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GLOBAL VALUE CHAINS, RISK PERCEPTION, AND ECONOMIC STATECRAFT

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Summary

Many countries, including the United States and China, have come to see economic statecraft as superior to armed conflict. Faced with a trading partner's economic sanctions, some countries try to avoid risk by complying with or ignoring the coercer's demands, but others retaliate and escalate conflict. In recent years, sanctions have been applied, not only to "rogue" states, but against trading partners. The United States and China, but also Japan, Australia, and Canada, were either the target or purveyor of economic coercion by or against trading partners in the last five years. However, not all resulted in trade wars. When, then, do economic sanctions lead to trade wars? This policy brief examines the ongoing Japan-South Korea trade dispute with a focus on how policymakers' risk perceptions regarding global value chains (GVCs) can influence when trade wars take shape.

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SERIES ON GREAT POWER COMPETITION IN THE 21ST CENTURY

Power asymmetry in GVCs is at the heart of the Japan-South Korea trade war

South Korea and Japan have been embroiled in a trade war since 2019, when Japan removed South Korea from a “white list” of countries accorded preferential treatment for export licensing. Three chemicals crucial for producing semiconductors in Korea, a key export item for the country, were on the list. The move came amidst a push by South Korea for restitution for Japan’s World War II-era transgressions, claims Japan contends were previously settled.

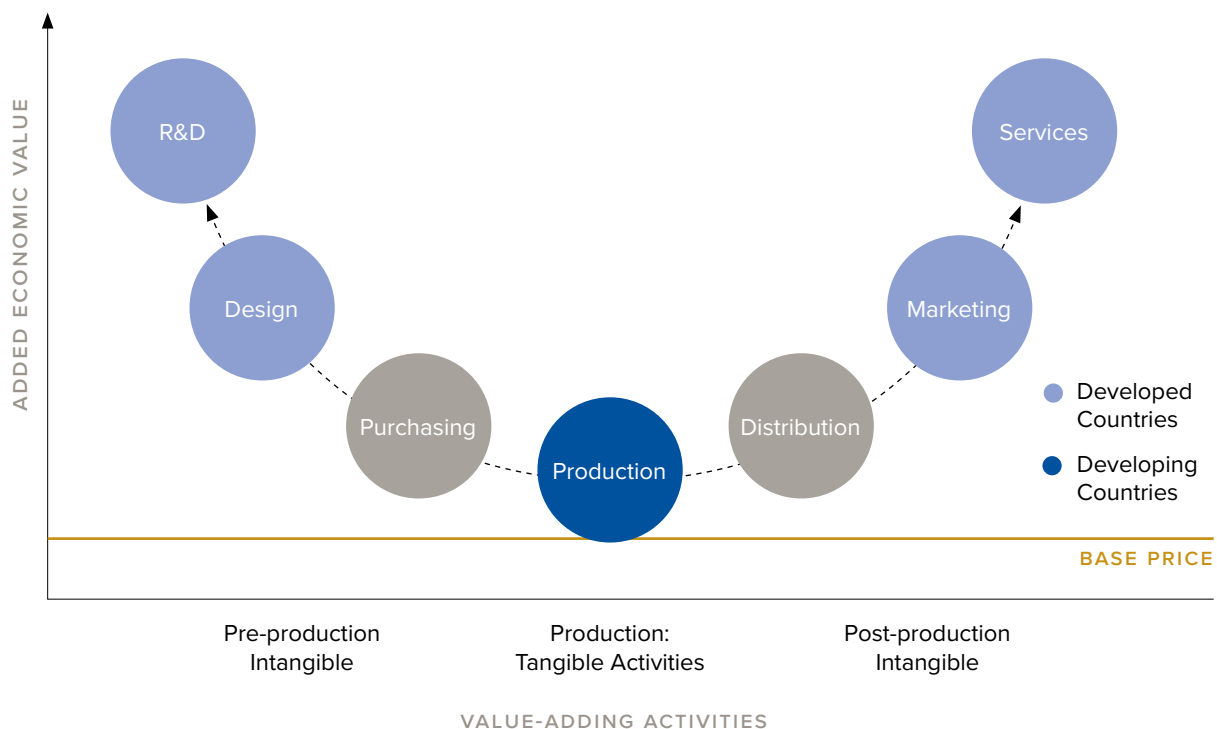
The conflict is high-stakes and ongoing. Despite its position as the tenth largest economy and home to companies such as Samsung and Hyundai, South Korea is deeply dependent on Japanese inputs, which are necessary to produce 16 percent of Korea’s total export value. Only China comprises a larger share. Japan has been Korea’s third largest trade partner since 2001, and Korea remains “highly dependent” on Japan for thirteen out of twenty products¹ with the highest gross trade value between the two countries (Moon, 2021). As one researcher lamented, Korean firms “basically import Japanese battery materials and assemble them” with “no choice but to stop” if Japan limits their export (SisaPress, 2013).

The conflict highlights the importance of global supply chains, or global value chains (GVCs) as they are commonly referred to by economists, which account for about two-thirds of global trade today. Rather than making a product from stage A to Z within a single country, many corporations dissect production processes into multiple stages, such as product design, manufacturing, and sales and spread those tasks across countries. They offshore less value-adding stages to other countries—simple manufacturing in many cases—creating a hierarchy within GVCs.

Once tension arose between Japan and South Korea, this difference in dependency and replaceability brought to the forefront a grossly asymmetric power relationship between the two countries. When Tokyo restricted exports of chemicals critical to the Korean information technology (IT) industry and withdrew Seoul from its whitelist, Korea swiftly retaliated and escalated the conflict, despite its dependence on Japan. Why? The answer lies in the nature of GVCs and their psychological impact on participants.

¹ ‘Highly dependent’ refers to 0.4 or higher trade specialization index (TSI) score, which measures a country’s comparative advantage by commodity categories. It is calculated: $(\text{net export} - \text{net import}) / (\text{net export} + \text{net import})$.

Figure 1: Smile curve of value-adding activities in a GVC (Fernandez-Stark & Gereffi, 2019)



For GVCs to run efficiently, all participants from different production steps must fulfill their roles as if they were workers on a single assembly line. While each step contributes to the larger process, not all inputs have the same value. Depending on which part of the production process a country occupies, the scarcity and value of their inputs vary (Figure 1). A country that holds scarcer—and therefore more valuable—resources such as microchip technologies is less replaceable in a GVC than one that contributes simple manufacturing.

This asymmetry of dependency can bring about seemingly counterintuitive reactions when a state is targeted by its GVC partner's sanctions. Retaliating entails different risks and benefits for differently situated policymakers. Providers of less-replaceable inputs often view retaliating or escalating the conflict as riskier, and more likely to entail losses, than the potential cost of moving their factories out of the partner state. Rearranging GVCs is expensive for everyone. However, when political tension forces a country to adjust its production lines, it is more challenging for countries that are dependent on that partner's scarce inputs to find a substitute.

It's impossible to substitute materials and suppliers completely. The reality of the semiconductor industry is that the smallest difference caused by changing suppliers, even using the same materials, can disable the entire production process or create defective products.

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For instance, a Korean IT executive observed: “It’s impossible to substitute materials and suppliers completely. The reality of the semiconductor industry is that the smallest difference caused by changing suppliers, even using the same materials, can disable the entire production process or create defective products” (Choi, 2019). This often makes a more dependent country’s policymakers engage in riskier, conflict-escalating behavior to avoid further loss of the opponent’s scarcer GVC input.

Seoul’s actions demonstrate exactly this. Having stable access to Japanese inputs was vital and losing it entailed tremendous expected losses. Consequently, Seoul engaged in risk-accepting behavior, doing whatever it could to compel Japan to change course. This included threatening to terminate the General Security of Military Information Agreement and officially filing a complaint with the World Trade Organization. While Washington intervened to stop Seoul from carrying out its threats, tensions between Seoul and Tokyo remain high today.



Credit: PxHere

Countries respond to GVC disruption with three strategies: reshoring, nearshoring, and China +1

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 maintain the technological gap. Faced with a GVC partner's coercion, calculations about retaliation vary. This dynamic is not unique to the Seoul-Tokyo trade conflict. For instance, China's eagerness for self-reliance has intensified since the U.S.-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).²

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 (US\$6.4 billion) plan to develop its own technology to substitute Japanese inputs by 2024 (Bae, 2019). Meanwhile, more dominant countries are trying to increase their domestic manufacturing capabilities by building new factories, upgrading existing ones into smart factories, and redirecting foreign direct investment (FDI).³

Second, nearshoring and "ally-shoring" are also noteworthy trends. Trade wars and the pandemic 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, and away from China, which was at the heart of "Factory Asia."

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

3 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).

COVID-19 and rising tensions between the United States and China cast a dark shadow on the future of GVCs and it is unclear which possible modifications will help to stabilize the broader system.



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 of 143 GVC managers in the United States and Mexico found that 74 percent of respondents were moving or considering moving their GVCs from China—47 percent were moving to Mexico and 24 percent were headed to Canada (Foley, 2020).

Third, some GVC participants have had more muted reactions 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 the U.S. trade deficit with China decreased. However, these gains were evened out by greater imports from countries such as Vietnam. For instance, ASEAN⁴ country exports of electronic machinery products to the United States increased from 15 percent in 2017 to 29 percent in 2020 (Zhang, 2020).

COVID-19 and rising tensions between the United States and China cast a dark shadow on the future of GVCs and it is unclear which possible modifications will help to stabilize the broader system. In an era of rising nationalism, the decision of some countries to hold GVCs hostage has engendered deep resentment. In addition, countries including China and South Korea so far have not been able to gain GVC independence from their dominant counterparts despite extensive government efforts to do so (Brands, 2021; *The Korean Times*, 2021). In all, as the case of Japan and Korea highlights, the power dynamics and inequality latent within GVCs remain persistent challenges for the future of geopolitics.

4 The Association of Southeast Asian Nations.

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UC Institute on Global Conflict and Cooperation (IGCC) addresses global challenges to peace and prosperity through rigorous, policy relevant research, training and engagement on international security, economic development and the environment. Established in 1983, IGCC convenes expert researchers across UC campuses and the Lawrence Livermore and Los Alamos National Laboratories, along with U.S. and international policy leaders, to develop solutions and provide insights on the most profound global security challenges.