641 | 1,505 | 1,012 | 29175 | 9% |
| Microphones; loud-speakers; audio-frequency electric amplifiers | 7642 | 1,677 | 792 | 23621 | 10% |
| Television, radio-broadcasting; transmitters, etc | 7643 | 1,453 | 895 | 23344 | 10% |
| Telecommunications equipment, nes | 7648 | 1,237 | 909 | 20373 | 11% |
| Parts, nes of and accessories for apparatus falling in heading 76 | 7649 | 1,153 | 1,850 | 34061 | 9% |
| Transformers, electrical | 7711 | 1,763 | 1,001 | 25931 | 11% |
| Other electric power machinery, parts, nes | 7712 | 1,620 | 1,338 | 27834 | 11% |
| Switches, relays, fuses, etc; switchboards and control panels, nes | 7721 | 1,554 | 1,676 | 37986 | 9% |
| Printed circuits, and parts thereof, nes | 7722 | 1,147 | 769 | 16463 | 12% |
| Fixed, variable resistors, other than heating resistors, parts, nes | 7723 | 1,294 | 706 | 17472 | 11% |
| Insulated electric wire, cable, bars, etc | 7731 | 1,783 | 1,055 | 30681 | 9% |
| Electrical insulating equipment | 7732 | 1,635 | 566 | 18122 | 12% |
| Electro-medical equipment | 7741 | 1,573 | 707 | 18856 | 12% |
| X-ray apparatus and equipment; accessories; and parts, nes | 7742 | 1,427 | 822 | 16462 | 14% |
| Household laundry equipment, nes | 7751 | 1,660 | 550 | 18884 | 12% |

| | | | | | |
|---|---|---|---|---|---|
| Domestic refrigerators and freezers | 7752 | 1,815 | 772 | 26159 | 10% |
| Domestic dishwashing machines | 7753 | 1,055 | 376 | 10358 | 14% |
| Electric shavers and hair clippers, parts thereof, nes | 7754 | 1,094 | 439 | 11631 | 13% |
| Domestic electro-mechanical appliances; and parts thereof, nes | 7757 | 1,972 | 749 | 25553 | 11% |
| Electro-thermic appliances, nes | 7758 | 1,878 | 984 | 29103 | 10% |
| Television picture tubes, cathode ray | 7761 | 849 | 518 | 9840 | 14% |
| Other electronic valves and tubes | 7762 | 1,021 | 664 | 12411 | 14% |
| Diodes, transistors, photocells, etc. | 7763 | 1,430 | 888 | 18438 | 13% |
| Electronic microcircuits | 7764 | 1,241 | 1,031 | 19138 | 12% |
| Crystals, and parts, nes of electronic components of heading 776 | 7768 | 1,116 | 705 | 14062 | 13% |
| Batteries and electric accumulators, and parts thereof, nes | 7781 | 2,029 | 961 | 30254 | 10% |
| Electric filament lamps and discharge lamps; arc-lamps | 7782 | 1,920 | 828 | 27065 | 10% |
| Automotive electrical equipment; and parts thereof, nes | 7783 | 1,789 | 864 | 27984 | 9% |
| Electro-mechanical hand tools, and parts thereof, nes | 7784 | 1,887 | 592 | 19338 | 13% |
| Other electrical machinery and equipment, nes | 7788 | 1,487 | 1,592 | 32517 | 9% |
| Passenger motor vehicles (excluding buses) | 7810 | 1,475 | 1,415 | 34698 | 8% |
| Motor vehicles for the transport of goods or materials | 7821 | 1,766 | 593 | 26021 | 9% |
| Special purpose motor lorries and vans | 7822 | 1,623 | 404 | 15353 | 13% |
| Public service type passenger motor vehicles | 7831 | 1,577 | 303 | 15543 | 12% |
| Road tractors for semi-trailers | 7832 | 1,472 | 226 | 10485 | 16% |
| Chassis fitted with engines, for vehicles of headings 722, 781-783 | 7841 | 1,067 | 376 | 11026 | 13% |
| Bodies, for vehicles of headings 722, 781-783 | 7842 | 1,166 | 536 | 13928 | 12% |
| Other parts and accessories, for vehicles of headings 722, 781-783 | 7849 | 1,517 | 1,439 | 39631 | 7% |
| Motorcycles, auto-cycles; side-cars of all kind, etc | 7851 | 1,330 | 409 | 17627 | 10% |
| Cycles, not motorized | 7852 | 1,525 | 286 | 15908 | 11% |
| Invalid carriages; parts, nes of articles of heading 785 | 7853 | 1,702 | 563 | 21139 | 11% |
| Trailers and transports containers | 7861 | 1,420 | 864 | 19851 | 12% |

| | | | | | |
|---|---|---|---|---|---|
| Other not mechanically propelled vehicles; and parts, nes | 7868 | 1,515 | 732 | 20525 | 11% |
| Rail locomotives, electric | 7911 | 252 | 23 | 1501 | 18% |
| Other rail locomotives; tenders | 7912 | 390 | 41 | 2598 | 17% |
| Mechanically propelled railway, tramway, trolleys, etc | 7913 | 223 | 19 | 1471 | 16% |
| Railway, tramway passenger coaches, etc, not mechanically propelled | 7914 | 172 | 15 | 1051 | 18% |
| Railway and tramway freight, etc, not mechanically propelled | 7915 | 463 | 171 | 4252 | 15% |
| Railway track fixtures, and fittings, etc, parts nes of heading 791 | 7919 | 1,110 | 610 | 15225 | 11% |
| Helicopters | 7921 | 311 | 120 | 3348 | 13% |
| Aircraft of an unladen weight not exceeding 2000 kg | 7922 | 236 | 125 | 3293 | 11% |
| Aircraft of an unladen weight from 2000 kg to 15000 kg | 7923 | 300 | 146 | 3405 | 13% |
| Aircraft of an unladen weight exceeding 15000 kg | 7924 | 292 | 135 | 3399 | 13% |
| Aircraft, nes and associated equipment | 7928 | 461 | 344 | 8824 | 9% |
| Parts, nes of the aircraft of heading 792 | 7929 | 485 | 971 | 16231 | 9% |
| Warships | 7931 | 204 | 58 | 2410 | 11% |
| Ships, boats and other vessels | 7932 | 983 | 660 | 15395 | 11% |
| Ships, boats and other vessels for breaking up | 7933 | 378 | 39 | 2553 | 16% |
| Tugs, special purpose vessels and floating structures | 7938 | 794 | 292 | 9580 | 11% |
| Total | | 324,956 | 150,897 | 4,049,535 | 12% |

# Chapter 3. Affordable Adjustments and Exploitable Opportunities in the European Union: The Search for Alternatives to Sanctions Busting Trade

**Abstract:**

My research explores the role of trade interests in sanctions busting. The literature on sanctions busting argues that economic sanctions create commercial opportunities for third-party states to exploit as sender state firms cease trading with states targeted by sanctions. European Union (EU) member states, particularly France, Italy, Germany, and the United Kingdom, are frequently cited as sanctions busters. Sanctions busting trade has been shown to weaken the effectiveness of economic sanctions, which can generate political costs for EU firms attempting to maintain trade relationships with targeted states. I argue that the picture is incomplete, demonstrating that firms in EU member states instead follow a "path of least resistance." By following this path, EU member states eschew sanctions busting commercial opportunities because more convenient and equally lucrative commercial opportunities potentially exist with alternative trade partners within their existing dense trading networks. The economic community that has developed among EU member states thus serves as a convenient "path of least resistance" and provides a less costly – both economically and politically – route for trade as the number of sanctions in force increases. Using UN Comtrade data from 1962-2011, I test the effects of intra-EU trade on the likelihood of sanctions busting using a multilevel logistic regression and find that as intra-EU trade increases for EU member states, the probability of sanctions busting declines. Scholars have largely ignored the effects of membership in the EU on economic sanctions and sanctions busting, which potentially could improve how economic sanctions are designed, implemented, and enforced.

What is the role of trade interests in sanctions busting? Research on economic sanctions and sanctions busting have shown that firms in third-party states have benefited from commercial opportunities when economic sanctions disrupt the third-party state's trade networks (van Bergeijk 1994; Caruso 2003; Early 2015; Kaempfer and Lowenberg 1999; Morgan and Bapat 2003). Sanctions busting by European firms has long irritated US policymakers and served as a key factor in creating a number of laws and regulations in the United States leading to secondary sanctions. The passage of the Helms-Burton Act, which extended the reach of US law to entities beyond US shores and sought to punish countries that maintained commercial ties with Cuba (Smis and van der Borght 1999), is a notable example. The Office of Foreign Assets Control (OFAC) economic sanctions guidelines, which were revised in 2009 after changes to US laws governing the size of penalties for violating US sanctions, were also driven by European firms (especially financial institutions) for violating US economic sanctions against Iran (Early and Preble 2020b).

When firms located in third-party states take advantage of these commercial opportunities, economic sanctions are undermined as the trade lost by the sanctioned (or target) state is ostensibly replaced by sanctions busting trade of third-party states' firms. However, this case seeks to demonstrate that opportunism, while ubiquitous in international relations (Lake 1996), may not be continuously omnipresent in international relations and may demonstrate variation as the European Union (EU) has developed its common market. The common market may represent an outlet for commercial opportunism: as this common market has developed, the economic and political benefits of the EU may reduce the propensity for opportunistic behavior via sanctions busting trade.

Existing liberal theories have argued that network effects generated by the imposition of economic sanctions disrupt trade relationships but also generates highly profitable and lucrative commercial opportunities for firms in third-party states as firms in sender states (those states imposing economic sanctions) withdraw from target states' (those states targeted by economic sanctions) markets. Firms in third-party states capitalize on these opportunities (Kaempfer and Lowenberg 1999, 40–46) by engaging in sanctions busting trade despite the political costs involved in undermining the economic sanctions of sender states.

While sanctions busting itself is a rare event in the international system (occurring around 2% of the time), within the subset of EU member states, sanctions busting is six times more prevalent, occurring approximately 12% of the time. Despite the increased occurrence of sanctions busting by EU member states, there is a persistent decline in the share of sanctions busting opportunities over time that these theories and variables cannot explain (Figure 1). At the start of the 1970s, these European countries — Germany, France, Italy, Belgium, the Netherlands, and the United Kingdom — have had new trade opportunities open up as the economic community of which they are members has expanded, providing EU firms with politically safer and more expedient avenues for trade than the politically fraught commercial opportunities created by economic sanctions. This calls our attention to the importance of alternative trade opportunities when EU member states' firms are faced with the choice between engaging in sanctions busting or trading within the customs union or single market. As these alternative markets developed internally within the common market, opportunistic trade may have been redirected inward.

The theoretical framework I propose seeks to address this blind spot of existing theories (Barry and Kleinberg 2015; Caruso 2003, 2005; Early 2009, 2015; Early and Spice 2015) with

their exclusive focus on the triadic relationships of sender-target-third-party sanctions buster. My theory argues that third-party states' firms are risk-averse, choosing a "path of least resistance" when economic sanctions create obstacles to trade. Potentially rent-seeking sanctions busting firms choose among a number of trade alternatives that offer convenience, safety, and lower political and economic costs than what might be obtained by initiating new trade or maintaining trade with states targeted by economic sanctions. The presence of other trading partners within a third-party state's trade network potentially offers *more* affordable adjustments and exploitable opportunities without the need to engage in politically sensitive and costly sanctions busting trade.

The key assumption behind sanctions busting — that third-party firms move to take advantage of these commercial opportunities as network effects disrupt existing trade relationships — may not tell the whole story. The very trade networks that are disrupted by economic sanctions and create these commercial opportunities for firms in third-party states ignore other potential lucrative outlets for trade. I argue that firms in third-party states take this "path of least resistance" by eschewing sanctions busting commercial opportunities when similar and more convenient commercial opportunities exist with alternative trade partners within their dense trading networks. It should be noted that my study does not claim that economic sanctions has somehow "stimulated" intra-EU trade to increase. The economic community that has developed among EU member states provides a less costly – both economically and politically – path of least resistance for trade as the number of economic sanctions in force increases (Figure 1). Having a significant number of low-risk, lower transaction cost options makes firms more risk-averse to exploiting lucrative and highly profitable commercial opportunities created by economic sanctions than existing theories contend (Early 2015; Early and Spice 2015).

I capture the effects of trade alternatives by creating a measure of intra-EU trade share —
the percentage of a third-party EU member state's total trade with other EU members — as a
proxy for capturing one type of convenient, safe, and less costly trade alternative available to
firms in EU member states. This trade alternative reflects the overall pattern of EU integration
since the founding of the EU with the Treaty of Rome in 1957 and the initial removal of customs
duties by 1968. Even before the advent of the Single European Market (SEM) in 1993, the
members of the EU worked to develop a customs union and economic community that reduced
trade barriers and encouraged commercial interdependence among member states. Using a time
series cross-sectional data set of UN Comtrade data from 1963-2011, I utilize a multilevel
logistic regression and find that, on average, as intra-EU trade increases, the propensity of EU
firms to engage in sanctions busting declines as third-party EU member states shift trade away
from extra-EU markets toward EU member states.

Using aggregate trade data, I find third-party EU member states in the European Union
and their firms have routinely engaged in sanctions busting when economic sanctions have been
imposed on trading partners, who are often the targets of US and UN economic sanctions (as
well as other states). In a study on how sanctions busting erodes the effectiveness of economic
sanctions, Early (2015) showed how US partners in the EU frequently sanctions bust, arguing
that firms routinely seek out commercial opportunities as economic sanctions disrupt trade
networks. The empirical picture, however, for EU member states tells a different story. Since
1979, sanctions busting by EU member states has declined relative to the share of total sanctions
busting opportunities available (Figure 1). If economic sanctions disrupt trade networks and
create commercial opportunities, then logically the more often sanctions are imposed, the more
they should disrupt trade networks and *increase* the number of commercial opportunities for EU

firms, especially for those firms that reside in states with high GDPs that are more open to trade. Why then does EU sanctions busting decline as the number of sanctions imposed worldwide increases?

## 3.1. EU Economic Integration and the Decline of sanctions busting opportunities

While the study of economic sanctions has focused predominantly on the United States and the effectiveness of economic sanctions as a tool of statecraft, the role of EU member states in perpetuating sanctions busting has not been a significant focus in the literature on economic sanctions. Since 2005, scholars have begun to focus on how Europe and the EU employ and utilize economic sanctions (Giumelli 2010, 2011, 2013; Portela 2005, 2011; Portela and Ruffa 2015), a shift away from the literature's predominant focus on the United States.

A handful of studies have sought to highlight Europe and the EU's role in sanctions busting (Caruso 2003, 2005; Early 2016; Early and Spice 2015; Yang et al. 2004), but these studies either highlight the prolific nature of EU member states to sanctions bust or the ways in which trade flows change to and from European states. Given the frequency to which EU member states, such as France, Germany, Italy, the Netherlands, and the United Kingdom, engage in sanctions busting, there is a need to understand how over time EU membership is affected by the network effects generated by the imposition of economic sanctions (van Bergeijk 1995). The few studies that have explored the role of European countries or the EU often cite economic size, trade dependency between the third-party and target state, and the relative trade openness of EU member states to other third-party states in the international system. No study has yet to explore how the deepening economic community within the EU affects the sanctions busting behavior of its member states.

Previous work on sanctions busting has focused mainly on explaining the phenomenon of sanctions busting through large-*N* analysis to discern general patterns in the data through trade flows (Caruso 2003, 2005; Early 2009, 2011, 2015; Early and Spice 2015) or through investment flows (Barry and Kleinberg 2015). The large sample sizes of these studies would make it difficult for the puzzle identified here to emerge as it would be quite difficult to discern the decline in the share of sanctions busting when looking at all countries in the international system. The puzzle presented in this chapter seeks to explain the decline in the share of sanctions busting by EU member countries from the highs of the early 1960s. Even as the use of economic sanctions increases in the 1980s (Hufbauer et al. 2009, 17), the EU's share in sanctions busting continues its decline relative to the commercial opportunities generated by the implementation of economic sanctions. Variables typically employed to understand the factors responsible for sanctions busting, such as GDP, trade share, and trade openness (Barry and Kleinberg 2015; Caruso 2003, 2005; Early 2009, 2011, 2015) vary less across time within the smaller subset of third-party EU member states. Previous large-*N* work has obscured the cross-temporal variation that is presented in the EU. As such, it has led to a profile of sanctions busting that may not capture the empirical realities within the European Union with its customs union and single market over the last sixty years, hallmarks of European economic and commercial integration.

This study attempts to show that the lack of cross-temporal variation in key variables fails to explain the secular decline in sanctions busting even as the use of economic sanctions balloons during the "sanctions decades" (Cortright and Lopez 2000). Key to the argument presented here is that commercial opportunities may present themselves owing to the network effects created when economic sanctions are imposed (van Bergeijk 1995; Caruso 2003, 2005). Given the rarity of sanctions busting, states may seek out or divert trade intended for a target state to other states

within its trading network. For states in the EU, there is a ready-made set of alternative trading partners without barriers that are incentivized to trade with each other. The commercial and economic integration may be an unexplored casual factor that may help explain why an EU member state fails to bust sanctions.

## 3.2. A Portrait of Sanctions Busting in the EU Context

Previous studies on sanctions busting have demonstrated that constituents and firms in EU members Germany, France, Italy, the UK, and the Netherlands have been shown to undermine the efficacy of economic sanctions (Early 2015; Yang et al. 2004). Given the EU's growing economic power and its high degree of trade openness, EU trade with targeted states often fills the void left by the firms of sender states, who cannot easily continue to trade with targets sanctioned by their home governments. The theory of sanctions busting would argue that these states with relatively high GDPs and high values of trade openness would capitalize on commercial opportunities.

I devise a measure that captures a country's share of sanctions busting and display the range of those values in Figure 1. This measure takes the number of sanctions busting events in each year conducted by EU member states and divides them by the number of potential sanctions busting opportunities available. The number of potential sanctions busting opportunities increases each year as the number of EU members increases, and I calculate this value by multiplying the number of EU member states by the number of sanctions events in force in each year. In Figure 1, the grey and black lines indicate the 3- and 5-year moving averages of the share of sanctions busting measure (left y-axis). The dotted lines indicate the number of sanctions in force (right y-axis). Across the span of years studied (1963-2011), the number of economic sanctions in force increases significantly between 1963 to the mid-1990s before

declining at the start of the 1990s during the "sanctions decade" (Cortright and Lopez 2000). As Figure 1 shows, sanctions busting by EU member states, driven largely by Germany, France, Italy, United Kingdom (after 1972), the Netherlands, Belgium, and Spain (after 1986), largely declines after 1970s, and the share of sanctions busted remains below twenty percent.
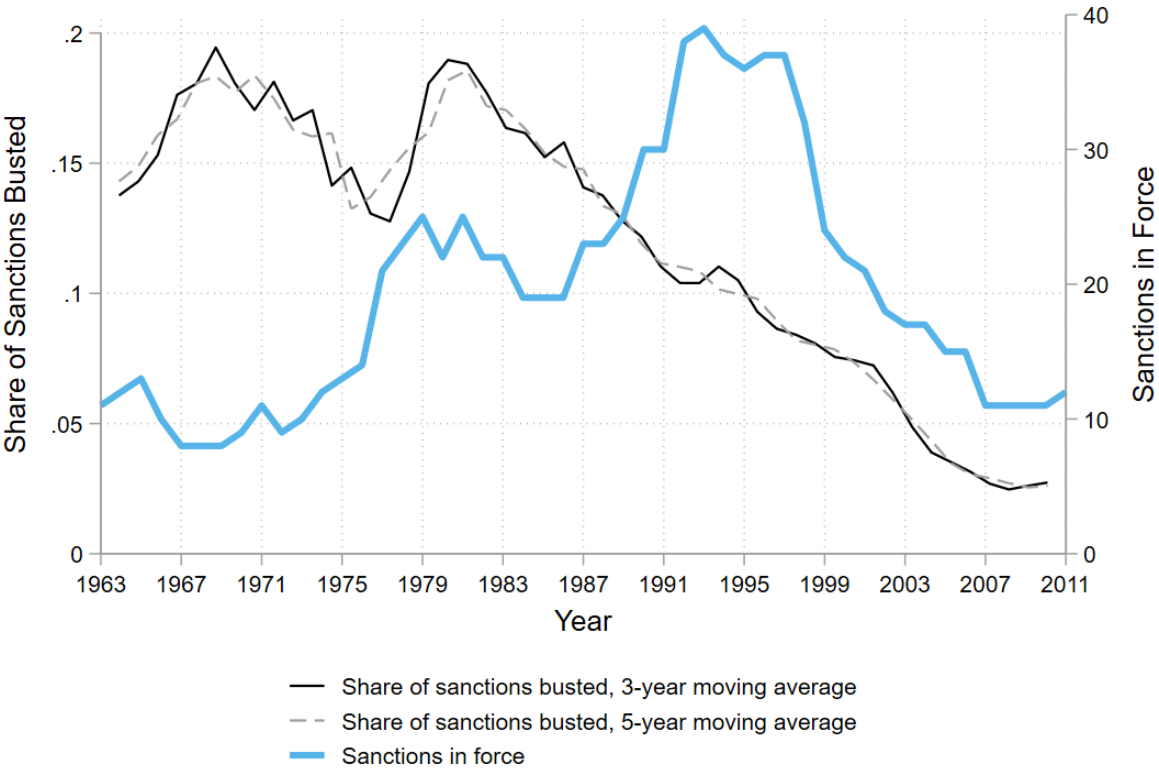


Figure 1. Share of sanctions busted by EU member states and Non-EU sanctions in force, 1963-2011. The figure shows the 3-year and 5-year moving averages for the share of sanctions busted along with the sanctions in force in any given year. Figure 1 does not include sanctions busting by European countries outside the EU; the figure also excludes sanctions imposed by the EU or by EU member states.

This value generated provides an effective measure of the share of sanctions busted for two reasons. First, it takes into account not only the variation in sanctions busting across countries in the EU but also the size of the EU in a given year. Because some countries sanctions bust frequently — like Germany — whereas others almost never do — like Ireland — it is important to devise a measure that allows one to compare more effectively each country's

behavior while also taking into account the membership of the EU at any point in time. Second, it allows for the comparison of the opportunities capitalized on by firms by engaging in sanctions busting trade relative to the total number of opportunities available *without* controlling for economic size, commercial dependence, or a particular country's overall openness to trade. Thus, decline in the shared of sanctions busted as the number of opportunities increases represents a unique puzzle given the propensity for EU member states to engage sanctions busting (Figure 2).
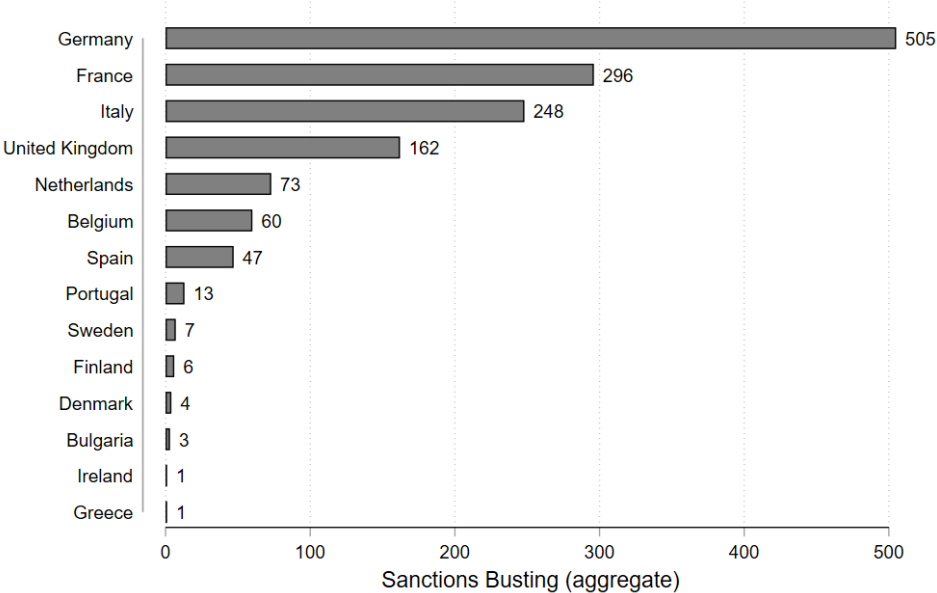


Figure 2. Incidents of sanctions busting arranged by EU member state using aggregate trade

Before the establishment of the EU Customs Union in 1968, the levels of intra-EU trade remain low, which might be indicative of the fact that the benefits of trade among member states had not yet been realized. After 1968, however, there is a marked trend upward. In 1981, with the addition of less developed members from Southern Europe, there is a plateau in the growth of intra-EU trade. The addition of Spain and Portugal to the EU and the subsequent addition nine years later of Austria, Finland, and Sweden also drove the growth of intra-EU trade. The years between 1991-1995, however, show slight declines in intra-EU trade. This brief decline and halt

to intra-EU trade share is most likely the result of a number of changes not only within Europe with the reunification of Germany but also the end of the Cold War.

Figures 3a-3d show the import and export trade share between EU countries and outside the EU. Figures 3a-3d show four of the founding EU members and highest sanctions busters in Germany, France, Italy, and the Netherlands. The black line in all four figures shows declines in the trade share for non-EU imports and exports while the trade share for EU imports and exports rises. These four figures provide empirical evidence that a continuously expanding and deepening economic community has developed.



a. France
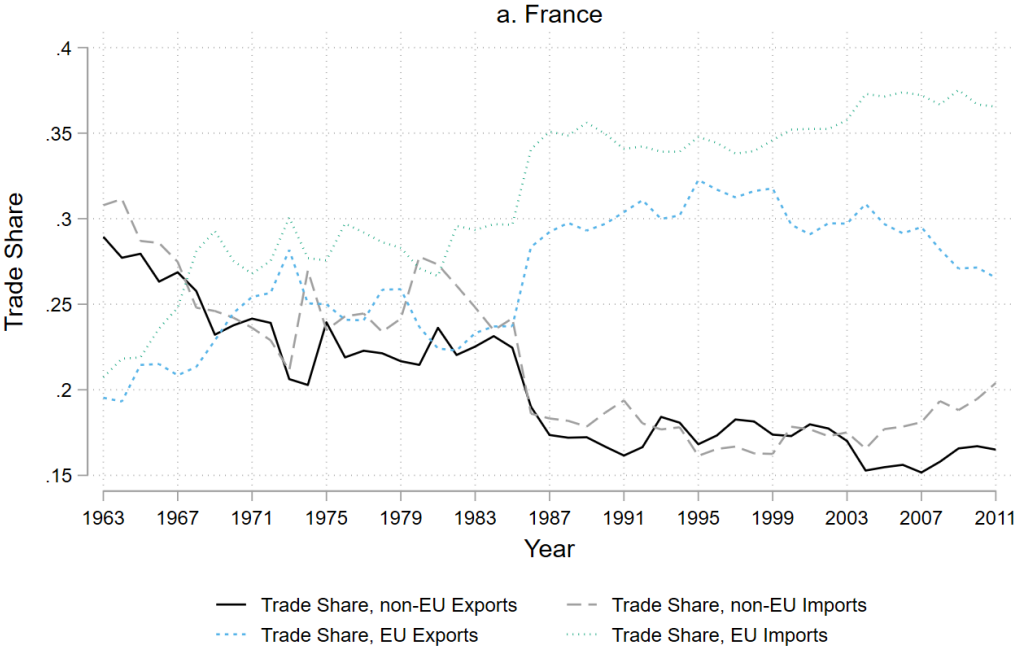
b. Germany
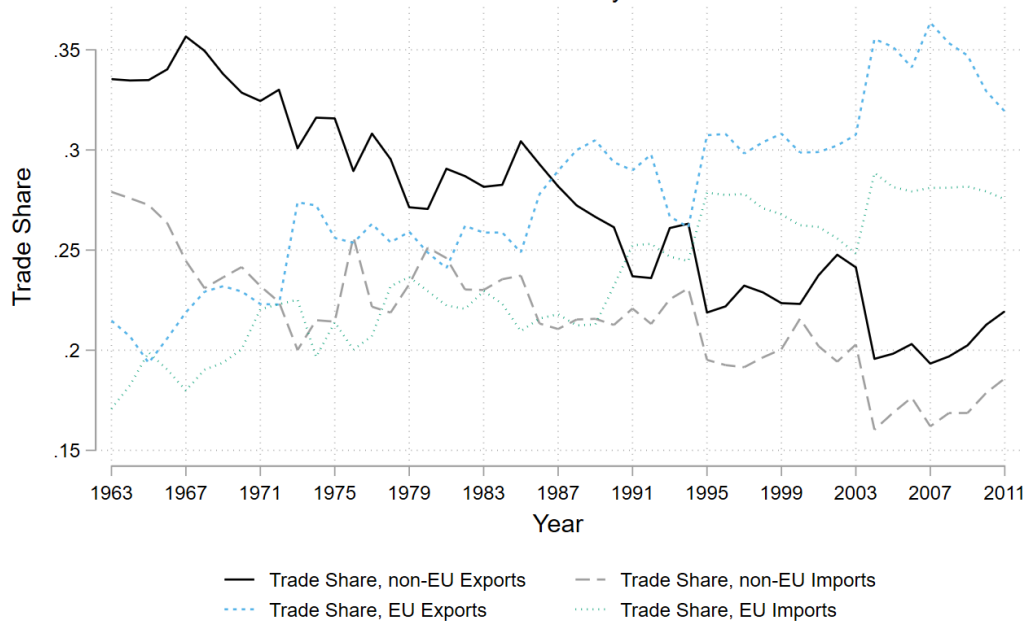


c. Italy
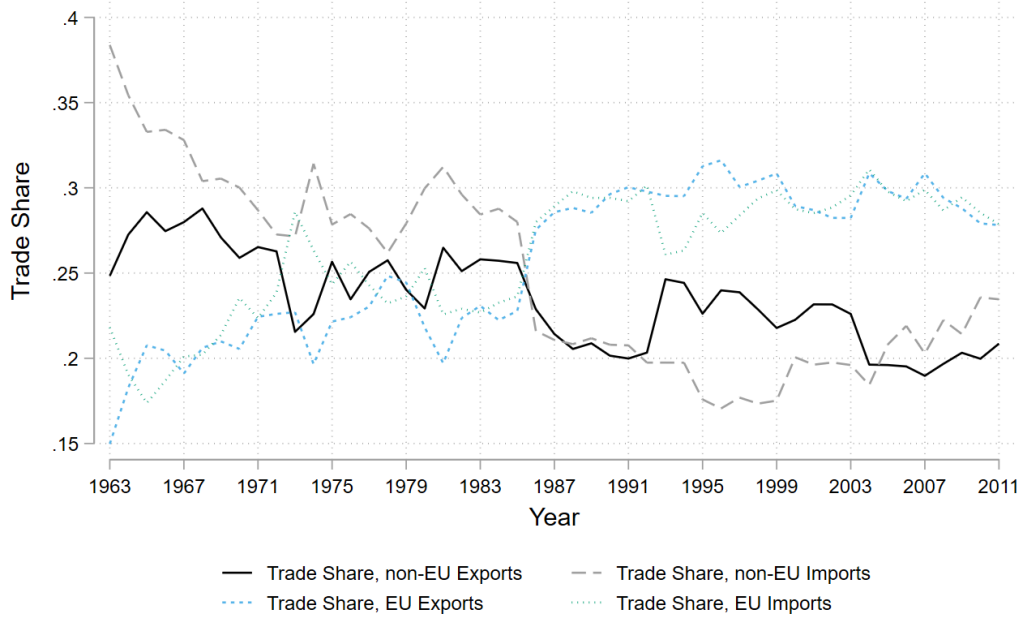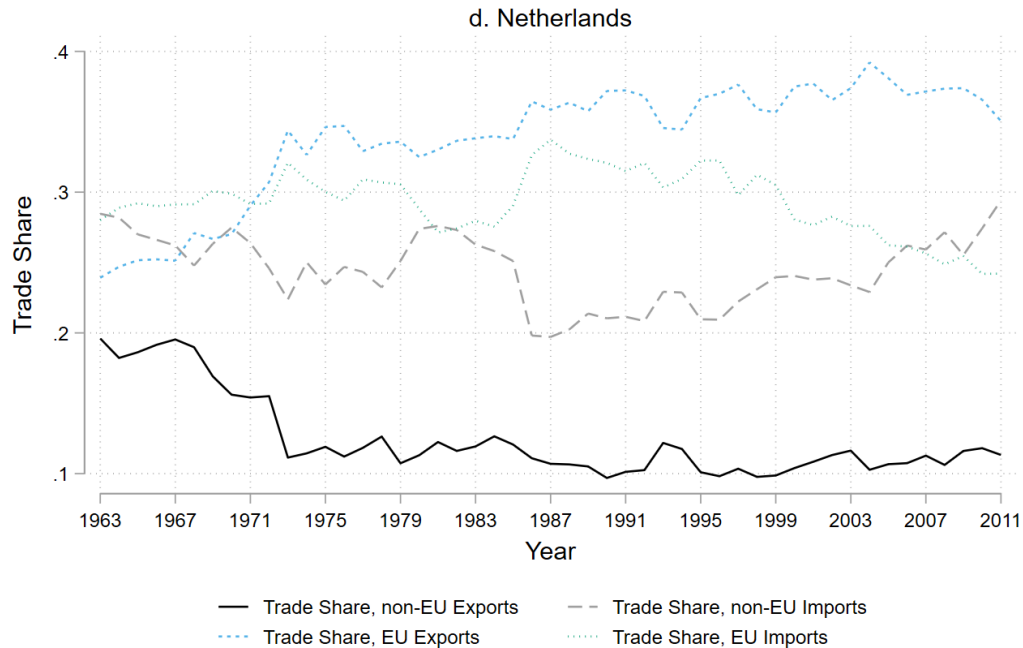
**d. Netherlands**

Figures 3a-3d. Intra-EU and Extra-EU trade share, exports and imports, 1963-2011. Graphs show the intra- and extra-EU trade for four founding EU members: France, Germany, Italy, and the Netherlands.

Figures 3e-3h show later EU members from each of the four expansions of the EU in 1973, 1981, 1986, and 1995. The blue dashed vertical reference line indicates the year in which these four states joined the EU. In Figure 3e, the United Kingdom, upon joining the EU, has a significant decline in extra-EU exports and imports and a significant jump in its share of trade from the EU. Spain (Figure 3g) also shows a sharp decline in extra-EU imports and exports and sharp rises in the share of EU imports and exports. Greece (Figure 3f), upon joining the EU, shows a significant increase in the amount of imports from EU member states and significant declines in its share of extra-EU imports. Sweden (Figure 3h) is an interesting case since its economic and commercial integration with the EU commences in 1972, when it signed a free trade agreement (FTA) with the EU. By 1972, extra-EU exports and imports, in particular, declined significantly while intra-EU imports and exports rose dramatically. By 1994, non-EU imports decline sharply with its inclusion in the European Economic Area (EEA).

e. United Kingdom

| Trade Share, non-EU Exports | Trade Share, non-EU Imports |
| Trade Share, EU Exports | Trade Share, EU Imports |



f. Greece

| Trade Share, non-EU Exports | Trade Share, non-EU Imports |
| Trade Share, EU Exports | Trade Share, EU Imports |

72

g. Spain

h. Sweden

Figures 3e-3h: Intra-EU and Extra-EU trade share, exports and imports, 1963-2011. Graphs show the intra- and extra-EU trade for four EU members joining after 1957: United Kingdom, Greece, Spain, and Sweden.

## 3.3. Toward a theory of the path of least resistance

Economic sanctions disrupt by inflicting economic pain on target states, which is reflected through trade flows (Caruso 2003; Yang et al. 2004) but also in a target state's gross national product and reduced economic welfare (Pape 1997, 93–94). Economic sanctions also generate trade barriers that impact the potential for profitable trade and can be disruptive as they upset well-established commercial avenues for profit between firms and their trading partners in sanctioned states (Early 2016, 47). When economic sanctions are imposed on target states, they generate "network effects" within the international system, spilling over to other countries (third-party states) and disrupting their firms' trade (van Bergeijk 1995). Thus, economic sanctions affect not only the sender and target but also the sender's and target's respective trading partners.
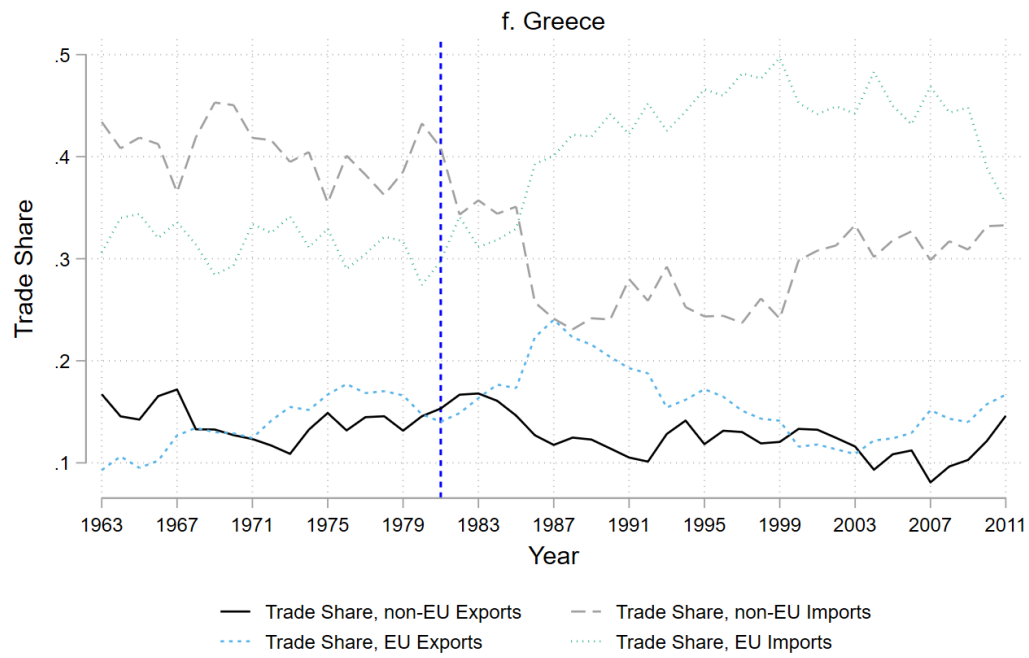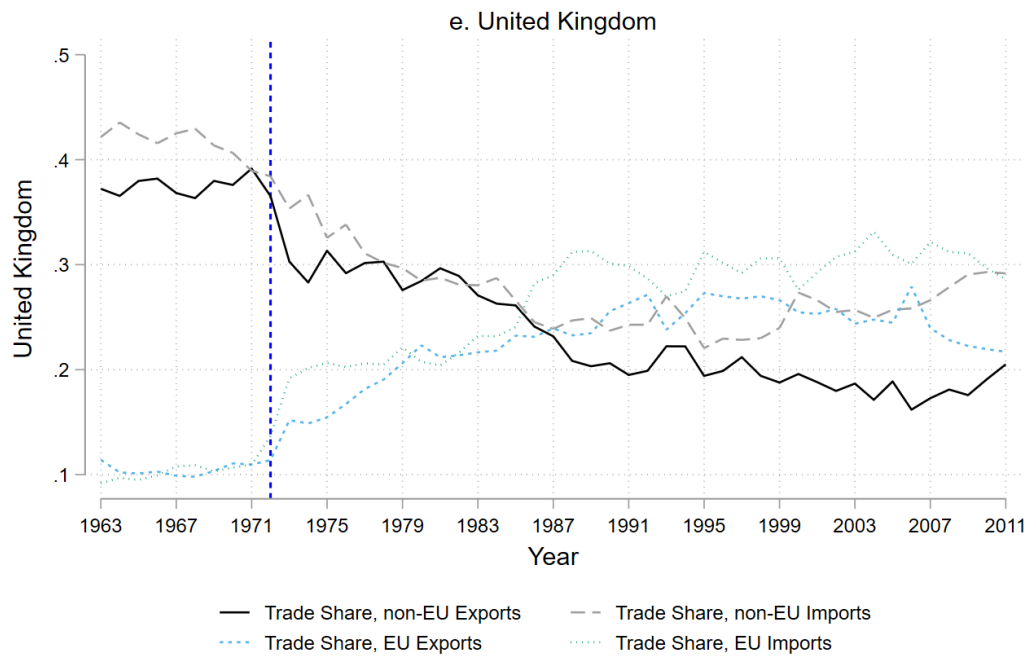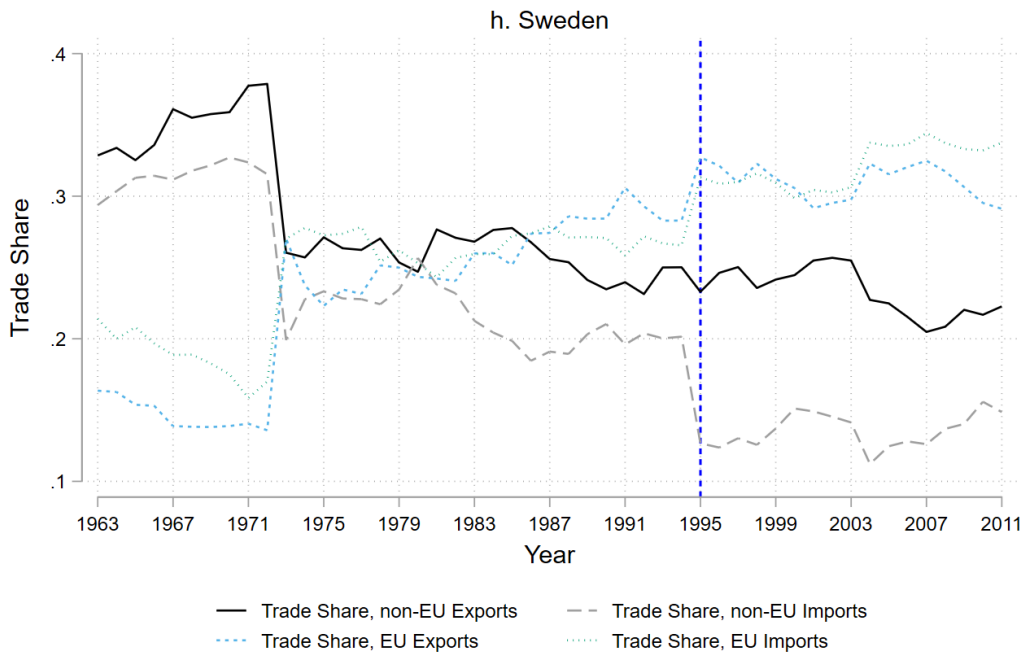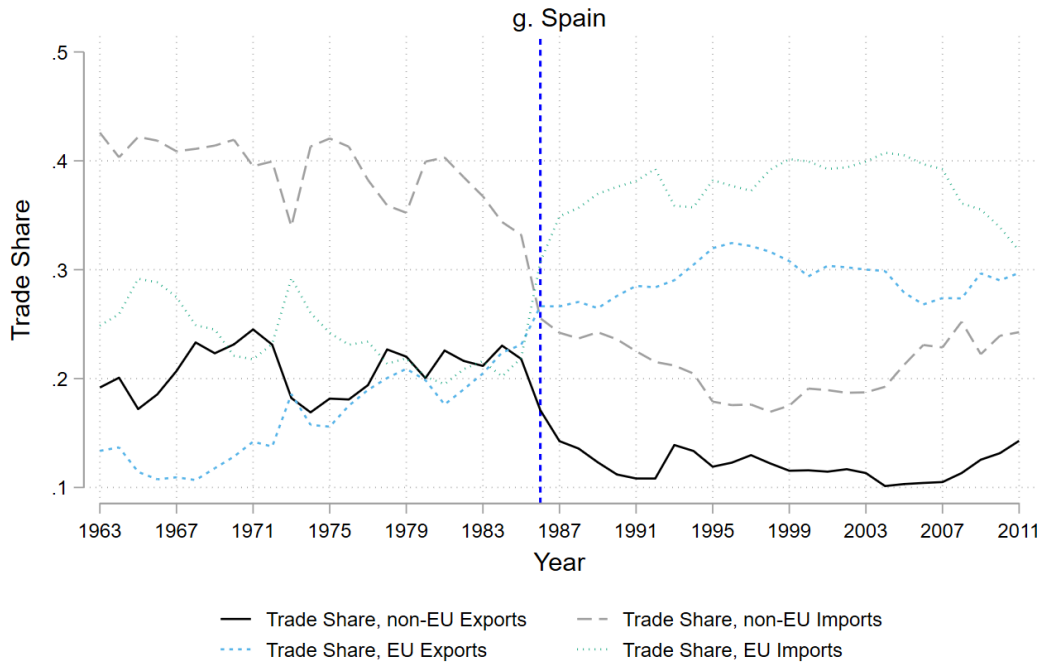
Without compliance from a senders' and third parties' firms, the efficacy of the economic sanctions can be significantly weakened by sanctions busting trade. At the same time, firms are faced with the prospect of relinquishing lucrative commercial opportunities that sanctions busting trade may create. Because "states fight and firms trade" (Q. Li and Sacko 2002, 13), survival is a common attribute between both states and firms: states survive by fighting while firms survive by generating profit through trade. The logic of sanctions busting trade is that firms seek out profitable opportunities for trade that did not exist before economic sanctions were imposed and ignore the economic sanctions in pursuit of those opportunities.

New opportunities for trade during an economic sanctions event vary depending on whether sanctions are uni- or multilateral in nature. As Kaempfer (2007, 875–76) notes, unilateral sanctions are more likely to generate rents for third-party states' firms, whereas multilateral sanctions generate rents for firms and traders in the target state. New opportunities for profitable trade occur under both unilateral and multilateral sanctions, and both of these new

opportunities impact the effectiveness of economic sanctions. There are a number of risks for would-be rent-seekers seeking to capitalize on these opportunities, from both the United States with robust sanctions enforcement policies that could result in not only large fines but also significant reputational effects (Early and Preble 2020a) and the European Union through blocking regulations, EU regulations designed to protect EU firms from US sanctions that disincentivizes firms from complying with US sanctions (Alexander 2009; Ellicott 1997; Huber 1996b; Love 2020; Sherman 1998). Faced between OFAC and US regulators or EU fines and administrative penalties at home, risk-averse EU firms pursue a logical strategy toward a "path of least resistance."

The "path of least resistance" involves EU firms relying instead on a plethora of low-risk, low transaction cost options. Economic sanctions disrupt the ability of EU firms and states to diversify by decreasing the available supply of markets available to EU firms. While economic sanctions may create commercially profitable and lucrative trade opportunities, these opportunities are fraught with risk, which firms seek to avoid. Because states exist in a dense network of trading partners and numerous alternatives through which their firms benefit, third-party states' firms may not necessarily seek out highly profitable opportunities brought on by the imposition economic sanctions for a number of reasons. First, there may be more attractive trade alternatives within a state's dense network of trading partners that offer similar if not better opportunities than those of sanctions busting trade, especially if such alternatives are geographically proximate or provide incentives for trade (such as a lack of customs or reduced tariffs). Second, barriers to trade created by economic sanctions may not be commercially viable for firms considering doing business with sanctioned partners when the costs of such trade have negative political costs. Third, the profitability of sanctions busting trade may be offset by the

economic, political, and reputational costs of such trade in the form of blistering penalties and

fines due to enforcement mechanisms created by the sender state. A third-party states' firms

must therefore choose between engaging in sanctions busting or diverting trade to a more

convenient and safer alternative trading partner and market. Firms of third-party states,

especially within the European Union's common market, are less likely to accept the risks of

sanctions busting trade when there are ample alternative markets from which to choose. Using

intra-EU trade as a proxy for such a trade alternative, I devise the following hypothesis:

> $H_1$: An increase (+) in Intra-EU trade share reduces (-) the probability of sanctions
> busting.

## 3.4. Research Design

This study employs a multilevel binomial logistic regression to test the effects of intra-

EU trade on the probability of sanctions busting between 1963-2011. The unit of analysis is a

directed dyad consisting of a target state, one that has been targeted by a sender state with

sanctions, and a third-party state that may/may not sanctions bust. The data set contains annual

observations of directed dyadic relationships between third-party EU member states and targets

of the economic sanctions, which serves as the unit of analysis. The number of direct dyads

increases as the number of EU member states increases from 6 to a total of 27; in other words,

only direct dyads involving an EU member state and a non-EU member state are a part of the

data set.

To test the hypothesis discussed above that increases in intra-EU trade reduce the

likelihood of sanctions busting, I utilize a time-series cross-sectional data set that contains 118

sanctions cases from 1963-2011 with 9,922 observations. Each of these sanctions cases are

instances when a country or entity other than the European Union or its member states is the

sender of the sanctions. Instances where the EU or its member states are senders of sanctions are not included in the data set since the focus of the paper is on how third-party European Union member states respond to sanctions. Sanctions episodes are coded using Hufbauer et al. (2009)'s data as well as their extension to their cases published on the PIIE web site that extend the range of cases to 2012. Due to limitations in GDP data for many of the target states, I do not consider sanctions events beyond 2011.

I utilize a multilevel model that accounts for the cross-classified nature of the data with third-party states trading simultaneously with one or more target states, which helps to account for clustering not only between third-party EU member states but also between the sanctions events and target states with which EU member states are trading. Multilevel models are increasingly being used for time-series cross-sectional and longitudinal data (Finch, Bolin, and Kelley 2017; Gelman and Hill 2007; Luke 2019; Shor et al. 2007; T. Snijders 1996; T. A. B. Snijders and Bosker 2012). By employing the non-nested or crossed-classified approach, I make the assumption that the effects of intra-EU trade on sanctions busting is the same across all EU member states in the data set. In other words, intra-EU trade should have a negative effect on the propensity to bust sanctions across all third-party EU member states and sanctions cases and target states with whom they trade. The addition of random effects in the multilevel model highlights efforts to understand the variability across both third-party states *and* sanctions events instead of unpacking the effects of any particular country or sanctions event on the propensity to engage in sanctions busting.

A difference-in-difference design was considered, but the use of such a model, while it might demonstrate a more definitive causal relationship between intra-EU trade and sanctions busting, is impractical due to limitations in the data, especially for the countries that founded the

EU (Germany, especially) where trade and GDP data, particularly, is missing or incomplete.[10]

Also, my analysis is concerned mainly with how *membership* within the EU affects the

likelihood of an EU member engaging in sanctions busting.

The use of the multilevel logistic regression model provides some unique benefits. First,

complete pooling of the data masks variation (Gelman and Hill 2007, 7), and this study hopes to

capture that variation. Second, repeated time measures in the data set due to different sanctions

events occurring at the same time make other forms of panel analysis difficult. Third, close trade

ties among EU member states and the similar trade interests mean that the data is clustered (not

only with the sanctions targets but also among EU member states, too), for which standard

pooling techniques with clustered standard errors may not properly compensate and for which

multilevel or mixed-effects approach are more suited (Luke 2019). Lastly, a multilevel model

offers a compromise between the fixed effects and random effects model while allowing for the

modeling of unit heterogeneity.

Table 1. Summary Statistics.

| *Variable* | *Mean* | *Std. Dev.* | *Min* | *Max* |
|---|---|---|---|---|
| Sanctions Busting | .1241685 | .3297903 | 0 | 1 |
| Intra-EU Trade Share | 63.11403 | 10.07321 | 34.12968 | 85.07085 |
| Trade Share$_{\text{Third-Party to Target}}$ | .0025571 | .0075779 | 9.42e-08 | .1183598 |
| Trade Openness | .1370751 | .4201424 | .0031193 | 5.608071 |
| Ln GDP$_{\text{Third-Party}}$ | 15.13146 | 2.372249 | 7.955682 | 19.35489 |
| Ln GDP$_{\text{Target}}$ | 13.48587 | 3.224855 | 6.235319 | 23.42038 |

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[10] For example, in the Correlates of War Trade 4.0 data set, trade data for Germany is spotty until 1955, which would only allow for two years of analysis *before* the creation of the EC in 1957. Given Germany's importance as Europe's largest country and economy, the results would be inconclusive.

| | | | | |
|---|---|---|---|---|
| Colonial Legacy | .0326547 | .1777401 | 0 | 1 |
| Sanction Duration | 11.22042 | 11.00203 | 0 | 61 |
| Distance (mi.) | 8.321794 | 1.166136 | -26.59074 | 9.731993 |
| Years of No Busting | 5.685043 | 6.337171 | 0 | 48 |
| Years of No Busting$^2$ | 0.7247541 | 1.606356 | 0 | 23.04 |
| Years of No Busting$^3$ | 13.3335 | 50.75268 | 0 | 1105.92 |

### 3.4.1. Dependent Variable

Borrowing from Early (2015) and Early and Spice (2015), I code sanctions busting as a dichotomous variable. For sanctions busting to have occurred, there must be either a 5% increase in the imports or exports in a given year above the baseline level of trade (that is, the level of trade when exchanged when sanctions are imposed) *and* the third-party's trade with the target must account for at least 5% of the target's total aggregate trade or trade in agricultural goods (which reflects the trading state's status as a major trading partner). For successive years to be coded as sanctions busting, the target's trade with the third-party must continue to account for at least 5% of the target's aggregate and trade in agricultural goods and remain above the 5% baseline established in the first year.

In the data set, sanctions busting in the aggregate accounts for 12.42% of the observations or 1,232 incidents of sanctions busting across 9,922 observations. It is worth noting that sanctions busting is less of a rare event when examining only EU member states, who account for most sanction busting cases within the data. If one considers all countries in the world in any given year across the same years, sanctions busting becomes considerably rarer at just 3.8% of total observations in the data set across 135,000 observations.

The distribution of sanctions busting across EU member states is given in Figure 2 using aggregate trade flows. As the figure shows, Germany, France, Italy, and the United Kingdom show the highest number of sanctions busting events followed by the Netherlands, Belgium, and Spain. The remaining sanctions busting events occur in single digits across some of the remaining EU member countries, principally those states that joined the EU after 1972.

*3.4.2. Independent Variables*

To test my first hypothesis that intra-organizational trade reduces the probability of sanctions busting, I generated an independent variable that captures intra-organizational trade, *Intra-EU Trade Share*, by using trade data from the UN Comtrade data set (Growth Lab at Harvard University 2019; United Nations, n.d.). This variable captures the proportion of trade with other EU member states to its total trade worldwide, and, as is consistent with the literature, is lagged by one year. High values indicate that the EU member state conducts a greater share of its trade within the EU, whereas lower values indicate that an EU member state conducts a greater share of its trade outside the European Union. I surmise that as intra-EU trade share increases, the probability of sanctions busting should decline.

Following from the literature on sanctions busting, I also construct several control variables. The first, *Trade Openness*, accounts for the EU member states' openness to international trade. This variable is coded as the third party's total trade divided by its GDP and lagged by one year. To account for the depth of the commercial ties between the EU member state and the target state and following from the literature, I create the variable, *Trade Share*. This variable is the proportion of bilateral trade between the target and third-party state to the third-party state's total yearly trade and is also lagged by one year. Higher values indicate that there are deeper commercial ties, and the literature on sanctions busting has shown that higher

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values on this variable account for an increased likelihood of sanctions busting. To code this variable, I use the same trade data used from the UN Comtrade data set (Growth Lab at Harvard University 2019; United Nations, n.d.).

To capture the economic size of both the third-party state and target state, I create two variables, ln GDP$_{3rd\text{-}Party}$ and ln GDP$_{Target}$. Both of these variables are coded using the gross domestic product in current year dollars using Gleditsch (2014), which is then lagged one year and logged. The economic size, as captured by GDP, has different effects. As the GDP for a target state increases, the probability that sanctions busting would occur should decline. As the target state grows larger economically, it would logically be less reliant on sanctions busting by third parties. For the third-party state, a higher GDP would indicate a larger economy and greater reliance on and capability of conducting sanctions busting trade.

In addition to the economic variables, I control for *Colonial Legacy*, a dichotomous variable, which takes into account the presence of a colonial legacy between the third-party and target state using Wimmer, Cederman, and Min (2009). If a colonial relationship existed in the past between the third-party state and target state, third-party states may be more likely to sanctions bust to preserve commercial ties with former colonial possession.

I code and control for *Sanctions Duration*, which measures (in years) the length of the sanctions event using Hufbauer et al (2009)'s coding of economic sanctions events. The longer a sanctions event endures, the greater the probability that a third-party state will engage in sanctions busting. I also control for the minimal geographic distance (Gleditsch and Ward 2001) between the third-party state and target state (with the assistance of *NewGene* (Bennett, Poast, and Stam 2019)), which is transformed using the inverse hyperbolic sine function, which, unlike the natural log, is able to preserve the zeroes in the data. The farther two states reside from each

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other, the less likely that sanctions busting occurs, presumably because farther distances impose greater costs on firms to conduct trade. Lastly, I control for periods in which sanctions busting does not occur in order to account for temporal dependence (Carter and Signorino 2010) by creating a *Years Since No Busting* variable along with its squared and cubed variants. The longer a state goes without sanctions busting against a target state, the less likely it would do so in the future.[11]

## 3.5. Results

Table 1 shows the results of the pooled and multilevel logistic regression (GLMM). To determine whether the levels in the data matter, a likelihood ratio test was performed, which returned a chi square of 357.46 and a *p* of 0.001. From these results, I can confidently reject the null hypothesis that the pooled model is preferred to the multilevel model.

The levels in the data matter and provide a better model for the data by controlling for clustering with both the target state and the third-party EU member states whereas the pooled logistic regression can account for clustering in the standard errors of the sanctions case (target state) *or* the third-party EU member state (but not both). The multilevel logistic regression (Model 2) also has a lower AIC of 3192.43 than the pooled logistic regression with its AIC of 3545.89, further indicating that the multilevel model provides a better fit for the data. Further,

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[11] I used both Stata and R for performing the regressions. In R, I grand-mean center the variables in the model (with the exception of the dichotomous variable, *Colonial Legacy*), which aids not only in interpreting the values of the independent variables (without grand-mean or group-mean centering, but also increasing the model's stability by eliminating high intercorrelations (which could impede model convergence between the random effects of the model (Luke 2019, 52–57). Stata did not require this action, which makes interpretation of the independent variables more straightforward.

with significant clustering between sanctions cases and between third-party EU member states,

the multilevel approach seems warranted.

Table 2. Pooled Logistic (Model 1) and Multilevel Generalized Linear Mixed-Effects Regression (Model 2) Results.

| | Model 1 Pooled logistic | Model 2 GLMM |
|---|---|---|
| **Fixed Effects**: | | |
| Intra-EU Trade Share (%) | -0.0412* | -0.0621* |
| | (-3.72) | (-4.84) |
| Trade Share$_{\text{Third-Party with Target}}$ | 34.22 | 58.58* |
| | (1.52) | (5.13) |
| Trade Openness$_{\text{Third-Party}}$ | -0.111 | 0.0499 |
| | (-0.34) | (0.08) |
| ln GDP$_{\text{Third-Party State}}$ | 0.447* | 0.666* |
| | (8.24) | (6.69) |
| ln GDP$_{\text{Target State}}$ | -0.0828* | -0.0607 |
| | (-2.68) | (-1.28) |
| Colonial Legacy | 0.863* | 1.968* |
| | (2.46) | (9.28) |
| Duration of Sanctions Event | 0.0466* | 0.0229 |
| | (3.28) | (1.81) |
| Distance (mi.)[12] | -0.247 | -0.109* |
| | (-0.72) | (-2.30) |
| Years without Sanctions Busting | -1.725* | -1.461* |
| | (-12.91) | (-17.50) |
| Years without Sanctions Busting$^2$ | 19.64* | 16.38* |
| | (8.40) | (9.35) |
| Years without Sanctions Busting$^3$ | -0.694* | -0.567* |
| | (-6.20) | (-6.40) |
| Constant | -2.129 | -7.133* |
| | (-0.66) | (-4.38) |
| **Random Effects**: | | *Standard Deviation* |
| Sanctions Cases (109 groups) | – | 1.41 |
| Third-Party States (27 groups) | – | 0.95 |
| *AIC* | 3545.9 | 3192.4 |
| *BIC* | 3632.3 | 3293.2 |

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[12] Distance has been transformed using the inverse hyperbolic sine function rather than the natural log due to zeroes in the data.

| | | |
|---|---|---|
| Log-likelihood | -1760.9 | -1582.2 |
| N | 9922 | 9922 |

The multilevel logistic regression results (Model 2, *generalized linear mixed-effects model*) show that intra-EU trade share has a negative sign and is statistically significant. Transforming the log-odds coefficient to a probability, the average marginal effect of intra-EU trade share on the probability of sanctions busting indicates a 0.26 percentage point decrease in the probability of sanctions busting for every 1 percentage point increase in a country's intra-EU trade share. Figure 4 shows the effects of intra-EU trade share on the probability of sanctions busting. Rather than relying on a random observation or the average observation to calculate the predicted probability, I utilize an observed value approach as recommended by Hanmer and Kalkan (2013). I calculate the fixed effects of intra-EU trade share on the probability of sanctions busting and utilize this approach for all the remaining figures below.
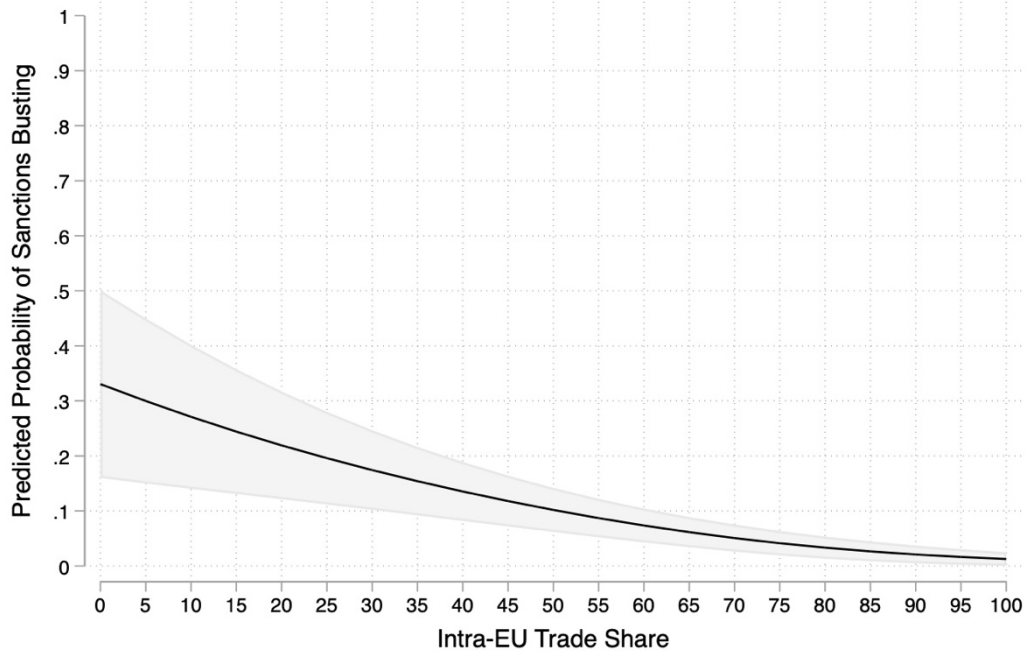
Figure 4. Predicted Probability of Sanctions Busting as a Function of Intra-EU trade. Shaded areas represent 95% confidence intervals.

Intra-EU trade share has a decidedly modest negative effect on the probability that an EU member state will engage in sanctions busting. As the percentage of intra-EU trade increases for a third-party EU member state, the probability of sanctions busting declines and the likelihood of sanctions busting occurring becomes rarer as the level of intra-EU trade of an EU member state surpasses the mean (63.11%), which is reflected in the narrowing confidence bands around the predictions. At higher values of intra-EU trade share, the probability of engaging in sanctions busting is significantly reduced and close to zero.

The effects of *Trade Share* (or *Commercial Dependence*} have a strong effect on the propensity to engage in sanctions busting with the probability of sanctions busting increasing 2.49 percentage points for every 1 percentage point increase in *Trade Share* between the third-party and target state. While the effects are strong, those effects come with caveats. As an EU member country's trade dependence increases with the target state, the probability of sanctions busting does increase. Note, however, the histogram overlayed with the predicted probability shows the frequency of observations of *Trade Share* when sanctions busting occurs. Most of the sanctions busting that does occur take places between the mean (0.002) and 1.3 standard deviations above the mean (0.01) – a very narrow range of the range. Sanctions busting is occurring at extremely small values of commercial dependence between the third-party EU member state and target state, even when the trade share between the target and 3rd-party state is an extremely small one. One such example can be found in the data set. Italian and French trade with Armenia in 1992, for example, amounts to trade share values of .00138% ($1,104,039 in total trade) and .000319% ($6,488,151 in total trade), respectively. However, Italian and French

trade with Armenia accounts for only a mere fraction of both EU countries' total trade. Despite the small values in the trade share, sanctions busting still occurs.
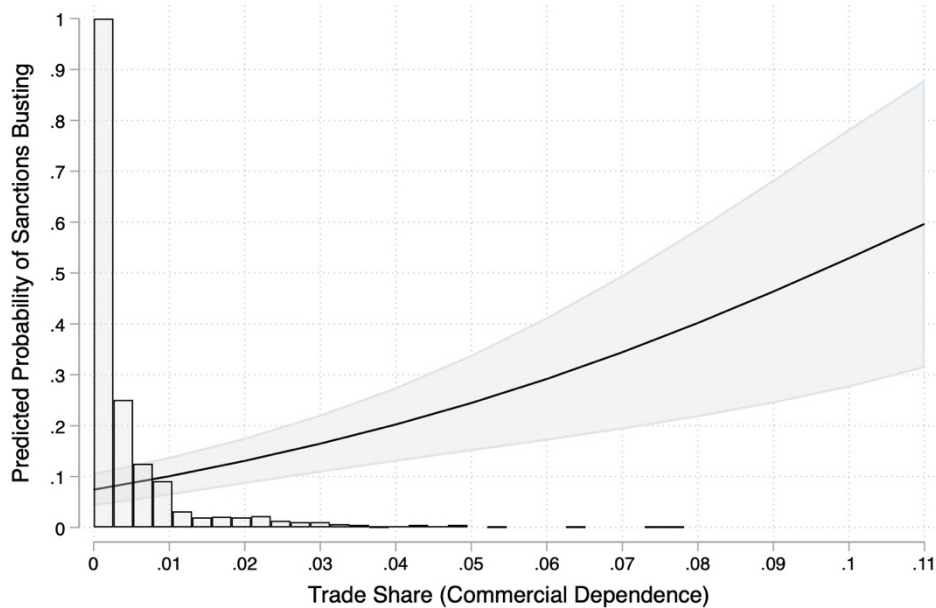


Figure 5. Probabilities of Sanctions Busting as a Function of Trade Share. Shaded areas represent 95% confidence intervals. Histogram has been overlayed showing the frequency of observations of Trade Share when sanctions busting occurred.

The *sparseness* in the incidents of sanctions busting at higher values of commercial dependence is likely the result of trade diversification among EU firms. Firms in the EU do not seem highly dependent on imports from target states nor too reliant on export markets in these target states. The sparseness of sanctions busting at higher values of *Trade Share* most likely reflects this diversification of trade partners by EU member states as well as the diversification of goods being traded since export diversification has been linked to more sustainable growth (Chenery 1979). Having a diverse export trade portfolio provides economic benefits, such as higher per capita income growth (Hesse 2008, 2). Export diversification could thus have been seen as a way to provide greater stability for the economies of EU member states when export markets outside the EU are disrupted by economic sanctions and better predictability for risk-

averse firms. Because this diversification occurs not only in the goods being traded but also in the places where these goods are destined, values of *Trade Share* in the aggregate never venture higher than 8%.

These findings indicate that export diversification in the EU offers not only a greater potential for sustainable growth and higher per capita income but may also serve to insulate EU member states from the disruptive effects of economic sanctions as goods destinated for a sanctioned market could be shifted to other markets. Such effects have been documented (Christie 2015). Also, as the number of sanctions in force increases in the 1970s, the number of commercial opportunities created by the disruption of trade networks due to economic sanctions would presumably increase, yet we are not seeing firms exploit these opportunities. What motivates sanctions busting among this risk-averse sample is not commercial dependence by firms in third-party states. Instead, commercial opportunities created through network effects are supplanted by safer and equally profitable, less-risky commercial opportunities within the EU common market.
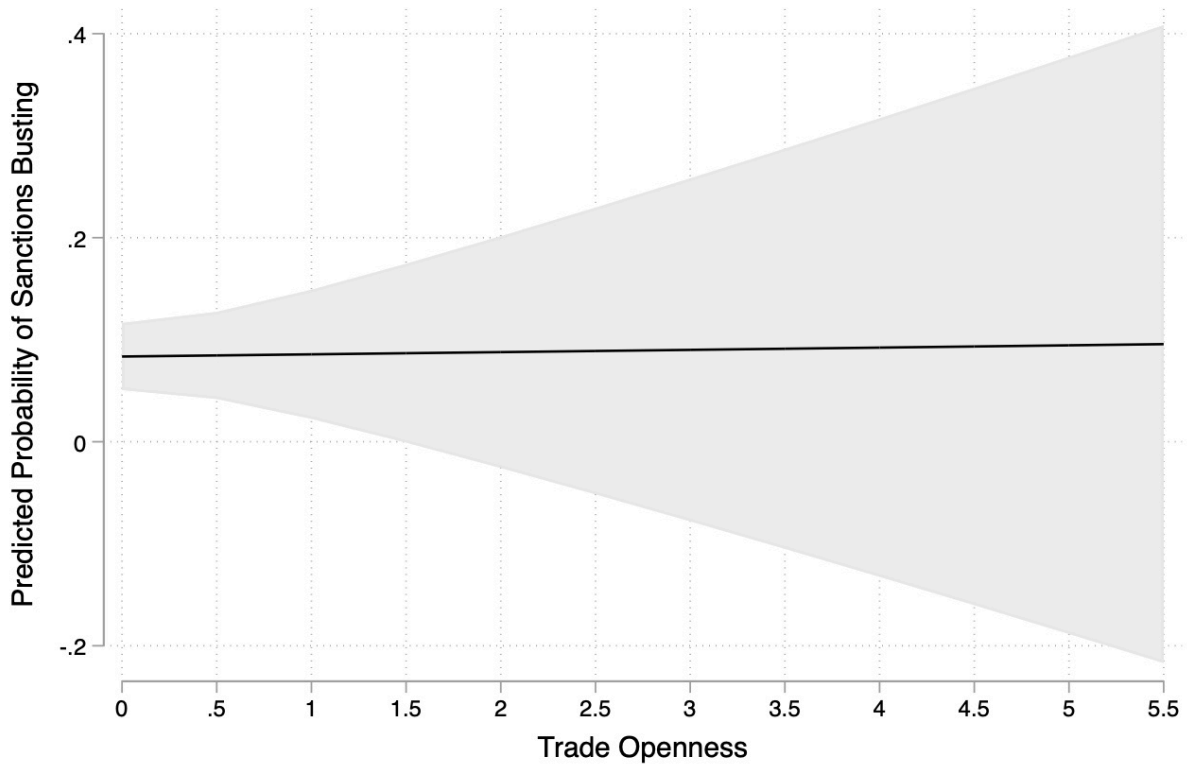
Figure 6. Predicted Probability of Sanctions Busting as a Function of Trade Openness. Shaded areas represent 95% confidence intervals.

Trade openness is statistically insignificant. Figure 6 shows the predicted probabilities over the range of values of trade openness in the data set with the line remaining horizontal. The effects of trade openness are negligible. Given the sample of EU countries and the EU's commitment to its trade and commercial policy, the amount of within- and between-case variation among EU member states is relatively small (Figure 7). Trade openness is often used a proxy for economic integration to the global economy, and EU member states have divested authority in the areas of trade and commerce to supranational bodies within the EU (M. Baldwin 2006), leading to EU member states having similar trade interests centered around EU trade policy.
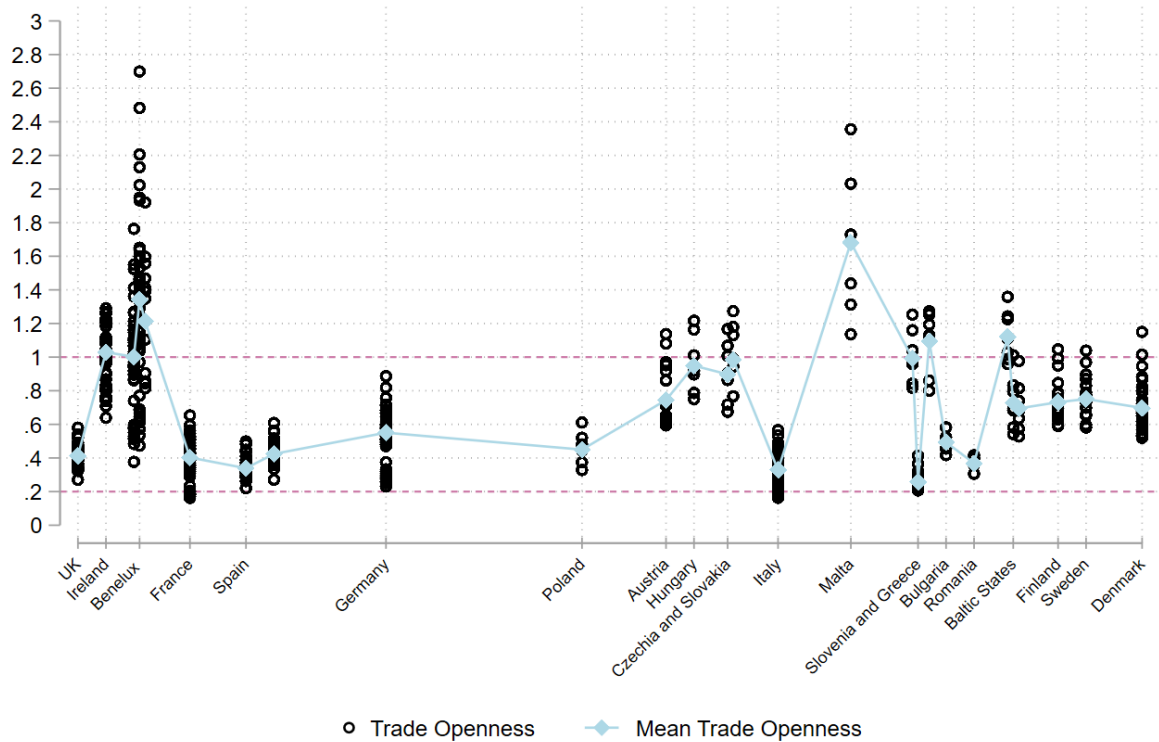
Figure 7. Variation in trade openness among EU member states. Black circles indicate observations of trade openness; blue diamonds connected by a line indicate the mean value of trade openness for each EU member state. Two dotted lines between 0.2 and 1.0 indicate the range where a significant portion of observations fall.

While the third-party state's GDP is statistically significant, the effects of GDP on the predicted probability of sanctions busting are modest and do not appear to generate an effect on the probability of sanctions busting until the value of GDP surpasses the mean (a value of 15.13 on the log scale) (Figure 8). Unsurprisingly, wealthier countries show a greater likelihood of engaging in sanctions busting with the probability of sanctions busting increasing 2.8 percentage

points for every 1 unit increase in the third-party state's ln GDP.
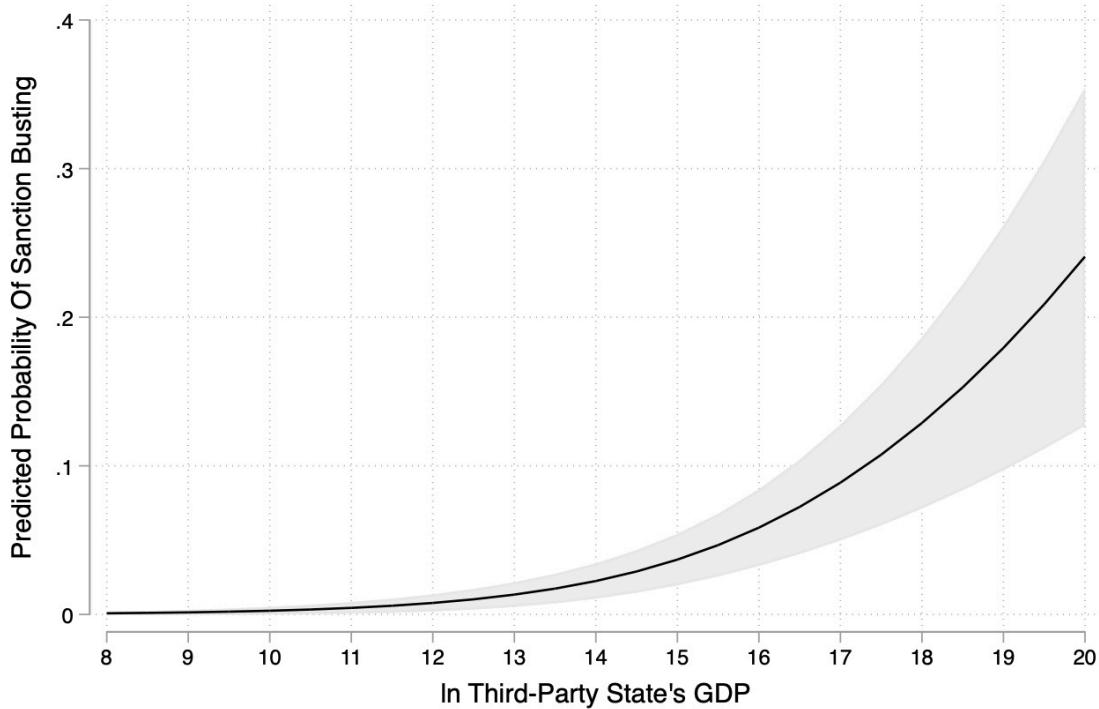


Figure 8.  Predicted Probability of Sanctions Busting as a Function of the ln third-party state's GDP. Shaded areas represent 95% confidence intervals.

The target's GDP, on the other hand, is not statistically significant in the model. These results are unsurprising. Because EU member states trade very little with many of the sanctioned entities relative to non-sanctioned trading partners and each other, when sanctions busting does occur, it is not contingent upon the economic size of the target state nor it is due to any significant level of commercial dependence (as seen in Figure 5). What drives sanctions busting in these cases is most likely the fact that third-party EU member states are able to capitalize on the profit-making opportunities due to the network effects created by economic sanctions.

As is consistent with previous studies on sanctions busting (Early 2009, 2011), colonial legacy is statistically significant, and the probability of engaging in sanctions busting is 10.43 percentage points higher when a colonial legacy exists between the target and third-party state.

The duration of the sanctions event is not statistically significant in the model presented here, which deviates from previous findings in the literature that showed that trading partners that were further away resulted in a lower likelihood of sanctions busting. I surmise that because firms, EU firms in particular, capitalize on the profitable opportunities created by network effects, that the length of the sanctions does not play a factor, especially when such firms and their wealth enable them to trade over vast distances. Finally, distance remains statistically and substantively significant; the farther away a target state is from the third-party, the less likely the third-party EU member state engages in sanctions busting.

## 3.6. Conclusion

This research has sought to understand the secular decline of sanctions busting by EU member states as well as the decline in opportunistic behavior via sanctions busting trade. I have sought to explain the cross-temporal variation in sanctions busting and have underlined how time-invariant variables may not adequately explain the decline in EU sanctions busting when the EU is considered separately. As economic sanctions have become more common in the international system, EU firms may have sought not only to develop trade relationships with countries less likely to be the focus of economic sanctions but also seek out trade alternatives with other EU member states. As the European Union has grown larger, the Single European Market offers an immense network of ready trading partners for its goods.

Understanding the role of the European Union and how this role interacts with the risk-averse nature of EU firms may potentially assist policymakers in how they design, implement, and enforce economic sanctions. While European member states *do* engage in sanctions busting more than other countries in the international system, the growth of the single market and the

addition of new EU member states provide new markets that offer similar if not greater benefits for EU member states. While economic sanctions have been shown to generate commercial opportunities for third-party states, third-party European countries have sought to trade instead with each other, even as the use of sanctions has increased over time. This shift in trade toward other European or EU member states shows not only the trade interdependence among states on the European continent but also the growing importance of the EU's economic community (customs union and more recent single market).

The volatility of intra-EU trade share as a proxy for trade alternatives may reflect the complexity of global and regional integration. Even as the EU has developed its customs union and common market, sanctions busting continues to occur. This finding may indicate that there may be some commercial relationships that cannot be sought elsewhere or may indicate sunk costs paid by firms in creating commercial ties and networks in states routinely targeted by economic sanctions.  There may ultimately be some commercial opportunities found outside the EU that cannot be substituted through the common market or non-sanctioned external trading partners.

# Chapter 4. The "Race Away from Brussels" and the Efficacy of Arms Embargoes

**Abstract**

The European Union implemented a legally binding Common Position on arms exports in 2008 after operating for nearly a decade under a politically binding Code of Conduct. Anecdotal evidence, media reports, and policy studies have consistently found that EU policy is lacking in creating a harmonized system of arms exports with EU modern conventional weapons appearing in several conflict zones. Using SIPRI arms transfer and multilateral arms embargo data (1993-2018), I show how arms embargoes are made less effective after the imposition of the EU's Common Position in 2008. I further argue that arms embargoes and arms exports by EU member states provides highlights how EU member states are often locked in a "race away from Brussels" whereby EU member states move away from supranational control over key policy areas through a preservation and privileging of national interests. The "race away from Brussels," I argue, is due to greater arms reporting transparency and intra-EU competition that make arms export harmonization and policy congruency more difficult to achieve. I find that the Common Position has magnified intra-EU competition relative to the period before the Common Position's implementation. I provide evidence of increased trade to partially and fully embargoed states while also demonstrating how increasing intra-EU competition undermines the effectiveness of arms embargoes.

In 2008, the European Union (EU) adopted a Common Position on Arms Exports ("Council Common Position 2008/944/CESP of December 8, 2008, defining common rules governing control of exports of military technology and equipment"), which was preceded by the Code of Conduct on Arms Exports. The Code of Conduct differed only slightly from the Common Position with the Code of Conduct being only politically binding while the newly adopted Common Position became legally binding on EU member states (Bauer and Bromley 2004; Bromley 2012). Both the EU Code of Conduct and the subsequent Common Position sought to align EU member states across a unified arms export control system. The European Union's Common Position worked to obligate its members to improve their reporting of both arms export licenses as well as denials of said licenses while aligning arms exports across the EU. The Common Position also urges member states to deny licenses when arms exports may be used to violate the human rights of citizens of the countries where military equipment is destined. Overall, the EU's Common Position has sought to make arms exports more transparent through the creation of national reports by individual member states, which are reported to the European Union annually, while harmonizing export controls for a particular class of goods.

Recent reports by the Stockholm International Peace Research Institute (SIPRI) indicate that, since 2011, the European Union accounts for 26% of global exports of modern conventional weapons. During the 2016-2020 period profiled in a recent SIPRI report, France, Germany, the UK (still part of the EU before Brexit), Spain, and Italy account for 22% of global arms exports, a slight uptick from the 2011-2015 period examined in previous reports (Wezeman, Kuimova, and Wezeman 2021). European defense industries exist in almost all EU member states along with Norway and Switzerland. However, "the bulk of SMEs [small and medium enterprises]" engaged in arms manufacturing are located mainly in Austria, Czechia, France, Germany, Italy,

Poland, Spain, Sweden, and the United Kingdom" (Roth 2017; Stockholm International Peace

Research Institute (SIPRI) 2021). As of 2014, these industries employed over 500,000

individuals and created — directly or indirectly — more than 1.2 million jobs (Roth 2017),

which demonstrates their importance to the economies in the union. The EU Code of Conduct

and subsequent Common Position create a single common policy anchored in Brussels that all

EU member states should follow.

Arms sales, especially of modern conventional weapons (MCWs), are highly regulated

by national governments (as is most military equipment), and export licenses must be granted

before transfers can occur (Stohl and Grillot 2009, 63–69). Within the EU (and in most arms

producing countries), arms export policies are implemented and enforced at the national level,

which allows states to ignore the EU's Common Position with few political or economic

consequences (Besch and Oppenheim 2019; Hansen and Marsh 2015; Ministerie van

Buitenlandse Zaken 2021; Oppenheim 2019). The Common Position (and the former EU Code

of Conduct) were designed to reduce the flow of arms transfers, especially when the sale of such

weapons contravened international law or violated norms of human rights. Rettman (2020) has

noted that arms exports from EU member states routinely find their way into arms-embargoed

Libya owing to the lack of oversight within the EU Council in Brussels. Trevisan (2021) has also

observed that the European Union contributes to the arms problem in Libya, noting that "defense

companies are untouchable by law….The role of arms-control laws in this organised

irresponsibility is neither incidental nor sustainable. Member states' laws and licensing systems

structurally enable them to break the arms embargoes that the EU is seeking to enforce."

Member states are trusted to devise national rules to ensure that arms sales do not find their way

into embargoed states, but these weapons still find their way to places barred by the spirit of the

Common Position. In total, France, Germany, Italy, Spain, Sweden, and the UK (before it left the EU) granted permits to countries routinely violating UN sanctions and arms embargoes totaling more than 1 billion euro (Rettman 2020).

Reports and studies have consistently demonstrated that while the EU has developed common frameworks to manage arms exports (Council of the European Union 2008), member states routinely seek exemptions at the national level to the Common Position even when such licenses contravene the principles of the EU's Common Position (Hansen and Marsh 2015; Oppenheim 2019). The language of the Common Position itself is at times paradoxical, as well. While urging member states to use caution when exporting to recipient countries, the Common Position simultaneously privileges member states' sovereignty and relegates the importance of arms and defense industries to member states front and center of the Common Position. Further complicating matters is that these *Common Positions* often "occupy something of a gray zone between legislation and political cooperation" (Dix 2013, 7).

Also, the lack of a formal enforcement mechanism means that states are relied upon to support the EU's security policies (2013, 7). The lack of credible enforcement mechanisms means that EU member states export arms even to embargoed states with few if any consequences, which at their core undermine the effectiveness of arms embargoes. Kranz (2016) has argued that the issues related to compliance and arms embargo effectiveness are due to the way that arms embargoes and other restrictive measures (EU sanctions) are designed that privilege national sovereignty where national imperatives take precedence over joint foreign and security policy goals at the EU level. Conversely, Erickson (2013) has shown arms embargoes *are effective* at restricting arms to partial and fully embargoed states. I argue that the answer lies somewhere in the middle: that arms embargoes are conditionally effective but that the Common

Position has had an opposite and unintended effect of undermining the effectiveness of arms embargoes. What explains this divergence?

I theorize that the Common Position has accelerated the "race away from Brussels" whereby member states hold onto policy areas when EU interference may impose economic and political constraints on their national governments. As EU countries "race away from Brussels," arms embargoes become ineffective sanctions instruments at inhibiting arms transfers. This "race away from Brussels" reflects efforts by member states to slow or abandon harmonized arms export control policies. The "race away from Brussels," stands in sharp contrast with Holzinger and Sommerer's (2011) "race to Brussels," whereby both industry and government benefit through harmonization of standards. Because increased harmonization of arms exports *harms* both industry and government, member states, often at the behest of their national arms industries, "race away from Brussels" to preserve their control and sovereignty over this key aspect of the EU's Common Foreign and Security Policy (CFSP). Competence.

This "race away from Brussels," I surmise, is the result of both greater transparency of arms exports and license denials and intra-EU competition among arms manufacturers. This information that member states capture, report, and subsequently make public on their arms export activity exacerbates intra-EU competition that already exists among arms exporters. Whereas international institutions are meant to mitigate these types of relative gains problems realists have identified (Grieco, Powell, and Snidal 1993; Keohane 1984; Powell 1991), the institutions within the EU have had a counterintuitive effect. As information has become less asymmetrical, opportunistic behaviors have increased as intra-EU competition has grown. Intra-EU competition can be operationalized as a form of spatial lag whereby the trade conducted by EU members to similar recipients impacts the behavior of EU members seeking to trade with

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those same recipients. If the Common Position has driven an increase in arms exports, this spatial effect should be higher during the Common Position than before it. Through a combination of descriptive statistics and quantitative analysis, I find that arms exports during periods of no embargo, partial, and full arms embargoes increase the average arms transfer by a European state by 86%, 148%, and 94%, respectively. Because there is an increase in the average arms transfers across all three levels, the effects witnessed are unlikely to be solely the result of the commercial opportunities created by the network effects of the arms embargoes.

The analysis and findings have implications not only for our understanding of economic sanctions and arms embargoes but also the study of the European Union. The EU's Common Position, which seeks to regulate and rein in arms exports, reflects how calls for greater transparency and centralization of policy may generate negative externalities and undermine the very problem such policies were meant to counter. Member states and their respective arms industries face not only economic competition and pressure due to increasing competition in the arms market but also barriers to carrying out arms trade due to the perception (real or otherwise) of burdensome supranational regulations. The "race away from Brussels" may exist in other policy areas, as well, such as the rise of vaccine nationalism in the EU during the COVID-19 pandemic and the hesitancy of member states to accept additional refugees and migrants during the Syrian civil war. The UK's recent exit from the EU – Brexit – may represent an extreme case of this phenomenon.

From a policy perspective, understanding the competitive dynamics that operate within Europe and the European Union and how these policies may undermine policy goals may lead to greater policy congruence between supranational institutions of the EU and their respective member states. While the EU has played an important role in restricting the flow and sale of

illegal weapons, the findings presented here show that licit arms exports to embargoed states have increased since the creation of the EU's Common Position on arms exports. The research presented here underlines the importance of developing effective oversight mechanisms so that the EU's normative agenda takes precedence over the economic benefits potentially generated through lucrative arms sales. Developing effective policies that preserve ethical norms while also preserving political and economic objectives need not be mutually exclusive.

## 4.1. Between the ethics and economics of arms embargoes

Much of the literature on the arms trade addresses the ethical and human rights concerns involved in such transfers. Such approaches focus on the consequences of an unregulated and, in some cases, regulated legal arms trade without properly considering the impetus driving such trade. Some studies have noted that many arms supplying states — such as France, Germany, the UK, and the United States — fail to exercise sufficient export controls, noting that most transfers seek to advance the domestic interests of the arms supplying state to further security and economic interests (Perkins and Neumayer 2010). The arms market, however, is not constant and has changed with developments in the international system. Yanik's work (2006) has sought to show how the decline of the Cold War has created a buyer's market and largely attributes human rights abuses to how national laws and international norms are structured to allow for arms transfers to embargoed states to occur. The very states that seek to create export controls design export controls in such a way that such regulations do not inhibit their ability to market and sell products. These regulations that promote arms exports reflect shrinking military budgets and defense spending as arms manufacturers rely less on domestic markets for sales and profit. This "dangerous trade" has caused untold human rights abuses, and scholars have sought to highlight the dangers of arms transfers and their effects on human rights in several conflicts (Erickson

2015). Has there been a "race to the bottom" when it comes to developing effective arms control policies in the EU? Holzinger and Sommerer argue that, at least when it comes to environmental regulation, there has been a "race to Brussels" as member states delegate policy management to supranational institutions in the EU (2011). The "race to the bottom" thesis, they argue, is often untenable. For arms control, knowing where "the bottom" is may make comparisons difficult. Comparing state behavior and action in comparison to EU stated goals may shed greater light on the lack of arms export harmonization and the "race away from Brussels" in favor of national sovereignty.

Yanik's logic (2006) assumes, however, that the "buyer's [export] market" drives sales in sufficient quantities. Such an explanation might imply that arms manufacturers are *desperate* to sell their modern conventional weaponry to whoever has ready cash to purchase. While many arms manufacturers may indeed need the funds that sales generate, such an explanation is insufficient to explain the proliferation of MCWs to embargoed states. Given that many buyers often purchase from multiple suppliers (Thurner et al. 2019), the availability of potential buyers and the need for buyers to diversify their supplies may play an important role in the proliferation of arms. What is missing from many explanations (save for García-Alonso (1999)) is how arms manufacturers compete for business and how this competition impacts arms transfers, especially to embargoed states. Europe and the European Union represent an important case for understanding the dynamics of arms export competition, especially when supranationally driven Common Positions with little enforcement power seek to regulate national governments' ability to issue arms export licenses to embargoed and non-embargoed customers.

While arms may represent "big business" for many states (Amnesty International, Oxfam, and International Action Network on Small Arms 2006; Stockholm International Peace Research

Institute (SIPRI) 2018), other industries and sectors for many countries are much more profitable. In 2006, conventional arms transfers amounted to nearly $60 billion, which accounts for only the legal trade in modern conventional weapons. While $60 billion represents significant trade, other forms of legitimate trade generate significantly greater revenue. Other forms of legitimate trade, such as oil and gas and agricultural products, generated $1.7 trillion and $852 million, respectively, during the same period (Stohl and Grillot 2009). Given the oligopolistic nature of the arms market since the end of the Cold War (Speers and Baker (ret.) 2003), the ability of new countries to break into a market and achieve true competition may be exceedingly difficult (Stohl and Grillot 2009, 44). Yet, as Thurner et al. (2019) have shown, it is not unusual for multiple suppliers to sell to a single buyer, a common occurrence throughout the network of the legitimate arms trade. While breaking into a state's market may be difficult, once such a market is broken into, the competition to retain that market may stimulate competition among suppliers of various companies, especially if those suppliers come from different countries.

Another strand in the academic literature and a focus of think tanks and advocacy groups is the effectiveness of arms embargoes: do they work or not and why (Brzoska 2008; Control Arms 2006; Erickson 2013). This strand often merges with the sanctions effectiveness literature, too. Arms embargoes, a "smart" or targeted form of economic sanctions, are routinely violated (Moore 2010). However, they are a frequent international policy that multilateral organizations like the United Nations (UN) and EU frequently utilize to bring an end to inter- and intra-state conflicts, protect human rights, promote democracy, and seek to improve international security (Brzoska 2008). Studying the effects of arms trade and the issues that come with such trade is key for understanding the interaction between foreign policy and economic issues, which may reflect a delicate balance of competing interests (Smith and Tasiran 2005).

These competing interests may potentially have an impact on the effectiveness of arms embargoes.

The literature on the effectiveness of arms embargoes is mixed and connects to the literature on the effectiveness of economic sanctions generally. Economic sanctions are argued by some to be ineffective and unsuccessful (Pape 1997, 1998) while others find that success is conditional on the policy's stated aims and the behaviors seeking the target to cease (Elliott 1998). Arms embargoes have been no stranger to the effectiveness debate. Previous works have utilized case studies that have explored the effectiveness of arms embargoes and have indicated that they are frequently violated (Control Arms 2006). Members of the UN Security Council often take steps, as well, to undermine the effectiveness of arms embargoes prior to their implementation (Fruchart et al. 2007). Erickson (2013), however, revisits the efficacy of arms embargoes given their frequency and perceived ineffectiveness. She argues that arms embargoes do have an impact on sender states' arms exports on average despite the paucity of mechanisms to punish violators and the incentives for arms exporting states to violate embargoes.

Scholars have sought to develop more empirically consistent models that explain the distributions of modern conventional weapons within the international system. Thurner et al. (2019) use temporal exponential random graph models (TERGMs) to describe, explain, and predict the structure and dynamics of international arms trade from 1950 to 2013, although they do not consider how the presence of arms embargoes or other institutional arrangements may alter this network. Their model demonstrates that political and economic factors play an important role in where arms are directed worldwide, but that other effects, such as path dependencies from previous exchanges, trade hierarchies, and importer and exporter effects also play a role in the shape this network assumes. Their work departs from the common approach of

dyadic independence, which has largely ignored dependence structures within the data. By modeling international trade as a dynamic network, these assumptions are relaxed, which allows for greater explanatory and predictive power across time (Thurner et al. 2019, 1739–40).

Given the geographic proximity of arms manufacturers and the concentration of suppliers in Europe, dyadic independence would appear to be an unsustainable assumption. When considering the interconnectedness and the competition present in the arms market as well as the proliferation of multiple suppliers to single buyers, modeling and accounting for spatial or network dependencies should lead to greater insights into the effectiveness of arms embargoes. Lastly, such approaches have the potential to help policymakers understand why arms embargoes fail to inhibit arms transfers, especially from Europe where the concentration of arms manufacturers is significant (Roth 2017) despite the consolidation that has occurred in the defense and arms industries in Europe.

## 4.2. "Race away from Brussels" and intra-EU competition

I develop a theory of a "race away from Brussels" to explain why the EU's Common Position on arms exports implemented in 2008. I posit that in situations where policy coordination brings *harm* to either business and government, EU member states avoid harmonization and policy coordination and "race away from Brussels" by avoiding the divestment of control over a particular policy; member states can reduce potential *harm* by maintaining control over a specific policy area.
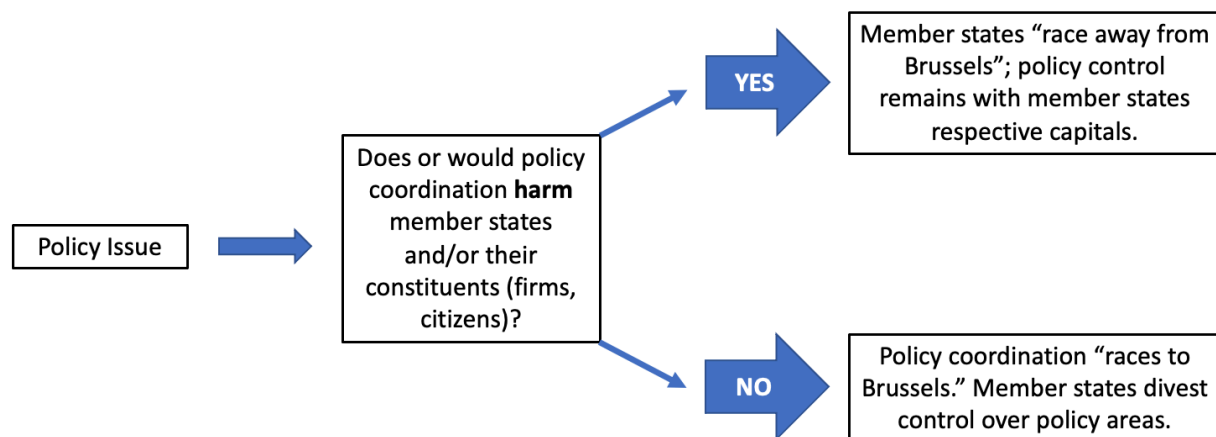
Figure 1. Diagram depicting the "race away from Brussels" or "race to Brussels."

Harm can be defined quite broadly and does not necessarily reflect any threat to the survival of the state or business (although it ostensibly could). I define harm as disproportionate gains on the part of one or more member states or their constituents over other EU member states and their constituents in the union. When coordinating on a policy leads to harm via disproportionate gains, then member states will "race away from Brussels" and preserve policy control within their respective national governments. Thus, harm may reflect instances where the *relative gains* (Grieco, Powell, and Snidal 1993; Powell 1991) matter. When the harm is minimal or at least acceptable or EU policy operates in such a way that mitigates the impact of relative gains, then policy coordination "races to Brussels" as member states divest control over a particular policy area. In a sense, member states are concerned mainly with absolute gains (Keohane 1993) due to the effects of successful policy coordination in mitigating harm. This theory helps to explain the puzzle of why greater information through increased transparency leads to less cooperation through diminished policy coordination and an inability to harmonize exports.

In 2008, the European Union member states at the time agreed on a common framework for arms exports to create more transparency as well as pull this vital national power into EU

competences (Council of the European Union 2008). The EU Common Position, which became legally binding in 2008, replaced the politically binding European Code of Conduct on arms exports that had been developed in the early 1990s. The creation of the Common Position represents the culmination of initial efforts at meetings in Luxembourg and Lisbon in 1991 and 1992, respectively, that led to the Code of Conduct. These effects led to the development of a common foreign policy that sought to make the EU a normative power that sought to promote development, reduce conflict, and respect for human rights in the run-up to the 1993 Maastricht Treaty (Cops and Duquet 2019, 2). The Common Position that resulted is a "legally binding set of rules" that EU member states must consider when they issue export licenses, with special considerations made for the respect of human rights in the destinations of the arms exports, the preservation of national and regional stability, as well as the compatibility of the arms exports with the development of the destination country (European Parliament 2020). Before the Common Position was adopted in 2008, no legally binding set of rules existed, only politically binding ones from the EU Code of Conduct on arms exports agreed upon in 1998, which was the direct result of meetings from 1991 and 1992 in Luxembourg and Lisbon (European Council 1998).

Both the EU Code of Conduct and the Common Position entered into force in 2008set the stage for greater transparency in the reporting of arms exports even if member states varied in the level of detail and information they initially provided. The Common Position resulted in an increase (on average) in the share of countries providing full reports, making even greater information available on their respective arms exports. Bromley and Bauer (2004) and Bromley (2012) have described efforts at improving annual reporting by EU member states through better sharing of information. Bromley (2012, 8) shows that between 2008-2010, reporting of arms transfers improves relative to the EU Code of Conduct as the share of EU members submitting complete reports increases. Other improvements in transparency can be evidenced by the increase in the length of the reports from just 4 pages in 1999 to over 550 pages by 2018, as member states provide more information on their arms transfers (European Union 2019, 1999).

As the Common Position has made reporting more transparent and competitive pressures already present have intensified (Bauer and Bromley 2004; Bromley 2012), EU member states have been reluctant to give up control over the granting and denial of arms export licenses. To reduce the impact of relative gains or harm, EU member states have sought to shift the decision-making locus from Brussels to their respective capitals and undermined the effectiveness of arms embargoes.

I do not argue that arms embargoes are by their very nature ineffective (Bromley and Brzoska 2008; Fruchart et al. 2007) but are instead *made less effective* by EU policy as partial and full arms embargoes are unable to accomplish their goals of reducing arms transfers. Partial arms embargoes are those in which arms can be exported to an embargoed state but only for specific recipients. Typically, these arms embargoes permit weapons to recognized governments (as in the case of Somalia) but do not permit the export to other groups in the country. Full arms embargoes are blanket embargoes of all arms transfers to all parties in a region (Tierney 2005). The arms embargo initially imposed on Rwanda, for example, cut off all transfers of arms to the entire country but was later relaxed to permit sales of arms to UN-sanctioned governmental entities. Sometimes partial and full arms embargoes can also spillover and apply to neighboring countries.

To measure the transfer of arms between countries, I utilize SIPRI's trend-indicator value (TIV). SIPRI's TIV, which serves as the dependent variable in the regression analysis that follows, *is not* a measure of the financial value of the arms transfer and "neither reflects the actual price paid for weapons nor represents current dollar values for arms transfers" (Holtom, Bromley, and Simmel 2012). Instead, the trend-indicator value is a pricing system that captures the volume of deliveries of MCWs and associated components that serves as a common unit of measure. The measure is meant to operationalize military capability rather than a financial value

in what SIPRI researchers call a military capability price index. Higher values reflect the transfer of greater military capabilities (Holtom, Bromley, and Simmel 2012, 1–2).[13] SIPRI's TIV has also been utilized by other researchers investigating arms embargoes (Erickson 2013; Moore 2010).

Figure 2 shows the average arms exports measured using SIPRI's TIV across three embargo levels (no embargo, partial, and full arms embargo), and, at first glance, arms embargoes appear effective at reducing trade to embargoed targets. Figure 3, on the other hand, shows the average TIV across different embargoes levels before and during the imposition of the EU's Common Position in 2008. When cross-tabulated against the presence or absence of the EU's Common Position (2008-present), arms embargoes, on average, lead to higher levels of arms exports than pre-Common Position levels.

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[13] Researchers interested in reading more detailed particulars on SIPRI's TIV are encouraged to read Holtom, Bromley, and Simmel's (2012) concise fact sheet on this measurement: https://www.sipri.org/sites/default/files/files/FS/SIPRIFS1212.pdf.

Figure 2: Mean Trend Indicator Value (TIV) of modern conventional weapons exports by European countries to all importing states as reported by SIPRI (Stockholm International Peace Research Institute (SIPRI) 2021) between 1993-2018.

The average transfer of MCWs *increases* in the presence of both partial and full arms embargoes *after* the Common Position on arms exports enters into force. What accounts for the increase in the average TIV across levels of arms embargoes? Kranz (2016) has argued that normative developments have been unsuccessful at overcoming the required consensus within the CFSP. These normative developments embodied in both the EU Code of Conduct and the Common Position (European Council 1998; Council of the European Union 2008) have sought to place human rights and development front and center in evaluating whether arms export licenses are warranted. While the inability of these normative developments at reducing the flow

of arms is a necessary cause, it is insufficient in explaining why the average arms transfers (TIV)

have *increased* since the Common Position went into force in 2008.

**Average arms exports before and during Common Position**

| Embargo type | Value | Series |
|---|---|---|
| No embargo | 6.50 | Before Common Position |
| No embargo | 6.73 | Common Position |
| Partial | 1.27 | Before Common Position |
| Partial | 6.87 | Common Position |
| Full | 3.99 | Before Common Position |
| Full | 4.89 | Common Position |

Trend-indicator value (in millions USD)
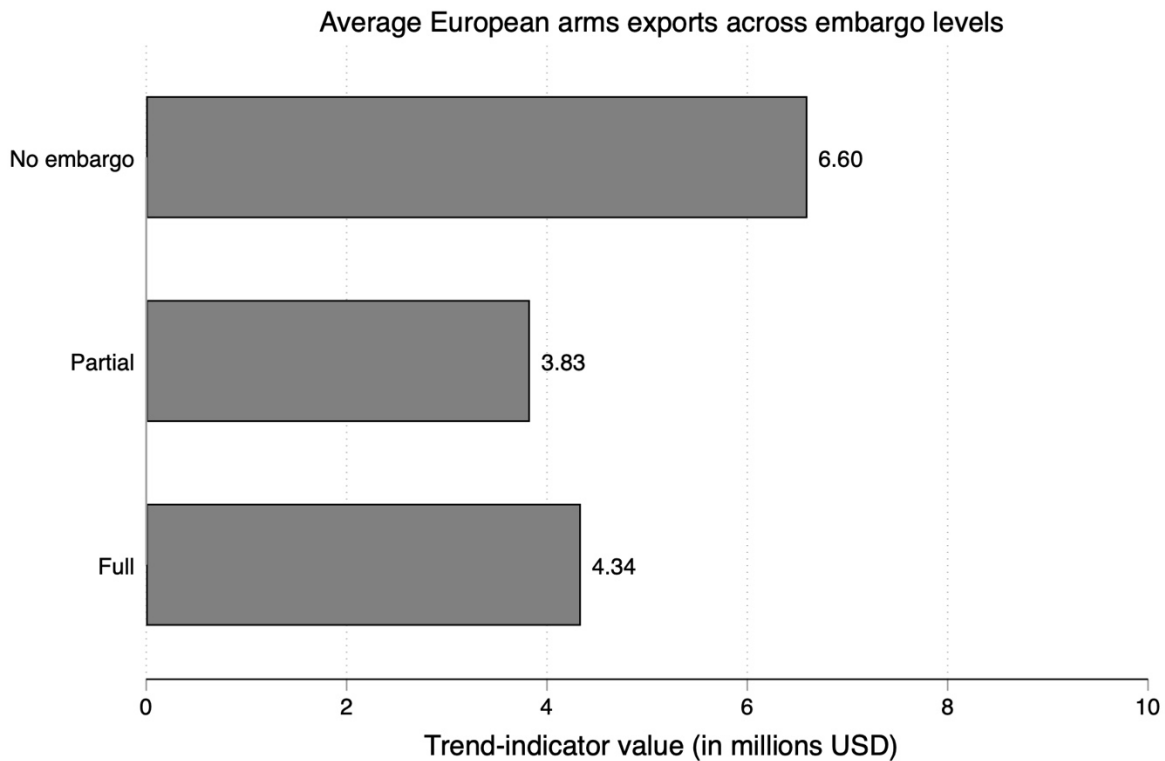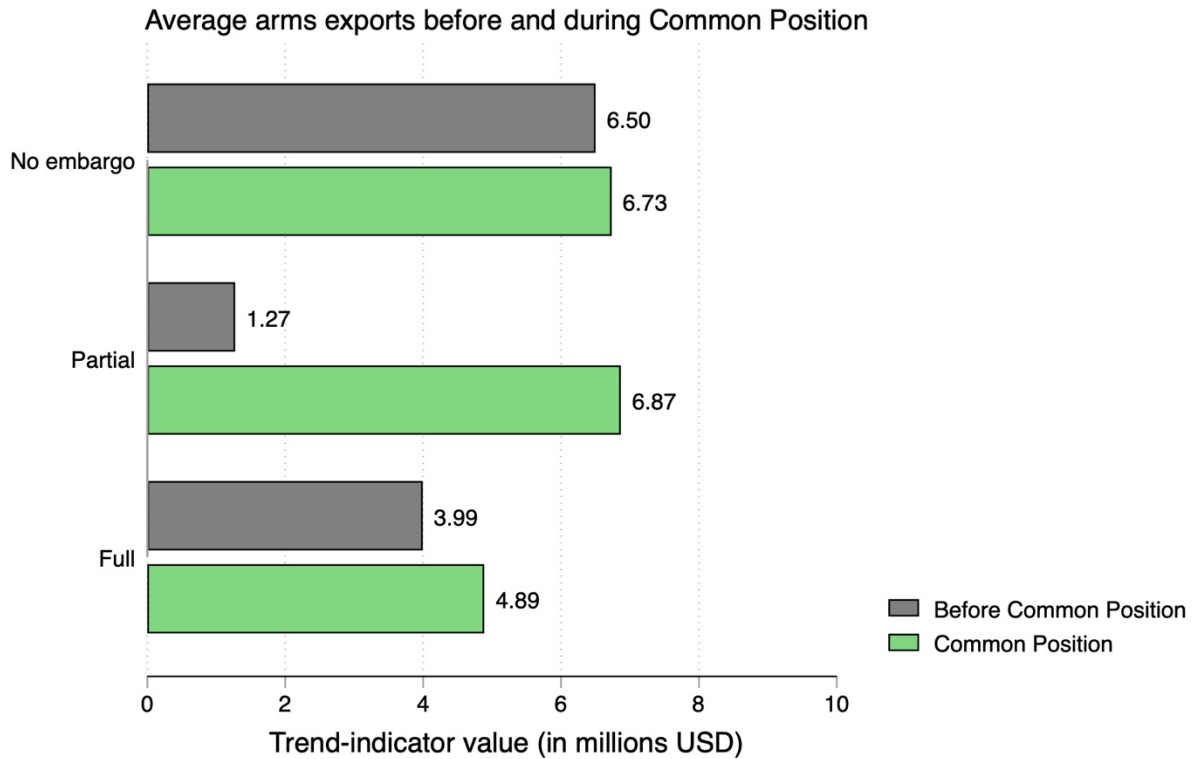
Figure 3: Mean trend-indicator Value (TIV) of modern conventional weapons exports by European countries as reported by SIPRI.

Full arms embargoes are more often targeted on state actors in an effort to slow or halt

interstate aggression or to restrict the flows of weapons to state and non-state actors operating in

a particular region, as occurred when an arms embargo targeted not only Rwanda but also

neighboring states. The average transfer during the Common Position for fully embargoed targets

increases 900,000 TIV (0.9). This increase may reflect how member states interpret arms

embargoes or even the definition of what constitutes "arms" in different ways to circumvent the

prohibition against such transfers. The presence of arms embargoes may allow European

manufacturers to seek better terms of trade, thus reaping higher prices for modern conventional weapons despite the "buyers' market" (Yanik 2006) – a dynamic more pronounced under a full embargo where the political costs of fulfilling orders and transferring arms are much higher and riskier. This slight increase in the TIV may indicate that only states well-positioned to absorb the political and economic costs can successfully violate a full embargo against another state actor.

Partial arms embargoes, on one hand, more typically target nonstate actors or destabilizing groups. The partial arms embargo creates new commercial opportunities as legitimate sales to support the government or local police may be permitted, which may explain why there is a significantly larger increase in arms exports during partial embargoes versus full arms embargoes. Arms manufacturers may push to capitalize on the increased demand, especially if they seek to head off the competition and work to avoid being cornered out of such lucrative markets. The huge disparity in the average TIV for partial embargoes *after* the imposition of the Common Position (Figure 3) may reflect two trends. First, partial arms embargoes may be easier to implement and may be the more preferred policy choice, especially if unanimity among European members is required. Second, the implementation of partial arms embargoes has become the more common form of arms embargo over time. The competition among arms manufacturers in Europe is driven both by the type of instrument employed – whether the embargo is full or partial – as well as by the institutional EU efforts to limit arms transfers. Evidence at the national level has demonstrated a discontinuity in the arms export control processes in the EU (Maletta 2019, 2021). An unintended consequence of the Common Position has been an increase of arms transfers to embargoed targets and further discontinuity with the EU's CFSP, reflecting a lack of cohesion among EU member states when economic incentives dominate.

$H_{1A}$: *The average TIV is highest for partially embargoed states when the Common Position is in force relative to non-embargoed states and fully embargoed when controlling for other determinants.*

$H_{1B}$: *The average TIV is higher for fully embargoed states when the Common Position is in force relative to non-embargoed states when controlling for other determinants.*

Capturing a "race away from Brussels" in the data is challenging but not impossible. A key factor in measuring this "race" is the competitive environment brought on through intra-EU competition, which can be captured using a spatial lag. I utilize Neumayer and Plümper's package in Stata to create a variable that captures what they term "specific source contagion" (Neumayer and Plümper 2010a). Spatial source contagion captures the impact of all other arms manufacturers' trade with similar recipients: in other words, the policy decisions and actions made by other EU member states as well as Norway and Switzerland, in granting arms export licenses (Figure 4).

The policy decision by country$_k$ to grant a license to export MCWs to country$_j$ motivates country$_i$ to grant similar licenses that allow exports of MCWs to the same country receiving MCWs from other source country$_k$. This policy contagion or diffusion can be modeled within the data, and the variable that captures the specific source contagion, the spatially lagged trend-indicator value, conceptualizes the trade conducted by other sources to the same target as a *deliberate* policy choice of national EU governments in support of their respective arms industries. I make an explicit assumption that the arms transfer(s) undertaken by country$_i$ and country$_j$ are the direct result of these policy choices occurring in other European countries whose arms manufacturers are exporting their MCWs. This dynamic reflects the policy choice and

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policy commitments that other European or EU member states have taken in supporting their

arms industries in the face of competition among the concentration of suppliers in Europe.

### Specific source contagion
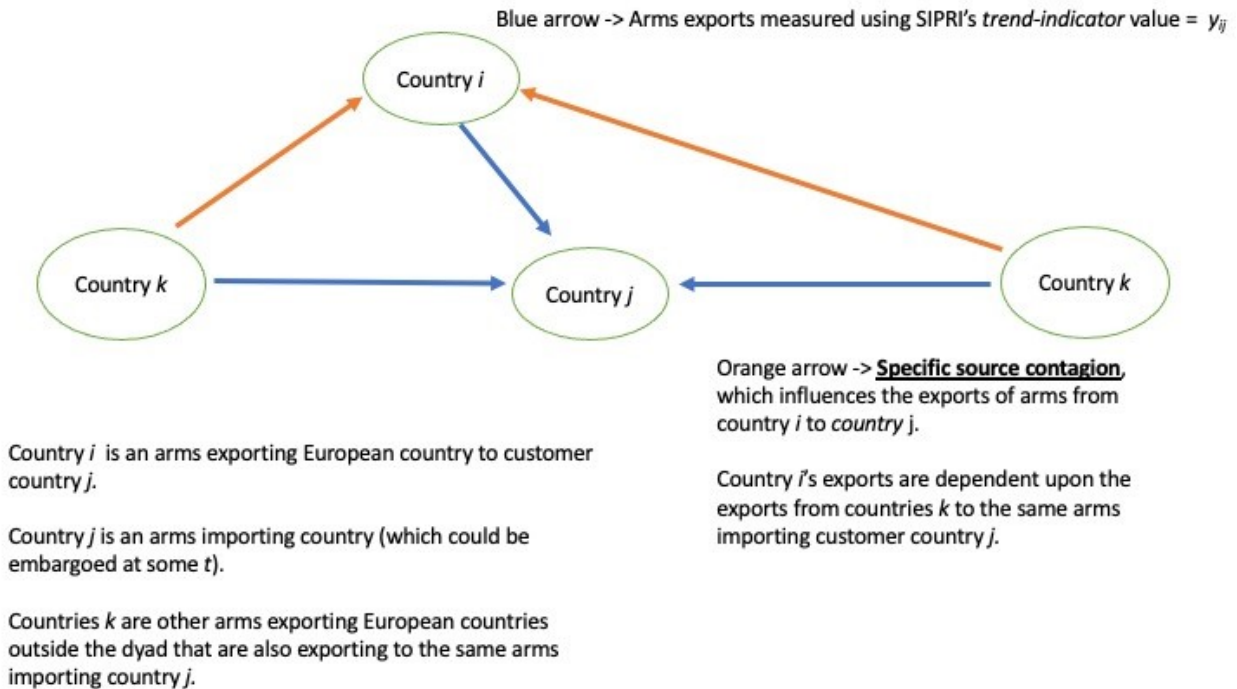


Figure 4: Diagram describing specific source contagion that impacts the arms exports of country$_i$ to country$_j$. The orange lines are the specific source contagion – that is the weighted average of arms transfers conducted by countries$_k$ that are impacting the arms supplying state in a given dyad. The blue lines indicate arms exports measured using SIPRI's trend-indicator value.

If the Common Position was effective and harmonized standards were developing,

harmonization would lead to a reduction of harmful competition (Holzinger and Sommerer

2011), the logic being that member states would work within an agreed-upon framework

whereby intra-EU competition would not undermine the intent and spirit of the Common

Position. Thus, the effects of harmful competition would decrease or disappear if the Common

Position were effective. However, as in Figure 2, the empirical record shows that the Common

Position is ineffective, and it is expected that the effects of spatial source contagion are amplified by the Common Position, not dampened.

> H₂: *Intra-EU competition is higher* under *the Common Position than before it, all else being equal.*

European exports to embargoed China are an excellent illustrative case of this competitive dynamic among European arms exporters (Figure 5). After the Tiananmen Square massacre in 1989, the European Union imposed a full arms embargo on China. EU ministers agreed at the time to an arms embargo along with other diplomatic and economic sanctions "to signal their disapproval of the Chinese government's lack of respect for human rights" (Kreutz 2004, 46). Each country was thus responsible for implementing the arms embargo by setting their own national lists of sanctioned goods, allowing each country to interpret the scope of the embargo (2004, 46).

As different member states construed the definition of arms and the parameters of the embargo differently, the lack of policy coordination at the EU level has resulted in a set of national arms embargoes rather than one unified embargo at the EU level (Kreutz 2004; Stockholm International Peace Research Institute 2012). France, Germany, and the United Kingdom exported MCWs to China despite the arms embargo as different national governments throughout the EU implemented the embargo in different ways at the national level. The UK in response to a Parliamentary Question in 1995 noted in 2012 that "all applications will be considered on a case-by-case basis" ("UK Interpretation of arms embargo against China" referenced in SIPRI 2012) while the French statement remained vague and noncommittal as to the scope to which it would enforce the arms embargo (French statement on interpretation of EU

arms embargo against China," referenced in SIPRI 2012; Stockholm International Peace

Research Institute (SIPRI) 2019).

Figure 5 shows French arms exports (solid blue line) from 1993-2018 along with lagged

arms transfers measured in TIV by France and the UK. Figure 4 helps to see how changes in the

trade by one European country impact the trade of another toward an embargoed state, in this

case, China. As French sales declined in 1996 through 2000, the vacuum left by the absence of

French arms exports is filled by an increase in British exports. French arms exports to China

begins to rise again in 2000 through 2004, which competes with British exports in the previous
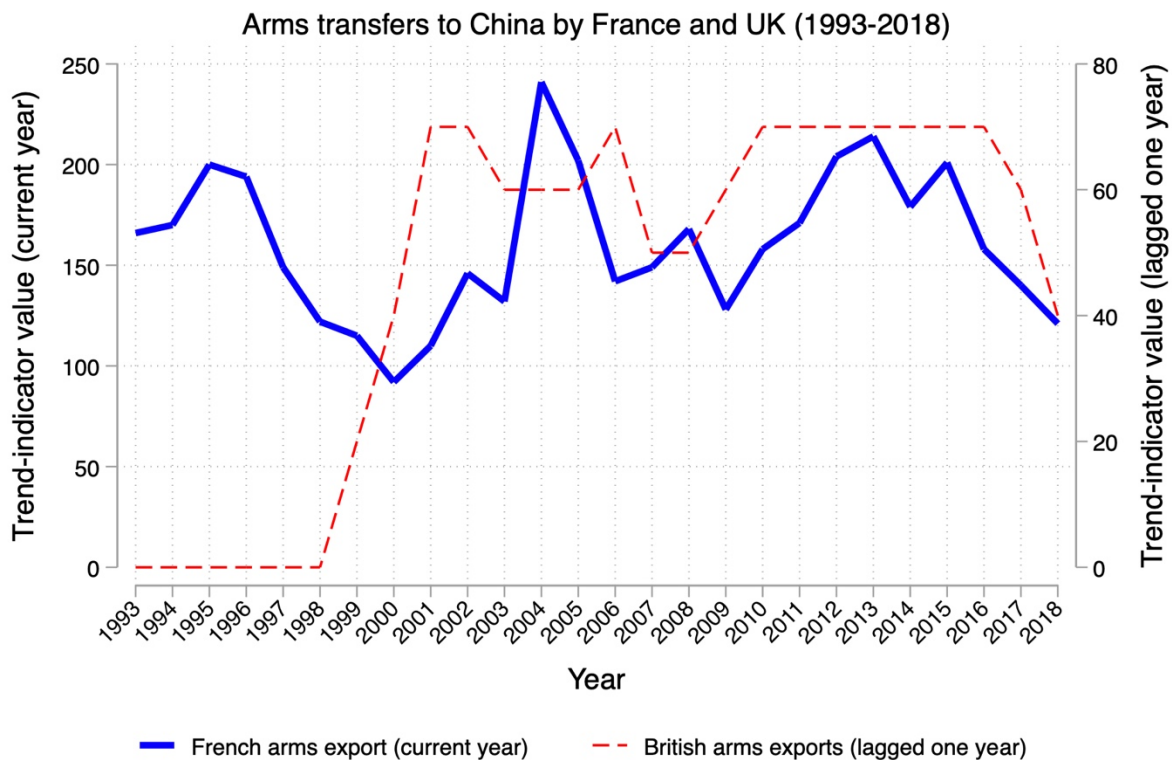
year.



Figure 5: Arms transfers of MCWs to China between 1993-2018 measuring in SIPRI's trend-indicator value. The left *y*-axis represents France's current year exports; the right *y*-axis measured lagged trend-indicator values of British exports. The *x*-axis measures the current year (*t*) for France and one year lag (*t*-1) for British exports.

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A similar dynamic also occurs in 2007 as French arms transfers rise as British arms transfers in the previous year also increase. These dynamics may reflect competition between European arms manufacturers for a lucrative arms market.

## 4.3. Data and Methodology

The data set constructed contains MCW transfers from European countries beginning with the signing of the Treaty of European Union in 1993 through 2018. The data set contains 26,927 observations across 1,040 dyads with each year capturing a potential transfer of arms. I measure arms transfers using SIPRI's trend-indicator value (TIV), which I transform into a spatially lagged variable. Each dyad consists of an EU member state or European country (for those who are not EU members) and arms importing state. In some years, no trade is captured as SIPRI codes arms transfers when the trend-indicator value is 0.5 or greater. Thirty-two of the 148 of the arms importing states are subject to a multilateral arms embargo imposed by the European Union, United Nations, or other multilateral organizations. Data on multilateral arms embargoes utilizes SIPRI's arm embargo data available on their website (Stockholm International Peace Research Institute (SIPRI) 2019).

### 4.3.1. Dependent Variable: Trend-indicator value (TIV)

The dependent variable is SIPRI's trend-indicator value (TIV) (SIPRI 2021). TIV, according to SIPRI methodology, is calculated using the unit production costs of weapons that are commonly sold by arms exporters. It *does not* represent the financial value of the transfer (as is typical with conventional trade flows) but rather "the transfer of military resources" (SIPRI 2021). The more arms that are exported from arms producers to importing arms buyers, the greater the transfer of military resources.

The TIV may also be adjusted as needed for used weapons or weapons that may have been in service in one country's military are later resold to another. The measurement developed by SIPRI serves as a common unit of measurement to capture the flow of arms from one country to another or from one country to a nonstate actor, such as a rebel group. Within the Arms Transfer Database, a search of arms transfers between two entities is often coded as zeroes. These zeroes represent TIVs of 500,000 or less. I have recoded zero to 0.5 (500,000) in the data set as TIV is calculated in millions. Cases where two states never engage in the transfer of modern conventional weapons are not included in the data set. However, instances where there are no values reported but trade in MCWs occurred in the previous year or will occur in future years are coded as 0. Several studies on arms embargoes have also utilized SIPRI's TIV as a continuous dependent variable to capture changes in arms transfers between states as well as the effectiveness of arms embargoes, and my coding conventions are similar (Erickson 2013; Moore 2010).

*4.3.2. Study Variables*

One of the key independent variables of interest in the study is the spatially lagged dependent variable, which I use to show the "race away from Brussels." To capture the effects of competition among arms manufacturers within the EU, which serves as a proxy for this "race away from Brussels," I transform the dependent variable based on SIPRI's trend-indicator value (TIV). I spatially lag this variable to account for the specific source contagion discussed earlier (Neumayer and Plümper 2010b, 2010a).

In dyadic data, Neumayer and Plümper break the dyad down into two units, the source (country$_i$) and the target (country$_j$). In the context of this paper, the source is the European or European Union member state exporting arms while the target is the arms recipient (which may

or may not be embargoed). All European and/or EU member states that follow the EU's

Common Position are sources (no sources outside the EU except for Norway and Switzerland are

in the data set). The target states are the multitude of arms recipients in the data, some of whom

are under an arms embargo at various points in the data set.

In situations of specific source contagion, the source's exports to the target are due to the

behavior of other sources exporting arms to the same targets (Figure 5). As discussed previously,

the policy decision by country$_k$ to grant a license to export MCWs to country$_j$ motivates country$_i$

to grant similar licenses that permit exports of MCWs to the same country receiving MCWs from

other source countries country$_k$. The variable that captures this dynamic (the spatially lagged

trend-indicator value) represents a *deliberate* policy choice of other national EU governments in

support of their respective arms industries. As this effect increases, arms exporting states within

Europe and the EU are moving away from supranational policies developed in Brussels.

In a situation where specific source contagion exists, the number of arms exported by

country$_i$ to country$_j$ is influenced and impacted by the arms exports of other arms exporting

countries$_k$ to target country$_j$, an arms recipient. By transforming the dependent variable in this

manner, I make an explicit assumption that the arms transfer(s) undertaken by country$_i$ and

country$_j$ are the direct result of the policy choices of other European and EU member states in

awarding arms export licenses to arms manufacturers. This dynamic reflects not only the policy

commitments but also the effects of intra-EU competition. The policy decision that permits arms

exports by one European country then motivates other European countries to offer similar export

licenses to remain competitive in the international arms trade against the spirit and motivation of

policies like the EU's Common Position developed in Brussels.

In constructing the spatial lag variable, a spatial weights matrix is necessary. Space can refer to geographic space, such as contiguity or minimal or great circle distances, or other forms of connectivity (Neumayer and Plümper 2016). Rather than utilize spatial distance between the source and target in the dyad in constructing the spatial weights matrix, I instead model connectivity based on the total trade directed to the target by the source, operating under the assumption that greater "conventional" trade between the source and target of a dyad reflects a degree of connectivity between the two states. The value that results after passing through the weights matrix is the average of the dependent variable – SIPRI's trend-indicator value – conducted by all countries$_k$ (other sources) with country$_j$ (a specific target) in any given year, weighted by the total amount of trade sources countries have conducted with specific targets. In effect, the spatially lagged variable indicates the extent to which other European/EU member states, other source states, are engaging in arms exports with the same target state and whether that trade affects the level of arms exports of source states (in this case, all other European/EU member states). The spatial weights matrix is also row standardized, which places the values of the matrix in the same units as the dependent variable, which will allow for the coefficient to be more clearly interpreted. Positive values would indicate that as other EU countries export arms to the same target, any given source country would also increase its arms export in kind.

*4.3.3. Other Key Variables*

I include several control variables that capture alternative explanations that might also explain an increase in arms exports during periods of arms embargoes. I also operationalize a variable that captures the military expenditures for all European countries (Stockholm International Peace Research Institute (SIPRI) 2020) by taking the log of annual military expenditures and lagging this variable by one year. As EU member states' military expenditures

decline, there is an intuition that arms manufacturers will seek markets for their military

hardware beyond the source country's military. In addition to these variables, I utilize GDP for

both the arms exporter and recipient states using National Account Data from the Penn World

Tables (Feenstra, Inklaar, and Timmer 2015). I utilize the current year GDP, which is then

logged and lagged one year. Arguably, wealthier arms exporters and wealthier recipients may be

more likely to sell and purchase MCWs.

I also create several dummy variables for arms embargoes. First, I create dummy

variables to capture *Embargo Presence*, which captures whether there is a single arms embargo

in force on a target and when there are overlapping arms embargoes in force. I then create a

series of dummy variables that capture *Embargo Level* when the arms embargo in force is either

partial or full. Lastly, I create a dummy variable, *Embargo*, that makes no distinctions between

levels and overlapping qualities and solely captures whether an embargo is in effect in any given

year. Lastly, I interact the *Common Position* variable (discussed below) with the spatially lagged

variable that captures the "race away from Brussels," *Embargo Level, Embargo Presence,* and

*Embargo* to capture the differences in the effects of the Common Position during the presence of

arms embargoes and the levels of arms embargoes.

### 4.3.4. EU Common Position on Arms Exports

In 2008, European Union member states at the time agreed on a common framework for

arms exports to create more transparency as well as pull this vital national power into EU

competences (Council of the European Union 2008). The EU Common Position, which became

legally binding in 2008, replaced the politically binding European Code of Conduct on arms

exports that had been developed in the early 1990s. The creation of the Common Position

represents the culmination of initial efforts at meetings in Luxembourg and Lisbon in 1991 and

1992 to create the EU Code of Conduct and to develop a common foreign policy, which sought to make the EU a normative power with the goals of promoting development, reducing conflict, and respecting human rights in the run-up to the 1993 Maastricht Treaty (Cops and Duquet 2019, 2).

The Common Position that resulted is a "legally binding set of rules" that EU member states must take into account when they issue export licenses, with special considerations made for the respect of human rights in the destinations of the arms exports, the preservation of national and regional stability, as well as the compatibility of the arms exports with the development of the destination country (European Parliament 2020). Before the Common Position was adopted in 2008, no legally binding set of rules existed, only politically binding ones from the EU Code of Conduct on arms exports agreed upon in 1998, which was the direct result of meetings from 1991 and 1992 in Luxembourg and Lisbon (European Council 1998). The rules that serve as the foundation to the Common Position developed from "common criteria" member states in 1991 and 1992 adopted and committed themselves to follow when granting arms export licenses. Like the Common Position adopted in 2008, the EU Code of Conduct allowed states to consider economic, social, commercial, and industrial interests when considering arms transfers while also leaving the decision to transfer military equipment "at the national discretion of each Member State" (European Council 1998).

The Common Position that came into force in 2008 has since then been adjusted several times by the European Council. Given anecdotal and case studies that have examined EU member states' exports to embargoed regions, I see the Common Position with a diminished capacity at restraining arms transfers when arms embargoes are in force given the hypercompetitive arms manufacturing industries among European (Union member) countries. I

create a dichotomous variable to capture the years in which the Common Position is in effect and interact this variable with the presence of arms embargoes generally, as well as with the variables that capture partial and full arms embargoes.

*4.3.5. Testing the Hypotheses*

To test the hypotheses generated in the theory and hypotheses section, I conduct a two-way fixed effects multivariate regression using OLS that utilizes panel corrected Driscoll-Kraay standard errors using a *Stata* package developed by Hoechle (2007). The large-*N* and moderate-to large-*T* ranging from 14-26 years also makes the use of Driscoll-Kraay standard errors appropriate in this context given the presence of cross-sectional dependence, serial autocorrelation, and heteroscedasticity. While there has been a movement in the field and literature on the dangers of two-way fixed effects (Imai and Kim 2019; Kropko and Kubinec 2018, 2020), the European Union has undergone a series of "shocks" across time due to the enlargement of its membership, which may indicate the appropriateness of this two-way fixed effects model.

## 4.4. Results

The results of the two-way fixed effects regression are profiled in Table 1. I create three models to test the effects of arms embargoes on EU arms transfers. Each model includes a spatially weighted dependent variable, specific source contagion spatial effect, which captures the effects of arms trade by other arms exporters to similar targets. Tests indicate the presence of cross-sectional dependence, serial correlation, and heteroskedasticity, all of which have an impact on the size of the standard errors. I thus utilize Driscoll-Kraay clustered standard errors (Hoechle 2007), which are suitable in situations where autocorrelation, heteroskedasticity, and cross-sectional dependence are present. Also, these standard errors are suitable for models where

the *N* is large (in this case, 1,040 dyads). *T* should be at least 20, and, in most cases in the data set, is closer to 25. The two regressions below explore the period from 1993-2018 after the official "birth" of the European Union after the signing of the Treaty of European Union (also known as the Maastricht Treaty).

**Table 1. Results of Two-way fixed effects OLS regression.**

|  | (1) Embargo levels | (2) Embargo presence/absence |
|---|---|---|
| "Race away from Brussels" modeled as specific source contagion | 0.0662 (0.0348) | 0.0673 (0.0349) |
| Common Position | 2.946*** (0.697) | 2.968*** (0.720) |
| *Common Position x* *"Race away from Belgium"* | 0.141*** (0.0343) | 0.143*** (0.0334) |
| ln GDP, arms exporter (lagged 1 year) | -0.420 (0.278) | -0.426 (0.273) |
| ln GDP, arms recipient (lagged 1 year) | -0.0552 (0.159) | -0.0876 (0.137) |
| ln Military expenditures (lagged 1 year) | -1.466 (1.119) | -1.458 (1.122) |
| Partial embargo | 1.437 (1.448) | |
| Full embargo | -0.00954 (1.082) | |
| *Common Position x* *Partial embargo* | 4.889* (2.167) | |
| *Common Position x* *Full embargo* | 0.336 (1.145) | |
| Embargo in force | | 0.395 (1.116) |
| *Common Position x* *Embargo in force* | | 3.000* (1.112) |

| | | |
|---|---|---|
| Constant | 23.02[*]<br>(9.916) | 23.40[*]<br>(10.03) |
| Observations | 29213 | 29213 |

Driscoll-Kraay standard errors in parentheses; there are 1,153 dyads between 1993-2018. Time fixed effects have been omitted from the results for space. [*] $p < 0.05$, [**] $p < 0.01$, [***] $p < 0.001$

As theorized, the specific source contagion – that is, the effects of arms exports by other European countries to the same trading partner – is, by itself, statistically insignificant. However, the specific source contagion when interacted with the dummy variable that captures the Common Position shows a dramatic difference, roughly 3 million TIV higher on average (Figure 6). This finding confirms Hypothesis 2 – the Common Position has magnified the effects of the specific source contagion. In other words, intra-EU competition increases the transfer of arms. As competing EU and European countries exports arms transfers to the same recipients — embargoed or not — the effect of this competing trade on each European countries' exports is significant, which is consistent with investigations in the policy literature on the destabilizing effect of intra-EU arms export competition (Maged and Harchaoui 2021). More importantly, Figure 5 shows the lack of arms export harmonization across the EU once the Common Position comes into force. *Were* the Common Position impactful, one would expect to find significantly shallow slopes or, ideally, a flat or negative relationship between arms exports and the spatial source contagion.

Effect of specific source contagion on arms exports before and during Common Position
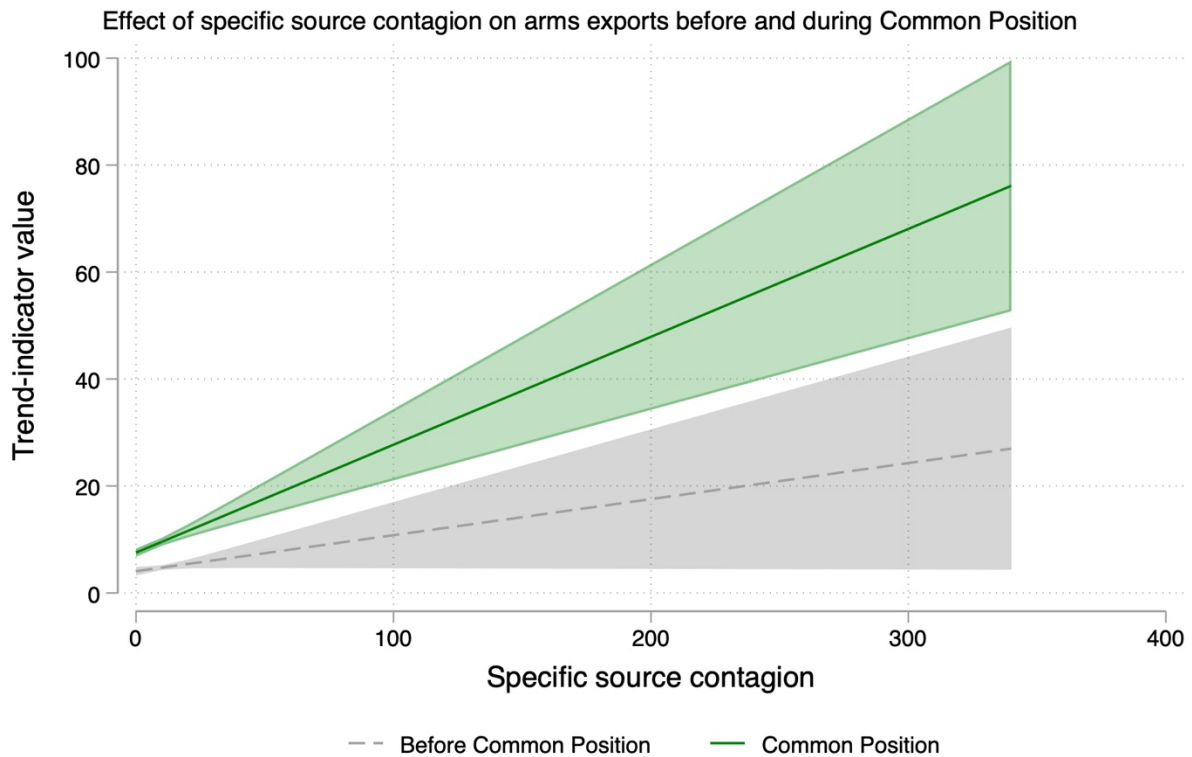
Figure 6. The effects of specific source contagion on the average TIV of European arms exporters before and during the Common Position. Shaded areas represent 95% confidence intervals.

Military expenditures are not statistically significant. Several measures are available to account for the effects of military expenditures, such as military expenditures per capita, military expenditures as a share of GDP, and military expenditures as a share of government spending; all were statistically insignificant. The economic size of the arms exporting countries is also statistically insignificant, which may reflect the lack of variation across Europe and the European Union.

Figure 7 shows the effects of the interaction between the EU's Common Position and the embargo level with all other variables in the models as observed. If, as hypothesized earlier, the Common Position has stimulated competition in the EU, an increase in TIV should be present during arms embargoes. The "main effects" of the *Common Position* with its coefficient of 2.95

reflect the average TIV when there is no arms embargo in force (embargo level = 0). The (lack

of) statistical significance of interactions is often misleading since regression tables are rarely

useful in assessing meaningful interpretations for values of *Z* (in this case, the effect of the

Common Position during a partial or full embargo (*X*) on an exporter's TIV (*Y*)) (Brambor,

Clark, and Golder 2006, 74). Following Brambor, Clark, and Golder (2006), I generate the

necessary figures to show the conditional effects of the Common Position during levels of arms

embargoes.
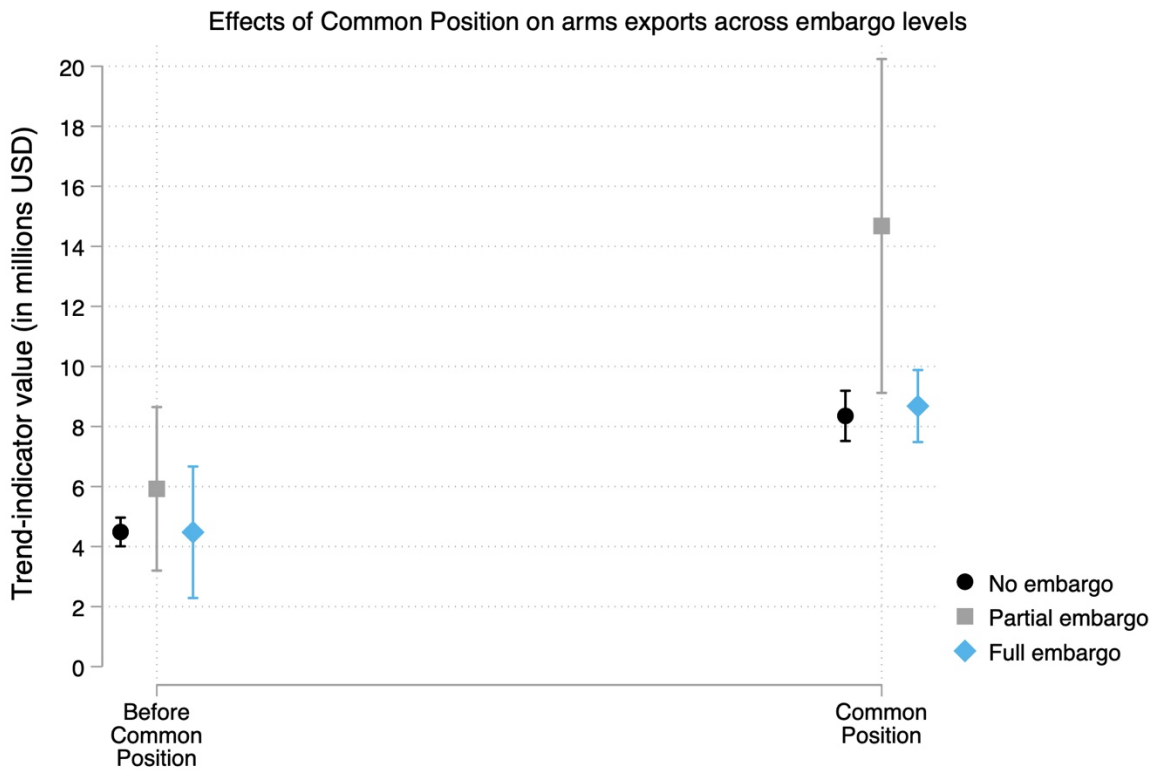


Figure 7: Linear prediction of arms transfers from supplier to recipient as a function of arms
embargo level and the EU's Common Position (1993-2018) with 95% confidence intervals. The
points on the figure represent predicted means of arms transfers using SIPRI's trend-indicator
value.

Trade to recipients who are partially embargoed shows a significantly more dramatic

increase of 8.7 million TIV, a nearly 2.5 times increase over pre-Common Position levels during

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the same level of the arms embargo. This is a significant increase and is 70% higher than trade

sent to fully embargoed recipients. Because partial arms embargoes still permit arms transfers,

usually to legitimately recognized government authorities in embargoed states, greater

opportunities for less politically damaging trade may be more probable. EU member states may

be more inclined to grant arms export licenses to arms manufacturers when these arms are

destined for legitimately recognized governments facing rebellions or other internal conflicts that

could undermine democratic norms in a given state or present a danger to European security. The

presence of partial arms embargoes presents an opportunity for EU member governments to

support their domestic arms manufacturers, especially when other EU members are providing

similar export licenses to their own domestic arms manufacturing enterprises.

A further finding from the plotting of the interactive effects of the Common Position on

arms embargo levels is that non-embargoed arms exports *also* increases significantly. Trade to

non-embargoed recipients increases 3.9 million TIV during the Common Position than before, an

increase of 86% over pre-Common Position levels. This finding supports the theory that the

Common Position created incentives for arms manufacturers to seek out export markets. While

embargoed markets may be more lucrative and thus lead to higher levels of transfers on average,

the significant effect of trade to non-embargoed targets is also noteworthy.

Figure 8 serves as a robustness check, showing again that EU arms transfers to recipient

states are higher during arms embargoes. In Figure 8, the average TIV for non-embargoed and

fully embargoed states *before* the Common Position is roughly equal at 4.48 TIV while the

average TIV during a partial embargo is 1.5 million units higher. After the Common Position

comes into force in 2008, the levels of trade across all three conditions increases significantly:

non-embargoed trade increases 86%, fully embargoed trade nearly doubles its pre-Common

Position trade levels, and partially embargoed trade is nearly 2.5 times greater (14.67 TIV). Before the Common Position, arms transfers to an embargoed recipient were 9% higher (395,000 TIV) compared to arms transfers to non-embargoed states. Arms transfers to embargoed states during the Common Position increased nearly 2.5 times (6.9 million TIV) over pre-Common Position levels. As with the previous figure, the Common Position has also had a strong impact on trade to non-embargoed states, an 87% increase over pre-Common Position levels.
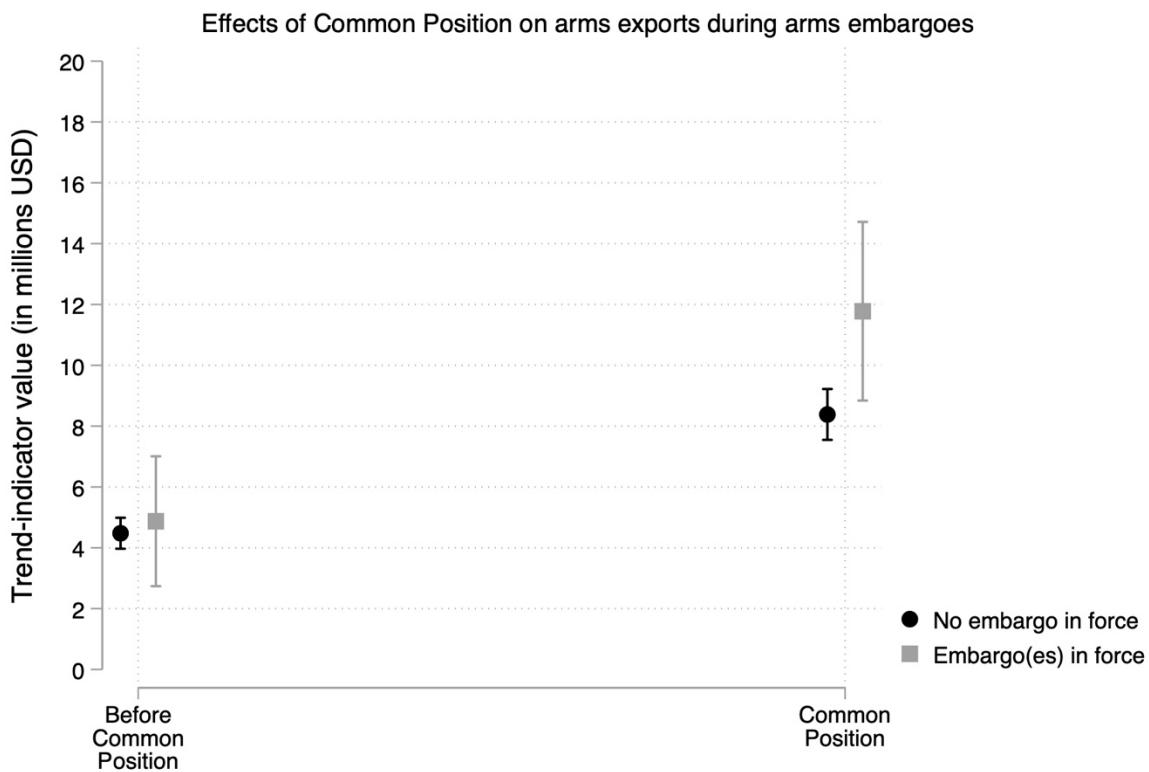


Figure 8: Linear prediction of arms transfers from the supplier when an arms embargo is in force before and during the EU's Common Position with 95% confidence intervals. The points on the figure represent predicted values.

Figures 7-8 offer convincing evidence that validates $H_{1A}$ **and** $H_{1B}$**:** the average transfer of MCWs is higher during arms embargoes with the EU's Common Position in effect than before its creation, all things being equal. A final observation from both Figures 6 and 7 is that arms

exports to *non-embargoed* states increase along with trade to partially and fully embargoed targets. This is an important finding because it underscores the fact that the busting of arms embargoes is not wholly due to the commercial opportunities caused by the network effects but is more probably due to the policy choices of EU members in awarding arms export licenses. In other words, if the arms embargoes were responsible for the increase in arms transfers, then the likelihood of observing an 86% increase (3.8 million TIV) in arms transfers during the Common Position to non-embargoed states seems implausible, especially since total Europe-wide arms exports increased by 9 percent from both 2010-2014 and 2015-2019 (Wezeman et al. 2020; Wezeman, Kuimova, and Wezeman 2021).

## 4.5. Discussion

The theory and hypotheses tested here indicated that much more needs to be done to harmonize EU efforts at reining in arms manufacturers while simultaneously supporting the "...wish of Member States to main a defence industry as part of their industrial base" (Council of the European Union 2008, 335/99). The Common Position of 2008 is contradictory in its support for export control that seeks to limit the ability of repressive states to use EU military technology to harm while simultaneously seeking to strengthen Europe's overall technological and industrial base. While the EU alone cannot be blamed for these failures in the effectiveness of arms embargoes, the lack of competences at the supranational level means that each member state is responsible for assessing export license applications on a case-by-case basis. The lack of policy congruency between the EU and its member states in this area has allowed member states to prioritize the competitiveness of their respective arms industries. While both the EU Code of Conduct and the EU's Common Position had annual reporting requirements, reporting requirements since 2008 have resulted in significantly greater transparency. While EU member

states have pledged not to use the data they share to improve their competitive positions, the

Exports Director of the Defence Manufacturer's Association and Secretary of the Export Group

for Aerospace and Defense, in testimony given before the UK's House of Commons in 2006,

noted that "there are always going to be discrepancies in decision making between the national

governments on export license applications which they receive from their companies" (Salzmann

2006, quoted in Bromley 2012, note 53). These discrepancies may be interpreted as a loss of

competitive advantage, resulting in an increase in opportunistic behaviors by arms exporting

countries in the EU as evidenced in the "race away from Brussels" as member states privilege the

positions of their own arms industries over EU-wide export harmonization of arms.

As others have already pointed out (Rettman 2020; Trevisan 2021), there is a

significant disconnect in the practice of setting "high common standards" when it comes to the

transfers of military technology and equipment and strengthening efforts "to prevent the export

of military technology and equipment, which might be used for internal repression or

international aggression or contribute to regional instability" (Council of the European Union

2008). Yet the amount of arms transferred to embargoed and non-embargoed targets varies, and

the impact of the Common Position is not uniform across all EU members (see Appendix 2).

Media reports profiling how arms exports by European companies destabilize Libya and other

conflict regions provide striking empirical evidence that the results here have largely supported.

Arms embargoes provide an opportunity for European and EU member states to exploit the

commercial opportunities arms embargoes represent, trumping normative endeavors at the

supranational level to develop more coordinated policies.

## 4.6. Conclusion

Policymakers in the EU and its member states have designed policies that allow loopholes to be abused while simultaneously creating incentives for commercially opportunistic behaviors. These opportunistic behaviors represent a counterintuitive finding in that cooperation on arms export harmonization and arms embargoes is seemingly undermined by commercial imperatives driven by the EU's Common Position. Whereas there is an expectation that greater transparency should improve cooperation among arms exporting states in how they grant (or fail to grant licenses), the opposite occurs post-2008 after the Common Position on arms exports comes into force.

While the ways in which institutions and policies have been designed have contributed to the problem, they are alone are necessary but insufficient to explain arms embargo busting on the part of European Union member states. As the analysis presented here shows, the EU Council's Common Position itself cannot shoulder all the blame. The hypercompetitive environment within Europe, which has always been present, has had a significant impact on the export of MCWs to embargoed countries while also increasing the flow of legitimate arms sales. The opening for opportunistic behavior through the granting of arms licenses have undermined multilateral arms embargoes imposed by the UN as well as the EU's own arms embargoes.

Strengthening export controls is one solution to a complicated problem, but it is difficult to argue that sales to Egypt or the UAE improve European security when sophisticated weapons and technology ultimately find their way to destabilized and failing states such as Libya. News and reports of Europe's shrinking military budgets are not statistically significant in the models developed here, reflecting the fact that intra-EU competition is a potentially stronger

motivation for arms embargo busting that has been magnified by the development of the EU's legally binding Common Position.

Much of the West has fueled a significant number of conflicts, but Europe's involvement is often overshadowed by the sheer volume of Russian- and US-made weapons, especially during the Cold War. Europe's involvement in several conflicts during the Cold War, especially during the Iran-Iraq War throughout much of the 1980s, created immense suffering and human rights violations. European countries also provided arms and weapons to Rwanda, which many see as contributing to the genocide that took place there. French and British sales to Iraq in the run-up to the First Persian Gulf War that sought to push Saddam Hussein out of Kuwait created problems for Coalition forces (Yanik 2006) as Western technology could have ostensibly been used against the West.

While European countries and governments work to support arms control initiatives internationally and supranationally (Romanyshyn 2015), Europe's contribution to the licit export of arms to embargoed states represents a significant dissonance between policy and practice within the European Union and among its member states as arms embargoes are undermined. With much of the arms exports to embargoed states driven by the larger EU economies of France, Germany, and the UK (before Brexit), smaller countries such as Bulgaria and the Netherlands also contribute to the busting of multilateral arms embargoes. When EU member states are busting their own arms embargoes, the effectiveness of these sanctions is called into question. As the analysis presented here has shown, US and Russian arms transfers annually are significant, yet they do not seem to play an outsized role in the European context.

By developing an understanding of what motivates arms exports to embargoed countries, policymakers, analysts, and activists can develop better policies and strategies that

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align EU member states toward a common approach to exporting MCWs to embargoed countries, many of which face significant domestic instability. To allow member states to contribute weapons to destabilized countries calls into question Europe's status as a normative power.

**Appendix 2: Additional Figures for Chapter 4.**

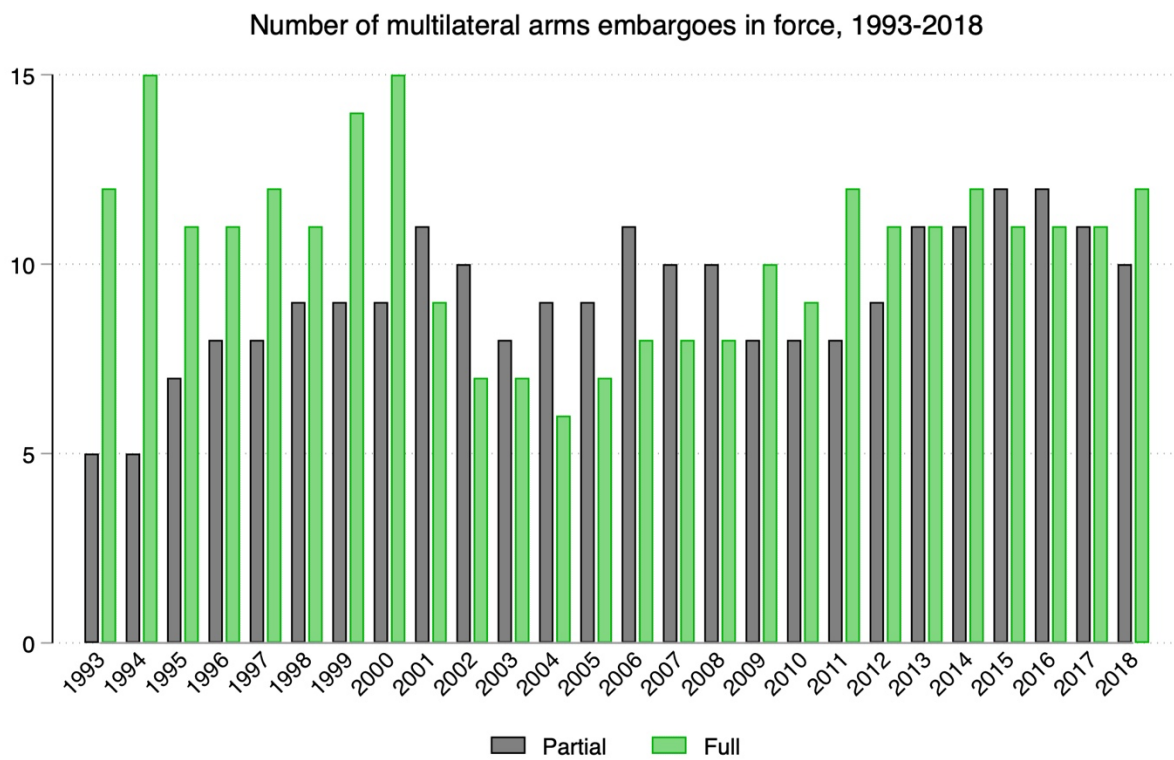Number of multilateral arms embargoes in force, 1993-2018



Figure A2-1. Distribution of partial and full arms embargoes from 1993-2018.

Figure A2-2. Arms exports to embargoed states during the Common Position (2008-2018) across EU members.

Figure A2-3. Arms exports to embargoed states before the Common Position (1993-2007) across EU members.

Figure A2-4. Arms exports to embargoed recipients between 1993-2018. Note that scale of the *y*-axis makes interpretation of the figure difficult given France's significant increase in trade after 2007. See Figure A2-5 for the same figure without France.
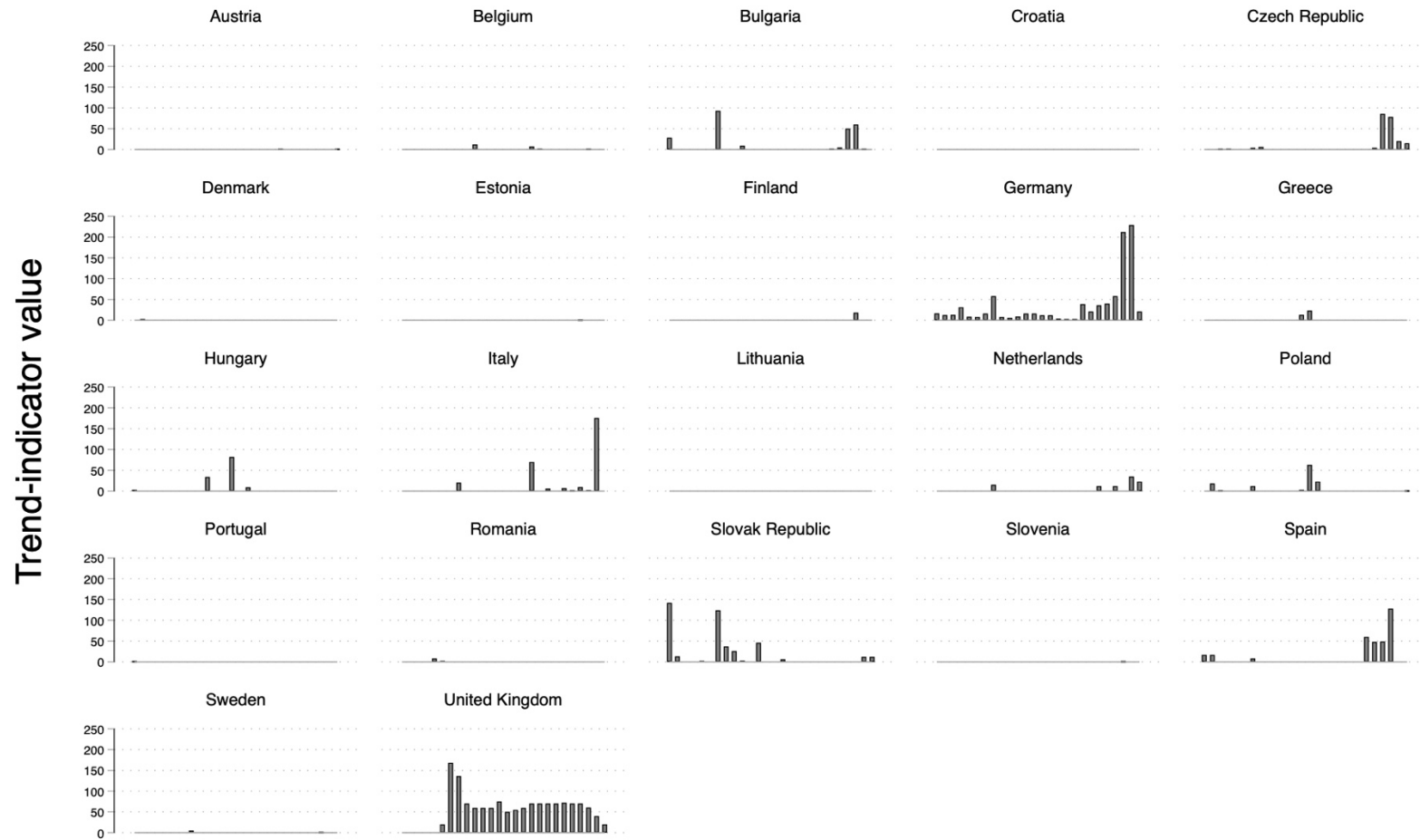
Figure A2-. Arms exports to embargoed recipients between 1993-2018. Note that scale of the *y*-axis makes interpretation of the figure difficult given France's significant increase in trade after 2007. See Figure A2-5 for the same figure without France.

# Chapter 5. Implications of Economic Sanctions and Opportunism

The three articles developed for this dissertation have real-world policy implications for the design, implementation, and enforcement of economic sanctions. As the first chapter demonstrates, target states vary in the amount of opportunity that they provide to third-party states. I show that target states with medium-sized economies, not smaller ones, are more likely to be the recipients of sanctions busting trade. Given that target states with medium-sized economies are also more frequently sanctioned, the use of economic sanctions against these targets with medium-sized economies may present even greater challenges. Because these medium-sized economies provide unique opportunities for third-party states, there may be competition among common major trading partners for sanctions busting support, which leads to better terms of trade for third-party states' firms seeking to capitalize on the opportunities this dynamic provides.

When designing and implementing sanctions regimes (regardless of the sender), understanding industry trade patterns between states may improve the effectiveness of targeted sanctions. Such efforts may allow policymakers to increase the potential to bring about concessions from the target if they know ex-post how industries among states in the international system are trading with states they seek to target with economic sanctions. Such efforts may result not only in more effective sanctions programs but sanctions programs of shorter duration, which may improve not only the efficacy of economic sanctions but also limit the negative effects of such sanctions, especially when it comes to impacts on humanitarian trade and assistance.

The second chapter's focus on how the development of the European Union and the increase in intra-industry trade has *reduced* the propensity for sanctions busting also has

important policy implications, especially for US policymakers who often see European countries and the EU as undermining US foreign policy goals. As the European Union expands and the common market becomes larger, it has a greater potential to offer not only more trade benefits but also a larger internal market where goods can be diverted, especially when economic sanctions or other trade disruptions create barriers or issues for European firms and entities. A future research agenda could involve disaggregating trade across industries to study industry trade patterns among EU member states and contrasting those trade patterns with extra-EU industries.

The final chapter with its focus on arms embargoes and arms embargo busting by European countries (or EU member states) reflects a policy incongruence between national governments in member states and European Union-wide directives at combatting the flow of legal arms and how such trade may impact human rights as EU member states "race away from Brussels." Given the EU's normative approach to arms control and its norm entrepreneurship in this area, the creation of the Common Position on arms exports should work to reduce arms transfers to embargoed states, not increase such transfers. With increasing competition among arms manufacturers magnified by the legally binding Common Position, EU policymakers may need to develop additional competences that impose stricter controls and stronger enforcement mechanisms, especially when modern conventional weapons (MCWs) make their way to conflict hotspots.

My study's contribution adds greater nuance to theories of sanctions busting by showing how opportunistic behavior can vary. Chapter 1, for example, showed how sanctions busting trade is not always *impactful* even when such trade "checks off the boxes" – in other words, trade not only *increases* with the target states but that such trade is carried out by a target's main

trading partners. However, as the findings in Chapter 1 show, sanctions busting trade is impactful under certain conditions. What makes this chapter's contribution key is that there is an interesting *relationship* between the states that senders target for economic sanctions and the states where sanctions busting trade occurs. These target states with medium-sized economies ostensibly compete with the same third-party sanctions busting states, forcing targets with medium-sized economies to offer more competitive terms of trade. In essence, the economic sanctions imposed on target states with medium-sized economies may be their own undoing and jeopardizing the success of economic sanctions. Windows for opportunistic behavior not only vary but are conditional on the nature of the target states.

Because the success of economic sanctions often rests on the support that target states receive, understanding the variation in this dynamic opportunistic behavior provides a timely contribution to the literature. Before taking office in 2021, the Biden Administration promised a sanctions review. That review, which was released in October 2021, underlined the need for greater coordination among allies as well as implementing sanctions that mitigate negative externalities, such as humanitarian, economic, and political disruptions (US Department of the Treasury 2021). For the coordination and implementation of economic sanctions to meet the sender's needs, an understanding of the target state is key.

While the chapters presented here have relied on large data sets and statistical methods to answer the research questions posed in each chapter, case studies and further ethnographic work may be useful in understanding causal processes and mechanisms involved. Further projects that get researchers on the ground to understand the motives of firms and officials across the EU may provide rich contextual data that simply cannot be captured in data sets. Given that firms engage in trade and sanctions busting, understanding the motivations for ignoring economic sanctions or

taking a chance on not being caught or prosecuted represents an intriguing puzzle in how

businesses analyze and factor in economic sanctions into their business models. In other words,

*when* does sanctions busting trade actually pay off?

The use of other sanctions databases, such as the TIES data set (Morgan, Bapat, and

Krustev 2009; Morgan, Bapat, and Kobayashi 2014) or the Global Sanctions Data Base

(Felbermayr et al. 2020), may provide opportunities for further testing using different methods of

coding and analysis of economic sanctions. Other methods of coding and operationalizing

sanctions events may provide methods for testing the theories and hypotheses presented here and

may also lead to the development of new methods of coding economic sanctions and the

creations of other data sets.

While EU countries take advantage of the economic opportunities that sanctions create,

further research needs to be conducted to understand other ways that the EU responds to

economic sanctions beyond the means of opportunism demonstrated here. The European Union

has, for example, often responded to US economic sanctions not only by engaging in sanctions

busting trade but also in developing trade mechanisms to thwart US efforts to punish its firms.

The development of INSTEX, an alternative trading system that allows for trade using

clearinghouses, represents a worrying development for the United States, perhaps more

worrisome than the economic opportunism in which EU firms engage.

While INSTEX has not led to significant transfers of goods between Europe and Iran (or

other sanctioned entities), the development of alternative payment systems and other blocking

mechanisms could potentially serve as blueprints for other countries to use in developing

mechanisms that marginalize US economic power and limit the use of the US dollar as the go-to

currency for trade and trade financing. Special payment vehicles like INSTEX represent a unique

form of opportunism that scholars have yet to explore. Foreign aid and foreign direct investment (FDI) are also vehicles for economically opportunistic behavior, offering opportunities for further research in exploring the dynamics studied here. Research in understanding these dynamics represents a unique opportunity for researchers to probe to understand the tolerance threshold for the US' heavy-handedness in its application of US sanctions while simultaneously exploring another form of opportunistic behavior European states engage in when confronting the impact of US sanctions.

While INSTEX has not lived up to its expectations (at least for now) (Aftalion 2019; Zable 2019), the use of special payment vehicles (SPVs) like INSTEX represents a response to US economic and financial sanctions and US dollar dominance. Which states are more likely or apt to adopt or adapt these mechanisms and with which target states would they be utilized? Is the adoption of these SPVs reflective of broader efforts to minimize the pain and impact of economic sanctions (Arnold 2016)? The use of alternative currencies like bitcoin and other electronic currencies may represent market trends to avoid the use of fiat currencies in favor of market driven instruments in to avoid the power and reach of not just the United States but also the EU. What types of variation are present across SPVs and digital currencies (like bitcoin) and how do SPVs and digital currencies reflect opportunistic behavior? What are the impacts of SPVs and digital currencies on the effectiveness of economic sanctions and how will they be utilized by third-party states to undermine economic sanctions in the future?

Economic sanctions are a "tool" frequently employed by policymakers within a country's respective "foreign policy toolkit" (Early and Preble 2021). Whether economic sanctions are effective policy tools remains an important question that the literature has yet to answer satisfactorily. It is difficult to accept an economic sanctions regime that has lasted for decades

has achieved any of its goals or that those goals have been worth the humanitarian concerns that these policies create. The negative externalities that economic sanctions may impose when they remain entrenched for decades may enact far greater costs to US foreign policy, US interests, and US national security than may be evident when such policies are levied against targets. The lack of mechanisms to study these impacts and the low priority that such impacts have on altering sanctions policy remains troubling.

The recent sanctions review by the Biden Administration (US Department of the Treasury 2021) has shown that the use of economic sanctions has exploded significantly within the last decade. As the regulatory responsibilities increase, the need for resources also increases with significant onus of enforcement foisted upon the private sector, which tends to over-comply. While the Biden Administration has sought to modernize the technology, increase personnel, and improve Treasury's infrastructure to monitor, the impacts of sanctions overuse may be exponential. As the use of economic sanctions increases, the level of resources needed to support them may exceed the resources US regulators can ostensibly commit, leading to what we see today: a vicious cycle of sanctions overuse and unsustainability that has eschewed diplomacy and diplomatic methods in favor of seemingly lower costing economic sanctions.

As their use (and abuse) has increased over time, understanding how economic sanctions are undermined by third-party states and their respective industries represents a perennial problem for policymakers. Over time, US economic sanctions, as policy instruments (Barber 1979), have targeted not just target states but also third-party states as the use (and abuse) of secondary sanctions and extraterritorial application of those sanctions has only increased. Given the potential that third-party states have for undermining economic sanctions and the variation of this impact, understanding how these countries and their industries operate can build off previous

research in this area and provide an array of new knowledge that can improve the efficacy of this important policy apparatus in the realization of foreign policy goals across the international system.

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