



Economic Security and Emerging Technology: Japan's Perspective for Pursuing a Technology Alliance

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Introduction

This article discusses challenges and opportunities related to economic security policy and emerging technology by reviewing policy developments in Japan with an eye toward pursuing a technology alliance between the United States and Japan. The paper is composed of three parts. The first part introduces recent economic security policy developments in Japan. The second part focuses on promoting research and development (R&D) of emerging technology within the framework of Japan's Economic Security Promotion Act of 2022. Finally, the third part explores possible next steps for pursuing a technology alliance.

Recent developments in the Economic Security Policy of Japan

Recently, the foundation of national security is expanding into economic and technological fields due to rapid technological innovation and significant geopolitical changes. In many countries, vulnerabilities in supply chains are becoming clear due to severe competition for technological supremacy, the COVID-19 pandemic, and Russia's invasion of Ukraine. There are many other disruptive challenges and external risks in the current world economy. In this regard, the Japanese government has recently strengthened its economic security policy as a high priority as stated in government-wide documents, namely the Basic Policy on Economic and Fiscal Management and Reform of 2021¹ and 2022², the Integrated Innovation Strategy of 2021³ and 2022⁴, the Growth Strategy 2021⁵, and the Grand Design and Action Plan for a New Form of Capitalism 2022⁶.

Japan intends to secure autonomy and gain superiority in certain areas, as well as deepen cooperation with likeminded countries to maintain and develop international order based on fundamental values and rules. Japan aims to strengthen its ability to know, protect and promote critical technologies through a holistic, whole-of-government approach. "Know" means to identify chokepoints in global supply chains with multiple suppliers. "Protect" means to prevent diversified technology acquisition activities via export controls, investment screening and other protective measures. "Promote" refers to R&D promotion in various fields of critical emerging technology.

While economic security is a relatively new area of focus in Japan, free and fair trade remains an essential part of government policy. In fact, the government-wide documents emphasize that Japan will seek to expand a free and fair economic order and further strengthen the rules-based multilateral trading system to build resilient supply chains and a robust global economy despite challenges such as climate change and a digital economy. Investments in GX (Green Transformation) and DX (Digital Transformation) as well as the promotion of startups are also

¹ “経済財政諮問会議。”内閣府ホームページ, <https://www5.cao.go.jp/keizai-shimon/>.

² “Basic Policy on Economic and Fiscal Management and Reform 2022.” Cabinet Office, June 2021, https://www5.cao.go.jp/keizai-shimon/kaigi/cabinet/2022/2022_basicpolicies_en.pdf.

³ “統合イノベーション戦略 2021.” Cabinet Office, June 2021, https://www8.cao.go.jp/cstp/tougosenryaku/togo2021_honbun.pdf.

⁴ “Integrated Innovation Strategy 2022.” Cabinet Office, 2022, https://www8.Cao.go.jp/Cstp/Tougosenryaku/togo2022_honbun_eiyaku.pdf.

⁵ “Action Plan of the Growth Strategy.” Cabinet Secretariat, June 2021, <https://www.cas.go.jp/jp/seisaku/seicho/pdf/ap2021en.pdf>.

⁶ “Grand Design and Action Plan for a New Form of Capitalism ~Investing in People, Technology, and Startups~.” Cabinet Secretariat, June 2022, https://www.cas.go.jp/jp/seisaku/atarashii_sihonsyugi/pdf/ap2022en.pdf.

important elements for a comprehensive growth strategy, together with the economic security policy in the Grand Design for a New Form of Capitalism.

R&D for emerging technology and Economic Security Promotion Act

As committed by Prime Minister Kishida as Chairperson of the newly established Council for Enhancing Economic Security in November 2021, a bill for enhancing economic security was prepared. After the second meeting of the Council, an Economic Security Promotion Bill was eventually submitted to the Diet and passed on May 11, 2022. The Economic Security Promotion Act is composed of four pillars: 1) supply chain resilience, 2) security of core infrastructure, 3) public-private cooperation for developing advanced technology, and 4) a non-published patent system. Because economic security challenges are quite broad and even though certain measures have already been implemented or are to be developed in the future such as export controls and investment screenings, the government of Japan chose these four pillars as a way to make substantive legislative progress in a quick and comprehensive manner in these important areas.

This article focuses on the third pillar related to advanced technologies, but the other areas are also important. The first pillar is to strengthen supply chain resilience of critical goods and materials vital to economic security. The scope of products is expected to be designated by cabinet ordinance by the end of 2022. The second pillar is to ensure the security and reliability of core infrastructure around fourteen areas, including electricity, gas, telecommunication and water, and is expected to enter into force by November 2023. The fourth pillar is to prevent leakage of critical technologies while promoting innovation by establishing a non-published patent system like that in other advanced countries and is expected to enter into force by May 2024.

As previously mentioned, the third pillar focuses on sharing technological information and establishing a framework to foster advanced technologies in Japan. In fact, the implementation of this pillar has already advanced in parallel with the first pillar of supply chain resilience. The first and the third pillars entered into force in August 2022 and their statutory basic guidelines were authorized as Cabinet Decisions on September 30, 2022.

The Cabinet Decision called “Basic guideline for research and development on key technologies identified” explains details regarding a fund allocation mechanism by funding agencies through a statutory framework of the “Council” composed of responsible government officials, affiliate organizations and relevant researchers. Such public-private cooperation is expected to develop critical technologies in the framework.

The basic guideline further elaborates the role of a statutory think-tank that is supposed to contribute to a R&D vision for the Council through various studies and surveys on key technologies from the perspective of social sciences, international relationships, science and technology, innovation, and national security.

Under a trial project during 2021-2022 about the think tank’s future functions, the Cabinet Office identified twenty key areas of emerging technologies such as AI, advanced computing, semiconductors, quantum, cyber, advanced surveillance sensors, robotics, hypersonics, advanced materials, space, maritime, medical and life sciences, and biotech. Since then, the first version of a Japanese R&D vision was published on September 16, 2022 that focused on 1) maritime technologies, 2) space and aerospace, and 3) cross-cutting areas such as cyber and biotechnology. In total, 27 subsets of specific breakdown technologies in these three areas were identified as the first step candidates for fund allocation.

The R&D vision will be further updated in coming years. At this stage, 250 billion yen is available for funding agencies in the supplementary budget for fiscal year 2021, and the budget will be expanded to 500 billion yen according to the Basic Policy on Economic and Fiscal Management and Reform of 2022 in June.⁷

⁷ In this section, see, for example, a series of documents by the government of Japan; 経済安全保障推進会議 | 内閣官房ホームページ, https://www.cas.go.jp/seisaku/keizai_anzen_hosyo/index.html; 経済安全保障法制に関する有識者会議 (令和4年度~) | 内閣官房ホームページ, https://www.cas.go.jp/seisaku/keizai_anzen_hosyohousei/4index.html; “第3回経済安全保障重要技術育成プログラムに係るプログラム会議,” 内閣府ホームページ, https://www8.cao.go.jp/cstp/anzen_anshin/program/3kai/3kai.html.

Next Steps for a Technology Alliance

The latest version of the US National Security Strategy was released on October 12, 2022, while Japan just released its new National Security Strategy on December 16, 2022. In this regard, it is a good time to consider how each ally's strategy for advanced technology development can benefit from collaboration with the other.

Historically in Japan, science, technology and innovation policies are developed through a “seeds-centered” approach, while defense technology and equipment policies have been developed through a “needs-centered” approach. Yet, the first National Security Strategy of Japan in December 2013 after the establishment of the National Security Council referred to these policies in both ways to some extent by encouraging the strengthening of technological capabilities including dual-use technology, the strengthening of cybersecurity, space and maritime fields, the strengthening of defense production and technology bases, and the formulation of the Three Principles on Transfer of Defense Equipment (finalized in April 2014). However, in the years since the development of that National Security Strategy, a strategic integrated approach has become much more important given the subsequent international developments including a rapid growth of emerging technologies, military-civil fusion, concerns about supply chain disruptions by various factors such as COVID-19, and most recently Russia's invasion of Ukraine.

In this regard, the Japanese government is trying to develop economic security policy in a more holistic manner, where in the context of R&D an integrated examination and matching of both seeds and needs of emerging technologies are more and more important in the dual-use context for both military and civil use. Furthermore, this aspect is recently characterized as “multi-use” for both public use and civil use in the broader context of the economic security policy.

In order to move forward on R&D collaboration and an innovation alliance between the United States and Japan, the avenue of economic security policy is crucial. It is necessary to grasp the overall movement from a big picture perspective through various discussions between both governments, related organizations, think tanks, academia, and industry. This will help policy makers and stakeholders conceptualize the overarching challenges and opportunities, and then advance each discussion with mutual trust while paying attention to priorities and resource

allocation and avoiding duplication and vertical division. More specifically, I suggest the following three points.

First, both sides should recognize that reliable counterparts reside not only at a government level but also at national funding agencies and other institutions, with a view to enhancing communications at various levels on this growing subject of economic security and emerging critical technologies. Science, technology and innovation policy experts in Japan at the expert group of national security have proposed utilizing a national research and development agency as a hub to invite participation of researchers from universities and the Acquisition, Technology & Logistics Agency (ATLA) of the Ministry of Defense. Furthermore, think tanks in the United States and Japan can facilitate broader track 1.5 (i.e., government and non-government entities) through studies and surveys with experts of both science, technology and innovation and national security from a perspective of developing sustainable research methodologies and flexible networks of experts. Such activities will also foster a human resources ecosystem in both countries.

Secondly, both sides should further develop mutual trust and deepen understanding of the systems for the protection of confidential technology information. As noted above, Japan has established a mechanism of public-private partnerships and statutory councils for key identified technologies where certain information protection measures have been prepared as a first step. Furthermore, in a broader future context, during the course of deliberations over the Economic Security Promotion Act of Japan, the importance of a more advanced security clearance system was emphasized. The supplementary resolutions of both legislative houses included the issue as a matter of consideration, recognizing the importance of such a security clearance system for facilitating international R&D collaboration.⁸

Thirdly, while both sides pursue a technology alliance through R&D promotion policies, they should also consider further collaboration between officials and experts on certain protection policies such as export controls, investment screenings and strengthening research integrity. International collaboration has been done more or less via regimes and other ways to identify key

⁸ See as reference: Cabinet Office of the Government of Japan, 経済安全保障推進法の審議・今後の課題等について, Cabinet Secretariat, July 2022, https://www.cas.go.jp/seisaku/keizai_anzen_hosyohousei/r4_dai1/siryou3.pdf.

technologies and sectors, in particular in the area of strategic export controls. Moreover, economic sanctions are also a matter of reference in multilateral coordination. In response to Russia's invasion of Ukraine, allies and like-minded countries implemented aligned sanctions in various areas including financial and trade sanctions. Export bans on certain emerging and foundational technologies such as semiconductors and quantum computing have also been implemented. It is worth considering the implications of such measures from the perspective of economic security and emerging technology, with an eye toward improving multilateral policy coordination.

Overall, a whole-of-government and holistic approach involving public-private partnerships and track 1.5 networks are keys to success for both sides.⁹ The subject is an important unfinished business, and continued dialogue among the allies and with other partners is necessary to make needed progress.

Mr. Jun Kazeki wrote in his own personal capacity. The views and interpretations expressed by the author are solely his own.

*The **US-Japan NEXT Alliance Initiative** is a forum for bilateral dialogue, networking, and the development of joint recommendations involving a wide range of policy and technical specialists (in and out of government) to stimulate new alliance connections across foreign, security, and technology policy areas. Established by Sasakawa Peace Foundation USA with support from the Nippon Foundation, the goal is to help improve the alliance and how it serves shared interests, preparing it for emerging challenges within an increasingly complex and dynamic geostrategic environment. Launched in 2021, the Initiative includes two overlapping lines of effort: 1) Foreign & Security Policy, and 2) Technology & Innovation Connections. The Initiative is led by Sr. Director James Schoff.*

⁹ See as reference GRIPs GIST seminar; “第 105 回 GIST セミナー「経済安全保障と先端・重要技術」,” GIST, <https://gist.grips.ac.jp/events/2022/09/105gist.html>, <https://gist.grips.ac.jp/events/2022/94f4fe87990c92f1bddd3f89e9e096b99ecaf03e.pdf> (Page 52).