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Tools of Japanese Economic Statecraft and Firm Responses: Case Studies of Rare Earths, COVID-19, and Semiconductors

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ABSTRACT

Governments have increasingly turned to economic statecraft to address negative security externalities resulting from economic interdependence. How have governments attempted to shape the behavior of firms, and how have firms responded? This article examines Japanese economic statecraft in response to the 2010 Chinese rare earths export ban, COVID-19 pandemic supply chain disruptions, and semiconductor supply chain vulnerability. The Japanese government has used a wide range of tools to influence firms, focusing predominantly on positive incentives to encourage innovation, structural reform, investment, and relocation rather than negative incentives such as export controls. The government has turned its traditional levers of economic policy to new purposes to deal with changing security threats, reflecting varying goals such as bolstering resilience and promoting competitiveness. Government policy has been most effective in shaping firm behavior and mitigating negative security externalities in the case of rare earths.

1 | Introduction

Although the vulnerabilities associated with economic interdependence are by no means new, they have been increasingly thrust into the spotlight over the past 20 years. Developments such as the return of trade war, the COVID-19 pandemic, and the war in Ukraine have underscored the importance of supply chain resilience and diversification (Bednarski et al. 2023). Moreover, some governments have intentionally weaponized economic interdependence (Farrell and Newman 2019). For example, the Chinese government has attempted to economically punish countries such as Japan, the Philippines, South Korea, and Australia through export restrictions, popular boycotts, administrative discrimination, informal blacklisting, and tourism restrictions (Cha 2023; Harrell et al. 2018; C. Lai 2018; Lim and Ferguson 2022). The US government has also expanded its use of tariffs, sanctions, export controls, investment restrictions, and other import limitations in recent years (CNAS Task Force on the Future of US Coercive Economic Statecraft 2020; Farrell 2025).

In this changing international environment, how have governments attempted to shape the behavior of firms, and how have firms responded? To what extent have governments achieved their intended strategic purposes using economic statecraft? This article explores these questions through an examination of Japanese economic statecraft—i.e., state manipulation of economic activities for strategic purposes—and the responses of Japanese firms to these policies (Aggarwal and Reddie 2021; Baldwin 1985; Evenett et al. 2024; Norris 2016). As a country known historically as a developmental state with a relatively strong capacity to use industrial policy to influence firm behavior, Japan can be considered an "extreme case" for the use of economic statecraft. This makes it a useful case for an exploratory probe to examine the tools through which government policy attempts to affect firm decisions (Seawright and

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Gerring 2008). It can also offer insight into the conditions under which these attempts are effective; if a government with relatively strong levers for influencing business such as Japan cannot achieve intended outcomes, this would suggest that these policies are less likely to work for other states with even more constraints on their capacity (Juhász and Lane 2024; Katada et al. 2023).

Drawing on surveys, government reports, trade and financial data, and media reports, this article examines three case studies of Japanese public and private sector responses to (1) the 2010 rare earths export ban by China; (2) supply chain disruptions caused by the COVID-19 pandemic; and (3) semiconductor supply chain vulnerability through the end of 2025. It demonstrates that the Japanese government has used a wide range of tools of economic statecraft. These have primarily included positive incentives such as subsidies, public investment, and other government support to encourage technological innovation, structural reform, investment in Japan by domestic and foreign firms, and relocation from China to other domestic and foreign destinations. Negative incentives such as export controls have been notably less common, distinguishing the Japanese approach to economic statecraft from countries such as China and the US. In addition, the case studies show that the Japanese government has turned its traditional levers of economic policy to new purposes to deal with changing its understandings of security considerations. In the cases of rare earths and COVID-19, there was a strong policy focus on bolstering resilience, while the case of semiconductors demonstrates a relatively stronger focus on promoting competitiveness to address threats to economic security. Moreover, the use of tools such as industrial policy is evolving. For example, in the case of the semiconductor industry, the Japanese government is strategically allocating targeted resources, but these resources are benefiting not only domestic firms—the traditional targets of industrial policy—but also foreign firms whose involvement is necessary to enhance supply chain resilience and to reinvigorate the sector to support domestic economic revitalization aims.

The case studies find mixed evidence for the effectiveness of Japanese economic statecraft in terms of (1) the ability of policies to shape the behavior of firms and (2) the ability of policies to mitigate negative security externalities for Japan. The Japanese government has been most effective in shaping the behavior of firms in the cases of rare earths, while its semiconductor-related policies and its COVID-19 subsidies have had more modest effects. In some instances, government policy influenced firms' decisions to make new investments. In other cases, evidence suggests that firms who took advantage of government resources were already at or near the threshold of action for making the behavioral change desired by the government, so government policy may have enabled or accelerated their actions. However, there were also examples of firms who did not change their behavior in the desired ways. The question of whether Japanese economic statecraft has mitigated negative security externalities is more difficult to assess on short timelines. There is evidence that it has succeeded to some extent in the rare earths case over the past 15 years, but the government initiatives in the other two cases have had limited impacts thus far.

This research contributes to the growing body of literature on economic statecraft in several ways. First, this article sheds light on the diverse tools through which governments are attempting to pursue economic statecraft, of which industrial policy is an important and growing component. Despite recent reinvigoration of the scholarship on industrial policy, important questions remain about the underlying mechanisms and processes at work (Juhász et al. 2024). In addition, studies have often limited their focus to certain types of economic tools instead of looking at the overall portfolio of positive and negative incentives. For example, positive tools of economic statecraft have tended to be understudied in the international relations literature relative to more dramatic episodes of economic coercion, and this article demonstrates that these positive tools actually constitute the dominant part of Japan's approach to economic statecraft.

Second, the article provides insight into the dynamic interplay between the public and private sector in addressing increasing risk, with greater attention to the perspective of firms to flesh out the processes of economic statecraft more fully (Katada et al. 2023; Norris 2016). The creation of new government policies tends to receive primary focus in analyses, but government policies generally involve creating rewards or punishments for firms to change their behavior to support national goals, so the compliance of these firms is a critical part of the equation.

Third, the article demonstrates some of the difficulties and potential limitations in implementing economic statecraft initiatives, responding to calls by scholars for greater attention to questions of policy effectiveness (Juhász et al. 2024). As a "harbinger state" that experiences many challenges before others in the international system, Japan provides an instructive example for policymakers in an increasing number of countries who are attempting to shape their own firms' behavior to enhance their national economic resilience (Lipscy 2023).

The article begins by discussing how firms make decisions related to location and innovation, how these decisions can generate security externalities that affect states, and the tools that states have used to try to shape firm behavior in ways that align with their national interests. It then proceeds to a discussion of tools of Japanese economic statecraft and firm responses in case studies of rare earths, COVID-19 supply chain disruptions, and semiconductors. After summarizing the findings from the comparative case studies, the article concludes with some implications for policy, underscoring the importance of public-private sector consultation in helping governments to better understand firms' decision-making and thereby craft more effective strategies for economic statecraft. Through such consultation, governments may be able to gradually shape firms' preferences to better align them with those of policymakers over time.

2 | Security Externalities, Firm Behavior, and Tools of Economic Statecraft

Many scholars have written about the effects of political conflict on economics. For example, studies suggest that states with

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tense relations generally tend to trade less with one another; rather, trade "follows the flag" because states prefer to engage with friendly countries to manage risks (Chen and Zhou 2021; Gowa and Mansfield 2004; Morrow et al. 1998; Pollins 1989). However, examinations of specific negative incidents have suggested that political conflict has very little effect on economic relations due to factors such as sunk costs and embeddedness in a market, which make firms unlikely to relocate their operations (Davis and Meunier 2011; Liu et al. 2022). Even when negative political events deleteriously impact firms' profits or stock values, these effects are often temporary and distributed heterogeneously across firms (Fisman et al. 2014; Heilmann 2016; Vekasi 2020). Consequently, economic relations seem fairly robust in the face of political conflict, and many firms are relatively insensitive to political risk.

However, this can pose problems for governments because the firms that make economic decisions are not the only ones who experience the consequences of these decisions; the effects of their decisions are not fully internalized among the parties conducting an economic interaction (Norris 2016, 2025). Firm decisions generate positive externalities for their home countries when they generate benefits for society, and they generate negative externalities when these decisions impose costs or risks to others. This article focuses specifically on *security externalities*, i.e., effects that positively or negatively impact aspects of the security of a state directly through military channels or indirectly through economic channels (Norris 2025). This article examines cases in which the Japanese government is trying to mitigate negative security externalities through economic statecraft, demonstrating that as its understanding of security threats has changed so has its use of policy tools. It is important to note that there is no consensus on the definition of security or economic security; instead, national governments concerned about economic security tend to pursue policies motivated by different combinations of resilience (i.e., reducing risks), competitiveness (i.e., promoting domestic industry), and protection (i.e., restricting foreign competition) (Govella 2025). Each of these policy goals can be pursued with a different mix of policy tools, as seen in this article.

2.1 | Firm Decisions: Location and Innovation

To provide the necessary background for the case studies, this section examines two aspects of firm behavior that have potential consequences for security—location and innovation—and that have therefore been targeted by economic statecraft initiatives. Firm decisions about location and innovation can lead to a type of security externality whereby economic activity weakens the domestic economy, leading to "corrosive" strategic consequences (Norris 2025).

In choosing locations for their operations, multinational firms generally consider market factors such as the cost of inputs and transportation, as well as the availability of infrastructure, resources, markets, local partners, marketing channels, technology, knowledge-related assets, specialized spatial clusters, and supporting institutions (Dunning 2009; Gorter and Nijkamp 2015). Firms seek profit and efficiency, but these private incentives are sometimes misaligned with national interests; a firm may choose a location that favorably maximizes profit yet exposes the firm and their home country to risk. A firm may judge that a risk is worthwhile or it may miscalculate or be unaware of risks involved, but regardless of the rationale, if negative consequences occur due to many firms' individual decisions, the aggregate effect creates negative security externalities for their home country. The disjuncture between the calculations of individual firms and their consequences for broader supply chains is well documented, with a prominent example being the supply chain disruptions that have created negative security externalities for individual countries (Felbermayr and Janeba 2024; Norris 2025; Tomlin 2025).

For example, if a firm that is part of a supply chain chooses to invest in a location where profit potential is favorable but where its operations faces risks of disruption, this can cause shortages of critically important goods and other problems that can impact the security of their home country. If a firm locates its operations in a place with weak intellectual property protection, intellectual property theft can create negative security externalities for its home country, particularly if the stolen material is highly innovative or has military applications. If a firm decides to offshore its operations, this can negatively impact its home country by weakening its competitiveness and industrial base, which has increasingly come to be seen as a security risk by governments, though these concerns may also be motivated by the desire to shield domestic companies from competition. Conversely, firms can choose locations that mitigate risks and therefore create positive security externalities by bolstering their country's economic strength and resilience.

When deciding whether and how to innovate, firms typically consider factors such as their total factor productivity level, cost, financial autonomy, profitability, company size, asset structure, patents, human resources, and business resources (Y.-L. Lai et al. 2015). As in the case of location, a firm's decisions about innovation can generate negative security externalities for its home country. While innovation is beneficial to a firm, it is also costly and time-consuming, and a firm may decide to abandon a line of activity if it judges that the costs are prohibitive, leaving its home country without leading firms in a key sector. This can corrode its home country's economic competitiveness, which is the basis of its national security. If a firm does not innovate to adapt to and mitigate risk from unreliable suppliers or scarce resources, this can perpetuate problematic economic dependencies for its home country. Even if a firm does innovate, it may not always pursue a trajectory that is in line with the innovation desired by the government for national interests. Again, the problem is that the consequences of a firms' decisions about innovation are not completely internalized. Conversely, innovation can benefit the firm while also generating positive security externalities for the state via economic growth, competitiveness, and diversification.

2.2 | Positive and Negative Policy Tools and Thresholds for Firm Action

Governments have tried to address these security externalities through economic statecraft. This article follows Norris (2016, 2025) in defining economic statecraft as "the intentional

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attempt of the state to incentivize commercial actors in a manner that generates security externalities that are conducive to the state's strategic interests." Outside of state-owned enterprises or government contractors, firms are generally not agents of the state; they are not required to take government calculations of risk or potential security externalities into account when making business decisions. Consequently, to influence firms' choices, governments often attempt to manipulate their incentives using positive tools of economic statecraft such as financial benefits (Johnson 1982; Norris 2016; R. Vogel 2000). For example, governments have tried to financially incentivize firms to reshore their operations back to their home country to combat hollowing out of industry or to move to locations with relatively lower levels of political risk (i.e., ally-shoring or friend-shoring). Governments have also tried to influence firm behavior to promote investment and innovation in ways that generate positive security externalities (Beaudry and Allaoui 2012; Lin and Luan 2020; Sung 2019). They have provided financial support to reduce investment risks to firms, which can stimulate private investment in innovation (Becker 2015; Koga 2005). These policy initiatives address economic security concerns but may also serve other government motivations, such as protectionism or clientelism. In some cases, governments have used negative tools of economic statecraft, such as restrictions, sanctions, or penalties; however, these negative tools tend to be opposed by firms and are relatively less common.

When evaluating the influence of these kinds of financial incentives or penalties, it is necessary to consider how these government actions intersect with the decision-making process of firms who are evaluating a host of factors related to location and innovation. Much of the existing literature focuses either on the proliferation of government policies toward firms or on the decision-making processes of firms with regard to primarily market factors. This article attempts to help build a more detailed understanding of government influence by examining how different constellations of tools are used by governments and received by firms. There is an inherent difficulty in analyzing the causal effects of policies related to economic statecraft since policy intervention is nonrandom by design. Relatedly, there is some endogeneity in a government's choice of tool, since the aim is to choose a policy that is needed by and has perhaps been requested by firms (Juhász et al. 2024; Rodrik 2007). However, the aim of this article is to use Japan as an extreme case for analysis, so the nonrandomness of policies is a feature of the research design in that it enables an examination of relevant policy tools. Descriptive qualitative analysis can help to shed light on how industrial policies may have shaped behavior in specific settings using a broad range of instruments.

For heuristic purposes, this article uses the concept of a *threshold for action* in firm decision-making. A firm's decision about whether to take an action desired by the government can be considered along a preference curve. For a given firm, there exists a threshold for action where it is inclined to act; once cost decreases below this point, it prefers to comply with the government's wishes. This decision-making process does not exist in a vacuum; it is embedded in a context where there are ongoing interactions among public and private actors. Japan in particular is often considered to be an ideal case of "embedded autonomy" with its strong relationships among government, industry associations, and firms, in contrast to other countries such as the US where there is a relatively more "arms-length" relationship between government and industry (Evans 1995; S. Vogel 2021). Therefore, the discussion of incentives alone cannot account for the entire story. Nonetheless, it is instructive to have a model of decision-making from the firm side to help clarify the processes at work.

Viewed in this context, financial incentives such as subsidies and tax incentives are ways for the government to decrease costs and therefore increase the likelihood of firm compliance by pushing them across the threshold for action. Subsidies are intended to lower the cost of doing business and increase returns on investments. Tax incentives are intended to increase a firm's profitability by decreasing its overall tax burden and may include exemptions, reductions, refunds, rebates, and credits. However, even if government incentives succeed in reducing the cost enough for a firm to decide that cost is no longer a significant barrier, this may not be sufficient to convince a firm to take the desired action if other relevant business conditions are still not favorable. Conversely, negative tools of economic statecraft essentially raise the cost of an action for firms with the goal of deterring them from an action that is not desired by the government. It is also important to note that firm decisions often involve long processes spread over time and many people at different levels of various organizations, which means that adjustments in response to government policy will be relatively slow (Aharoni 2015).

The case studies in this article show that the Japanese government is attempting to influence firms in multiple ways, including changing established behaviors and initiating new behaviors. The next section examines three case studies focusing on specific Japanese government policies intended to mitigate negative security externalities and the responses from Japanese and foreign firms.

3 | Empirical Case Studies of Japanese Economic Statecraft and Firm Responses

The Japanese government is well known for its intervention in the private sector dating back to the 1850s in the iron foundries, shipyards, and arsenals established by the Tokugawa shogunate and local governments (Smith 1955). During the post-World War II period, the Ministry of International Trade and Industry (MITI)—and its successor the Ministry of Economy, Trade and Industry (METI)—famously attempted to shape the behavior of Japanese firms through industrial policy in sectors such as petrochemicals, steel, automobiles, and semiconductors (Johnson 1982). Industrial policy can be defined as a set of government policies which target the transformation of the structure of economic activity in pursuit of some public economic or noneconomic goal (Juhász et al. 2024). It has generally been used to promote a targeted domestic industry or sector by intervening in resource allocation or structural organization (International Monetary Fund 2024; Itoh et al. 1991). There has been debate over the years about whether industrial policy produced successful economic outcomes (Okimoto 1989;

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Samuels 1987), and recent studies have pointed to a relative decline in Japanese government influence vis-à-vis firms over time (Katada 2020). Despite these discussions, however, the Japanese government is still considered by many to be the exemplar of the developmental state, with a relatively well-developed set of tools for influencing firms in comparison to other countries (Beeson 2014; Katada et al. 2023; Pempel 1999). Typical tools of Japanese industrial policy have included subsidies, tax incentives, loans, grants, licenses, antitrust exemptions, trade restrictions, favorable regulation, and administrative guidance.

The Japanese government is now attempting to leverage these existing tools to deal with evolving concerns about its economic security, blending traditional industrial policy with other tools of economic statecraft (Aggarwal and Reddie 2020; Govella 2021). This section examines three cases in which the Japanese government has tried to persuade its firms to change their behavior due to negative security externalities: (1) the 2010 rare earths export ban by China; (2) supply chain disruptions caused by the COVID-19 pandemic; and (3) semiconductor supply chain vulnerability. It focuses specifically on cases where the government attempted to use economic statecraft in response to a crisis that had concrete economic impacts on firms, since these are cases in which firms should be most likely to be inclined to respond to government policy and therefore relatively close to their threshold for action. Given the relatively strong capacity of the Japanese government, if its policies do not produce outcomes in these cases, this would constitute strong evidence that these policies are less likely to be effective when wielded by other states (Gerring 2006).

These case studies show how the Japanese government has adapted its traditional levers of economic policy to reflect changing understandings of security threats, producing varying levels of policy focus on resilience and competitiveness. They find mixed evidence for the effectiveness of Japanese economic statecraft in terms of the ability of policies to shape the behavior of firms and the ability of policies to mitigate negative security externalities for Japan. In each case, effectiveness is defined by the goals set by the Japanese government itself. By these standards, government policy has been most effective in the case of rare earths. Insufficient time has elapsed to make a definitive assessment of the COVID-19 and semiconductor cases, but initial results are mixed so far.

3.1 | Rare Earths

On September 7, 2010, a Chinese trawler operating in disputed waters near the Senkaku/Diaoyu Islands collided with Japanese Coast Guard patrol boats, after which Japan detained the boat's skipper. China demanded that the skipper be released, and after Japan extended the detention for another 10 days, China cut off exports of rare earths to Japan. Rare earth elements are critical minerals that are essential for a wide range of uses, including high-tech consumer technologies and significant defense applications. At the time, China accounted for 97 percent of world production of rare earth elements, and Japan imported over 80 percent of its rare earths from China (Tukker 2014). Although Beijing denied that the incident and the rare earths restrictions were connected, the effects were clear: Japan suffered a supply shock when shipments were halted for 2 months, and a METI survey released in October 2010 found that all 31 Japanese firms handling rare earths had reported disruptions to shipments ('China Denies New Rare Earths Export Quota Cuts' 2010).

This disruption made the Japanese government acutely aware of the negative security externalities caused by dependence on China. In this case, the negative security externalities took the form of overdependence creating vulnerabilities to supply chain disruptions that impacted key economic sectors for Japan, such as consumer electronics, defense, medical technology, and automobiles. Concerns about ensuring reliable supplies of rare earths have persisted to the present. In April 2025, for example, China imposed export restrictions on rare earths as part of its retaliatory response to US tariffs, setting off another wave of global concern. This section examines the efforts of the Japanese government to shape firm behavior in response, demonstrating that Japanese economic statecraft was primarily focused on bolstering resilience by (1) diversifying sources of rare earths and (2) promoting technological innovation to reduce the amount of imported rare earths required. It finds that government policy was relatively effective in shaping firm behavior to minimize reliance on China and reducing associated negative security externalities, though these efforts may be reaching a plateau.

3.1.1 | Pursuing Alternative Supplies Through Agreements and Investment

First, the Japanese government responded to the sudden realization of these negative security externalities by seeking out alternative supplies through government-to-government agreements. Japan's Ministry of Foreign Affairs (MOFA) pursued agreements with countries such as Mongolia, Vietnam, Myanmar, India, Kyrgyzstan, Tajikistan, Turkmenistan, Uzbekistan, Kazakhstan, and Namibia (Bagchi 2012; Vekasi 2019; 'Vietnam to Help Japan on Rare Earths; Joint Statement' 2010). In 2022, Japan and other countries established the Minierals Security Partnership to catalyze public and private investment in responsible critical minerals supply chains. In October 2025, the US and Japan signed a framework agreement to secure the supply of critical minerals and rare earths through mining and processing.

Second, the Japanese government reached out to alternative suppliers and engaged in public investment through the Japan Organization for Metals and Energy Security (JOGMEC, formerly known as the Japan Oil, Gas and Metals National Corporation), an incorporated administrative agency established through the merger of the Metal Mining Agency of Japan and the Japan National Oil Corporation in 2004. JOGMEC operates under the jurisdiction of METI with the principal goal of seeking a stable supply of natural resources for Japanese industry. Through JOGMEC, the Japanese government encouraged private sector participation in overseas mining projects by taking on more of the risk and expense involved. These types of resource projects generally require huge initial investments and results can take 10–20 years to manifest, which makes investment daunting for many firms without government assistance.

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After China's 2010 embargo, JOGMEC turned its attention to rare earths, pursuing projects in Australia, Canada, the US, South America, Africa, and Asia (Vekasi 2019). In these instances, the Japanese government used public investment to encourage private sector firms to act in the desired manner by altering their cost and risk calculations. In some cases, this policy was supporting firms who had already decided to act based on their own business calculations—i.e., they were already beyond the threshold for action. For example, Sojitz—Japan's largest importer of rare earths and the sole distributor of Australian firm Lynas' rare earth products in Japan—actually moved ahead of the government, entering a "strategic alliance" with Lynas in November 2010 (Soble 2011). However, government involvement helped to accelerate and amplify diversification efforts. In March 2011, Sojitz and JOGMEC provided $250 million of financing to Lynas, through loans and equity via Japan Australia Rare Earth (JARE) in return for a long-term supply contract for 30 percent of total Japanese consumption, and Sojitz began importing materials from the mine in October 2025 (Gholz and Hughes 2021; Sato 2025). In 2022, JARE announced that it had contributed an additional $9 million in the equity of Lynas Rare Earths Limited followed by another $132 million in 2023 (JOGMEC 2022, 2023).

In 2022, the Japanese government decided to raise the maximum amount of capital injection by JOGMEC from 50 percent to 75 percent in overseas mining projects to encourage private sector participation in such projects to take on even more of the risk and expense involved ('Japan to up backing for firms to secure rare metals' 2022). In March 2025, JOGMEC and Iwatani announced a $116 million investment in a rare-earth processing project planned by French group Caremag, which was expected to supply roughly 20 percent of Japanese demand for dysprosium and terbium. In August 2025, JOGMEC and Sojitz established a joint adventure called Japan Australia Gallium Associates which signed an agreement with US aluminum company Alcoa to explore producing gallium in Western Australia (Turton 2025).

3.1.2 | *Promoting Innovation to Strengthen Resilience*

In addition, METI allocated funding to reduce Japan's reliance on Chinese rare earth minerals. On February 25, 2011, it announced that it would offer around 42 billion yen ($513 million) in subsidies for this purpose. Of this total amount, it granted subsidies totaling 33 billion yen to partially fund 160 capital investment projects that would reduce use of rare earths from 30,000 tons to 20,000 tons and to diversify sources, while an additional 8.9 billion yen was disbursed to other projects later in 2011 ('Japan to Offer Subsidies for Rare Earths' 2011). The overall scale of the projects totaled about 110 billion yen, including spending by the firms themselves. This was in addition to the 100 billion yen earmarked in the previous year's government budget for securing alternative supply sources (Rowley 2011).

Since the lack of minerals within Japan made it impossible to create a viable independent domestic Japanese rare earth industry, government efforts to promote innovation were focused on bolstering resilience instead of promoting competitiveness. Specifically, these government subsidies were used to encourage Japanese firms to innovate to decrease their use of rare earths by developing alternative technologies or by using rare earths more efficiently. This tool of economic statecraft was welcomed by Japanese firms who were also aware of the risks of continuing their heavy dependence on Chinese rare earths. For example, Nissan Motor Company used the subsidy to invest in facilities aimed at developing auto parts that do not use rare earths. Toshiba Corporation installed polishing equipment that would enable it to use less cerium. Konica Minolta introduced new equipment that uses cerium oxide more efficiently when polishing gas. Some Japanese firms set up facilities to recover rare earth metals from used nickel-hydride batteries collected in and outside Japan (Rowley 2011).

A number of initiatives focused on magnets containing rare earths, which constitute a key part of manufacturing supply chains. Hitachi Metals recycled chaff from neodymium magnet production. Mitsubishi Corporation, Daido Steel, and Intermetallics developed a technology to reduce the use of dysprosium in neodymium magnet production. A handful of the initiatives involved tapping supplies or rare earths outside China, in places like the US and Australia. Molycorp, Daido Steel, and Mitsubishi announced the formation of a joint venture to manufacture and sell next-generation neodymium-iron-boron (NdFeB) permanent rare earth magnets, which was financed by the three shareholders and by a subsidy from METI. The new technology created permanent rare earth magnets that deliver greater performance with less reliance on dysprosium and higher production yields ('Molycorp, Daido Steel, and Mitsubishi Enter Joint Venture' 2011).

In June 2011, METI said that it would grant 8.7 billion yen in subsidies to a second batch of 68 capital investment projects that would reduce use of rare earths or diversify suppliers of the minerals. This second batch included a subsidy to Nippon Steel and Sumikin Stainless Steel Corp, which introduced equipment to collect rare metals through the process of making stainless steel ('More Subsidies Granted for Company Efforts to Cut Use of Rare Earths' 2011). In September 2011, the government supplied a subsidy of about 300 million yen to motor manufacturer Nidec Corp, lens maker Hoya Corp, and two other firms that were working to reduce the use of rare earths related to components for cars and SLR cameras. It also aimed to prevent domestic firms from moving their manufacturing bases to China ('Govt to Pay Firms to Curb Rare Earth Use 2022).

In February 2012, METI announced that it had earmarked an additional $65 million in subsidies to encourage innovation by Japanese manufacturers to reduce their reliance and consumption of rare earths and to spur the development of new technologies. Again, many firms recognized the risks of heavy dependence on imported rare earths and were at or close to the threshold for taking this action, but government action enabled and accelerated their efforts. The government was particularly focused on reducing dependence on dysprosium, which is used for motors in hybrid vehicles and other products, through recycling innovations as well as through inventing dysprosium-free products. Japan aimed to cut its domestic use of the metal by 30 percent. METI began publicly soliciting projects in late 2011 and said that it had selected 49 projects at firms, universities, and other institutions as eligible to receive the

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subsidies in the next 2 years. All domestic makers of high-power magnets that use dysprosium applied for the scheme, indicating a high level of private sector buy-in to the government program ('Japan Govt Encourages Under Reliance on Rare Earths, Shells Out $65 M as Subsidy' 2012). In October 2012, a research cooperative on magnetic materials used in high-efficiency motors was established, sponsored by firms such as Toyota, Mitsubishi Electric, Daikin, Denson, Aichi Steel, and NEC Tokin. METI provided subsidies and tax incentives ('Japan Taking Drive for Rare-Earth Alternatives to Next Level' 2012). Similar initiatives have continued into the present as the Japanese government has continually tried to reduce its dependence on China by finding alternative sources of rare earths and to reduce overall use of these critical minerals. Companies such as Proterial (formerly Hitachi Metals) and Daido Steel have developed magnets that do not require heavy rare earths, for example (Sato 2025).

3.1.3 | *Summary and Assessment*

Government initiatives facilitated behavioral change on the part of Japanese firms in some areas. First, it spurred technological innovation to reduce dependence on China and bolster resilience. Due to fact that the rare earths industry is strongly shaped by the geographic location of these minerals, there are limitations on the Japanese government's ability to promote its own domestic industry; it cannot become an industry leader in mining or processing, for example, so innovation policy has focused on efficient use and investigation of alternative materials. Second, the government eased investment by the private sector in new locations. Many firms in the rare earths sector took advantage of government resources. Some of these innovation and relocation decisions may have occurred without Japanese economic statecraft due to the strong alignment of interests among firms and the government. However, even in those cases, it is unlikely that they would have been successful in diversifying as quickly and to as great an extent without the Japanese government subsidizing risk through public investment and subsidies.

Regarding whether the Japanese government was effective in mitigating negative security externalities related to dependence on Chinese rare earth exports, it is clear that there was a dramatic shift in Japanese import patterns in the 2010s, as illustrated by Figure 1, and an increase in overall resilience. The graph shows United Nations Comtrade data for Harmonized System (HS) codes 280530 (rare-earth metals, including all 15 lanthanides, scandium, and yttrium, whether or not intermixed or interalloyed), 284690 (compounds, inorganic or organic of lanthanides (excluding cerium), yttrium, scandium, or mixtures of these metals) and 284610 (cerium compounds). While these numbers do not encompass the full range of the rare earths supply chain, they capture an important mid-stream portion. The available data for the upstream (ores) and downstream (magnets) portions of the supply chain includes multiple other substances besides rare earths, which makes it difficult to accurately assess, so those numbers have not been included in the graph. Figure 1 shows that China's share of Japanese rare-earth imports averaged around 87 percent in the period from 2000 to 2010, falling to an average of around 61 percent in 2011–2024. This was driven by pursuit of alternative suppliers and by innovation. An assessment by Nomura Research Institute found that almost all the programs introduced to reduce use of rare earths were able to achieve the desired effects, and the Japan Society of Newer Metals concluded that the risks of supply interruptions were reduced by domestic innovation (Gholz and Hughes 2021).

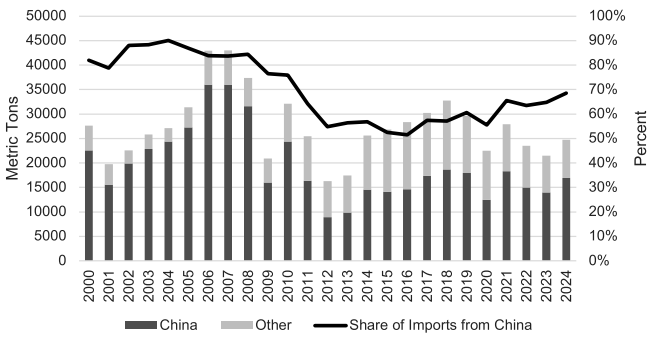


FIGURE 1 | Rare Earth Imports to Japan by Source (2000–2024). Source: United Nations (2025).

However, while this change has been dramatic, it may have plateaued for the time being, presumably until technological breakthroughs or new sources of supply emerge. The share of rare earths imports from China seems to have stabilized at around the 59 percent level. Overall levels of Japanese rare earth imports have also remained relatively flat since an initial drop in the early 2010s. This demonstrates the structural limitations to the efforts of the Japanese public and private sectors to reduce dependence on China in the face of rising demand for these minerals. However, the government continues to seek new ways to bolster its economic security. For example, sediments containing high concentrations of rare earths were recently discovered in Japan's coastal waters, creating the possibility of domestic rare-earth development. In January 2026, a project led by the Japan Agency for Marine-Earth Science and Technology will begin extracting rare earths off the coast of Minami-Torishima island. The government also plans to amend the law to allow JOGMEC to make capital investments in rare metal refining within Japan, which may create new possibilities for diversification ('Japan to up backing for firms to secure rare metals' 2022).

These efforts gained renewed momentum in April 2025 when China imposed export restrictions on rare earths as part of its retaliatory response to US tariffs. A few months later, China announced expansive new rare earths-related export controls, including stipulations that foreign companies need Beijing's approval to export magnets that were produced using Chinese extraction methods, refining, or magnet-making technology or magnets that contain even small amounts of rare earth materials from China. In 2026, China targeted Japan with export controls due to tensions spurred by comments made by Prime Minister Takaichi concerning Taiwan, and the stockpiling, innovation, and diversification preparation undertaken previously by the Japanese government prevented widespread industry disruption. This provides evidence of Japan's increased resilience and the government's relative success in mitigating negative security externalities in comparison to the early 2010s baseline used in this case study. Further mitigation efforts are

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ongoing. The second Trump administration signed a wave of bilateral agreements on critical minerals agreements, including a framework agreement with Japan in October 2025 (The White House 2025). This new agreement tries to address the entire supply chain from mining and separation to derivative products such as batteries, magnets, and catalysts. It calls on the US and Japan to jointly identify projects and finance them through grants, guarantees, loans, equity, and offtake arrangements. Japan also joined the minilateral Forum on Resource Geostrategic Engagement (FORGE), which was launched by the Trump administration in 2026.

Overall, the Japanese government has employed a range of positive tools of economic statecraft to influence firm behavior in the rare earths industry to bolster resilience. It has sought to encourage Japanese firms to find alternative sources of rare earths and to pursue innovation to reduce overall use of these critical minerals through new technologies, recycling, and gains in efficiency. These efforts can be judged as being relatively effective in terms of achieving the government's goals of shaping firm behavior and reducing negative security externalities. The effectiveness of these efforts was aided by the fact that the government was targeting a specific industry with strategic value, consistent with past examples of Japanese industrial policy. By working through JOGMEC and providing incentives, the Japanese government had a relatively clear set of objectives and tools with which to influence private sector behavior, which was well aligned with the goals and objectives of the firms themselves. This enabled the government to support firms who were already beyond the threshold of action to accelerate their efforts and to enable other firms to act by providing resources and mitigating risk.

3.2 | The Coronavirus Pandemic and Supply Chain Resilience

The COVID-19 pandemic disrupted global supply chains and other international economic activity, highlighting the vulnerabilities associated with interdependence and prompting widespread discussions of the need for enhanced resilience. Negative security externalities took the form of overdependence on Chinese and other foreign suppliers creating vulnerabilities to supply chain disruptions, but the scope of impacted sectors was much wider, going beyond rare earths to include masks, medicines, medical devices and machinery, hygiene products, automobiles, electronics, aviation parts, fertilizer, and other products. Similar to the previous case study, this section demonstrates that the Japanese government used a range of positive tools of economic statecraft to attempt to shape firm behavior in response to this crisis. Government policy was primarily focused on bolstering resilience by reducing risk through diversification of sources for various products. However, its approach was generally limited to encouraging relocation, and policy was diffuse instead of narrowly targeted industrial policy. This section suggests that the Japanese government has been less effective in achieving its stated goals in this case, both in terms of shaping firm behavior and in terms of mitigating negative security externalities.

Beginning in 2020, METI launched two subsidy programs aimed at encouraging Japanese firms to relocate production to Japan and to other countries in Asia (Watanabe 2022). Although China was not named as the target for these policies, they were known as "China exit" subsidies (Takeuchi 2020), and it was notable that almost no government support was given to firms to expand in or move operations to China, in contrast to other Asian countries. Japanese policy was not as anti-offshoring as that of the US. For example, one METI official said that "...it was unrealistic to bring all production home... Instead, Japan wants a combination of domestic and overseas production, together with international cooperation—especially when it comes to emergency supplies" (Denyer 2020). Thus, the overall goal of the policy seemed to be to shape firm behavior by encouraging firms across a wide variety of sectors to diversify production away from China to any other location—at home or abroad—in order to mitigate negative security externalities, so that is the standard used to assess government policy effectiveness in this case study. In most cases, that diversification did not involve fully exiting from China, as seen in the following analysis.

3.2.1 | Bolstering Resilience by Encouraging Firm Relocation to Japan

In April 2020, the Japanese government rolled out an emergency economic package that included 220 billion yen to relocate production back to Japan and 23.5 billion yen to diversify supply chains to Southeast Asia. It identified five focus industries: rare-earth metals, automobiles, electronics, medical devices and machinery, and hygiene products (Ministry of Economy, Trade and Industry of Japan 2020a). Manufacturing firms producing goods vital to public health or manufacturing firms key to Japanese economic competitive advantages were prioritized. Despite the initial disruptions caused by the pandemic, however, a survey of Japanese firms, subsidiaries and affiliated firms in China conducted by the Japan External Trade Organization found 22 percent saying in April 2020 they planned to *expand* their business in China, up nearly seven percentage points from March. A similar survey found just 5.6 percent considering relocating out of China, down from 9.6 percent in March 2020 ('Almost half of Japan technology firms diversifying supply chains away from China, survey shows' 2020). This suggests that although many firms benefitted from these subsidies, government policies were insufficient to move many other firms beyond the threshold of action to diversify away from operations in China in the face of business incentives pointing in the opposite direction.

This initial package was followed by several rounds of subsidies that were broadly disbursed across sectors, in contrast to the more narrowly focused case of rare earths. In July 2020, Japan offered an initial group of 87 firms subsidies totaling US $653 million to expand production at home and in Southeast Asia (Denyer 2020). Eligible firms include producers of aviation parts, auto parts, fertilizer, medicine, masks, and paper products, including Sharp, Shionogi, Terumo, and Kaneka ('Japan reveals 87 projects eligible for "China exit" subsidies' 2020). However, according to METI, none of the first subsidy recipients with physical bases in China had plans to leave the country (Regalado 2020). This desire to continue doing business in China indicates that while the government was effective in facilitating

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diversification by Japanese firms, it was not effective in encouraging them to leave China specifically.

Of the 87 firms funded in July 2020, 57 received a total of $535 million—about 82 percent of the total funding—to open factories in Japan (Ministry of Economy, Trade and Industry of Japan 2020b). Of these, 41 were small or medium enterprises. Larger recipient firms such as Iris Ohyama, Ace Japan, and Showa Glove were makers of medical devices, drugs, and personal protective equipment. Drug ingredient maker Ace Japan planned to break ground on a factory in Yamagata to produce ingredients it had imported mainly from China. Iris Ohyama used its funds to produce masks domestically in Miyagi, diversifying outside China. Showa Glove replaced about 10 percent of its imports with domestically produced rubber gloves. However, a representative from one of the subsidy recipients acknowledged that "we had decided to do domestic production even without the subsidy," suggesting that the subsidies were reaching some Japanese firms who were already at or close to the threshold for taking these actions (Akiyama 2020).

The rest of the subsidy recipients for domestic production were in industries considered critical to national security, such as aerospace, automotives, and chipmaking. For example, Novel Crystal Technology and Flosfia Inc. design gallium oxide wafers, an experimental semiconductor material. However, METI insisted that critical industries were not specifically targeted for repatriation. It maintained that applications were evaluated based on the firms' finances, project viability, percentage of overseas production, and degree of concentration in one country or region (Regalado 2020). This indicates that these policies differed from a more strategically targeted industrial policy approach. There was not necessarily a vision for transforming a specific sector or industry through strategic realignment as in the case of rare earths or semiconductors; instead, the goal was to achieve broad-based supply resilience across a wide range of sectors. In terms of broader trends, the program seemed to have limited impact on firms' attitudes about reshoring. For example, according to a December 2020 Kyodo News survey, only 8 of 96 firms said that they had or were thinking of shifting their production bases back home, despite the urging of their Japanese government to do so ('Almost half of Japan technology firms diversifying supply chains away from China, survey shows' 2020).

3.2.2 | Bolstering Resilience by Encouraging Firm Relocation to Other Asian Countries

In addition to these subsidies to produce in Japan, subsidies were also given to firms to relocate to other Asian countries, particularly focusing on Southeast Asia. As mentioned in Section 3.2.1, Japanese government policy packages earmarked funding for diversification to Asian countries. Figure 2 illustrates the destination countries of Japanese firms whose projects were approved for support from the government. More than 10 billion yen in the first round went to 30 firms that were paid to expand production into Vietnam, Myanmar, Thailand, and other Southeast Asian countries. For example, Hoya, which produces hard-drive parts, planned to move to Vietnam and Laos, Sumitomo Rubber planned to make nitrile rubber gloves in Malaysia, and Shin-Etsu Chemical planned to shift production of rare-earth magnets to Vietnam ('Japan reveals 87 projects eligible for "China exit" subsidies' 2020). For the second round of applications in September 2020, the government added "projects that contribute to the resilience of the Japan-ASEAN supply chain" to the list of qualifying moves, which included countries such as India and Bangladesh (Gakuto 2020). There have been a total of eight rounds of such subsidies to date, which have funded 124 projects in 154 countries (see Figure 2).

In October 2020, Japan ramped up its program to encourage businesses to build production sites in Southeast Asia to diversify supply chains, agreeing to cover up to half the cost of such investments for large firms and as much as two-thirds for smaller businesses. The subsidies applied to products for which manufacturing tends to be concentrated in a specific country. The program did not cite China by name; rather than supporting pulling out of a specific country, the program was intended specifically to support projects that involve expanding production networks into ASEAN members (Takeuchi 2020).

Efforts to encourage Japanese firms to relocate to Southeast Asia may have resonated more strongly with firms who were linked to strategic industries than to others, perhaps because these firms were already more sensitive to the risks of Chinese investment and therefore already at or close to the threshold for action. According to a December 2020 Kyodo News survey, 42 percent of Japanese firms that the government recognized as possessing sensitive technology linked to security were shifting their manufacturing bases and sources of parts supplies from China to India and Southeast Asia in a bid to diversify their supply chains ('Almost half of Japan technology firms diversifying supply chains away from China, survey shows' 2020). Over time, the economic challenges caused by China's Zero-COVID policy also had more pronounced negative effects on Japanese firms, which also contributed to their desire to diversify operations. For example, 40 percent of Japanese firms in China surveyed by JETRO in 2021 suffered deterioration in business performance due to the Zero-COVID policy (Japan External Trade Organization 2022c). However, many firms in industries such as automobiles weathered the initial effects of

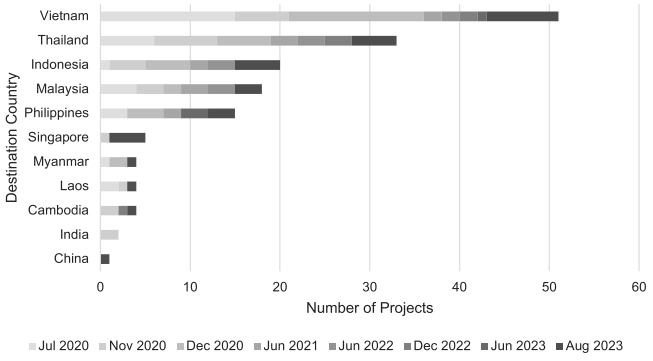


FIGURE 2 | Adopted projects under the program for strengthening overseas supply chains by destination country (2020–2023). Source: Japan External Trade Organization (2020a, 2020b, 2020c, 2021, 2022a, 2022b, 2023a, 2023b). In the case of one project, the destination was noted as "ASEAN countries," so it was not credited to any particular country.

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the pandemic and remained committed to doing business in China; government incentives were not effective in changing the behavior of many firms in this regard.

3.2.3 | *Summary and Assessment*

The Japanese government used a mix of positive tools of economic statecraft to encourage Japanese firms to relocate their production back home or to other Asian countries in response to the supply chain disruptions caused by COVID-19. Unlike the other two case studies in this article, government policy was not targeted strongly at transforming a specific industry. Instead, positive incentives were widely distributed in the name of bolstering resilience.

In terms of changing firm behavior, government policy helped to enable or accelerate firm diversification to Japan or Asian countries besides China, though it did not generally incentivize firms to totally withdraw operations from China. Many firms took advantage of government resources, with some comments from firm representatives suggesting that the subsidies were effective in facilitating changes in behavior by firms that were already at or close to the threshold for action. Data from various surveys and media demonstrate that many Japanese firms remained committed to continuing to do business in China, though government policy seemed to resonate most strongly among firms engaged in strategic industries.

With regard to reducing negative security externalities, this case also seems to have been less effective, in part because its effects were diffused across many different industries, unlike the case of rare earth minerals, which had a stronger targeting component. METI even claimed that the strategic nature of the industry was not a factor for consideration in resource allocation, so the government's own stated goal was broad-based economic resilience. Consequently, the expansive goals set by the government for these initiatives and the relatively modest sums of money involved produced limited results relative to the ambitious aims, though they did increase Japan's resilience in some product areas.

3.3 | Semiconductors

Semiconductors enable nearly every modern industrial, commercial, and military system, including smartphones, aircraft, weapons systems, the Internet, and the electric grid. In recent years, many governments have come to see the semiconductor industry as essential to their economic security (Goldberg et al. 2024; Miller 2022). From 2020 to 2022, there was an ongoing global shortage of semiconductor chips due to surges in demand and supply chain disruptions. Moreover, Russia's invasion of Ukraine has intensified fears that China could similarly invade Taiwan, which would threaten the global center of chip production, and the US has pursued limited technological decoupling with China in the semiconductor industry due to geopolitical concerns.

In this case study, negative security externalities took the form of overdependence on Chinese semiconductor companies, as well as the weakness of the Japanese or Japan-based semiconductor industry, causing potential vulnerabilities to supply chain disruptions. Compared to the other two cases examined in this article, there was a relatively stronger focus on future security vulnerabilities created by a lack of technological innovation within Japan, due to the fast pace of technological development in the semiconductor industry. This section demonstrates that in addition to bolstering resilience through diversification of semiconductor supply chains, the Japanese government was also focused on pursuing competitiveness, which was associated with more prominent use of economic statecraft to promote innovation and investment. Although it is too early to evaluate whether Japanese government policies have been effective in mitigating negative security externalities related to semiconductors, this section demonstrates that Japanese economic statecraft reinforced or accelerated decisions for which firms were already close to the threshold of action in some cases. In other cases, Japanese government policy has combined industrial policy with other tools of economic statecraft to incentivize innovation in Japan by domestic and foreign firms that may not have otherwise occurred.

Although Japan had a highly competitive semiconductor industry in the 1970s and 1980s, these firms (e.g., Toshiba, Fujitsu, Hitachi) declined in the 1990s as the industry shifted away from vertically integrated firms that both designed and manufactured semiconductors toward more specialized firms. The Japanese government tried to encourage its firms to adapt through various initiatives in the 1990s and 2000s, but many were unable or unwilling to do so (Uno 2022). The global market share of Japanese semiconductor firms declined from over 50 percent to 1988 to less than 10 percent in 2019 (Culpan 2021). However, Japanese firms still control some of the most important parts of the chip supply chain such as coaters/developers (e.g., Tokyo Electron, Screen Holdings), wafer cleaning systems (e.g., Tokyo Electron, Screen Holdings), silicon wafers (e.g., Shin-Etsu Chemical, Sumco), and photoresists (e.g., Shin-Etsu, JSR, Tokyo Ohka Kogyo) (Satoh and Cheng 2024).

3.3.1 | *Strengthening Resilience Via Domestic Production and Foreign Investment*

The Japanese government's most immediate priority has been to ensure a stable supply of semiconductors. First, it has tried to promote domestic production. In June 2021, METI released a Semiconductor and Digital Industry Strategy to secure budget funding for greater public-private investment in the semiconductor industry that includes increasing semiconductor supply chain resiliency by building domestic production capacity (Ministry of Economy, Trade and Industry of Japan 2021). The government approved $7.7 billion in funding as a part of a strategy to support domestic semiconductor manufacturing at home (Uno 2022). In February 2022, the Japanese government set up a subsidy program that included incentives for firms to build new plants or upgrade existing facilities, as well as measures to foster personnel.

The Japanese government has also offered subsidies to encourage Japanese firms in this sector to relocate under the umbrella of the COVID-19 programs discussed in the previous case study. A number of firms that provide services to

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chipmakers such as TSMC received subsidies. For example, Mitsubishi Electric received a grant to acquire a factory in Hiroshima Prefecture to produce semiconductors for electric power generation. Uyemura & Co., a Japanese firm which provides electroplating services to bind chip components, received a subsidy to diversify its sources of raw materials away from China and to conduct its inspection process in-house (Regalado 2021).

At the same time, the Japanese government also used economic statecraft to incentivize foreign firms to make new greenfield investments in Japan, which was a departure from Japan's traditional domestically focused industrial policy of the past. A greenfield investment occurs when a firm starts a new venture in a foreign country by constructing new facilities or expanding existing business. In June 2022, the Japanese government decided to provide up to $3.5 billion in subsidies—about 40 percent of the total costs—for a semiconductor plant being built by Taiwan Semiconductor Manufacturing Corporation (TSMC), Sony Group, and Denso in Kumamoto prefecture. It was the first project to win subsidies from the public fund. While this was a significant move, it essentially supported actions that had already been initiated by the private sector. TSMC was already beyond the threshold for action; it had previously announced plans to set up the chip plant in October 2021. It sealed a deal with Sony Semiconductor Solutions Corporation for a new joint venture called Japan advanced semiconductor manufacturing (JASM) in November 2021, and Denso took a stake in the project in February 2022, which was welcomed by the government ('TSMC to Expand New Japan Chip Factory, Denso Takes Stake' 2022). Construction of the plant had already begun in April 2022, prior to the government subsidies. According to METI minister Koichi Hagiuda, the government supported the project to support semiconductor supply chain resilience and to contribute to the development of the semiconductor industry in the future, including helping to cultivate semiconductor talent in Japan ('Japanese Government to Allocate Up to ¥476 Billion for TSMC Chip Plant' 2022). The plant opened in February 2024 with plans to start production by the end of the year.

As early as January 2023, TSMC had announced that it was considering a second chip plant in Japan, "if there is enough demand from customers and adequate government incentives" (Cheng and Li 2023). This suggested that the firm was near the threshold of action for additional investment and that the Japanese government might be able to use economic statecraft to influence TSMC moving forward. Even though Japanese government policy lagged private sector action in the case of the first facility, it had the opportunity to shape future behavior by encouraging TSMC to deepen its investment in Japan further. These efforts appeared to bear fruit in February 2024 when JASM announced that it would build a second fabrication facility in Kumamoto to begin operating in late 2027. The two facilities will focus on producing semiconductors for automotive, industrial, and consumer uses and to meet high-performance computing-related needs. They are collectively expected to directly create more than 3400 high-tech jobs in Japan (Chiang 2024), demonstrating the synergy in using industrial policy to attract foreign firms to both boost economic competitiveness, build capacity, and generate domestic political benefits within Japan. Following the investment, TSMC will maintain the majority stake (86.5 percent) in JASM, with Sony, Denso, and Toyota holding equity stakes of 6 percent, 5.5 percent, and 2 percent respectively (Winer 2024). The Japanese government agreed to grant a subsidy of $4.86 billion for the second facility. METI officials said that the two facilities would need to use silicon wafers from Japanese suppliers and rely on the local supply chain for at least 50 percent of the indirect materials for manufacturing to qualify for the subsidy ('TSMC's Kumamoto Plant Opens as Most Advanced Fab in Japan' 2024). TSMC also told its supply chain partners in November 2023 that it was considering building a third facility in Japan to make 3-nanometer chips, signaling an opportunity for the government to further target the firm for support (Mochizuki and Lee 2023), but discussions had not progressed significantly as of December 2025.

Additional Japanese government subsidies have gone to other American, Korean, and Taiwanese firms, marking additional departures from traditional domestically oriented industrial policy. In July 2022, the Japanese government authorized $680 million in subsidies to Western Digital and Japanese partner Kioxia to support a joint semiconductor facility in Mie prefecture to boost flash memory chip output; the firms received additional government subsidies in February 2024 to bring the total to $1.64 billion to expand memory chip production in Mie and Iwate prefectures ('Japan to Give 243 Bil. Yen to Kioxia-Western Digital Chip Plants' 2024). In September 2022, the Japanese government authorized a third project providing up to $320 million in subsidies to American firm Micron Technology, Inc. to boost its production in Hiroshima (Inagaki and Lewis 2022). In May 2023, Micron Technology announced that it would invest up to $3.6 billion in Japan for the next few years with support from the government (Fitch and Linskey 2023). In October 2023, it was announced that Taiwan's Powerchip Semiconductor Manufacturing Corp. would team up with Japanese investment firm SBI Holdings to build a plant in Miyagi, also with Japanese government support (PSMC 2023); however, the plan was later abandoned. In December 2023, METI announced that Korea's Samsung Electronics would receive up to $140 million in subsidies—half of the total expected investment—to build a chip development facility in Yokohama to focus on chip packaging ('Samsung to receive up to $140 m in subsidies for Japan chip facility' 2023).

Collectively, these examples suggest that the Japanese government has had some early success in attracting new investments from foreign firms through subsidies, though in some cases government policy was clearly reinforcing decisions which had already been largely made by the private sector. It is using familiar tools of industrial policy, but instead of promoting only domestic firms, this new era of semiconductor policy is notably different due to the active collaboration with foreign partners. Table 1 summarizes some of the recent chip investments in Japan by foreign and domestic firms.

3.3.2 | *Promoting Innovation and Future Competitiveness*

In addition, the Japanese government has attempted to use financial incentives for innovation to shape the future direction of semiconductor technology in ways that ensure Japanese firms will be at the heart of new developments, consistent with

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TABLE 1 | Major chip investments in Japan (January 2021–February 2024).

	Firm	Nationality	Sector	Year	Investment
Chipmakers	TSMC	Taiwan	Logic	2021	$20 billion
	Sony Group	Japan	Sensors	2021	Undisclosed
	Rapidus	Japan	Logic	2022	$33 billion
	Micron	USA	Memory	2023	$3.7 billion
	Samsung	ROK	R&D	2023	$280 million
	Kioxia/Western Digital	Japan/USA (JV)	Memory	2024	$4.9 billion
Suppliers	Sumco	Japan	Materials	2021	
	Ebara	Japan	Equipment	2022	
	Tokyo Electron	Japan	Equipment	2022	
	Tokyo Ohka Kogyo	Japan	Materials	2023	

Source: Adapted from Satoh and Cheng (2024).

a more Japanese traditional approach to industrial policy. In 2022, the Japanese government set aside a budget of about $2.4 billion to create a joint research and development hub called the Leading-edge Semiconductor Technology Center (LSTC) with the University of Tokyo, the National Institute of Advanced Industrial Science and Technology, and Riken, as well as US and European participants, with the goal of making 2 nm chips. LSTC's research and development center is engaging with the recently formed Japanese chip foundry firm Rapidus, which will be the manufacturing organization.

Rapidus was established in August 2022 with the backing of Toyota, Sony, Denso, Kioxia, MUFG Bank, NEC, NTT, and Softbank. Rapidus announced a partnership with Belgium-based microelectronics research hub IMEC on advanced semiconductor technologies, and it signed a partnership with IBM to develop the US firm's 2 nm technologies. It plans to begin mass production of the chips in 2027 at a plant it began building in Hokkaido in September 2023. The firm secured $510 million in subsidies from METI in November 2022 and an additional $1.94 billion in April 2023 (Nagao 2023). Rapidus president Atsuyoshi Koike said that the firm would need to invest about $37 billion to start production (Patterson 2023). In February 2024, METI approved up to $300 million for LSTC to develop 1.4 nm chip manufacturing know-how by 2028 and then share those plans with Rapidus (Mochizuki et al. 2024). Construction of a second plant in Hokkaido is planned to start in 2027, with production of 1.4 nm chips scheduled for as early as 2029 (Mukano & Tsukada 2025).

In November 2024, the Japanese government announced a multistage framework for supporting the semiconductor industry (including Rapidus) through around 2030, beginning with subsidies while the firms are working toward mass production, and then transitioning to other forms of government support such as investment and guarantees for private-sector financing. The program was to be funded through bridge bonds to be repaid using dividends from its stakes in firms such as Nippon Telegraph and Telephone and Japan Tobacco (Takeuchi et al. 2024). In February 2025, the Japanese government adopted legislation to enable government investment in Rapidus, with plans to secure $635 million in its FY2025 budget; in addition to investment, the legislation would also allow the government to provide contributions in kind (e.g., facilities, equipment) in exchange for receiving shares and loan guarantees (Jiji 2024).

Despite these measures, the success of Rapidus remains uncertain, as it ultimately depends on the venture's ability to achieve a huge technological jump with little idea of the total cost, reliability, or marketability of the final product. In July 2025, Rapidus announced that it had completed early prototyping of 2 nm transistors, a critical step toward its goal of achieving mass production in 2027. It plans to sell to US-based firm Broadcom, which focuses on design and development without manufacturing; this would enable Rapidus to supply its chips to the US firm's customer companies. Rapidus has also reportedly entered into negotiations with Apple, Google, Facebook, Amazon, Microsoft, and dozens of other potential clients (Mukano 2025). Government funding has been steady, with METI announcing in November 2025 an additional 1 trillion yen in support through March 2028. Private investment has been noticeably slower, though a group of 20 Japanese companies—including Kyocera, Canon, Honda Motor, Fujifilm Holdings, Ushio, and Nippon Express Holdings—announced new investments in Rapidus in December 2025 (Nikkei Staff Writers 2025).

The Japan Investment Corporation (JIC)—a government-affiliated fund overseen by METI—is also trying to use industrial policy to promote structural reform in the semiconductor industry to boost international competitiveness. JIC acquired the chip-materials producing firm JSR through a takeover bid of approximately $6.4 billion (Tomoshige 2023a). JSR is a major supplier of photoresists required for chipmaking, with roughly 30 percent of the global market. It is smaller than its rivals based in other countries, making it vulnerable to potential takeover attempts. According to a METI official, JIC decided on the investment "on its own, and this is not something that the government planned," but the official also acknowledged that it was an "important deal for bolstering Japan's competitiveness" (Kawase 2023). JIC also acquired Shinko Electric Industries for $4.8 billion. Shinko is the world's fourth-largest semiconductor packaging company with a 9.2 percent share of the global market ('Fujitsu to sell chip packaging arm to Japan state-backed fund' 2023). JIC is making these acquisitions with the

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aim of promoting business consolidation in Japan's semiconductor materials industry, to strengthen competitiveness and supply chain resilience. These actions mirror Japan's past approach to industrial policy and attracted some criticism from rivals and investors (Inagaki et al. 2024).

3.3.3 | *Using Export Controls as Negative Policy Tools*

A very different policy development began in October 2022, when the US government prohibited American firms from exporting technology, software, and equipment used in producing advanced computing chips and supercomputers to China. The US also barred supporting certain China-based chip firms without a license from the government. Japan and the Netherlands later joined the US in implementing these export controls, though the Japanese government framed its own actions as independent and avoided naming China as the intended target ('Japan to restrict chipmaking equipment exports, with eye on China' 2023). Most observers agreed that the coordinated efforts were intended to make it difficult for China to import or manufacture advanced chips, though the controls implemented by the three countries differed in details (Tomoshige 2023b).

Beginning in July 2023, the Japanese government designated 23 types of semiconductor technology as being subject to export restrictions, including advanced microchip manufacturing equipment, such as machines that deposit films on silicon wafers and those that etch out chip circuits. Japan is also in the process of expanding its own export controls and adding new foreign firms and organizations to its entity list. However, the US has both tightened and loosened export controls under the second Trump administration, calling into question the future trajectory of its own policy. For example, the US government added 65 Chinese entities to the list of foreign entities that are or have the potential to be involved in activities contrary to US national interests. In contrast, it also approved sale of Nvidia's H20 and AMD's MI308 GPUs under terms that the US government would receive 15 percent of the proceeds (Congressional Research Service 2025).

In contrast to the positive tools of economic statecraft discussed elsewhere in this article, these export controls are a negative tool, which involves restricting firm behavior using threat of punishment. Unauthorized exports without METI approval may lead to warnings, submissions of background statements, criminal charges such as fines or imprisonment, or administrative sanctions such as bans on export of goods or transfer of technologies for up to 3 years or a prohibition on working as a person responsible for export of goods or transfer of technologies at any company (Scanlan-Dyas et al. 2023). These negative tools of economic statecraft raise the cost of an action for firms with the goal of deterring them from behavior that is not desired by the government. While these export controls are designed to enhance economic security, they are also expected to adversely affect revenue at leading chipmaking equipment producers, so they are not favorably viewed by the private sector (Mochizuki et al. 2022). Firms are likely to comply with policies to avoid penalties, but they are also likely to try to find ways to work around them where possible. In addition, some analysts have suggested that the export controls may have unintended consequences that end up damaging Japanese economic security by eroding the competitiveness of domestic firms or further spurring Chinese indigenous innovation in this area (Baums 2024; Rasser 2020).

3.3.4 | *Summary and Assessment*

To what extent have the Japanese government's tools of economic statecraft been effective in changing firm behavior in the semiconductor industry? It is much too early to say whether the Japanese government will achieve its broader aim of enhancing semiconductor supply chain resilience, facilitating knowledge transfer, or nurturing local talent, but this section demonstrates that the Japanese government has combined industrial policy with other tools to attempt to encourage new investments in Japan by both foreign and domestic firms. In some cases, economic statecraft initiatives served to reinforce decisions that firms would have likely made anyway, but they do seem to have jump-started domestic innovation efforts in a way that may not have otherwise occurred.

Compared to the other two case studies, the Japanese government's approach to economic statecraft in the semiconductor industry employs the widest range of tools, including the incorporation of strategies that strongly resemble its traditional approach to industrial policy. However, the Japanese government is also using industrial policy in new ways, such as allocating resources to foreign firms, to adapt to the changing international environment. Unlike Japan's post-pandemic diversification incentives, its efforts in the semiconductor industry are much more strategically targeted, suggesting that there may be more scope for success along the lines of what was achieved in diversifying rare earth supplies. However, the future of Japanese industry depends on technological developments that are difficult to predict for governments and firms alike, so the eventual outcome is by no means guaranteed and will require long-term policy commitment.

3.4 | Comparative Case Analysis and Findings

The case studies reveal that the Japanese government has used diverse tools of economic statecraft to try to shape firm behavior to address varying types of national security externalities. Table 2 summarizes the different tools featured in the three case studies. Each of these tools aims to reduce negative security externalities—and potentially increase positive externalities—through distinct pathways that have different cost-benefit consequences for specific firms.

In terms of tools of economic statecraft, several patterns emerge across the case studies. First, unlike China or the United States, Japanese economic statecraft has consisted predominantly of positive tools involving financial incentives. Tools #1–6 include promoting technological innovation, structural reform, and investment; these tools are promoting a targeted industry in the manner of traditional industrial policy, but Tool #6 directs resources toward foreign firms instead of domestic ones. Tools #7–10 attempt to influence firm behavior by incentivizing relocation: encouraging firms to move from China to Japan, encouraging firms to move from China to other foreign locations, and easing firm operations abroad through public

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TABLE 2 | Tools of Japanese economic statecraft featured in case studies.

Tool	Rare Earths Case Study	COVID-19 Case Study	Semiconductor Case Study
1. Acquisitions of firms to encourage structural reform (+)			✓
2. Subsidies to encourage technological innovation (+)	✓		✓
3. Investment to encourage technological innovation (+)			✓
4. Guarantees for private-sector financing to encourage technological innovation (+)			✓
5. Subsidies to encourage firms located in Japan to invest more in Japan (+)	✓	✓	✓
6. Subsidies to encourage foreign firms to make greenfield investments in Japan (+)			✓
7. Subsidies to encourage Japanese firms to move from China to Japan (+)		✓	✓
8. Subsidies to encourage Japanese firms to move from China to foreign location (+)	✓	✓	✓
9. Investment to secure supplies abroad (+)	✓		
10. Bilateral or multilateral government agreements to secure supplies abroad (+)	✓		
11. Export controls to restrict firm activities related to security (–)			✓

Note: Symbol key (+) positive tools; (–) negative tools.

investment and government bilateral or multilateral agreements. These tools may also be associated with industrial policy if they target a specific industry, as seen in the cases of rare earths and semiconductors. In the case studies, these positive tools were used to incentivize firms to engage in new behaviors; in others, they were used to reinforce or accelerate decisions for which firms were already close to the threshold of action. In other instances, they were not sufficient to change firm behavior in the face of other incentives.

Second, in the case of semiconductors, Japan has used negative tools of economic statecraft, specifically restricting firm behavior using the threat of punishment through export controls (Tool #11). This use of negative tools is a relatively unusual feature of Japanese economic statecraft, and it is important to notice this absence, which distinguishes Japan from other countries such as China and the United States. This policy raised the cost of an action for firms with the goal of deterring them from an action that was not desired by the government, and the policy change was made despite the objections of Japanese companies, unlike other positive policy tools which usually complemented private sector preferences. Japanese policy in this case seems to have been influenced by a combination of threat perception and increased pressure from the US for policy alignment on export controls (Kim and Rho 2024; Marukawa 2020), a factor that did not exist in the other two cases.

Third, Japanese economic statecraft has involved a mix of inwardly and outwardly directed policies, as illustrated in Table 2. Some tools target firm behavior inside Japanese borders, while others are focused on extraterritorial activities. The line between the two is often blurry, which reflects the growing complexity of the global economy and the difficulty inherent in trying to shape firm behavior to achieve desired policy outcomes. This also reflects the increasingly ambiguous identity of multinational firms that do not fit neatly into the definitions of "domestic" and "foreign" (Govella 2016).

The three case studies also reveal other substantive similarities and differences related to security externalities, government policy focus, tools, firm responsiveness, and threat mitigation, as further described in Table 3. First, although supply chain vulnerabilities were consistent concerns, the Japanese government's perception of security threats varies across the three cases, leading it to focus its economic security policies differently. In the first two cases, Japanese government policy was primarily focused on bolstering resilience by reducing risk through diversification and innovation to reduce dependence. In the semiconductors case, concerns about future vulnerabilities posed by a lack of domestic technological innovation in the semiconductor industry led to a much more prominent policy focus on competitiveness and more pronounced use of industrial policy (see Table 2 and Table 3). The Japanese government has adapted its traditional levers of industrial policy to promote activities by both Japanese and foreign firms in the semiconductor industry, adjusting policy implementation to suit the new dynamics of the globalized sector while also promoting domestic capacity.

Second, despite being a developmental state with relatively strong capacity for and experience with industrial policy, the

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TABLE 3 | Summary of case study characteristics.

Case	Security externality	Policy focus	Tools used	Firm response	Externality mitigation
Rare earths (2010–2025)	Overdependence on Chinese suppliers leading to supply chain vulnerabilities for a specific commodity	Resilience	#2, #5, #8, #9, #10	High	Moderate
COVID-19 (2020–2025)	Overdependence on Chinese and other foreign suppliers leading to supply chain vulnerabilities in a wide variety of sectors	Resilience	#5, #7, #8	Moderate	Low
Semiconductors (2020–2025)	Overdependence on Chinese and other foreign suppliers leading to supply chain vulnerabilities in one strategic sector; lack of domestic technological innovation leading to future vulnerabilities	Resilience; Competitiveness	#1, #2, #3, #4, #5, #6, #7, #8, #11	Moderate	Low

Japanese government has achieved mixed success across the three cases—even though these cases were selected as those in which firms should be most likely to respond to government policy. Each of the crises in the three cases had had concrete economic impacts on firms, which should therefore have been relatively close to their threshold for action. However, the Japanese government has been most effective in shaping the behavior of firms in the cases of rare earths, with more limited impacts in the cases of semiconductors and COVID-19. This suggests that other governments with relatively less capacity may face even greater challenges in impactfully wielding economic statecraft initiatives.

Third, the question of whether Japanese economic statecraft has mitigated negative security externalities is more difficult to assess given the short time horizon, but there is evidence that it has been effective to some extent in rare earths, where the overall dependence of Japan on Chinese imports has declined notably from 2010 to 2025. However, the share of rare earth imports from China seems to have stabilized at around the 59 percent level, suggesting that policy efforts may have reached a plateau, and there are still vulnerabilities in various parts of the rare earths supply chain. In the case of semiconductors, Japanese government policy seems to have jumpstarted some activities in the sector, though it is too early to say that they have had a meaningful effect on mitigating negative security externalities. In the case of COVID-19 subsidies, the impact seems to have been too diffuse to make a significant impact on mitigating vulnerabilities across the wide range of sectors addressed, though relative improvements in supply chain resilience were made in some areas. Ensuring continued results will require the government to commit to these policies over a long time period.

4 | Contributions and Policy Implications

This article makes several contributions to the existing literature. Firstly, it sheds light on the constellations of tools of economic statecraft that governments are using to shape firm behavior, including industrial policy and other kinds of positive incentives and negative punishments. Analyses of "economic statecraft" as such must be disaggregated into a more fine-grained analysis of the full spectrum of tools at work to understand the processes at work. The findings here clearly demonstrate a strong focus on positive tools in Japan's economic statecraft, which differs from other countries.

This article also supports recent literature showing that "new economic statecraft" now increasingly incorporates industrial policy as well as recent literature demonstrating that new industrial policy now goes well beyond traditional tools such as inward-looking subsidies (Aggarwal and Reddie 2020; Juhász et al. 2024). It could even be suggested that the two concepts are converging in large part, in both scholarship and practice. The definition of industrial policy may also be becoming blurred as both domestic and foreign firms reap its benefits in some strategic sectors such as semiconductors. This increasing intertwining of economic statecraft and industrial policy points to the ongoing tension between economic cooperation and economic nationalism, which is also apparent in the case studies.

In addition, the article draws attention to the role of firms as actors in the implementation of economic statecraft. Economic statecraft works through the creation of rewards or punishments to incentivize firms to change their behavior, so it is essential to understand firm decision-making processes to fully evaluate the processes of economic statecraft. Moreover, government-business interactions are embedded in a much broader context of state-society links that make decisions subject to continual negotiation. This article has used the concept of a threshold of action to help theorize how firms respond to government policies within this context, offering examples from three specific attempts by the government to influence firm behavior. The findings can be empirically tested in future studies to better understand the dynamic interplay between the public and private sectors.

Furthermore, this analysis demonstrates some of the difficulties and potential limitations in implementing economic statecraft. This study has defined policy effectiveness in terms of changes in firm behavior and in terms of mitigating negative security externalities. Even for a state like Japan that has relatively long experience with industrial policy and relatively strong capacity as a developmental state, shaping firm behavior is no easy task. This analysis has suggested that positive tools of economic

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statecraft such as financial incentives have sometimes played a role in influencing firms to engage in new investments and in reinforcing or accelerating decisions for which firms were already close to the threshold of action. In other instances, they have not been sufficient to change firm behavior in the face of other incentives. Mitigating negative security externalities is an even more challenging goal than shaping firm behavior, but it does appear that this is possible when the interests of firms and the state are strongly aligned. These findings contribute to the scholarly literature examining the ways that government "failure" in industrial policy is endogenously related to a country's political and capacity constraints (Juhász and Lane 2024).

As an increasing number of countries attempt to shape their own firm' behavior to enhance their national economic resilience, Japan's experience with such initiatives provides an instructive example of the associated opportunities and challenges for policymakers. First, consultation between the public and private sectors is essential because government policies are most effective when they are well aligned with the objectives of the private sector. Second, if a government maintains its focus on a specific goal of economic statecraft over an extended period of time, it can also try to gradually shape a firm's preferences to be more in line with those of policymakers and thus influence it to recalculate its threshold for action. Mitigating negative security externalities is a long-term project, so economic statecraft should be conceptualized as a repeated game where there are multiple opportunities to affect firm behavior across successive interactions. Third, policies are more likely to be effective when the government's aims are clearly defined and limited to a specific sector with strategic implications. Fourth, changes in firm behavior are likely to be slower than the government may desire, and in many cases, firms may not comply at all. The cases examined in this article are "most likely" cases for firm compliance where a government with strong capacity for economic statecraft is attempting to influence firms who have also experienced negative economic consequences from the international environment. However, despite these favorable conditions for compliance, the policy results were still mixed, which suggests that public-private cooperation will be even more challenging in situations where security externalities are less clearly associated with economic damages for firms. Overall, despite increasingly pronounced government concern about security externalities, firms remain primarily focused on economic factors.

As other countries turn to economic statecraft with greater frequency, Japan's experience with such initiatives provides an informative example. Japan continues to be an early adopter of policies in this area. It has moved more quickly than the US and other governments in initiatives related to rare earth diversification, supply chain resilience, and semiconductor industry promotion, and Japan's 2022 Economic Security Promotion Act has created a legislative basis for the government to address security externalities through economic policies. Analysts and observers are looking to Japan to learn from how its policies fare in the implementation phase (Hui 2021; Patey 2023; Shigenoi 2022). As government policy in this area continues to evolve very quickly around the world, recognizing the distinct perspective of firms is critical to understanding the processes of economic statecraft and to facilitating more effective public-private cooperation.

Conflicts of Interest

The author declares no conflicts of interest.

Data Availability Statement

Data sharing not applicable to this article as no datasets were generated or analyzed during the current study.

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