Holistic Approach to Critical Technology Control: Overview of Interim Report of Subcommittee on Security Export Control Policy, Trade Committee, Industrial Structure Council

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The Subcommittee on Security Export Control Policy under the Industrial Structure Council's Trade Committee engaged in intensive discussions from July 10 to Sept. 25, 2019 on trends in issues regarding international critical technology control as well as Japan's future strategy in this regard.

Changes in the International Order & the Implications for Japan's Economic Policy

1. Changes in the international order

Growing domestic disparities and unease over the emergence of different political and economic regimes has led to a marked rise in the number of countries prioritizing their national interests above all else. The international order built on the values of democracy and free and fair trade is seeing destabilization in all areas from international politics through to trade and technology.

The US-China rivalry has escalated beyond mere trade friction and competition for economic power into a struggle for supremacy. Regardless of the US decision to incorporate China asymmetrically into liberal capitalism following its 2001 accession to the World Trade Organization (WTO), expectations of convergence with Western values such as the protection of intellectual property rights (IPR) and rejection of state capitalism have been disappointed, and concern has been growing over increasing civil-military integration and state-led economic policies such as protection of state-owned enterprises (SOEs) and illicit IPR acquisition. The United States is not only imposing duties as a way of reducing its trade deficit but also aiming to secure technological supremacy. In parallel with this rivalry, countries in both Europe and Asia are increasingly adopting various industrial policies such as massive government investment in critical domestic industries *(Chart 1)*.

While continuing to emphasize economic internationalism focused on the WTO, Japan too needs to adopt "economic policies more closely integrated with security". Our challenge will be to maintain and increase our economic advantage in partnership with like-minded countries who share our values and principles.

2. How to implement "economic policies more closely integrated with security"

(1) Importance of a holistic approach

With the loss of technological superiority and technological vulnerabilities increasingly regarded as security concerns, countries around the world are expanding their measures for preventing the outflow of critical technologies for security reasons, and also promoting economic policies with a focus on domestic industry.

Instituting measures to stop the outflow of critical technologies so as to prevent the proliferation of technologies that could be diverted to military use is Japan's international responsibility, and the importance of this remains unchanged. In so doing, we need to avoid impeding economic growth and innovation even as we address the diversification of channels for technological outflow accompanying globalization and open innovation.

Simply instituting measures for preventing the outflow of critical technologies ("protecting" critical technologies) will not, however, be sufficient to secure a technological advantage and remove technological vulnerabilities. As a starting point, critical technology information held by all entities from universities and research institutes to large companies and the small and medium enterprises (SMEs) that underpin them needs to be properly identified and shared and analyzed (critical technology information has to be "known") across the government and industry. Then, Japan must also focus on measures to "develop" domestic capacity so as to further advance those critical technologies in which we currently have an advantage while simultaneously reducing our current technological overreliance on other countries in certain areas. This will be essential in securing a technological advantage for Japan and dealing with technological vulnerabilities.

The holistic approach suggested by the 24th general meeting of the Industrial Structure Council will therefore be vital. This approach starts by identifying technologies related to key areas essential for economic policies more closely integrated with security. In this regard, the Subcommittee defines "critical technologies" as "important technologies in which Japan should maintain superiority and remove vulnerabilities in order to ensure Japan's security and realize the sound development of the Japanese economy".

(2) The Integrated Innovation Strategy

The Integrated Innovation Strategy 2019 showed a policy direction for innovation promotion in the area of safety and security. This lays out a holistic approach of economic policies to be pursued by Japan *(Chart 2)*.

Components of "Economic Policies More Closely Integrated with Security" & Their Improvements to Be Achieved

With regard to "economic policies more closely integrated with security", the Subcommittee discussed (a) inward foreign direct investment (FDI) screening as an urgent issue to be improved, and then, as issues to be reviewed, (b) export control and (c) other measures for preventing the outflow of critical technologies ("protecting" critical technologies) and for "knowing" and "developing" critical technologies.

1. FDI screening

In addition to FDI's short-term advantages of a positive impact on the economy and employment and the consumer merits of new services and products, over the medium- to long-term too it helps to promote innovation in areas right through to business models and work modes. In 2012, the government accordingly set the goal of doubling FDI to 35 trillion yen by 2020, and we will need to continue to grow that investment.

At the same time, amidst increasing international concern over the security challenges presented by FDI, European and North American countries have recently been bolstering their FDI controls *(Charts 3 & 4)*. This presents the possibility that investors will avoid such countries with stronger FDI controls and begin to invest more heavily in business related to Japan's critical technologies with a view to acquiring said technologies, which not only raises the security concern of critical technology outflow but could also impact negatively on foreign companies' development of business relationships with Japanese companies, dealings in critical technologies included.

Even as we work to further promote FDI, we also urgently need to review our system in light of the stronger FDI controls in the West. The Subcommittee consequently discussed the direction of such a review based on the principle of boosting predictability for foreign investors as a result.

(a) Exemptions from the across-the-board prior notification obligation with rigorous delineation of transactions covered by national security review

In the case solely of investment presenting limited national security risks, consideration should be given to exemptions from the prior notification obligation. In such cases, the government will need to engage in *ex post facto* monitoring, and where necessary (such as in cases of a risk to national security), the government must also be able to take appropriate measures. Consideration should further be given to the development of a coordination mechanism amongst the relevant ministries so as to ensure the effectiveness of *ex post facto* monitoring.

(b) FDI by entities without legal personality

In the case of FDI by entities without legal personality, such as investment limited partnerships, where foreign investors as associates or partners under certain conditions such as limited liability partners acquire stocks, consideration should be given to measures to reduce the burden on such limited liability partners putting up funds, such as the requirement of filing a notification under the foreign exchange law only for association partners who could exercise substantive influence over the company receiving the investment (for example, unlimited partners in investment limited partnerships).

(c) Addressing concerns

There have been numerous cases overseas of parties using their influence on the management of the company in which they have invested to access information held by that company and business management in a form outside the existing scope of Japan's FDI screening.

Overseas examples

- Fund X acquires around 1% of the stocks of Company A, then pressures Company A to change its business strategy and to accept a director dispatched by Fund X. In the end, the head of Company A quits, and the president of Fund X is appointed as a director at Company A.
- Company P acquires around 1% of the stocks of Company B, then criticizes the business strategy of Company B and demands talks with the CEO of Company P. As a result, a business segment that was supposed to be expanded under the original business strategy is forced to be sold.

Because Japan too could see its national security compromised through FDI by foreign investors that leads to their involvement with the critical technologies of Japanese companies and the operation of critical infrastructure, we need to look at (i) lowering the threshold for the stock acquisition ratio requiring notification (from 10% to 1% for listed companies), (ii) widening the notification requirement to more types of behavior post stock-acquisition (for example, acquiring executive positions and transferring critical business sectors), so as to prevent that national security concern and (iii) redressing practical imbalances in relation to the fact that a transfer of critical business sectors to a Japanese subsidiary of a foreign

entity is not required to be notified, whereas a Japanese subsidiary has to notify when it acquires shares of a newly established company with critical technologies separated from a Japanese company forced by a foreign entity.

(d) Strengthening information exchange mechanisms with related government institutions in Japan and overseas

We need to strengthen information exchange mechanisms with related government institutions in Japan and overseas so as to ensure effective control and boost the sophistication and efficiency of FDI screenings.

(e) Operational mechanism for FDI screening and other related issues

We should work to clarify, based on a consistent approach, (i) criteria for exemption from prior notification and (ii) factors to be considered in national security screenings for FDI and post stock-acquisition behavior that have already been announced by the competent authorities. Consideration must also be given to reducing the burden of enquiries by foreign investors where there is doubt about legal interpretations on whether an FDI is subject to prior notification. The competent authorities must strengthen their screening systems in terms of both quality and quantity by introducing mechanisms for using staff with specialist knowledge for critical technologies and by actively utilizing experienced human resources at companies and universities who have been involved in research and management in relation to leading-edge critical technologies.

In addition, economic globalization and technological innovation will inevitably extend the scope of critical technologies and change the types of behavior by foreign investors which represent a source of concern. As such, reviews need to be undertaken as appropriate through ongoing dialogue among experts in critical technologies, government institutions involved with these technologies, and other related parties on (i) the scope of industrial sectors subject to FDI screening and (ii) elements to be considered in national security screenings, etc.

2. Export controls

Japan has implemented export controls for items agreed under international export control regimes from the risk of diversion to military use. However, there are moves in the West to strengthen export controls, with the US considering adding emerging technologies and foundational technologies *(Chart 5)* to the scope of controls without waiting for agreement from international export control regimes, while the European Union is considering implementing export controls for the purpose of human rights protection. The Subcommittee consequently discussed medium- to long-term challenges in Japan's export controls based on these trends.

(a) Conformance with international consensus on items subject to control

The dramatic advance of digital technologies has seen a similarly dramatic increase in the speed of technological development, giving rise to dual-use technologies such as AI that have great strategic significance but whose commercial developments are difficult to distinguish from military-use ones. Because international export control regimes operate on the principle of unanimity, a country wishing to add items to the control list needs to coordinate with other regime members, which takes at least one or two years, and may not result in consensus even then. In our current statutory framework, Japan could add extra items to its export control list in conformance with international agreement amongst a small number of like-minded countries, but consideration should also be given as to whether Japan needs its own export controls that are not based on any international agreement.

With countries currently considering how to handle export controls for technologies in the process of development which are still difficult to define, such as emerging technologies, as well as for technologies that serve as the foundation for all industries, such as foundational technologies, Japan should look at how to handle export controls for results derived from basic scientific research which are not subject to export controls.

(b) Acceleration of outreach to universities and SMEs

Outreach to universities and SMEs, etc., should be accelerated for the purposes of building an appropriate export control system for each entity.

(c) Deemed exports and non-residents

From the perspective of export controls as one means of preventing the outflow of Japan's critical technologies, further consideration should be given in accordance with the actual status of technology outflow from Japanese to any foreigners ("deemed export") to the pros and cons of implementing export controls for deemed exports based on the concept of "residence".

(d) Importance of outreach to countries and regions developing export control systems and "in reach" to countries participating in international export control

regimes

3. Means other than government measures to prevent critical technology outflow

To realize "economic policies more closely integrated with security", or in other words, a holistic approach in relation to critical technologies, it will be important to appropriately combine government measures to prevent the outflow of critical technologies ("protecting") with measures to prevent technology outflows that are driven by universities, companies, and other non-government entities, analyzing what comprises critical technologies ("knowing") and promoting R&D of them ("developing").

(1) "Knowing"-related measures

The government as a whole needs to develop and utilize specialist human resources and strengthen mechanisms so as to grasp critical technology information held by universities and companies, etc., and share and analyze ("knowing") that information across the government as a whole.

(2) "Developing"-related measures

Consideration should be given to new mechanisms and measures for "developing" critical technologies to identify critical areas for "developing" based on information gained through "knowing"-related measures and redress vulnerabilities in areas where Japan is vulnerable, as well as to secure further advantage in areas where Japan currently has an advantage. This includes allocating resources (earmarking funds, etc.), building highly reliable global supply chains in partnership with countries and regions that share Japan's values and ethics, and strengthening information security, including industrial security, as a means of promoting international R&D cooperation.

(3) "Protecting"-related measures other than inward direct investment control and export controls

The mechanism whereby some government or public funding agencies guarantee compliance with laws and regulations of export controls by parties commissioned for government projects needs to be widened across the entire government. Consideration should also be given to how to release or control R&D results related to government funds (papers, patent applications, etc.) based on R&D categories from the perspective of critical technology controls, also bearing in mind a balance with the merits of publication such as promoting innovation. In addition, licensing of research results based on government funds should be subject to a consistent licensing policy.

A critical technology control perspective should be included in the implementation of entry and stay permission procedures or other related ones for foreigners.

In-house systems for access to critical technologies and remuneration systems need to be reviewed from the perspective of preventing critical technology outflows through employees who have quit or retired from Japanese companies. It will also be important for them to take preventive measures with technology against unintended critical technology outflows through reverse-engineering.

4. Roles of government and private sector to ensure effective critical technology control

As to the further study on the above, government-led measures with binding force will not necessarily produce the greatest results in a cost-efficient manner, and some should instead be implemented with the leadership of the private sector, thereby making the best mix of efforts as an entire nation.

5. Other point

IT networks underpinning the distribution of various types of data are defined as critical infrastructure. The protection of IT networks as well as the data, including personal data, flowing on the networks which may have an impact on security is another point to be studied as a part of critical technology controls.

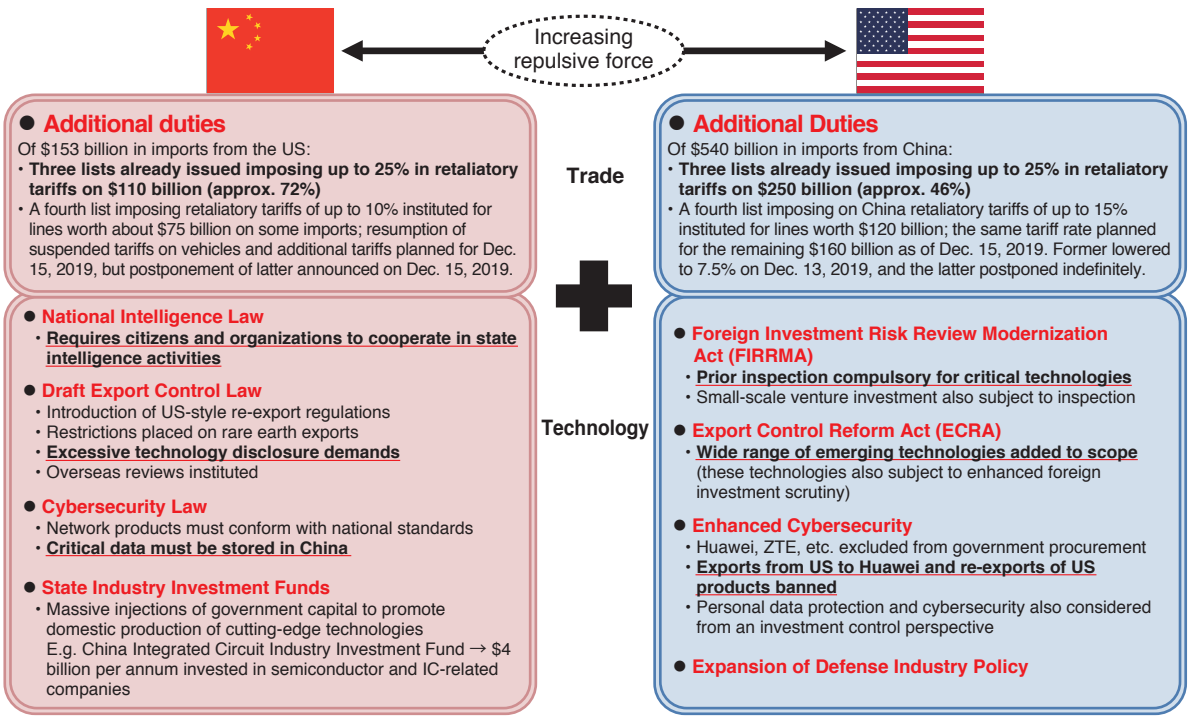
Conclusion

The Subcommittee has put together its basic thinking in terms of reviewing "economic policies more closely integrated with security" *(Chart 6)*. The government must engage in sufficient exchanges of views with industry and other actors in considering the various types of measures, and work actively to strengthen mechanisms as the foundation for implementing necessary measures effectively, including securing technical expertise.

It is the Japanese government's responsibility to maintain and improve Japan's economic advantage and build a more resilient economy while also working in partnership with like-minded countries that share our values and principles and maintaining our basic focus on WTO-based economic internationalism. Issues in that regard are wide-ranging, with many requiring review, and it will be incumbent upon the government to work as a unit to address these.

CHART 1

The US-China rivalry is essentially a battle for supremacy. If it drags on, we could see a split into two economic zones, presenting the strong risk of global supply chain fragmentation and the immediate loss of Japan's national power.



Amidst the US-China power struggle, Europe and Asia too are beefing up industrial policies such as investing huge amounts of state funds into domestic industry. With countries around the world perceiving security and the economy as intrinsically linked and shaping their industrial policy around domestic industry, to enhance our economic resilience, Japan too needs new industrial policies that integrate security concerns.

France: Stronger government support for the digital sector

- The French government has always had a strong influence in key sectors (electricity, aviation, cars, semiconductors, etc.)
- The government has announced a policy promoting **digitalization of the manufacturing industry**, including **funding of 500 million euros**.
- A state plan for **AI R&D** has also been announced along with **665 million euros in funding over four years.**

Germany: National Industrial Strategy 2030

- **Aims to increase manufacturing's added value.**
- Notes that **industrial policies are being revived around the world** and that **almost no countries have succeeded relying solely on market strength.**
- Noting the importance of industrial policy rather than leaving everything up to the market, **lays out guidelines for industrial policy creation.**

South Korea: Major investment in key areas

- **Investment plan for injecting 1.49 trillion won into strategic investment areas and 3.52 trillion won into leading business**
- Announcement of **comprehensive support, including tax breaks, technological development and HRD support, and dedicated funds** with the aim of making South Korea a **semiconductor superpower**

Source: Ministry of Economy, Trade & Industry (METI)

CHART 2

Overview of Integrated Innovation Strategy 2019

● Realizing the future vision for security noted in the Strategy will require pursuing "Know", "Develop", "Keep", and "Utilize" initiatives in relation to Japan's science and technology (from the "Safety and Security" section of the Integrated Innovation Strategy)

○ Future vision	• Amidst an increasingly harsh security environment, Japan will realize comprehensive security against a wide range of threats to people's lives and socioeconomic activities • The relevant ministries, industries and academia will work together to unite Japan's advanced scientific and technological capabilities • Whilst guarding against science and technology information leaks, we will deploy our advanced scientific technologies out in society and secure and maintain our technological superiority, thereby realizing a society in which that superiority may be widely utilized for ensuring people's safety and security.		
○ Objectives	• "Know": Overview our science and technology and clarify fields to promote, fields to supplement, and fields to control properly • "Develop": Focus the allocation of budget and human and other resources on the fields identified through the above process to drive ahead science and technology contributing to safety and security. • "Keep": Prevent science and technology information leaks so as to secure and maintain our technological superiority and preventing our R&D results from being used in the manufacture of weapons of mass destruction, etc. • "Utilize": Ensure the safety and security of our country and its citizens by deploying out in society the results acquired via the above processes of "Know", "Develop" and "Keep".		
○ Current status and issues	○ Japan's advanced science and technologies need to be broadly utilized to prevent and mitigate disasters, deal with terrorism and crime, and combat threats in a range of spheres including cyberspace, space and the oceans. ○ Science and technology information must be appropriately controlled so as to secure and maintain our technological superiority and prevent that information from being used for international terrorism and crime, such as the manufacture of weapons of mass destruction.		
○ Future directions	**"Know"** Clarify priority areas and issues	**"Develop"** Develop science and technology through collaboration amongst relevant ministries, industries and academia	**"Keep"** Prevent science and technology information leaks
	"Utilize" Deploy out in society the results acquired via the above processes of "Know", "Develop" and "Keep".		

Source: Ministry of Economy, Trade & Industry (METI)

CHART 3

Outline of US investment control system

1. The Exon–Florio Amendment (50 U.S.C. app §2170) passed under the Omnibus Trade and Competitiveness Act of 1988 amended the Defense Production Act of 1950, enabling the President to suspend or prohibit mergers, acquisitions or takeovers of US firms by foreign companies where there is "credible evidence that leads the President to believe that the foreign interest exercising control might take action that threatens to impair the national security." These decisions can also be applied retroactively and are not subject to judicial review.

2. The power to investigate the impact of a transaction on national security lies with the CFIUS, which is headed by the Treasury Department and comprises representatives from national intelligence agencies, the Defense Department, State Department, and Commerce Department etc.

3. The Foreign Investment Risk Review Modernization Act (FIRRMA), which was passed in August 2018 and will go into effect by February 2020, broadens the scope of presidential powers to (1) non-controlling investment related to critical technologies, (2) non-controlling investment related to critical infrastructure, (3) non-controlling investment related to the sensitive personal information of US citizens, and (4) purchase and lease of real estate in the proximity of sensitive facilities.

4. Governance and information rights are regarded as pertaining particularly in relation to (1) to (3), including appointment as an board member or executive officer, the right to appoint these members, access to non-public technology information at the company being invested in, and involvement in important decisions in relation to sensitive technologies, etc.

US Investment Control (Review Conducted by CFIUS): Before and After FIRRMA

※ Updates are in red.

	Prior to FIRRMA	**After** FIRRMA		
Type of Review	(1) *Ex post facto* intervention (indefinite) ※Voluntary declaration in advance by investors	(1) Expanded the covered transactions subject to ex post facto intervention (indefinite) to include the following:	+	(2) Added mandatory declaration (prior-notification). Covered transactions are as follows:
Covered Transactions	Transactions related to mergers, acquisitions of, e.g., voting rights or proxy voting rights that may constitute control over a US business (irrespective of the number of acquired shares) ※Transactions include: • Purchase or lease of assets (including business and real estate)	Non-controlling and non-passive investments that afford membership rights on the board of directors, rights to nominate, access to nonpublic information and involvement in substantive decision-making related to: • critical technologies, • critical infrastructure, • sensitive personal data of US citizens.		• Foreign government–controlled investments in critical infrastructure or technology having potential implications for business management (irrespective of the number of acquired shares)
Business Sector	Sectors not specified			
Factors to be Considered	Effects on domestic production needed for projected national defense requirements, etc.	Factors below have been added. • Security-related effects result in foreign control on critical infrastructure, energy, strategic goods, and sensitive information, etc.		
Characteristics	(1) Authority by the President to suspend or prohibit transactions (not subject to judicial review) (2) Foreign investors and CFIUS can negotiate a mitigation agreement (President's authority will not be exercised as long as the mitigation agreement is complied with).			

※FIRRMA added provisions regarding information sharing with allies.

Source: Ministry of Economy, Trade & Industry (METI)

CHART 4

Recent developments of reinforced investment controls in Europe

◆ **EU:** New regulation entered into force on April 10, 2019. Created an **investment control information-sharing mechanism among EU member countries.** Added **critical infrastructure and technologies (AI, robotics, semi-conductors, cybersecurity, etc.)** as elements to be considered for review.

◆ **Germany:** Regulation was amended in July 2017. Expanded **the scope of business sectors subject to prior notification (in addition to arms, military engines, etc., weapons manufacturing devices, items designed for military use (electronic devices, video equipment, etc.).** Stipulated **cybertechnology and critical infrastructure, etc., as sectors subject to *ex post facto* review** and introduced focused reviews, etc.

◆ **UK:** Amended the Enterprise Act 2002 on June 11, 2018, to bolster investment control. Expanded the scope subject to review to include **military technology and advanced dual-use items, cyber security (quantum technology, general-purpose computers).**

In July 2018, rather than amending the existing Enterprise Act, a completely new framework to control investment based on national security concerns designed to align the United Kingdom with the investment control frameworks of other countries was put up for public comment.

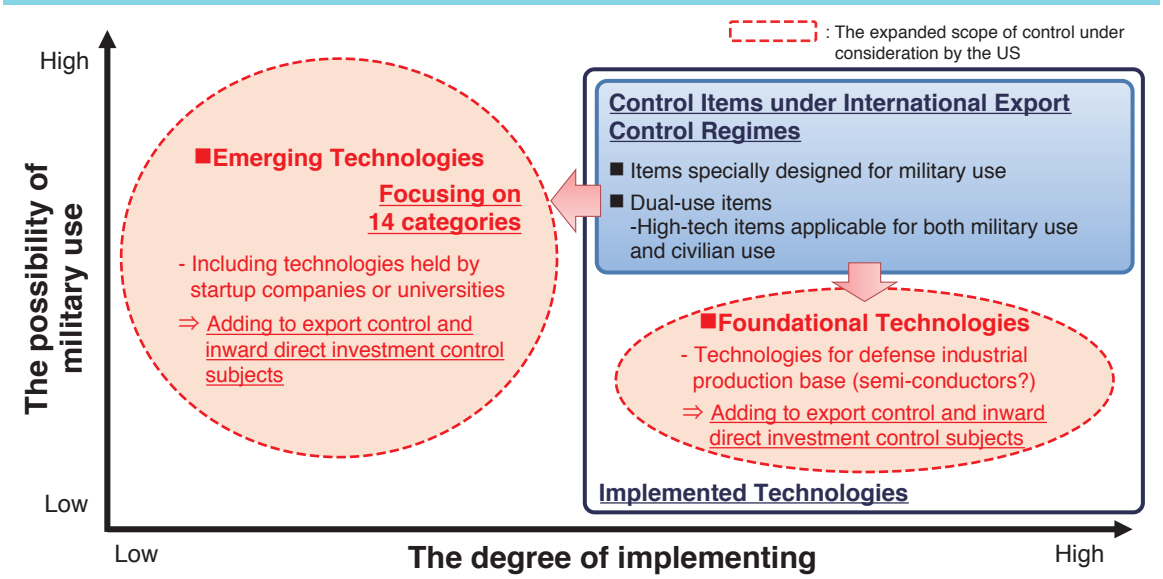
◆ **France:** The Action Plan for Business Growth and Transformation bill (PACTE bill), which included the reinforcement of investment control, was presented to the Council of Ministers on June 18, 2018. Article 55 of the PACTE bill on investment control was approved at the National Assembly in October, 2018. Cabinet Order expanded the scope of controlled business sectors in December, 2018, **adding strategic business sectors such as semiconductors, space, drones and security-related AI, cybersecurity, robotics, and mass storage data, etc.) as sectors subject to review.** Strengthened sanctions for non-compliance.

Source: Ministry of Economy, Trade & Industry (METI)

CHART 5

Expanding the scope of technologies subject to control

- Although control of emerging technologies has been discussed at the Wassenaar Arrangement or other occasions in recent years, there have been only sporadic discussions about each individual technology.
- On the other hand, the US is considering the expansion of the scope of technologies subject to control based on Export Control Reform Act (ECRA).



Source: Ministry of Economy, Trade & Industry (METI)

CHART 6

Basic thinking in terms of reviewing "economic policies more closely integrated with security"

Game changes and next steps

1. FDI controls: urgent action needed

Game changes

○ The household savings rate, which drives Japanese economic growth, has dropped to a seriously low level. Japan needs to grow inward FDI to create jobs and boost productivity.

○ Given growing concerns over the use of inward FDI to access sensitive technology and control companies engaged in business with a national security aspect, the US and various European countries are moving to close loopholes and strengthen their inward direct investment controls.

US: Foreign Investment Risk Review Modernization Act (FIRRMA) put into force. Focus on critical infrastructure, sensitive technologies, and personal information; addition of prior screening format; introduction of rules on information exchange with allies, etc.

Europe: Germany, the UK, and France have expanded those business types requiring prior notification and lowered stock acquisition thresholds, etc.

Issues requiring review

① Prior notification obligation scrapped for investment presenting limited national security risk, as long as it conforms with certain criteria

② Reduction in notification burden and ensuring the enforcement related to control of investment by foreign partners in investment limited partnerships and other entities without corporate status.

③ Responses to concerns
- Threshold lowered for ratio of stock acquisition in listed companies required to give notification (currently 10%)
- Addition of more actions subject to notification after stock acquisition (currently only changes to articles of association)

④ Formalization of information exchange with relevant administrative institutions in Japan and overseas

⑤ Clarification of government's investment criteria and review when and where required through dialogue with experts

2. Export controls: issues requiring consideration

Game changes

US: Recognizing the limits of international regime compliance, stronger controls have been introduced for emerging and foundational technologies and embargos placed on certain companies.

Europe: Considerations proceeding on introducing export controls for human rights protection

Issues requiring review

① Timely and effective decisions on items subject to export controls (current practice is compliance with international regimes)

② Handling of non-resident requirement for deemed exports

3. Other: Issues requiring consideration

Game changes

○ Cases that can't be handled through investment controls or export controls are emerging, such as personnel dispatch programs and solicitation of retired employees for the purpose of technology acquisition.

○ Governments are boosting the amount of government funds invested in domestic industry with the aim of securing technological superiority., etc.

Issues requiring review

② "Protecting"
- Balance between disclosure of R&D results and security demands
- Licensing policies related to R&D results
- Exim control from the perspective of sensitive technology control

① "Knowing"
Create the necessary mechanisms to grasp, share, and analyze sensitive technology information

③ "Developing"
- Promote R&D through focused budget allocation
- Build trustworthy supply chains
- Take information protection measures to promote international joint R&Dtechnology control

④ Division of roles between public and private sector
- Secure government's technical expertise, measures to reduce government and private sector legal compliance costs

⑤ Other issues
- Protection of data with security implications

Source: Ministry of Economy, Trade & Industry (METI)

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