Beyond Foreign Military Sales

Opportunities to Enhance Japan-U.S. Defense Industrial Cooperation

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**Introduction**

Japan’s defense industry is described in the Japanese government’s current National Defense Program Guidelines for FY 2019 and beyond (2018 NDPG) as “an essential foundation for the production, operation, and maintenance of defense equipment” and plays a vital role in Japan’s defense.¹ Japan’s defense industry has developed with the cooperation of its ally, the United States, and the Japan-U.S. alliance has been “a cornerstone of Japan’s national security” for decades.² Japan’s defense capabilities have evolved in response to rapid changes in its regional security environment, and defense industrial cooperation between Japan and the United States is far more advanced than Japan’s cooperation with other countries. This paper explores measures to further cooperation between the Japanese and U.S. defense industries as both countries pursue strategies to ensure a free and open Indo-Pacific region.

Japan’s 2018 NDPG states that the security environment around Japan is “becoming more testing and uncertain at a remarkably faster speed than expected” with China’s growing military power and North Korea’s rapidly improving ballistic missile capabilities.³ Without much transparency, China is developing a world-class military and improving quickly in domains such as space, cyber, and the electromagnetic spectrum in addition to nuclear, missile, naval, and air forces.⁴ Moreover, China’s primary goal is to change the free, open, and rules-based order in Asia in favor of its values.⁵ North Korea is also promoting the development of weapons of mass destruction and ballistic missiles and improving its operational capabilities.⁶ In this environment, deterrence under the Japan-U.S. alliance “plays a significant role for peace, stability and prosperity of not only Japan but also the Indo-Pacific region and the international community.”⁷ Also, now more than ever, Japan is clearly aware that “defense capability is essential for Japan to play on its initiative its roles in the Japan-U.S. Alliance at all phases from peacetime to armed contingencies. Strengthening Japan’s defense capability to provide
for national security is none other than strengthening the Japan-U.S. Alliance,” and “Japan must strengthen this capability on its own accord and initiative.”8 The April 2021 U.S.-Japan Joint Leaders’ Statement noted that “Japan resolved to bolster its own national defense capabilities to further strengthen the Alliance and regional security.”9 Japan needs to get effective, cutting-edge capabilities to respond to growing threats within a limited budget, making defense procurement more critical than ever. In order for Japan to strengthen its defense capabilities and address current threats, it must procure equipment from the United States that it cannot develop and manufacture on its own, mainly through the Foreign Military Sales (FMS) program. The balance between defense equipment imports and indigenous development is a key issue for Japan as it considers ways to enhance its role in the Japan-U.S. alliance.

In addition, new challenges such as technological innovation and supply chain security concerns could change the security environment significantly. Japan’s 2020 defense white paper notes that “as civilian technologies have been rapidly developing, further technological innovation is expected to dramatically change battle scenes in the future. In particular, major countries have focused on the aggressive utilization of artificial intelligence (AI), high-power energy, quantum technology, and other cutting-edge technologies.”10 In this context, China is “implementing a policy of civil-military fusion across the board, with the aim of promoting two-way links between military and civilian resources in technology development and various other fields” and “is striving to develop and acquire cutting-edge technologies that can be used for military purposes.”11 Although the United States is still the world’s largest investor in defense research and development (R&D), China is closing the R&D spending gap with the United States.12 Supply chain risks are also emerging. A recent Department of Defense (DOD) report shows the U.S. defense industry’s reliance on China and the existence of sole-source suppliers in the supply chain of some products.13 Moreover, the co-chair of the bipartisan Defense Critical Supply Chain Task Force of the U.S. House Armed Services Committee said, “throughout the pandemic, U.S. adversaries like China weaponized supply chain vulnerabilities in a way that threatened Americans’ health and security. Our Defense Critical Supply Chain faces similar weaknesses that, if exploited, would impair our ability to compete with our adversaries and respond to crises.”14 In this increasingly complicated security environment, further cooperation between the U.S. and Japanese defense industries, including in innovation and supply chain security, could contribute to enhancing deterrence under the Japan-U.S. alliance.
The State of Japan’s Defense Industry and Japan’s Defense Industrial Strategy

Japan’s Defense Industrial Strategy

In 2013, Japan published its first National Security Strategy to “guide Japan’s national security policy over the next decade.” The strategy clearly outlines three priorities for Japan’s defense procurement policy. First, the strategy notes that Japan should participate in joint development and production of defense equipment and other related items. Second, instead of the Three Principles on Arms Exports (1967) and the collateral policy guideline (1976), the strategy says the government should introduce clear principles for the overseas transfer of arms and military technology. Third, the strategy states that “defense production and technological bases are one of the important factors that support defense forces through research, development, production, operation and maintenance of defense equipment” and that Japan should strengthen its international competitiveness.

Based on the National Security Strategy, Japan established the Three Principles on the Transfer of Defense Equipment and their implementation guidelines in April 2014. As a result, new clarity was established for the specific standards, procedures, and restrictions on the transfer of defense equipment. Accordingly, Japan established rules to enable the overseas transfer and export of defense equipment to other countries, which had previously been restricted by the Three Principles on Arms Exports.

Until 2014, Japan’s policy for the defense industry was based on the so-called guidelines for indigenous development/production ( kokusanka-hōshin) of 1970, which stated that Japan should promote the independent development and domestic production of defense equipment to protect the nation. Based on the guidelines, Japan’s defense industry developed defense equipment through licensed production and other means. In June 2014, in response to the National Security Strategy and the National Defense Program Guidelines for FY 2014 and beyond, a new Strategy on Defense Production and
Technological Bases was formulated for the next 10 years. That strategy established international joint development and production as a preference over licensed production based on two core observations: (1) that “international joint development and production projects have become the international standard as a way to improve the performance of defense equipment and to deal with rising development and production costs, and they contribute to maintaining and strengthening Japan’s defense production and technological bases”; and (2) that “opportunities for technology transfers through licensed productions have been decreasing in recent years.” In addition, Japan would import defense equipment that it cannot manufacture through arrangements such as FMS, provided cost, production timelines, and other factors prove competitive. At the same time, Japan would consider ways for the defense industry to continue technical research, maintenance, and sustainment activities so as not to weaken the defense industrial base.

Further, the Defense Technology Strategy was formulated in 2016 for roughly the next 20 years, emphasizing that technologies from various fields are essential along with existing defense technologies. It also encouraged cooperation with other research organizations at home and abroad and the utilization of dual-use technology given the rapid development of civilian technology and Japan’s severe fiscal condition.

The most recent strategy documents that are relevant to the defense industry are the 2018 NDPG and Medium Term Defense Program (FY 2019–FY 2023), which emphasize the importance of strengthening Japan’s defense industrial base by focusing on supply chain risk management; defense industry participation in the sustainment and maintenance of imported equipment; and promoting overseas transfers of equipment. Furthermore, they also stipulate investments to develop cutting-edge technologies and the active utilization of commercial technologies.

Japan’s Defense Industry

One of the biggest problems for Japan’s defense industry is that it has not had much experience with international competition. Since the end of the Cold War, defense companies worldwide have turned to international markets and exporting has become their primary business. However, Japan’s defense industry could not penetrate foreign markets for decades due to the Three Principles on Arms Exports. As a result, until the establishment of the Three Principles on Transfer of Defense Equipment and Technology in 2014, the only customer for Japan’s defense industry was the Ministry of Defense (MOD). Despite Japan’s efforts to encourage defense exports in recent years, the only export of finished equipment to date has been the transfer of warning and control radar systems to the Philippines, for which the two countries concluded a contract in August 2020. In addition, the reverse licensing of some U.S.-origin equipment parts is underway.

As for Japan’s defense industry composition, there are many small and medium-sized enterprises that act as subcontractors under prime contractors such as Mitsubishi Heavy Industries (MHI) and Kawasaki Heavy Industries (KHI). The number of defense-related subcontractors, for example, is estimated to be about 1,100 for fighter aircraft, 1,300 for tanks, and 8,300 for destroyers. Japanese defense companies’ average defense demand dependence is only about 3 percent, and the defense-related business is not a major sector for prime companies, though for some small companies defense demand dependence is more than 50 percent. Also, while the defense industry was restructured in Europe and the United States to strengthen international competitiveness after the Cold War, Japan has not undergone a similar pattern of corporate restructuring.
One of the biggest problems for Japan’s defense industry is that it has not had much experience with international competition.

In 2014, the MOD evaluated the capabilities of Japan’s defense industry sectors in *Strategy on Defense Production and Technological Bases*. The aircraft sector, with a few exceptions, was not considered to be internationally competitive, although the development and production capacity of transport aircraft, maritime patrol aircraft, amphibious rescue aircraft, and rotary aircraft are comparable to international competitors with technologies obtained through licensed production. However, Japan’s defense industry has high-level capabilities to produce equipment used on land and at sea. Japan’s defense industry has also developed technology and manufacturing capabilities for communication electronics and command and control systems by capitalizing on advances in the commercial sector driven by civilian demand. Japan can acquire guided weapons domestically with technologies obtained through licensed production, although they are more costly than those of other countries. The major products developed by Japan’s defense industry in recent years include the Soryu submarine, Type 10 tank, C-2 transport aircraft, and P-1 maritime patrol aircraft.

Japan’s defense industry is currently in a difficult situation. For example, Sumitomo Heavy Industries has withdrawn from the production of machine guns, and in the past few years, Komatsu, a manufacturer of vehicles, and Daicel, a manufacturer of explosives, have also withdrawn from the defense business. Other suppliers are similarly talking about withdrawing from the defense industry. The chairman of the Japan Association of Defense Industry cited imports, stating “[we] are in a difficult situation because the procurement of defense equipment from overseas tends to increase.”

### High Levels of FMS Procurement

In addition to private industry selling defense equipment and services directly to procuring governments, countries can export defense equipment and services to other countries through government-to-government (G2G) agreements, which are mechanisms where governments of exporting countries act as mediators. While the primary purpose of G2G agreements is to increase the capabilities of the procuring country from the perspective of common security, it also helps strengthen bilateral government relations through various interactions, including related training and maintenance. The United States uses the FMS program as the primary G2G mechanism for defense equipment exports to other countries. The United States exports defense equipment to other countries mainly through two vehicles: FMS and Direct Commercial Sales, both of which Congress authorizes under the Foreign Assistance Act and the Arms Export Control Act. The United States allows exports of items that require enhanced security measures only via FMS. Under FMS, the U.S. government and the procuring government sign a legal document known as a Letter of Offer and Acceptance (LOA), and the U.S. government purchases defense equipment and services from U.S. industry as an intermediary with the same contract conditions that apply to U.S. government procurement. In foreign policy, FMS is considered a form of security assistance and therefore requires congressional oversight and the supervision of the secretary of state to ensure that FMS is compatible with U.S. foreign policy.

The MOD regards FMS as “critical to strengthen Japan’s defense capabilities” because FMS “allows Japan to procure equipment with a high level of confidentiality that cannot be generally purchased through Direct Commercial Sales and highly capable equipment.” The MOD also recognizes that “while Japan is facing severe financial conditions, imports of foreign equipment are increasing due to their high performance and the complex trends of defense equipment. On the other hand, Japan’s defense industry has been exposed to harsh conditions due to a downward trend in the number of procured equipment from domestic companies and other reasons.” Japan’s increased reliance on FMS and the relative stagnancy in domestic defense procurement is a major issue in Japan’s defense policy debate.

A look at the budget for FMS procurement shows that the amount ranged between 100 billion and 200 billion yen (or approximately between $0.9 billion and $1.8 billion, respectively, at the rate of $1=¥110) from Japan Fiscal Year (JFY) 2012 to JFY 2014, but has increased since JFY 2015, peaking to 701.3 billion yen ($6.4 billion) in JFY 2019. The FMS budget decreased to 471.3 billion yen ($4.3 billion) in JFY 2020 but is still at a high level.

Comparing FMS procurement figures with other FMS client countries from the Defense Security Cooperation Agency’s (DSCA) published data, Japan was the fourth-largest FMS procurer in FY 2016 (1. United Kingdom, 2. South Korea, 3. Saudi Arabia); the second-largest in FY 2017 (1. Qatar, 3. Saudi Arabia); the fourth-largest in FY 2018 (1. Saudi Arabia, 2. Kuwait, 3. Poland); the second-largest in FY 2019 (1. Saudi Arabia, 3. Belgium); and the seventh-largest in FY 2020 (1. Taiwan, 2. Poland, 3. Morocco). Japan primarily procures the Aegis system and aircraft through FMS, including the Global Hawk, V-22, F-35A, F-35B, KC-46A, and E-2D.

### Japan’s increased reliance on FMS and the relative stagnancy in domestic defense procurement is a major issue in Japan’s defense policy debate.

While the level of Japan’s FMS procurement has remained high, the 2018 NDPG states that “in order to efficiently procure U.S.-made high-performance equipment, MOD/SDF will promote rationalization of FMS procurement.” Japan’s Acquisition, Technology & Logistics Agency (ATLA) and DSCA have held the Security Cooperation Consultative Meeting (SCCM) five times since 2016 and confirmed that they will promote various initiatives to resolve difficulties with FMS such as late delivery, late case closure, and transparency in pricing. The SCCM and other bilateral initiatives have resulted in a 49 percent reduction in late delivery and a 33 percent reduction in case closure on a monetary basis as of the end of JFY 2019 compared to the previous fiscal year.

In a situation where Japan’s dependence on FMS is increasing and the amount of domestic procurement is stagnating, industrial participation in the production of foreign equipment appears vital to strengthen Japan’s defense industrial base.
Defense Industrial Cooperation between Japan and the United States

The Guidelines for Japan-U.S. Defense Cooperation, published in April 2015, stipulates that “in order to enhance interoperability and promote efficient acquisition and maintenance,” Japan and the United States will “cooperate in joint research, development, production, and test and evaluation of equipment,” “strengthen the basis to repair and maintain common equipment,” “facilitate reciprocal defense procurement,” and “explore opportunities for cooperation with partners on defense equipment and technology.” So far, the defense industries of Japan and the United States have cooperated through joint development and production, licensed production, and maintenance and sustainment of U.S.-origin equipment. This cooperation has strengthened the Japan-U.S. alliance and contributed to joint operations.

Japan-U.S. defense industrial cooperation has played a significant role in building Japan’s current defense industrial base. After World War II, Japan’s aircraft industry built its production base through licensed production from the United States, and there was much to absorb in terms of manufacturing technology and various management methods, which had a significant effect on the enhancement of the production base. After that, under the kokusanka-hōsin formulated in 1970, the necessary foundation for defense production and the technology base was formed through licensed production and R&D. Since then, Japan has conducted licensed production of U.S. equipment such as the F-15, P-3C, AH-1, AH-64, Patriot Guided Missile, and Sea Sparrow.

Since the 1980s, Japan has also conducted joint development and production with the United States, including for the SM3 Block IIA missile and the F-2 fighter aircraft. The F-2 was developed and produced by MHI as the main contractor and General Dynamics (currently Lockheed Martin) as a U.S. partner, though there is a debate as to whether the F-2 technically qualified as a joint development project because key technologies were derived from another aircraft, the F-16. Initially, Japan favored
the domestic development of the F-2. Still, with trade frictions between Japan and the United States, there was a strong push by the United States to adopt U.S.-made fighter jets, and as a result, the two sides decided to conduct joint development as common ground. Some evaluations suggest that the F-2 program “was officially called co-development, though neither side really thought of it that way. The United States saw F-2 development as another exercise in security assistance for support of an F-16 variant in which it had no procurement interest. To Japan, the F-2 was an indigenous program based on an aircraft design imposed by pressure from Washington.” On the other hand, others have suggested that “Japan and the United States were able to develop fighter planes with greater performance compared to those developed by a single country because of the superior technologies of Japan and the United States, and there was the advantage of improving the technological level of both sides through the exchange of engineers and the transfer of technologies.”

Japan-U.S. defense industrial cooperation has played a significant role in building Japan’s current defense industrial base.

The SM3 Block IIA, an interceptor for ballistic missile defense, is jointly developed and produced by MHI and Raytheon. Japan procures SM3 Block IIA through FMS, but Japanese companies support the manufacturing of roughly half of the components for both Japanese and U.S. acquisitions under the project. (Japan is responsible for the second and third stages of the rocket, the nosecone, and other components.) In contrast to the F-2, the SM3 Block IIA project is evaluated as “the first program that was developed through the entire span of the acquisition cycle,” from defining mutual requirements to research, development, and production between Japan and the United States.

Japan-U.S. defense industrial cooperation can generally be categorized into the following four groups: (1) participation in the manufacture of procured equipment; (2) sustainment and maintenance for equipment of U.S. origin; (3) provision of parts to the United States; and (4) joint development and production. According to this classification, participation in the manufacture of procured equipment includes licensed production, which has been on the decline in recent years due to U.S. concerns about technology leaks and the revision of Japan’s defense industrial strategy in 2014.

Regarding the manufacture of procured equipment for the F-35, Japanese companies have participated in the final assembly and check-out of the airframe and engine, the manufacture of some engine parts, the manufacture of some radar parts, and the manufacture of some Electro-Optical Distributed Aperture Systems (EODAS). Japan indicated industrial participation as one of the criteria for the selection of the F-35A, and suppliers proposed their plans to Japan. Although Japan does not have rules governing industrial participation, it does consider industrial participation on a case-by-case basis. Japanese companies also have manufactured display systems and sonar parts for the Aegis system and produced 16 percent of the airframe structures for the KC-46A Pegasus tanker aircraft that Japan procures.

Regarding sustainment and maintenance for equipment of U.S. origin, the 2018 NDPG stipulates that the MOD should promote sustainment and maintenance for imported equipment. Japanese companies
are engaged in sustainment and maintenance of the KC-46A and especially the V-22 for U.S. Forces Japan. As for the provision of parts to the United States, Japan’s National Security Council approved the reverse licensing of some parts U.S. companies have difficulty manufacturing but which continue to be produced under license in Japan as equipment transfers. Reverse licensing of Patriot PAC-2 missile parts and F-100 aircraft engine parts to the United States are underway.
Issues Related to Japan-U.S. Defense Industrial Cooperation

In this section, five issues related to Japan-U.S. defense industry cooperation are discussed as context for recommendations to further defense industrial ties between the two countries.

1. Defense Industrial Cooperation between the United States and Other Countries

The United States engages in defense industrial cooperation with many countries, including the United Kingdom, Sweden, Italy, Australia, and Canada. These relationships provide important context for considering ways in which Japan could enhance its own defense industrial cooperation strategy.

The United Kingdom’s defense industry retains a “special relationship” with the United States, and many UK companies conduct business in the United States through subsidiaries. BAE Systems has been particularly active in acquiring U.S. companies to boost its sales in the U.S. market. The United Kingdom encourages foreign companies such as Lockheed Martin, Raytheon, and Northrop Grumman to invest in R&D and production in the UK market by granting them the same treatment as UK firms. Thus, the United Kingdom has actively attracted investment from the United States and other countries and increased equipment exports by increasing the competitiveness of its defense industry. The United Kingdom’s defense industrial policy of attracting foreign defense companies to invest in the country is supported by the fact that the United Kingdom originally had one of the strongest defense industrial bases in the world. The United Kingdom is also the only Level 1 partner in the F-35 program—the maximum level of participation.
Sweden has a long-standing relationship with the U.S. defense industry and equipped the Gripen fighter and its predecessor with engines and other systems from the United States. Saab, the most prominent Swedish defense company, was selected by the United States in 2018 to become the contractor for the T-7 (T-X) trainer aircraft, which would be jointly developed and produced by Saab and Boeing, and proposed to establish a new manufacturing facility in the state of Indiana. Before the T-7 project, Saab also sold the Sea Giraffe radar to the U.S. Navy, which the United States has sold to other countries through FMS. Sweden has also accepted investments from foreign firms in its defense industry.

Italy’s defense industry also has a long history of cooperation with the United States on several platforms, including the CH-47 and C-27J aircraft. For the CH-47 helicopter, AgustaWestland (Leonardo) signed a joint industrial agreement with Boeing for systems integration, final assembly, and delivery to the Italian army and also has a license to sell the CH-47 to other countries. Italian defense companies such as Beretta Holding, Fincantieri Marine Group, Leonardo, and others have manufacturing facilities in the United States. Also, as one of the partner countries in the F-35 program, Italy maintains final assembly and check-out, parts manufacturing, and sustainment and maintenance facilities for the F-35A and F-35B in Cameri. U.S. companies such as Avio Aero (GE Aviation), Boeing Italy, and Northrop Grumman Italia operate plants in Italy.

Australia also promotes defense industrial cooperation with the United States. The Australian shipbuilder Austal is a prime contractor for the Littoral Combat Ship (LCS) and Expeditionary Fast Transport (EPF) used by the U.S. Navy and has a manufacturing base in the United States. The Australian defense industry is open and receptive to foreign investment from large defense companies, while approximately 3,000 Australian companies serve as contractors. Australia has major defense companies headquartered overseas that participate in defense procurement as prime contractors and expects local companies to join the global supply chain as suppliers for the programs. U.S. companies such as Boeing, Raytheon, Lockheed Martin, and Northrop Grumman have manufacturing and maintenance bases in Australia. Boeing has a joint development and production program for unmanned aerial vehicles (UAVs), called Loyal Wingman, with the Royal Australian Air Force. Australia is also a partner country for the F-35 program.

Canada’s defense industrial ties with the United States date back to the Hyde Park Agreement during World War II. Canada currently has Defense Production Sharing Agreements and Defense Development Sharing Agreements with the United States, which make it easier for Canadian defense companies to participate in U.S. government procurement. The Canadian defense industry played an essential role in vehicle production for the United States during the wars in Iraq and Afghanistan, and Canada is also a partner country in the F-35 program.

One important takeaway for Japan is that these other countries have built manufacturing facilities in the United States. The U.S. 2020 Industrial Capabilities Report notes that the United States welcomes foreign investments from its allies if they take the necessary steps for foreign investment screening and defense industrial security.

2. Offset Policy

Because Japan spends a significant amount of its annual defense budget on foreign procurement such as FMS from the United States, there are voices expecting a return on investment that extends beyond
Beyond Foreign Military Sales

The definition of offset varies and is not set in stone. The Bureau of Industry and Security in the U.S. Department of Commerce states that “offsets in defense trade encompass a range of industrial and commercial benefits provided to foreign governments as an inducement or condition to purchase military goods or services.” According to the European Commission, “offsets are compensations that many governments in the world require when they procure defense equipment from non-national suppliers.” The World Trade Organization (WTO) generally prohibits offsets, but a broad exemption is made for security-related matters. Many countries that have implemented offsets, such as South Korea, Canada, and Israel, require suppliers to bear a minimum percentage of the overall contract value as offsets, typically expressed as a percentage of the total contract, varying according to each importing country’s policies. In contrast, since 2012, and up until Brexit, the United Kingdom’s defense industrial policy was aligned with EU rules, merely encouraging domestic company participation and not pursuing an offset policy. Also, Australia’s industrial policy encourages partnerships between domestic industry and international contractors but not as a formally mandated offset policy. Japan does not have an offset policy. As Japan conducts industrial participation in the F-35 and other projects, it does not have any offset guidelines. Japan does not mandate what percentage of the procurement amount must be offered as a return on acquisition, and it merely encourages domestic companies to participate in the programs.

The number of countries with offset policies has increased since around the end of the Cold War. Decreasing international demand for advanced weaponry meant more competition in the defense industry, with firms making side deals to ensure their own survival. Offset strategies of importers have evolved to include measures such as offset banking, which allows offset obligations to be carried forward several years, and multipliers, which weigh the value of offsets desired by the procuring country, such as technology transfer and collaboration with small and medium-sized enterprises. Many countries that had previously been customers tried to use offsets to strengthen their defense industries and participate in the international market. The motivations were twofold: (1) a domestic defense industry is essential for independent national security; and (2) the defense industry utilizes highly skilled engineers and advanced technologies critical to economic competitiveness.

When evaluating offsets, it is important to balance potential economic benefits against cost increases. Some studies indicate that offsets do not create economic benefits despite cost increases, and “both theoretical and empirical discussions, mainly in the form of case studies, by the majority of the economists conclude that offsets overall have had very little positive impact on economic development.” On the other hand, there is a possibility that the distortionary impact of offsets may be less than the total benefit from jobs, tax revenue, and increased exports. In any case, it is not easy to assess the impact of offsets because governments and companies often have not conducted offsets in a transparent manner, nor have international organizations such as the WTO reported on them. Canada publishes offset obligations based on company declarations, but the economic impact is not necessarily scrutinized critically by a third party. Countries do not report how much offsets increase procurement costs. However, it is estimated that overhead and other miscellaneous costs of offsets alone total approximately 10 percent of the overall acquisition cost, though it varies from country to country.
When evaluating offsets, it is important to balance potential economic benefits against cost increases.

3. Enrich the Defense Industry Ecosystem

INITIATIVES IN THE UNITED STATES

Civilian technology is developing rapidly, and countries are working to incorporate artificial intelligence (AI), quantum computing, and other new technologies into the military field. These technologies could shape “the economic and military balance among states.” The 2018 National Security Strategy of the United States outlines the National Security Innovation Base (NSIB). The NSIB is “the American network of knowledge, capabilities, and people including academia, national laboratories, and the private sector that turns ideas into innovations, transforms discoveries into successful commercial products and companies, and protects and enhances the American way of life.” The NSIB includes the traditional defense industrial base, large commercial technology providers, small emerging technology providers, and universities that directly and indirectly help create the tools the DOD relies on. It has become important to strengthen partnerships with nontraditional defense contractors and start-ups in the commercial sector with whom the DOD previously did not have partnerships.

Nontraditional defense contractors find some challenges in the DOD’s acquisition environment, such as the complexity of the DOD’s acquisition process, government-specific contract terms and conditions, and intellectual property rights concerns. In China, innovation transfers from the civilian sector to the military feature prominently in its military-civil fusion strategy aimed at making China an economic and military superpower. In response to China’s strategy, the DOD has been implementing initiatives to enhance partnerships with the commercial sector to enrich the defense industry ecosystem.

In 2015, the DOD established the Defense Innovation Unit to utilize new commercial-based technologies such as AI, cybersecurity, automated control systems, space, 3D printing, and augmented reality for the defense sector, though it does not yet have a large budget ($29 million in FY 2020). The DIU uses the Other Transaction procurement system for agreements with nontraditional defense contractors. The Other Transaction procurement system is not subject to government procurement laws and regulations, such as Federal Acquisition Regulations and Defense Federal Acquisition Regulation Supplement, realizing faster and more flexible procurement and enabling DOD to engage a broader range of contractors and innovative businesses.

It has become important to strengthen partnerships with nontraditional defense contractors and start-ups in the commercial sector.
As one measure to strengthen the defense industry ecosystem, the DOD is conducting accelerator programs and building partnerships with start-ups. Accelerators are “people, organizations, and programs that support startups and entrepreneurs to promote business growth” and “mainly provide short term support programs (e.g., funding and providing know-how) growing the business of companies that are beyond the seed stage.” There are also some international accelerator programs organized by the United States and other countries. The DOD, the United Kingdom’s Ministry of Defence, and NATO, together with an accelerator company, launched the Allied Defence Accelerator in 2020 and held the International Space Pitch Day in 2020. Start-ups gave presentations on their commercially valuable technologies that can be applicable to the military, and 10 companies from the United States, United Kingdom, Australia, and India received funding. Also, the U.S. Air Force, Norwegian Space Agency, Norwegian Ministry of Defense, and Netherlands Ministry of Defense launched a virtual accelerator program called Techstars Allied Space Accelerator with an accelerator company. In 2020, start-ups from the commercial sector in the United States, United Kingdom, Norway, Germany, and the Netherlands with next-generation space-related technologies—such as geographic information analysis, satellite services, space situational awareness, resilient communications, and space AI—participated in the program to form partnerships with governments and leverage the mentorship of industry experts and investors. Furthermore, Norway launched Hacking 4 Allies, a program for Norwegian start-ups with security-applicable technologies, together with a U.S. accelerator company. The program helps Norwegian start-ups develop connections for entering the U.S. market and teaches them how to get funding.

**INITIATIVES IN JAPAN**

Japan also tries to utilize innovation in the commercial sector for defense. The 2018 NDPG indicates that “MOD/SDF will make focused investments through selection and concentration in important technologies including artificial intelligence and other potentially game-changing technologies.” ATLA is implementing measures to invite basic research on advanced civilian technologies through a competitive research funding program called the Innovative Science & Technology Initiative for Security, which aims to “discover creative research activities conducted in universities, research institutes, companies, etc., which are expected to apply defense equipment in future and to promote promising research seeds.” In addition, ATLA is working on a project that aims to put advanced commercial technologies into practical use in a short period (about three years) by quickly demonstrating the effectiveness of advanced commercial technologies through cooperation with civilian engineers.

**4. Frameworks and Agreements That Advance Defense Industrial Partnerships with the United States**

There are currently three tiers of frameworks and agreements for defense industrial cooperation with the United States: entry-stage Reciprocal Defense Procurement Agreements; second-stage Security of Supply Arrangements; and the National Technology and Industrial Base, representing the deepest level of defense industrial cooperation.

**RECIPROCAL DEFENSE PROCUREMENT AGREEMENTS**

Reciprocal Defense Procurement (RDP) Agreements are intended to promote defense procurement between the United States and signatory countries on a reciprocal basis with measures such as reduced market barriers. Each U.S. government agency can determine when it is not appropriate to apply Buy
American provisions due to inconsistency with the interests of the United States, and the DOD has signed RDP Agreements with 28 countries, including Japan, for which Buy American provisions do not apply. Japan signed an RDP memorandum of understanding (MOU) and exchange of notes with the United States in 2016.

SECURITY OF SUPPLY ARRANGEMENTS

Security of Supply Arrangements (SOSAs) allow “the DOD to request priority delivery for DOD contracts, subcontracts, or orders from companies in these (signatory) countries. Similarly, the arrangements allow the signatory nations to request priority delivery for their contracts and orders with U.S. firms.” SOSAs are also expected to facilitate procurement between the two nations, improve interoperability, and ensure timely delivery of equipment. The countries that have signed SOSAs with the United States are Australia, the United Kingdom, Canada, Finland, Italy, Norway, the Netherlands, Spain, and Sweden, and these countries are eligible to receive priority delivery of equipment from the U.S. defense industry under the Defense Priorities and Allocations System. In addition, signatory countries create “codes of conduct,” and only companies that endorse SOSAs voluntarily participate in the codes of conduct. Although SOSAs are not legally binding, there is a possibility that U.S. prime contractors will regard companies that participate in the code of conduct as partners that are willing to cooperate with U.S. industry.

THE NATIONAL TECHNOLOGY AND INDUSTRIAL BASE

The National Technology and Industrial Base (NTIB) “consists of the people and organizations engaged in national security and dual-use R&D, production, maintenance, and related activities within the United States, Canada, the United Kingdom, and Australia.” In 2017, the NTIB was expanded to include the United Kingdom and Australia; it previously consisted of only the United States and Canada, which have strong defense industry ties. The primary purpose of NTIB expansion was to take advantage of the competition in defense technology by integrating the four countries’ R&D and industrial bases. So far, the NTIB has mainly contributed to “cooperation on measures to resolve specific supply chain issues and for the protection against adversarial foreign investment.” The U.S. Committee on Foreign Investment in the United States recognizes Australia, Canada, and the United Kingdom as “exempted foreign countries” for security reviews on investment. A report of the Defense Critical Supply Chain Task Force of the U.S. House Armed Services Committee noted that although the NTIB is not functioning well enough, the United States could use it to cooperate with allies on supply chain security through such measures as updating its legal authorities.

The United States designed its current export control system to maintain its technological superiority in the Cold War era, and its export control system is now hindering U.S. technological development. In particular, the extraterritorial nature of the U.S. export control system has become a barrier for other countries to conduct joint R&D with the United States. The NTIB should promote cooperation that would allow the United States and its allies to leverage their technologies, R&D, and industries in the military and remove barriers to innovation. However, efforts to relax export controls have not made much progress under the NTIB. One possible explanation could be that responsibility for export control issues spans the DOD, Department of Commerce, and Department of State.

In the future, NTIB countries may develop experimental export control initiatives and expand these initiatives to countries with SOSAs and RDP Agreements on a case-by-case basis. For Japan, NTIB
countries are like-minded nations, and it would be beneficial for Japan to promote defense industrial cooperation in technology and R&D under the NTIB framework. Unlike NTIB partnerships, Japan and the United States do not currently have defense industry manufacturing bases in each other’s countries, and they do not have SOSAs to facilitate defense procurement.

5. Information Protection of the Defense Industry

Information security is an essential element for promoting international industrial cooperation because of the high importance of technology information protection today, and it is also related to the NTIB and the streamlining of export controls. The United States signed the Defense Trade Cooperation Treaty to exempt exports of certain defense equipment and services from export control regulations with the United Kingdom and Australia in 2007, before the countries joined the NTIB. Before that, the United States signed a nonbinding statement in 2000 with the United Kingdom that included “five pillars,” one of which was industrial security, with the aim of promoting closer defense industry cooperation. Australia also signed a similar statement with the United States at that time.

The gap in industrial security systems between Japan and the United States arguably limits the willingness of U.S. defense industries to cooperate with Japanese counterparts. The United States established the National Industrial Security Program (NISP) in 1993 to implement the industrial security system. This program has been aided by the Defense Counterintelligence and Security Agency, which provides oversight of companies under NISP, and the Center for Development of Security Excellence, an institution that provides education for the DOD and companies under NISP. Japan established the Secrets Protection Act in 2013, signed a General Security of Military Information Agreement (GSOMIA) with the United States in 2007, and since 2015 has “continued progress through the Bilateral Information Security Consultations.” In 2021, Japan and the United States signed an exchange of notes on enhanced security measures for classified military information related to advanced weapon systems. However, Japan still doesn’t have a comprehensive defense industrial security program equivalent to that of the United States like its other allies and partners.

The gap in industrial security systems between Japan and the United States arguably limits the willingness of U.S. defense industries to cooperate with Japanese counterparts.
Japan-U.S. defense industrial cooperation has evolved over the years from seller-customer relationships where Japan mainly conducted licensed production toward joint development and production. Japan may further enhance cooperation under bilateral partnerships to maintain the defense supply chain and innovation that will help address challenges in the current security environment, such as the rise of China. Defense industrial partnerships may also lead to the next joint development project between the two countries. (Since the SM3 Block IIA, no joint development and production projects between Japan and the United States have been formed.) This is no simple task, as major projects in areas such as missile defense require a range of partnerships including research, development, information sharing, joint development and production, testing, sustainment, and exercises and training. In addition, operational requirements must be given equal attention with industrial matters in determining what programs to implement in the current challenging security environment. It is necessary to create an environment where the defense industries of Japan and the United States can develop partnerships on a long-term and stable basis. Based on the five issues summarized above, here are five recommendations to enhance Japan-U.S. defense industry partnerships.

1. **Promoting Information Protection of the Defense industry**

ATLA should continue to enhance information security in the Japanese defense industry, recognizing that it is critical to promoting defense industrial cooperation between Japan and the United States as well as multilateral cooperation in the future. Information security is essential for any industrial cooperation and is a limiting factor in what level of cooperation Japan and the United States can undertake.
While progress has been made in developing a system for the exchange of defense information between the Japanese and U.S. governments, it is also necessary to develop a system to exchange defense information between the Japanese and U.S. defense industries. Japan still doesn’t have a comprehensive defense industrial security program equivalent to that of the United States like its other allies and partners. In 2019, the United States signed an Industrial Security Annex (ISA) with India, which is an attachment to a GSOMIA and “acknowledges the equivalency of a partner government’s information security regime for the partner nation’s nongovernment entities.” The ISA facilitates classified military information exchanges between the United States and Indian defense industries. Although the details of the U.S.-India ISA have not been made public, it could potentially be a model for Japan.

Information security measures, especially cybersecurity, are essential, as hackers are increasingly attacking the defense industry supply chain. In Japan, several defense companies had information leaks due to cyberattacks in 2020. ATLA is fully aware of the importance of information security and is considering applying security standards equivalent to NIST SP800-171, which is the U.S. government’s standard, and implementing robust information protection mechanisms. ATLA should continue this effort with Japanese industry.

In September 2021, Australia, the United Kingdom, and the United States announced AUKUS, a trilateral security partnership that will enable the three countries to share information and technology further and integrate defense science, technology, industrial infrastructure, and supply chains. The joint statement indicates that the first areas of cooperation will be AI, quantum technology, and submarine capabilities. The UK government says that AUKUS reflects the exceptional trust and cooperation the three countries already have in sharing extensive intelligence in the Five Eyes (an intelligence-sharing alliance between the United States, United Kingdom, Australia, Canada, and New Zealand). The three countries have been NTIB members and had a foundation for information sharing across defense industries. Japan would have to enhance information security to cooperate with frameworks such as NTIB and AUKUS and with other like-minded nations to promote industrial cooperation. At a workshop for this paper held at CSIS, participants commented that it would be meaningful if the United States and Japan could participate in a defense industrial cooperation program with Australia, such as the Sovereign Guided Weapons and Explosive Ordnance Enterprise. Such cooperation would prove significant in defense industrial and technological terms but also support the three countries’ shared interest in maintaining stability and prosperity in the Indo-Pacific region.

2. No Offset Policy

Offset transactions are based on the positions of a buyer and seller and do not constitute defense industry partnerships. Japan has not had an offset policy to date but is dependent on FMS for procurement. Offset policies allow procuring countries to compel overseas suppliers to implement offsets. For Japan, however, an offset policy is not a practical approach for several reasons.

First, it is not easy to obtain domestic understanding of the increased cost of procuring overseas equipment under an offset policy. With FMS procurement, U.S. suppliers are legally allowed by the U.S. government to recoup expenses from offsets by including them in an LOA. The Japanese government, already under pressure for increased dependence on FMS for defense procurement, would find it difficult to explain additional cost increases that would likely result from introducing an offset policy.
Second, indirect offsets are inefficient for an industrialized country such as Japan. Offsets can be divided into direct offsets related to procured equipment, such as in-country parts production, and indirect offsets which are not related to procured equipment, such as ship repair for purchased tanks or school construction when buying amphibious vehicles. If Japan introduced an offset policy, the Japanese government theoretically could explain to legislators and the public that increased FMS spending provides economic benefits to a wide range of sectors in Japan through indirect offsets. However, indirect offsets for non-defense sectors would not sustain the defense industry, a core government objective, and therefore would likely prove ineffective for an industrialized country such as Japan that does not need to support other industries with offsets. Third, offsets are not likely to facilitate the transfer of advanced technology. Governments often introduce offset policies to try to encourage suppliers to transfer their technologies, but suppliers generally resist sharing the results of their R&D. Some countries that have introduced offsets, especially developing countries, attach great importance to technology transfer, though this often results in transferring relatively old technologies.

3. More Industrial Participation

Japan should continue to promote industrial participation based on industrial partnerships with the United States. There are two recommendations under this category.

First, ATLA should increase the number of personnel it employs to better understand the supply chain and business conditions in Japan’s defense industry. Japan may need to consider further industrial participation from the perspective of maintaining its defense industry’s supply chain and manufacturing capabilities as one factor in the selection process for procuring imported equipment. ATLA is responsible for maintaining Japan’s defense industry and should therefore enhance its ability to advise on industrial participation of Japanese defense firms. In order to do so, ATLA needs to better understand the supply chain and business conditions of defense companies.

Second, Japan and the United States should initiate a dialogue to identify how the operation of the Japan Self-Defense Forces (JSDF) and United States Forces Japan (USFJ) would be improved by deepening the participation of Japan’s defense industry in the maintenance and sustainment of U.S. equipment. Japan should continue to promote the participation of Japanese industry in the sustainment and maintenance for equipment of U.S. origin. According to a Board of Audit of Japan’s report, “MOD is coordinating with the U.S. government to have Japanese industries sustain and maintain equipment procured through the FMS because ‘it is generally advantageous in terms of transportation costs and the time required for maintenance/sustainment.’” In addition to expanding the number of FMS systems to be sustained and maintained, Japan can provide better support through more in-depth maintenance of equipment of U.S. origin. A deeper role in maintenance would require access to U.S. equipment data and intellectual property, and U.S. export control regulations might be an issue. Increasing the releasability of technical information related to U.S. equipment will require an understanding across the U.S. government. This will require a detailed explanation of how the enhanced participation of Japan’s defense industry in the maintenance and sustainment of U.S. equipment of JSDF and USFJ would benefit both forces. To this end, it would be helpful to initiate a dialogue involving both the acquisition agencies and military services of Japan and the United States.

It has been noted that one drawback with industrial participation, whether associated with offsets or not, is that costs typically increase. For example, when Japan procured the F-35A through FMS, at first
the price increased due to industrial participation, and ATLA explained that this cost was incurred to train domestic companies in the manufacturing process. Since then, the cost of F-35As assembled in Japan has declined. In addition, licensed production also tends to include additional costs. For example, in the JFY 1969 budget, the price difference between the licensed production of the F-4E fighter and the purchase of it from the United States was discussed in negotiations with the Ministry of Finance. At that time, licensed production was approved on the grounds that maintenance costs would be lower and Japanese technology would be improved. There is a question of whether cost increases from industrial participation in foreign equipment can be accepted as an investment in the defense industry. If the investment meets the national security interests of Japan to enhance its role in the Japan-U.S. alliance, then this investment should be considered necessary.

4. Supplement the Defense Supply Chain in the United States

ATLA should continue to support efforts of the Japanese defense industry to enter the U.S. global supply chain. Since the Three Principles on Transfer of Defense Equipment and Technology were introduced in 2014, Japan's National Security Council has approved the reverse licensing of some parts that U.S. companies have difficulty manufacturing and Japanese companies continue to manufacture under license in Japan (e.g., Patriot PAC-2 parts and F-100 engine parts). In this way, Japan’s defense industry has already been supporting the U.S. supply chain, though on a small scale. FMS customers tend to continue to use legacy equipment procured from the United States, and maintaining that equipment is especially challenging once it is retired by the U.S. military. Japanese firms could better support U.S. industry by continuing to manufacture parts under licensed production. Also, the Japanese defense industry may be able to supplement the U.S. defense industry's supply chain through the parts manufactured by Japanese companies participating in FMS equipment.

The United States is emphasizing the strengthening of the defense supply chain in cooperation with its allies, as noted in the Interim National Security Strategy Guidance, the “Executive Order on America’s Supply Chains,” and the 2020 DOD Industrial Capabilities Report. Japan can build on its track record of supporting the U.S. supply chain and arguably help reduce risk by making the supply chain more geographically diverse. It would be of great significance to Japan’s defense industry if parts from Japan were to enter the global supply chain of U.S. companies and be exported to other countries through U.S. companies.

When foreign companies enter U.S. programs, it is considered more advantageous for them to include local production and development in their proposals, which will support the U.S. economy. Also, even if it is not a large-scale program, building the capability to produce components and conduct testing and maintenance in the United States could increase the presence of the Japanese defense industry, potentially allowing it to be a foundation for a bigger role in U.S. projects and joint development and production in the future.

There are several other benefits of having a manufacturing base in the United States. First, Japanese companies would have a chance to access U.S. innovation, including university research, finance systems, and entrepreneurial culture. Second, Japanese industry could overcome barriers to information sharing. Third, a Japanese presence in the United States could encourage the DOD to overcome the tendency to favor contracts with U.S. companies.
Commercial Japanese companies already have manufacturing bases in the United States. In addition, as seen above, defense industries of other countries have manufacturing bases in the United States and are deepening defense industrial cooperation with the United States. At the workshop for this paper held at CSIS, a defense industry expert suggested that the Japanese defense industry could learn from the successful examples of Japanese commercial industries such as automobiles in the United States.

On the other hand, workshop participants commented that very few Japanese defense companies were willing to have a manufacturing base in the United States under current restrictions such as Foreign Ownership, Control or Influence in the United States and Japan’s regulations requiring prior notification to the Japanese government for foreign direct investment in the defense industry. They noted that there was a possibility that Japanese defense companies would take up the challenge in the future if they had support from the Japanese government. Other factors that discourage Japanese companies from establishing manufacturing bases in the United States would include financial burdens associated with setting up defense production lines in the United States—a potentially difficult sell given that Japanese defense companies’ average defense demand dependence is currently only about 3 percent—and lingering concerns about reputational risk, namely the fear of being labeled “merchants of death” in Japan.

5. Include Start-Ups in Initiatives Promoting Japan-U.S. Defense Industrial Cooperation

Recognizing that partnerships with start-ups are necessary for the future ecosystem of the Japanese defense industry, the MOD should conduct accelerator programs with major defense industries to utilize new technologies. Further, in addition to the traditional cooperation between major Japan and U.S. defense industries, the participation of start-ups would constitute a new form of defense industrial cooperation between the two countries and diversify the partnership.

Japan’s start-up ecosystem is still immature, and the amount of venture capital investment is still small in Japan compared to other countries. However, in addition to the measures already taken by ATLA, if it is possible to enhance partnerships with start-ups in the commercial sector and create incentives for them to participate in the defense sector, the defense industry ecosystem in Japan could be further developed in the future. For Japan, there are two imperatives for utilizing start-ups: (1) deepening the partnerships between domestic start-ups, the MOD, and major domestic defense industries to strengthen the domestic ecosystem; and (2) promoting the cooperation of start-ups among allies and partners to complement and strengthen each other’s ecosystems. Given the nature of new technologies being developed by multiple countries simultaneously, cooperation and collaboration on innovative technologies with allied countries will further enhance the defense industry ecosystem of Japan.

There are two effective ways to implement accelerator programs. The first would be for a U.S. partner country to collaborate with a U.S. accelerator, as demonstrated by Norway’s Hacking 4 Allies program. For example, the MOD and Japanese defense companies might work with U.S. accelerator companies to develop accelerator programs for Japanese start-ups with new technologies. In addition to the MOD and Japan’s major defense industries discovering start-ups and strengthening the Japanese defense industry ecosystem, accelerator programs would also guide start-ups on entering the U.S. defense and commercial markets. The chance to enter the world’s largest defense market would incentivize
Japanese start-ups to do business in the defense sector. Moreover, Japanese start-ups with unique technologies would complement the U.S. defense industry ecosystem.

Another option is for Japan to participate in a multilateral accelerator program with the United States and like-minded countries in cooperation with U.S. accelerator companies. The accelerator program could facilitate cooperation on new technological fields in which the participating governments have a common interest and strengthen the relationship between start-ups and government agencies. This would provide a major incentive for start-ups to participate in the defense business. A participant at the CSIS workshop mentioned that incentives would include granting start-ups intellectual property to encourage them to continue their activities in the commercial sector and funding with non-dilutive capital that does not diminish the entrepreneur’s shareholding.
Conclusion

As times have changed, so has the relationship between the Japanese and U.S. defense industries. Although the Japanese defense industry lacks international experience and is small relative to the U.S. defense industry, it has ample potential to play an essential role as a partner to support the U.S. defense industry’s supply chain and the defense industry ecosystem. Also, through cooperation with the United States, Japan can strengthen its defense industrial base. Therefore, while recognizing the necessity of FMS procurement, which is still essential for Japan’s defense, Japan should continue implementing measures to enhance Japan-U.S. defense industry partnerships instead of extending the relationship between FMS customers and providers.

The security environment in the Indo-Pacific region is becoming increasingly severe due to China’s growing military power. Further cooperation between the Japanese and U.S. defense industries will strengthen deterrence, although Japan’s defense industry is currently in a difficult situation, with domestic procurement stagnating. For Japan to fully take advantage of its role in the Japan-U.S. alliance, it must maintain and strengthen the defense industry through defense industrial cooperation with the United States.
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