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Peer reviewed|Thesis/dissertation

UNIVERSITY OF CALIFORNIA,
IRVINE

When the Target Fights Back:
Economic Coercion and Interstate Conflict in the Era of Global Value Chains

DISSERTATION

submitted in partial satisfaction of the requirements
for the degree of

DOCTOR OF PHILOSOPHY

in Political Science

by

Phoebe W. Moon

Dissertation Committee:
Professor Etel Solingen, Chair
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2022

DEDICATION

To

My family

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ACKNOWLEDGEMENTS

Nothing that I have achieved in life so far has been done through myself alone. In every step, I had my family, mentors, friends, and colleagues who believed in me and supported me in all the ways they could, and then some more. I surely am forgetting a lot of people here. I wish they could forgive me for this error and remember that I always am grateful for their support. First and foremost, I would like to express the deepest appreciation to my committee chair, Professor Etel Solingen, who always inspires me to become a better scholar and a mentor. She is the one who guided me towards this incredibly relevant and important topic even before trade conflict and global value chains were all over the media. Without her mentoring, feedback, and recommendation letters, I would not have been able to be where I am today. Her endless passion as a scholar, a teacher, a mentor, and a mother has left me with overwhelming admiration and respect for her.

I would like to thank my committee members, Professor Robert Uriu, Professor Erin Lockwood, and Professor Gustavo Oliveira. Throughout this extreme, unusual time of COVID-19 where each one of us was living in a crisis, they have not only helped me academically, but also have provided the emotional and psychological support that a graduate student with a small child writing a PhD dissertation during a pandemic desperately needed. Their encouragement and warm words of acknowledgement meant so much more than they can imagine.

I gratefully acknowledge the research funding provided by the University of California Institute on Global Conflict and Cooperation, UC Irvine, and Cato Institute Junior Scholar Symposium. With this generous support, I was able to fully focus on my research in my last year as a PhD candidate. I also thank Cambridge University Press and IGCC for letting me use my published book chapter and policy brief, respectively, in my dissertation.

Many colleagues from the UCI Political Science department supported me. My friends from the “brother country” of Turkey, Nazim Uras Demir and Melisa Perut, have provided support in so many ways, including, yes, that thing that we talk about every other day. Hannah June Kim has been a great mentor, a friend, and a coauthor from day one and even after she graduated and moved to Omaha. Nathan Chan and Pooya Safarzadeh were there from the beginning to the end, going through so many lows and highs together. I would also like to thank Bryan Fitzgerald for his help with Qualtrics and beers, but also for introducing me to his lovely family, Sarah and Nicholas. Professor Heidi Hardt, Professor Mary McThomas, Professor Kristen Monroe, Professor Michael Tesler, Professor Keith Topper, and Professor Samantha Vortherms have all been great mentors and friends, each in their own special way.

I also would like to thank the UCI Childcare for their exceptional service. Knowing that my son is in good hands from 8 am to 6 pm took so much burden off me and allowed me to concentrate on my work. The entire time I was at UCI, but especially when I was a single mom, teachers at UCI Childcare supported me with so much patience and empathy.

Many interviewees from South Korea, Japan, and China not only provided me with information and their time, but also encouragement. Most of them understood how hard it is to write a PhD dissertation and were eager to offer support above and beyond what I have expected.

Lastly and most importantly, my biggest gratitude and love go to my family. I thank my parents, Il Moon and Younghee Son, whose love, patience, and support let me be who I am. They always motivate me to be a daughter they can be proud of. I haven't been able to see them for more than two years because of the pandemic and I really miss them. I also want to thank my grandparents for always praying for me and supporting me. My "special boy" Yoobin also deserves a sentence or two here for being such a low-maintenance son who is full of love and care. His laughter makes everything in the world seem okay, even in the most stressful days. My furry family members also deserve to be acknowledged for their purrs and meows: Pumpkin, Butternut, and Huey. Most importantly, I wish to thank the love of my life, Benjamin Hoyt. His love and protection brought me out from the darkest period of my life when everything seemed like it was my fault. I also owe him for letting me have a loving family here in the US, ten thousand kilometers away from home: Katherine, Leo, and Aimee Hoyt (and Ryan). My fate has led me to meet him coming from the opposite side of the globe, and I am excited to see where life will take our family next.

All errors in this dissertation are of my own and no part of this dissertation reflects views of individuals and institutions mentioned above.

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ABSTRACT OF THE DISSERTATION

When the Target Fights Back:

Economic Coercion and Interstate Conflict in the Era of Global Value Chains

by

Phoebe W. Moon

Doctor of Philosophy in Political Science

University of California, Irvine, 2022

Professor Etel Solingen, Chair

When exposed to economic coercion, why do some target states choose to escalate a conflict by retaliating instead of acquiescing or ignoring it altogether? More broadly, what is the nature of the relationship between economic interdependence and conflict today? Whereas many scholars examine economic coercion as tools to be used against “rogue” states, economic pressure applied by partners within shared GVCs represents a fast-growing form of conflict in the 21st century as a substitute to military action. Moreover, GVC centered economic interdependence is distinct from that based on traditional trade, making it plausible that these distinctive economic relationships impact actors in distinct ways.

In this dissertation, I use prospect theory to show that decisionmakers are influenced by their perceived position in GVCs, relative to the sender, in formulating their response to economic pressure. When a target’s key industries are more dependent on the sender within their shared GVCs, its leaders are more likely to escalate conflicts. This asymmetry in dependency makes policymakers see themselves as strategically disadvantaged. The prospect of losing the sender’s less replaceable GVC inputs predisposes them towards more risk-seeking behavior. By contrast,

when a target holds relative dominance, its leaders are less likely to risk conflict escalation. They perceive themselves as occupying a superior strategic position and will act in a relatively risk-averse manner to avoid potential losses. For them, the opponent's inputs are easier to replace and, as a consequence, the incentive to retain them is less meaningful relative to the risk of conflict escalation.

The empirical section of the dissertation largely draws on two methods. First, I use a process-tracing method and within-case congruence tests to conduct in-depth case analysis on two contemporary East Asian cases: the ongoing Japan-South Korea trade conflict and the China-South Korea conflict over THAAD. Additionally, I conduct two experiments to further highlight how GVCs and traditional forms of economic interdependence can influence actors differently.

Chapter One

Introduction

“I don’t believe any country in the world is going to retaliate, for the simple reason that we [the United States] are the most lucrative and biggest market in the world.”

(Peter Navarro, 2018)

The Trump administration’s team of advisors were confident going into what eventually became a paradigm-shifting trade war with China. The explanation Peter Navarro’s comments provides above well illustrates the rationale behind this sentiment: the United States had an economy that was superior to that of any other countries in the world, including China (PBS NewsHour 2018). Contrary to their expectations, however, China refused to acquiesce and America’s tariffs were immediately met by China’s retaliatory tariffs. While this is the landmark event that signaled the start of the era of trade wars, Washington was not alone in believing that economic power could directly translate into a successful political coercion. In 2019, Japan announced plans to regulate its export of critical intermediate materials to South Korea. Politicians in Tokyo were confident that, by leveraging their economic and technological superiority, they could coerce Seoul into changing its policies regarding their long-lasting historical disputes. This attempt was also met with fierce retaliation as in the case of the US-China trade war. Similarly, three years before this conflict, China had imposed economic regulations on Seoul to stop it from installing an American

anti-missile system in South Korea. In this case, Seoul did not retaliate and, in fact, publicly displayed extreme reticence, fearing the prospect of what an escalated conflict might entail.

There have been numerous other cases of trade partners weaponizing their interdependence to achieve political goals since the start of the 21st century, involving countries such as Australia, Brazil, European Union member states, Canada, etc. An examination of interstate conflict trends over the last several decades reveals a shift in how states exert coercion. Since the end of the Cold War, various circumstances, including the advent of nuclear weapons (Knorr 1966), domestic ruling coalitions' desire to remain in the global economy (Solingen 2007), and global norms against violence (Senese 1997), have made armed conflict a less desirable option for states (Fattore 2009; Young and Levy 2011). However, not all coercive policies succeeded—some even escalated into tit-for-tat trade wars as in the case of the US and China.

The two cases involving South Korea further highlight this puzzle. As will be explained in more detail later, in both cases, South Korea was the state targeted by the initial coercive policies. In each instance, China and Japan were among its closest trading partners. Each conflict was politically motivated. South Korea's history with both China and Japan also represented a straightforward way for national leaders to garner political capital by standing up to these larger states. In spite of how similar the cases might seem, each led to a strikingly different result.

In this light, this dissertation revisits some of the oldest questions of international relations (IR) and offers novel interpretations of the interconnections between economic coercion, national security, and economic interdependence in the contemporary global environment. My research questions are: When exposed to economic coercion, why do some target states choose to escalate a conflict by retaliating instead of acquiescing or ignoring it altogether? More broadly, what is the nature of the relationship between economic interdependence and conflict today?

In addressing these timely questions, my dissertation examines how economic interdependence based on global value chains (GVCs) influences policymakers' psychology and how this mechanism pushes them to make one decision as opposed to another. I argue that understanding trade war onset requires (1) taking into consideration how the global production and trade operate today and what impact they have on policymakers and (2) conceptualizing trade war onset as a process in which a unilateral coercive policy of the sender state fails and becomes a mutual conflict as the target state decides to retaliate.

During economic coercion, a state(s) (the *sender*) threatens to use or uses coercive economic tools to disrupt economic relations with another state (the *target*). Such coercion has largely taken the place of interstate war, even if it is an imperfect substitute (Baldwin, 2020; Drezner, 2021; Pape, 1997). Increasingly, more states use economic means to reach their political goals which brought about the increase in weaponization of economic interdependence (Doxey 1987; Farrell and Newman 2019). Between 1945 and 2005, there were 1,412 threatened and imposed economic sanction cases (Morgan et al. 2014), compared against a mere two cases in the 1920s, and 47 in the 1990s (Hufbauer et al. 1990).

Whereas many consider economic coercion to be a policy used only against "rogue" states such as North Korea and Iran (Peksen 2019b; Kaplowitz 1998; Bapat et al. 2013), the realities of international conflict today show increasing usage of economic tools against "normal" states (Drezner 1999; 2001; Goenner 2007; Busch 2000). The US and China are perhaps the most widely discussed examples, but many other countries have been embroiled in trade wars over the last half-decade. This reality should compel scholars to stop disregarding such conflicts as mere "commercial disputes (Elliott 1998; Pape 1997)" and instead incorporate them into the study of economic statecraft and conflict. Especially in East Asia and Asia-Pacific regions, there have been

no major militarized conflicts between industrialized countries for decades. However, recent political upheaval, including the resurgence of Great Power politics and the US-China trade war, calls into question the stability of this peace (Solingen 2021) and, more fundamentally, whether our narrow focus on interstate conflict as armed disputes is keeping us from seeing the bigger picture of this “hot peace.”

These conflicts have been further complicated by the rise of GVC production. The rapid decline of transportation and communication costs since the 1990s has facilitated the fragmentation of production processes across interstate lines. Multinational corporations (MNCs) design their GVCs in a way that minimizes costs while maximizing profits by outsourcing different production steps to firms across the world (Gereffi 2014; Ravenhill 2014). As a result, GVCs bind countries and firms together within a single manufacturing system in a fashion that renders them more intertwined than in traditional methods of trade. While GVCs now represent more than half of all global trade, scholarship has largely remained focused on gross national trade and foreign direct investment when considering the question of economic interdependence (Barbieri 1996; Copeland 2015; Mansfield and Pollins 2001).

Therefore, I suggest that it is crucial to understand the prevalence of trade wars today using the lens of GVC interdependence and how this new paradigm of production and trade influence a target state’s reaction to its GVC partner’s economic coercion. In addressing this issue, I propose that the psychological framework provided by prospect theory (Kahneman and Tversky 1979; Tversky and Kahneman 1992) represents a strong, credible foundation for understanding economic coercion results in a global economy marked by GVC trade. Under normal circumstances, states are content with the absolute gains of GVC interdependence. There would not be any trade agreements otherwise (Hirschman 1945). However, once a conflict starts, GVC interdependence,

with its logic of embeddedness and replaceability, creates different psychological conditions for differentially situated policymakers. Policymakers will think in zero-sum terms and weigh expected gains and losses in deciding how to react to the GVC partner's coercion. I argue that a target state's relative position within this system of trade will have a significant impact on policymakers' reaction to economic coercion. States which occupy a more favorable position (the *domain of gain* described by prospect theory) will be less likely to retaliate in the face of economic pressure. States in the domain of gain act in a risk-averse manner to avoid further losses, relatively secure in knowing that what they offer to their opponent is less-substitutable than what their opponent offers them. The fear of potential conflict escalation, for these states, exceeds the expected utility of maintaining the senders relatively more replaceable GVC inputs. Meanwhile, states whose position is less advantageous (those in the *domain of loss*) will be more likely to retaliate and escalate in a conflict. For the domain-of-loss actors, the expected losses from losing access to the opponent's scarcer GVC inputs weigh more than the risk of conflict escalation. Over the course of my dissertation I will demonstrate how my theoretical framework is better suited to the nuances of GVC trade than other potential explanations grounded in rational choice assumptions.

The remaining introductory chapter consists of four sections. First, I explain in greater detail what GVCs are and why they are central to understanding global politics and economy, especially economic and coercion interdependence. Second, I introduce existing studies in international relations that specifically investigate GVCs and highlight what my dissertation adds to this area of research. This section serves as a brief survey of this nascent literature, and I present a more extensive review of the economic coercion success in my second chapter. Third, I discuss

my theoretical framework and account of how GVCs influence state actors' response to their GVC partner's economic coercion. Fourth, I provide a brief roadmap of the rest of the dissertation.

1.1 What Are Global Value Chains and Why Do They Matter?

The world has observed extensive economic globalization and an increase in international trade flows in the past, most famously during the “First Globalization (1870-1914).” However, the rise of GVCs has transformed the world economy and production in a distinctive and fundamental way. The 1990s marked a critical turning point as the cost of transportation and communication decreased and information technology developed. In addition, the global trend of economic liberalization allowed trade barriers to go down, making it easier for firms to unbundle production and make the processes fragmented. Rather than making a product from stage A to Z within a single state's borders in a Ricardian manner (i.e., the exchange of wine and cloth), MNCs dissected production processes into multiple stages, such as product design, manufacturing, and sales. They then offshored labor-intensive stages, simple manufacturing in most cases, to countries with cheaper labor. China's economic liberalization and the World Trade Organization (WTO) membership accelerated this development as MNCs scrambled to take advantage of China's abundant labor and large market (V. Shih 2021; Demir and Solingen 2021).

Consequently, companies' specializations became more vertical than horizontal, meaning that they concentrated on certain stages of production rather than a complete product (or service) itself (Baldwin, 2013; Gereffi, 2014, 2019). For example, a semiconductor crosses national borders 70 times on average in its GVCs —companies in the US design it, Japanese companies make the necessary equipment, South Korean companies provide the materials, and Chinese firms

manufacture the finished chips. Even for one type of material or intermediate goods that goes into the process, it is not a single firm within a single country that manufactures them. For instance, *Figures 1.1 and 1.2* illustrate a semiconductor's front-end manufacturing process and the machines and materials that go into it.¹ Semiconductor polysilicon and silicon wafers make base wafers for semiconductors. In making this one intermediate product, various companies participate from around the world, such as Wacker (Germany), Tokuyama (Japan), and Hemlock (Germany) for polysilicon and Shin-Etsu (Japan), Sumco (Japan), and Global Wafers (Taiwan) for silicon wafers. Whereas the traditional form of trade usually involves only two countries, GVC trade crosses borders of multiple countries many times. In this sense, GVCs are complex networks that “bind a group of firms into a larger economic unit (Sturgeon 2001)” through fragmenting production processes, “with each stage adding value, and with at least two stages being produced in different countries (Antràs 2020).”

¹ In many cases there are more than three vendors, but I only list the top three due to space constraints. For further information, *see* Kim, 2020.

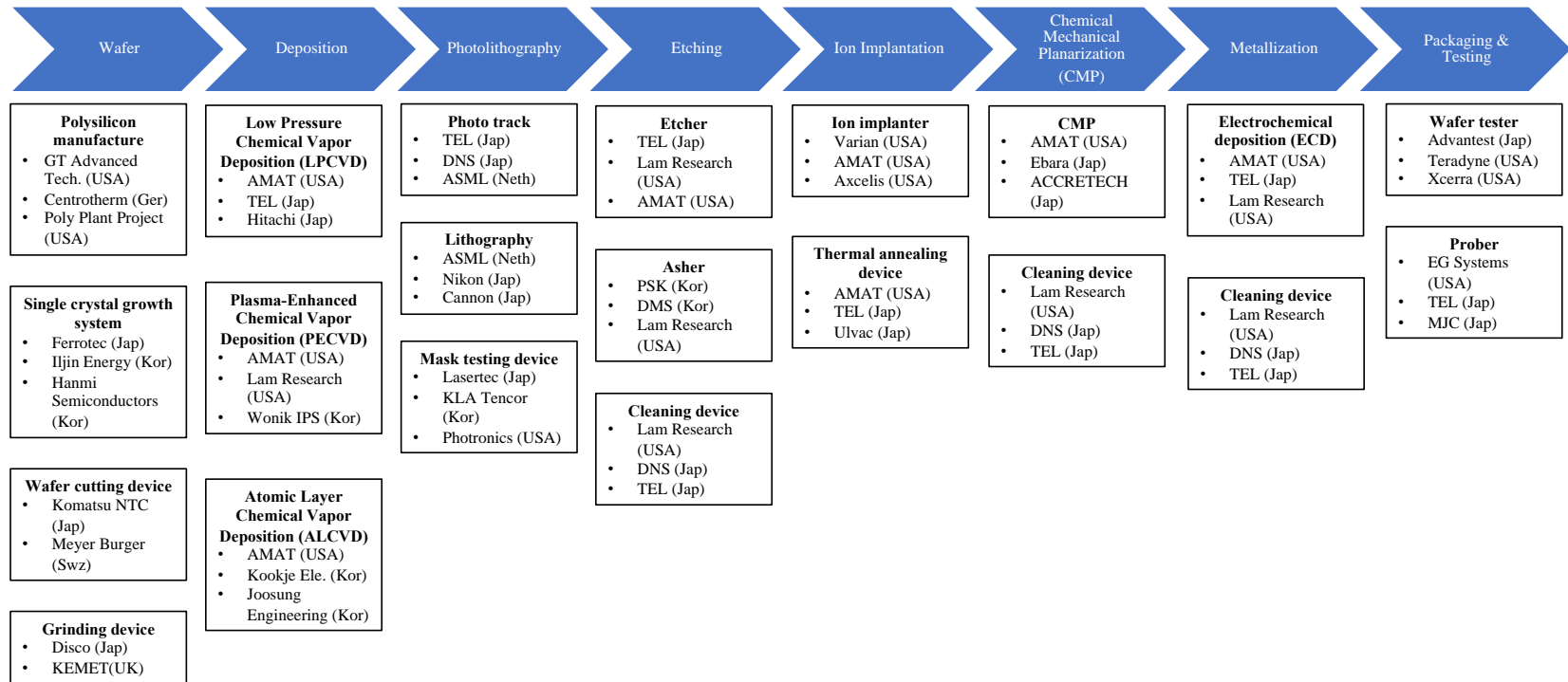


Figure 1.1 Makers of equipment and machines for the front-end manufacturing process of semiconductors (Source: Kim, 2020)

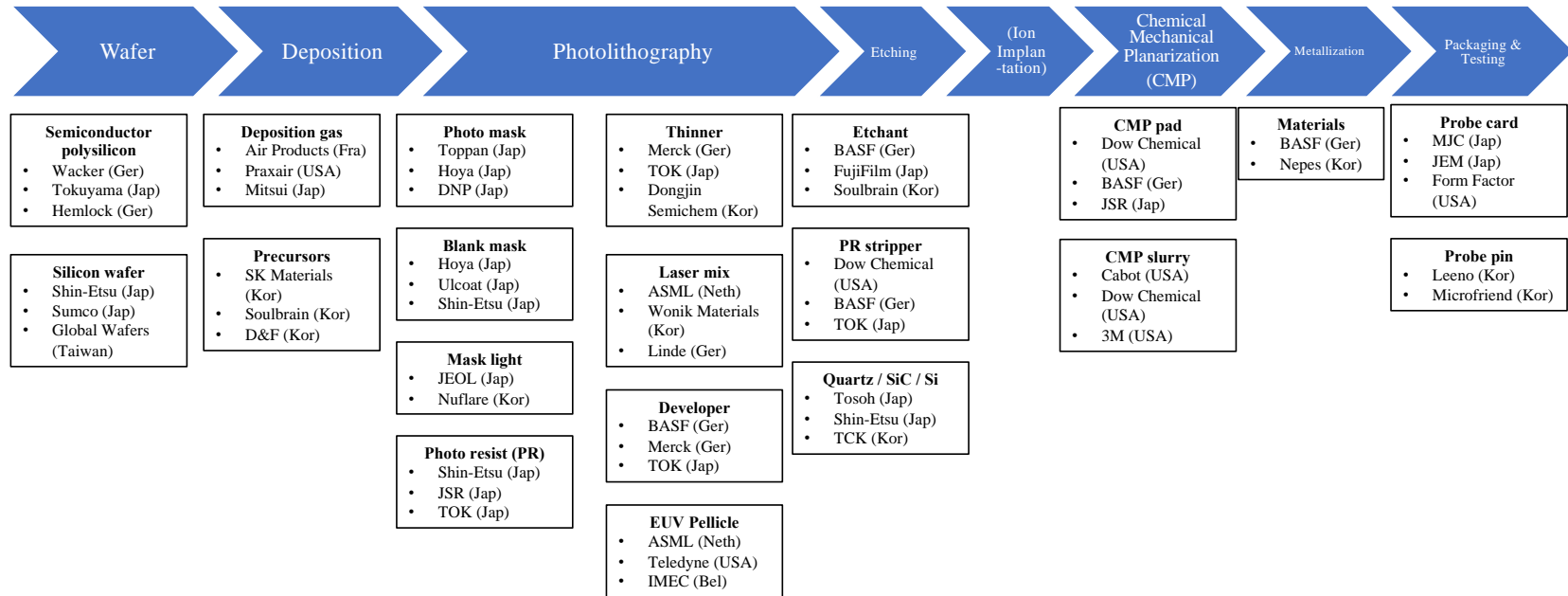


Figure 1.2 Makers of materials for the front-end manufacturing process of semiconductors (Source: Kim, 2020)

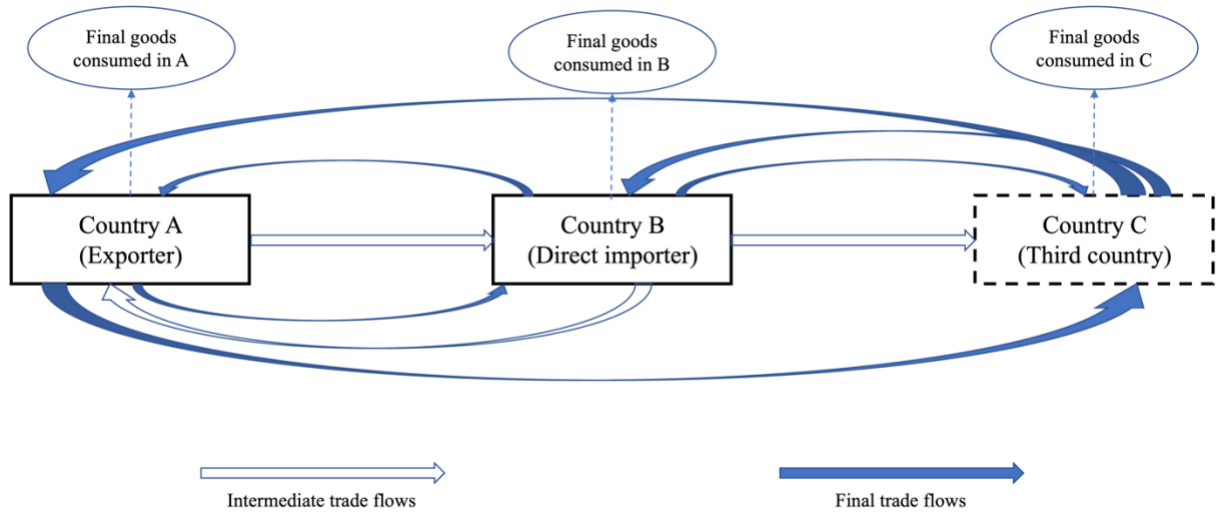


Figure 1.3 Gross bilateral intermediate and final goods trade between Country A and Country B (Source: Wang et al., 2014)

A country's gross export consists of value added abroad (Foreign Value Added; FVA) and value added domestically (Domestic Value Added; DVA), and FVA is also called a country's backward GVC participation. Within a system of GVC production, total GVC is the sum of FVA and indirect value added (DVX). *Figure 1.3* describes gross bilateral trade relationship between trading partners A and B. Commodities that Country A exports to Country B have four different types of value-added embedded (Z. Wang, Wei, and Zhu 2014):

- 1) **Domestic value-added, absorbed abroad (DVA)** = (Final goods exports from A to B) + (Intermediate goods exports absorbed by B) + (Intermediate goods sent to B and re-exported to C)
- 2) **Domestic value-added, exported and returned home (RDV)**

- 3) **Foreign value-added (FVA)** = (Foreign value added in final goods exports) + (Foreign value added in intermediate goods exports)
- 4) **Pure double counted terms (PDC)**² = (Pure double counting from domestic sources) + (Pure double counting from foreign sources)

These measures of GVC participation help to highlight the crucial role that GVC embeddedness plays in shaping a state's economic outlook. In analyzing a country's embeddedness in GVCs, experts usually look at the proportion of DVA and FVA in gross exports. When a country has a lower DVA and higher FVA, it has more developed forward linkages, meaning that its industries import intermediate goods, manufacture and process them, and re-export. On the other hand, when a country has a higher DVA and a lower FVA, it has more developed backward linkages, meaning that its industries create higher value-added intermediate goods. On average, developed industries have a higher proportion of DVA in their gross exports. However, since the 2000s there has been an overall decrease of DVA globally, as more countries began to participate in GVCs and offshoring has increased. As a country's economy develops, the proportion of RDV and PDC also show an increase on average. This is because a country with more backward linkages exports higher value-added intermediate goods and imports final goods already manufactured in other countries.

However, while these numbers can show overall trends, more nuance is needed in understanding an industry's level of development and sophistication. For example, both China and Japan have a high proportion of DVA_FIN —China's high quantity of final goods exports largely

² PDC is included in gross trade amount but is excluded when calculating gross domestic production.

constitute DVA_FIN, while Japan's high level of DVA_FIN comes from the high amount of value-added in its final goods exports (J. M. Lee and Yoon 2016).

Among the range of terms used to describe this economic phenomenon, I choose GVC for mainly two reasons. First, one of the most important mechanisms through which this fragmentation of production processes influences interstate conflict is the difference between states in value added. This contrasts with other similar expressions including global commodity chain, activities chain, and production chain which similarly highlight the fragmented nature and the chain-like connection of production processes. In particular, although very similar, compared to value chains, supply chains focus more on the business aspect of the production, including effective management and minimization of costs (Feller, Shunk, and Callarman 2006). Second, I focus on the state-level dyadic relationship rather than ties involving three or more states, private companies, or individuals. Other concepts such as production network and value network are defined as "a set of inter-firm relationships that bind a group of firms into a larger economic unit," emphasizing the web-like characteristics of producers and laborers across the world (Sturgeon 2001). When necessary I do mention the role of third countries, but I largely focus on dyadic relationships to better analyze how two countries view each other in a shared production process. Therefore, against models that emphasize the web-like characteristics of these systems, I use GVC to better depict the dyadic and linear relationship between trading partners.

Why then is the GVC system important and what distinctive implications does it have compared to the traditional form of trade? First, GVC trade is the predominant method of trade and production, increasing from approximately 37% of global trade in 1970 to almost 55% in 2018

(Figure 1.4).³ The growth of GVCs has stagnated since the 2008 global economic crisis due to the overall decline in economic growth. The recent COVID-19 pandemic and the general rise of geopolitical tension exacerbated the trend. Nonetheless, the GVC system remains in the center of both political and business concerns, which are reflected in the prevalence of trade conflicts and new industrial policy announcements (e.g., The US’s CHIPS for America Act, the EU’s new Industrial Strategy, China’s Made in China 2025, and Japan’s Semiconductor • Digital Industry Strategy).

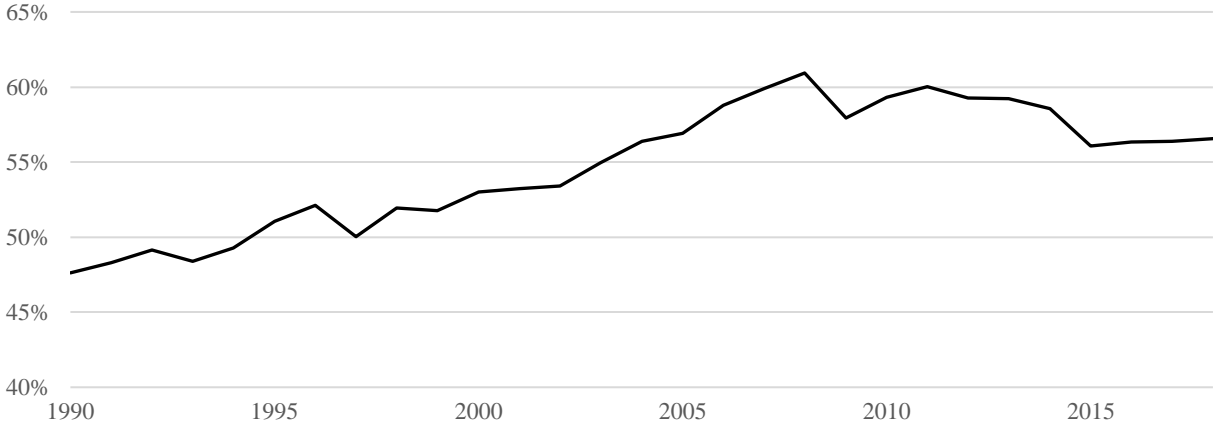


Figure 1.4 GVC flows as a percentage of total trade flows, 1990-2018 (Source: UNCTAD Eora GVC Dataset)

In addition to their uniquely meteoric rise in the global economy, GVCs also connect states and firms in a more intimate and intertwined way than traditional trade. Many scholars have understood economic interdependence between trading states as one of the key motivations for interstate peace. For instance, when there are sufficient economic ties, states will perceive dispute

³ Depending on the measurement, some estimate the proportion of GVC in global trade to be as high as two-third of the global trade (OECD 2018; “WITS Database,” n.d.)

with a trading partner as potential loss of opportunity costs (Oneal and Russett 1997) or as risking a strategic loss which might destabilize a domestic ruling coalition aiming to internationalize (Solingen 2007). Nonetheless, it is relatively easier to lower dependency on a single trading partner by substituting and diversifying partners in final goods trade (Hirschman 1945). In contrast, GVCs connect their contributors in more co-dependent ways and “the potential costs of armed conflict disrupting economic linkages are magnified by the termination of access to inputs critical to international competitiveness as well as the loss of export markets (Ravenhill 2014).” In other words, the global economy has become more integrated not only in quantitative terms but also shows qualitative changes distinctive from pre-WWI era economic interdependence.

Lastly, GVCs have their own internal logic that sets them apart from other instruments of trade. Most importantly, Shih (1996), the founder of a Taiwanese technology firm Acer, proposed that the amount of value-added in different production processes forms a “smile curve,” with both ends adding more value compared with those in the middle (*Figure 1.5*). Upstream stages include production processes like R&D and branding, and downstream is the distribution stage where marketing, sales, and after-sales service take place. Both upstream and downstream activities tend to occur in more developed countries with better technological infrastructure and more capital. Conversely, the midstream of industry is defined by the product assembly stage, which includes processes like manufacturing and packaging. Midstream is usually concentrated in developing countries where labor and land are both cheap and abundant.⁴

⁴ There are other forms of production curves such as “W curve” and “frown curve” depending on the industry. For example, the petrochemical industry’s value-added curve has a high midstream and low up and downstream. Refining and manufacturing of petrochemical products adds more value than the acquisition of raw materials or distribution processes. For this study, the emphasis is on the fact that different production stages add different amounts of value, rather than which part of the production process adds the most value. Moreover, I do not use the terminology “upstream” or “downstream” to describe GVC positionality in my theory for this same reason — depending on the industry, upstream may not necessarily equal to higher level of technology and lower level of replaceability.

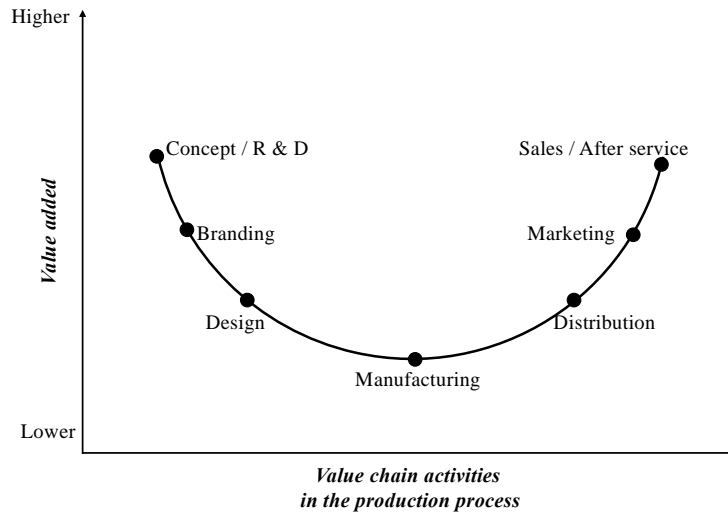


Figure 1.5 Smile curve of activities in a GVC (Sources: Gereffi, 2019; Shih, 1996)

By extension, the contributions of states can be measured by their “replaceability.” The different locations (such as upstream and downstream) on the value-added curves are determined by each stage’s entry barrier and accumulation of capability. More value is added in production stages where it is hard for newcomers to enter and there is a greater accumulation of capability. For example, in making computers, producing microchips and software requires accumulated technology and technical expertise. It is harder for countries seeking to occupy an upstream position within a GVC to start obtaining the requisite know-how and skilled technicians when there are existing countries and organizations that already have those resources in abundance. China has been trying to move up the value chain and be less dependent on Western companies by heavily investing in high-tech industry including semiconductor development for the past 40 years. Despite the Chinese Communist Party’s efforts, as of 2019, little more than 15% of the semiconductors used within China were domestically produced, and more than half were still made by foreign companies (Lewis 2019). Moving up/downstream from midstream is not an easy task, meaning that within any given GVC companies and countries that occupy up/downstream

positions within an industry are not easily replaceable. Whereas it is not difficult to build new assembly factories and hire factory workers, there are only a handful of firms around the world that occupy both ends of a smile curve. As I will discuss later, these considerations—concerning the relative value of a state’s contribution to a GVC—have the potential to exert influence on the decision making of state leaders, especially in a region like Northeast Asia where a wide range of highly profitable GVCs currently operate.

1.2 GVCs in International Relations Studies: What Has and Has Not Been Done

Scholars of international relations have recently started paying attention to GVCs, even though the topic remains largely the purview of economists and statisticians. The existing literature on the relationship between GVCs and global politics largely focuses on their impact on three key topics: economic interdependence and peace, economic development, and global inequality.

First, recent studies have begun probing whether GVC integration promotes interstate peace in the same manner as final-goods trade. Brooks (2005) observes that GVCs have become vital sources of raw materials and technology, making great powers unable to produce weaponry individually. GVC economies also substantially reduce incentives for military conquest and allow corporations to maintain stable GVCs and regional economic integration. In the context of Great Power politics, Kim and Solingen (2017) show that global production networks are positively correlated with interstate political cooperation in East Asia, although it does not affect the incidence or intensity of dyadic conflicts. Similarly, Green (2016) argues that East Asian states’ GVCs reduce regional disputes over the South China Sea. Moreover, Dorussen and Ward (2010)

and Kinne (2012; 2013) use network analysis in exploring how GVC connection influenced interstate cooperation.

Second, some studies examine GVCs' contribution to lowering entry barriers for countries that might otherwise be excluded from the global economic system. Before GVCs, only a handful of countries such as Germany or the US that possessed the requisite industrial infrastructure and technical expertise could compete within the global marketplace. GVCs have helped many developing economies, such as China and Mexico, benefit from global economic growth, and they help to alleviate global poverty (Baldwin, 2013; Raei et al., 2019). For instance, Demir and Solingen (2021) analyze how the outward-oriented regime survival model of the Chinese leadership pushed China to be integrated into Western-led GVCs and how forward GVC participation contributed to its economic growth. Likewise, Xing (2021) delineates the process in which China gained competitiveness in the US market by using GVCs to lower entry barriers.

Third, in a contrasting context, some scholars analyze the GVC system's role behind the worsening global inequality. As explained in the previous section, GVCs have a unique structure in which some participants create more value and reap more benefits than others. Suwandi (2019) argues that this structure is imperialist by nature due to the global capital-labor relations it creates where MNCs in the Global North exploit the South. Similarly, Oliveira (2022) examines the sociopolitical and ecological impact of soybean commodity chains in South America as elites exploit the rural indigenous people. At a domestic elite level, Lockwood (2021) explores how GVCs influenced the rhetorical framing in US politics surrounding the Trans-Pacific Partnership (TPP) during the 2016 presidential election in the context of rising inequality.

This dissertation contributes to this growing scholarship by offering a unique combination of international political economy and political psychology in understanding trade war onset and

economic coercion. I thus far have explained what the GVC system is, how it is different from the traditional form of trade, why it is crucial to incorporate GVCs in the study of international relations. I also provided a brief overview of the existing studies of international relations that specifically investigate GVCs. Now, I turn to my theoretical framework that explains how GVCs can influence trade war onset by shaping policymakers' risk perception on a GVC partner's economic coercion.

1.3 The Dissertation's Theoretical Framework

This dissertation seeks to expand the economic coercion literature, addressing why some target states choose to escalate a conflict by retaliating, instead of acquiescing or ignoring it altogether, when exposed to economic coercion. By extension, it also re-examines the nature of the relationship between economic interdependence and peace in a contemporary context. Building on my pre-dissertation research, I focus on how GVC-based economic integration influences the target's policy (Moon 2021b; 2021a). I draw on prospect theory (Kahneman and Tversky 1979; Tversky and Kahneman 1992) to hypothesize that the target state frames its response according to its perceived position within the GVCs, relative to the sender. I suggest that when a target's key industries are more dependent on the sender within their shared GVCs, its policymakers will be more likely to act in a risk-seeking manner, retaliating and escalating conflicts. By contrast, when a target holds relative dominance, its leaders are more likely to show a risk-averse behavior, meaning that they are less likely to risk conflict escalation and thus prefer to acquiesce or ignore the sender's request.

The dissertation's main argument has three principal pillars. First, in responding to a trading partner's economic coercion, a target's policymakers pay acute attention to where their key industry is within shared GVCs vis-à-vis the sender. While the gross trade amount is still important, actors will also put stock in their GVC-specific relationship considering whether they are relatively dependent on or superior towards the sender. In other words, individuals are "more sensitive to their relative position (Davis and McDermott 2021, 152)." When the target state provides less replaceable GVC inputs compared to the sender (e.g., non-memory semiconductor design), its decision-makers will perceive themselves to be in the *domain of gain*, or a relatively dominant position. On the other hand, when the target state contributes relatively more substitutable GVC inputs (e.g., low labor cost in simple manufacturing), its decision-makers will see themselves in the *domain of loss*, or a relatively dependent position. Moreover, in this stage, the target's policymakers set (or describe what they already see as) their *reference point*, or the status which individuals define to be the status quo and by extension the state where they aim to return to once the conflict takes place.

Second, using the information established in the first stage, actors will put different weights on the expected gains and losses of each policy option. In this stage, decision-makers will consider both the policy result's direction from their reference point (i.e., gain or loss) as well as the probability of it happening. *Table 1.1* describes people's four different emotional reactions and behavior depending on the situation. For instance, a militarized dispute between highly industrialized countries has a very low probability of happening, but once it does happen, the expected losses are immense. Therefore, a policymaker in this situation will see the option that entails this possibility with 'fear of large loss' and demonstrate risk aversion, resulting in the acceptance of an otherwise unfavorable settlement. Contrarily, the sender retracting its coercive

policy and returning to the target’s reference point will be a gain, with varying probability. If the target’s leader does not expect her retaliation to have a great success rate, then a policy option entailing this result will be a ‘risk-seeking’ option.

	Gains	Losses
High probability	95% chance to win \$10,000 Fear of disappointment <i>Risk averse</i> Accept unfavorable settlement	95% chance to lose \$10,000 Hopes to avoid loss <i>Risk seeking</i> Reject favorable settlement
Low probability	5% chance to win \$10,000 Hope of large gain <i>Risk seeking</i> Reject favorable settlement	5% chance to lose \$10,000 Fear of large loss <i>Risk averse</i> Accept unfavorable settlement

Table 1.1 *The fourfold pattern of decision-making under risk (Source: Kahneman, 2011, pp. 316–319)*

Third, the policymaker will make a final policy decision by comparing different expected utilities calculated, which involves the domain she is in, the direction of results from her reference point, and the expected probability of each option. Suppose that two policymakers are facing similar policy options. They may see expected outcomes differently depending on the domain they are in. If a leader considers her country’s key industry to be in the domain of gain, the risk of conflict escalation and militarized conflict will loom much larger compared to potential gains from getting the sender’s relatively substitutable inputs back. Whereas shifting GVCs by moving factories and hiring new employees is costly, it carries less value than the risk conflict escalation entails. In contrast, a leader faced with the same options but in the domain of loss will have different calculations. Because losing access to the sender’s less substitutable inputs is critical to her industry and economy, the ‘hope of large gain’ will trump the ‘fear of large loss.’

This is different from rationality-based theories which assume that target states only focus on the net value of a policy. For example, many studies claim that economic coercion will succeed when it creates sufficient economic loss for the target regardless of the situation they are in (Dizaji and van Bergeijk 2013; Drury 1998; Galtung 1967; Hirschman 1945). Then, in predicting a target's behavior, they pay attention to how dependent it is on the sender state and surmise that the target will refrain from retaliating when the sender has a dominant position. Because of the fear of further loss once it retaliates, the target will show risk-averse behavior. While my theoretical framework predicts the same for a target in a domain of gain, it provides a more nuanced and sophisticated understanding of the policy reaction of targets in a domain of loss.

I make four central hypotheses that are closely connected to the unique nature of GVCs and prospect theory's understanding of human behavior. **1)** In assessing their relationship with the sender, target's policymakers will use the pre-conflict GVC relationship as a reference point. **2)** Using this reference point, policymakers will position themselves in either a domain of loss or domain of gain. **3)** When the policymakers see themselves in what prospect theory defines as a domain of loss, they will act in a more risk-seeking manner; however, they will act in a more risk-averse manner when they see themselves in a domain of gain. **4)** In assessing different policy options, a loss from the status quo will loom larger than a comparable gain.

1.4 Roadmap of the Dissertation

In the following second chapter, I first define the key terms and variables I use in my theoretical framework. Then, I provide an overview of the existing studies on economic coercion success.

After identifying the strengths and weaknesses of alternative explanations, I build my theoretical framework and conclude the chapter with brief explanations on coding my key variables.

Chapter 3 will examine the ongoing trade conflict between Japan and South Korea which started in 2019 due to the South Korean Supreme Court ruling on the reparation of wartime forced labor victims. This is the case in which South Korea is in the domain of loss, meaning that it is more dependent on Japanese inputs to the shared GVCs and South Korea's contribution to the shared GVCs was relatively more replaceable than that of Japan. I start this chapter by providing an overview of the economic relationship between South Korea and Japan, and explain why I identified South Korea as the more dependent partner. Then, I compare two policy options, retaliation and non-retaliation, and analyze what competing theories would predict the result to be. Lastly, I compare the different predictions to the empirical result.

Chapter 4 is also a case study on the conflict between China and South Korea in 2016 concerning the installation of the US THAAD missile system in South Korea. This serves as a case in which South Korea, in contrast to the previous chapter, is in the domain of gain, meaning that it occupied a relatively superior position within the shared GVCs with China and that South Korean contributions to the GVCs were less replaceable compared to those of China. As the previous chapter, I illustrate the Sino-Korea trade relationship and explain why I operationalized South Korea as the less dependent partner. Next, I compare the same policy options and compare them to the empirical result.

Chapter 5 uses a different methodology to study the connection between GVC positionality and conflict escalation. In this chapter, I use the experimental method to further explore how one's position within GVCs as well as the GVC system itself, compared to final goods trade, can

influence decisions on retaliation against economic coercion. This chapter contains two experiments that test the same set of hypotheses using different experimental designs.

Lastly, chapter 6 concludes the dissertation by providing a summary of the theory and cases and a brief examination of an additional case of economic coercion between the US and China. I also discuss the academic and policy implications of the study results and my future research trajectories extending from this dissertation.

Chapter Two

Competing Theories of Economic Coercion Receptivity

This chapter provides an overview of the competing logics of economic coercion outcomes to improve our understanding of the target receptivity to economic coercion. My ultimate purpose is to offer a novel account of trade war onset and the ties between economic interdependence and peace in the contemporary GVC economy. I begin by defining some of the key concepts I use throughout the dissertation. Next, I will turn to expected value theory and expected utility theory, explaining some of the key distinguishing features of these rational-choice models, and then examine the existing literature on economic sanction outcomes. After reviewing the existing studies, I describe prospect theory in detail and use this framework to offer a more persuasive basis for the research on economic coercion in the era of GVC trade. Lastly, I will conclude by providing an account of the research design I will use in the following chapters.

2.1 Discussion on Key Concepts and Scope Conditions

Economic Coercion

Economic coercion encompasses “international instruments that punish or deny benefits to leaders, ruling coalitions, or broader constituencies (Solingen 2012, 5)” using economic means aimed to accomplish political goals. While the term ‘economic coercion’ used in this dissertation is conceptually similar to how scholars more widely define ‘economic sanction,’ I distinguish the

terms in two ways.⁵ Economic sanction “emphasizes intended effects rather than the means for achieving those effects (Baldwin, 2020, p. 35),” meaning that it fails to clarify the economic traits of the coercive policy tool. Moreover, given its historical association with sanctioning against “rogue” states, I wish to avoid confusion by, instead, opting for a different term. Additionally, I highlight the relational aspect and the importance of the target’s perception by using the term ‘economic coercion’ rather than ‘economic statecraft,’ which focuses more on the sender state’s undertakings (*Ibid*, pp. 37-39).

Target Retaliation

How do we know a failed economic coercion policy when we see one? There is no agreed definition of what makes coercion a success or a failure. For instance, Galtung (1967) measured economic sanction success by looking at the degree of punishment that the target suffered and whether it modified its behavior to comply with the sender’s formal goals. Barber (1979) extended the scope by adding goals beyond immediate, formal purposes, including the coercive policy’s influence on international audiences. Hufbauer et al. (1990) suggest sanction success “scores” as a continuous scale, combining “the extent to which the policy result sought by the sender country was in fact achieved and the contribution to success made by sanctions.” Pape (1997) criticizes this measurement for being too broad, arguing for a clearer causality between the coercive policy and target compliance instead, as opposed to concurrent deployment of other coercive strategies such as military threat.

⁵ When referring to a specific study that uses terms other than ‘economic coercion,’ I employ the study’s original terminology.

This disagreement, on the conceptual boundaries of a successful or failed economic coercion, remains and threatens to undermine the viability of this oft-used foreign policy tool. However, if successful coercion pulls the target closer to what the sender wants from it and all other cases are failures, how can we make sense of a situation in which the target strays even further away from the sender's request? This sender-biased view of coercion omits a crucial third type of result, in which a target state retaliates, or a policy "backfires." Here, I borrow from Peksen and Jeong (2021, p. 2) and define target retaliation as "economic punitive measures initiated by target countries against their senders before initial sanctions are lifted." To use an extreme example, the US oil embargo on Japan was partially responsible for the attack on Pearl Harbor. Is this a case in which the coercive policy failed and the target did not concede, or a case of a target retaliation (Byman, Waxman, and Larson 1999)? The existing literature does not adequately scrutinize the target's response as a potential transition from the sender's initial coercion to trade war onset. There have been surprisingly few attempts to understand this transitional process even though a target state's retaliation is what converts a sender's one-sided coercion into a mutual conflict. Therefore, this dissertation addresses another fundamental gap in the literature: the theoretical narrowness of the "success/failure" dichotomy.

The question of what makes a policy distinctively "retaliatory" is a fraught one. The most straightforward example I shall return to throughout this dissertation concerns a target state employing the same types of targeted economic instruments as the sender, such as imposing retaliatory tariffs or quotas. For instance, the Trump administration's initial 25 percent tariffs on Chinese imports in 2018 was subsequently followed by China's retaliatory tariff on American goods. The fact that the US and China imposed tariffs on the same amount (25 percent tariff to \$16 billions worth of imports) of the opponent's imports only one day apart from each other, makes

it abundantly clear that the Chinese policy was a retaliatory one. However, states do not necessarily use the same type of countermeasure in responding to the sender's coercive policies. Many target governments respond to, for example, tariffs and embargoes by taking their cases to the WTO and/or releasing strongly worded public statements. Whether these reactions are retaliatory or rhetorical depends on the context.

Similarly, the dividing line between retaliation and defensive measures is also blurry. On the one hand, for instance, a target state's government providing a profuse support for its domestic industry to replace the sender's imports can be a defensive measure aiming to minimize the impact of losing access to the sender's imports. On the other hand, substituting the sender can be a retaliatory policy, especially if the two economies share thick GVCs. By no longer relying on the initial sender for the imports in question, the originally targeted state will be able to inflict losses to the sender within the intertwined GVC ties. Even if the sender wishes to normalize the trade relationship in the future to reap the benefits of economic interdependence again, the target has the choice not to cooperate. As mentioned before, states make trade agreements for mutual benefits although their relative gains can be different. In other words, the level of interdependence between the target and the sender correlates with the target's leveraging capacities. Therefore, a target's defensive policy can be simultaneously retaliatory in many cases.

Because of this ambiguity, it is important to examine cases in a detailed, comprehensive manner taking all different forms of retaliatory behavior into account. In this dissertation, I will hold that a targeted state imposed retaliatory measures when they have put into effect at least one policy that can generate concrete economic losses for the sender. This means that if the target only engages in verbal denouncements, I do not code it as an instance of retaliation. Rather, this would be a rhetorical display for the country's domestic constituents. Such public statements can be a

part of an overall retaliatory strategy but they must accompany tangible policies including, but not limited to, retaliatory tariffs, embargo, disadvantaging the sender's companies doing business in the target state, and officially taking the case to the WTO.

Conflict Escalation

Probing target reciprocity inevitably brings forward the question of conflict escalation (non-military conflict, in this case) and trade war onset. Conflict escalation describes the point at which a unilateral coercive policy becomes a mutually coercive conflict as a result of the target state's retaliation. I define conflict escalation as a situation in which the target decides to retaliate in a proportionate or an overwhelming manner (Braithwaite and Lemke 2011), not when a state initiates a hostile policy, either diplomatic or economic. By conflict escalation, I assume that conflict has already begun and both sender and target are aware of the conflict and its political motivations. I also assume that the target actors might not predict the extent to which the sender will react, but are aware that retaliating entails conflict escalation. However, a scenario in which the sender abandons its coercive behavior in response to the target's retaliation is a part of target policymakers' calculations, with varying levels of expected gains and possibilities depending on the situation.

Conflict escalation is mostly discussed in the context of militarized conflicts such as interstate or civil warfare (Braithwaite and Lemke 2011; Goldsmith 2013; Morrow 1999). In discussing the escalation of international conflicts, Wright (1965) divides a conflict in a broad sense into four stages: awareness of inconsistencies, rise of tensions, measures short of military action to resolve the issue, and militarized war. Within this framework, most scholars focus on the

third and fourth categories, and see conflict escalation, narrowly, as the process going from the third stage to the fourth. *Figure 2.6* outlines the stages of decision-making involved in situations of imposed economic coercion. To fill this gap within the existing theoretical frameworks of economic coercion receptivity, I specifically address the various decisions available to targeted states in the t_4 column.

Moreover, I specifically investigate a target state's reaction immediately following the sender's coercive policy to isolate variables that may influence the target's decision over time. By focusing on the target state's reaction approximately within six months since the sender's initial set of coercive attempts, I expect to minimize the impact of possible intervening variables, such as third-party country's influence or *ex ante* changes in domestic public opinion. In other words, any subsequent developments, temporally remote from the initial economic pressure, are not within this dissertation's scope of inquiry. In the following empirical chapters, my interests lie with South Korea's response to the forms of surgically targeted economic coercion implemented by Japan and China. I see state-level reactions to this type of precisely specified economic coercion among GVC partners as an undertheorized topic, one that I can contribute to, so I start my analysis at the point at which one side brings this kind of coercion to bear and the other must decide how to react. I do not aim to explain the causal historical processes behind a sender's initial coercive policy to any great degree, and my framework does not have much to say about how these conflicts play out over a grander sweep of time.

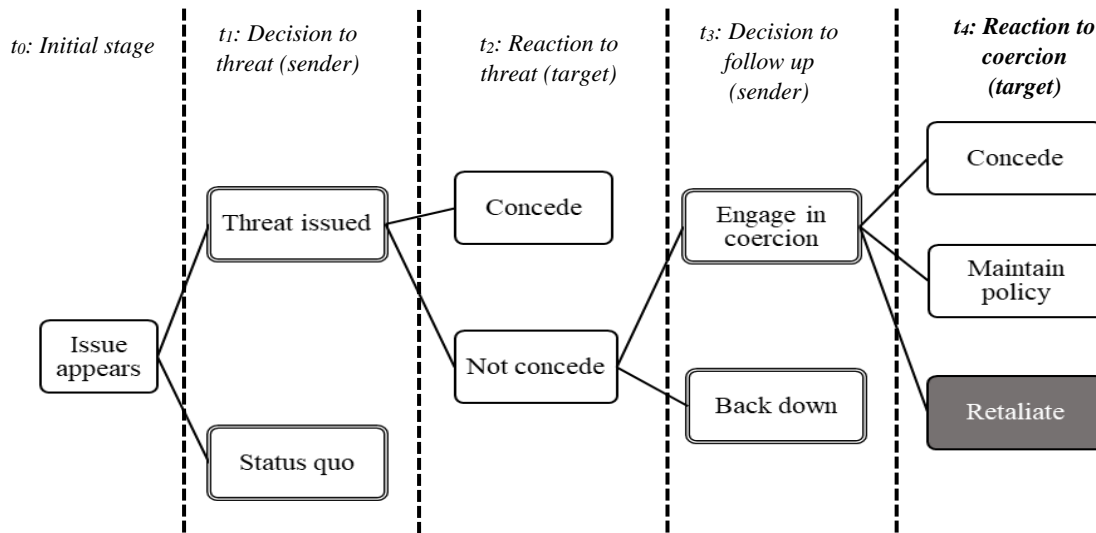


Figure 2.6 Chronological process of sender-target interaction in economic sanctions

Dependency and Substitutability in GVCs

Studies on trade and peace show that economic exchange entails economic dependence, and GVC relationships are no exception. When country A is dependent on B, country A is “determined or significantly affected by the external forces” of country B. In this case, country A can be sensitive to country B’s policies and economies, and changes in country B’s conditions can induce quick responsiveness in country A if the level of sensitivity is high. In addition, when country A is vulnerable to country B, then A is liable to “suffer costs imposed by external events even after policies have been altered” and it is costly to make “effective adjustments to a changed environment over a period of time (Keohane and Nye 1977, 12–13).”

While this account of dependency seems relatively intuitive, scholars do not agree on the implications for interstate dependency. In particular, there is no consensus about whether such relationships entail a greater proclivity towards conflict or peace. On the one hand, neorealists understand dependency as a source of conflict, affording governments powerful leverage against

their trade partners. In an anarchic international system, states must be more aware of relative gains than absolute gains, therefore it is not in their best interest to indirectly support others' (military) power through trade (Hirschman 1945; Waltz 2010). For instance, in the early postwar period the US refrained from trading with communist states including the Soviet Union and China, because it was "in America's national security interest to deny the benefits of international economic exchange (Mastanduno 1988, 122)" to them. On the other hand, many liberalists see (mutual) dependence as a source of peace assuming that states are rational actors wanting to maximize their welfare (Morrow 1997). Therefore, to the extent that trade brings economic gains, states will try not to jeopardize the relationship (Oneal and Russett 1999; Keohane and Nye 1977). Therefore, the effectiveness of economic coercion largely relies on the economic dependence of the target state on the sender state. For targets (but also for senders), "the price of being belligerent is an implicit price that increases with the level of trade (Polachek 1980, 61)."

Directly stemming from issue of dependency, one of the key concepts in the studies of economic interdependence and coercion is substitutability. The outcomes of economic coercion depend on how easily the targets can replace senders, regardless of how powerful the senders are (Galtung, 1967). There are largely two strategies for a target state to substitute imports from senders: internal and external substitution. In the 1960s and 1970s Rhodesia relied on an internal substitution strategy and avoided severe consequences from foreign sanctions by replacing sanctioned imports with domestic sources. South Africa employed an external substitution strategy when it recovered 86% of its export losses during Apartheid by finding new trade partners within a year of sanction onset (Kavaklı, Chatagnier, and Hatipoğlu 2020). When country A is substitutable or replaceable in the eyes of country B in the shared GVCs, it means that country B can obtain country A's GVC inputs from either another foreign country or produce it domestically.

Within GVCs the level of substitutability of a state or a firm varies depending on its main contributions to GVCs. Going back to the example of semiconductor manufacturing, as seen in *Figure 1.2*, Japanese companies are the top three producers of blank masks used in photolithography process. On the other hand, the top three producers of deposition gas used in deposition process each come from France, the US, and Japan respectively. In this case, a coercion target seeking to substitute Japan's GVC inputs will face more challenges finding an alternative supplier for blank masks than deposition gas. Therefore, if a target state mainly imports blank masks from Japan to fulfill its own role in this semiconductor GVC, it is dependent on Japan and Japan has the more dominant position. Moreover, Japan is less substitutable in the blank masks market than in the deposition gas market. A country mainly occupying production stages that require deposition gas will be less dependent on Japan than a target state that locates itself mostly in stages that need blank masks. The last section of this chapter will further discuss specific measures of dependency and substitutability in GVCs.

2.2 Expected Value Theory and Expected Utility Theory

People have, for centuries, contemplated how to make good decisions under conditions of uncertainty. One of the earliest forms of decision theory was EVT, which suggested that the ideal way of making such a decision is by choosing an option with the highest expected value. Here, the expected value of an option is defined as probability p multiplied by outcome value x . Therefore:

$$EV = px$$

Consider the following example of three different lottery tickets:

Ticket A: 1% chance to win \$500

Ticket B: 10% chance to win \$50

Ticket C: 50% chance to win \$10

In this selection three lottery tickets with different chances to win and amount of prize money, the ticket's expected values are: $\$500 \cdot 0.01 = \5 , $\$50 \cdot 0.1 = \5 , and $\$10 \cdot 0.5 = \5 , respectively. All three tickets have the same expected value; therefore, it does not matter which one you choose. In fact, it would be irrational in the eyes of EVT to have a preference for one option over another.

Figure 2.7 depicts a hypothetical outcome function of EVT.

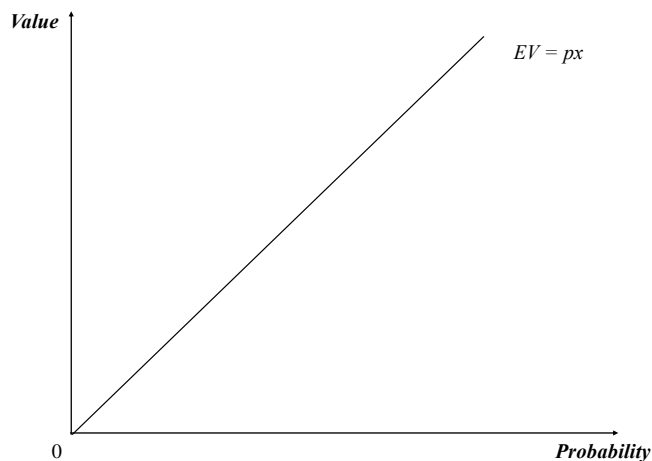


Figure 2.6 A hypothetical outcome function of expected value theory (Kahneman and Tversky 1979)

Bernoulli (1954) and Von Neumann and Morgenstern (1947) improved upon EVT by suggesting that the value attached to most options is psychological and subjective. Therefore, it is more realistic to model payoffs as *utility*, not (objective) value. EUT is one such revised model and its normative framework assumes that a rational individual will obey its basic axioms (i.e., completeness, transitivity, continuity, and independence) maximizing their net utility (Bernoulli

1954; Von Neumann and Morgenstern 1947). As *Figure 2.8* shows, EUT focuses on the relationship between wealth (x -axis) and the utility (y-axis) the actor receives from it. When a choice yields the outcome x with the probability of p , then its overall utility is: $U(x_1, p_1; \dots; x_n, p_n) = p_1u(x_1) + \dots + p_nu(x_n)$, where $p_1 + \dots + p_n = 1$ ($p \geq 0$).⁶ Here, the utility of the prospect is the sum of the expected utility of its outcomes. Moreover, individuals accept the prospect $(x_1, p_1; \dots; x_n, p_n)$ if and only if $U(w + x_1, p_1; \dots; w + x_n, p_n) > u(w)$, where w is one's asset position. In other words, regardless of the actor's initial standing, a choice is acceptable only when it yields more utility than the risk-free assets they possess.

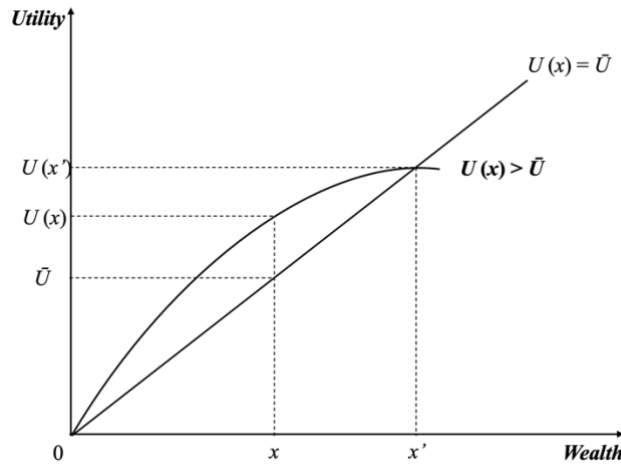


Figure 2.7 A hypothetical value function of expected utility theory (Kahneman and Tversky 1979)

Also, the concavity of the utility curve implies the *law of diminishing marginal utility*, in which one's psychological utility gained from wealth decreases as the amount of wealth increases. Here, $U(x) > \bar{U}$ where \bar{U} is the utility a risk-neutral individual perceives from x amount of wealth

⁶ Null outcome is omitted for the purpose of simplification. Therefore, we assume that (x, p) is equivalent to the choice $(x, p; 0, 1-p)$ where the outcome x is produced with the probability of p and 0 with $1-p$.

in a risky gamble and $U(x)$ is the amount of utility coming from a guaranteed gain of x wealth (Jensen 1906). This mechanism indicates, in turn, that people are *risk-averse* – they prefer a certain prospect over any risky prospect of the same amount (Arrow 1971; Pratt 1964). For example, going back to the three lottery tickets with an equal expected gain of \$5, many people will choose ticket C with the 50% chance of winning.⁷ People’s levels of risk tolerance vary, and someone who chooses ticket A or B over C is more risk-accepting or risk-seeking. However, EUT posits that most people will choose ticket C over A or B because people tend to be risk-averse. People prefer options with lower variance between losing and winning and prefer more certainty in an option.

In sum, decision-making models based on strong rationality assumptions suggest that actors largely focus on the final absolute welfare independent from their initial standing.⁸ The axioms of EVT and EUT advise that it is rational for actors to aim for an option with the highest payoff whenever possible and assume that people make such decisions in reality. Under these assumptions, policymakers avoid options with low possibilities and prefer options with high possibilities, resulting in a universally risk-averse attitude. Moreover, among different options, actors will look for the one with the highest utility of the final outcome.

Few studies in IR explicitly claim to have EUT as their basis (Bueno de Mesquita 1988; Simowitz and Price 1990; Özdamar 2019; Fuchs, Kugler, and Pachon 1997) outside of game theoretical models. In fact, by themselves, neither EUT nor prospect theory “generate substantive predictions about international outcomes or the foreign policy behavior of states.” This calls for a scholarly imagination firmly grounded on precise understanding of these theories that allows one

⁷ When $U(x_1, p_1; \dots; x_n, p_n) = p_1u(x_1) + \dots + p_nu(x_n)$, $U(A) = 0.01*500 = 5$; $U(B) = 0.1* 50 + (1-0.1)*0 = 5$; and $U(C) = 0.5*10 + (1-0.5)*0 = 5$.

⁸ Although the outcome is commonly expressed as “assets” in economics, it may include various values such as subjective feeling of welfare and monetary wealth.

to “embed concepts from these decision theories into specific theories of foreign policy and international politics (Taliaferro 2004, 33).” Within IR studies that operate according to either an implicit or explicit EUT framework, actors will behave in specific discernable ways. First, a target’s assumed primary motivation will be to maximize the absolute net utility it can reap from interacting with the sender, not how much it gains compared to the status quo. In IR, this mechanism is often represented by the difference between relative and absolute gains (McDermott 2004). Second, actors will be presumed to show predominately risk-averse behavior vis-à-vis the sender’s coercive policy, meaning they will prefer to acquiesce or maintain the policy in question. The target will be reluctant to increase expected risks by further antagonizing the sender, resulting from their calculation of the expected outcomes’ values and possibilities. Third, a decision-maker will not, EUT holds, be affected by how decision-making elements are presented. Instead, they will “compute” the expected utility of different policies and have clear preferences based on the utility’s absolute amount. In the trade and peace literature, many studies that focus on trade as opportunity costs of fighting use this assumption in discussing states’ *ex-ante* expectations (Polachek 1980; Wagner 1988).

2.3 Sender-Centric Theories

In questioning what makes economic coercion successful, many scholars focus on how to maximize the target’s economic pain from the sender’s point of view. As Schelling (1966) states, the power to hurt is the power to coerce. Explicitly or implicitly, sender-centric studies assume that the target will acquiesce if the sender’s coercion creates sufficient pressure; and if this policy fails, it means that the sender was not able to impose enough costs on the target (Bapat et al. 2013; Dashti-Gibson, Davis, and Radcliff 1997; Dizaji and van Bergeijk 2013; Galtung 1967). Therefore,

connecting it back to EVT and EUT's rational-choice assumptions, these studies posit that coercion will succeed as long as senders can convince that acquiescing will yield the best net value or utility. The following section provides an overview of three main sets of variables in accounting for the success or failure of economic coercion.

International Cooperation

Some studies show that multilateral economic coercion led by international institutions can induce more economic pain than that imposed by a single government or *ad hoc* coalition (Bapat and Clifton 2009; Drezner 2000; Early and Spice 2015; Martin 1994). Institutionalized sanctions can reduce the possibility of free-riding and defection among sender states through monitoring and punitive measures (Bapat and Clifton 2009; Drezner 2000; Martin 1994). For instance, the United Nations Security Council Resolution 1718 (2006) on sanctioning North Korea states: "In order to ensure compliance with the requirements [...], all Member States are called upon to take, in accordance with their national authorities and legislation, and consistent with international law, cooperative action including through inspection of cargo to and from the DPRK, as necessary."

In a similar context, multilateral cooperation can also prevent 'sanctions busting,' in which opportunistic third-party countries or individuals provide the target with alternative trade routes. Because the target becomes able to substitute the sender in its economy, the effectiveness of the sender's pressure diminishes (Early 2009; 2011; Early and Spice 2015). For example, Iran relies on countries such as the United Arab Emirates and China to circumvent Washington's economic sanctions. Black markets and other forms of illicit trade also help target states obtain resources that they are denied access to, such as materials for nuclear weapons development programs or luxury

goods. South Africa was able to find states willing to trade with it despite the UN arms embargo and Iraq managed to find alternative oil buyers through Jordan, as well as using smugglers and other illicit groups.

In understanding economic coercion outcomes within a GVC partnership, if this theoretical framework holds, I expect a multilateral coercive attempt to have a higher chance of changing the target's behavior. In contrast, if senders are a single country or an *ad hoc* group of a few governments, the target will be less likely to acquiesce to the senders' request. In addition, in the absence of international cooperation, the target will find alternative trade partners and third-party countries/individuals will attempt 'sanction busting' by offering to supply commodities the sender used to contribute to the GVCs. In these situations, therefore, it should be less likely to acquiesce.

Coercive Strategy

Another sender-centric body of literature concerns the effectiveness of different sanctioning strategies. Studies show that economic coercion is less effective in achieving core or existential policy goals such as regime change and major military alteration (Ang and Peksen 2007; Lindsay 1986). Peksen and Jeong (2021) suggest that when initial sanctions involve highly salient issues, targets recognize senders' strong commitment and acquiesce rather than impose counter-sanctions. In fact, pressing for regime change using economic means are not only more likely to fail, but also can disproportionately hurt the welfare of civilians and worsen the humanitarian conditions as the ruling elites monopolize necessary resources to survive (Adam and Tsarsitalidou 2019; Peksen 2009; Wood 2008). For instance, in Zimbabwe, Western sanctions resulted in a slight increase in polity score, but also in an increase in poverty level and decrease in employment rate while the

government largely remained autocratic (Pindiriri 2020). Similarly, Drury and Peksen (2014) find that women are more likely to be among the casualties of foreign economic coercion than men.

Some scholars distinguish targeted sanctions (or smart sanctions) from conventional or comprehensive sanctions (Gordon 2011; Lucena Carneiro and Apolinário 2016). Conventional sanctions have a sweeping impact on the target state's macro-economy and macro-politics and therefore have the potential to harm civilians before reaching the elites. Instead, targeted sanctions freeze elites' assets abroad, stop exporting luxury goods, impose arms embargos, etc. However, many studies show that targeted sanctions do not necessarily have a better success rate than conventional ones (Cortright and Lopez 2002; Drezner 2011; Eriksson 2011; Tostensen and Bull 2002). In particular, Biersteker et al. (2016) calculate UN-led targeted economic sanctions' success rate to be as low as 22%, which is lower than the comprehensive sanctions' general success rate of 37% (Hufbauer, Schott, Elliott, et al., 1990).

Employing these models to understand GVC trade and economic coercion outcomes, I surmise that when the sender's request is of a core sovereignty-related issue or a major military issue, the likelihood of the coercive policy succeeding will be lower. Also, coercive attempts that have a narrower elite-level target will be more effective in changing the target's behavior than ones with a broader range of civilian suffering. We can also extrapolate that initial coercion attempts with more salient issues and broader civilian impact will be more likely to result in targets' retaliatory behavior.

Alliance between the Sender and the Target

The last group of sender-centered models suggests that allies can make economic coercion more costly for the target than rival states and, therefore, have a better success rate. Whereas governments can be more sensitive to losing domestic support by capitulating to a rival's pressure, they prefer not to damage further political and strategic ties they share with an ally (Hufbauer et al. 1990; Whang 2010; Peksen and Jeong 2021). For example, Drezner (1999) explains that, *ceteris paribus*, allies are more likely to concede than adversaries because the target is less worried about the relationship turning zero-sum. "Ironically, a sender will obtain the most favorable distribution of payoffs when it cares the least about the relative distribution of gains (p. 5)."

Then, it is possible to deduce that when the sender and the target are allies and GVC trade partners simultaneously, the target will be more predisposed to acquiescence. On the other hand, when they are adversaries, the target will react more defiantly. There will be extensive discussion on the target's media and in the government emphasizing the value of their alliance and overall diplomatic relationship with the GVC partner.

2.4 Target-Centric Theories

The studies I have discussed so far assume that maximum pressure directly yields target states' concession, but many scholars rightfully point out that A does not necessarily lead to B. In fact, it is crucial to understand different characteristics of the target state in finding what determines successful economic coercion. In this section, I introduce different explanations on economic coercion outcomes that study target states.

Political Regime and Domestic Institution

Some research focuses on the potential linkage between target states' political institutions and coercion outcomes. Many argue that external economic pressures are more likely to change the behaviors of democratic targets than autocratic ones (Allen, 2005; Brooks, 2002; Lektzian & Souva, 2007; Major, 2012; Peksen, 2019a). As previously mentioned, in a society where a small number of elites make political decisions, it tends to be the civilians and the socioeconomically disadvantaged who bear the cost of economic coercion. Therefore, even if the sender creates significant costs for the target, authoritarian leaders are less prone to acquiesce as long as they can circumvent the losses. On the other hand, democratic regimes potentially suffer greater losses of domestic support in the presence of foreign economic pressure since policymakers need to satisfy a larger body of constituencies. Democratic governments also in most cases are bounded by the rule of law and thus are unable to oppress civilian protests as their authoritarian counterparts do.

Despite the authoritarian nature and relative freedom to make policy decisions, some researchers argue that economic coercion can succeed against personalist regimes (Escribà-Folch and Wright 2010; Peksen 2019b). In a personalist regime one dictator and her small group of elites hold all the power. Even though the dictator may not be held accountable vis-à-vis non-elite civilians, she still must keep the elites satisfied to sustain in power. External economic coercion will put economic restrictions on the dictator and make her less capable of rewarding her supporters. However, when an autocratic government is more institutionalized through an established political party or military junta, senders will face more challenges in similarly affecting it. Institutionalized rules will effectively oppress possible domestic oppositions to the ruling government and keep the dissatisfied elites in check.

Putting this into the context of GVC trade and target retaliation, we can assume that democracies will be more inclined to concede and change their behavior than autocracies. When a

democratic country faces economic coercion from its GVC partner, its citizens will protest the resulting economic cost. Moreover, democratic citizens will voice their concerns and discontent to their government and push it towards conflict resolution. It is also possible to deduce that the individuals more influenced by the economic coercion will express more dissatisfaction and be more active in trying to pressure their government into changing its policy than people who are less impacted.

Rally 'round the Flag

Although they are not studies of economic coercion or interdependence *per se*, investigations of the rally 'round the flag effect provide an alternative social psychological framework for understanding target behavior (Mastanduno 2016). Early models of this phenomenon (Mueller 1970; Kernell 1978) connect a “specific, dramatic, and sharply focused” international crisis that involves the US, and the president in particular, to a stronger domestic public support. This included various events such as American military intervention, US-Soviet summits, and the Soviet atomic test. Some studies found that it is not only the executive leader but also other national symbols such as flags (Barnett and Roselle 2008; Skitka 2005). However, Baker and ONeal (2001) argue that only military events are likely to increase the president’s approval rate and many other scholars question the validity of the theory itself (Brody 1992; James and ONeal 1991; James and Rioux 1998; ONeal and Bryan 1995).

There are largely two mechanisms through which international crises can increase the public’s support for a national leader. First, the “patriotism” argument (Brody 1992; Mueller 1970) maintains that a crisis involving a foreign country motivates citizens to see their country in a more

positive light. This salience of “us versus them” framing is linked to stronger support for symbolic and practical representations of the ingroup, resulting in an increased approval rate of the president as the head of the state. People also may fear that their opposition to the president may jeopardize the chance of their nation’s success. On the other hand, the “opinion leadership” explanation (Brody 1992; Zaller 1992) highlights the unique nature of foreign policy and international crises. Unlike domestic issues, the incumbent president has access to information on international crises that the public and even other politicians lack. This monopoly of information makes it harder for political opponents and the media to criticize the president, which results in an overall more positive opinion on how the president is handling the situation. More recently, there have been attempts to find alternative mechanisms to how rally ’round the flag is realized such as media (Hatuel-Radoshitzky and Yarchi 2020; Kazun 2016) and public anger (Lambert, Schott, and Scherer 2011).

I expect to see one or more of the following outcomes in using a broad idea of the rally ’round the flag effect as an alternative explanation of economic coercion result. First, the overall approval rate of the president at the time of the GVC partner’s coercive policy will increase. For instance, when the US and EU imposed economic sanctions on Russia in 2014, Vladimir Putin’s approval rate in Russia increased by around 20%. Moreover, the media will show more positive aspects of the leader and how they handle the situation, and less negative criticisms of the leader. Second, the media and public opinion polls will show a clear divide between “us” versus “them.” This framing can contain negative coverage of the sender state, not only the coercive policy itself but also the sender state’s fundamental characteristics as a nation. Also, it will emphasize the positive aspects of the target state, such as its superiority as a nation, self-pitying image as the victim, and confidence in overcoming the situation. Third, in terms of commercial behaviors,

citizens in the target state are likely to buy fewer products from the sender state and show more support to domestic products as a substitute.

Political Instability

Closely connected to the rally 'round the flag effect, some studies suggest that political leaders use conflict with other countries to divert domestic audiences' attention away from political or economic instability. Specifically, Derouen (2000) suggests that presidents use force abroad to divert domestic audiences' attention away from a weak economy. In the context of economic coercion, Whang (2011) argues that the US presidents facing domestic discontent are more prone to initiate economic sanctions against other countries to gain domestic political support. Peksen and Jeong (2021) show that a target state experiencing domestic instability is more likely to impose reciprocal sanctions. Counter-sanctions can serve as a means to enhance the leadership's legitimacy and induce rally 'round the flag sentiment once the initial sanction from the sender is framed as unjust foreign pressure. For example, the Chinese Communist Party used reciprocal sanctions against the US when the US imposed economic sanctions against China after the Tiananmen Square massacre. By depicting the US and the West as foreign forces threatening China's sovereignty and using counter-sanctions against Washington, Beijing partially aimed to divert domestic attention and discontent stemming from the carnage.

Considering these study results, we can infer that a target country facing more domestic political, social, or economic instability will be more inclined to retaliate and escalate a conflict. As in the case of rally 'round the flag hypothesis, there will be deliberate attempts by the target government and its media to frame the GVC partner (sender) as a foreign force pressuring the

target to alter its (legitimate) behavior. In contrast, the source of domestic instability will receive less attention compared to the debate on economic coercion.

Gaps in the Literature

While each study makes significant contributions to our knowledge of economic coercion outcomes, they have several limitations. Returning to sender-biased approaches: scrutinizing the intentions and sociopolitical traits of the sender is vital in understanding economic coercion. In fact, it is well-suited to explain why states initially decide to use economic means of coercion. However, a coercion outcome is synonymous to the target's reaction and, to that extent, focusing only on the sender's perspective provides less than half the story. The overarching sender-biased trend in the literature on economic sanctions creates two problems. First, as mentioned above, this narrow focus on the sender's perspective dichotomizes the sanction result into narrow categories of success or failure depending on whether the sender's demand has been met or not (Bonetti 1998; Peksen 2019b; Solingen 2012). As a result, the existing literature overlooks a third possible policy option for the target, which is escalating the conflict by retaliating against the sender's coercion. This "backfire" outcome is fundamentally different from cases in which the target simply does not concede to the sender's demand and thus deserves attention as a separate category of potential outcomes economic coercion can create.

Second, sender-biased studies tend to make the target a completely passive object without any volition while also operating on the basis of strong rationality assumptions (either implicit or explicit). Rationality requires actors to have a clear set of preferences and make conscious and calculated choices to maximize the utility of their outcome. Therefore, when the sender imposes

sufficient costs on the target through economic coercion the rational target will concede to avoid the punishment (Drury 1998; Dizaji and van Bergeijk 2013). For instance, Hirschman (1945) argues that when the sender produces enough external costs for the target, it will pressure the target's leadership into concession. Galtung's (1967) "naïve theory" of sanctions reinforces this idea by suggesting that harsher sanctions have more substantial effects by delegitimizing the target's leadership and pressuring them to acquiesce to external demands. Refusing to do so is anomalous and irrational. However, empirical data shows that not all costs created by economic coercion persuade targets to change their behaviors (Biersteker et al. 2018; Hufbauer et al. 2007; Morgan, Bapat, and Kobayashi 2014).

Stepping away from a sender-biased view of economic coercion outcomes opens up diverse dimensions to better understanding this crucial research topic. This is important because economic coercion outcomes often hinge on the particular thoughts and behaviors of a target states' leaders rather than being an automatic result of senders' pressure. However, I offer three additional ways in which the existing literature on economic coercion can better address the contemporary interstate dynamics.

First, in analyzing interstate conflict, most scholars overlook the preeminent forms of conflict escalation today: non-militarized disputes between "normal" states (Fattore 2009; Rosecrance 1986). Out of the 39 WTO dispute cases in 2018, 15 were between highly advanced democracies, including Switzerland, Norway, the European Union, and Japan (World Trade Organization, n.d.). More states are weaponizing interdependence particularly when militarized conflict is not a realistic option, using economic tools to compel other "non-rogue" states to change behaviors (Farrell and Newman 2019). The expected costs of militarized warfare have increased drastically, making economic coercion an attractive alternative option. Highly modernized states

such as those in Northeast Asia are much less likely to engage in a full-scaled interstate war for a variety of reasons, including the possibility of nuclear warfare, their deep-seated economic ties, and the broader global norms against militarized conflict (Abizadeh, 2011; Doyle, 1997; Knorr, 1966; Mansfield & Pollins, 2001; Waltz, 2001). Instead, sender states derive a number of benefits from utilizing economic coercion. Disrupting trades may entail some degree of collateral damage but can at a minimum signal a sender's intentions if not coerce the target into changing its behavior (Biersteker, Eckert, and Tourinho 2016; Giumelli 2011). Economic coercion also allows a sender to accomplish all of this at a lower price than war would entail (Baldwin, 1985, 2000; Gompert & Gordon, 2008; Wright, 2018). Therefore, understanding the finer gradation of conflict intensity, short of war, is essential.

Second, the existing literature lacks proper analysis on how the advent and prevalence of the GVC system influence economic coercion and interstate relations. As I explained in the previous chapter, GVC trade constitutes more than half of all global trade despite the fact that two recent economic crises, the 2008 financial crisis and the COVID-19 pandemic, have cut into its growth rate (World Trade Organization and World Bank 2019). Recent years have seen numerous trade wars, disputes concerning Huawei, and heated discussions on the reshoring of GVCs, placing GVCs at the heart of geopolitics (Solingen 2021). Moreover, GVC trade can have significant impacts on interstate relations by increasing the level of interdependency between countries and firms, on certain occasions making it impossible to produce a product without foreign inputs. In terms of global development, more importantly, GVC integration is a two-sided sword. Entry barriers into the global economy are now lower than they used to be before the advent of GVCs. Developing countries without resources and pre-existing technological development and infrastructure can reap economic benefits from the global economy by joining the existing GVCs.

However, within GVCs, entry barriers into production stages with higher profit margins remain steep, if not steeper in some industries. GVCs' structure allows countries with technology and experience to occupy higher value-adding stages of production (e.g., artificial intelligence) and make contributors of lower value-adding inputs (e.g., low labor costs) stay in processes that yield less profits. This internal logic creates what resembles imperialist era economic exploitation (Oliveira 2022; Suwandi 2019).

Third, as mentioned above, these theories still largely rely on rational-choice assumptions that focus on the net value or utility of policy options. However, studies and empirics show that state leaders often do not follow the normative rational-choice prescriptions. For instance, South Korea's retaliatory measures against Japan in 2018 and China's conflict escalation with the US cannot be explained using the "economic interdependency leads to peace" proposition. If actors act in a way that EUT posits, it seems more plausible that South Korea and China should try their best to de-escalate the situation for the fear of further losses. Their economies are largely dependent on Japan and the US, respectively, and conflict escalation entails worse economic and political consequences. While nationalism and Great Power rivalries may partially explain the results of these economic coercion cases, they cannot explain cases in which the target did not retaliate, such as Japan's reaction to China's pressure in 2013 and South Korea's reaction against China's coercion in 2016. Nationalism and rivalry among states are almost ubiquitous today, that they lost their value as explanatory variables. Therefore, there needs to be a new framework outside rationality assumptions to explain why some economic coercion attempts escalate into trade wars while others induce target acquiescence.

Before concluding this section, I would like to briefly introduce the only two studies that, to the best of my knowledge, use prospect theory to understand economic sanction receptivity.

First, Solingen (2019) specifically examines the effectiveness of sanctions on denuclearization by connecting domestic ruling coalitions' different models of survival and prospect theory. Internationalizing leaders rely on economic growth by joining the global economy and refrain from developing nuclear weapons that may jeopardize their political goal. In contrast, inward-looking leaders are more likely to develop nuclear weapons programs that synergize better with their means of political survival such as economic nationalism, military, and ethnic identity. However, if a country starts its nuclear tests *before* an internationalizing coalition comes to power, the endowment effect makes it harder to give up the weapons they already possess. By adopting prospect theory, Solingen “modifies expectations from models assuming stable, unchanging preferences across time, space, and circumstances (p. 130),” making a more dynamic theory of nuclear proliferation as a result.

Park and Jo (2013) also use prospect theory to explain the effectiveness of negative and positive sanctions against North Korea. From the target's perspective, they show that there are fewer incentives to acquiesce to negative sanctions than positive inducements. Negative sanctions lower the target's reference point and therefore increase the threshold of the expected utility between standing firm and backing down. In contrast, positive inducements increase the target's reference point and decrease the same threshold between standing firm and backing down. Taken together, choosing settlement over contention entails more favorable expected outcomes when there is a higher reference point. Because of how the value function is delineated, loss aversion and diminishing sensitivity incentivize a target state to comply to the sender's request when there are positive inducements.

This chapter so far has defined key concepts of the dissertation and provided an overview of existing literature of economic coercion outcomes. Sender-centered theories are well-suited to

understand some aspects of economic coercion but neglect targets' retaliation as a policy outcome and targets' volition and circumstances as a modifying variable between senders' pressure and policy outcomes. While studies examining target states suggest fuller analyses of coercion success, most of them remain to see interstate conflict as militarized disputes and economic sanctions as policy tools for only "rogue" states. Combined with the overall negligence of the uniqueness and predominance of the GVC system, the pre-existing studies have limitation in undertaking the realities of geopolitics today where Great Powers substitute armed disputes with economic warfare. Lastly, models based on rationality and EUT overemphasize the importance of net utility as a policy goal and disregard psychological processes that deviate from this simplified explanation of decision-making behaviors.

2.5 Prospect Theory, Global Value Chains, and Economic Coercion

How then should we understand the existence of the current "hot peace" characterized by so many trade disputes? More specifically, why do some target states decide to retaliate and escalate a conflict with their GVC partners? Foreign policy is fundamentally about decision-making under risk, and prospect theory attempts to provide a realistic and descriptive model of people's heuristics in understanding chances and risks. Decision-makers cannot be certain of the consequences of a policy. States do not know what other states will want (intentions) and will do (behavior) in the future because of the international system's anarchic nature and the uncertainty caused by it. Theories based on rationality assumptions and complete information can suggest ideal and simplified approaches to problems, but they are empirically inaccurate in many cases. In this light, I propose to use prospect theory based on bounded rationality as well as an understanding of various cognitive biases to study a target state's reaction to economic sanctions. In this section I

introduce the important concepts and mechanisms of prospect theory and apply these to my research question and suggest specific hypotheses that I will be testing empirically.

2.5.1 Prospect Theory

Kahneman and Tversky (1979) introduced prospect theory as a direct challenge to EUT by conducting experiments in which people frequently failed to follow EUT's normative prescriptions. While EUT assumes that people's primary preference is to maximize their final net utility, prospect theory claims that *the direction of change from a reference point* is more important than the absolute final outcomes. Simply put, an individual who sees themselves in an unfavorable situation (*a domain of loss*) is more likely to be risk-seeking, whereas one who sees themselves in a favorable position (*a domain of gain*) is more likely to be risk-averse (Kahneman 2011; Kahneman and Tversky 1979).

Two Stages of Decision-making

Although people are not consciously aware of them, prospect theory suggests that the decision-making process consists of two steps. First, in the *editing stage*, an actor sets her reference point and determines possible options and expected outcomes. Actors put themselves in either a domain of loss or a domain of gain as a result of their framing of the situation in this stage. Here, individuals' views on the situation may not necessarily concur with those of others. People's risk tolerance and reference points can vary (Werner and Zank 2019; Mercer 2005; He and Feng 2013). However, prospect theory assumes that a similar structural condition will induce actors to make decisions that are similar in direction, albeit with varying degrees. Although person A's threshold

of a sufficient expected gain, one that is worth risking conflict escalation for, may differ from that of person B to some degree, they can generally agree on whether they are in a good or a bad situation. For my purposes, this means that the qualitative and quantitative trade data will provide an overall guideline for when decision-makers perceive themselves to be in a domain of loss or gain. I will specially address this assumption in my empirical chapters by drawing on expert interviews.

Bounded rationality, one of the most fundamental assumptions of prospect theory, implies that decision-makers comprehend the possible options and their evaluation into a more straightforward, more digestible form (Simon 1997). The editing phase can contain seven types of *framing effects* that are not mutually exclusive. First, acceptance suggests that decision-makers are unlikely to second-guess and modify “a reasonable construct of a choice problem” presented to them (McDermott 2001, 22). Although a 30% chance of winning a war is the same as a 70% chance of losing, when a military expert presents the winning chance, the executive leader is more likely to focus on it than think of losing 70%. Second, segregation argues that people tend to separate riskless and risky components of a prospect. For example, a prospect of (200, .80; 50, .20) is interpreted into a sure gain of 50 and the risky choice (150, .80), making the decision-maker focus exclusively on the “problem” of (150, .80) while ignoring the “irrelevant” (50, .20). Third, coding makes people categorize an outcome as a loss or a gain rather than thinking about the absolute net outcomes. Fourth, combination offers that actors combine options that yield the same outcomes and treat them as one. Fifth, cancellation suggests that if more than one options share components, those components are interpreted as redundant and thus ignored. Simply put, when set A consists of two red pens and five black markers and set B has two red pens and five blue markers, we tend to ignore the red pens and weigh between the black and blue markers. Sixth, simplification lets

individuals round probabilities or outcomes (e.g., a 45% chance → an even chance) and ignore improbable possibilities. Seventh, detection of dominance occurs when people see and immediately dismiss alternatives with less valuable outcomes without further evaluation (Kahneman and Tversky 1979; McDermott 2001, 20–24; Tversky and Kahneman 1992).

Three judgmental heuristics have an overarching impact on these editing processes, and I expect to identify one or more of them in my case studies. First, representativeness refers to people's tendency to categorize an object (or an event) into a particular schema (Khong 1992; Mercer 2005). Individuals look for similarities between the objects (or events) they already have information on and the ones they are trying to evaluate, indicating that they reflect on their experiences. Second, availability bias suggests that in making judgments people are more likely to connect new information with objects or events that are salient in their memory or imagination (Iyengar 1990; McDermott 2001). For instance, when individuals are asked to guess who is aggressive, many are inclined to pick individuals who wear Muslim headwear as opposed to those without it. However, domestic non-Islamic terrorist attacks are more frequent in reality; the 9/11 terrorist attacks and the biased media coverage have made markers of Muslim identity more “threatening” to Americans (Unkelbach, Forgas, and Denson 2008; Pape 2005). Third, anchoring refers to a phenomenon in which people are influenced by preceding choices or values even when the subsequent ones are unrelated to these choices and values (Furnham and Boo 2011; Kahneman 2011). For example, when asked: “Is the proportion of Americans who go to college higher or lower than 80%” versus “Is the proportion of Americans who go to college higher or lower than 20%?”, people who receive the first question are more likely to guess a higher number than those answering the second question.

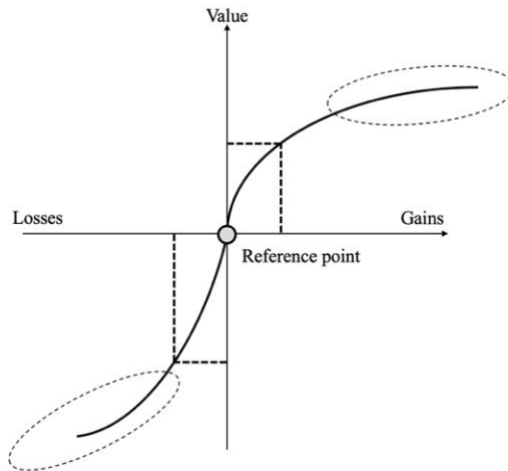


Figure 2.8 A hypothetical value function of prospect theory (Kahneman and Tversky 1979)

During the second phase of prospect theory, the *evaluation stage*, the actor weighs the values of expected outcomes (*value function*) and their weighted probabilities (*weighted probability function*) to choose the outcome that could maximize her prospective utility (Kahneman and Tversky 1979; Levy 1997). *Figure 2.9* shows the hypothetical value function of prospect theory.⁹ The most noticeable difference between *Figures 2.8* and *2.9* is that while EUT only utilizes quadrant I of the coordinate plane, prospect theory uses both quadrants I and III. As mentioned above, EUT does not see the actor's level of wealth prior to a choice as any meaningful standard; instead, she will choose whichever option entails the maximum final outcome. On the contrary, prospect theory assumes that people perceive losses and gains with different weights. With a reference point at point zero, the value function in the domain of gain forms a concave line, as in EUT. By contrast, the value function in the domain of loss creates a convex line. Also, the curve in the domain of loss is steeper than the one in the domain of gain, meaning that individuals

⁹ This is a hypothetical model since people's sensitivity to losses and gains varies. While the model describes the general trend of loss aversion, an individual's unique sense of risk assessment will form a corresponding slope in the graph (Kahneman and Tversky 1982).

put more weight on losses as opposed to comparable gains. Prospect theory argues for *loss aversion*, claiming that people desire to avoid *negative* change from their initial standing more specifically. This exists in contrast to EUT’s emphasis on general risk aversion.¹⁰

This logic also implies the *endowment effect*, a phenomenon in which an actor values what she already has over comparable gains (Kahneman and Tversky 1979; Sokol-Hessner and Rutledge 2019; Thaler 1980). For example, in an experiment that underscores this effect, subjects were divided into groups of “sellers” and “buyers” and asked to rate the value of a drinking mug. Buyers valued the mug at roughly \$2.87, while sellers valued the same mug at \$7.12 (Kahneman 2011, 296). Below is the theory put into a simple formula: V is the overall value of the outcome π is the decision weight of p , and v is the subjective value of the outcome x .

$$V = \sum_{i=1}^n \pi(p_i)v(x_i)$$

Moreover, *Figure 2.10* shows the weight function of prospect theory. Here, the perceived weight for very low probabilities is different from that of the rest. When π is an increasing function of p and $\pi(0) = 0$ and $\pi(1) = 1$, then when the value of p is extremely low but not 0, $\pi(rp) > r\pi(p)$ for $0 < r < 1$. In other words, when an outcome is improbable but not impossible, then the decision-maker will perceive the weight of the prospect to be higher than it actually is. People who buy lottery tickets or fear plane flights (even though the chance of dying in a car crash is far greater)

¹⁰ Formulated simply: $(x, p; y, q)$ is a prospect where one can receive x with probability p , y with probability q , and nothing with probability $1-p-q$ (Here, $p + q \leq 1$). A) If $p + q < 1$, or $x \geq 0 \geq y$, or $x \leq 0 \leq y$, then $V(x, p; y, q) = \pi(p)v(x) + \pi(q)v(y)$, where $v(0) = 0$, $\pi(0) = 0$, and $\pi(1) = 1$. That is, if $(x, p; y, q)$ is a regular prospect that is neither strictly positive or negative, as in the case of EUT, the overall outcome of the value (V) is determined by perspective and the subjective value of the outcome (v) is determined by outcomes. However, B) if $p + q = 1$ and either $x > y > 0$ or $x < y < 0$, then $V(x, p; y, q) = v(y) + \pi(p)[v(x) - v(y)]$. That is, if the value of a prospect is strictly positive or negative, then it is equivalent to the value of the riskless component ($v(y)$) plus the value-difference between the outcomes ($[v(x) - v(y)]$) multiplied by the weight associated with the more extreme outcome ($\pi(p)$).

can be examples of this phenomenon. On the other hand, for the rest of the p values, there will be a tendency to underweight the possibility of an outcome. This contrast implies that people tend to be more sensitive to outcomes with lower probabilities while underweighting the possibility of a more likely outcome (McDermott 2001). The slope of π indicates one's subjective preference sensitivity to change in probability, and the 45-degree line represents the relationship between the probability of an outcome and the amount of weight a person attributes to it when there is no cognitive bias in weighing prospect possibilities (Kahneman and Tversky 1979).

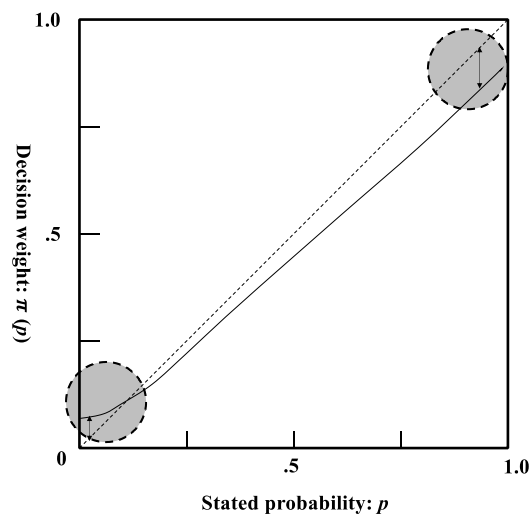


Figure 2.9 A hypothetical weighting function of prospect theory (Kahneman and Tversky 1979)

2.5.2 Prospect Theory and Economic Coercion Outcomes

This section details how I apply prospect theory to understand target states' retaliatory policies against economic coercion and how GVCs can influence leaders' risk perception. The primary actors in this model are political decision-makers of target states, while MNCs are key supporting actors that frame these policymakers' perceptions. In other words, corporate leaders can exert

influence on policymaking processes in various ways. These sorts of elites can help to frame the target state's situation in a certain manner or sometimes even directly pressure the government to make a decision that aligns with their interests. Notwithstanding this crucial role the private sector plays, as the following empirical chapters describe, the preference of the private sector is not consistently reflected in the government's final decision. In fact, according to the preponderance of experts I have interviewed, political leaders' beliefs and threat perception frequently trump corporate actors' interests especially in a situation of interstate dispute. For instance, elites in Japan's key industries were largely against the government's decision to use economic means to pressure South Korea, but did not publicly express such opinion for the fear of being denounced by the Japanese public. Similarly, when Seoul decided to lay low in the face of China's coercion over the installation of the THAAD system, South Korean companies doing business in China were unable to secure any support from the South Korean government. Therefore, although I construe the category of "decision-maker" or "elite" broadly to encompass both political and corporate leaders, policymakers are the central actors in my theoretical framework.

For the purpose of this study, a target state's positionality within GVCs it shares with the sender is the *independent variable*. The target leaders' decision to employ a retaliatory measure(s) is the *dependent variable*. I suggest that GVC positionality influences target leaders' perception of the domain (coded as gain or loss) they are in, which in turn causes their risk propensity. Risk-seeking propensity will lead to a retaliatory policy and risk-averse propensity will result in a nonretaliatory policy. If my theory holds, target states' policymakers will be more willing to take the risks that retaliatory policy entails when their key industry is more dependent on the senders' GVC inputs. In contrast, they will be less prone to bear the risks of escalating the conflict if they are in a more dominant position within shared GVCs.

Identifying the Reference Point

The reference point is arguably the most central concept of prospect theory. It serves as a point in which an actor is accustomed to and therefore aims to return to when there is an external force that removes her status from her reference point. While it is challenging to concretely define what an actor considers as her reference point (McDermott 2001; Meng and Weng 2018), it is plausible to assume in this case that it is the status quo disrupted by the senders' economic coercion. In this dissertation, I posit that a target leadership's reference point is the undisrupted sender-target GVC ties from which the target's economy could benefit. Consequently, target policymakers will assess their domain (gain or loss) and aspire to return the discombobulated relationship to the pre-coercion status.

H1) In assessing their relationship with the sender, the target's policymakers will use the pre-conflict GVC relationship as a reference point.

The central contribution of prospect theory is to highlight that an agent's subjective psychological assessment of the options open to them plays a role in structuring their tolerance for risk and their assessment of the desirability of the "payouts" open to them. It may seem at first blush that this does not adequately differentiate it from the rival decision-making theories I will consider throughout the dissertation. For example, it might be argued that EUT or rational choice models of decision-making also can encompass the idea of reference points. For instance, imagine a situation much along the lines I have already outlined: one GVC partner state is targeted with a form of precise economic coercion by the other. It is open for rational theorists or adherents to EUT to consider factors such as actors' current perception of certain GVC relationship, and to

conclude that a state might behave aggressively towards another when faced with coercion because it sees that a long-standing GVC is a bad investment, say, and unlikely to return much in the future. This might even appear to be a counterintuitive conclusion at first glance, given the characteristic assumptions of EUT, but the willingness to forsake a seemingly profitable GVC relationship can ultimately be reconciled with these assumptions if the perceptions and probabilistic judgments of the relevant parties lead to the conclusion that the return on this relationship is likely to diminish. However, while one might conclude that the considerations informing this context sensitive model of EUT amount to something like a “reference point,” it would not approximate the reference point described by prospect theory, I use in this dissertation. The phrase “reference point” in this stylized account of EUT simply tracks the more common ordinary meaning: the position you start from. To minimize the confusion, I provide expansive tables and summaries of what EUT and prospect theory would predict in both my review of the literature and the individual case summaries. Moreover, I explain why I believe the reference points are what they are and why the behavior of South Korea as the target state in each case study is broadly consistent with the expectations of prospect theory but not ultimately EUT.

Situating Oneself in a Domain

Domain refers to an actor’s assessment of the situation she is in. She is in a domain of loss when she perceives her circumstances to be unfavorable; she is in a domain of gain when she believes that she is in a favorable position. When decision-makers assign value to different policy outcomes, I suggest that the intrinsic asymmetry of the GVC system makes retaliation and conflict escalation entail different risks for leaders in different domains (Hinz and Leromain 2018; Moon 2021b). On the one hand, GVCs lower the global economy’s entry barriers for developing

countries and create a system in which all parties can reap absolute gains. This is possible because firms outsource lower value-adding production stages to states with abundant labor and land by utilizing cheaper transportation and communication (Gereffi 2019). At the same time, ironically, the same logic contributes to inequality by putting states in particular parts of the production process as in *Figure 5* (Aggarwal 2017; Rungi and Del Prete 2017; S. Shih 1996; Suwandi 2019).¹¹

If a sender's GVC inputs are less replaceable than that of the target in general, the target's policymakers will perceive themselves to be in a domain of loss. Their input, such as cheap labor or rent, is likely more replaceable. By contrast, policymakers in a less dependent state than their opponent will situate themselves in a domain of gain since their inputs are less replaceable. For instance, since 1979, China has invested heavily in reducing its dependency on foreign semiconductor companies for high-tech intermediate goods. Despite these efforts, only 8% of the semiconductors China uses are made domestically by Chinese firms (Lewis 2019). There are fewer opportunities for smaller or more dependent states to abide by Hirschman's (1945) recommendations: dependent states cannot, for example, structure their economies and trade to avoid over-reliance in a system where technical expertise tends to accumulate and compound over time. GVCs connect countries in a fundamentally different manner, with one state unable to run its own firms and factories without another.

¹¹ GVC "upstreamness" is often the concept used to measure a company or country's strategic position which defines a country or an industry's overall position to be superior when it is closer to the initial stages of a production process (Antras et al. 2012; C.-S. Kim, Lee, and Eum 2019; Meckling and Hughes 2017). However, this implies that the average amount of value added in each stage of production is the same in every industry, even though in reality what the upstreamness index reflects will vary by industry. For example, in the case of petroleum industry, the average amount of value added during the refining process exceeds that of the oil extraction or distribution, forming a reverse U shape rather than a smile curve (World Trade Organization and World Bank 2019). For this reason, I refrain from using the term "upstreamness" and instead examine a specific industry's production chain.

H2) Using a reference point, policymakers will position themselves in either a domain of loss or a domain of gain.

Risk-aversion and Risk-seeking

Risk is relative variance in outcomes and a policy option is riskier when its expected payoffs have greater variance. For instance, going back to the example of lottery tickets with different payoffs:

Ticket A: 50% chance of winning \$500 and 50% chance of losing \$500

Ticket B: 50% chance of winning \$1,000 and 50% chance of losing \$1,000

Both tickets in this case have expected value of \$0, because $\{(\$500*0.5) + (-\$500*0.5)\}$ for A and $\{(\$1,000*0.5) + (-\$1,000*0.5)\}$ for B. Ticket A and B have expected gains of \$250 ($\$500*0.5$) and \$500 ($\$1,000*0.5$), respectively. Therefore, it is “rational” to choose ticket B because they have the same expected value but B has higher expected gains. However, experiments show that most people will choose ticket A over B because B is “riskier.” The payoff for ticket B is higher but the cost of losing is also higher, making ticket B a riskier option than ticket A. People are risk-averse in many cases (Figner and Weber 2011; Kahneman 2011; Kahneman and Tversky 1979; 1982; Pratt 1964).

While economists calculate risks in terms of simplified monetary values and possibilities in percentages, political decisions never present themselves in such a clear manner. Policy choices are closer to comparing apples and oranges than three lottery tickets with different possibilities and prize money of winning. In this sense, as McDermott (2001) argues, comparing policies with different expected values relies on “ordinal comparisons” of preference. When the level of

uncertainty is extremely high, under some conditions, actors may even “choose the option with the highest utilities without regard for the level of probability associated with each option (He and Feng 2013, 3).” Consider this example of two policy options:

Policy option A: If successful, country A will agree to a FTA worth \$500 billion; but if unsuccessful, country A will declare a militarized war.

Policy option B: If successful, country B will agree to a FTA worth \$20 billion; but if unsuccessful, country B will summon its ambassador in protest of your policy.

For policy option A, the variance between policy success and failure is the gap between huge economic gains and a war. For policy option B, succeeding yields smaller economic gains compared to the first option, but even when it fails, the consequences are not as disastrous as an armed conflict. In this example, policy option A is riskier than B because A has a larger variance in outcomes.

For this study, the riskiness of a policy option refers to the gap between expected losses and gains of succeeding and failing the policy. A riskier policy option will have greater expected gains once it succeeds but more severe consequences when failed. Moreover, an actor has a risk-seeking attitude when she is willing to choose policy option A over B. In contrast, a risk-averse actor will choose policy option B over A.

Identifying and Weighing Expected Losses and Gains

As described in *Table 1*, expected gains and losses induce different emotions and actions depending on the probability and I expect to observe the same pattern in targets’ behavior. Under

normal circumstances, states focus on the absolute gains that GVCs bring; there would be no trade agreements if otherwise (Barbieri 1996). Trade partners become accustomed to this situation which makes them identify it as a reference point. However, when tensions flare, the asymmetry of replaceability switches the thinking of state leaders into zero-sum terms (Dos Santos 1970; Hirschman 1945). Conflict increases the level of uncertainty about the future of the partnership, especially for policymakers deciding whether or not to engage in a retaliatory measure. This frames the status quo in a way that highlights the domain-of-loss state's perception of its relative disadvantages, shifting the focus from absolute to relative gains (Baldwin, 1985; Copeland, 2015).

In assigning values to different policy outcomes, leaders in either domain expect similar gains from retaliation, including temporary compensation (or minimization of loss) from bargaining *ex-ante* or more favorable terms for future bargaining (Limenta 2017; Spamann 2006). The same is true of nonretaliation, where policymakers hope for conflict de-escalation as a result of laying low (Moon 2021b). They face similar conflict escalation risks, including sanctions imposed by the opponent or the onset of militarized conflict. Non-retaliation entails similar risks, including the continuation of unwelcome aggression. In both cases, expected losses involve painful economic adjustments resulting from losing an opponent's contribution to GVCs (Hirschman 1945).

What is noticeable here is that all states face similar expected outcomes. However, because of the strategic asymmetry in the extant system of GVC, each policy option's expected losses and gains have different values for states in different domains. On the one hand, decision-makers in the domain of loss assign more weight to the losses from GVC disruption. This is true in both policy options since alienating the opponent means forfeiting less-replaceable resources as well as a potential economic catastrophe. Consequently, a domain-of-loss state is more likely to engage in

risk-seeking behavior, choosing options with more significant expected gains in hopes of compelling the opponent to cease its aggression. If policymakers do not perceive laying low as a guarantee to GVC stability, they instead will be inclined to try to change the opponent's policy through any means, even if this potentially entails risking further economic loss or political fallout.

Those in a domain-of-gain state face similar expected losses and prefer to avoid GVC interruption, especially its business class. The costs that political leaders in these states assign to readjusting GVCs often do not exceed the costs of conflict escalation. For them, the opponent's inputs are painful to lose but relatively easier to replace, though the risk of the conflict intensifying and expanding into further sanctions or becoming militarized has more weight. As a result, a domain-of-gain state is more inclined to be risk-averse and shun further conflict escalation.

H3) When the policymakers see themselves in a domain of loss, they will act in a more risk-seeking manner; however, they will act in a more risk-averse manner when they see themselves in a domain of gain.

H4) In assessing different policy options, a loss from the status quo will loom larger than a comparable gain.

2.6 Comparing Two Models' Theoretical Prediction

This section further clarifies the difference between EUT and prospect theory's theoretical prediction on target behavior and economic coercion outcomes. In terms of observable policy behavior, the two models reach the same conclusion for targets in a domain of gain and diverge in a domain of loss. Moreover, the expected outcomes of retaliation and nonretaliation are similar for all actors: retaliating usually entails the risk of escalating the conflict and the aspiration of changing

the sender's policy back to cooperative GVCs. Nonretaliation usually entails the risk of further losing the sender's GVC inputs and the aspiration of the sender changing its own policy after some time.¹² While given options and outcomes are similar, target states reach different conclusions depending on their circumstance because the value and possibility each expected outcome carries are different. Knowing that retaliating will lead to conflict escalation in most cases, then, target leaders think in terms of, "*is it worth it to escalate this conflict?*" Table 2.2 illustrates actors' different situations, emotions, and policy choices.

Target State Behavior: Expected Utility Theory

EUT actors are different from prospect theory actors in that they think only within the policy outcomes they are facing, instead of comparing pre- and post-economic coercion. In other words, without a reference point, actors decide only on the basis of expected outcomes in retaliation or nonretaliation. EUT target leaders focus on the risks of retaliating, and therefore refrain from conflict escalation.

For an EUT target in a less dependent GVC position, although reorganizing GVCs is painful, the cost of doing so does not exceed the expected gains from the potential escalation of the conflict. Once the conflict escalates, it will likely spill over to other economic issues and further complicate political relations. The sender's GVC inputs are relatively replaceable and therefore not worth escalating the conflict. In this case, the target policymakers' emotion is the fear of larger

¹² Expected outcomes are case specific and entailed values of a policy vary depending on the situation. These expected outcomes of retaliation and nonretaliation are examples that most target states in this decision-making process may face. Each case study chapter will discuss in more detail the case-specific outcomes and what they entail. Also, in using within-case congruence method, I will put different weight on different policy options and outcomes depending on which theory I am using to explain the cases.

losses in the future by retaliating and escalating the conflict. This, in turn, leads to a risk-averse attitude, resulting in a nonretaliatory policy.

For an EUT target in a more dependent GVC position, losing the sender’s GVC inputs is extremely costly, but the expected utility of retaliating still does not exceed that of refraining in most cases. For an EUT actor, there is no reason why she should put more weight on *regaining* the opponent’s GVC inputs since losing it and gaining it have the same value in EUT. EUT actors think only within the given policy choices and do not compare their situations to pre-conflict status. Consequently, without the extra weight put on *regaining* the opponent’s GVC contribution, risks of conflict escalation are usually larger than the expected utility of having functioning GVCs. Risks of retaliating include not only worsened political (or even militarized) disputes but also graver economic damage from additionally losing the opponent’s irreplaceable inputs. However, expected gains remain the same for both policy options, which is (re)gaining the sender’s inputs. Therefore, like the less-dependent EUT actor, a more-dependent EUT actor will also experience the fear of a larger loss as opposed to seeing more value in (re)gaining the sender’s GVC inputs. This will yield the same policy result as the less-dependent counterpart: nonretaliation and risk-aversion.

	Relative Trade Position	
	Dominant (Domain of Gain)	Dependent (Domain of Loss)
Expected Utility Theory	Partner replaceability high/medium High/medium cost of losing partner High/medium value of regaining partner	Partner replaceability low Extremely high cost of losing partner Extremely high value of regaining partner
	Fear of larger losses <i>Risk-averse attitude</i> Non-retaliation	
Prospect Theory	Partner replaceability high/medium High/medium cost of losing partner High/medium value of regaining partner Fear of larger losses <i>Risk-averse attitude</i> Non-retaliation	Partner replaceability low Extremely high cost of losing partner Extremely high value of regaining partner Hope to avoid larger losses <i>Risk-seeking attitude</i> Retaliation

Table 2.2 Theoretical predictions of expected utility theory and prospect theory

Target State Behavior: Prospect Theory

While prospect theory offers the same behavioral prediction for targets in a domain of gain, the mechanism behind it is slightly different. For targets operating in the prospect theory model, actors view losses and gains in terms of their reference point: the pre-coercion situation in which they enjoyed profits from stable GVCs. With this reference point set, regaining the sender's GVC inputs have greater value for a prospect theory actor than for an EUT actor because losses are more painful than comparable gains in prospect theory. Moreover, a prospect theory actor is loss averse in general and tends to put more weight on events with extremely small probabilities. Consequently, the expected losses from conflict escalation seem even larger than how an EUT actors sees it, especially the possibility of the conflict becoming militarized. Putting these together, like the EUT actor in a less-dependent position, a prospect theory actor in a domain of gain also sees GVC rearrangement as costly, but still not worth further complicating the situation. While the expected losses are large, regaining the sender's GVC inputs is not as valuable. Domain-of-gain policymakers experience fear of disappointment, meaning that they wish to avoid the situation in which they retaliate with hopes of succeeding to change the sender's behavior but fail. When the policy fails, there will be graver consequences than what could have happened as a result of not retaliating. As explained above, a riskier option is a policy with a larger gap between the consequences of succeeding and failing. Below is an illustration of the hierarchy of the options, outcome values relative to a domain-of-loss case:

Retaliation success: Sender coerced into withdrawing initial coercive policy (Best)

Nonretaliation success: Sender appeasement (Good)

Nonretaliation failure: Extended economic coercion (Bad)

Retaliation failure: Conflict escalation (Worst)

The difference between failing and succeeding with retaliation is much larger than that of nonretaliation. Therefore, target leaders will evince a risk-averse attitude and conclude that the sender's relatively more replaceable GVC inputs are not worth the risks entailed to retain them.

The most important and interesting diverging point between EUT and prospect theory lies in actors' assessment of expected gains and losses when they are in a domain of loss. To reiterate, a prospect theory actor is sensitive to the direction and amount of change from her reference point, or the status quo. As in the case of the domain-of-gain actor, a target leader in a domain of loss is also loss-averse and overestimates extremely small probabilities. However, a domain-of-loss leader sees great value in regaining the sender's GVC inputs because they are much more challenging, if not impossible, to substitute. The perceived cost of losing (and therefore the utility of regaining) these harder-to-replace inputs is much larger to an actor in a domain of loss than a domain of gain. Below is an illustration of the hierarchy of the options, outcome values relative to a domain-of-gain case:

Retaliation success: Sender coerced into withdrawing initial coercive policy (Best)

Nonretaliation success: Sender appeasement (Good)

Nonretaliation failure: Extended economic coercion (Bad)

Retaliation failure: Conflict escalation (Worst)

Because the substitutability of the sender's GVC contribution and the value of regaining it changed, accordingly, the outcome value of retaliation success increased drastically. A prospect theory actor in a domain of loss will therefore experience hope to avoid the larger losses that result from being completely excluded from the sender's GVCs. This will lead her to have a risk-seeking attitude, thinking that it is better to do something than not do anything when there is so much at stake. Being in a place of dependency puts her in a situation where the pain of losing the sender's inputs is more significant than the possibility of conflict escalation.

2.7 Methodology

To better bring to life causal mechanisms involving subjective, elusive variables, it is necessary to take a methodologically eclectic approach, using both qualitative and quantitative analyses. Therefore, this dissertation connects psychological factors (i.e., the perceptions and beliefs of government decision-makers) to empirical conditions (i.e., GVC positionality) and results (i.e., policy decisions). In examining how empirical conditions influenced actors' psychology, I conduct semi-structured interviews with South Korean, Japanese, and Chinese foreign policy and industry elites. I also utilize a process tracing method and employ within-case congruence tests to study two contemporary interstate economic disputes in East Asia using original language sources. In addition, I conduct experiments through which I obtain large-*N* data on decision-making behaviors.

Qualitative Case Study Method

The qualitative in-depth case study method is the most appropriate methodology for answering my research questions because it allows for the nuanced and detailed understanding of the causal mechanisms. I apply my theoretical framework and utilize process-tracing method and within-case congruence method to two contemporary cases. I obtained data by interviewing political and industry elites in South Korea, Japan, and China. I interviewed around 25 experts who included, most notably, an incumbent politician, an expert advisor to the South Korean government, think tank researchers, and academics in relevant fields. I used snowball methods to recruit the subjects and the interviews were semi-structured. The questions I asked these experts included, but were not limited to:

- What is your view on the relationship between South Korea and Japan/China based on GVCs and traditional trade?
- Why do you think Seoul reacted the way it did to Japan/China's coercive attempts?
- What role do you think private companies played in framing the situation and the government deciding its response to Japan/China's initial coercive attempts?
- What were the controversies within the government in in deciding what its first reaction to Japan/China's regulations?
- Do you think Seoul should have responded in a different way? If so, how?

Statistical data on trade relationships, such as the volume of GVC trade and specialization indices, provides a broader picture of the empirical conditions the actors faced. However, more importantly, the interview data and other original language source materials can connect these objective factors to the actors' cognition. This dissertation explores cognitive variables, including threat perception and decision-making, which are challenging to accurately operationalize and derive meaningful causal inference from. I attempt to overcome this issue by talking with the

individuals who directly partook in the actual decision-making process or who are experts in the matter.

The first case study examines the ongoing trade conflict between Japan and South Korea, which began over longstanding historical disputes. In 2019, when the South Korean Supreme Court ordered Japanese companies to compensate victims of WWII forced-labor policies, Tokyo took action by restricting the exports of three chemicals (fluorinated polyimides, photoresists, and hydrogen fluoride) to Seoul on July 1. These materials are critical for making microchips, smartphone displays, and semiconductors, all crucial to the South Korean information and communications technology (ICT) industry. Japan went further and withdrew South Korea from its whitelist, which simplifies the export process of strategic materials.

The second case study concerns South Korea's reaction to Chinese economic sanctions in 2016. On February 7, South Korean and American officials announced their plan to install the American Terminal High Altitude Area Defense (THAAD) system in South Korea, emphasizing that this was a defensive measure against North Korea. However, the prospect of a nearby American anti-ballistic missile system upset Beijing. China responded by ordering its people to abstain from "Korean wave" products and withheld government subsidies from South Korean firms making electric automobiles.

Three considerations inform my case selection. First, to adequately control as many variables as possible, it is necessary to compare sufficiently similar cases (Van Evera 1997; Lijphart 1971). By having South Korea as the target state in both cases, I aim to minimize the possibility of other unforeseen variables influencing the case analysis. Most importantly, variables including models of regime survival of the target (Solingen 2012) and political regime and institutions (Allen, 2008; Brooks, 2002; Escribà-Folch & Wright, 2010; Peksen, 2019a) can be

held constant. This is not to say that domestic political considerations are of trivial importance. Rather, they play a crucial role in framing what a state's leaders see as risky or valuable in the process of establishing their reference point and framing the domain they occupy. While the framework I use and my specific phenomena of interest preclude these larger dynamics, my case studies take into account how domestic political factors including the leadership's interests should have shaped a state's decision to retaliate. Second, in each case, the sender and the target are heavily dependent on each other, not only in terms of traditional trade but also GVC integration. For policymakers to perceive the situation as risky and their decisions to be potentially costly, the sender and target's economic relationship must be significant enough. Third, Northeast Asia is home to a sophisticated and fast-growing cluster of GVCs but simultaneously remains mired in a series of political conflicts (Solingen 2007). I expect this revealing contrast to help highlight the relationship between economic coercion and GVC interdependence.

Qualitative case study chapters have the following order of content. First, I provide basic historical background of why the dispute started, who the actors are, and how the sender executed the initial economic coercion. I then position the target state into a domain of loss or a domain of gain by assessing its reference point. Here, I use three difference indices to illustrate the positions of different actors. The following chapter will explain these measures in detail. Next, I lay out expected outcomes of retaliation and nonretaliation in terms of what the expected losses and gains were, and how much value and possibilities the decision-makers saw in each outcome. In doing so, I make theoretical predictions for prospect theory and three alternative explanations: EUT, targeted sanctions theory and political instability theory. I conclude each chapter by comparing the theoretical predictions to empirical results.

Experimental Study

While qualitative methods provide significant depth to the research and illustrate the causal mechanism more clearly, it offers limited internal validity. To complement this shortcoming of qualitative analysis, I also use the experimental method to obtain large-*N* data on how different forms of trade and GVC positions influence decision-makers differently. I conduct two experiments that test the same set of hypotheses using similar designs. The first experiment more closely resembles the traditional format of prospect theory experiments by offering succinct policy outcomes, with the likelihood of events described in percentage terms, and with monetary values attached to different outcomes. The second experiment represents the decision-making environment in the real world by providing subjects with more detailed narratives of the situation they are in and what each policy choice entails. In these online experiments, participants read a scenario in which they are the president of an imaginary country that is facing a trading partner's economic coercion. One out of four different situations (GVC trade domain of loss / GVC trade domain of gain / traditional trade more dependent / traditional trade less dependent) is randomly presented and participants are asked to decide to retaliate to the sender's coercive policy or not.

The experimental method has recently received significant attention among IR scholars due to its ability to better highlight correlations and causal mechanisms by controlling and manipulating variables (Friedman, Lerner, and Zeckhauser 2017; Hyde 2015; Mintz, Redd, and Vedlitz 2006; Linde and Vis 2017). Therefore, the experiment provides balanced evidence with both external and internal validity. I used Qualtrics to design the experiment, Lucid to distribute, and R Studio to analyze the results.

2.8 Operationalization of Variables

Before going into the empirical chapters, this last section offers explanations on the coding and operationalization of key variables in this study. A broader research design was already described in the previous chapter, including methodologies and case selections, so this chapter will only include the definitions of the specific measurements and why I use them in my empirical analysis.

The Sender and the Target

In determining senders and targets, I code sender state as the state that first used economic measures to coerce another country. The target state is the state that received such external pressure from the sender state to change its behavior. Most disputes between states stem from political disagreements and are not the result of purely economic motives. Rather, as mentioned above, states use economic tools for political goals. Therefore, for the purpose of this dissertation, I focus on “who first used economic measures” within a specific case of a conflict and not “who first started the conflict at large.” By confining conflict initiation to the moment when a sender state first employs economic coercion, I aim to partially circumvent the issue of infinite regress in historical case analysis.

Dependency in GVCs

I operationalize GVC dependency by examining trade specialization index (TSI) and product complexity index (PCI). I also supplement these with revealed comparative advantage (RCA) and self-assessment comments from individuals involved in each case. All three mathematical indices are significant in measuring strength in trade of a country, but I see TSI and PCI as more relevant for my purposes than RCA. TSI provides relational and comparative trade information of two

countries, so it is a better measure of who has the upper hand in trading a certain product. PCI is not relational, but provides more detailed information on how sophisticated a country's products are and, therefore, how high an entry barrier a product has. While RCA is an important indicator in that it shows a country's production capability for a given product in the world market, it does not include any information on how superior a country's technology is. A country can produce a large quantity of low-technology products and still have a high RCA value because it has a large market share. Here, I define each concept beginning with TSI, RCA, and PCI because RCA is a part of PCI calculation.

TSI indicates a country's comparative advantage for a given commodity type. When X is an export value and M is an import value of a commodity from country i to country j , the TSI of that commodity for country i is:

$$TSI_{ij} = \frac{(X_{ij} - M_{ij})}{(X_{ij} + M_{ij})}$$

TSI value ranges from -1 to 1. When country i is entirely importing product A from country j , i 's TSI of product A vis-à-vis j is -1, and thus i has no specialized advantage over product A. In contrast, when country j entirely relies on i for its import of product A, i 's TSI of product A vis-à-vis j is 1, and thus i has a perfect specialized advantage of product A over j . When the TSI value is 0, the amount of exports and imports of product A is the same between the two. I expect to see more commodities with TSI values closer to 1 when a target state is less dependent on the sender state, and thus in a domain of gain. On the other hand, when a target state is in a domain of loss, there will be more commodities with TSI values closer to -1. I compare TSI values at the 10-digit Harmonized System of Korea (HSK) code level. In my case studies I examine the TSI of the twenty

commodities that are traded the most in terms of value between the sender and the target (Moon 2021b) and use this as part of my calculation of relative advantage within a GVC relationship.

In addition, RCA is very similar to TSI but are individual country values rather than comparative values. Country i has a comparative advantage in the global market of a given commodity A when its ratio of exports of product A to its gross exports of all products is larger than the world as a whole's ratio of exports of product A to the world's gross exports of all products (Balassa 1965; Balassa and Noland 1989). In other words, RCA measures whether a country's export of product A in proportion to the world market of product A, is larger than the entire product A export's share in the world market. Simply put, country i has the comparative advantage of commodity A when,

$$RCA_{Ai} = \frac{\frac{X_{Ai}}{\sum_i X_{Ai}}}{\frac{\sum_A X_{Ai}}{\sum_i \sum_A X_{Ai}}} \geq 1$$

Here, X_{Ai} is country i 's exports of product A, $X_{Ai}/\sum_i X_{Ai}$ is country i 's share of product A in the world market, and $\sum_A X_{Ai}/\sum_i \sum_A X_{Ai}$ is the total share of product A of the world market. Country i is a competitive producer of product A and is considered to have export strength in that product market when it has a RCA value of larger than 1 (Hausmann et al. 2013). For instance, in 2019, the US's RCA of "coffee and coffee substitutes" was 0.3226 and "arms and ammunition" was 3.6604 (UNCTAD database), meaning that it had much higher competitiveness in the global market exporting arms and ammunitions than coffee. When country i 's RCA is higher than country j 's RCA value in a given product, i occupies a more dominant position within the shared GVCs of that product, and thus is in a domain of gain. In each case study, I will compare RCA values of the

twenty commodities that the target and the sender export to one another the most, at the level of the 3-digit Standard International Trade Classification (SITC) commodity classification code.

Lastly, I compare twenty products that the target and sender states export to each other the most and compare their PCI values. Product A's PCI is the average diversity of countries producing A and the average ubiquity of the other commodities these countries produce. The formal definition resembles the following:

$$PCI = \sum_i \frac{M_{Ai} M_{A'i}}{k_{i,0} k_{A,0}}$$

PCI is a network analysis concept and here, M_{Ai} is an adjacency matrix of product A exported by country i , where:

$$M_{Ai} = \begin{cases} 1, & RCA_{Ai} \geq 1 \\ 0, & RCA_{Ai} < 1 \end{cases}$$

Hence, M_{Ai} is 1 if and only if $RCA_{Ai} \geq 1$ and 0 otherwise. $M_{A'i}$ indicates an adjacency matrix of all the products country i exports except A. Moreover, k indicates a vertex, or a node, where $k_{i,0}$ is the number of product categories exported by country i (diversity or the number of activities of country i) and $k_{A,0}$ is the total number of countries that export product A (ubiquity measure). In a given product A, PCI is higher when country i produces a smaller number of product types and fewer countries are able to make product A. A higher PCI value implies that the product requires a higher level of sophistication and technology. For example, in 2019, the product category with the highest PCI (2.75) was “photographic plates and film, exposed and developed, other than motion-picture film and the one with the lowest PCI (-2.93) was “tin ores and concentrates (Atlas of Economic Complexity webpage).” In using PCI to determine a target state's GVC location

relative to the sender, I compare PCI values at the 4-digit Harmonized Tariff System (HS) 1992 code level.

Chapter Three

Case I: Japan-South Korea Trade Conflict

3.1 Historical Background

The recent trade war between South Korea and Japan is only the latest manifestation of centuries-long hostility. While the conflict spilled over into economy and trade, it stemmed from the two countries' political and historical disputes. In 2018, the South Korean Supreme Court upheld an appellate court decision ordering several Japanese firms to pay reparations to the victims of forced labor during the Second World War.¹³ On October 30, the Supreme Court ordered Nippon Steel to pay 100 million Korean won damages to four South Koreans who were forced to labor during the war. The Court returned a similar judgment on November 30, ordering Mitsubishi Heavy Industries to pay 28 South Korean plaintiffs 150 million Korean won each. Similarly, in January 2019 the Seoul High Court and Daegu District court ruled against Japanese firms. The former rejected Nachi-Fujikoshi's appeal of Seoul Central District Court's ruling in 2014 to compensate 17 South Koreans 80-100 million Korean won for their wartime forced labor. On January 8, the Daegu Court decided to seize Nippon Steel's 81,075 shares in POSCO-Nippon Steel RHF Joint

¹³ In 1938, Japan declared a national mobilization order to control resources that could be used for war including infrastructure, labor, and businesses. From 1939 to 1945, approximately 1,130 to 1,460 thousand Koreans were taken to slavery under this law, working in inhumane environments such as coal mines and munitions factories. The effect of this law was later extended to children as young as elementary school students and several hundred women from the age of 12 to 40; the former worked in military-related construction sites and the latter were either sent to munitions factories or forced to become "comfort women." Some forced labor victims were even killed after finishing constructions in order to keep military secrets as in the cases of mass murder in Pyongyang airport construction site and Jishima Isles that each killed around 800 and 5,000.

Venture based in South Korea. Two months later, Daejeon District Court also decided to seize Mitsubishi Heavy Industries' trademark and patent assets.

As a reaction to this series of court rulings, the Japanese government decided to weaponize its superior position within its shared GVCs with South Korea.¹⁴ On July 1, 2019, Japan's Ministry of Economy, Trade and Industry (METI) announced that it would revise its regulations on exports of photoresist, hydrogen fluoride, and fluorinated polyimide to South Korea starting from July 4. Previously, South Korean companies were able to get a comprehensive preapproval that would exempt them from further inspections for three years when importing these three materials. With this new measure, South Korean companies now had to get approval for each case of import, not only to purchase these three items but also to buy any related manufacturing technologies and machinery.¹⁵ Regulating these three chemicals has great symbolic and practical significance in that they are essential in making semiconductors and displays, which are South Korea's key industries. A photoresist is used to make semiconductors (HSK3707901010) and organic light-emitting diode (OLED; HSK3707901020) during the photo process. Hydrogen fluoride (HSK281111000), also called etching gas, is used to etch patterns on a substrate such as silicon wafer and for cleaning. Lastly, fluorinated polyimide (HSK3920999010) is used in semiconductor and display manufacturing processes such as OLED panel production (Hyundai Research Institute 2021).

In addition, on August 7, 2019, Tokyo announced that South Korea would no longer be a part of its 'white list' which exempts selected trading partners from getting special approval every

¹⁴ Tokyo argues that it is in violation of the 1965 Treaty of Normalization of Diplomatic Relations between Japan and South Korea. Through this treaty, the South Korean government surrendered its rights to sue for reparation of the damage inflicted by Japanese colonialism. In compensation, Japan paid South Korea 300 million US dollars as "aid" and 200 million US dollars as a low interest rate loan. However, South Korean courts and legal scholars argue that, while the government waived its right to demand further compensation, South Korean individuals' right to do so has not been waived as a part of this treaty.

¹⁵ Normative time for export screening is 90 days, but it can take longer depending on the type of materials being exported.

time they import certain strategic materials. The white list included 1,194 strategic materials and among these Seoul expected 159 items to have a severe impact on the South Korean economy. Excluding South Korea from the white list and recategorizing it into group B enabled the enforcement of ‘catch-all regulation’ on exports to South Korea, granting Tokyo the right to regulate exports even with the products that are not categorized as strategic.¹⁶

Tokyo officially claimed that its relationship with South Korea could no longer be based on mutual trust and alleged that there was an “inappropriate incident” stemming from its exports to South Korea. On July 5, 2019, Onodera Itsunori, former Japanese Minister of Defense and a Liberal Democratic Party (LDP) politician, made the following comment:

“Japan, for instance, exported a hundred shipments of hydrogen fluoride to South Korea. South Korean firms used seventy of them, but where did the rest go? We made an official request to Seoul asking to disclose the information but didn’t get any response. That is why we had to enforce these regulations.”¹⁷

The Japanese government’s official stance was that it was concerned about their exports to South Korea being illegally re-exported to countries such as North Korea or Iran, and becoming a part of illicit nuclear weapons development programs. Although this was Tokyo’s formal position, most experts viewed it as a pretext for coercing Seoul to undo its Supreme Court’s decision regarding wartime forced labor. For example, in January 2019, LDP held a meeting discussing Japan’s

¹⁶ Japanese government categorizes trading partners into four groups: group A consists of countries that are in the white list. Group B includes countries that are a part of Multilateral Export Control Regime and meet certain criteria, but are not in group A. Group D lists unstable countries and regions that need special attention, including Afghanistan, Central Africa, Congo, Iraq, Lebanon, Libya, North Korea, Somalia, South Sudan, Sudan, and Iran. Group C encompasses the rest of the world that are not in groups A, B, and D (経済産業省, 2019).

¹⁷ Okuda Satoru. Zoom interview with the author. January 5, 2022.

potential reaction to the South Korean Supreme Court's decision. As a result of this meeting, Tokyo created a list of ten policy options, of which the eighth one was "suspension of provision of materials centered on hydrogen fluoride from Japan."¹⁸ Judging from the evidence, it is reasonable to conclude that the initial economic coercion was Tokyo's reaction to this historical issue.¹⁹

3.2 Reference Point and Domain of Loss

This section explains what the South Korean decision-makers identified as their reference point, which I define as the status quo of the trade relationship between South Korea and Japan before Japan's coercive policies came into effect. With this reference point, I suggest that the South Korean actors placed themselves in a domain of loss in their GVC relationship with Japan. In addition, by demonstrating how high the level of their economic interdependence was, I aim to establish that the involved actors perceived any disruption to such ties as risks and threats.

¹⁸ Okuda Satoru. Zoom interview with the author. January 5, 2022. The ten policy options are as following:

- (1) Appeal to the International Court of Justice.
- (2) No visa for South Koreans, restricting them from entering Japan.
- (3) Restrictions on the large number of South Korean students in Japan searching for jobs.
- (4) Add tariffs on South Korean products.
- (5) Remittance suspension, export restrictions.
- (6) Refusal of South Korea's application for participation in the Trans-Pacific Partnership (TPP).
- (7) Foreclosure of assets of South Korean companies in Japan.
- (8) *Suspension of provision of materials centered on hydrogen fluoride from Japan.*
- (9) Return of the Japanese Ambassador to South Korea.
- (10) Breaking diplomatic relations as a last resort.

¹⁹ It might be argued that South Korea was the first to leverage economic coercion towards Japan in this case, since the South Korean Supreme Court required Japanese companies to pay reparations to those enslaved during the war. Setting aside the fact the South Korean judiciary is an independent branch of government without any meaningful connection to its executive leadership, the particular compensation they required Japanese firms to pay can hardly be described as the sort GVC-specific economic coercion we see both Japan and China use in their respective conflicts with South Korea.

If EUT were to have superior explanatory power than prospect theory, then we should be able to see politicians and trade experts more focused on the policy choices that lie ahead rather than considering what they have lost compared to the “normal” times. In other words, actors will neither be “reference dependent (Vis and Kuijpers 2018)” nor situate themselves in a domain of gain or loss. The same data I present here would have been available to the EUT actors as well, but they will use this data to estimate which policy will bring them the largest utility in the future.

Trade Relationship between Japan and South Korea

Immediately preceding the trade conflict, in 2018, Japan was the fourth biggest exporter in the world, exporting \$738 billion worth of products and services which represented 3.8% of the global exports. In the same year, South Korea was the sixth biggest exporter, exporting \$605 billion worth of goods representing 3.1% of the global total (WTO database). In addition to being among the highest advanced economies in the world the two countries are also closely interconnected through trade ties (*Figure 3.11*). In 2018 Japan was South Korea’s fifth biggest export market and third biggest import provider, while South Korea represented Japan’s third largest exporter and fifth largest importer.

Moreover, Japanese and South Korean key industries are similar in structure and are tightly intertwined with one another. In 2018 Japan’s three biggest exports were machines (36%), transportation (24.58%), and chemical products (8.94%). In the same year, South Korea’s three biggest exports were machines (42.8%), transportation (14.52%), and metals (8.38%). Among the commodities Japan exported to South Korea, the top three were machinery (29.1%), chemical

products (17.64%), and instruments and apparatuses (15.7%). South Korean exports to Japan were largely machinery (25.4%), mineral products (17.53%), and metals (16.63%) (OEC database).

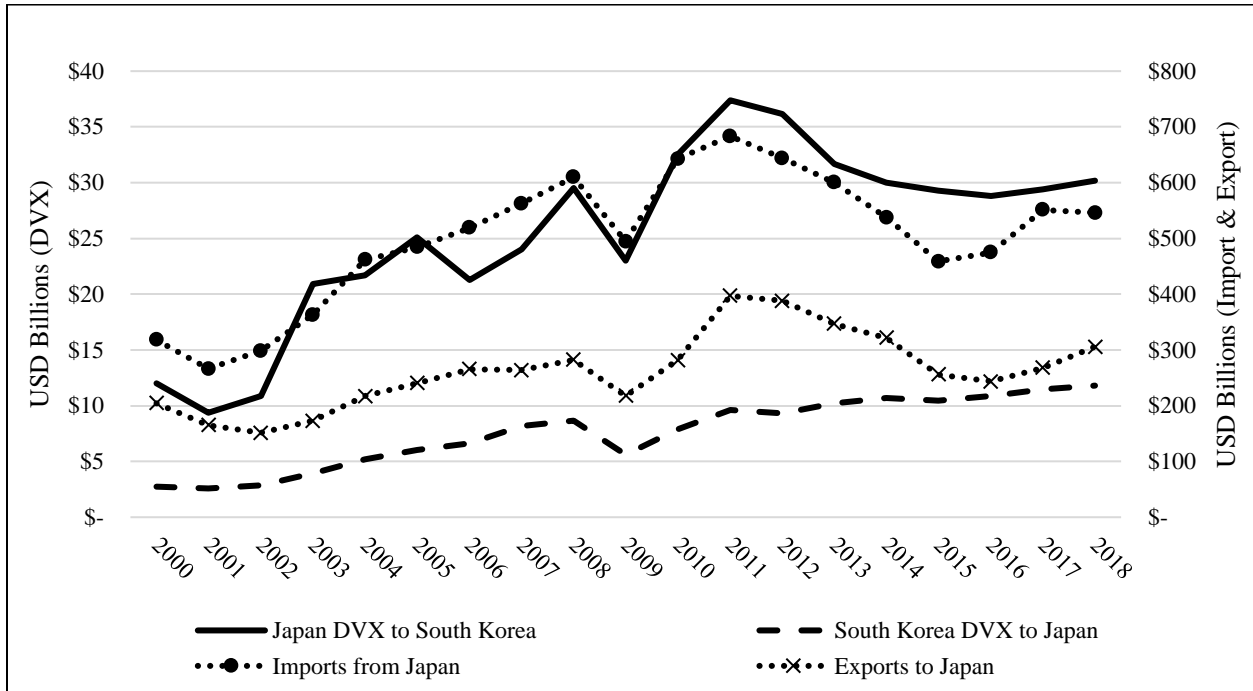


Figure 3.10 Gross trade and indirect value-added trade between South Korea and Japan (2000-2018) (Source: UNCTAD Eora)

While Japan has always been among the top five trading partners of South Korea, South Korea never enjoyed a trade surplus with Japan. In 2018, South Korea received net profits of \$55 billion from China and \$13 billion from the US, but had a trade deficit of \$24 billion with Japan, which was the largest deficit for South Korea vis-à-vis any other country (K-stat database). This chronic trade deficit has its roots in the two countries’ GVC relationship, which connects them even closer than traditional trade. Of the \$24 billion trade deficit with Japan, 93% (\$22.4 billion) came from intermediate goods trade (MTIE 2020). Moreover, as illustrated in *Figures 3.12* and *3.13*, intermediate goods equal to 35% of the total imports from Japan to South Korea and 34% of

the total exports from South Korea to Japan. Especially in the case of the Japanese goods imported to South Korea, consumer goods (or final goods) are less than one-sixth of the total import value.

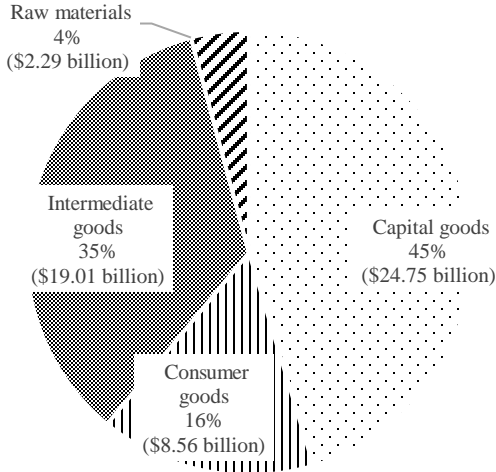


Figure 3.11 Types of Japanese goods imported to South Korea, 2018 (Source: UNCTAD Eora)

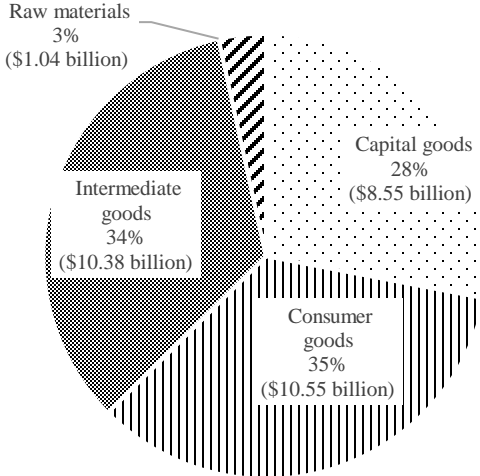


Figure 3.12 Types of South Korean goods exported to Japan, 2018 (Source: UNCTAD Eora)

Domain of Loss: Quantitative Evidence

South Korea possesses cutting-edge technology in various areas such as ICT and chemicals and is one of the biggest economies in the world. However, in its relationship to Japan when the conflict first started, South Korea was in the domain of loss. Japan had a technological advantage over South Korea in several industries' GVCs but in particular Tokyo occupied a higher strategic position in the ICT industry, which is South Korea's key industry. There were 253 types of South Korean commodities whose value was half or more attributable to Japanese contributions and 48 types that have a 90% reliance rate (HRI 2019). Within the ICT industry, in 2014, Japan had higher competitiveness in intangible GVC inputs including R&D (Japan 93.5 / South Korea 90.5), software capacity (88.9/82.7) and product design (92.8/87.4). For tangible GVCs, or manufacturing, South Korea was more competitive in manufacture production (96.3/100.9) and component procurement (91.1/92.4) but had noticeably lower material capacity (95.2/84.7) (KIET 2014). Additionally, South Korea's labor productivity has been lower than that of Japan. South Korean output per worker in 2017, 2018, and 2019 were 68186.5, 69815.2, and 71122.5, respectively. During the same years, Japan's output per worker was 75421.5, 74519.9, and 75383.9 (ILO database).

Table 3.3 lists South Korea's TSI value of the twenty most traded products (by value) between Japan and South Korea in 2018. Among twenty products, South Korea was specialized in importing fourteen products from Japan and specialized in exporting only six products. More importantly, South Korea was highly dependent ($TSI \geq -0.4$) on Japan for thirteen products and almost entirely dependent for crucial ICT intermediate goods such as chemicals used in dry-etching patterns on semiconductor materials and charge coupled devices.

Rank	HSK code	Product	Gross trade (USD)	TSI
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1	8542311000	Monolithic integrated circuits	1,806,486,712	-0.71
2	2710124000	Naphtha	1,472,127,072	0.96
3	7204490000	Other (Ferrous waste and scrap)	1,471,357,082	-1
4	2710192020	Jet fuel	1,219,622,505	0.96
5	8486208410	For dry-etching patterns on semiconductor materials	1,160,388,401	-0.98
6	7326909000	Other (Articles of iron or steel)	1,015,691,191	-0.22
7	2707300000	Xylol (xylenes)	971,534,054	-1
8	2853909000	Inorganic chemicals, compounds of precious metals. Rare-earth metals	956,539,977	0.02
9	2710121000	Motor spirit	948,158,370	0.83
10	3818001000	Chemical elements doped for use in electronics	939,762,876	-0.81
11	8541409030	Charge coupled devices (CCD)	833,181,341	-0.97
12	8486204000	Machines for depositing membrane or sputtering metal on semiconductor wafers	810,346,141	-0.95
13	7208399000	Other (Iron or non-alloy steel; in coils, without patterns in relief, flat-rolled, of a width 600mm or more, hot-rolled, of a thickness of less than 3mm)	766,971,574	-0.82
14	8486902010	Machines and apparatus of a kind used solely or principally for the manufacture of semiconductor devices or of electronic integrated circuits	765,404,074	-0.48
15	2710193000	Gas oils	715,343,590	0.39
16	9001200000	Sheets and plates of polarizing material	714,426,657	-0.83
17	7106911000	Containing by weight 99.99% or more of silver	698,105,844	1
18	7208519000	Other (Iron or non-alloy steel; (not in coils), flat-rolled, of a width 600mm or more, hot-rolled, without patterns in relief, of a thickness exceeding 10mm)	626,211,372	-0.53
19	8486209200	Machines of coating and developing or stabilizing photoresist	564,675,061	-0.99
20	3824999090	Chemical products, mixtures and preparations; n.e.c. heading 3824	523,176,889	-0.80

Table 3.3 Trade Specialization Index of twenty most traded products (by value) between Japan and South Korea in 2018 (Moon 2021b)²⁰

Similarly, Tables 3.4 and 3.5 illustrate PCI values of the twenty most exported and imported products, respectively, for South Korea vis-à-vis Japan. The twenty products South Korea exported to Japan the most have an average PCI value of 0.28 after substituting the missing

²⁰ As previously mentioned, TSI measures how specialized a country is by calculating the proportion of imports and exports to the total trade value in a given product. If a TSI value is closer to -1, the reporting country is more specialized in importing the product. The reporting country has specialized advantage when TSI value of a product is closer to 1. HSK code is Harmonized System (HS) code specific to South Korea. It shares the first six digits with the standardized global HS code and adds four digits further specify the products and better reflect the South Korean industry. For products named “others,” the product title of their higher classification six-digit HS code is indicated in parentheses. The numbers are rounded to the nearest 0.01.

values with the averaged value of products with the same first three-digit HS code. While I have substituted the missing PCI values, I want to highlight that the missing values are a meaningful indicator of how advanced the traded products are in this relationship. All products with missing PCI values (marked with asterisks) come last in the code order and were not included in the original list of HS 1992 codes, meaning that they were the most recently added.²¹ For example, HS 1992 code 8486 includes “machines and apps used solely for manufacture of semiconductor boules or wafers, etc.; machines and apparatus specified in note 9(c) chapter 84; parts,” which are highly specialized products that require know-how and technology. This omission, then, serves as a sign of how advanced the technology required to produce these goods are and therefore it is reasonable to surmise that these missing products are of higher PCI value. Among these highest volume products South Korea had two products in its imports and five among its exports that had missing PCI values.

In this light, I also formulated an alternative way to compare the average PCI values of Japan and South Korea with missing data. Here I substituted the missing values with the highest PCI values of the same first three digits of HS code as compared to the average of all products in the same HS code category. The average PCI value of the twenty largest export categories from South Korea to Japan became 0.32. On the other hand, the twenty largest import categories from Japan have an average PCI value of 1.02. When the missing values are substituted with the highest PCI value of the same HS first three-digit codes, the average PCI value of these twenty products becomes 1.12.

²¹ On this point I am thankful for the guidance of Growth Lab in John F. Kennedy School of Government at Harvard University, the creators of the dataset. Email correspondence.

According to the Economic Complexity Index (ECI), which measures a country's productive knowledge and overall complexity of its industries, in 2018 Japan and South Korea had scores of 2.48 and 2.14, respectively. Japan's ECI has been ranked the highest in the world since 1995 when the dataset first began. South Korea's ECI was ranked 21st in 1995, 10th in 2005, and 3rd in 2018 (Atlas of Economic Complexity database). According to an alternative dataset, Japan had an ECI of 2.25 compared with South Korea's 1.92 in 2018. Japan's ECI also remained the highest ranked in this dataset, and South Korea's rank went up from 27th in 2000 and 11th in 2010 to 5th in 2018 (OEC database).²² South Korea is rapidly catching up to Japan, but Japan has so far been able to maintain its place as the most complex economy.

Rank	HSK	HS 1992	Product	PCI	PCI Rank
1	2710124000	2710	Naphtha	-0.65	899
2	2710192020	2710	Jet fuel	-0.65	899
3	2710121000	2710	Motor spirit	-0.65	899
4	7106911000	7106	Containing by weight 99.99% or more of silver	-0.62	891
5	2710193000	2710	Gas oils	-0.65	899
6	2710192010	2710	Kerosene	-0.65	899
7	2853909000	2853*	Other	N/A	N/A
8	7326909000	7326	Other (Other articles of iron or steel)	0.99	205
9	2710195020	2710	Lubricating base oil	-0.65	899
10	8542311000	8542	Monolithic integrated circuits	1.04	184
11	8541409022	8541	Photovoltaic cells (photovoltaic cells, including solar cells, photodiodes, photocouplers and photorelays)	1.05	177
12	8480710000	8480	Injection or compression types	1.25	121
13	8431499000	8431	Other (Parts suitable for use solely or principally with the machinery of headings 8425 to 8430)	0.87	261
14	8803301000	8803	Of aeroplanes	0.48	439
15	7210491090	7210	Other (Flat-rolled products of iron or nonalloy steel, of a width of 600 mm or more, clad, plated or coated)	-0.65	899
16	8708999000	8708	Other (Parts and accessories of the motor vehicles of headings 8701 to 8705)	1.25	122
17	8542323000	8542	Multichip integrated circuits	1.04	184
18	7308909000	7308	Other (Structures (excluding prefabricated buildings of heading 9406) and parts of structures (for example, bridges and bridge sections, lock gates, towers, lattice masts, roofs,	0.45	454

²² The two databases have different values and rankings because they calculate ECI using different sources of trade data. Atlas of Economic Complexity uses the UN COMTRADE database. OEC uses more comprehensive international and national data sources that include more information such as trade data of Taiwan and Hong Kong.

			roofing frameworks, doors and windows and their frames and thresholds for doors, shutters, balustrades, pillars and columns”, of iron or steel; plates, rods, angles, shapes, sections, tubes and the like, prepared for use in structures, of iron or steel (excluding prefabricated buildings of heading 9406)		
19	2402201000	2402	Filter tip cigarettes	-0.74	931
20	8486902010	8486*	Of subheading 8486.20.1000, 8486.20.2100, 8486.20.2210, 8486.20.2310, 8486.20.2390, 8486.20.3000, 8486.20.4000, 8486.20.5110, 8486.20.5910, 8486.20.6010, 8486.20.6020, 8486.20.6090, 8486.20.7000, 8486	N/A	N/A
Average PCI value: 0.28					

Table 3.4 Product Complexity Index of twenty most exported products (by value) from South Korea to Japan in 2018 (Source: Atlas of Economic Complexity database)²³

Rank	HSK	HS 1992	Product	PCI	PCI Rank
1	8542311000	8542	Monolithic integrated circuits	1.04	184
2	7204490000	7204	Other (Ferrous waste and scrap; remelting scrap ingots of iron or steel)	-0.53	852
3	8486208410	8486	For dry-etching patterns on semiconductor materials	N/A	N/A
4	2707300000	2707	Xylol (xylenes)	0.25	537
5	3818001000	3818	Chemical elements doped for use in electronics	2.49	3
6	8541409030	8541	Charge coupled devices (CCD)	1.05	177
7	8486204000	8486*	Machines for depositing membrane or sputtering metal on semiconductor wafers	N/A	N/A
8	7208399000	7208	Other (Flat-rolled products of iron or nonalloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated)	0.56	410
9	9001200000	9001	Sheets and plates of polarising material	0.83	274
10	7326909000	7326	Other (Other articles of iron or steel)	0.99	205
11	8486902010	8486*	Of subheading 8486.20.1000, 8486.20.2100, 8486.20.2210, 8486.20.2310, 8486.20.2390, 8486.20.3000, 8486.20.4000, 8486.20.5110, 8486.20.5910, 8486.20.6010, 8486.20.6020, 8486.20.6090, 8486.20.7000, 8486	N/A	N/A
12	8486209200	8486*	Machines of coating and developing or stabilizing photoresist	N/A	N/A
13	8703401000	8703	New (Motor cars and other motor vehicles principally designed for the transport of persons (other than those of heading 8702), including station wagons and racing cars)	1.17	148
14	7208519000	7208	Other (Flat-rolled products of iron or nonalloy steel, of a width of 600 mm or more, hot-rolled, not clad, plated or coated)	0.56	410
15	3824999090	3824*	Other	N/A	N/A
16	2853909000	2853*	Other	N/A	N/A
17	9030820000	9030	For measuring or checking semiconductor wafers or devices	1.3	105

²³ As explained previously, PCI is an indicator of how diverse and sophisticated the know-how needed to produce a given product is. Products with higher PCI value require a higher level of technology and less countries hold the capacity to produce them. I indicate here both HSK codes and HS 1992 codes for each product because Atlas of Economic Complexity uses HS 1992 codes to calculate PCI values. PCI rank is scored out of 1,225 commodities and indicates where each product lies in terms of production complexity among all the products. The numbers are rounded to the nearest 0.01.

18	8708400000	8708	Gear boxes and parts thereof	1.25	122
19	2902300000	2902	Toluene	0.64	368
20	3920730000	3920	Of cellulose acetate	0.38	484
Average PCI value: 1.02					

Table 3.5 Product Complexity Index of twenty most imported products (by value) to South Korea from Japan in 2018 (Source: Atlas of Economic Complexity database)

Rank	SITC code	Product	RCA	
			Japan	S. Korea
1	728	Other machinery for particular industries, n.e.s.	3.94	2.09
2	334	Petroleum oils or bituminous minerals > 70% oil	0.33	1.77
3	776	Cathode valves & tubes	1.20	4.59
4	673	Flat-rolled prod., iron, non-alloy steel, not coated	3.44	3.41
5	874	Measuring, analysing & controlling apparatus, n.e.s.	2.41	0.93
6	582	Plates, sheets, films, foil & strip, of plastics	2.33	1.92
7	598	Miscellaneous chemical products, n.e.s.	1.96	0.88
8	778	Electrical machinery & apparatus, n.e.s.	2.18	1.47
9	772	Apparatus for electrical circuits; board, panels	1.73	1.36
10	511	Hydrocarbons, n.e.s., & halogenated, nitr. derivative	2.35	4.94
11	282	Ferrous waste, scrape; remelting ingots, iron, steel	1.98	0.24
12	699	Manufactures of base metal, n.e.s.	0.55	0.83
13	784	Parts & accessories of vehicles of 722, 781, 782, 783	2.24	1.46
14	335	Residual petroleum products, n.e.s., related mater.	1.14	1.53
15	764	Telecommunication equipment, n.e.s.; & parts, n.e.s.	0.15	0.51
16	781	Motor vehicles for the transport of persons	3.41	1.61
17	524	Other inorganic chemicals	3.66	4.86
18	575	Other plastics, in primary forms	1.31	2.30
19	884	Optical goods, n.e.s.	3	2.34
20	676	Iron & steel bars, rods, angles, shapes & sections	1.31	0.99
Average RCA value			2.03	2.00

Table 3.6 Revealed Comparative Advantage of the twenty most traded products (by value) between Japan and South Korea in 2018 (Source: WITS database)²⁴

In addition to TSI and PCI, *Table 3.6* compares RCA values of the twenty most traded products between Japan and South Korea in 2018. The average values of Japanese and South Korean RCA were 2.03 and 2.00, respectively. Similar to other indices, the two countries are very

²⁴ As explained above, RCA shows a country's comparative advantage of a given product in the global market. If country A has a high RCA value of product *a*, then A is a competitive seller of *a* in the global market and occupies a significant share of the market. The numbers are rounded to the nearest 0.01.

close to each other in terms of the level of technology and market competitiveness, but Japan was slightly more advanced than South Korea.

Domain of Loss: Qualitative Evidence

This section, so far, has presented evidence on the tightness of South Korea and Japan's overall economic relationship and the trade data showing why I situated South Korea in a domain of loss in its GVC ties with Japan. Yet, as a theoretical model using psychological variables, it is crucial to check whether the relevant actors also saw these "objective" facts and perceived South Korea to be in a more dependent position vis-à-vis Japan. Misperception is a prevalent type of human error in politics, so there are reasons to believe that policymakers could have been fundamentally misunderstanding the situation (Jervis 1976; Flynn, Nyhan, and Reifler 2017; Duelfer and Dyson 2011). Therefore, this section serves as a connecting bridge between numeric trade data and the perceptions of individuals concerning their domain. In order to accomplish this I analyze original interview data as well as other original language sources.

Historically, since the end of the Korean War, Japanese and South Korean economies have grown together. Under the pro-Japan regime of Park Chung-hee in the 1960s, South Korea in large part developed its industry using loans and technology from Japan. The following is how Professor Min Dong Joon, an expert advisor to the South Korean government on intermediate-goods competitiveness, described this relationship during an interview with the author:

“Since the 1965 Treaty on Basic Relations between the Republic of Korea and Japan, Japan's conglomerate structure has been Korean industry's basic model. [...] When South Korean industry was first starting to develop [after the end of the Korean War], the best

thing we could do was to *be integrated with the Japanese industry in a vertical way*: we took machinery from Japan and started with simple products like wigs and elementary-level parts. In developing our industry, we always followed Japan’s footsteps. All South Korean industries have some type of “original” companies that they emulated in Japan, such as automobiles, semiconductors, shipbuilding, and steel. All our industrial structures, parts, and industrial standards are perfectly synced with those of Japan. We buy from Germany and the US, too, but *more than 70% of South Korean intermediate goods are directly or indirectly connected to Japan*. [...] We have the historical and personal connections, so it’s convenient for us.”²⁵

Other experts on trade and commerce from both South Korea and Japan largely agreed with this description. In the industrial ecosystem of Northeast Asia, Japan makes the highest quality parts and materials that require the highest level of technology. South Korea then imports these intermediate goods, processes them, and exports them to other countries including China.²⁶ Japan uses South Korea as its “export base,” meaning that Japan benefits from indirectly exporting to the global market by selling its intermediate goods to South Korea.²⁷

Even before this conflict, many South Korean businesspeople, politicians, and industry experts were aware of this dependency. On the one hand, Japan and South Korea are tightly intertwined and reap mutual benefits from their interweaved economies. Abe Makoto, a Japanese expert on the South Korean high-tech industry, described the relationship in these terms:

²⁵ Min Dong Joon. Zoom interview with the author. January 20, 2022. Emphasis added by the author.

²⁶ I have asked the expert interviewees to describe the GVC relationship between the three Northeast Asian countries during my interviews. The interviewees who answered to this question are mostly from Japanese and South Korean academia but also in think tanks.

²⁷ Okuda Satoru. Zoom interview with the author. January 5, 2022.

“Especially when it comes to machinery for manufacturing high-tech devices like semiconductors and smartphones, South Korea is still very reliant on foreign imports. It has structurally been that way since the 1970s. During the era of globalization since the 2000s, it’s not that South Koreans were not worried about it at all, and there have been policies to strengthen that industry, but South Koreans were not too concerned. They thought it was fine to purchase such machinery from foreign sources.”²⁸

There were criticisms on the South Korean industry for being too dependent on Japan when the conflict first started in 2019. For example, President Moon Jae-in said: “Companies were complacent on cooperation with Japan even though they were perfectly capable of producing materials themselves (J. W. Park 2019).” Similarly, Kim Gi-sik, former president of Financial Supervisory Services commented: “We should be ashamed of ourselves and think about what we did while Samsung Electronics’ semiconductors maintained the global number-one spot for the last twenty years (I. Y. Lee 2019).” In 2013, POSCO issued a report describing South Korea as “a cormorant²⁹” and “a sandcastle” that will “scatter into a pile of sand, should Japan start a tsunami with materials and components as their weapons.” Similarly, a South Korean financial expert suggested that South Korean companies are “basically importing Japanese battery materials and assembling them” with “no choice but to stop” if Japan stops exporting them (No 2013). A comment from former Foreign Minister Yoo Myung-hwan reflects how South Korean decision-makers viewed Japan’s power over the South Korean economy: “During the 1997 Asian Financial Crisis, what ultimately pulled the plug for South Korea was Japan’s decision to pay back South

²⁸ Abe Makoto. Zoom interview with the author. December 20, 2021.

²⁹ This refers to a traditional East Asian fishing method in which fishers used birds named cormorants to fish. A fisher ties the neck of a cormorant with string and releases it to hunt for fish. When the bird tried to swallow a fish, the fisher would take its catch from its sealed throat. It is used as an analogy of a relationship in which one takes advantage of the other party by making them do the labor and indirectly benefiting from them.

Korea's short-term foreign debt. Investors in New York, London, and Hong Kong, who considered Japan as South Korea's strongest guardian, scrambled to withdraw their money from ROK (H. Lee 2019)."

However, many businesspeople refuted by arguing that the (inter)dependency is a natural form of GVC configuration in the era of globalization. The dependency is actually "a success case of division of labor and cooperation through free trade (D. Lee 2019)." In Professor Min's estimation:

"Japan has the economy of scale. These are products the Japanese people have been making from the past, and they produce just the right amount for the global market. So, if we try to make that very small amount of products for ourselves, if Dongjin Chemical does that, for example, Dongjin Chemical needs to pay an incredibly high price for it. Because of the entry barrier. From Samsung Electronics' perspective, economic feasibility trumps everything else at least during peace. We are also very used to Japanese products because we have been buying them for such a long time. We are 'addicted' to them."³⁰

Thus, South Korean actors were aware of the danger of being overly dependent on Japan and attempted to escape this position, which conversely shows that this GVC position put them in a domain of loss. As early as 2001, Seoul passed a law supporting the intermediate goods (materials and parts) industry. Professor Min describes his experience being a part of the expert committee for the law as follows:

³⁰ Min Dong Joon. Zoom interview with the author. January 20, 2022.

“When I was asked to come up with a special law on boosting the intermediate goods industry back in 2001, our biggest data point was our trade deficit with Japan. It was exactly ten billion dollars. [...] We selected around a hundred products including light emitting diodes (LED) and attempted to domestically produce them. But when you look at the result, our trade deficit with Japan didn’t decrease; instead, our exports to China increased. In terms of numbers, we were not in the red anymore, but our trade deficit with Japan was still enormous. We bought materials from Japan to make products with large profit margins and sold them. The content of the trade didn’t improve. In fact, our binding with Japan became even stronger than it was before.”³¹

In 2010, there was another attempt to promote independence in rare metal technology, in which Seoul invested 300 billion Korean won (approximately \$260 million). However, the program was plagued by numerous entry barrier related problems including technological challenges and patent-related issues. A former Samsung vice-chairman described South Korean companies to be in a “Death Valley” where they had little chance to navigate the dangers and see a product through from R&D to commercialization (Sotaro 2019).

3.3 Policy Options

This chapter so far has explained the historical background of the 2019 trade conflict between Japan and South Korea. I also delineated quantitative and qualitative evidence on what the target-state actors saw as their reference point within their GVC relationship with the sender and why they would have put South Korea in the domain of loss. Now, I turn to two ideal-typical policy

³¹ Min Dong Joon. Zoom interview with the author. January 20, 2022.

options South Korea faced in receiving economic coercion from Japan: retaliation and nonretaliation. What is important here is that the same sets of expected gains and losses were available to all the relevant actors, regardless of whether their thought processes were based on EUT or prospect theory. However, the two theories differ on the subject of how actors interpret the available data and how much weight they ought to put on each policy option. For each option, I lay out the entailed expected losses and expected gains in terms of outcome values and possibility, and discuss how prospect theory and EUT assess them differently. I then conclude this section with a short theoretical prediction of the case outcome before moving on to alternative explanations.

3.3.1 Retaliation

Seoul's first possible policy option was to retaliate instead of acquiescing or simply not reacting. For a decision-maker thinking in terms of prospect theory, this policy's main purpose would have been returning to the status quo (or the reference point); for an EUT actor, the absolute net outcome of the retaliatory policy would be what made it more compelling. Successfully using this retaliatory policy entailed two types of expected gains: Japan's withdrawal of its initial regulatory policies and domestic support. On the other hand, failing to return to the reference point after using a retaliatory policy carried four types of expected losses: conflict escalation, complication of its relationship with the US, negative shifts of public opinion, and militarization of the conflict.

Expected Gains

The first expected gain from retaliation was successfully forcing Japan to change its behavior, making Tokyo withdraw its initial coercive policies. This was an expected outcome with an extremely high value, given the critical importance of less-substitutable Japanese GVC inputs for the South Korean industries, and a medium possibility.³² Most importantly, prospect theory and EUT allocate different amounts of value to this expected gain. According to prospect theory's framework, the value of stabilizing the GVCs shared with Japan is not merely a gain but *regaining what has been lost from the reference point*. Therefore, because losses loom larger than comparable gains, this particular expected outcome carries even more weight than, for example, being newly added to Japan's white list might. For a prospect theory actor, this extra value of restoring an economic loss (and other political gains that I will explain shortly) makes retaliation a policy that can bring about an additional advance beyond the reference point. Should the retaliation succeed, Seoul will be able to achieve political and psychological utility in addition to normalizing the volume of Japanese GVC imports and coercing Tokyo to withdraw its regulations to the pre-conflict level. However, EUT assumes that comparable gains and losses carry the same weight and, therefore, there will be no additional cognitive value added to regaining Japan's GVC inputs. The final absolute welfare is all that matters for an EUT agent.

As explained above, Japan and South Korea were tightly connected through GVC trades. Japan was the primary exporter of 322 goods and materials South Korea imports, including 107 chemical-engineering items, 60 kinds of machinery and electronics, 58 base metals products, and

³² South Korean companies were ultimately able to substitute a large part of these intermediate goods and materials that were impacted by this conflict, and thus the trade dispute did not damage their economic stability as much as they initially anticipated. However, as mentioned previously, this dissertation examines the timeframe of the target's *initial response* to external coercion and bases its policymakers' outcome calculation on the circumstances the actors were in *within that timeframe*. For this reason, I refrain from making any retrospective analysis and strictly focus on the thoughts and emotions of individuals when they first encountered the sender's economic coercion. However, the last part of this chapter on the empirical outcomes of this dispute will also include the long-term results of the target's decision and the sender's reaction to it.

34 types of optical and precision instruments, totaling \$8.9 billion (KCTDI database). There was asymmetry in dependency within the shared GVCs in several cases. For example, while South Korea imported 100% of its semiconductor wafers from Japan, this constituted only 3% of Japan's total exports of the product. Similarly, South Korea imports 83.5% of its semiconductor blank masks and 75% of its display panel filters from Japan, representing only 7% and 4% of Japan's total export of those items (D. Lee 2019).

HS section title		Imports from Japan* (A)	Total imports* (B)	A/B (%)	Number of six-digit products
5	Mineral products	10.9	11.2	97.3	6
6	Products of the chemical or allied industries	5.4	5.5	98.4	14
7	Plastic and articles thereof; rubber and articles thereof	5.1	5.3	96.2	7
11	Textile and textile articles	0.05	0.05	99.6	1
13	Articles of stone, plaster, cement, asbestos, mica or similar materials; ceramic products; glass and glassware	2.3	2.3	97.5	2
15	Base metals and articles of base metals	2.0	2.2	92.1	10
16	Machinery and mechanical appliances; electric equipment; parts thereof; sound recorders and reproducers; television image and sound recorders and reproducers, and parts and accessories of such articles	1.9	2.1	91.7	5
17	Vehicles, aircraft, vessels and associated transport equipment	0.1	0.1	97.7	2
18	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; clocks and watches; musical instruments; parts and accessories thereof	0.04	0.04	94.2	1
Total		27.8	28.8	96.5	48

Table 3.7 Products that South Korea relies on Japan for more than 90% of its total imports, 2018

(Source: HRI 2019)

* In \$100 million

Photoresist		Hydrogen fluoride		Fluorinated polyimide	
South Korean imports					
Japan	91.9%	China	46.3%	Japan	93.7%
USA	7.4%	Japan	43.9%	Taiwan	3.9%
Belgium	0.4%	Taiwan	9.7%	China	1.4%
Others	0.3%	Others	0.1%	Others	1.0%

Japanese exports					
USA	21.8%	South Korea	85.9%	China	36.3%
Taiwan	17.9%	Taiwan	7.8%	South Korea	22.5%
China	16.7%	USA	3.3%	Taiwan	19.5%
South Korea	11.6%	China	2.6%	Hong Kong	7.5%

Table 3.8 South Korea and Japan’s imports and exports of the three regulated products (Source: (Joo-wan Lee 2019))

Regaining its status on the Japanese white list also potentially guaranteed the South Korean industries more stable access to critical materials. Being excluded from the white list did not necessarily mean that Japan would immediately stop exporting critical goods —the system only facilitates exporting some of the key strategic materials from having to go through inspection and approval processes every time. However, the exclusions gave Tokyo more power to deny South Korean firms the ability to purchase these materials and undermined the fundamental trust between the two countries. Cho and Lim’s (2019) report demonstrates how important it was for South Korea to be on Japan’s white list by comparing four trade dispute scenarios. First, if Japan excludes South Korea from its white list but does not cause any harm to production processes, GDP loss for both countries will be insignificant: 0.07 ~ 0.13% and 0.03 ~ 0.06% decrease for South Korea and Japan, respectively. In the second scenario where South Korea excludes Japan from its white list and regulates exports, it will damage the South Korean industry more than Japan’s. The authors explain that this discrepancy stems from the relatively larger inter-industry effects of Japanese exports than South Korea's. Japan also has more industrial capacity to replace South Korean products with imports from other countries or domestic products. The third scenario assumes that both South Korea and Japan exclude each other from their white lists and regulate exports to each other. In this case, South Korean and Japanese GDP will suffer a 0.25 ~ 0.46% and 0.05 ~0.09% decrease, respectively. Lastly, when Japan excludes South Korea from its white list and 32% of the South Korean ICT industry experiences disruption in their production, South Korea’s GDP

will decrease as much as 6.25%. This ultimately underscores how far, for Seoul, whitelist exclusion represented a negative deviation from the status quo.

In terms of the probability of the retaliation policy succeeding, experts were divided on whether it would be feasible for Seoul to cause Japan enough damage to make Tokyo withdraw its initial coercive measures. On the one hand, Japan imported 322 types of goods and materials primarily from South Korea including iron and steel, chemical engineering goods, and machinery and electronics (KCTDI database). Among these, for example, Japan was entirely dependent on South Korean nitrate and nitrate-sulfate, while Japan represented only 14% of South Korea's total exports of the goods. On the other hand, the products Japan relied primarily on South Korea for were relatively replaceable compared to the products South Korea needs from Japan. For example, in the case of nitrate and nitrate-sulfate, Japan could easily find substitutes as these are petroleum refinery byproducts. Similarly, while Japan was dependent on South Korea's iron and steel exports, Japan itself made many high-quality iron and steel products. Experts predicted that Seoul's regulations would almost certainly invite Japan's additional retaliation. Moreover, South Korea, Japan, and China are bitter rivals in the global iron and steel industry; regulating trade could directly harm South Korean companies (Kyung-yup Cho and Lim 2019).

Second, Seoul could also expect to gain domestic support by standing up to its long-time rival. This was an expected outcome with a medium value and a high possibility. With historical issues such as "comfort women"³³ and forced labor during the Japanese occupation of Korea and territorial disputes such as the tension over Liancourt Rocks, Japan and South Korea have

³³ Whether to call them "comfort women," "sex slaves," or "women drafted for military sexual slavery by Japan" is a controversy. Whereas the term "comfort women" is the most widely used, it may imply voluntariness and willingness, which is not historically accurate in that the victims were the illegality and forcefully kidnapped in most cases. On the other hand, although the term "sex slavery" best reflects the reality, some victims were opposed to being called "slaves."

persistently had political tension. South Korean and Japanese public opinion about the other state has fluctuated over time, depending on what major events were going on at the time of the surveys, but the overall trend has been consistently negative. South Koreans' opinion of Japan was relatively positive in 2002 when South Korea and Japan cohosted the World Cup and in the aftermath of the 2011 earthquake (*Figure 3.14*). In another survey held in both South Korea and Japan, there has been a gradual increase in the percentage of people with positive opinions since 2015. However, in both surveys, the proportion of respondents who had positive views on Japan never exceeded those with negative views. Japan's opinion of South Korea shows a similar pattern in which it is always more negative than positive (*Figure 3.15*).

There was a high possibility of winning a considerable level of domestic support by choosing to retaliate. The Ministry of Trade, Industry, and Energy (MTIE) released a report claiming that many within the South Korean public favored a strong reaction and suggested that South Korean industries must achieve technological independence and find alternative intermediate goods providers both domestically and abroad. They also showed strong support for boycotting Japanese products in general as a way to bolster the legitimacy of the Supreme Court decision (MTIE 2020). Therefore, it is reasonable to assume that South Korean policymakers could have anticipated domestic support once they decided to demonstrate a strong stance against Japan and resolve.

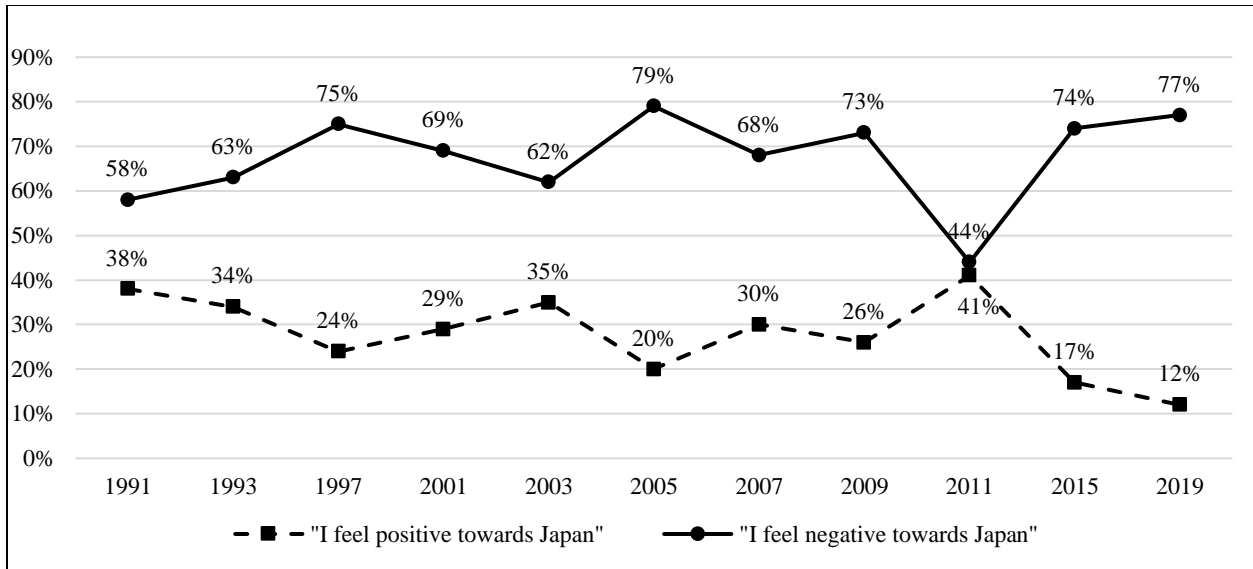


Figure 3.13 South Korean public opinion on sentiment towards Japan, 1991-2019 (Source: Gallup Korea 2019c)

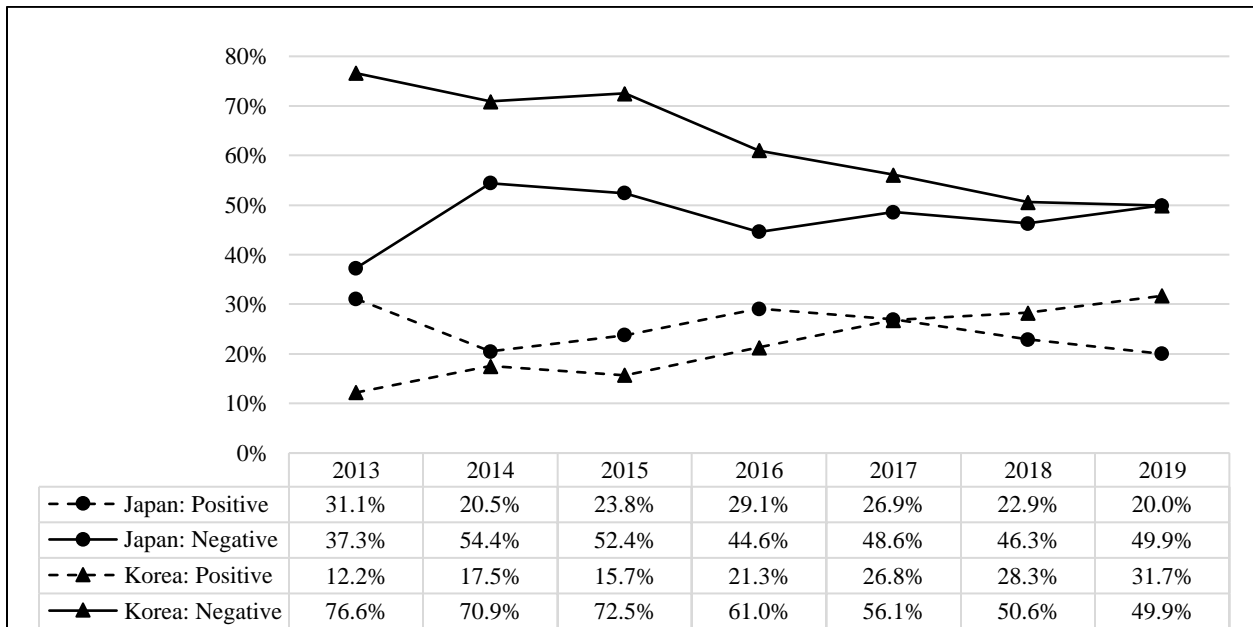


Figure 3.14 South Korean and Japanese public opinion on sentiment towards each other, 2013-2019 (Source: East Asia Institute and The Genron NPO 2019)

Expected Losses

I suggest that retaliating and failing to overturn Japan's initial coercive policies carried four possible expected losses. First, failing to force Tokyo to withdraw its regulatory policies entailed potential conflict escalation and, by extension, further losing access to critical GVC inputs. This is an expected loss of extremely high value and medium to high possibility. As mentioned above, despite the interdependent nature of their relationship, Japan's GVC inputs were less substitutable than those of South Korea. Therefore, extending the trade dispute and further losing Japanese inputs would be a significant loss for the South Korean industries.

In a study released immediately following the initial regulatory policies, Cho (2019) calculated that South Korea would suffer GDP losses of 4.7% on average. If it decided to impose retaliatory measures against Japan, it would be able to decrease Japan's GDP by 1.2% but would also incur an extra GDP loss of 1.2% for itself. More importantly, as Seoul's retaliatory measure becomes stronger, Japan's GDP loss will decrease because Japan can substitute South Korean firms (*Table 3.9*). Once South Korean firms exporting to Japan lose their monopolized profits within the shared GVCs, Japan's domestic firms will be able to enter the market and substitute the South Korean rivals. In addition, China will be the biggest beneficiary of this conflict, for instance, enjoying a 2.1% production increase in the electronic automobile industry in which South Korea and Japan dominated.

Semiconductor shortage	Scenario 1		Scenario 2		Extra losses from retaliation (%)	
	Japan's trade regulation (%)		South Korea's retaliation (%)			
	S. Korea	Japan	S. Korea	Japan	S. Korea	Japan
15%	-0.12	-0.04	-0.89	-2.07	-0.78	-2.03
30%	-2.15	-0.04	-3.09	-1.75	-0.94	-1.72
45%	-4.24	-0.04	-5.37	-1.33	-1.13	-1.30

60%	-6.20	-0.04	-7.53	-0.85	-1.33	-0.81
75%	-8.01	-0.05	-9.56	-0.31	-1.55	-0.26
80%	-8.58	-0.06	-10.20	-0.12	-1.63	-0.07
Average	-4.47	-0.04	-5.64	-1.21	-1.17	-1.16

Table 3.9 Changes in GDP resulting from a trade conflict between South Korea and Japan (Source: Cho 2019)

The second expected loss came from Seoul risking its relations with Washington by exacerbating its animosity with Japan. Expected outcomes of this diplomatic dimension were relatively unclear, but it is plausible to surmise that negative results were of greater consequences and likely. Some anticipated a best-case scenario, in which Washington takes Seoul’s side and persuades Tokyo to withdraw its coercive politics. For instance, in response to Tokyo’s claims about Seoul’s illegal exports of strategic materials to North Korea, the US State Department officially supported Seoul’s rebuttal saying that the US and South Korea are closely cooperating on sanctions against Pyongyang (S. Park 2019).

In contrast, some others expressed doubts about Washington’s willingness to play a mediatory role, interpreting President Trump’s comments such as stating that he will be involved “maybe if they would *both*” want him to and that he wished Tokyo and Seoul would be able to solve the problem by themselves (Baek, 2019, emphasis added). Many experts predicted that Seoul’s retaliation and further escalation of the conflict would upset Washington and yield long-term negative effects. Economically, many American companies and politicians expressed concerns over the possible disruption of semiconductor GVCs and China benefitting from the trade war between these two ICT giants (Choe 2019). Politically, Washington has long pushed the two East Asian countries to cooperate and serve as its security and economic bulwarks in the Pacific. Especially since the US started viewing China as a threat to balance against, the role of Tokyo and Seoul as allies and pivots of the Asia Pacific region’s security has significantly increased. Despite

these efforts, the Japan-ROK relationship has not improved, much to the US's chagrin (Glosserman and Snyder 2015). This historical context makes it reasonable for South Korean policymakers to expect longer-term disadvantages or penalties from the US once their retaliatory attempts fail and the conflict escalates.

Third, failing in its countermeasure against Japan entailed losing domestic support. This is an expected loss of medium value and high possibility. As previously mentioned, the data shows that the public opinion of South Korea and Japan on each other has been largely unfavorable (*Figures 3.14 and 3.15*). While some South Koreans supported the government's firm stance against Japan, others called for a more pragmatic approach. They were concerned about the rising anti-Japan sentiment and the South Korean government reacting emotionally to these export regulations. In addition, because of the importance of Japanese influence in the South Korean economy, they argued that Seoul should acquiesce even if that means "bowing down" to Tokyo (MTIE 2020). Since the public opinion did not show unanimous support for Seoul's retaliation against Japan, it would be hard for the government to receive support from either side if the retaliatory policies failed.

As a final expected loss, the conflict could have developed into a military dispute. Should this issue develop into partial or full-blown warfare, this is an outcome with extremely high value but also an extremely low possibility. Even if not a full-blown one, an armed clash between the two countries would have grave consequences, although it is improbable to happen. East Asia has been relatively peaceful since the end of the Cold War, but military action is always lurking in interstate relations. A military dispute immediately preceding the trade conflict in December 2018 involving a South Korean naval vessel and Japanese military aircraft likely made this possibility more salient. Even before this clash, South Korea has been sensitive about Japan's strengthening

of its Self-Defense Forces and its increased defense expenditures. In 2013, when Tokyo suggested it might remilitarize, many South Korean politicians, including then Democratic party leader Han-gil Kim, denounced it saying: “Japanese remilitarization must not be permitted under any circumstances (YTN 2013).” Moreover, in a 2015 public opinion survey, 42.9% and 43.2% of South Korean respondents expressed “concern” and “extreme concern” over Japanese remilitarization, respectively (M. Park 2015). Similarly, in a 2016 survey, 37.7% of South Korean respondents thought that a militarized conflict with Japan will happen in the future while only 8.1% of the Japanese respondents answered ‘yes’ to the same question (EAI and Genron NPO 2017).

3.3.2 Nonretaliation

In contrast, Seoul also had the option of not retaliating, which encompasses policies ranging from acquiescing to simply not responding to Japan’s coercive policies. The nonretaliatory policy also entailed the same sets of expected losses and gains whose outcome values prospect theory and EUT measure differently. A failing nonretaliatory policy involved two expected losses: the continuation of Japan’s regulatory policies and negative shifts of public opinion. A successful nonretaliatory policy entailed an expected gain of appeasing Tokyo to change its mind and withdraw its initial regulatory policies and winning domestic support.

Expected Losses

First, if the nonretaliation appeasement policy fails, South Korean policymakers risked Japan maintaining its export regulations or even expanding them. This expected loss was of extremely high value with a medium-level possibility. As explained above, when Japan first announced its

plans to regulate its exports to South Korea, experts in both South Korea and Japan were greatly concerned over this policy's economic and political effects. The three regulated materials (fluorinated polyimides, photoresists, and hydrogen fluoride) were critical to South Korean key industries. Moreover, being excluded from Japan's white list meant that Tokyo had the power to regulate the export of any critical materials on the list, opening up the possibility of even further export controls. South Korean leaders feared that continued exclusion would let Japan arbitrarily limit the export of critical materials using its superior strategic position in shared GVCs. The South Korean Finance Ministry described this as South Korea's "structural vulnerability that threatens national security and manufacturing competitiveness (M. J. Lee, Kim, and Kim 2019)."

Whether Tokyo would be willing to withdraw its coercive measures as a result of Seoul's nonretaliation was unclear. Nonretaliation was unlikely to normalize the relationship independently without resolving the underlying source of conflict, but the most imminent matter was stabilizing the GVCs shared with Japan. Even if the trade volume were to return to the pre-conflict level in the long term, compared to it happening as an immediate reaction to Seoul's retaliation, it was likely that waiting for a resolution would take longer and cause more damage in the meantime. In terms of possibility, the likelihood of Japan voluntarily withdrawing its regulations was medium to low. Although the South Korean economy would suffer to a much greater extent, given the degree of interdependence, the Japanese economy could not avoid some collateral damage. This speculation made some experts think that Japan would soon withdraw its regulations rather than further increasing pressure. During interviews, a number of experts claimed that many personnel from Japanese companies secretly visited their trading partners in South Korea to express their concerns and discuss potential solutions. For example, Kim Jun Dong, former spokesperson and Director General of MTIE, said the following:

“From the perspective of Japanese business, they were not happy with their government’s decision, either. In fact, a lot of them came to South Korea in an extremely secretive manner and complained about the whole situation.”³⁴

Professor Min also made the following comment on the industrial relationship between Japan and South Korea:

“For these small to medium sized Japanese companies that export intermediate goods to South Korea, Taiwan and South Korea are pretty much the only countries that are capable of buying from them. The materials needed for semiconductors are of extremely high technology. [...] If these companies can’t make what Samsung Electronics demands of them, they can’t survive. South Korea’s ‘buying power’ and Japan’s ‘selling power’ are now almost similar.”³⁵

While there were reasons to believe that a nonretaliation policy might change Tokyo’s decision, some others were doubtful. For instance, many Japanese politicians in LDP openly argued for even stronger punishment for Seoul.³⁶ Japanese expert Abe Makoto described the political situation in Japan as follows:

“The Japanese government thought that South Korea would never be able to catch up with Japan. Private companies don’t think that way. Because South Korean companies try very hard, if Japanese companies don’t do anything, South Korea will catch up. Despite this anxiety in the private sector, politicians are unaware of this reality. Even people in METI.

³⁴ Kim Jun Dong. Zoom interview with the author. January 18, 2022.

³⁵ Min Dong Joon. Zoom interview with the author. January 20, 2022.

³⁶ Okuda Satoru. Zoom interview with the author. January 5, 2022.

They only remember the past in which Japan was doing very well. The memory of South Korea being a small economy is very strong for them.”³⁷

In the private sector, Japanese firms were unwilling to openly express discontent even though there was no compensation from the government regarding the economic losses from this conflict. Big companies sued by forced labor victims were worried about losing their assets in South Korea, and smaller companies exporting to South Korea were afraid of Japan’s domestic public opinion.³⁸

Second, if Seoul decided to lay low instead of retaliating and failed to overturn Japan’s coercive policies, it would face a significant loss of domestic support. This was an expected loss with medium to high value and high possibility. While the aforementioned expected losses in retaliating would have entailed serious consequences, not showing resolve against the long-time rival and, in addition, eventually failing to appease Japan will result in even more criticism from both sides of the South Korean public. If the export regulations continued or expanded because Seoul did not stand firm, citizens who originally supported a nonretaliatory option might grow disillusioned because of the economic consequences. More importantly, the government will suffer even harsher criticism from those who originally supported retaliatory policies because the politicians not only failed to regain these economic benefits, but also lost face to their historical rival.

Expected Gains

³⁷ Abe Makoto. Zoom interview with the author. December 20, 2021. Emphasis added.

³⁸ Okuda Satoru. Zoom interview with the author. January 5, 2022, and Abe Makoto. Zoom interview with the author. December 20, 2021.

First, a successful nonretaliation policy would result in Japan overturning its initial coercive decisions, letting South Korea regain Japanese GVC inputs. This expected gain had an extremely large value and low to medium level of possibility. As previously explained, South Korean companies were highly reliant on Japanese intermediate goods and materials. Therefore, regaining what South Korea was denied during the conflict carried great value for its industries. Some experts anticipated that Japan might withdraw its regulations since Japanese industries were suffering collateral damage, but most remained pessimistic (S. Lee 2019; Y. Seo 2019; Hankyora 2019). For instance, after former South Korean President Lee Myung-bak visited Liancourt Rocks in 2012, a disputed territory between South Korea and Japan, the total trade volume between the two fell and has not recovered (*Figure 3.11*).

Second, if Seoul did not retaliate and Tokyo withdrew its coercive policies, South Korean leaders would be able to gain domestic support. This is of low to medium value and medium to high possibility because of how divided the public opinion was. Judging from the negatively skewed public opinion trend (*Figure 3.14*) and the nationwide boycott against Japanese products that immediately followed the initial coercion, it is reasonable for Seoul to expect domestic criticisms for not standing up even if doing so successfully appeases Tokyo. For instance, in a Gallup survey taken a week after Tokyo's announcement on regulating exports of the three products, 61% of the respondents thought that the Japanese government was at fault, while 17% and 13% blamed the South Korean government and both governments, respectively. Moreover, 67% of the respondents expressed their willingness to participate in a boycott movement. To the questions asking why they positively and negatively evaluate the president's performance, 22% and 10% answered 'good at diplomacy' and 'problems with diplomacy,' respectively, both of which the numbers showed the widest gap from the previous week's survey (Gallup Korea 2019c).

Nevertheless, this nonretaliation policy could have garnered support from those who were against escalating the conflict for economic purposes.

3.3.3 Theoretical Expectations of the Case Outcomes

Prospect Theory

Table 3.10 summarizes the expected outcomes of the retaliation and nonretaliation policy options for the target state in the Japan-South Korea trade conflict case. Here, I define retaliation as the risk-seeking option and nonretaliation as the risk-averse option because the difference between the worst and best outcomes is wider in the retaliatory policy (McDermott 2001). Taken together the prospect of Japan’s GVC inputs continuing to shrink, the US-South Korea relationship deteriorating, the conflict militarizing, and the potential loss of domestic support all entail more expected losses than nonretaliation. Similarly, Japan withdrawing its initial regulations in a shorter timeframe and the possible gains in domestic support for standing up to Japan carry more value than the expected gains from nonretaliation. Below is an illustration of the hierarchy of the policy options in the Japan-South Korea case:

Retaliation success: Japan coerced into immediately withdrawing its regulations (Best)

Nonretaliation success: Appeasing Japan in the long term (Good)

Nonretaliation failure: Extended loss of Japanese GVC inputs (Bad)

Retaliation failure: Conflict escalation (Worst)

	Retaliation (risk-seeking)	Nonretaliation (risk-averse)
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Expected losses	1. Intensified economic sanctions 2. Relationship with the US 3. Militarization of conflict 4. Negative shifts of public opinion <i>(Extremely high cost)</i>	1. Continued economic coercion 2. Negative shifts of public opinion <i>(High cost)</i>
Expected gains	1. Japan withdrawing regulations 2. Positive shifts of public opinion <i>(Extremely high value)</i>	1. Eventual conflict de-escalation 2. Positive shifts of public opinion <i>(High value)</i>

Table 3.10 Summary of the policy outcomes in the Japan-South Korea trade dispute case

Among the four hypotheses I have suggested in the previous chapter, this chapter so far has already discussed *H1* and *H2*. First, in assessing their relationship with the sender, the target’s policymakers will use the pre-conflict GVC relationship as a reference point (*H1*). For example, the South Korean decision-makers comments on the situation regularly compare their pre- and post-coercion situation. This is in direct contrast with EUT in which the actors only focus on the absolute outcomes of the given policy options without such a concern for the status quo. Second, using a reference point, South Korean policymakers facing the prospect of Japanese coercion will position themselves in a domain of loss (*H2*). South Korean actors will frequently point out how difficult or even impossible it is to substitute Japanese inputs within their industries.

In addition, I expect to see two patterns of target behavior as the outcome of this economic coercion. First, because the target is in a domain of loss in this case, we should be able to observe a risk-seeking behavior (*H3*). We would expect the South Korean government to employ retaliatory policies, such as imposing reciprocal export regulations to Japan, officially taking the case to the WTO, or actively supporting their domestic businesses at the government level. In acting so, policymakers will show hope to avoid larger losses by showing resolve.

Moreover, in assessing different policy options, a loss from the status quo will loom larger than a comparable gain (*H4*). Therefore, South Korean policymakers and experts will pay more attention to regaining what they have lost. Regaining Japanese GVC inputs and stabilizing the GVC production will carry more value in the eyes of Seoul than the potential risks of retaliating.

EUT

If EUT were to provide a better explanation of economic coercion outcomes than prospect theory, then we should expect to see three patterns of behavior from the target state. First, in assessing their relationship with the sender, the target policymakers will not have a reference point. Instead, they will focus on the final absolute welfare independent from their initial standing. In the Japan-South Korea trade conflict, it means that the target actors will be more future-oriented, focusing more on what the different policy options will bring in the future as a result of their decisions. They will be less preoccupied with what they have lost because of the conflict.

Second, decision-makers will perceive losses and gains of a comparable amount to be of the same value in assessing different policy outcomes. Regaining Japan's GVC inputs and stabilizing the GVC relationship between the two countries will not carry any extra value, compared to, for instance, negotiating a new trade deal of the same volume. South Korean decision-makers will not put any extra weight on regaining Japan's GVC contribution and will be, theoretically, more concerned about the risks entailed in conflict escalation.

Third, most importantly, when the target and sender share thick GVCs, meaning that their volume of GVC trade is very high, target actors will show predominately risk-averse behavior against the sender's coercive policy. This risk-averse attitude will result in a nonretaliatory policy

that has a narrower gap between the outcomes of policy success and failure. South Korean policymakers and experts will express their fear of larger losses in the future that the retaliation option entails, instead of arguing to lay low.

Targeted Sanctions Hypothesis

In understanding which economic sanction policies are more likely to succeed than others, some scholars examine the specific strategy of economic coercion. Among the different characteristics of coercive strategies, I test whether the targeted sanction (or smart sanction) hypothesis (Gordon 2011; Lucena Carneiro and Apolinário 2016) applies to this case study. As previously mentioned, the economic sanctions literature almost entirely focuses on coercion against “rogue states” which is different from what I try to explain in this dissertation. However, I apply the broader logics behind this hypothesis to this conflict between Japan and South Korea.

Tokyo’s economic coercion against Seoul was very narrowly targeted on GVCs and, more specifically, GVCs of South Korea’s key industries such as semiconductors. It was a deliberate strategy of the political elites in Japan to regulate the three materials that Japan initially regulated and exclude South Korea from its white list. As mentioned earlier in this chapter, Japanese politicians had a list of policy options early as January. Among the ten possible strategies that also included policies with broader impacts such as “add tariffs on Korean products,” “suspension of provision of materials centered on hydrogen fluoride from Japan” was perhaps the most narrowly targeted tactic.³⁹ Japanese industries also suffered collateral damage, but many were aware of the

³⁹ Okuda Satoru. Zoom interview with the author. January 5, 2022. See *footnote 18* for the full list of possible policies suggested by LDP.

asymmetric GVC relationship between the two trading partners. A Japanese businessperson commented: “Japanese manufacturers are roughly two generations ahead (of South Korean manufacturers). [...] It would be difficult for South Korean rivals to catch up in a short time.” Another businessperson made a similar comment: “There are overseas materials firms that provide similar products to what we make, but when you look at the products used in South Korea, you see a large market share for Japanese firms. That is because Japanese firms have an edge in supplying good and stable quality products and an established support system (Tsukumori 2019).”

Therefore, if the logic behind targeted sanctions’ superior effectiveness lies in its ability to inflict more pain upon the target’s decision-making elites, Tokyo’s narrow focus on GVCs should yield the intended result. The import and export statistics of the regulated materials show that the sanctioning strategy was indeed carefully calculated to target South Korean industries where it hurts the most (*Table 3.8*). The experts I have interviewed also agreed that this was a highly strategic decision made by Japan which “had a perfect understanding of the Japan-South Korea trade relationship as a shared ecosystem.”⁴⁰ In fact, according to a South Korean news report, “people from the Japanese government went around asking ‘What would hurt the South Korean government the most? Where would it hurt the most for the South Korean economy?’ around May of 2019 (JTBC, 2019).”

Political Instability Hypothesis

Some studies pay attention to how domestic instability can influence a target state’s reaction to economic sanctions. The general argument of this literature is that political elites use conflict with

⁴⁰ Min Dong Joon. Zoom interview with the author. January 20, 2022.

other countries to distract people's attention from adverse domestic events. Counter-sanction will create a rally 'round the flag effect where domestic audiences show stronger support for their leadership and fight against unjust foreign oppression (Derouen 2000; Peksen and Jeong 2021; Whang 2011). As in the case of sanctioning strategy hypothesis, the political instability hypothesis focuses on sanctions against "rogue states." Accordingly, I will adopt the theoretical logic behind how domestic instability can influence political decision-makers' reactions to external pressure and adjust this to explain my variables of interest.

As for the South Korean case, in the second quarter of 2019 immediately preceding the Japanese regulations, the Moon administration's approval rate was 45% (*Table 3.12*). Whether the public opinion was negative enough for Seoul to use this conflict to divert people's attention is ambiguous. On the one hand, 45% was a much lower rate compared to when he first started his presidency (81%). Nevertheless, it was also the second highest approval rate in the second quarter of the third year of presidency among all presidents since 1988 (Gallup Korea 2019c). When asked why they negatively evaluated President Moon's governance, respondents' top three answers were "deterioration of the economy and public welfare (44%)," "an excessive pro-North Korea attitude (13%)," and "problems with the North Korean nuclear weapons program and security (8%)." Indeed, this was the *détente* period between the US and North Korea during which a series of summits took place. The top three answers to why the respondents positively evaluated President Moon's governance reflect people's support of this atmosphere: "good diplomacy (20%)," "improved relationship with North Korea (16%)," "he tries the best he can (8%) (Gallup Korea 2019b)."

Some of the big events that might have influenced the domestic political situation at the time include but are not limited to: the escalation of the US-China trade war, the Club Burning

Sun scandal⁴¹, the Washington-Pyongyang summit in Hanoi (February 27~28), the Washington-Seoul summit (April 11), China-South Korea summit (June 27), and Washington-Pyongyang-Seoul Panmunjom summit (June 30). Although some South Koreans were unhappy with the government’s appeasement policies toward North Korea, as shown in the survey results, there was no salient threat to the regime that would have motivated Seoul to divert people’s attention. Therefore, according to the political instability hypothesis, the South Korean government is less likely to retaliate and risk escalating the conflict.

Below is a simplified summarization of the theoretical predictions of the four competing theories:

Theory	Independent Variable	Outcome Prediction
GVC Prospect Theory	Domain of loss based on GVC relationship	Retaliation
Expected Utility Theory	Calculation based on final outcomes	Nonretaliation
Targeted Sanctions Hypothesis	Sanction strategy	Nonretaliation
Political Instability Hypothesis	Domestic political situation	Nonretaliation

Table 3.11 Simple summarization of the four competing theories' independent variables and outcome predictions

⁴¹ Club Burning Sun incident was a nationwide scandal involving celebrities, prosecutors, police force, and politicians that exposed widespread and deep-rooted illegal activities among the elites including bribery and sex trafficking. The first media report on this issue was released in January of 2019 and made a significant impact on South Korean citizens’ trust in the government as an institution. However, it is hard to determine whether it had a direct impact on the president’s approval rates, given the clear connection of the prosecution and law enforcement to this scandal. For instance, at the time of the scandal, in a public opinion survey asking why they supported the Moon administration’s governance, 7% of the respondents answered: “willingness to clear up the deep-rooted evil in the society.” In contrast, there was no mention of the scandal in their reasons for being critical of the government (Gallup Korea 2019a).

Name	Year	1				2				3				4				5			
	Quarter	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
Roh Taewoo (1988 - 1993)	Positive	29	57	53	41	45	28	26	-	28	18	28	25	12	-	-	15	-	12	-	-
	Negative	46	16	25	27	25	41	45	-	40	62	55	54	40	-	-	41	-	56	-	-
Kim Young Sam (1993 - 1998)	Positive	71	83	83	59	55	55	44	36	37	28	29	32	41	41	34	28	14	7	8	6
	Negative	7	4	6	18	24	21	25	33	34	41	45	39	33	37	40	47	65	74	78	74
Kim Dae Jung (1998 - 2003)	Positive	71	62	56	63	60	52	46	50	49	38	54	30	27	29	28	31	33	26	28	24
	Negative	7	11	17	14	16	22	29	24	20	26	18	51	55	52	49	49	41	53	52	56
Roh Moo Hyun (2003 - 2008)	Positive	60	40	29	22	25	34	23	27	33	34	28	23	27	20	16	12	16	24	27	27
	Negative	19	41	53	62	57	46	60	57	55	53	61	67	63	70	74	79	78	66	64	62
Lee Myung-bak (2008-2013)	Positive	52	21	24	32	34	27	36	47	44	49	44	47	43	39	37	32	25	25	23	24
	Negative	29	69	65	55	55	55	55	45	45	41	43	41	49	54	55	60	62	58	59	63
Park Geun-hye (2013-2017)	Positive	42	51	60	54	55	50	44	44	34	36	40	43	40	33	32	12	<i>Impeached</i>			
	Negative	23	23	21	33	34	39	46	46	56	54	51	46	49	53	55	80				
Moon Jae In (2017 - 2022)	Positive	81	75	73	68	75	60	55	55	45	45	44	46	61	45	42	38	35	39	37	
	Negative	11	17	19	23	15	30	36	36	45	46	48	46	30	45	48	53	56	53	56	

Table 3.12 Quarterly public approval rates of the government in South Korea since 1988, in percentage (Source: Gallup Korea 2021)⁴²

⁴² South Korea has a single-term, five-year presidency.

3.4 Empirical Outcomes

This chapter has so far provided a historical background of the 2019 Japan-South Korea trade conflict and explained why South Korean decision-makers situated themselves in a domain of loss vis-à-vis Japan in this conflict. I also applied prospect theory, EUT, targeted sanction hypothesis, and political instability hypothesis to make theoretical predictions of what the coercive policy's outcomes should look like for each theory. In this section, I illustrate the empirical outcomes and use the within-case congruence method by matching them with the four theoretical predictions summarized in *Table 11*.

Overall, Seoul demonstrated a set of behaviors that more closely resembled those prospect theory anticipated, especially given that it was the only theory that predicted any kind of retaliatory policy from the target. Even before employing concrete policies, President Moon and other government officials in South Korea responded swiftly and forcefully, demonstrating their resolve and willingness to retaliate. Only a few hours after Tokyo's initial announcement of the regulatory policy on July 1, Minister of MTIE Sung Yoon-mo openly denounced Japan: "We express our deepest regret. We will be taking all the necessary measures relying on both international and domestic laws, including filing a lawsuit with the WTO (JTBC 2019)." On the same day, Vice Minister of the Ministry of Foreign Affairs (MOFA) Cho Se-young summoned Nagamye Yasumasa, the Japanese ambassador to South Korea, to protest Tokyo's policy (Jungjin Lee and Hyun 2019). On July 15, President Moon made the following comment during a cabinet meeting:

"Japan's unprecedented connection of historical issues with economic issues this time is a very unwise move that goes against the history of the development of bilateral relations. I warn you that in the end it will do more damage to the Japanese economy. [...] I cannot help but highlight that the Japanese government's measures started with export restrictions

on semiconductor materials, where the South Korean economy's strongest competitiveness lies. This is the same as blocking the growth of the South Korean economy at a time when it is trying to achieve a higher level of growth. If Japan's intentions are there, it will never succeed. (Y. Park 2019).”

When Tokyo excluded South Korea from its white list on August 2, only a few hours after Tokyo's announcement President Moon made another official statement during an emergency meeting. He used even more aggressive expressions during this speech that almost resemble the language used to declare a militarized war. According to the Japanese experts I have interviewed, this speech made the headlines of the Japanese media and shocked many Japanese people. Following is an excerpt of the statement:

“Since it has become clear that the Japanese government is responsible for aggravating the situation by ignoring the diplomatic efforts of our government and the international community, *I warn you that the Japanese government is entirely responsible for what will happen in the future.* [...] *But we will never lose to Japan again. We overcame many adversities and got to where we are today.* [...] Furthermore, we will use this as *an opportunity to not be swayed by technological hegemony again* [...]. Although Japan has an immense economy, we also have countermeasures if it tries to damage our economy. *We will not sit and watch Japan, the perpetrator, show the audacity to accuse us when they are in the wrong.*⁴³ [...] We will repeat history and succeed over challenges once again with the people. We can do it. [...] (W. Lee 2019, *emphasis added*)

⁴³ The accurate Korean expression used here is “적반하장 (賊反荷杖)” which is an idiom meaning literally, “Save a stranger from the sea, and he'll turn your enemy” or “Save a thief from the gallows and he'll cut your throat (Dong-

In addition to these strong public statements, the South Korean government pursued four retaliatory strategies that are highly risk-accepting. First, it decided not to extend its military intelligence-sharing agreement, the General Security of Military Information Agreement (GSOMIA), with Japan. On August 22, Seoul announced its intention to terminate the treaty to the dismay of Japan and the USA. This was an unexpected decision given the GSOMIA's origins as an American effort to compel its two closest Northeast Asian allies to participate in its "Pacific Pivot" strategy. American officials expressed tremendous discontent both through the media and during visits to South Korea. Both Secretary of State Mike Pompeo and Secretary of Defense Mark Esper criticized the decision, and the US Senate unanimously passed a resolution emphasizing the importance of GSOMIA (Yonhap 2019). A Blue House spokesperson insisted nonetheless that if South Korea "revokes [its] decision unilaterally without any change in Japan's export restrictions," it would only prove that "the initial decision [to terminate the agreement] was not made prudently enough" and that was "not the case (Choe 2019)." Despite the tremendous pressure from its most important ally, Seoul held fast for nearly three months until November 22, a day before GSOMIA's expiration. It emphasized that the decision to suspend GSOMIA's termination for six months was both temporary and subject to change at any time. The amount of time and pressure it took South Korea to suspend its decision to terminate GSOMIA makes it plausible that South Korean policymakers initially predicted Washington to be less upset by the decision. This made Seoul perceive the expected losses from retaliating more significantly. Once Washington signaled its willingness with the lengths it did to make South Korea change course, inducing higher costs than Seoul anticipated, its policy also changed accordingly.

A English-Korean Dictionary)." The idiom describes a situation in which a person blames another person for something when in reality they are at fault.

Second, Seoul officially filed a complaint to the WTO on September 11, describing Tokyo's economic coercion as "unfair and groundless" based on "political considerations unrelated to any legitimate export control considerations (H. Seo 2019)." The two countries had already entered the first bilateral consultation stage of WTO mediation when Seoul decided to temporarily suspend both its withdrawal from GSOMIA and its legal campaign against Japanese regulations. However, while this was the official stance of the South Korean government taking the case to the WTO, whether the decision-makers genuinely believed that they could win is unclear. Rather, some experts understand it as Seoul's desperate attempt to use all and every means it could to make Japan withdraw its regulations. For instance, Professor Emeritus Bark Taeho, the former Minister for Trade and the former South Korean candidate for the WTO Director-General, described the situation as the following:

"The products that are regulated are not ordinary commodities. They are strategic materials that are controlled by international agreement, things that you can make nuclear weapons out of. If the exporting country decides that it can trust the trade partner, it adds it to its white list and makes exporting easier. They weren't even able to create a panel at the WTO and there was no progress. Is this a part of [Japan's] export process or export regulation? I think it's a simple matter of Japan changing its export processes [against South Korea]."⁴⁴

Third, as a more direct form of retaliation, Seoul excluded Japan from its white list, which revoked Japan's ability to import strategic materials from South Korea for military purposes. In a radio interview, Kim Seungho, South Korean delegate to the WTO, used a playground analogy to explain the reason behind Seoul's retaliation: "A kid needs to fight against a bully when he gets

⁴⁴ Bark Taeho. Phone interview with the author. November 29, 2021.

punched. If we do not react now, other countries will come and punch us, too. We'll become a punching bag. Even if we end up punched again, we need to withstand and hit back (J. E. Lee 2019).”

Finally, Seoul attempted to redress its strategic incapacity, supporting its domestic intermediate goods industry. As soon as the conflict started, President Moon held talks with conglomerate owners to discuss the issue. Here, he promised support for diversifying intermediate goods suppliers and lowering South Korea's dependence on foreign companies (Kwak 2019). This was followed by a 7.8 trillion Korean won (\$6.4 billion) plan to create stable GVCs by 2024 (H. Bae 2019b). Seoul created an emergency supplementary budget with multilevel strategies involving short-, mid-, and long-term plans under the assumption that Japan will continue and/or intensify its export regulations. However, even after the government vowed to support industries, a Hyundai executive lamented “the patenting challenges in replacing premium core materials they only sourced from Japan.” He also expressed concerns about their “global competitiveness without those crucial products (Y. Choi 2019).” Similarly, when Russia offered to export hydrogen fluoride to South Korea to substitute for what Japan no longer provided, South Koreans in the semiconductor industry expressed strong skepticism. One expert commented: “If Russian hydrogen fluoride is of such high purity, as the Russians claim, it is impossible that we don't know anything about it. [...] We don't have experience using Russian hydrogen fluoride, so we will have to test it out before using it.” Another expert said: “Even if the purity is high, we need at least two months to find out if we can use it [for our production]. We are already running out of stock and I am uncertain if Russian hydrogen fluoride will be a viable substitute (Yoon 2019).”

In contrast to this empirical outcome, which more closely resembles prospect theory's predictions, EUT anticipated Seoul would not retaliate and risk conflict escalation. Instead, South

Korean decision-makers should have focused on the policy choices at hand and the expected outcomes of each policy. In other words, they should have thought only about what results the retaliatory or nonretaliatory policy would bring about in the future, rather than trying to return to a reference point. However, in the process of assessing possible policy options and their outcomes, the evidence shows that many experts did have a reference point they anchored their acceptable policy results on. South Korean political elites and experts in related industries frequently described themselves to be in the domain of loss, emphasizing how grave the loss of Japanese GVC contributions was.

Moreover, because South Korea and Japan already had a trade relationship based on thick GVCs, EUT anticipated that actors ought to adopt a risk-averse attitude in situations of uncertainty. The fear of further losses stemming from this intertwined relationship should have motivated South Korean political elites to refrain from actions that would entail conflict escalation. In addition, for EUT actors, regaining GVC inputs that were already lost due to the initial economic coercion gives the same amount of utility (but in the opposite direction) as further loss of comparable Japanese imports. Therefore, if South Korean decision-makers were thinking as EUT predicts, they would not have retaliated against Japan's economic coercion. However, the evidence shows that, in estimating the expected losses and gains of possible policy options, South Korean decision-makers perceived that regaining Japanese GVC inputs would carry with it the kinds of extra value I described at the end of the previous chapter.

Similarly, the targeted sanctions hypothesis also predicted that Japan's coercion ought to succeed, meaning that the South Korean government should have changed its behavior. As previously explained, Tokyo made a deliberate and well-calculated decision on which economic means to use to pressure South Korea. Evidence shows that this initial coercive policy clearly

targeted South Korea's key industries including ICT and electronics so it could inflict pain on the ruling elites. Seoul should have withdrawn its Supreme Court's decision in the best-case scenario. Even if this were not possible, Seoul would have officially expressed, for example, its empathy towards Japan's discontents. Yet, Seoul demonstrated resolve as soon as Japan announced its intentions for export regulations and continued to engage in retaliatory policies.

Lastly, the political instability hypothesis states that when there is domestic instability in the target state, its leadership will use disputes with foreign countries to distract the public opinion while creating a rally 'round the flag effect. Because the public sentiment of South Koreans has been consistently negative toward Japan, the potential loss of public support was not a negligible part of the leadership's calculation in deciding how to react. In fact, I add positive and negative shifts of public opinion to both policy choices' expected gains and losses in prospect theory. However, President Moon's approval rate was overall neutral to positive (*Table 3.12*), so he did not have strong enough motivation to create a conflict with a foreign country to distract the domestic audience. President Moon, then, should have thought that the risks entailed in retaliation were not worth taking and not have responded to Japan's initial economic coercion with retaliation. Instead, he should have envisioned more potential loss involved in conflict escalation, with this option entailing further Japanese GVC input losses, than the expected gains of a rally 'round the flag effect. Once Seoul decided to retaliate, President Moon employed incredibly strong language denouncing Japan. The South Korean government and media also actively promoted and supported the anti-Japanese boycott movement. However, I interpret these behaviors as a part of a larger retaliatory policy, as opposed to retaliation being an attempt to gain public support.

All the competing hypotheses predicted that Seoul would not retaliate given the risks involved. However, the empirical outcome did not show as these theories expected. The South

Korean government's reaction against Japan's economic coercion was an unusual case that made even experts in economics and commerce question its motivations. During my interviews, I asked experts why they thought Seoul chose to retaliate instead of laying low. Some simply answered, "I don't understand why they are doing it." Some other answers include, "nationalism," "political naïveté," "miscalculation," and "politicians' scheme."

However, once I explained how prospect theory could have influenced the psychology of South Korean elites, most of them expressed strong agreement, connecting the theory with the two countries' GVC relationship. Below are some of the comments:

"The export control would cause severe damage to the operation of Korean companies. It's worth trying to force Japan to stop export control. You can't accept that."⁴⁵

"It turned out that South Korea could come up with alternatives in a year or two, but they had no idea back then. [...] There was a resolute determination that if Japan stopped exporting [these materials], they had no choice but to develop them domestically. They knew they couldn't succeed overnight. But they still had to do something."⁴⁶

"I mean, it is South Korea's most important products. Among all the products they export. And Japan attacked that."⁴⁷

⁴⁵ Xing Yuqing. Zoom interview with the author. January 10, 2022.

⁴⁶ Okuda Satoru. Zoom interview with the author. January 5, 2022.

⁴⁷ Abe Makoto. Zoom interview with the author. December 20, 2021.

Chapter Four

Case II: China-South Korea Conflict on THAAD

4.1 Historical Background

Similar to the previous case concerning Japan and South Korea, China's economic coercion against South Korea in 2016 also originated from a dispute not related to trade. In early 2015, the South Korean Ministry of National Defense (MND) publicly mentioned the US Terminal High Altitude Area Defense (THAAD) system for the first time. Seoul broached the topic, however, in order to deny China's allegations that the former was planning on installing it in South Korea. The Blue House also reaffirmed its 'three NO' promises regarding THAAD: No request (to the US), no agreement to install the system, and no decision to install it. However, Seoul changed its stance when Pyongyang conducted its fourth nuclear weapons test on January 6, 2016, allegedly succeeding in creating a hydrogen bomb. On February 7, officials from Seoul and Washington announced that they would begin negotiations to install a US THAAD system in South Korea (Koh 2017). Beijing officially demanded South Korea withdraw its decision on February 17. On March 31, during the US-China summit, Chairman Xi Jinping formally protested the THAAD deployment in South Korea. Despite this diplomatic pressure, on July 8, Seoul and Washington officially agreed to install a THAAD system in South Korea and a week later the MND announced its decision to place it on the site of a Lotte corporate golf club in the city of Seongju. On February 28, 2017, the South Korean government and Lotte signed a lease agreement for the THAAD installment (HRI 2017b).

Although both Seoul and Washington emphasized that this was a defensive measure against North Korea, installing a US missile defense system on their doorstep upset China's leadership. Qiu Guohong, Chinese ambassador to South Korea, sternly warned that the ties between China and South Korea "could take a long time to recover" and "could be destroyed instantly." He also expressed his distrust of Seoul and Washington's intentions: "I do not deny the fact that THAAD would play a role in protecting [South] Korea, but it will inevitably target China and Russia (Tiezzi 2016)."

Once Seoul officialized its decision to install the THAAD system, Beijing started using economic means to coerce Seoul into withdrawing the policy. China canceled a joint festival between Qingdao and Daegu in July, and in September Beijing excluded automobiles using South Korean batteries from its government subsidy recipient list. It also tightened the process for issuing business visas to South Koreans. In October, Beijing ordered a 20% decrease in Chinese citizens' group tours to South Korea. In November, it started a tax investigation and safety investigation against Lotte. It subsequently banned its imports of South Korean cosmetics, decreased time allocated to South Korean products in China's TV home shopping networks, and started an antidumping investigation on South Korean chemicals. In December, it finalized its decision to exclude South Korean automobile batteries from Chinese government subsidies. Chinese Communist Party's (CCP) coercive policies continued even in 2017, when it unilaterally canceled South Korean concerts, strengthened regulations on group tours to South Korea, and closed around 40 Lotte Mart locations in China. Kim Youngho, an incumbent member of the National Assembly in charge of South Korea's foreign relations with China, commented during an interview with the author:

“Many small- and medium-sized businesses run by South Koreans in rural Chinese provinces even had their electricity cut off. There are numerous cases of South Korean companies being victimized by the Chinese government because of THAAD. The situation is not normalized even today.”⁴⁸

In addition, the Chinese government cultivated a strong anti-Korean and anti-Lotte sentiment among the Chinese public. In July 2016, CCP-published People’s Daily (人民日报) released an editorial that outlined the adverse effects its editorial board believed the THAAD deployment would have on the stability of Northeast Asia and claimed the system was directly aimed at China and Russia (Zhao 2016). Global Times (環球時報), the sister newspaper of People’s Daily, published an editorial that made five policy recommendations to the CCP: 1) Regulating against the South Korean company that provided the land (i.e., Lotte) which the THAAD was situated at; 2) Banning pro-THAAD South Korean politicians from entering China; 3) Researching the THAAD’s impact on China’s strategic security; 4) Evaluating the long-term effects of North Korea on the geopolitics of Northeast Asia; and 5) Coordinating a response to THAAD installment with Russia (Global Times 2016). Immediately following Lotte’s approval to provide its land for the THAAD deployment, Global Times released another editorial calling for Chinese consumers’ to place active pressure on South Korea and suggested specific pain points, such as tourism, Lotte products, and electronics (Hana Institute of Finance 2017). Moreover, the paper conducted a survey comprised of loaded questions such as “Are you willing to participate in boycotting Lotte’s products if Lotte lends land to Seoul to install THAAD (S. Y. Park 2017)?”

⁴⁸ Kim Youngho. Zoom interview with the author. January 23, 2022.

China's coercive measures were not as straightforward as those of Japan in the previous case, given its nondemocratic characteristics; its policies are crafted and carried out in a way that grants the regime a degree of deniability. Regardless of this opacity, all the Chinese and South Korean experts I have interviewed agreed that almost no decision made in China can be completely free from CCP, even the direction of public opinion is shaped in part by the regime. As one Chinese expert commented, "inaction on the part of people in charge of censorship can be interpreted as accommodation."⁴⁹ Allegedly, the dispute officially ended on October 31, 2017, when the Chinese and South Korean foreign ministries announced a statement recognizing the "great importance" of their relationship. However, all the Chinese and South Korean experts I have interviewed unanimously agreed that China's economic coercion was still in place and Beijing is not likely to normalize the relationship anytime soon.

4.2 Reference Point and Domain of Gain

This section explains what the South Korean policymakers perceived as their reference point in their relationship with China. Consistent with the previous case study, I define the reference point as the status quo of the trade relationship between South Korea and China before China's coercive policies came into effect. In articulating this reference point, I contend that the South Korean leaders placed their industry in the domain of gain. Moreover, by demonstrating the structure of the two economies' relationship, I aim to establish that the involved decision-makers saw any potential disruption to the ties, especially those connected with escalating the conflict, as risks. However, while the closely intertwined relationship between the two states makes these threats

⁴⁹ Xing Yuqing. Zoom interview with the author. January 10, 2022.

seem especially salient, the values of expected outcomes are different from those of the Japan-South Korean case, because Seoul resides in a different domain. Similar to the previous case study, if EUT has more explanatory power than prospect theory, the involved parties' experts and decision-makers will be focused on what the available policies entail independent of the pre-conflict status quo.

Trade Relationship between China and South Korea

As seen in *Figure 4.16*, trade between China and South Korea had grown exponentially since 2001 when China joined the WTO. In 2015, right before the THAAD conflict started, a Free Trade Agreement (FTA) between China and South Korea came into effect and further strengthened the states' interdependence. The two economies are highly interconnected not only through traditional forms of trade but also through thick GVCs. Between 1992 and 2015 South Korea's gross exports to China grew from \$2.65 billion to \$137 billion. Likewise, its gross imports from China increased from \$3.7 billion to \$90 billion during the same period. In 2015, the year before the THAAD conflict, 26% of South Korea's gross exports were to China, and South Korea's total trade volume with China was twice as large as its second largest export market, the US (K-stat database).

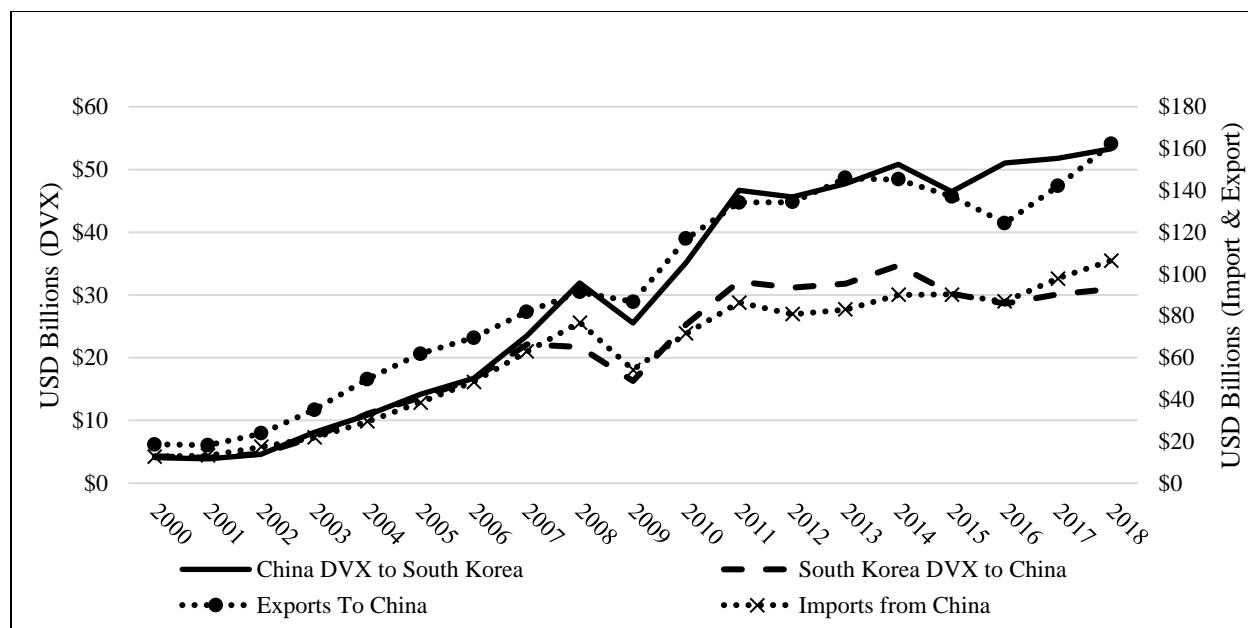


Figure 4.15 Gross trade and indirect value-added trade between South Korea and China, 2000-2018 (Source: UNCTAD Eora)

Looking at the GVC connections, *Figure 4.16* shows the indirect value added between the two states after 2000. Of South Korea’s forward GVC participation, 37.1% was to China, meaning that more than one third of the value South Korea exports to China was sent to third countries. For backward participation, 21.3% was from China, which means that almost one fifth of the value that South Korea exported came from China. In both cases, China was South Korea’s most significant partner. In China’s case, South Korea was its biggest partner for both forward and backward participation, representing 11% and 11.4% of China’s total gross exports (WTO database).

In addition, China and South Korea have similar key industries and they are tightly intertwined with one another. In 2015, China’s three biggest exports were machines (44.9%),

textiles (11%), and metals (7.79%). In the same year, South Korea’s three biggest exports were machines (37.5%), transportation (21.08%), and metals (8.43%). Among the commodities China exported to South Korea, the top three were machines (47.6%), metals (7.82%). South Korean exports to China were primarily machines (46.8%), instruments and apparatuses (15.5%), and chemicals (11.47%) (OEC database). Moreover, as shown in *Figures 4.17* and *4.18*, intermediate goods equal to 26% of the total imports from China to South Korea in 2015, and 24% of the total exports from South Korea to China.

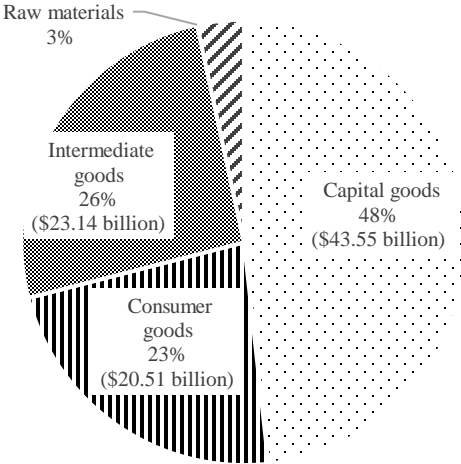


Figure 4.16 Types of Chinese goods imported to South Korea, 2015 (Source: UNCTAD Eora)

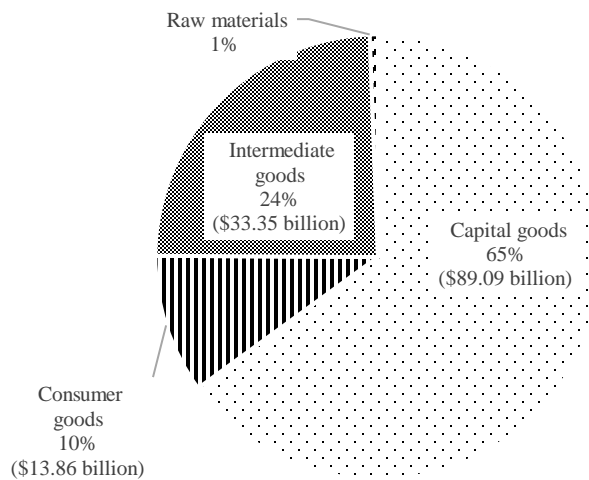


Figure 4.17 Types of South Korean goods exported to China, 2015 (Source: UNCTAD Eora)

Domain of Gain: Quantitative Evidence

The trade relationship between China and South Korea truly highlights how important GVCs are for understanding economic interdependence today, even more so than gross trade. Although China’s overall economy was substantially larger than South Korea, within their shared GVCs, South Korean companies occupied a less substitutable status in their key industries. In other words, the characteristics of dependence between South Korea and China were different depending on whether one considers traditional forms of trade or GVCs. In terms of gross trade volume, South Korea was more dependent on China—the overall volume of exports from South Korea to China was larger than vice versa. The proportion of trade volume with China in South Korea’s total trade (21%) was much larger than that of South Korea in China’s total trade (7%) (“K-Stat Database,” n.d.). However, in terms of GVC ties, China was more dependent on South Korea. South Korean GVC inputs were less substitutable than China’s. Experts on the China-South Korean trade relationship saw that much of what South Korea exported to China were, in reality, for the South

Korean companies doing business in China, indicating that China’s actual contribution in the shared GVCs was “exaggerated” in statistics.⁵⁰ South Korea possessed a general technological advantage over China in several industries’ shared GVCs, but most importantly, the ICT industry. As a whole, South Korean labor productivity is substantially greater than China’s. In 2014 and 2015, China’s output per worker was 23222.7 and 24802.7, respectively, while South Korea's was 64684.3 and 65710 during the same period (ILO database).⁵¹ In ICT alone, in 2014, South Korea had higher competitiveness in intangible GVC inputs, including R&D (South Korea 90.5 / China 76.5), software capacity (82.7/74.6) and product design (87.4/76.5).⁵² For tangible GVCs, or manufacturing, South Korea was more competitive in material capacity (84.7/78.2) and component procurement (92.4/86.2) while being virtually indistinguishable in production (100.9/101.3) (KIET, 2014).

Table 4.13 further highlights South Korea’s strategic superiority in the shared GVCs. Among twenty products with the highest gross trade value, South Korea's export competitiveness outpaced China’s (TSI > 0.4) in eleven instances. More importantly, South Korea held advantages in ICT intermediate goods such as monolithic integrated circuits, D-ram, and p-xylene, which were critical for both countries’ key industries.

Rank	HSK code	Product	Gross trade (USD)	TSI
1	8542321010	DRAM (Dynamic random access memory)	12,009,061,730	0.63
2	8542311000	Monolithic integrated circuits	8,660,318,652	0.67

⁵⁰ Bark Taeho. Phone interview with the author. November 29, 2021.

⁵¹ This measure of labor productivity is calculated by dividing the total output of an economy by the total number of workers. A higher score reflects an economy with greater technological sophistication, since fewer workers are necessary to achieve greater outputs. For my purposes, a higher score is one index of strategic advantage in a supply chain.

⁵² These competitiveness scores are derived from an industry wide survey of different factors of ICT competitiveness. The measure uses the ICT capacity of the United States as a reference point, set to the value of 100. Therefore, a score of 90 in R&D would suggest that a state has roughly 90% of the research and development capacity of the US.

3	8517701029	Other (Telephone sets and other apparatus for the transmission or reception of voice, images or other data, via a wired or wireless network; parts)	8,206,625,158	0.33
4	8542323000	Multichip integrated circuits	5,959,944,435	0.16
5	9013801990	Other (Optical devices, appliances and instruments)	5,455,730,425	0.83
6	2902430000	p-xylene	4,419,673,173	1
7	9013801130	For televisions (Optical devices, appliances and instruments)	4,298,494,200	0.93
8	8531909000	Other (Signaling apparatus)	4,162,418,212	1
9	9013801930	For televisions (Optical devices, appliances and instruments)	3,899,630,285	0.31
10	8538909000	Other (Electrical apparatus)	3,006,688,586	0.74
11	9013801140	For monitor (Optical devices, appliances and instruments)	2,524,650,086	0.97
12	8708999000	Other (Vehicle parts and accessories)	2,505,536,317	0.81
13	8542313000	Multichip integrated circuits	2,491,387,084	0.29
14	8542321030	Flash memory	2,245,111,431	0.26
15	8471702090	Other (Units of automatic data processing machines; storage units)	2,182,880,695	0.81
16	8544300000	Ignition wiring sets and other wiring sets of a kind used in vehicles, aircraft or ships	2,181,858,074	-0.49
17	8517121090	Other (Telephones for cellular networks or for other wireless networks)	2,107,548,421	-0.97
18	8541402090	Other (Electrical apparatus; photosensitive, including photovoltaic cells, whether or not assembled in modules or made up into panels, light-emitting diodes (LED))	1,812,294,568	0.13
19	8708400000	Gear boxes and parts thereof	1,755,177,369	0.92
20	8534009000	Other (Circuits; printed)	1,697,049,648	0.19

Table 4.13 Trade Specialization Index of twenty most traded products (by value) between China and South Korea in 2015 (Moon 2021b)⁵³

Similarly, *Table 4.14* and *4.15* display PCI values of the twenty most exported and imported products, respectively, for South Korea vis-à-vis China. The twenty products South Korea exports to China the most had an average PCI value of 1.21 and the twenty products at the top of South Korea's imports from China had an average PCI value of 0.91. What is notable here is that, unlike the PCI values of the Japan-South Korea trade (*Table 3.4 & 3.5*), there are no missing values in the China-South Korea case. The dataset does not include products that were invented and given HS codes more recently. Although a higher code number does not necessarily indicate

⁵³ See *footnote 19* for explanations.

a higher “level” of technology at the time of creating the original 1992 HS code database, the products with higher numbers that were added *subsequently* to the database tend to be more cutting-edge. This, in turn, indicates that South Korea’s trade with Japan deals in more sophisticated technology than its trade with China.

Additionally, ECI of South Korea and China in 2015 were 2.07 and 1.27, respectively. China’s ECI ranked 46th in 1995, 39th in 2000, 24th in 2010, and 18th in 2015. South Korea’s ECI ranked 21st in 1995, 20th in 2000, 8th in 2010, and 4th in 2015 (Atlas of Economic Complexity database). In another ECI dataset, South Korea and China had ECI values of 1.78 and 0.89 in 2015, respectively (HS 1992 code). Using this dataset, South Korea ECI ranked 27th and China 56th in 2000. These values were, respectively, 11th and 36th in 2010, and 5th and 31st in 2015 (OEC database). In both cases, China is rapidly catching up to South Korea, but South Korea has maintained its place as the more complex and sophisticated economy to this point.

In addition to TSI and PCI, *Table 4.16* compares RCA values of the top-twenty most traded products between China and South Korea in 2015. The average Chinese and South Korean RCA values were 1.26 and 2.19, respectively. Similar to other indices, the two countries were not too distant from each other, but the products South Korea exported were more advanced than those from China.

Rank	HSK code	HS 1992	Product	PCI	PCI Rank
1	8542321010	8542	DRAM (Dynamic random access memory)	1.05	186
2	8542311000	8542	Monolithic integrated circuits	1.05	186
3	8517701029	8517	Other	1.15	148
4	9013801990	9013	Other	1.68	41
5	2902430000	2902	p-xylene	0.68	342
6	8531909000	8531	Other	1.05	187
7	9013801130	9013	For televisions	1.68	41
8	8542323000	8542	Multichip integrated circuits	1.05	186

9	8538909000	8538	Other	1.21	136
10	9013801930	9013	For televisions	1.68	41
11	9013801140	9013	For monitor	1.68	41
12	8708999000	8708	Other	1.22	131
13	8471702090	8471	Other	1.09	170
14	8708400000	8708	Gear boxes and parts thereof	1.22	131
15	8542313000	8542	Multichip integrated circuits	1.05	186
16	8543709090	8543	Other	1.63	47
17	8542321030	8542	Flash memory	1.05	186
18	2902500000	2902	Styrene	0.68	342
19	8473304060	8473	DRAM modules	1.14	154
20	9001200000	9001	Sheets and plates of polarising material	1.08	178
Average PCI value: 1.21					

Table 4.14 Product Complexity Index of twenty most exported products (by value) from South Korea to China in 2015 (Source: Atlas of Economic Complexity database)⁵⁴

Rank	HSK code	HS 1992	Product	PCI	PCI Rank
1	8517701029	8517	Other	1.15	148
2	8542323000	8542	Multichip integrated circuits	1.05	186
3	8542321010	8542	DRAM (Dynamic random access memory)	1.05	186
4	8517121090	8517	Other	1.15	148
5	8471300000	8471	Portable automatic data processing machines, weighing not more than 10 kg, consisting of at least a central processing unit, a keyboard and a display	1.09	170
6	8544300000	8544	Ignition wiring sets and other wiring sets of a kind used in vehicles, aircraft or ships	-0.53	866
7	7308909000	7308	Other	0.47	435
8	8542311000	8542	Monolithic integrated circuits	1.05	186
9	9013801930	9013	For televisions	1.68	41
10	8542313000	8542	Multichip integrated circuits	1.05	186
11	8517129090	8517	Other	1.15	148
12	8542321030	8542	Flash memory	1.05	186
13	8541402090	8541	Other	1.08	176
14	8528511000	8528	LCD (liquid crystal display) monitor	0.58	385
15	8542391000	8542	Monolithic integrated circuits	1.05	186
16	8534009000	8534	Other	1.15	151
17	7208519000	7208	Other	0.25	529
18	8517701022	8517	Cases	1.15	148
19	8517703060	8517	Transmission apparatus incorporating reception apparatus for radio-telephony, radio-telegraphy other than subheading 8517.70.10	1.15	148

⁵⁴ See footnote 22 for explanations.

20	9002119090	9002	Other	0.58	318
Average PCI value: 0.91					

Table 4.15 Product Complexity Index of twenty most imported products (by value) to South Korea from China in 2015 (Source: Atlas of Economic Complexity database)

Rank	SITC code	Product	RCA	
			China	S. Korea
1	776	Cathode valves & tubes	1.2	2.88
2	764	Telecommunication equipment, n.e.s.; & parts, n.e.s.	2.77	1.82
3	871	Optical instruments & apparatus, n.e.s.	2.75	7.41
4	778	Electrical machinery & apparatus, n.e.s.	1.72	2.23
5	772	Apparatus for electrical circuits; board, panels	1.2	1.6
6	511	Hydrocarbons, n.e.s., & halogenated, nitr. derivative	0.26	4.71
7	784	Parts & accessories of vehicles of 722, 781, 782, 783	0.56	1.98
8	728	Other machinery for particular industries, n.e.s.	0.58	1.98
9	752	Automatic data processing machines, n.e.s.	3.11	0.48
10	334	Petroleum oils or bituminous minerals > 70 % oil	0.22	1.54
11	773	Equipment for distributing electricity, n.e.s.	1.35	0.89
12	884	Optical goods, n.e.s.	1.40	2.16
13	673	Flat-rolled prod., iron, non-alloy steel, not coated	0.33	3.97
14	575	Other plastics, in primary forms	0.37	2.13
15	759	Parts, accessories for machines of groups 751, 752	1.58	1.08
16	874	Measuring, analysing & controlling apparatus, n.e.s.	0.57	0.78
17	582	Plates, sheets, films, foil & strip, of plastics	0.76	1.75
18	675	Flat-rolled products of alloy steel	1.59	2.05
19	522	Inorganic chemical elements, oxides & halogen salts	1.04	1.58
20	676	Iron & steel bars, rods, angles, shapes & sections	1.83	0.78
Average RCA value			1.26	2.19

Table 4.16 Revealed Comparative Advantage of the twenty most traded products (by value) between China and South Korea in 2015 (Source: WITS database)⁵⁵

Domain of Gain: Qualitative Evidence

This trade data highlights the discrepancy between qualitative and quantitative superiority within the two countries' shared GVCs as well as their overall trade ties. The simple trade data, including China's large proportion within South Korea's exports and China's massive economy, has high

⁵⁵ See footnote 23 for explanations.

saliency and cognitive availability. It may seem counter-intuitive to claim that South Korea holds any economic advantages over an economic behemoth like China. However, a close examination of the GVC data and qualitative aspects of the trade show otherwise. While China has rapidly grown its economy and technological capacity, in GVCs South Korea still had the upper hand due to its less-substitutable GVC inputs. Then, it is important to connect the available “objective” data to the perceptions of decision-makers. In other words, were South Korean experts and policy makers acting in accordance with where they should be in (i.e., the domain of gain)? Many elites I interviewed based their assessment of the situation on the qualitative data grounded in South Korea’s strength in substitutability of GVC inputs. For instance, Professor Min illustrates the GVC ecosystem of Northeast Asia and the THAAD conflict in the following terms:

“Looking at the overall balance [of the region], we can conclude that *Japan is indirectly exporting its products to the Chinese market through South Korea*. This is how GVCs of materials, parts, and machines work among South Korea, Japan, and China. Japan makes the materials, South Korea imports that and makes intermediate goods, and in turn exports those high-tech products to other countries including China. [...] During the THAAD conflict, China used the automobile industry to coerce us. This also happened in the past, but they used vinegar and garlic against us back then. Now, they are using much higher-level technology for leverage. All the parts that go into this industry were held hostage. [...] *But Beijing couldn’t drag this out for too long because they held the shorter end of the stick. They see the difference in the industrial status.*”⁵⁶

⁵⁶ Min Dong Joon. Zoom interview with the author. January 20, 2022. Emphasis added.

Similarly, a 2016 industry news article from South Korea compared Samsung Electronics and Huawei using reports released by various institutions including World Intellectual Property Organization (WIPO). In 2015, Huawei applied for 3,898 patents surpassing even Qualcomm, which has historically been one of the most dominant firms by these measures. Samsung Electronics was the fourth with 1,683 applications. This big gap in the volume of patents may seem to set Huawei apart from its rivals, but the article concludes otherwise:

“At its heart ‘patent application = technology disclosure,’ so many global companies don’t patent their core technologies. Even when they do, they decide which institution to apply to depending on the characteristics of the product, who their rivals are, and the market size. In a patent war, this ‘patent portfolio’ is what determines a firm’s qualitative superiority. This patent portfolio shows Samsung’s superiority through ‘patent families.’ A patent family is a set of patents that are related. When a company divides a certain type of technology and applies to patent each part or applies in multiple countries using one technology, it counts as one patent family (S. J. Park 2016).”

As the article continues, eliminating duplicates and counting the patent families of an individual company (or a country more broadly) offers a more accurate assessment of the quality of its innovation. Employing a quality-centered approach to understanding patents paints a different picture than a simple quantitative comparison. Between 2003~2012, Japanese brand Panasonic had the most patent families with around 110 thousand applications and Samsung Electronics occupied the second place with 95,852. Huawei ranked 21st place with 28,726 cases. Similarly, Samsung Electronics applied for only 45.8% of its patents in one country while Huawei had 80.3%, meaning that most of Huawei’s patents were only for China. Samsung Electronics had 16.4% of

its patents applied in more than four countries, which indicates patents of the highest-quality technology, Huawei had only 4.4% (S. J. Park 2016).

The widespread focus on China's rapid economic rise occludes the fact that, in spite of this meteoric ascension, and its progress in some key areas, its economy is still heavily dependent on South Korea's in several key regards. When China opened its diplomatic and economic gates at the end of the twentieth century, its economy and industrial capacity grew at an unprecedented rate. The Chinese leadership's decision to immerse its economy into GVCs lay at the heart of this rapid development (Demir and Solingen 2021). Since the early 2010s, however, China's growth began to slow and it entered what Chairman Xi called a 'new normal (新常态).' Beijing aimed to move away from its industrial model as the world's factory, focused on exploiting its cheap labor and rent, and it has instead prioritized the qualitative development of the economy. In 2015, China announced 'Made in China 2025' centered upon gaining technological independence in sectors such as Artificial Intelligence and aerospace technology (Kennedy 2015).

Since the early 2000s, Chinese companies have been surpassing South Korean ones in various areas, as South Korea did with Japan in the past (Uriu 1996). By 2015, China was responsible for the 1,762 most exported products globally, which was more than twice the number of second-ranked Germany (638) (KITA database). Especially in the case of final goods, such as smartphones, local brands such as Huawei and Xiaomi have supplanted South Korean ones. Accordingly, South Korean businesses have begun to feel threatened by China's rapid development. In a 2016 survey of 300 manufacturing firms, 84.8% of South Korean respondents thought China's speed of innovation was faster than that of South Korea. An employee of a semiconductor company commented: "Between China and South Korea, there is still a

technological gap of 3~4 years. However, in many cases Chinese companies just plunder our best talent, so it's only a matter of time until we're caught up (Jung 2016).”

Although the THAAD conflict took place against a backdrop of society-wide anxiety about China's rapid rise, many South Korean experts also acknowledged that China relied on South Korea for more high-tech products such as chemicals, machinery, electronics, and intermediate goods. A South Korean financial analyst made the following comment on the economic fallout over THAAD:

“We cannot overlook the Chinese economy's dependency on the Korean economy. As important as the Chinese market is to South Korea, China's dependency on the South Korean market is also significantly high. Especially now that the Chinese manufacturing market in ICT and appliances is rapidly growing, many Chinese firms depend on South Korean intermediate goods such as semiconductors. In reality, more than 70% of South Korea's profit from its trade with China comes from intermediate goods sales (B. Kim 2017).”

Similarly, a South Korean think tank report assessing the THAAD conflict commented: “It is worrisome that South Korea's reliance on its exports to China is increasing which might result in trade regulations [by China]. However, China's demand for South Korean intermediate goods is likely to stay high and this conflict is likely to have a very limited impact [on intermediate goods trade] (HRI 2017b).”

During an interview with the author, Professor Bark described the economic relationship between South Korea and China along these lines:

“From its trade relationship [with China], South Korea enjoys an incredible trade surplus. [...] We occupy a higher ground within the shared GVCs with China in the sense that we export more to China. ‘Mother companies’ in South Korea send intermediate goods and capital to their ‘child companies’ in China so they can make products. [...] We import the products we import from Japan because we need them. The products we export to China, we are exporting to South Korean companies doing business in China. [...] China has a lot of rare earth and raw materials, but at least for now, *there are no Chinese manufactured products that we absolutely need in order to make our products. It’s actually China that needs South Korean technology along with that of Japan and the US.*”⁵⁷

Figure 4.19 illustrates the estimated years of technological gaps between South Korea and China in 2011 and 2015. While the gaps are narrowing, South Korea’s technology was still on average 3.3 years ahead of China’s. Although South Korean businesspeople did, in 2016 and 2017, feel threatened by China’s growth, it mostly came from the anticipation of losing their relative advantage, rather than being replaced by other countries in GVCs.

⁵⁷ Bark Taeho. Phone interview with the author. November 29, 2021. Emphasis added.

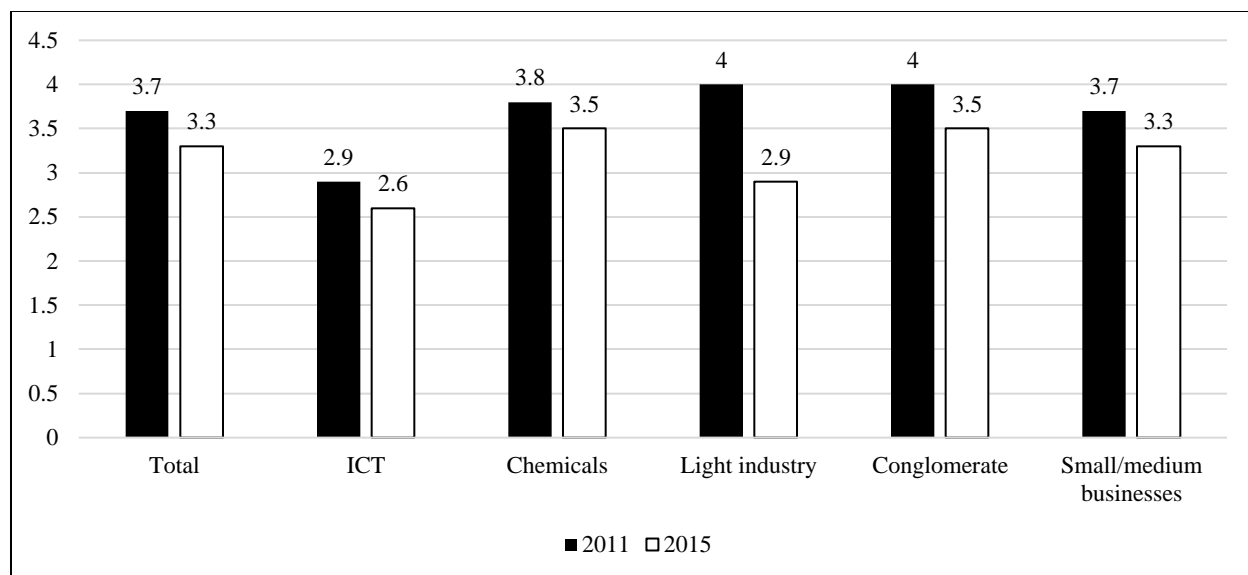


Figure 4.18 Technological gap in manufacturing between South Korea and China, in years
 (Source: Hana Institute of Finance 2017)

Many within South Korea are keenly aware of both the fact that its firms remain ahead of their Chinese competitors, but that the gap needs to be maintained. In 2015, in a series of interviews, executive members of Samsung and LG commented on this dualism: “We are not too worried [about Chinese companies]” and “Chinese companies may have caught us with South Korea’s appliance technologies by 95%, but their brand images are far below ours (S. Jang 2015).” In a survey from 2012 conducted on South Korean firms doing business in China, 66.6% of the respondents indicated that South Korea had superior technology compared to China (B. Choi 2012). South Korean firms were worried about losing their market because of the recent slowing of Chinese economic growth, but not about being replaced in GVCs due to South Korea being at any technological disadvantage.

4.3 Policy Options

This chapter so far has explained the historical background of the conflict between China and South Korea concerning the deployment of the American THAAD system. I also delineated quantitative and qualitative evidence regarding what the target-state actors had as their reference point within their GVC relationship with the sender, and why they would have considered South Korea as occupying the domain of gain. Now, I turn to two ideal-typical policy options South Korea faced in receiving economic coercion from China: retaliation and nonretaliation. As in the previous chapter, regardless of whether their thought processes were based on EUT or prospect theory, the same set of expected gains and losses existed. The theoretical expectations of prospect theory and EUT diverge in how they interpret the available data and how much weight they put on each policy option. For each option, I lay out the entailed expected losses and expected gains in terms of outcome values and possibility, and discuss how prospect theory and EUT assess them differently. I then conclude this section with a short theoretical prediction of the case outcome before moving on to alternative explanations.

4.3.1 Retaliation

Seoul's first possible policy option was to retaliate instead of acquiescing or not reacting at all. A prospect theory actor would aim to return to the status quo or reference point, while an EUT actor will solely focus on the final outcome of retaliation independent of the pre-conflict conditions. Successfully using this retaliatory policy entailed two types of expected gains: China's withdrawal of its initial regulatory policies and domestic support. On the other hand, failing to return to the reference point after using a retaliatory policy carried four types of expected losses: conflict escalation, deterioration of the domestic public opinion, jeopardizing China's role as a mediator between North Korea and the world, and militarization of the conflict.

Expected Gains

The first expected gain from retaliation was successfully forcing Beijing to change its behavior and making it withdraw its initial coercive policies. This was an expected outcome with a high value, given the central role of China in the South Korean economy. As in the Japan-South Korea conflict, prospect theory argues that the value of China withdrawing its regulations on South Korean firms is *regaining* what has been lost from the reference point. Therefore, more weight should be put on this expected outcome of gaining the losses back than comparable gains. On the other hand, if EUT has more explanatory power, a loss that has already occurred should not influence the target state's behavior.

While China's economic coercion towards South Korean businesses was much less concentrated than that of Japan, it is noticeable that Beijing was selective in choosing which industries to damage. In fact, China was very careful not to harm industries in which China was more dependent on South Korea, such as semiconductors (Shim and Kim 2016). Three industries were most severely impacted by China's regulatory measures against South Korea. First, the tourism and service industry suffered the most from China's policies. As seen in *Figure 4.20*, since 2010, Chinese tourists visiting South Korea increased dramatically before dropping when the THAAD conflict started in 2016. By the time the conflict started, Chinese tourists represented almost half of the entire number of tourists visiting South Korea and as tourists they also provided the most money spent per visitor. As a part of its initial economic coercion against South Korea, Beijing banned charter flights to South Korea, decreased the number of cruise ship routes to South Korea, decreased the number of Chinese tourists visiting South Korea by 20%, and tightened standards for tourist visa approval. South Korean duty-free shops, at the time, relied on Chinese

tourists for 64% of their total revenues and 78% of their clientele were Chinese. In February 2016 when Lotte made an agreement with the South Korean government to lease their land for THAAD installment, Incheon Airport duty-free shops' monthly sales dropped from \$62.7 billion to \$45.5 billion (HRI 2017a).

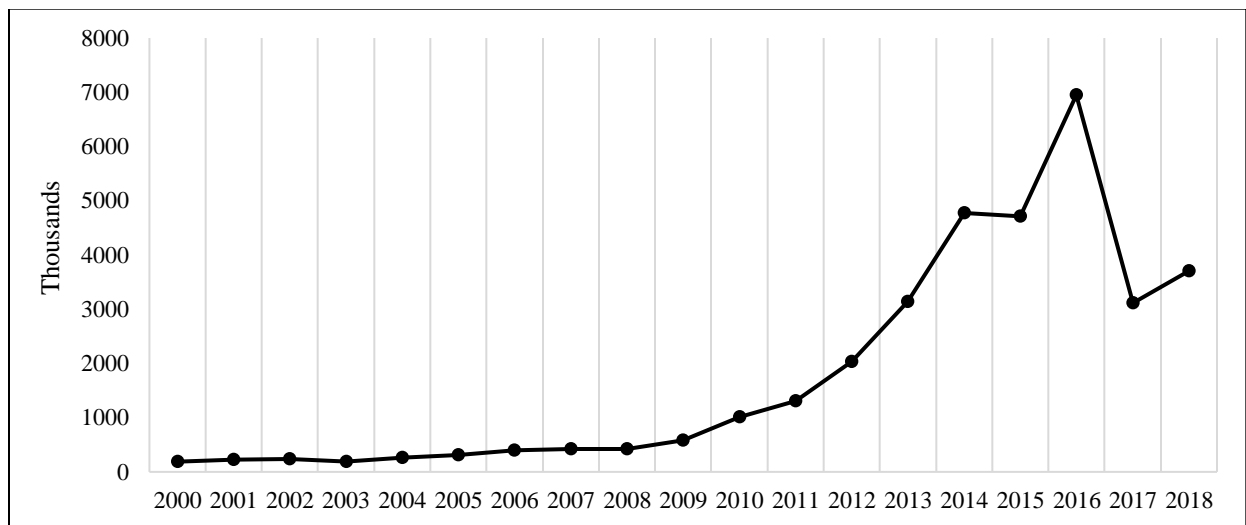


Figure 4.19 Number of Chinese tourists visiting South Korea, 2000-2018 (Source: Korea Tourism Organization Data Lab)

Second, China's coercive policies severely impacted South Korean entertainment businesses. Since the early 2000s, South Korea's entertainment industry has been gaining influence in China, represented by the *Hallyu* phenomenon. By the time the THAAD conflict started, exports to China accounted for 70% of the entertainment industry's entire exports. The THAAD conflict not only resulted in Beijing banning South Korean dramas, movies, and music concerts, but it also brought substantial losses in the stock market for connected firms. From July 2016 to March 2017, major entertainment companies in South Korea lost as much as 45.6% of their stock value (Figure 4.21). Beijing regulating the sale of South Korean cultural exports in

China brought almost no damage to the Chinese economy while severely impacting the South Korean one. As illustrated in *Figure 4.22*, the value of cultural contents exported from South Korea to China largely exceeds that from China to South Korea even after the dispute started. Many experts expected, as a result, that Beijing would continue imposing this measure that damages the South Korean economy more than that of China.

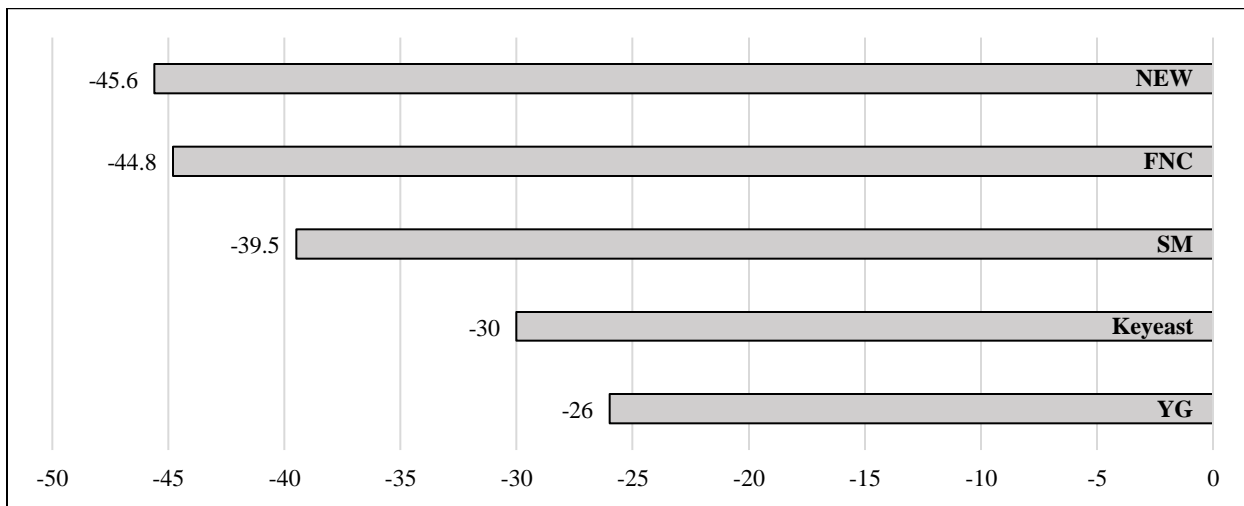


Figure 4.20 Stock price fluctuation of major South Korean entertainment companies from July 2016 to March 2017, in percentage (Source: Hana Institute of Finance 2017)

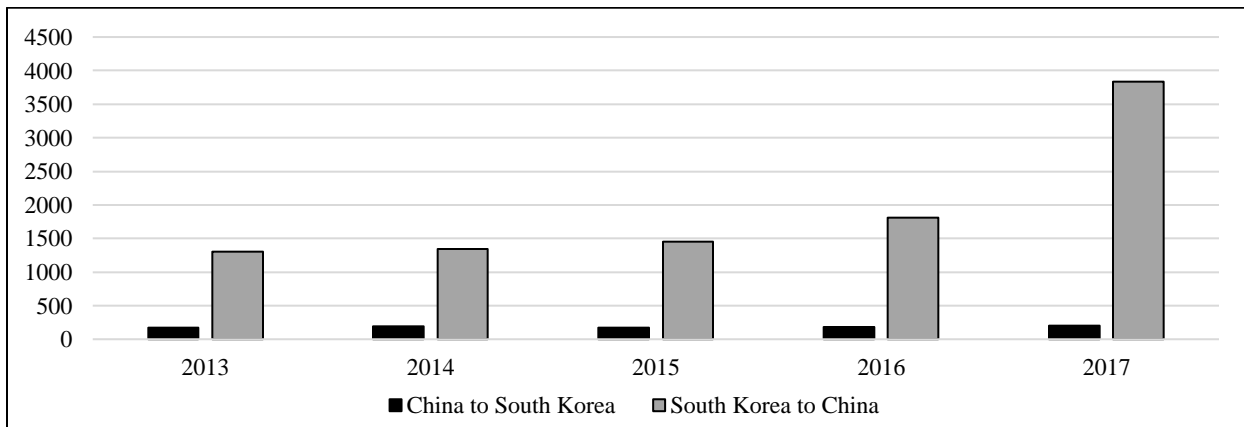


Figure 4.21 Cultural contents exports between China and South Korea, in million USD (Source: Ministry of Culture, Sports and Tourism 2019)⁵⁸

Third, Beijing also targeted South Korea's automobile industry, in addition to the tourism and entertainment segments of the Korean economy. On December 29, 2016, Beijing announced that it would not provide government subsidies to automobiles using batteries manufactured by Samsung SDI and LG Chemicals. South Korean experts interpreted this as a CCP effort to drive South Korean automobile batteries out of the Chinese market. Government subsidies cut the cost of manufacturing an electric car nearly in half and thus carmakers have little incentive to use batteries without them (Ku 2017). Moreover, annual sales in China of Beijing Hyundai (北京现代) and Dongfeng Yueda Kia (东风悦达起亚) dropped from 1,678,922 in 2015 and 1,792,021 in 2016 to 1,145,012 in 2017. In early 2017, Beijing Motors, Hyundai Motors's Chinese partner, refused to pay South Korean subsidiaries that supplied automobile parts to Beijing Hyundai. There were, at the time, 145 such South Korean subsidiaries with 290 factories in China, responsible for manufacturing automobile parts for South Korean automakers. After 3~6 months of postponing their payment, Beijing Motors asked for a 20~40% discount as their condition for payment (C. Jang, Kang, and Kang 2017).

In terms of probability, the likelihood of the Chinese government withdrawing its initial coercive policies as a result of retaliation was low to medium. The products that Beijing used to

⁵⁸ These statistics include Hong Kong as a part of China. The "contents industry," as it is known in South Korea, includes publication, cartoons, music, games, movies, animations, TV programs, advertisements, characters, knowledge information, and contents solution.

pressure South Korea were carefully selected in a way that minimized damage to Chinese industry while inflicting pain on the South Korean economy (*Table 4.17*). Moreover, many experts argue that the negative trajectory of the South Korean automobile industry began before the THAAD conflict, in part because of the rise of local Chinese automakers. In 2015, Chinese companies already occupied 41.1% of the Chinese automobile market while South Korean firms held only a 7.84% share. The overall trend within China saw a decrease in imported cars and an increased preference for local brands (M. Kang 2016). The 2016 figures on the top ten brands with the most sales in the Chinese passenger car market are instructive in this regard. The German brand Volkswagen was the market leader with almost 3 million cars sold, followed by the American GM subsidiary Buick, and the Chinese firm Changan, with 1.17 million and 1.15 million, respectively. South Korean Hyundai was the sixth with 0.99 million (Armstrong 2017).

	South Korea	China
Export	1.4 trillion won	Insignificant
Investment	Insignificant	45.4 billion won
Tourism	7.1 trillion won	1.04 trillion won
Culture/entertainment	87.2 trillion won	Insignificant
Total	8.5 trillion won	1.1 trillion won
Proportion to nominal GDP	0.52%	0.01%

Table 4.17 Estimation of economic losses from the THAAD conflict, in Korean won⁵⁹ (Source: HRI 2017a)

The second expected gain from retaliation was a potential increase in domestic political support. This was an expected outcome of a medium level of value and medium to low possibility. South Korean public opinion towards China was as crystallized as it was towards Japan. In an

⁵⁹ The annual average currency exchange rate in 2017 was 1178.585 Korean won to 1 USD.

annual survey series, South Koreans’ favorability of China, on a scale of one to ten, ranged from 3.94 in 2012 to 4.45 in 2013 (J. Kim, Lee, et al. 2014). In a 2015 Pew Research Center report, 61% of South Korean respondents expressed favorable attitudes toward China while only 25% did the same for Japan. 67% of these respondents also expressed favorability towards Chairman Xi. However, 78% of South Korean respondents answered that they were concerned about territorial disputes with China (Stokes, 2015). Similarly, in a 2016 survey, 36% of South Koreans saw China as a military threat which was very close to the proportion of respondents who saw Japan in similar terms (37.7%). When asked whether they felt closer to China or Japan, 34.2% answered ‘China,’ 12.8% answered ‘Japan,’ and 23.4% answered ‘neither’ (EAI and Genron NPO 2017).

Expected Losses

Retaliating and failing to overturn China’s initial coercive policies carried four possible expected losses. First, failing to force Beijing to return to the reference point entailed potential conflict escalation and, by extension, further economic pain from China’s coercion. This is an expected loss of high value and medium to high possibility. Drawn from a Korean think-tank study, *Table 4.18* analyzes two scenarios in which Beijing continues its economic regulations on South Korean industries. The first scenario assumes 5% decrease in product export, 20% decrease in Chinese tourists, and 10% decrease in entertainment business export. These measures result in 0.59% loss of the total South Korean GDP. The second scenario assumes 10% decrease in product export, 30% decrease in Chinese tourists, and 20% decrease in entertainment business export. This scenario anticipates 1.07% decrease in the total South Korean GDP.

		Product export	Tourism	Entertainment	Total
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Scenario 1 (Bad)	Value (Impact on GDP)	\$4.14b ↓ (0.30% ↓)	\$3.1b ↓ (0.23% ↓)	\$0.92b ↓ (0.07% ↓)	\$7.69b ↓ (0.59% ↓)
Scenario 2 (Worst)	Value (Impact on GDP)	\$8.27b ↓ (0.60% ↓)	\$4.65b ↓ (0.34% ↓)	\$1.83b ↓ (0.13% ↓)	\$14.76 ↓ (1.07% ↓)

Table 4.18 Expected impact of China’s economic coercion (Source: W. Jang 2017)

Similarly, *Table 4.19*, also drawn from a 2017 South Korean think tank report, models’ estimates of production and trade in different industries using three scenarios. Scenarios 1, 2, and 3 depict situations in which China uses technical barriers to trade (TBT), sanitary and phytosanitary (SPS), and antidumping (ADP) measures against South Korean products and services, respectively. On average, the study estimated that these three types of non-tariff barriers would cost South Korea as much as 1.29% of its overall GDP (*Figure 4.23*). Specifically for South Korea’s key industries, the study estimated that China’s non-tariff barriers would decrease South Korea’s GDP by 2.08%, production by 2.51%, exports by 3.37%, and imports by 1.24% (Oh 2017).

Second, for Seoul, failing in its countermeasure against China entailed a potential negative shift of public opinion towards the government. This is an expected loss of medium value and high possibility. South Korean public opinion on the installment of the US THAAD system was sharply divided. A series of Gallup polls in 2016 showed 50% support for THAAD deployment in July, which increased to 56% the following month (Gallup Korea 2016). This lack of overwhelming domestic support featured in a follow-up poll in January 2017 where 51% of the respondents indicated support. Of the respondents who supported the system’s installation, 61% thought that THAAD would serve as a defensive security measure and 20% believed it was a countermeasure against the North Korean nuclear threat. Of the respondents who were against the system, 20% thought that it was neither necessary nor practical. Only 12% of the respondents pointed out that South Korea’s relationship with its neighbors, including China, might be threatened by THAAD.

In addition, only 3% of the respondents were concerned about possible economic coercion from China (Gallup Korea 2017). Therefore, should Seoul retaliate and fail, it was reasonable to expect that it would lose domestic support at a time when there were clear divisions over the topic of THAAD. This would have been especially true of any situation that would have entailed further escalation of Chinese regulations.

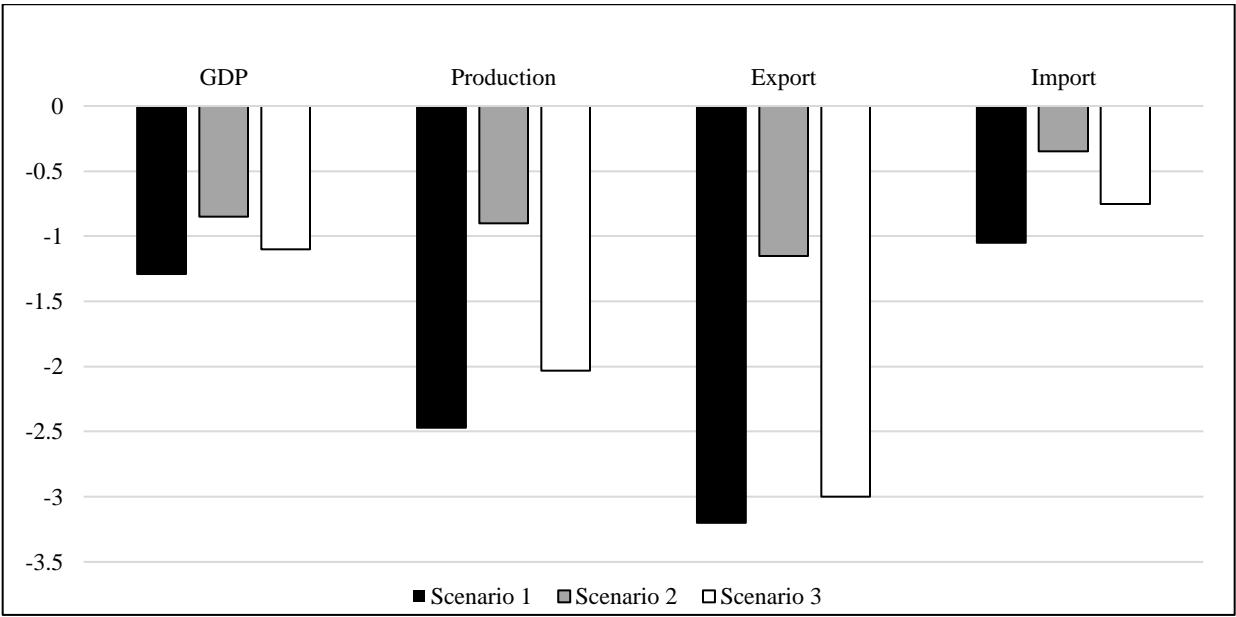


Figure 4.22 Estimation of the impact of China's non-tariff barriers on South Korea's macroeconomy, in percentage (Source: Oh 2017)

	Scenario 1 (TBT)			Scenario 2 (SPS)			Scenario 3 (ADP)		
	Production	Export	Import	Production	Export	Import	Production	Export	Import
Agriculture and fishery	-0.12	-0.41	-0.59	-0.90	0.02	0.00	-0.14	-1.18	-0.84
Energy	0.07	0.60	-1.52	0.16	0.00	0.01	0.06	0.45	-0.91
Beverage and food	-1.93	-1.18	-2.19	-8.27	-1.32	-0.74	-2.50	-1.93	-2.83
Textile and clothing	-1.45	-6.62	-1.99	-0.18	-3.07	-0.92	-6.32	-8.17	-2.31
Wood and paper	0.63	-2.89	-1.20	-0.82	-1.13	-0.76	-0.59	-3.79	-1.78
Petroleum and chemical	-9.14	-17.47	1.28	-1.69	-4.12	0.09	-12.14	-19.19	1.70
Base metal	-0.89	-8.71	1.15	-0.47	-0.43	-1.50	-2.44	-3.22	1.75
Primary metal	-1.39	-2.12	-1.61	-0.09	0.39	-1.77	-1.87	-3.99	-1.49
Motored vehicle and automobile	-5.34	-1.81	-1.39	0.60	1.15	-0.70	-0.79	0.07	-1.83
Electronics	-2.83	-0.45	-1.27	-0.40	-0.38	-0.70	-0.48	-0.06	-1.54
Other machines	-1.96	-3.17	-0.39	-0.19	-2.87	0.33	-2.11	-3.23	-1.32

Table 4.19 Changes in production and trade in various industries, in percentage (Source: Oh 2017)

Third, one of China's most important forms of leverage over South Korea was its close relationship with North Korea. By exacerbating its ties with Beijing, Seoul risked disrupting inter-Korean relations. This was of medium to high value and high possibility. In a public opinion survey, 34.3% of South Koreans saw China as the most important player in the North Korean nuclear weapons problem and as the state who should bear the most responsibility for solving this problem. This group was larger than those who said that either South Korea (33.7%) or the US (22.5%) should be the key actor. 82.4% of the respondents thought that China's help was necessary for the reunification of the Korean Peninsula (J. Kim, Kang, et al. 2014). Likewise, in a 2016 survey 52.5% of South Korean respondents identified China as the biggest obstacle to Korean reunification. Also, 46.3% thought that China should take an active role in solving the North Korean nuclear crisis, but only 35% believed that China would take such a role (Asan Institute for Policy Studies 2016). As Pyongyang's "guardian," China was the intermediary to the rogue state in the eyes of global leaders, and Seoul has always emphasized China's role in persuading Pyongyang to denuclearize (Y. H. Kim 2017). During an interview, Legislator Kim also highlighted the importance of China on the issues concerning North Korea and suggested that aggravating China entails complications in the South-North Korean relations.⁶⁰

As a final expected loss, the conflict could have developed into a military dispute. The possibility of the situation devolving into war is an outcome with extremely high (negative) value but also an extremely low possibility. In May of 2017, The People's Daily published an interview with a Chinese senior military strategist, Yang Chengjun, titled "China Should Take Military Action against THAAD Deployment." In this interview, he remarked:

⁶⁰ Kim Youngho. Zoom interview with the author. January 23, 2022.

“Diplomatic channels have so far proven unable to stop the deployment of THAAD. China [should] take military action to safeguard its national security. For instance, China could send more troops armed with advanced weapons to its northeast region, enhance air and naval forces and conduct regular anti-THAAD drills in the region. The country could also disclose more information about the deployment of its own advanced weapons, such as the DF-41 strategic missile (Li 2017).”

Going a step further, another Global Times editorial titled “THAAD Provides a Reason for China to Elevate Nuclear Prowess” cast the situation in starker terms:

“China’s related strategic weapons must target South Korea’s Seongju County, where THAAD will be installed. [...] The most essential task for China now is to boost its military power. The THAAD installation has offered China a crucial reason to increase and improve its tactical nuclear weapons. It would be worth it if Beijing can comprehensively elevate its strategic nuclear power because of THAAD (Global Times 2017).”

When asked how threatened they felt, 71.9% of South Korean respondents answered that they saw China’s economic expansion as a threat and 66.4% said they viewed its military expansion as similarly ominous⁶¹ (J. Kim, Lee, et al. 2014). While full-blown militarized warfare was unlikely, China possessed enough military power for South Korea to feel threatened.

4.3.2 Nonretaliation

⁶¹ The percentage of South Koreans who are concerned about China’s military rise has remained somewhat consistent in recent years. For example, in a series of surveys from 2012 and 2014, respectively, 73.2% and 66.5% of South Korean respondents indicated that China’s military expansion was threatening to South Korea (J. Kim, Kang, et al. 2014).

Contrary to the retaliation policy, Seoul also had the option of acquiescing or not responding to China's coercive policies. A successful nonretaliatory policy entailed an expected gain of appeasing Beijing, causing the latter to change its mind and withdraw its initial regulatory policies. It also potentially meant winning domestic support. A failed nonretaliatory policy involved two expected losses: the continuation of China's regulatory policies and losing the domestic public's support.

Expected Gains

The first expected outcome of a successful nonretaliatory policy is Beijing eventually withdrawing its initial coercive policy. This is a high-value gain with a medium possibility. As we saw above, the Chinese regime's opaqueness hindered outside assessments of Chinese leadership's decision-making or how deeply the regime was connected with the economic fallout. Beijing refused to admit to implementing sanctions with the exception of and some of the measures seemed plausibly grassroots, such as the *Hallyu* boycott. Though these assessments need to be weighed against the fact that state-run media and government officials vociferously criticized South Korea. The overall uncertainty made South Korean leaders worry extensively about the situation worsening. As mentioned above, China's economic pressure took a toll on the South Korean economy. Many South Korean companies doing business in or with China reported that THAAD deployment was negatively impacting them. A 2017 survey of 597 South Korean firms in China found that 36.4% of the respondents had experienced scheduled events being unilaterally postponed and 39.7% have witnessed lag in the Chinese government's review or licensing processes (*Table 20*).

Answer	Response rate
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Cancellation of business agreement(s)	33.3%
Postponed scheduled event(s)	36.4%
Lag in the government's review or licensing processes	39.4%
Pressure to stop using <i>Hallyu</i> ⁶² contents	18.4%
Limited product distribution	33.3%
Tightened regulations such as tax inspection and administrative guidance	10.5%
Others	8.8%

Table 4.20 Survey result of the impact of THAAD installment on South Korean companies doing businesses with China (Source: KITA 2017)

While the situation was convoluted, there were reasons to believe that Beijing would change its behavior as a result of Seoul not retaliating. Politically, China needed South Korea's cooperation in its struggle against the US. Legislator Kim made the following comment on China's attitude toward the US-South Korean relationship:

“A researcher at the Chinese Academy of Social Sciences (中国社会科学院) called me back in 2017 and asked what Seoul's stance was on the China-South Korea relations. I expressed great discomfort. [...] I told him that when Presidential Candidate Moon gets elected he has no choice but to strengthen our alliance with the US rather than pursuing balanced diplomacy, if China keeps on fomenting anti-China sentiment among South Koreans like this. He was dumbstruck by my comment. [...] I met a lot of high-ranked CCP diplomats including Yang Jiechi (杨洁篪) and Xing Haiming (邢海明). Whereas China pressured South Korea to be balanced between China and the US in the past, Beijing now respects the US-South Korea alliance much more and is worried about it.”⁶³

⁶² *Hallyu* (韓流), also referred to as ‘Korean wave,’ is an expression used to describe the increased popularity of South Korean cultural contents such as K-pop, movies, and K-dramas.

⁶³ Kim Youngho. Zoom interview with the author. January 23, 2022.

Economically, Chinese industries were reliant on South Korean GVC inputs especially in ICT, a fact which was highlighted by the coercive strategies Beijing used. A South Korean professor and a China expert, Choi Pil Su, commented: “If China really wanted to make South Korea suffer because of THAAD, it would have blocked our intermediate goods which consist 80% of the trade. But they could not do that since we have more power as the seller in that case.”⁶⁴ Even when South Korean concerts were being canceled and Chinese tourists stopped visiting South Korea, Beijing circumvented intermediate goods and machines as possible targets. A sober 2017 South Korean think tank report highlighted both South Korean companies’ losses in tourism and final goods businesses but concluded along the following lines:

“The technological difference between manufacturing in South Korea and China is decreasing, but the threat of any imminent competition is limited. There are big differences in the types and prices of products that the two countries export and South Korea is maintaining a wide gap in the overall level of technology. We should therefore center our efforts around intra-industrial trade in areas such as electronics and focus on maintaining this complementary relationship based on our superior position in this structure of the division of labor rather than competing against China (Hana Institute of Finance 2017).”

Until 2016 when the THAAD conflict started, South Korea’s market share for high value-adding intermediate goods gradually grew from 15.8% in 2008 and 18.5% in 2012 to 20.6% in 2015. Especially in terms of memory semiconductors, the annual growth rate of China’s imports from South Korea was 20.1% on average from 2008 to 2018 and South Korean products occupied 46.3% of China’s imports by 2015. Similarly, while Chinese imports of commodities requiring a lower

⁶⁴ Choi Pil Su. Zoom interview with the author. January 20, 2022.

level of technology from South Korea decreased since the late 2000s, high-tech machines used in manufacturing products such as semiconductors, displays, and chemical analysis increased (S. Kang 2019).

In a similar context, South Korean experts paid attention to China's economic coercion against Japan in 2012 over the Senkaku/Diaoyu islands and what Lim and Ferguson (2021) call "boycott fomentation." In September 2012, Japan announced its plan to nationalize the disputed Senkaku islands, which was met with Beijing's pressure and a series of anti-Japan boycott movements in China throughout 2013. In some cases, these demonstrations developed into violent protests. For instance, there were widespread reports of arson and other attacks against targets such as a Toyota dealership in Qingdao, Japanese convenience stores and supermarkets nationwide, and a parts factory for Panasonic in Qingdao (W. Jang 2017). A Chinese expert on trade and commerce made the following comment during an interview:

"In China, it's very dangerous for people to move in public in a big group. To protest, that is. In this case, the government was very accommodating to all actions these groups undertook. Eventually demonstrations led to vandalization of Japanese car dealers and stores. In Xian, the owner of a Toyota Corolla was stopped and beaten by mobsters."⁶⁵

As a result, many Japanese businesses withdrew from China and Japanese investment in China also decreased. However, Japan's exports to China remained stable—the proportion of exports to China in Japan's total gross exports was 19.7% in 2011, 18.1% in 2012, 18.1% in 2013, and 18.3% in 2014. At the same time, Japan's export of high-tech products (including radioactive materials and industrial robots) to China increased in 2012 by 71.6% and 63.7%, respectively. A

⁶⁵ Xing Yuqing. Zoom interview with the author. January 10, 2022.

South Korean think tank report interprets this outcome as a result of China's increased demand for high-tech materials, for which it is unable to substitute the import source (E. Lee and Moon 2017). Moreover, Japanese automakers' market share in China recovered after 7 months. Taiwan also experienced a similar Chinese economic coercion in 2016 when pro-independence Tsai Ing-wen was elected as the president. CCP also decreased the number of Chinese tourists visiting Taiwan and tightened import regulations, but the relationship recovered within a year (Hana Institute of Finance 2017).

In addition, many South Korean businesspeople were reluctant to make a direct causal connection between THAAD and China's coercive behavior. As early as 2012, a survey conducted on Chinese and South Korean companies doing business in China found only half of South Korean respondents (55.6%) viewing China as a future partner while 7 in 10 Chinese respondents (69.5%) saw South Korean companies the same way (B. Choi 2012). Many experts that I have interviewed claimed that South Korean businesses' exodus from China was already happening even before the THAAD conflict. Former Trade Minister Bark made the following comment:

“China's labor was really cheap in the early 1990s but their GDP per capita is now almost \$10,000. On the other hand, Vietnam has labor force of similar quality but its GDP per capita is only \$3,000. South Korean companies thought that they didn't have to pay the high price in China, so they are moving to ASEAN and India.”⁶⁶

Professor Choi also made the following comment:

“South Korean companies doing business in China are already at their limits. They barely break even. For example, Hyundai Motors of course suffered because of THAAD, but they

⁶⁶ Bark Taeho. Phone interview with the author. November 29, 2021.

were already in a bad spot because of their excessive factory investment and the rise of local Chinese automakers.”⁶⁷

In a survey conducted on South Korean companies in January 2017, 48.5% of the respondents thought China’s coercive policies toward South Korean firms would stay in place until Beijing changes its broader protectionist trade policy. In other words, approximately half of the respondents saw Beijing’s regulatory policies as more connected to China’s broader economic and industrial interests rather than THAAD. On the other hand, 38.2% thought that this pressure would continue until Seoul withdrew its decision to install THAAD and 13.2% believed it would end soon regardless of what Seoul does. Moreover, 61.8% of the respondents suggested South Korea’s diplomatic efforts are the most effective response for ending China’s coercion, *regardless of THAAD*. Only 26.5% saw the withdrawal of THAAD as the most effective policy to ease the situation (Hong 2017).

The second type of expected gain from nonretaliation was domestic support from not actively escalating the conflict. This was a medium-value gain with medium possibility. As mentioned above, the South Korean public opinion on THAAD was sharply divided. Whereas Gallup surveys showed an almost even divide, in a survey conducted by a more conservative South Korean think tank, 73.9% of South Korean respondents answered that they supported the THAAD deployment while only 20.7% were against it (Asan Institute for Policy Studies 2016). Moreover, many South Koreans were aware that China was the biggest trading partner for South Korea and offered great value as a market. At the time, a survey of South Korean companies found 43% of the respondents answering that “elimination of external instabilities such as the THAAD conflict

⁶⁷ Choi Pil Su. Zoom interview with the author. January 20, 2022.

and protectionism” should be the primary goal of the next administration (D. H. Bae 2017). Many South Korean business executives were worried about China imposing more far-reaching measures given the scale of the initial sanctions. Therefore, the best scenario in terms of public opinion would be South Korea making the Chinese leadership withdraw the coercive policies without escalating the conflict.

Expected Losses

Should South Korea’s nonretaliatory policy fail, the first expected loss was the continuation of China’s regulatory policies. A South Korean think tank report anticipated four types of economic regulations from China. First, Beijing will directly target South Korean businesses in China through the state media and tightened administrative investigations. As mentioned above, Chinese media was actively criticizing South Korea’s decision to deploy THAAD and was calling for Chinese citizens to boycott South Korean products. Within a month of Seoul’s decision, the Chinese Ministry of Foreign Affairs and the Ministry of National Defense had made 27 separate public comments against the deployment. During the same period, The People’s Daily alone published 265 reports denouncing the decision (W. Jang 2017). While larger firms such as Hyundai Motors and Samsung Electronics had the capacity to adjust to the adverse situation, 58% of the South Korean companies doing business in China were small to medium-sized firms that lacked such flexibility (Hana Institute of Finance 2017). Therefore, although retaliating and failing to compel China to change course would have entailed steeper costs overall, the continuation of China’s economic coercion would place an outsized burden on these firms in particular.

Second, the institute also anticipated that Beijing might further regulate Chinese tourist visits to South Korea by tightening the visa issuance process and banning tourism companies from selling South Korea tour programs. During the aforementioned Japanese and Taiwanese cases, Beijing ordered 30% reduction of the number of Chinese tourists visiting these countries. Chinese tourists were such a large part of the South Korean economy that a 30% decrease in the number of Chinese visitors was equivalent to 0.4% of the South Korean GDP (Hana Institute of Finance 2017).

Third, Beijing could, the group reasoned, implement more non-tariff barriers such as delays in South Korean exports and tighter hygiene inspections. For example, one of the South Korean export products that were initially targeted by Beijing was cosmetics. In 2015, China imported around 40% of South Korean cosmetics exports which was roughly a quarter of the total exports from China to South Korea (K-stat database). In August 2016 there were, for example, 61 cases of South Korean cosmetic product exports failing to pass China's import inspections (W. Jang 2017).

Fourth, Chinese companies and individual investors were withdrawing their investments in South Korea, and the think tank concluded these trends could continue. As seen in *Table 4.21*, Chinese investment was 5.1% of the total foreign investments in South Korea. While South Korean investment in China was much larger than corresponding Chinese investment in South Korea, it was enough to threaten South Korea's economy should Chinese investors decide to withdraw on a large scale. Beginning from August 2016, China's stock investment in South Korea decreased even though the overall rate of foreigners' stock investment increased in the same period (K-stat database).

	South Korean investments abroad (assets)		Foreign investments in South Korea (debts)	
	China	Share	China	Share
Total	\$121.7b	15.7%	\$48b	5.1%
Direct investment	\$69.9b	24.4%	\$6.6b	3.7%
Stocks	\$9.4b	6.1%	\$8b	2.3%
Bonds	\$4.4b	5.4%	\$16.1b	7.8%
Derivative products	\$0.04b	0.1%	\$0.05b	0.1%
Others	\$38b	16.9%	\$17.2b	10.0%

Table 4.21 Foreign investment in China and South Korea (Source: Bank of Korea database)

Answer	Response rate
First half of 2017	13.6%
Second half of 2017	44.4%
First half of 2018	21.5%
Second half of 2018	15.2%
Others	5.3%

Table 4.22 Survey result of South Korean companies doing businesses with China on their expected duration of China's THAAD-related economic coercion (Source: KITA 2017)

In terms of possibility, as mentioned above South Korean experts in general thought that China's economic coercion would not last for too long. Many of them saw China's regulations as a part of Beijing's larger endeavors to achieve economic and industrial independence, with THAAD serving only as a pretext (Hong 2017). In a survey, for example, approximately half of the South Korean businesspeople respondents thought China would withdraw its coercive policies by the second half of 2017. Only 5.3% thought it would go beyond 2018 (*Table 4.22*).

The second expected loss of nonretaliation was losing the domestic public's support if the government became seen as unwilling or incapable of standing up for itself while also failing to regain the economic losses from China's initial coercive policies. This is an outcome with medium value and medium possibility. When the THAAD conflict first started, South Korean public

opinion was not as hostile towards China as it was against Japan. Moreover, the public opinion on THAAD was also divided. Therefore, while the negative shifts of public opinion coming from escalating the conflict would be significant, it is plausible to anticipate that ‘doing nothing’ option would also cause a similar level of public discontent.

4.3.3 Theoretical Expectations of the Case Outcome

Prospect Theory

Table 4.23 summarizes the expected outcomes of the retaliation and nonretaliation policy options for the target state in the China-South Korea trade conflict case. The combined weight of a further deteriorating trade relationship with China, negative shifts of public opinion, China potentially refusing to mediate between South and North Korea, and the possible militarization of the conflict involve greater expected losses than nonretaliation would have entailed. Similarly, China withdrawing its initial regulations in a shorter timeframe and the possibility of gaining domestic support for standing up to China carry more potential value than the expected gains from nonretaliation. Below is an illustration of the hierarchy of the policy options in the China-South Korea case:

Retaliation success: China coerced into withdrawing its regulations (Best)

Nonretaliation success: Appeasing China (Good)

Nonretaliation failure: Extended coercive policies by China (Bad)

Retaliation failure: Conflict escalation (Worst)

	Retaliation (risk-seeking)	Nonretaliation (risk-averse)
Expected losses	1. Intensified economic sanctions 2. Militarization of conflict 3. No mediation between South-North Korea 4. Negative shifts of public opinion <i>(Extremely high cost)</i>	1. Continued economic coercion 2. Negative shifts of public opinion <i>(High cost)</i>
Expected gains	1. China withdrawing regulations 2. Positive shifts of public opinion <i>(Extremely high value)</i>	1. Eventual conflict de-escalation 2. Positive shifts of public opinion <i>(High value)</i>

Table 4.23 Summary of the policy outcomes in the China-South Korea trade dispute case

Among the four hypotheses I have suggested in chapter two, this chapter so far has already discussed *H1* and *H2*. First, in assessing their relationship with the sender, the target’s policymakers used the pre-conflict GVC relationship as a reference point (*H1*). As a result, South Korean decision-makers will make comments comparing their pre- and post-coercion situation. This is in direct contrast with EUT in which the actors only focus on the absolute outcomes of the given policy options. Second, using a reference point, policymakers will position themselves in a domain of gain (*H2*). South Korean actors will frequently point out how they are not satisfied with the current situation in which China is using economic means to pressure South Korea. However, they will also express their readiness to substitute China and their belief that Beijing cannot continue the coercion for an extended period of time because South Korea is in a more favorable position.

In addition to these first two hypotheses, I expect to see two target behavior patterns as the outcome of this economic coercion. First, because the target is in a domain of gain in this case, we should be able to observe a pattern of risk-averse behavior (*H3*). The South Korean government will not employ retaliatory policies, such as imposing reciprocal regulations on China, officially taking the case to the WTO, or actively supporting their domestic businesses at the government

level. By acting in this manner, policymakers will evince fear of larger losses, attempting to avoid further aggravating Beijing. Also, while South Korean policymakers and experts will still pay attention to opportunities to regain what they have lost because of China's coercion, they will be more concerned about the risks entailed in retaliation (*H4*). Therefore, avoiding the expected losses from retaliating will carry more value in the eyes of Seoul than the expected gains from forcing China to withdraw its regulations.

EUT

Unlike the previous case study in which the target was in a domain of loss, in the China-South Korean case, EUT and prospect theory both predict that the target should not retaliate. This is consistent with the findings of the broader body of research on prospect theory: actors in the domain of gain ought to behave in a manner that is similar to that predicted by EUT (Kahneman and Tversky 1979; McDermott 2001). Since, in this case, the target and sender share a thick GVC relationship, target actors will show predominately risk-averse behavior against the sender's coercive policy. This risk-averse attitude will result in a nonretaliatory policy with a narrower gap between policy success and failure. South Korean policymakers and experts will express their fear of larger losses in the future that the retaliation option entails, instead of arguing to lay low.

However, there are still differences in the behavior of a EUT actor compared to the one prospect theory postulates. If the process in which the target policymakers decide to retaliate or not more closely resembled the logic of EUT, these leaders would not have a reference point for assessing the target-sender relationship. Instead, they should focus on the final absolute welfare independent from their pre-conflict standing. Then, in the China-South Korea trade conflict, the

target actors ought to focus only on what the different policy options might bring in the future as a result of their being pursued and not consider what they have lost because of the conflict. The lack of a reference point should also result in the target actors not situating themselves in a domain of gain or loss.

Targeted Sanctions Hypothesis

Beijing targeted industries that impact the broader South Korean businesses and audiences. This was a sharp contrast from Tokyo's approach in the previous chapter, which narrowly targeted South Korean key industries' GVCs where it was the most vulnerable. The industries China used to pressure Seoul were tourism, entertainment contents, and automobiles. Restricting tourism was especially painful for the South Korean economy because the range of industries 'tourism' encompasses is vast. From larger companies such as airlines, duty free shops, hotels, and travel agencies, to smaller ones such as restaurants, independent shops in tourist districts, and hospitals that Chinese tourists use for cosmetic treatments and surgeries in South Korea were all heavily dependent on China. For instance, the president of the Sogong Co-op of Small Businesses and the president of the National Association of Underground Passage Shop Owners, Jung In-dae, made the following comment during a radio interview:

“In Myung Dong district, half the visitors are from China. [...] 2014 Sewol Ferry Incident, 2002 SARS outbreak, 2015 MERS outbreak, and now the THAAD conflict —there have been many sources of economic recession. It was better during the Sewol Ferry and MERS, but THAAD made tourists basically vanish so the whole shopping district is annihilated. [...] We have lost on average more than 40% of our sales volume so far. Some lost half.

Increasingly more shops cannot pay their rent and management expenses for more than 2-3 months (YTN 2017).”

Therefore, if the logic behind targeted sanctions being more effective than conventional ones lies with the difference in the amount of pain inflicted upon decision-making elites, Beijing’s broad economic coercion should have had a lower possibility of succeeding. The elites partially shared the economic impact of China’s policies as in the cases of Hyundai Motors and Lotte, but the burden mostly fell on a broader range of small companies and individual shops. This, in turn, means that the targeted sanctions hypothesis will expect South Korea not to withdraw its decision to deploy THAAD. The literature does not address the conditions under which a target state is likely to retaliate because, as mentioned above, the economic coercion outcomes are dichotomized into discrete categories of success and failure (Peksen and Jeong 2021). In spite of this broader omission, it is possible to assume that the targeted sanctions hypothesis ought to predict that China’s general coercive policies should fail and that South Korea should act in a way that does not correspond with Beijing’s preferences. Therefore, Seoul’s reactive policies will range from acquiescence (i.e., withdrawing its decision to deploy THAAD) or simply not responding to China’s pressure.

Political Instability Hypothesis

While the previous case between Japan and South Korea was staged during a period when there was no single major domestic disturbance in South Korea, the situation was very different when the THAAD conflict started. In October 2016, South Korean media and politicians first started discussing the possibility of impeaching President Park Geun-hye. This impeachment came as a

response to the ongoing scandal regarding Choi Soon-sil's illegal meddling in President Park's political decisions, as well as Park being implicated in a broader range of corruption scandals. As seen in *Table 12*, South Koreans who thought President Park was doing a good job dropped to 12% by the fourth quarter of 2016. In a November 2016 Gallup weekly survey, only 5% of the respondents indicated their approval of her performance while 89% of the respondents showed disapproval (Reuters 2016). From October 2016 to March 2017, when the South Korean Supreme Court decided to uphold the National Assembly's impeachment verdict, around 16.56 million South Koreans participated in weekly candlelight protests nationwide (Do 2017).

When this national scandal first surfaced, South Korea was just starting to suffer from Beijing's economic coercion which had started in earnest during the summer of 2016. Immediately before October 2016 when the mass protests first started, China decided to tighten the process for issuing business visas to South Koreans, unilaterally canceled or postponed several South Korean concerts and TV shows, and excluded South Korean automobile batteries from the government subsidy list. Therefore, the domestic stability hypothesis would anticipate that Seoul should try to divert domestic dissatisfaction to China by retaliating and escalating the conflict.

Below is a simplified summary of the theoretical predictions of these four competing theories:

Theory	Independent Variable	Outcome Prediction
GVC Prospect Theory	Domain of gain based on GVC relationship	Nonretaliation
Expected Utility Theory	Calculation based on final outcomes	Nonretaliation
Targeted Sanctions Hypothesis	Sanction strategy	Non-response or acquiescence
Political Instability Hypothesis	Domestic political situation	Retaliation

Table 4.24 *Simple summary of the four competing theories' independent variables and outcome predictions*

4.4 Empirical Outcomes

This chapter has so far provided historical background for the trade conflict between China and South Korea concerning the deployment of THAAD and explained why South Korean decision-makers situated themselves in a domain of gain vis-à-vis China in this conflict. I also applied prospect theory, EUT, targeted sanction hypothesis, and political instability hypothesis to make theoretical predictions of what the coercive policy's outcomes should look like for each theory. In this section, I illustrate the empirical outcomes and use the within-case congruence method by matching them with the four theoretical predictions summarized in *Table 24*.

As prospect theory suggested, the target in a domain of gain demonstrated a contrasting response to the sender's economic coercion compared to the previous Japan-South Korean case. However, as mentioned above, it is important to have a closer examination of the mechanism behind the decision since EUT also makes the same theoretical prediction in the case of a domain-of-gain actor. The South Korean government showed great reluctance to escalate the conflict despite domestic criticism and continued pressure from China. When President Park was impeached and President Moon started his term, one of his highest priorities was normalizing South Korea's relationship with China. As a part of this effort, he temporarily suspended the THAAD deployment in June 2017, although it was overturned the next month. Many experts I have interviewed explained that a big part of why South Korean decision-makers did not retaliate was because, indeed, they were not willing to risk a potential conflict escalation over Chinese inputs to shared GVCs that they can replace. Below are some excerpts from the expert interviews I have conducted:

*“There were alternatives available in the case of our conflict with China, so the government did not have to support South Korean firms. During our conflict with Japan, it was evident that our companies were going to suffer losses as Japanese cutting-edge technological intermediate goods stopped being shipped. The government had to help.”*⁶⁸

*“There was no reason for Beijing to mess with GVCs. They were still buying necessary parts and products from South Korea. If they couldn’t, it would have done more damage to them. At that time, Japan, Taiwan, and South Korea exported similar ICT intermediate goods to China. China was in a bad relationship with Taiwan after Tsai Ing-wen became the president. It has not recovered its relationship with Japan since the 2013 territorial dispute. [...] *China was more dependent on South Korea so it was unnecessary for us to retaliate.*”*⁶⁹

*“If China stops importing from South Korea, they are at a disadvantage. In 2000 when we decided to stop importing Chinese garlic, China stopped importing our cell phones so we had to give in. Back then for China cell phones were 100% imported as final goods. Now they manufacture phones in China. But the parts are from South Korea. [...] *The South Korean government concluded [in the THAAD case] that it would be better not to respond at all.*”*⁷⁰

Further, South Korean officials’ passive reaction to various instances of diplomatic disrespect on Beijing’s part demonstrates this firm nonretaliatory posture. When President Moon visited China for a summit in July 2017, Chinese security guards assaulted accompanying South

⁶⁸ Bark Taeho. Phone interview with the author. November 29, 2021. Emphasis added.

⁶⁹ Ji Man Soo. Zoom interview with the author. January 09, 2022. Emphasis added.

⁷⁰ Choi Pil Su. Zoom interview with the author. January 20, 2022. Emphasis added.

Korean reporters during an official event on China-South Korea trade partnership. During this visit, China also engaged in several other diplomatic slights when, for example, Beijing sent an assistant secretary to greet Moon at the airport. No major Chinese news media reported Moon's official visit. In addition, Moon was left to take care of his own meals and was not, for example, granted an official dinner on the day he arrived nor an official breakfast the day after and Foreign Minister Wang Yi patronizingly tapped on Moon's shoulder after a handshake (M. Park 2017). Seoul embargoed all reporting in South Korea concerning the attack on the journalists and refused to react to this provocation beyond "expressing regret" to the Chinese government. In fact, Legislator Park In-suk made the following comment during a government meeting:

"No one is talking about it as if someone put a gag order. It's unacceptable behavior on China's part but both the government and the media are so quiet. I used to be a doctor before becoming a politician and although I was not in ophthalmology⁷¹, this is a serious injury even judging with simple medical common sense. I don't see any reports on our government asking Beijing for investigation or receiving any apologies (H. Park 2017)."

Similarly, on February 12, 2016, Chinese Foreign Minister Wang Yi denounced Seoul and Washington's decision to deploy THAAD quoting *Records of the Three Kingdoms*: 項莊舞劍 意在沛公 ("Xiang Zhuang performs a sword dance, but his mind is set on Liu Bang."). This phrase requires a bit of further elaboration. It describes the Hongmen Feast (鴻門宴) scene in the book in which warlord Xiang Yu's (項羽) advisor Fan Zeng (范增) orders Xiang Zhuang to assassinate Liu Bang (劉邦; Emperor Gaozu of Han). This comment was meant to convey a great deal of

⁷¹ The reporter was diagnosed with eye socket and nose fractures.

disrespect by comparing the US to Xiang Yu and South Korea to Xiang Zhuang, who is merely Fan Zeng's subordinate. The other allegorical implication intended here is that South Korea is merely a puppet that is pressured into doing the bidding of the party, the US/Xiang Yu, who is more directly responsible for the blameworthy action. Seoul did not make any official comment on any of this discourtesy (Shin 2016).

Moreover, contrary to the previous case study, Seoul did not internationalize the issue or officially sue China at the WTO. After the deployment, Prime Minister Hwang Kyo-an was confident that "China and South Korea's relationship is deep enough that China cannot easily engage in retaliation" and that "concerns over China's retaliation will not be realized." Foreign Minister Yoon agreed that "China has not mentioned or hinted at any economic and military sanctions at the governmental level," so South Korea should "not make hasty conclusions (Yi 2016)." Six months into the conflict, MTIE expressed its willingness to sue China at the WTO, which several other government officials expressed support for. The next day, however, the Blue House officially announced that it would not be taking China's coercive policies to the WTO. Blue House spokesperson Park Soo Hyun commented during a press briefing that Seoul will prioritize "the South Korea-China cooperation over the issue of North Korean nuclear weapons (Joo 2017)." Seoul's commitment to non-retaliation was so deep-seated that when a South Korean delegate to the WTO requested adding the ongoing conflict to a WTO meeting agenda, the government was quick to downplay this, emphasizing that such an action was "in no way an official motion (Kyeohan Cho 2017)." Following is Legislator Kim's comment on the government's reaction at the time:

"We could have sued China at the WTO. But even when we did it with Japan later, it has no binding power. It takes a long time, too. We could have internationalized it. I thought

of a lot of different options but couldn't find any solution. If we retaliate against Chinese firms, that will hurt our national interest and make conflict resolution even harder.”⁷²

As a result, South Korean companies were “prodded to work out responsive measures on their own (J. Choi 2017).” Many adjusted their China-dependent GVCs by diversifying their outsourcing partners. Samsung partially moved its operations from China to Vietnam. In 2015 it invested \$20 million in factory development and by 2017 Hanoi represented 40~50% of its total smartphone production. Samsung SDI began manufacturing batteries in Hungary and SK Innovation replaced its proposed Chinese factory with one in Eastern Europe. LG Electronics shifted its GVCs elsewhere while reducing production in China, and LG Chem began primarily producing batteries in Poland. Similarly, automobile firms, which suffered the most from Beijing's policy, moved their GVCs to Vietnam, Indonesia, and India (J. H. Park 2017). When China began imposing burdensome inspection requirements on South Korean chemical firms, Seoul brusquely dismissed industry concerns about any connection between the timing of these inspections and THAAD (Shim and Kim 2016). Following is how Legislator Kim described the situation to the author during an interview:

“The government tried to assist the industries that China targeted during this time since there were so many of them, but it was in general impossible. Especially for Lotte, it completely withdrew from China but we didn't provide it with any help. Lotte Marts and other businesses closed, but I have not heard of the government helping it whatsoever. [...] We could have helped these companies financially and compensated what they have lost.

⁷² Kim Youngho. Zoom interview with the author. January 23, 2022.

But there was no compensation for the damage. [...] All we could do back then was to persuade Beijing to withdraw its regulations by appeasing it.”⁷³

Within a year of THAAD deployment, Seoul adopted another ‘three NO’ policy to appease China and normalize the relationship, which included no further THAAD installment, no trilateral military alliance with Japan and the US, and no participation in American missile defense programs (B. Park 2017).

South Korean decision-makers decided to not retaliate to China’s economic coercion and this empirical outcome concurs with EUT’s prediction as it does with that of prospect theory. As EUT suggested, target state actors showed a risk-averse attitude faced with an important trading partner and fear of larger losses retaliatory policy entailed. Decisionmakers’ unwillingness to take risks resulted in a nonretaliatory policy with a narrower gap between the outcomes of policy success and failure. However, while the ultimate policy decision was in accordance with EUT’s outcome expectations, the process that led to this conclusion more closely resembles the workings of prospect theory.

The most central distinction between EUT and prospect theory is whether there is a reference point through which an actor situates herself into a domain of loss or gain. In the case of South Korean decision-makers vis-à-vis China, the evidence demonstrates that they viewed themselves in a domain of gain. On the one hand, South Koreans were concerned about losing their Chinese market share and potentially being overtaken by China’s rapid technological rise. They were also discontent with the situation and wanted to regain what they had lost due to China’s coercive policies. On the other hand, the weight of what they already had lost did not exceed the

⁷³ Kim Youngho. Zoom interview with the author. January 23, 2022.

risks entailed in retaliating because of their strategically superior position. Most South Korean actors were aware of their strategically advantageous position within the GVCs it shared with China and, accordingly, not many were worried about being replaced by China in these GVCs. In fact, most of them expressed confidence that they still maintained a dominant status in cutting-edge technology. This dynamic led South Korean leadership to lay low rather than retaliate and escalate the conflict. Retaliation not only could have resulted in more economic pressure from China, but also political and even military consequences, which was not worth the relatively replaceable role China occupied in their shared GVCs. These predictions about the outcomes of this conflict, as we have seen above, are consistent with those of EUT. However, the process through which South Korea's elites arrived at them would have been entirely different if the theoretical underpinnings of EUT were a better fit for the evidence at hand. EUT is forward-looking and it is concerned, first and foremost, with the possible distribution of benefits and costs associated with a particular policy option. This, as I have shown, is not how the South Korean political and industrial establishment viewed the situation.

Moreover, the target sanctions hypothesis predicted that China's coercion should be more likely to fail, meaning that the South Korean government should not have changed its behavior. Unlike Japan's coercive policies, which were narrowly focused on South Korea's weak points in shared GVCs, China had a broader range of targets encompassing the tourism, entertainment, and automobile industries. While this external pressure caused South Korea economic pain, especially compared to the Japanese case, the damage was less consequential. In the end, South Korea accomplished its strategic goal of deploying THAAD in its territory despite the costs involved. Ji Man Soo, a South Korean expert on Chinese economic and foreign policy, made the following comment during an interview with the author:

“We [South Korea] brought in the THAAD system for a non-economic reason. We accomplished what we wanted, so all we needed to do was to let time pass and wait for the situation to calm down by itself. If we remain quiet and let time pass, THAAD will still be there. And that’s accomplishing our strategic goal at the end of the day, isn’t it?”⁷⁴

This empirical outcome concurs with the theoretical expectation of the targeted sanctions hypothesis in that the target state did not change its behavior because of the sender state’s coercion. However, the hypothesis does not distinguish different outcomes of coercion failure, which may range from retaliatory coercion to non-response from the target.

Lastly, the political instability hypothesis predicted that the South Korean leadership should have used China’s economic pressure to distract the public. Contrary to the Japan-South Korea trade conflict, South Korea had a clear political issue at home when China started implementing coercive policies against South Korea. The presidential scandal that ultimately led to President Park’s impeachment broke out in 2016 between summer and fall. The media first reported President Park’s illicit connection to the Mir and K-sports foundations, and later found revealed that Choi Soon-sil, the daughter of a religious cult leader Choi Tae-min, was deeply implicated in these scandals. Moreover, she was not only given classified information and allowed to edit the president’s speeches at will, but also, effectively, acted as the president through a proxy. South Koreans were infuriated by President Park and Choi’s corruption and abuse of power, leading to the outbreak of mass candlelight protests mentioned above. Three to four months passed between when the scandal first broke out and December and when the National Assembly suspended President Park as the executive leader. However, during this political turbulence, Park

⁷⁴ Ji Man Soo. Zoom interview with the author. January 09, 2022.

administration made no attempt to use China's economic and political pressure against South Korea as a means to divert the public's attention.

As *Table 24* illustrates, among the competing hypotheses, EUT and the targeted sanctions hypothesis predicted that Seoul should not retaliate given the risks involved. The political instability hypothesis anticipated that the target should use the sender's external coercion to create a rally 'round the flag effect among its domestic constituency and divert their attention from any ongoing political turmoil. Therefore, in contrast to the previous case study, most alternative explanations accurately describe the target's ultimate policy decision but do not adequately account for the mechanisms behind it.

As in the Japan-South Korea case, I asked experts during interviews why they thought Seoul chose to lay low instead of retaliating. Most of them answered, "China's strong national might." Some explicitly mentioned that there was no need for the government to support firms doing business in China because "China was the one that was more dependent on South Korea's high-tech exports."⁷⁵ Many interviewees also pointed out that the vagueness of China's coercion made it hard for Seoul to respond in a systematic manner. They nonetheless acknowledged that by not providing any support to South Korean firms and individuals punished by China's policies and remaining diplomatically quiet, the government showed active determination to not escalate the conflict.

⁷⁵ Choi Pil Su. Zoom interview with the author. January 20, 2022, Bark Taeho. Phone interview with the author. November 29, 2021, and Min Dong Joon. Zoom interview with the author. January 20, 2022.

Chapter Five

Experiment on Prospect Theory and Trade Relationship

5.1 Introduction

Experiments have recently risen in prominence among IR scholars. This surge of interest is in part due to the flexibility they afford experimenters to highlight correlations and causal mechanisms by controlling and manipulating variables (Friedman, Lerner, and Zeckhauser, 2017; Hyde, 2015; Mintz, Redd, and Vedlitz, 2006; Linde and Vis, 2017). Meanwhile, most IR studies using prospect theory as their theoretical framework use either qualitative methods (Farnham 1992; Fuhrmann and Early 2008; He and Feng 2012; 2013; Levy 1997; McDermott 2001; Mercer 2005; Morrissette 2010) or non-experimental quantitative methods (Berejikian and Early 2013; Kowert and Hermann 1997).⁷⁶ This is a curious trend given that prospect theory originates from the discipline of psychology and behavioral economics and the initial papers demonstrating its validity as an explanation of human behavior employed an experimental methodology (Boettcher III 2004; Kahneman and Tversky 1979; Tversky and Kahneman 1992). In fact, many studies that use prospect theory outside of IR still largely rely on experiments, such as those that examine the decision-making behavior of politicians (Linde and Vis 2017), trends in public policymaking (Bellé, Cantarelli, and Belardinelli 2018), tax compliance behavior (Austin, Bobek, and Jackson 2021), financial forecasting (Shrader, Simon, and Stanton 2021), and cybersecurity (Qu et al. 2019).

⁷⁶ The only exceptions that use experiments to the best of my knowledge are Boettcher III (1995, 2004) and Haerem et al. (2011).

The reasons behind this discrepancy are largely twofold. First, it is challenging to replicate the real-world policymaking processes accurately enough for experiments to have viable external validity. Experiments are one of the best research methods for elucidating the causal relationship among variables in a controlled setting by simplifying the characteristics of the situation facing agents. However, this high internal validity also means that experiments are inevitably unrealistic to varying extents and therefore lack external validity (King, Keohane, and Verba 1994). It can be particularly hard for IR scholars to convince their audience using experimental methods because, in addition to the issues other domestic- and individual-level studies face, there exists an extra layer of level-of-analysis problem. Most research questions in IR concern the international system and states but experiments can only be conducted on individuals and small groups (Hyde 2015; Mcdermott 2011). Similarly, some scholars question how cultural context can engender different reactions from experiment subjects and call for cross-cultural experiments (Gardner, Gabriel, and Lee 1999). In fact, many have criticized the use of experimental results from Western, educated, industrialized, rich, and democratic (WEIRD) countries as a basis for deriving general theories of human psychology (Henrich, Heine, and Norenzayan 2010).

The second reason why few IR prospect theory studies use experimental methods comes from the nature of prospect theory itself. Because prospect theory examines human cognition, many key theoretical components such as reference points and framing can be subjective. In fact, several studies show how changing the wording and expressions used in prospect theory vignettes can alter experimental results to a meaningful degree (Maoz 1990; Meng and Weng 2018; Osmundsen and Petersen 2019; Paese, Bieser, and Tubbs 1993; Werner and Zank 2019). Many important factors can be lost in translation while turning complicated reality succinctly into an experimental vignette consisting of only a few paragraphs, if not sentences. In other words, it is

challenging for researchers to design experiments in a way that perfectly tests what they aim to test.

The experimental method, despite some flaws, nonetheless “can provide precise methodological control, unparalleled causal insight, and innovative theoretical clarification and direction (Mcdermott 2011, 504)” if used with rigorous experimental design and data analysis. Especially for studies using prospect theory, experimental evidence adds great value to the study. The theory itself was originally developed as a descriptive theory grounded on experimental results (Kahneman 2011). In this context, this chapter serves as an attempt to fill in this gap in the IR literature using the psychological framework provided by prospect theory. I hope to contribute to the literature by developing an experimental design that can complement the qualitative methodology used in my earlier chapters.

In addition, through this experiment I explore how traditional forms of trade and GVC ties can have a differential impact on decision making. Whereas the uniqueness of the GVC system is a critical component of my theoretical framework, the different effects it could yield compared to traditional forms of trade are not empirically tested in the qualitative case analyses. I asked questions related to this issue during interviews, but counterfactual speculation is less compelling evidence than that generated by observing experimental subjects making choices within a controlled situation. Therefore, by designing an experiment that can allow participants to think in a GVC versus a traditional trade mindset, I aim to examine the validity of this assumption.

Ultimately, my findings reflect the broader challenges of creating IR prospect theory experiments that can accurately capture the reality of foreign policy decision-making. I find mixed support for the role of prospect theory in shaping retaliation decisions in the face of economic coercion. As my results indicate, subjects in the domain of loss do often behave differently than

those placed within the domain of gain. However, these results do not return an unequivocal endorsement of all my hypotheses. Prospect theory studies like mine, that use trade or economic dependent variables, have long faced severe challenges in achieving the same efficacy as studies that use the loss of human lives as their criteria for domain-setting (Fagley & Miller, 1997). In spite of these challenges, and given the dearth of experimental prospect theory studies in IR, the results of my experiment help lay the foundations for future work. This endeavor may help to more clearly distinguish between EUT and prospect theory in the one hand, and the particulars of finished goods and GVC trade, on the other, in an experimental setting.

The remaining chapter will outline the details of my experimental design and the findings of the two experiments I conducted as part of this dissertation project. In both experiments, the subjects read hypothetical scenarios in which they assumed the role of executive leader of an imaginary state that faces a trade partner's economic coercion. The first experiment resembles traditional prospect theory experiments in virtue of the fact that it conveys to its subjects the likelihood of a policy outcome in percentages and describes expected utility in terms of monetized value. The second experiment more closely reflects real-world politics, giving the subjects more elaborate explanations about their possible policy choices, and uses the more direct language of "retaliation." Both experiments, however, test the same set of hypotheses using similar scenarios.

5.2 Experiment I

Experimental Design

I used Qualtrics to design and program the experiment and an online survey distribution firm Lucid to distribute the survey experiment. The experiment received approval from the University of California, Irvine Office of Research Institutional Review Board (HS# 2021-6663) in advance and

the data was collected between April 11 to 14, 2022. I used R to analyze the data I obtained. Respondents were informed that the research concerned trading decisions and state behavior, that their participation was voluntary, and that they were free to terminate their participation at any time. The participants were financially compensated in accordance with Lucid’s recruitment policy, and the length of each experiment was approximately 5-10 minutes. *Table 5.25* shows descriptive statistics of the 222 experiment participants for Experiment I. While prospect theory is intended to depict patterns of human behavior regardless of individual traits (Kahneman and Tversky 1979; 1982), for the first experiment, I oversampled the older male population to better reflect the average politicians’ age and gender (Bak and Palmer 2010; Horowitz, McDermott, and Stam 2005; van Emmerik, Euwema, and Wendt 2008).

Age		Education	
20-29	1	Elementary school	0
30-39	2	Middle school	0
40-49	39	High school	103
50-59	76	Bachelor's degree	81
Above 60	104	Graduate degree (MA, PhD, JD, MD, etc.)	30
Gender		Prefer not to say	7
Male	132	NA	1
Female	85	Political Ideology	
Non-binary	1	Very liberal	22
NA	4	Somewhat liberal	44
Ethnicity		Neutral / Unknown	55
White/Caucasian	176	Somewhat conservative	61
Black/African American	24	Very conservative	37
Latino/a or Hispanic	11	Prefer not to say	3
Asian or Pacific Islander	7	Education or Career Specialization	
Two or more	2	Political science	4
Unknown/Other	2	Psychology	10
		Economics	3
		Trade	9
		Finance	13
		More than one	3
		NA	180

Table 5.25 Descriptive statistics of Experiment I subjects

First, the participants answered five demographic questions that serve as control variables: age, gender, ethnicity, education level, and political ideology. In addition, I asked whether their occupation or education degrees were related to economics, political science, trade, finance, or psychology to control for any variation in expertise and to see if it had any effects on their decision.

After answering these basic demographic questions, the subjects read a hypothetical scenario in which they would be making a policy decision as the executive leader of an imaginary country named Slorgy. They had a neighboring country, Pentrivia, that they traded with. The participants were randomly shown one of four scenarios. Subjects had an equal chance to receive a vignette in which they were in a GVC relationship or a traditional trade relationship with the sender state. The subjects were assigned to either the domain of gain or domain of loss condition within each trade category. This random allocation resulted in 54 respondents in a GVC/domain of gain group, 56 in a GVC/domain of loss group, 57 in a tradition trade/domain of gain group, and 55 in a tradition trade/domain of loss group.

The participants were shown hypothetical scenarios in which Pentrivia (the opponent state) initiated an economic coercion policy against Slorgy (the participant’s country) over the fishing rights in a nearby chain of uninhabited islands. The description of expected losses in trade and what roles each country occupied in the trade relationship were adjusted in accordance with the respondent’s assigned situation. Moreover, the scenarios in the first experiment only presented simplified policy outcomes in terms of substitutability. *Table 5.26* lists the four scenarios that the subjects in different groups read before making their policy choices.

		Subject’s domain	
		Domain of loss	Domain of gain
Trade relation	GVC trade	“Pentrivia manufactures their products in Slorgy for our lower labor costs, but Pentrivia possesses technology and know-how which we lack. We cannot readily find a new supplier of the goods	“Companies in our key industries possess technology and know-how which Pentrivia lacks, but we manufacture our products in Pentrivia for lower labor costs. Pentrivia will

		Pentrevia provides, because not many countries hold these cutting-edge technology and know-how. Pentrevia will have to pay some costs but find it easier to replace what we provide to their economy. Pentrevia can replace us with other countries with (slightly higher than ours) but still significantly low labor costs.”	find it hard to replace what we provide to their economy, while we can more readily find a new place to make our goods. We can find other countries with slightly higher labor costs, but the technologies and know-how we hold are scarcer and cannot be replaced.”
	Traditional trade	“Among Slorgy's trading partners, Pentrevia is at the top in terms of trade volume. Losing access to their trade will entail major costs for us, and would represent a major blow to our overall economy.”	“Among Slorgy's trading partners, Pentrevia is in the middle in terms of trade volume. Pentrevia is one of our middle-sized trading partners. Losing access to their trade will not have a critical impact on our overall economy, but will entail some costs for us.”

Table 5.26 *Experiment I hypothetical scenarios*

Immediately following the description of the situation, the subjects were asked to choose between the two potential courses of action each of which detailed the chances of each policy succeeding and failing as well as what success and failure entailed in each case. The chance of success and failure was indicated in percentages and the result was described in terms of monetary value within the trade relationship. However, the choices were named “Policy A” and “Policy B” instead of “retaliation” and “non-retaliation” in order to encourage the subjects to focus more on the outcome of the policies. This also allows the experiment to resemble the customary design format of prospect theory experiments that is most commonly used and which precisely quantify risks and payouts rather than leaving these uncertain (Boettcher III 2004; Kahneman and Tversky 1979; Ruggeri et al. 2020). In all four scenarios, the subjects were informed that the total trade value between Pentrevia and Slorgy was \$120 billion before the conflict started. For participants in the domain of loss, Policy A (retaliation; risk-seeking) entailed 80% chance to lose \$80 billion or 20% chance to lose \$20 billion in total trade with Pentrevia. Policy B (non-retaliation; risk-averse) entailed 60% chance to lose \$60 billion or 40% chance to lose \$40 billion in total trade with Pentrevia. Policy A was a riskier option than Policy B both in terms of the probability of success (60% gap versus 20% gap) and expected payoffs (\$60 billion gap versus \$20 billion gap).

Moreover, to further create the conditions of gains and losses, the policy options for a domain of loss scenario used the verb *lost* while those for a domain of gain scenario used the verb *retain*. However, while they were framed in different tones, the amount of expected payoffs was identical in all four scenarios.

The experiment tests the following hypotheses:

- Hypothesis 1: We should observe the respondents in a domain of gain, in both forms of trade, to choose the risk-averse option (“Policy B”).
- Hypothesis 2: We should observe the respondents in a domain of loss, in both forms of trade, to choose the risk-seeking option (“Policy A”).
- Hypothesis 3: We should observe stronger effects of domains when subjects are situated in the GVC scenario than the traditional trade relationship scenario.

Findings

The first experiment generates mixed results (*Table 5.27* and *Figure 5.24*). In all four scenarios, more respondents demonstrated risk-averse behavior and chose not to retaliate. However, the difference between policy choices in the domain of gain and the domain of loss is meaningful. First, as *Hypothesis 1* expected, the subjects in the domain of gain were much more likely to choose not to retaliate in both forms of trade. 68.52% of the GVC subjects and 66.67% of the traditional trade subjects in the domain of gain chose the risk-averse option over the risk-seeking one. The results are both statically significant with χ^2 values of 7.41 ($p < 0.01$) and 6.33 ($p < 0.05$), respectively. In other words, if the null hypothesis was true, the probability of obtaining this result is less than 1% and 5%, respectively.

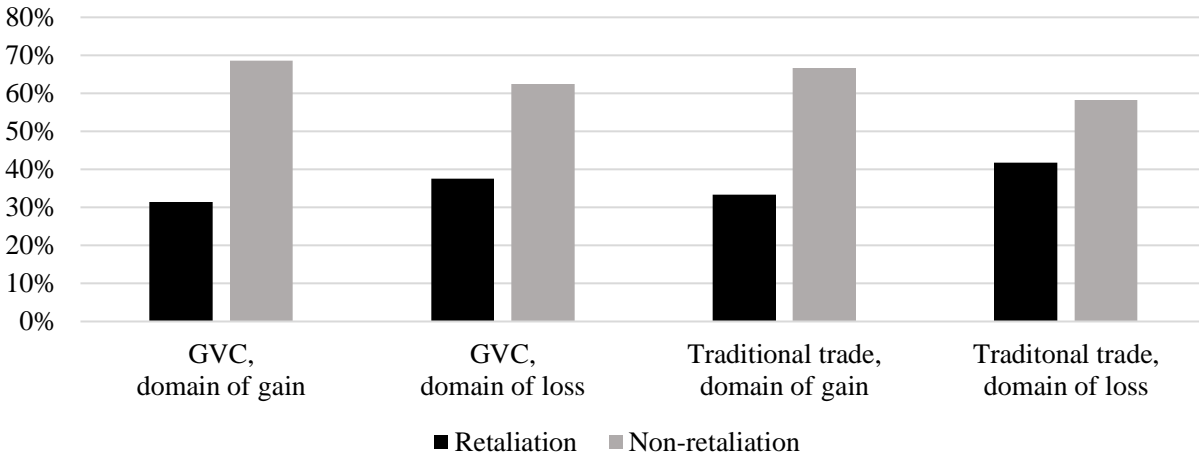


Figure 5.23 Experiment I results, in percentage

	Total, N = 222		
	Retaliation	Non-retaliation	χ^2
GVC trade, domain of gain	17 (31.48%)	37 (68.52%)	7.41***
GVC trade, domain of loss	21 (37.5%)	35 (62.5%)	3.5
Traditional trade, domain of gain	19 (33.33%)	38 (66.67%)	6.33**
Traditional trade, domain of loss	23 (41.82%)	32 (58.18%)	1.47

Note. Numbers in parentheses are row percentages. $df = 1$

*** $p < 0.01$ ** $p < 0.05$

Table 5.27 Experiment I chi-square test results

On the other hand, the experiment shows very weak support for *Hypothesis 2*. Contrary to what prospect theory predicts, more subjects chose non-retaliation over retaliation even in a domain of loss. 37.5% of the GVC subjects and 41.82% of the traditional trade subjects in the domain of loss chose the risk-seeking policy option. However, as seen in *Figure 5.24*, the gap between the proportion of subjects who chose Policy A and B is much narrower in the domain of loss scenarios than in the domain of gain ones. Unlike the statistically significant results in the domain of gain, the relationship between domain and policy choice was not statistically significant for *Hypothesis 2*. In the domain of loss, χ^2 values of the GVC and traditional trade scenarios were

3.5 and 1.47, respectively, and neither value crossed the threshold of being statistically significant. In other words, we fail to reject the null hypothesis which sees no relationship between domain and policy choice. However, as mentioned in the introduction, hypothetical scenarios using economic utility are far less likely to obtain the expected effects compared to vignettes that concern saving human lives and military action (Fagley and Miller 1997)

Lastly, *Hypothesis 3*, which concerns how GVC trade and the traditional form of trade may influence decision-makers differently, receives mixed support. In the domain of gain scenario, more subjects chose Policy B in the GVC trade (68.52%) than traditional trade (66.67%). In the domain of loss scenario, more subjects chose Policy A in the traditional trade (41.82%) than GVC trade (37.5%). Unfortunately, none of the groups showed any statistically meaningful association between domain and policy decision, contrary to the first experiment.

In the case of control variables, none had consistent effects on all subject groups. This aligns with the assumptions of Kahneman and Tversky (1979) who claim that prospect theory describes universal human psychology. While Kahneman and Tversky acknowledge that there are personal differences in the degree of risk propensity across different individuals, prospect theory ought to be capable of describing people's general tendency in making decisions under risk. Accordingly, there should be no systematic difference among different demographic groups. There were two control variables with a statistically significant effect. The first case is having received higher education having an impact on the traditional trade/domain of loss group. 55.56% of the people who responded that they did not receive higher education and 28.57% of those who did not choose Policy A over B ($p < 0.05$). The second efficacious control variable was gender. In the traditional trade/domain of loss group. 52.94% of men and 23.81% of women chose Policy A over B ($p < 0.05$). For both higher education and gender, there was a small, closer to a medium

association between the control variable and policy choice within given groups (*Cramer's V*=0.27; 0.29).

5.3 Experiment II

Experimental Design

The first experiment's design resembles the traditional format of prospect theory experiments in that it offered very simple explanations of the situation and quantified each choice's expected outcomes. However, as explained in the second chapter of this dissertation, policy choices in real life differ from options offered in these experiments (McDermott 2001). In reality, nuances and complications make mathematically calculating chances and outcomes challenging, if not impossible. As an attempt to reflect the complexity of real-world politics in my experimental design, for the second experiment, I presented subjects with more detailed descriptions of the situation and what each policy choice entails. This modification produced interesting results that were not observed in the first experiment and, more importantly, shed light on how I can further improve the experimental design in the future.

I used the same platforms to design and distribute the second experiment as the first one and the data was collected between March 8 to April 8, 2022. *Table 5.28* shows descriptive statistics of the 1,034 experiment participants for Experiment II. In contrast to the first experiment which oversampled certain demographic groups, the second experiment had nationally representative samples.

<i>Age</i>		<i>Education</i>	
18-19	32	Elementary school	3
20-29	223	Middle school	10
30-39	237	High school	571
40-49	172	Bachelor's degree	301
50-59	144	Graduate degree (MA, PhD, JD, MD, etc.)	127

Above 60	222	Prefer not to say	17
Gender		NA	6
Male	500	Political Ideology	
Female	499	Very liberal	124
Non-binary	6	Somewhat liberal	206
NA	29	Neutral / Unknown	320
Ethnicity		Somewhat conservative	203
White/Caucasian	721	Very conservative	143
Black/African American	135	Prefer not to say	35
Latino/a or Hispanic	91	NA	3
Asian or Pacific Islander	46	Education or Career Specialization	
Two or more	13	Political science	25
Unknown/Other	25	Psychology	53
		Economics	47
		Trade	54
		Finance	49
		More than one	39
		NA	751

Table 5.28 Descriptive statistics of Experiment II subjects

After answering the same basic demographic questions as the first experiment, the subjects read a similar scenario in which they were asked to make a policy choice as the president of an imaginary country named Slorgy. Subjects of the second experiment also had a neighboring trade partner, Pentrivia, and they were randomly shown one of four scenarios with an evenly distributed chance. This random allocation resulted in 260 respondents reading a GVC/domain of gain vignette, 249 reading a GVC/domain of loss one, 263 shown a traditional trade/domain of gain scenario, and 262 facing a traditional trade/domain of loss situation.

The participants then were shown hypothetical scenarios in which Pentrivia (the sender state) initiated some form of economic coercion against Slorgy (the participant's country) over the fishing rights in a nearby chain of uninhabited islands. The description of expected losses in trade and what roles each country occupied in the trade relationship were adjusted in accordance with the respondent's assigned situation. In both scenarios concerning the traditional trade, Pentrivia threatened to cut its trade with Slorgy in half. For the GVC scenarios, when the respondent was in a domain of gain, Pentrivia threatened to cut the production of Slorgy's companies in Pentrivia in

half. When the respondent was in a domain of loss, Pentrivia threatened to pass a new law restricting exports of industrial materials to Slorgy, cutting the production of the respondent's key industries in half. Moreover, where there are multiple factors that actors can consider as expected gains or losses, the scenarios presented simplified policy outcomes emphasizing the substitutability of Pentrivia and Slorgy. The scenarios also showed what retaliation and non-retaliation policies entailed differently in each situation. *Table 5.29* lists the four scenarios that the subjects in different groups read before making their policy choices.

<i>GVC, Domain of Gain</i>
<p>The situation Pentrivia announced yesterday that it will pass a new law restricting Slorgy businesses in Pentrivia, cutting the production of our companies in Pentrivia in half, if we don't give up control over the fishing rights in a nearby chain of uninhabited islands. Companies in our key industries possess technology and know-how which Pentrivia lacks, but we manufacture our products in Pentrivia for lower labor costs. Our trade advisors are divided about what to do.</p> <p>"We should retaliate!" One group of experts argues that we should retaliate by cutting exports to Pentrivia in half: "It's worth risking conflict escalation! If we successfully force Pentrivia into withdrawing its decision to limit our industries, it will save our key-industry companies from losing a lot of money that would have been spent on relocating factories."</p> <p>"We should lay low!" The other group of experts argues that we should either not react or give up the disputed fishing rights: "It's not worth it to escalate the conflict when we cannot be replaced! If we retaliate and fail, the conflict may further damage the trade relationship and there is a chance of this becoming a military conflict. If we lay low and successfully appease Pentrivia, things will return to normal. If Pentrivia doesn't change its mind, we will have to spend a lot of money and time relocating factories, but it's easy to find other countries with slightly more expensive labor."</p>
<i>GVC, Domain of Loss</i>
<p>The situation Yesterday, Pentrivia announced that it will pass a new law restricting exports of industrial materials to Slorgy, cutting the production of our key industries in half, if you don't give up control over the fishing rights in a nearby chain of uninhabited islands. Pentrivia manufactures their products in Slorgy for our lower labor costs, but Pentrivia possess technology and know-how which we lack. Your trade advisors are divided about what to do.</p> <p>"We should retaliate!" One group of experts argues that we should retaliate by cutting exports to Pentrivia in half: "It's worth risking conflict escalation! There is a chance of this conflict further damaging the trade relationship and becoming a military conflict, but if we lose our imports from Pentrivia, our industries are doomed. If we successfully force Pentrivia into withdrawing its decision to limit our industries, it will save our key industries from losing access to critical components we need from Pentrivia to make our products."</p>

<p>"We should lay low!"</p> <p>The other group of experts argues that we should either not react or give up the disputed fishing rights: "It's not worth it to escalate the conflict. If we don't retaliate, Pentrivia may change its mind and things will return to normal. It will save our key industries from losing access to critical components we need from Pentrivia to make our products. If Pentrivia doesn't change its mind, however, we're going to have a hard time looking for an alternative seller."</p>
<i>Traditional Trade, Domain of Gain</i>
<p>The situation</p> <p>Yesterday, Pentrivia announced that it will cut its trade with Slorgy in half if you don't give up control over the fishing rights in a nearby chain of uninhabited islands. Among Slorgy's trading partners, Pentrivia is in the middle in terms of trade volume. Your trade advisors are divided about what to do.</p> <p>"We should retaliate!"</p> <p>One group of experts argues that we should retaliate by cutting exports to Pentrivia in half: "It's worth conflict escalation! If we successfully force Pentrivia into withdrawing its decision to limit our industries, trade with Pentrivia will return to normal."</p> <p>"We should lay low!"</p> <p>The other group of experts argues that we should either not react or give up the disputed fishing rights: "It's not worth escalating the conflict! If we retaliate and fail, the conflict may further damage the trade relationship and there is a chance of this becoming a military conflict. If we lay low and successfully appease Pentrivia, trade will return to normal. If Pentrivia doesn't change its mind, we can buy things from other countries with slightly higher prices."</p>
<i>Traditional Trade, Domain of Loss</i>
<p>The situation</p> <p>Yesterday, Pentrivia announced that it will cut its trade with Slorgy in half you don't give up control over the fishing rights in a nearby chain of uninhabited islands. Among Slorgy's trading partners, Pentrivia is at the top in terms of trade volume. Your trade advisors are divided about what to do.</p> <p>"We should retaliate!"</p> <p>One group of experts argues that we should retaliate by cutting exports to Pentrivia in half: "It's worth escalating the conflict! There is a chance of this conflict further damaging the trade relationship and becoming a military conflict, but if we lose our imports from Pentrivia, we lose our biggest trading partner. If we successfully force Pentrivia into withdrawing its decision to limit our industries, trade with Pentrivia will return to normal."</p> <p>"We should lay low!"</p> <p>The other group of experts argues that we should either not react or give up the disputed fishing rights: "It's not worth conflict escalation! If we lay low, Pentrivia may change its mind and trade will return to normal. It will save us a lot of time and money looking for a new trading partner of that size. If Pentrivia doesn't change its mind, we'll lose our biggest trading partner."</p>

Table 5.29 *Experiment II hypothetical scenarios*

After reading the description of the situation and conflicting advice from trade advisors, the subjects were asked to choose between two policy options: “retaliation” and “lay low.” The experiment tests the following hypotheses:

- Hypothesis 1: We should observe the respondents in a domain of gain, in both forms of trade, to choose the risk-averse option (“lay low”).
- Hypothesis 2: We should observe the respondents in a domain of loss, in both forms of trade, to choose the risk-seeking option (“retaliation”).
- Hypothesis 3: We should observe stronger effects of domains when subjects are situated in the GVC scenario than the traditional trade relationship scenario.

Findings

Figure 5.25 and *Table 5.30* show mixed results of the experiment as in the first experiment, but the results were a step closer to my theoretical expectations. Overall, subjects’ decisions aligned closer to prospect theory’s expectations when more details were provided. This result makes it plausible to assume that in the real world where there are even more details and nuances to the situations, more decision-makers will act in a way predicted by prospect theory than not. I will further discuss the implications of the experimental results in the last section of this chapter.

The experiment results support *Hypothesis 1* in that subjects were more likely to choose to lay low than retaliate when they were put in the domain of gain, regardless of the form of trade ties between Pentrivia and Slorgy. 62.31% of the people in a GVC trade relationship and 63.88% of the subjects in a traditional trade relationship chose to lay low. The results are both statically significant with χ^2 values of 15.75 ($p < 0.01$) and 20.26 ($p < 0.01$), respectively. In other words, had there been no correlation between the domain and laying low (null hypothesis), the probability of obtaining this result would be less than 1%.

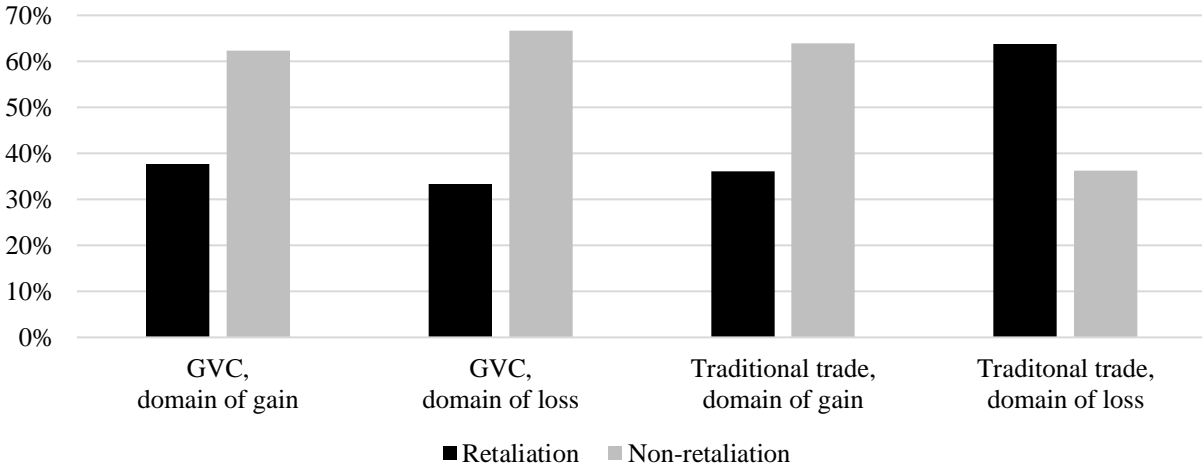


Figure 5.25 Experiment II results, in percentage

	Total, N = 1,034		
	Retaliation	Non-retaliation	χ^2
GVC trade, domain of gain	98 (37.69%)	162 (62.31%)	15.75***
GVC trade, domain of loss	83 (33.33%)	166 (66.67%)	27.67***
Traditional trade, domain of gain	95 (36.12%)	168 (63.88%)	20.26***
Traditional trade, domain of loss	167 (63.74%)	95 (36.26%)	19.79***

Table 5.30 Experiment II chi-square test results

For *Hypothesis 2*, the expected correlation between being in the domain of loss and choosing to retaliate was observed only in the case of the traditional trade group and not in the GVC trade one. 63.74% of the subjects who were in a traditional trade relationship with the sender chose to retaliate and this was a statistically significant result with a χ^2 value of 19.79 ($p < 0.01$). However, only one third of the people in GVC group indicated their willingness to retaliate and this also was statistically significant with a χ^2 value of 27.67 ($p < 0.01$). Therefore, when a subject was put in a domain of loss, she was more likely to act in a manner that aligns with prospect theory's expectations only when she was in a traditional trade relationship with the sender.

Lastly, the experiment does not support *Hypothesis 3* and, in fact, shows the opposite of what the hypothesis predicts. Among four groups, there was a small, closer to medium, association between trade format/domain and policy decision (*Cramer's V* = 0.25; *df* = 1). Of the subjects who were in a GVC relationship with the sender, the domain they were in and their policy decision show no statistically meaningful association (*Cramer's V* = 0.05; *df* = 1). On the contrary, the results for traditional trade relationships show a small, closer to medium, association between domain and policy decision (*Cramer's V* = 0.28; *df* = 1). Between the GVC/domain of gain group and traditional trade/domain of gain group, there was no statistically meaningful association (*Cramer's V* = 0.06; *df* = 1). Between the GVC/domain of loss group and the traditional trade/domain of loss group, there was a small association (*Cramer's V* = 0.12; *df* = 1). Therefore, while there was a small difference between being in a traditional trade relationship and a GVC relationship overall, the direction of the relationship was the opposite of my theoretical expectations.

In the case of control variables, there was no systematic difference among different demographic groups. In the case of my findings, a subject's level of education had a statistically significant effect ($p < 0.01$) on the GVC/domain of gain group and their political orientation had the same level of effect ($p < 0.01$) on the traditional trade/domain of loss group. However, in both cases, the randomly allocated subjects were skewed towards lower levels of education (including 23% more respondents who had not completed any kind of undergraduate or graduate degree) and conservative political views (including 22% more respondents who identify as somewhat or very conservative). In addition, subjects' gender had also had a statistically significant effect on the GVC/domain of gain group and their age on the GVC/domain of loss group, but at a lower level ($p < 0.05$). None of the control variables had *Cramer's V* equal to or higher than 0.3 which is the threshold of a moderate level of association between variables (*df* = 1).

Whether respondents were employed in fields or held degrees related to economics, political science, trade, finance, or psychology had a minor impact on the results. For the GVC/domain of gain group ($p < 0.01$), subjects who had such occupation or educational background were more likely to choose retaliation (52.24%) while the majority of subjects who did not have such occupation or degrees chose non-retaliation (68.45%). For the GVC/domain of loss group ($p < 0.05$), subjects with such specializations (43.75%) chose to retaliate with a higher proportion than those without these specializations (29.51%).

5.4 Discussion

This chapter has so far discussed the designs and results of the two experiments I have conducted to empirically test how prospect theory can explain a target state's decision to retaliate against a sender's economic coercion. Both experiments tested the same hypotheses and used similar hypothetical scenarios to situate subjects into different domains and trade relationships.

The first experiment's results partially aligned with my theoretical expectations in that subjects in the domain of gain were more likely to choose not to retaliate regardless of the type of trade relationship they were in. Those in the domain of loss were, on average, more likely to choose retaliation over laying low when compared to subjects in the domain of gain category. However, individuals were still more likely to lay low in the domain of loss group. These results should be understood in the context of past experimental studies of prospect theory in IR, which have found that the domain of loss framing often does not yield "a dramatic shift in preferences" in the manner of the original prospect theory articles (Boettcher III, 2004). My initial experiment adopted simple scenarios with less narration of the situation and it described policy options using percentages and monetary outcomes, all of which are consistent with the foundational prospect theory studies. This

experiment also produced results that partially concurred with my hypotheses. When subjects were put in a domain of gain, they were more likely to choose the risk-averse option regardless of the trade relationship. While domain of loss respondents were more likely than those in the domain of gain to retaliate, they were still more risk-averse than prospect theory would predict.

The second experiment offered subjects more elaborate scenarios to help them visualize the circumstances they faced and understand what each policy outcome entails. It also used the expression “retaliation” and “lay low” unlike the first experiment which gave “Policy A” and “Policy B” as choices. On the one hand it produced a result that is strikingly consistent with the expectations of prospect theory: for the domain of gain groups, regardless of the trade format, subjects were more likely to not retaliate. For the domain of loss groups, those in a traditional trade relationship were far more likely to retaliate. However, within the GVC vignette respondents remained largely risk-averse even when they were put in a domain of loss. While these subjects were, consistent with the findings of Experiment I, more likely to retaliate in the domain of loss, the results do not perfectly align with the theoretical expectations of prospect theory. My findings here speak to the need for additional experimental research to address the differences between finished goods and GVC trade relationships in an experimental context.

Experimental studies have been the primary way of measuring prospect theory since its inception (Kahneman and Tversky 1979), but most IR studies using prospect theory are predominantly qualitative. Testing the validity of prospect theory in “real world” decisions with experiments is “difficult to construct and costly to execute” and the experiments frequently “produce inconclusive (or even worse, incoherent) results (Boettcher III 2004, 332).” Despite these perils, the experimental method can provide IR research with great internal validity and is especially crucial in testing prospect theory. In this light, although my experiments yielded mixed

results, I believe this to be a meaningful first step toward more elaborate and ambitious projects in the future, or middle-ground studies to better distinguish between the effect of prospect theory on GVC trade relationships as opposed to finished goods trade. As an effort to improve the project in the future, I would like to conclude this chapter with discussions on why the experiment results might have been only partially concurrent with my theoretical expectations and how I can overcome some of the issues.

First, studies have consistently shown that in experiments using hypothetical scenarios, the type of issue presented can make a decisive difference (Boettcher III 2004; Jou, Shanteau, and Harris 1996; Mandel 2001). More specifically, subjects tend not to view scenarios concerning military or security utilities (e.g., human lives, sovereignty) the same way as they think of economic utility (e.g., money, jobs). In emphasizing the importance of framing effects in prospect theory, Fagley and Miller (1997) found that people are significantly more likely to make risky choices when human lives are at stake instead of money. Wang (1996) also reports that individuals are more risk-accepting in choices regarding life and death than money or public property. Situations in which money or property is at stake rarely meet people's minimum requirement for justifying risk-accepting options. Tetlock's (1992) findings on the positive correlation between the level of accountability and people's willingness to make risky choices can also explain people's different reactions to saving lives and gaining money. These studies help demonstrate the degree of difficulty involved in designing an experiment that adequately captures the role that prospect theory plays in shaping the dynamics of international economic conflict.

My results help contribute to this broader theoretical and methodological question. Experiments can provide valuable insights due to their high internal validity, but they often fail to accurately reflect the real world. Unlike a carefully controlled environment in a laboratory, an

uncontrolled field setting is complicated by other factors such as other international events, politicians' personal interests, and miscommunications (Bellé, Cantarelli, and Belardinelli 2018; Hyde 2015; McDermott 2002; Mercer 2005; Mintz, Redd, and Vedlitz 2006). Therefore, people may be universally more risk-averse in making economic decisions as some studies find, but the mechanisms behind decisions to retaliate against foreign economic coercion may be different in the real world. For instance, politicians may perceive more accountabilities in failing to respond to a sender's economic coercion than experiment participants do in hypothetical scenarios. The complexity of the real world makes it essential for scholars to take an eclectic approach in employing different methods and interpreting their results.

Second, while these experiments test prospect theory at the individual level, policy decisions are made as a group in most cases. Therefore, in real life, decision-makers both influence and are influenced by other people, which may yield a different result than what an isolated experiment subject may choose by herself (Mintz and Wayne 2016; Paese, Bieser, and Tubbs 1993; Saunders 2017). Most famously, Janis (1982) found that even the smartest people can make irrational decisions when they fall victim to "groupthink" for reasons including excessive striving for unanimity, disdain for personal doubts, and hierarchy within the group. Moreover, even in a controlled laboratory setting, substantial "reframing" can often occur when the subjects are allowed to "discuss the decision problems in interactive face-to-face groups (Boettcher III 2004, 334)." Decision-makers' perception of their situation, their relationship with the sender, utility of each expected outcome, and the likelihood of policy success and failure are all critical components of prospect theory. Simultaneously, these are all matters of personal perception albeit based on objective factors most of the time. Even during my expert interviews, for example, I found that some interviewees are more focused on the GVC relationship while some others put more weight

on political ties with the sender state. Similarly, some experts were more future-oriented in that they perceived less threat from further losing access to Japanese GVC inputs, but some others were more concerned about the regulations becoming exacerbated.

Prospect theory tells us about the general orientation of people's utility function but the steepness of the slope depends on individual personality (Kahneman 2011). In other words, while people are more risk-accepting when they are in a domain of loss and more risk-averse in a domain of gain, an individual's threshold of what qualifies as a risk-accepting behavior varies. Moreover, numerous factors can influence the final policy decision of a group with members with such varying perceptions. A group with a relatively risk-accepting leader, to give an example, would be more likely to choose a riskier policy than another one with a risk-averse leader. In some cases, political leaders may have personal motivations to frame the situation in a certain way and manipulate decisions made in group settings (Maoz 1990). In this context, it is important to understand how individuals with different levels of risk tolerance, political interests, and values interact with one another in the real world. The first step to understanding this interaction could be an experiment using both individual and group settings, and examine how subjects act differently in two different situations. An experimental design that allows researchers to carefully monitor a group's decision as external observers could also provide valuable insights.

Third, for the first experiment, the lack of meaningful difference among different subject groups may have been due to the relatively small N size. Compared to the second experiment which had more than a thousand respondents, the first one only had slightly more than fifty subjects per experimental group. This small number of subjects made the data susceptible to biases and made the strength of association between variables weaker. For instance, in the case of the GVC/domain of loss group, the difference between subjects who chose Policy A and B was 25%

in percentage but only seven more people in raw numbers. This small gap in raw numbers might bring the overall result into question, since a few respondents who misunderstood the question or who were not paying adequate attention could have made a great impact on the results (Ternovski and Orr 2022). However, most previous experimental studies of prospect theory have had similar group sizes, often with fewer than 50 subjects per experimental cell. In the case of the second experiment, although one group's result was not concurrent with the theory, all four groups showed results that were statistically significant to the level of 0.01. For example, the smallest gap between the subjects who chose to retaliate and lay low was in the GVC/domain of gain (25%) and the difference was 64 people in raw number. While there was a same 25% gap between subjects choosing Policy A (retaliation) and B (lay low), the first experiment's seven-person difference was not statistically significant but the second experiment's 64-person difference was. Therefore, it is reasonable to surmise that the first experiment could have produced more fruitful results if there had been more subjects participating. However, these suggestive results will need to be validated by future studies in this vein.

Chapter Six

Conclusion

6.1 Introduction

The decision to retaliate against a trading partner's economic coercion attempt can be extraordinarily complicated. The global environment, the balance of national power between the sender and the target, and domestic political forces all exert constraints on policymakers. This dissertation, however tentatively, has shown that elites pay substantial focus to their specific GVC positions relative to the sender in deciding their immediate reactions to such economic pressure. Moreover, in making policies, actors think and behave in a way that aligns closer to the description of prospect theory than the normative prescriptions of rational-choice models.

Conditions of the international system are shifting interstate conflict away from armed warfare toward so-called "trade wars." Despite this change, our knowledge of how economic interdependence can be weaponized remains largely fixated on the sanctioning of "rogue" states. As discussed in the first chapter, understanding why some target states choose to retaliate and escalate the conflict while others refrain is increasingly significant. In addition, the study of instances of economic coercion is predominantly concerned with whether the sender succeeds in coercing the target or not. In this light, I offer a novel framework for understanding economic coercions among trade partners today.

This concluding chapter consists of four principal parts. First, I will summarize my theoretical framework and empirical findings. Then, the second section will briefly apply the theoretical framework of this dissertation to analyze other cases of economic coercion for the

purpose of demonstrating this study's external validity. The third section will discuss the implications of the study, both in terms of theory and policy. Lastly, I conclude this dissertation with thoughts on what can be done to improve this research project in the future and what steps I plan to take in building upon this manuscript.

6.2 Summary of the Findings

In the second chapter, I was primarily concerned with laying out my theoretical framework, which connects a target state's GVC positionality to its decision to retaliate. Whereas most existing studies have rationalist assumptions and posit that actors make policy decisions on the basis of the policy options' final outcomes, I suggested that when a target's key industries are more dependent on the sender within their shared GVCs (i.e., a domain of loss), its leaders are more likely to escalate conflicts. By contrast, when a target holds relative dominance (i.e., a domain of gain), its leaders are less likely to risk conflict escalation. When decision-makers assign value to different policy outcomes, this intrinsic asymmetry of the GVC system makes conflict escalation entail different risks for differently situated leaders. When interstate tensions flare, the asymmetry of substitutability compels leaders to think in zero-sum terms, replacing the usual focus on absolute gains through trade.

While all target states face similar expected outcomes in choosing whether to retaliate or not, because of the strategic asymmetry in the extant system of GVC, each policy option's expected losses and gains have different values for states in different domains. On the one hand, decision-makers in the domain of loss assign more weight to the losses from GVC disruption. This is true in both policy options since alienating the opponent means forfeiting less-replaceable resources as well as a potential economic catastrophe. Consequently, a domain-of-loss state is more likely to

engage in risk-seeking behavior, choosing options with more significant expected gains in hopes of compelling the opponent to cease its aggression. If policymakers do not perceive laying low as a guarantee to GVC stability, they instead will be inclined to try to change the opponent's policy through any means, even if this potentially entails risking further economic loss or political fallout. Those in a domain-of-gain state face similar expected losses and prefer to avoid GVC interruption, especially its business class. The costs that political leaders in these states assign to readjusting GVCs often do not exceed the costs of conflict escalation. For these leaders, the opponent's inputs are painful to lose but relatively easier to replace. The risk of the conflict intensifying and expanding into further sanctions or becoming militarized carries more weight. As a result, a domain-of-gain state is more inclined to be risk-averse and forswear further conflict escalation.

In my third chapter, I examined a case in which a target state, South Korea, occupied the domain of loss. In this case study, I identified Japan as the sender who first introduced economic means of coercion to the conflict. In July 2019, the Japanese government announced that it would start regulating its exports of three intermediate goods to South Korea, which were critical for South Korea's key industries such as semiconductors and displays. Moreover, Japan excluded South Korea from its white list which exempts selected trading partners from getting special approval every time they import certain strategic materials. Then, I defined South Korea as the target that was facing the decision to respond to this external pressure from its major GVC partner. The two countries' key industries were tightly intertwined through GVCs which created a relationship that was mutually beneficial, and I posited that this status quo served as the actors' reference point when the conflict started. Despite South Korea's status as a stronghold of high-tech industries, South Korea was in a domain of loss in its relationship with Japan. Most notably, among the twenty most traded products between Japan and South Korea, South Korea was highly

dependent ($TSI \geq -0.4$) on Japan for thirteen products and almost entirely dependent on Japan's crucial ICT intermediate goods such as chemicals used in dry-etching patterns on semiconductor materials and charge coupled devices. Moreover, the intermediate products that South Korea imported from Japan were of higher technology compared to South Korean exports to Japan. In this section, I also demonstrated how these economic facts led many South Korean and Japanese elites to perceive South Korea as the more dependent partner (i.e., in a domain of loss).

The rest of the third chapter illustrated what the expected outcomes of retaliating versus laying low would have entailed for Seoul, and how these outcomes shaped the South Korean reaction to Japan's economic coercion. A successful retaliation had the expected gains for Seoul of allowing it to regain Japan's less substitutable GVC inputs that have been lost and accruing domestic support by standing up to its long-time rival. Seoul's expected losses from retaliation included further lost access to critical Japanese GVC inputs, risking its relationship with Washington as a consequence of pursuing conflict with Japan, domestic political costs from "losing" to Japan, or even, at the limit, the possibility of a potential military clash. In contrast, any nonretaliatory policy that failed would have entailed the expected losses of South Korean industries further losing Japan's GVC inputs due to the continuation of Japan's regulatory policies, as well as a decline in domestic support for refusing to stand up to external pressure. A successful nonretaliatory policy could have resulted in the gain of appeasing Tokyo, with the latter withdrawing its initial regulatory policies. Non-retaliation could also mean gaining domestic support for normalizing the trade relationship without escalating the conflict.

The empirical outcome of this conflict between Japan and South Korea concurred with my theoretical expectations, which hypothesized that the target state ought to show risk-accepting behavior by retaliating. Seoul's immediate reaction was to retaliate using all means possible, which

included excluding Japan from its white list, filing a lawsuit with the WTO, publicly denouncing Japan's actions, threatening to terminate a military intelligence-sharing pact, and offering aggressive support to its own industries. This result was contrary to what a theory based on EUT would argue, which posits that actors base their calculations on final outcomes and that people are generally risk averse.

In contrast to the third chapter, chapter four shows behavioral patterns of a target state in the domain of gain. In this conflict, I defined China as the sender state who first started using economic means of coercion. In response to Seoul and Washington's decision to install an American anti-missile system THAAD in South Korea, China penalized South Korean firms doing business in China using administrative tools. These measures included not offering government subsidies to automobiles with South Korean batteries. Beijing also unilaterally canceled cultural events connected to South Korea, banned tourists from visiting South Korea, and refused to talk to South Korean officials. Then, as in the previous chapter, I defined South Korea as the target facing the decision to retaliate and reference point as the pre-conflict trade relationship in which the two countries' key industries were tightly intertwined through GVCs. Despite China's economic and political might, South Korea occupied the domain of gain in its GVC relationship with South Korea. Among twenty products with the highest gross trade value, South Korea's export competitiveness outpaced China's ($TSI > 0.4$) in eleven instances. In addition, the intermediate products that South Korea exported to China were of higher technological sophistication compared to South Korean imports from China. These core facts made South Korean and Chinese elites perceive South Korea to be the less substitutable participant in their shared GVCs. While South Korean experts were worried that Chinese technology and industries could catch up in the future, they were less concerned about being replaced by China in GVCs when the conflict started.

In deciding how to react immediately following the start of China's economic coercion attempts, Seoul's first possible policy option was to retaliate instead of acquiescing or not reacting at all. Successfully using this retaliatory policy entailed expected gains of China withdrawing its initial regulatory policies and the trade relationship normalizing, as well as gaining domestic support for standing up to external pressure. On the other hand, failing to return to the reference point after using a retaliatory policy carried four types of expected losses. First, the conflict could escalate, leading to further losing access to China's GVC inputs and the trade relationship deteriorating. Seoul also risked upsetting its domestic constituency by escalating the conflict or failing to retain China's support in cultivating the inter-Korean relationship. In the worst case, the conflict between Seoul and Beijing might even have become militarized. In contrast, a successful nonretaliatory policy entailed the expected gain of appeasing Beijing, causing the latter to change its mind and withdraw its initial regulatory policies. It also potentially meant winning domestic support. A failed nonretaliatory policy involved expected losses of China's regulatory policies continuing unabated and the Moon administration ultimately upsetting its domestic audience because of its lack of resolve.

The outcome of this conflict between China and South Korea concurred with my theoretical expectations yet again. My approach holds that a target state occupying a less replaceable position will behave in a risk-averse fashion by deciding not to retaliate. Seoul's immediate reaction was to demonstrate a firm nonretaliatory, apologetic posture, including not filing a lawsuit with the WTO, not acknowledging any of China's diplomatic slights at the time, and not supporting any South Korean companies that were victimized by China's policies. While this risk-averse attitude also aligned with what a theory based on EUT would argue, the process through which the policymakers reached this conclusion more closely resembled the dynamics of prospect theory.

Lastly, chapter five takes a different methodological approach in testing a similar set of hypotheses. In this chapter, I use an experimental method to examine how GVC positionality can influence subjects' decisions to retaliate against the sender's economic coercion. This chapter aims to serve as a catalyst for the IR literature using prospect theory, which has been predominantly qualitative, to come closer to the theory's original methodological roots and take advantage of the benefits of the experimental method. In this context, the two experiments in chapter five complement the previous qualitative empirical chapters by obtaining a large-*n* sample that shows generalizable patterns through statistical analysis. For both versions of the experiment, subjects read a hypothetical scenario in which they were choosing a policy in the face of a trading partner's economic coercion. Participants were randomly shown four different vignettes: domain of loss position in a GVC relationship with the sender, domain of gain position in a GVC relationship, domain of loss position in a traditional trade relationship, and domain of gain position in a traditional relationship.

The first experiment took a simple format that is commonly used in the literature to test prospect theory: succinct vignettes and choices with quantified expected outcomes. The results showed subjects in the domain of gain having a strong tendency of risk-aversion, which was statistically significant and concurred with my theoretical expectations. Subjects in the domain of loss also showed weak risk-aversion, but this result was not statistically significant. The second experiment provided participants with more details of the situation they were supposedly in and what each policy outcome would entail. In this version of the experiment, subjects in the domain of gain showed a risk-averse attitude in both types of the trade relationship. For those in the domain of loss, the majority of the traditional trade relationship group chose to retaliate while the domain

of loss/GVC group chose to lay low. All four groups had results that were statistically significant in this version of the experiment.

6.3 External Validity of the Theoretical Framework

In this dissertation, I chose to compare two contemporary cases that concern South Korea for methodological reasons explained in Chapter 2. While this case selection entails relatively high internal validity by allowing a closely controlled case comparison, it does raise the question of the theory's external validity. To partially overcome this issue, in this section, I provide a brief examination of an additional case of economic coercion among GVC partners that does not include South Korea: the US-China trade war.

In June 2018, the Trump administration put into place a set of economically coercive measures against China in the form of 25 percent tariffs on \$35 billion worth of the latter's imports. However, before this rift in the relationship, the US and China were each other's biggest trading partners. In 2017, immediately before the trade conflict started, the two countries' trade volume was as large as \$586 billion. In the same year, the US represented 5.97 percent of China's total GVC trade volume, which was the largest share for a single country. China also was the US's fourth biggest GVC trading partner, representing 3.57 percent of its total GVC trade (WITS database).

Understanding whether China was in a domain of loss or gain against the US in this case requires a slightly different approach than the previous case studies. An analysis using the same indices as other cases would ultimately suggest that China is in a domain of gain. In 2017, out of twenty products that are traded the most, China was highly dependent ($TSI \geq -0.4$) on the US for only five products while the US was highly dependent on China for the remaining fifteen items.

In addition, the average PCI value of the twenty most exported products from China to the US was 0.65 while for the US it was as low as -0.15 (OEC database).⁷⁷ In aggregate, of the \$586 billion trade volume between the US and China, \$459 billion were exports from China to the US (WITS database). This significant trade deficit for the US was a talking point for candidate Trump during the 2016 election and redressing it was likely one of the biggest motivations behind the Trump administration's trade war (Time 2016).

This trade imbalance is similar to the Japan-South Korea case, but the two cases are not the same. In the case of Japan and South Korea, Japan's trade surplus against South Korea was a byproduct of its direct, tangible exports of high-tech intermediate goods and machinery. Therefore, Japan's large advantage was correlated with its relatively superior position within its shared GVCs with South Korea. In contrast, the Sino-American economic linkage largely consists of indirect and intangible GVC components, masking the actual benefit American MNCs are gaining from the trade. Trade data omits "factory-less" American MNCs with "no production facilities, but retain the ownership of their products assembled or manufactured by contract manufacturers (Xing 2020, 2)." For example, Xing and Detert (2011) find that 96.4 percent of the value of Apple iPhones amounting up to \$2 billion, manufactured and exported from China to the US, are in fact contributable to other GVC participants, including the US, Germany, Japan, and South Korea. For example, trade data suggests that only \$10.75 of the \$500 value of an iPhone 3 went to China, which is the price of a direct shipment of parts needed in manufacture. Although Apple, an American firm, takes \$321.04 of the \$500, there is "a 'missing export' of Apple intellectual property and services associated with selling one iPhone abroad (Xing 2020, 4)."

⁷⁷ The list of commodities is in 6-digit HS 1992 codes and the PCI values are in 4-digit HS 1992 codes.

For these reasons, I code China to be in a domain of loss vis-à-vis the US in this case. I do not discredit the fact that China is rapidly developing through the GVC system and possesses the world's second largest GDP (Solingen 2021). However, it occupied a relatively more replaceable position compared to the sender state. Many indicators show that, despite the interdependent relationship, "China needs the United States more than the United States needs China (Babones 2019)."

Very simply put, the empirical result of this case is that the target state in a domain of loss chose to retaliate against the sender's economic coercion as my theoretical framework anticipates. When the Trump administration imposed its initial coercive policy in 2018, Beijing immediately responded with retaliatory tariffs and officially filed a complaint to the WTO. Cui Tiankai (崔天凯), Chinese Ambassador to the US, stated: "We have done the utmost to avoid this kind of situation, but if the other side makes the wrong choice, then we have no alternative but to fight back (Tan and Mody 2018)." Despite several negotiation attempts, the two biggest economies remain in conflict even after President Biden took office.

There are preliminary forms of evidence to surmise that China was behaving as an actor in a domain of loss. For example, Zhao Jinping (赵晋平), a former Director-General of the Research Department of Foreign Economic Relations in Development Research Center of the State Council, made the following comment during an official meeting held by the Chinese Embassy in South Korea:

"The US launched the trade war to suppress China's long-term development. It is inevitable that China's foreign trade will suffer losses which will adversely impact the Chinese economy in the short term. [...] China will suffer such losses because its core technology is still not as advanced as that of the US. China manufactures and exports to the US the

parts it imports from South Korea. [...] China does not possess true competitiveness while the US has the capacity to launch a trade war. [...] Some parts of China believe that the Chinese state power has surpassed that of the US, but there exists a huge gap between China's level of technology and that of the US, and even those of Japan, European countries, and South Korea (Yoo 2018).”

On the other hand, some experts such as Nathan (2019) suggest that “Xi believes that China has the stronger negotiating positions” and that he “expects China to surpass the United States in economic and military strength” by 2049. For the purposes of this short case sketch, it is worth noting that 2049 still remains some way off and the dependency of China on the US remains a fact of their trade relationship at this juncture (Lewis 2019).

However, a much deeper investigation is necessary to determine whether this correlation is indeed causation. I also do not claim that my theory alone explains this critical case. In fact, many factors that could have influenced China's decision to retaliate, outside of GVC positionality, and these additional considerations require more careful disentangling. Most importantly, many studies attribute the trade war to China's great power rivalry against the US, describing it as a modern Thucydides Trap (Moosa 2020; Xing 2018; Kwan 2020). Moreover, even if Beijing believed that potentially losing access to the US's less replaceable GVC inputs and being excluded from the shared GVCs posed a dire threat, it is incredibly challenging to find concrete evidence in a such closed country. It is correspondingly difficult to acquire reliable insider testimony about the inner-workings of the Trump administration. I wish to conduct further research and incorporate certain crucial factors into my theoretical framework, including domestic politics and great power rivalry, might have influenced China's response to the Trump administration's economic coercion.

6.4 Implications of the Dissertation

6.4.1 Implications for International Relations Theory

The interdisciplinary nature of the dissertation offers theoretical implications to three bodies of literature. First, this dissertation contributes to alleviating the underrepresentation of political psychology in the IPE literature. In a meta-study, Kertzer and Tingley (2018) found that, of the articles submitted to *International Studies Quarterly* between 2013 to 2017, IPE was one of the subfields in which political psychology methods were clearly underrepresented. This was in stark contrast to other areas like foreign policy and international security where scholars were making significant attempts to bring the human perspective back into the study of politics. Given the unique viewpoint psychological studies can offer to political science, the dearth of such studies in the IPE literature represents an exciting opportunity for scholarly cross-pollination.

Second, this research focuses on the GVC system, a predominant yet under-analyzed form of trade, in understanding the relationship between economic interdependence and conflict. This dissertation, by specifically bringing the GVC system into the study of interstate disputes, offers a future pathway for theorizing the nature of economic interdependence and interstate relations. As explained in the first chapter, GVCs bind countries and firms together within a single manufacturing system in a fashion that renders them more intertwined than in traditional methods of trade. It also is at the center of both political and business concerns, which are reflected in the prevalence of trade conflicts and new industrial policy announcements, including the US's Executive Order on America's Supply Chains and China's Dual Circulation Strategy. In this context, it is crucial to examine how the influence of the GVC system might be both consistent

with but also divergent from our current understanding of the relationship between economic interdependence and conflict.

Lastly, this dissertation contributes to the literature on economic sanctions in two ways. First, I address the rise of economic coercion among “normal” states by attempting to better understand how states use economic instruments to promote and defend their national interests. The existing literature on economic sanctions is narrowly focused on how states coerce and punish “rogue” states such as North Korea (Peksen and Jeong 2021). In contrast, it does not offer many insights into the growing weaponization of economic ties among trading partners. The US-China trade war is perhaps the most representative example, but many other “normal” states are going through trade conflicts with another state, including Japan, Brazil, South Korea, Indonesia, India, and Turkey (World Trade Organization n.d.). Second, rather than dichotomizing sanction results between acquiescence from the target and failure to change the target’s behavior, I also include “retaliation” as a third policy option for target states. Considering the possibility of retaliation enables researchers to examine the risk for conflict escalation latent within economic coercion among GVC partners. This emphasis on retaliation and risk ought to spur scholars to look into the conditions underlying escalation. I also believe that by assessing the conditions for target retaliation, the theory has implications for trade war onset. The existing literature does not adequately scrutinize the target’s response as a potential transition from the sender’s initial coercion to the advent of fully-fledged mutual trade wars. There have been surprisingly few attempts to understand this process of transition even though the target state’s *retaliation* is what converts a sender’s one-sided coercion into an interstate conflict (Drezner 1999; Peksen and Jeong 2021; Solingen 2012). Therefore, by highlighting the fact that economic sanctions can take place

among “non-rogue” states and targets can choose to retaliate, this dissertation expands the scope of the literature to more accurately reflect the tenor of recent events.

6.4.2 Policy Implications for Individual States and the Global Community

Most straightforwardly, decision-makers in a potential sender state should understand that weaponizing GVCs to coerce another state into changing its behaviors may not always work, if the target state is driven into a corner.⁷⁸ For instance, when the Trump administration first decided to use the superior economic and technological position of the US to pressure China, American policymakers were expecting a swift victory. If one thinks in terms of rational choice or EUT based theory, how could it be otherwise: how could Beijing possibly risk fraying its economic ties with its largest trade partner? Yet, Beijing immediately imposed retaliatory measures on the US, and this escalated into a trade war that remains in place even today. By 2021, the conflict is estimated to have cost 245,000 jobs in the US alone. Meanwhile, Washington’s overall trade deficit remained unchanged because its decreased Chinese deficit (from \$419 billion in 2018 to \$346 billion in 2019) was offset by an increased trade deficit with other countries (Oxford Economics 2021).

In this context, political elites should not be overconfident even when they see themselves with the “upper hand” in the GVC relationship vis-à-vis the potential target. While it may seem like they can achieve a relatively easy victory by weaponizing the asymmetric interdependence, they should understand that the coercive attempts may not directly translate into the target’s acquiescence. Successful policies of economic coercion, or attempts to resolve ongoing trade wars, ought to take into consideration the fact that decision-makers are not exclusively driven by narrow cost-benefit analyses. Instead, as this dissertation has proposed, within GVC systems the logic of

⁷⁸ I thank Jordan Cohen for encouraging me to not shy away from making the “obvious” policy recommendation.

replaceability can help make sense of how states are likely to react to such pressure. States are, as I find in both my case studies, acutely aware of where they stand in the global economic system, but are by no means likely to be cowed by pressure from a strategically more well-situated opponent. My results, in fact, suggest that the reverse is more likely to be the case: disadvantaged states are more likely to fight back out of desperation.

Global Inequality and GVCs

In addition to this simplest policy recommendation, the dissertation offers two further policy implications. First, my theoretical framework is fundamentally concerned with how global inequality caused by the GVC system can lead to interstate economic conflict, which in turn makes those who are economically vulnerable suffer more. If the trends I outline here persist, then GVCs may evolve in a way that exacerbates global inequality by further solidifying the GVC positionality of central “headquarter” or peripheral “factory” economies (Suwandi 2019). The economic hardships generated by trade disputes and the pandemic have disproportionately affected suppliers and lower-ranked employees, as producers and employers engage in cost-cutting measures. In 2018, the US-China trade war generated a total deadweight loss of \$8.2 billion (Amiti, Redding, and Weinstein 2019) with Chinese producers and consumers more seriously impacted (Carvalho, Azevedo, and Massuquetti 2019). Moreover, during the first month of the pandemic, informal workers’ expected median earnings across the Americas decreased to \$244 from \$1,298 pre-pandemic (Meester and Ooijens 2020).

How then can the GVC system be improved to alleviate this ingrained problem of inequality? First, the lowering of trade barriers must be accompanied by standardization of labor and technology-sharing practices within GVCs. Trade barriers create extra costs which accumulate

and become impactful for GVC-produced commodities and services that cross borders multiple times (OECD 2020). However, as MNCs maximize their profit margins with the aid of the global economic liberalization, the difference between the developed countries that hold key technologies and developing countries occupying lower value-adding stages of GVCs will deepen (Lockwood 2021b). To address this problem, GVCs should develop in a way that alleviates the innate power asymmetry in its system, narrowing the gap between the core “headquarter” and peripheral “factory” economies. At an international level, when initiating interstate trade agreements such as FTAs and RTAs, governments should include measures that can protect labor rights and improve working environments in all segments of GVCs. Technology transfer and education can also help mitigate inequality.

Second, GVCs need to become more transparent. GVCs resemble a complex web that involves not only those core firms and their suppliers, but also secondary, tertiary, and quaternary subsidiaries. Even when some core MNCs, such as Apple and Samsung, disclose their immediate suppliers, it can be difficult to reconstruct the production process and adequately assign accountability for bad behavior. Scandals regarding Nike’s sweatshop and child labor in cocoa production highlight how equality and human rights can be lost in this multi-layered web of GVCs, resulting in the exacerbation of global inequality. The opaqueness of GVCs makes it easy for MNCs to ignore such problems and deflect the blame onto others. Therefore, information on the structure of GVCs and their participants at various levels must be more accessible to both producers and consumers (Francisco and Swanson 2018). Once GVCs become more transparent and it becomes easier for producers and consumers to keep track of who participates, MNCs will be able to improve their standards (if they are not forced to) in choosing their suppliers.

Lastly, related international organizations such as the WTO should be given more mediating power to better function as an interstate forum for potentially antagonistic countries. These institutions should also be able to compel countries from weaponizing their superior GVC position. While the WTO already has rules in place against states “politicizing” their economic power, there are various loopholes (such as the “safeguard” exemption that enables countries to institute protectionist measures) that allow states to skirt consistent execution of WTO rules. Also, most international organizations including the WTO lack effective enforcement authorities, making it easy for economic superpowers such as the US and China to ignore rulings when they see fit. The WTO could be an effective institution for mediating trade conflict, but its powers and bylaws need to be fundamentally recalibrated to reflect the realities of a GVC-driven global economy (Bronckers 2020).

*Reshoring, Ally-shoring, and China+1 Strategies*⁷⁹

Power asymmetry in GVCs creates anxiety: a relatively dependent country wants to move up the GVC hierarchy and be more independent while its dominant partner tries to keep the technological gap. Faced with a GVC partner’s coercion, calculations about retaliation vary within this context. This is not unique to the two empirical cases this dissertation examined. For instance, China’s eagerness for self-reliance has intensified since the US-China trade war, which has, so far, resulted in Washington “[starving] Huawei of vital inputs” and “exploiting asymmetric strengths [...] to turn its policy toward a global prohibition on providing advanced semiconductors or semiconductor technology to China (Brands 2021).”⁸⁰

⁷⁹ This section is partially an excerpt from Moon (2021).

⁸⁰ Even before the trade war, in 2015, Beijing launched Made in China 2025, which aims to improve its GVC position in response to the intensifying Sino-American tension.

There are at least three significant policy trends in the still-developing relationship between the GVC system and trade conflict. First, many countries are engaging in reshoring—bringing manufacturing back to the home country from overseas—both because of geopolitics and the effects of COVID-19 (OECD 2021). More dependent countries are attempting to achieve independence from their partners by reshoring, increasing domestic inputs to their GVCs. Seoul responded to Japan’s economic coercion with a 7.8 trillion Korean won (approximately 6.4 billion US dollars) plan to develop its own technology to substitute Japanese GVC inputs by 2024 (H. Bae 2019a). Meanwhile, more dominant countries are trying to increase their domestic manufacturing capabilities by building new factories, upgrading existing ones into smart factories, and redirecting FDI.⁸¹

Second, nearshoring and “ally-shoring” are also noteworthy trends. Trade wars and the pandemic have made GVCs seem riskier, but GVCs have become such an essential form of production that some commodities are impossible or extremely inefficient to make within one country. Consequently, some countries are moving their production lines to geopolitically closer partners, away from China which was historically at the heart of “Factory Asia.” The White House (2021) published a report arguing for “friend-shoring” or “ally-shoring” over reshoring, stating that it is impossible to obtain some crucial materials domestically. A survey on 143 GVC managers in the United States and Mexico found that 74% of respondents were moving or considering moving their GVCs from China— 47% of them were moving to Mexico and 24% were headed to Canada (Foley 2020).

⁸¹ The Biden administration accelerated its push for America First by announcing its intention to add five million manufacturing jobs, ‘Executive Order on America’s Supply Chains,’ and ‘Buy American Order.’ In 2020 alone, multinational corporations created 160,647 jobs in the United States through reshoring or FDI (Reshoring Initiative 2021).

Third, some GVC participants have had a more muted reaction to the recent GVC disruption and resorted to a China+1 strategy, slightly diversifying their China-centered GVCs. In 2020, because of COVID-19 and Washington's tariffs, American imports and trade deficit with China decreased. However, these gains were evened out by greater imports from countries such as Vietnam. For instance, ASEAN countries' exports of electronic machinery products to the United States increased from 15% in 2017 to 29% in 2020 (Zhang 2020).

6.5 Future Trajectories of the Project

As most doctoral dissertations do, one of my biggest goals in assembling this manuscript is to pose unasked questions and to analyze the world through a previously neglected viewpoint. In its conclusion I wish to suggest useful and fruitful avenues, consistent with the themes I pursue here, for future scholarship to reimagine the relationship between economic interdependence and interstate relations.

First, I hope to pursue in future studies the question of how cultural differences shape the way a target state's decision-makers think and behave. In its current form, the dissertation's qualitative case studies examined actors from the East Asian culture and the experiments were conducted on Americans. While prospect theory claims to explain the general patterns of decision-making under risk, there are reasons to believe that individuals from different cultural backgrounds may react to external pressure in different ways. This additional layer also gives me a chance to examine more empirical cases beyond the two I explore here. While this dissertation studies two South Korean cases, recent history provides numerous other incidents in which a sender state used economic means to coerce its GVC partner. For example, in 2019, China implemented formal and informal coercive measures against Australia to which Australia responded with retaliatory

policies. Within their \$170 billion trade relationship, Australia was in a relative domain of loss, exporting ores and metals to China while importing computers and other electronics from it. In 2018, the US used tariffs against China to coerce China into addressing its currency manipulation and intellectual property policies. The two countries were tightly connected through GVCs and China, the target, immediately responded to Trump's coercion with retaliatory tariffs. In 2012, China pressured Japan into addressing the Senkaku-Diaoyu territorial conflict. China and Japan also shared thick GVCs and Japan, the strategically advantaged target, did not retaliate against China's coercive policies. Given the prevalence of trade disputes and economic sanctions among GVC partners today, the theoretical framework of this dissertation can help understand these trends.

Second, it is a meaningful endeavor to design an experiment that can measure prospect theory effectively while using hypothetical scenarios with economic utility, instead of those concerning security or human lives. There are at least three intertwined questions that further research could help to disentangle. First, can the differences between finished goods trade and GVC production be adequately operationalized in a way that will resonate with individual respondents? My initial results suggest that experimental subjects do respond to the two different forms of trade—even presented in simplified vignettes—in an asymmetrical fashion. Moreover, my review of the literature in chapter two and the interview data from chapters three and four suggest that these forms of trade are meaningfully distinct in their influence on strategic decision-making. However, it remains for future work to more precisely identify how these kinds of considerations can be translated to the laboratory (Renshon, 2017).

The second intertwined question concerns how to create a prospect theory experiment that adequately captures the element of strategic decision-making that decision-makers in the international system face. Rathbun (2019) has his experimental subjects play iterated prisoner's

dilemma games as part of his claim that foreign policy elites possess distinct cognitive styles. A similarly sophisticated design, whereby subjects can be placed within a domain of gain or loss and play across multiple rounds, might help to better capture the feeling of dependency and superiority that my theoretical framework demands. This is especially critical because the logic of replaceability cannot be easily conveyed in a single response vignette: it is rightfully a feeling inculcated over a broader span of time.

Finally, the third question is whether any experiment testing trade policies can overcome the well-documented difficulty of spurring subjects to respond with the same degree of urgency and accountability that they do to questions involving human lives. As noted above, past work has found that life-or-death vignettes, like the so-called “Asian disease” problem, prompt respondents to respond more clearly in a manner that prospect theory predicts (Boettcher III 2004; Fagley and Miller 1997). There also exists the potential difference between real politicians and economic elites versus experimental subjects in making policy decisions. The economic livelihood of a country is, in many ways, no less important to its survival than the lives of its citizens in real life but such an abstraction is difficult to generate in an experimental context.

Lastly, while the dissertation fills an important analytical gap by studying why some target states retaliate, it currently does not make any distinctions within the nonretaliatory policy option. A target state’s decision to not retaliate against external coercions can range from ignoring the pressure to changing its behavior in a way that aligns with the sender’s requests. The difference between escalating the conflict by retaliating and not retaliating carries great significance. However, acquiescing and not responding at all are also fundamentally different in terms of what expected outcomes the two policies entail. For instance, in the China-South Korea case concerning the THAAD deployment, Seoul would have faced a very different set of consequences should it

have decided to withdraw its decision to install the anti-missile system. In this context, including various forms of what qualifies as a nonretaliatory policy will be a meaningful addition to the theoretical framework.

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