Policy Recommendations on Supply Chain Resilience (March 31, 2025)

By the Study Group on Supply Chain Resilience

The Japan Economic Foundation (JEF) organized a study on how to strengthen supply chain resilience and published a report on it based on the discussions of experts on trade policy in the study group on March 31, 2025. The following is the essence of this report.

1. Current Situation and Issues

The supply chains that form the backbone of the Japanese economy are facing the risk of disruption. The causes of supply chain disruption include (1) physical risks (natural disasters such as earthquakes and floods, accidents, and infectious diseases) and (2) cyber risks (attacks targeting nuclear power plants, leakage of customer information from online shopping, etc.). However, what we are currently facing is a new (3) geopolitical risk associated with the rapid changes in the international situation caused by the relative decline of the United States as a superpower.

The issue of supply chain problems became more tangible to the general public in 2010, when the territorial dispute between Japan and China over the Senkaku Islands escalated into a geopolitical risk, leading to China imposing export restrictions on rare earths, a critical raw material for Japan's manufacturing industry. Additionally, during the Covid-19 pandemic that began in 2020 and persisted for several years, there were physical risks such as the shortage of essential medical supplies like masks and vaccines, and the risks associated with constrained semiconductor supplies. Regarding cyber risks, in 2022 a ransomware attack on Kojima Press Industry Co., Ltd., a supplier to Toyota Motor Corporation, forced Toyota to suspend operations at all its domestic factories, affecting the production of 13,000 vehicles.

In particular, (3) the risk of supply chain disruptions caused by geopolitical changes has been growing amid the escalating tensions between democratic nations and authoritarian states such as Russia and China, exacerbated by the ongoing Russia-Ukraine war since 2022 and the Israel-Gaza conflict that erupted in 2023. Furthermore, with the inauguration of the administration of President Donald Trump in the US in 2025, US foreign policy has shifted to "Make America Great Again" (MAGA), leading to high tariffs on China, the EU, Canada, Mexico, and others, which in turn are triggering retaliatory tariffs. These trends cannot be fully understood as mere conflicts between nations centered on social systems. For example, while the US promotes MAGA, some Southeast Asian countries are aiding Chinese propaganda claiming to be the defenders of free trade and eventually getting to join BRICS. The structure of the conflict is becoming more serious and complex. Of course, Japan is no exception. In this way, as postwar international rules and institutions such as the United Nations and the WTO are being undermined, the fragmentation and chaos of the international system are deepening. At the same time, economic security is gaining prominence, and many countries are implementing new trade policies and industrial policies to strengthen their domestic economies.

The accelerating power struggle between the US and China is heightening geopolitical tensions and giving rise to a multipolar structure in which major countries in various regions of the world are playing important roles. At the same time, the leadership of the US in international organizations such as the UN and the WTO, which had been declining for some time, is now considered even less likely to be effective under the Trump administration.

Thus, the challenge is how to mitigate the three types of supply chain disruption risks and strengthen resilience.

2. Responses by Companies

① Physical risk

To strengthen the resilience of supply chains, which play a key role in business activities, Japanese companies have been making a variety of efforts for a long time including collecting relevant information, developing alternative routes of procurement of raw materials, procurement by stockpiling or recycling, developing substitutes and promoting local production for local consumption by setting up production bases in partnering nations. Recently, an increasing number of companies are using AI for precise disaster predictions through data analysis and optimal distribution of relief supplies during disasters, as well as using personal disaster prevention assistants and using visualization of disaster risks and preventive measures.

② Cyber risk

From the perspective of self-protection, an increasing number of companies are collecting, processing, analyzing, and evaluating information on hostile cyberattack actors (such as countries, attack groups, and hackers) that pose a threat, focusing on their attack intentions, capabilities, and methods, and considering countermeasures.

③ Geopolitical risks

They have established an in-house organization of experts specializing in economic security issues, and have been working to prioritize issues and manage risks.

In addition to such efforts by private companies, it is important to

reduce dependence on specific countries and support domestic industries, both of which require significant government involvement. The former is a "trade policy" aimed at establishing a new trade order, while the latter is an "industrial policy" aimed at strengthening the Japanese economy. The following sections will provide detailed explanations of the policy responses.

The main characteristics of Japan's supply chain are as follows.

a. China's share of Japan's total imports peaked in 2020 and has been declining since then, but remains at a high level *(Table 1)*.

b. Japan is overwhelmingly dependent on imports from China for a large number of items *(Chart 1)*.

c. Japan's dependence on imports from China is high even for important strategic materials *(Table 2)*.

d. Dependence on China is particularly pronounced for rare metals

TABLE 1

Japan's import share by country (all items)

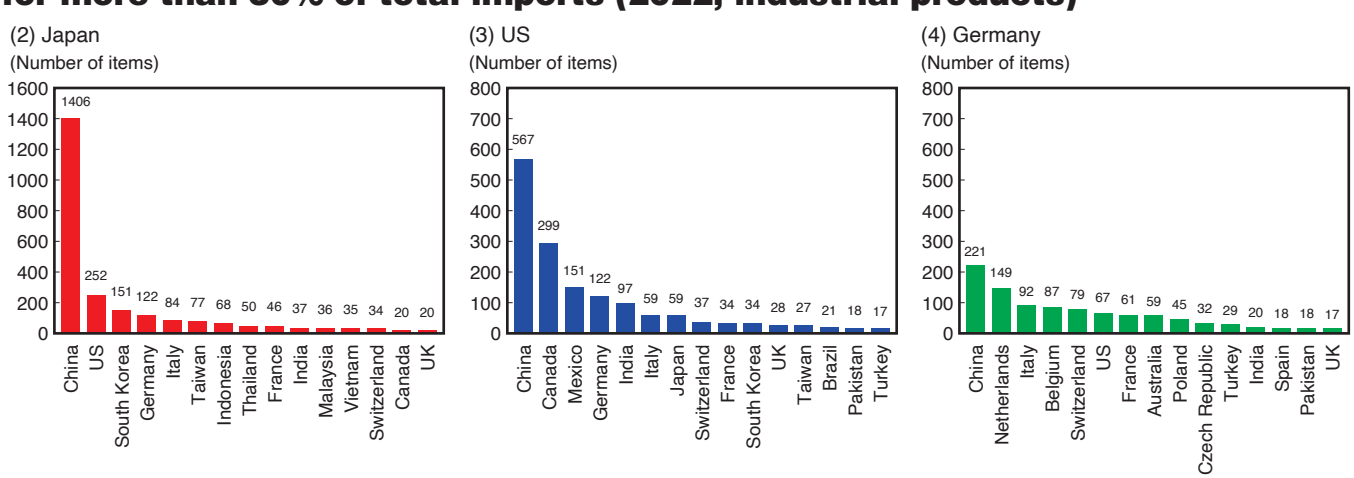
(unit: %)

2024 Rank	1	2	3	4	5	6	7	8	9	10	11	(Reference)	
Year	China	US	Australia	UAE	South Korea	Taiwan	Saudi Arabia	Vietnam	Thailand	Indonesia	Germany	EU	ASEAN
2000	14.5	19.0	3.9	3.9	5.4	4.7	3.7	0.7	2.8	4.3	3.4	12.3	15.7
2001	16.6	18.1	4.1	3.7	4.9	4.1	3.5	0.7	3.0	4.3	3.6	12.8	15.6
2002	18.3	17.1	4.2	3.4	4.6	4.0	3.4	0.7	3.1	4.2	3.7	13.0	15.3
2003	19.7	15.4	3.9	3.7	4.7	3.7	3.8	0.8	3.1	4.3	3.7	12.8	15.3
2004	20.7	13.7	4.3	4.0	4.8	3.7	4.1	0.8	3.1	4.1	3.7	12.6	14.8
2005	21.0	12.4	4.8	4.9	4.7	3.5	5.6	0.9	3.0	4.0	3.5	11.4	14.1
2006	20.5	11.7	4.8	5.5	4.7	3.5	6.4	0.9	2.9	4.2	3.2	10.3	13.8
2007	20.6	11.4	5.0	5.2	4.4	3.2	5.7	1.0	2.9	4.3	3.1	10.5	14.0
2008	18.8	10.2	6.2	6.2	3.9	2.9	6.7	1.2	2.7	4.3	2.7	9.2	14.0
2009	22.2	10.7	6.3	4.1	4.0	3.3	5.3	1.3	2.9	4.0	3.0	10.7	14.1
2010	22.1	9.7	6.5	4.2	4.1	3.3	5.2	1.2	3.0	4.1	2.8	9.6	14.6
2011	21.5	8.7	6.6	5.0	4.7	2.7	5.9	1.4	2.9	4.0	2.7	9.4	14.6
2012	21.3	8.6	6.4	5.0	4.6	2.7	6.2	1.7	2.7	3.6	2.8	9.4	14.6
2013	21.7	8.4	6.1	5.1	4.3	2.8	6.0	1.7	2.6	3.5	2.9	9.4	14.1
2014	22.3	8.8	5.9	5.1	4.1	3.0	5.8	1.9	2.7	3.2	3.0	9.5	14.3
2015	24.8	10.3	5.4	3.6	4.1	3.6	3.9	2.3	3.2	3.0	3.1	11.0	15.1
2016	25.8	11.1	5.0	2.8	4.1	3.8	3.2	2.7	3.3	3.0	3.6	12.3	15.2
2017	24.5	10.7	5.8	3.1	4.2	3.8	4.1	2.8	3.4	3.0	3.5	11.6	15.3
2018	23.2	10.9	6.1	3.7	4.3	3.6	4.5	2.8	3.4	2.9	3.5	11.8	15.0
2019	23.5	11.0	6.3	3.6	4.1	3.7	3.8	3.1	3.5	2.5	3.5	12.4	15.0
2020	25.7	11.0	5.6	2.6	4.2	4.2	2.9	3.5	3.7	2.4	3.3	11.5	15.7
2021	24.0	10.5	6.8	3.5	4.1	4.3	3.6	3.0	3.4	2.5	3.1	11.1	14.7
2022	21.0	9.9	9.8	5.1	3.7	4.3	4.8	2.9	3.0	3.2	2.5	9.7	14.9
2023	22.1	10.5	8.2	4.7	4.0	4.5	4.4	3.3	3.3	3.1	2.9	10.4	15.3
2024	22.5	11.3	7.1	5.0	4.2	4.1	4.0	3.6	3.3	3.1	2.9	10.5	15.7

Source: Compiled by the study group based on Ministry of Finance & CEIC data

CHART 1

Number of items whose import share depends on a specific country or region for more than 50% of total imports (2022, industrial products)



Note: Excluding HS 2-digit codes 1 to 24, the total number of items was calculated for all 4,344 HS 6-digit codes with import records in Japan, the US, and Germany.
Source: METI White Paper on International Economy & Trade (2024), 176P

TABLE 2

Import dependence on important strategic materials (2024)

Items		Imports (billion yen)	HHI	Import share					
				1st place		2nd place		3rd place	
				Country/Region	Share	Country/Region	Share	Country/Region	Share
Antimicrobial agents		**674.2**	**10.1**	**Canada**	**17.8**	**Indonesia**	**15.1**	**China**	**11.9**
Fertilizers		**1,126.2**	**21.1**	**China**	**39.1**	**Canada**	**18.8**	**Malaysia**	**10.3**
Permanent magnets		**980.9**	**26.4**	**China**	**33.2**	**Philippines**	**29.7**	**Vietnam**	**24.8**
Machine tools and industrial robots		**856.8**	**14.7**	**China**	**27.5**	**Germany**	**19.3**	**Thailand**	**11.5**
Aircraft parts		**3,520.6**	**53.3**	**US**	**72.4**	**France**	**5.3**	**South Korea**	**4.0**
Semiconductor devices and integrated circuits		**51,914.8**	**21.8**	**Taiwan**	**42.3**	**China**	**11.1**	**US**	**10.3**
854239	Other integrated circuits	15,417.0	35.3	Taiwan	57.6	Thailand	6.3	US	6.2
854321	Processors and controllers	15,236.1	40.2	Taiwan	62.0	US	7.1	China	6.9
848620	Equipment for manufacturing professional semiconductor devices or integrated circuits	4,091.4	19.7	Netherlands	28.8	US	24.3	Singapore	19.9
854232	Professional memory elements	3,558.3	39.0	Taiwan	57.5	South Korea	20.8	China	11.6
848690	Parts and accessories for semiconductor manufacturing equipment	2,937.2	18.1	US	31.8	South Korea	22.6	China	12.9
381800	Wafers	1,934.6	17.4	China	25.4	US	23.2	South Korea	16.1
854143	Photovoltaic cells	1,624.7	69.9	China	82.5	Philippines	13.6	Taiwan	2.3
903141	Equipment for inspecting semiconductor wafers or semiconductor devices	1,194.6	39.2	Singapore	54.9	US	28.1	Israel	10.0
Storage batteries		**5,375.2**	**51.3**	**China**	**70.2**	**South Korea**	**13.3**	**Singapore**	**3.1**
850760	Lithium-ion batteries	4,018.0	60.2	China	76.8	South Korea	9.9	Singapore	4.2
850790	Replacement parts for storage batteries	680.3	71.8	China	84.4	US	4.2	Philippines	4.0
850710	Lead-acid batteries for starting piston engines	457.3	41.4	South Korea	62.6	Germany	11.8	China	6.8
Combustible natural gas		**62,332.8**	**20.1**	**Australia**	**38.8**	**Malaysia**	**15.1**	**Russia**	**8.8**
Metal minerals		**11,928.7**	**23.4**	**South Africa**	**45.7**	**China**	**10.4**	**Chile**	**6.6**
Ship parts		**2,850.8**	**15.0**	**China**	**33.7**	**US**	**9.5**	**South Korea**	**8.7**

Note: HHI is the Herfindahl-Hirschman Index. The closer the index is to 100, the higher the concentration.
Source: Compiled by the study group based on the Ministry of Finance

and rare earth elements. *(Tables 3 & 4)*.

On the other hand, restructuring supply chains takes time and requires consideration of economic efficiency. Therefore, while redoubling efforts to stabilize external relations by eliminating and mitigating geopolitical risks and pursuing common interests, it is a major challenge to reduce excessive dependence on specific countries and achieve the best mix of supplies from other countries.

3. Policy Responses

① Government response to physical risks

The expected policy responses include preparing countermeasures or preventive measures against natural disasters (including infectious diseases), training local residents to mitigate disaster damage, and promoting public-private partnerships for terrorism prevention (such as joint training to prevent terrorism in advance) and international cooperation to combat international terrorism.

② Government response to cyber risks

Recently, with the advancement of digitalization, cyber attacks have become an important issue as a risk to the new supply chains that have emerged in recent years. The following measures can be considered as countermeasures.

Recently, there have been warnings about attack patterns originating from network boundaries. With the spread of teleworking, there have been cases of attacks originating from home Wi-Fi routers, and the IPA, an independent administrative agency of the Ministry of Economy, Trade and Industry, is issuing detailed warnings about this issue.

Among these warnings, it is particularly important for corporate executives to understand cyber threats and the current cyber situation. It is becoming increasingly important to share data that can help companies assess their risks, such as what types of companies and technologies are being targeted and how this could lead to a decline in economic power.

The government is focusing on proactive cyber defense, with particular emphasis on strengthening public-private cooperation. Sharing cyberattack information between companies and the government to protect against attacks is a policy that will be promoted going forward. Given the presence of intelligence information from foreign sources, it is essential to establish a security clearance system to provide such sensitive information within its framework. Additionally, sharing cyberattack information detected through communication networks with the private sector is also necessary. To implement proactive cyber defense effectively, it is crucial to establish a security clearance system and enhance the capabilities of private companies to obtain clearance qualifications, as these measures are essential for safeguarding the supply chain.

③ Government response to geopolitical risks

(1) Response from the perspective of trade policy: rules-based response

The expansion of geopolitical risks caused by the confrontation between superpowers raises concerns about the establishment of an international order based on power rather than rules. Russia's invasion

of Ukraine is a clear violation of the UN Charter. If this is allowed to stand, it would effectively mean recognizing "force-based" changes to the status quo and rejecting a "rules-based" international order. The Trump administration's unfounded tariff hikes are also a clear violation of WTO rules. Such "power-based" dominance means increased uncertainty in the business environment, leading to instability in supply chains and significant negative impacts on the global economy. To address this, the following measures, starting with filing complaints with the WTO, can be considered.

TABLE 3

Import dependency on rare metals and rare earths (2024) ①

Items		Amount (billion yen)	HHI	Import share					
				1st place		2nd place		3rd place	
				Country/Region	Share	Country/Region	Share	Country/Region	Share
250410	Natural black ship (powder or flake)	79.8	73.9	China	85.7	Madagascar	4.0	Sri Lanka	2.6
250490	Natural black ship (other)	13.2	92.2	China	96.0	Sri Lanka	4.0	US	0.1
380110	Artificial black ship	205..2	37.3	China	58.4	US	10.6	Poland	9.6
380190	Other black ships	36.0	91.9	China	95.8	Malaysia	1.2	Sweden	1.2
260200	Manganese ore and manganese ore containing iron	332.0	50.7	South Africa	64.1	Gabon	30.6	Austria	4.9
260400	Nickel ore (including concentrates)	58.5	51.5	New Caledonia (France)	58.8	Philippines	41.2	South Africa	0.0
261000	Chrome ore (including concentrates)	36.8	51.5	Pakistan	66.4	South Africa	26.7	China	3.9
261100	Tungsten ore (including concentrates)	0.0	100.0	Portugal	100.0				
261220	Thorium ore (including concentrates)	0.1	100.0	India	100.0				
261310	Molybdenum ore (including concentrates) roasted	1,197.9	47.7	Chile	66.2	US	17.9	Mexico	6.8
261400	Titanium ore (including concentrates)	503.1	30.1	Canada	44.7	South Africa	24.5	India	19.4
261510	Zirconium ore (including concentrates)	68.8	46.0	Australia	66.0	Senegal	11.4	Indonesia	6.6
261590	Niobium ore, tantalum ore, vanadium ore (including concentrates)	2.7	25.6	Rwanda	30.8	Burundi	25.1	Indonesia	24.4
280450	Boron and tellurium	5.5	35.1	Germany	41.0	US	38.4	Canada	18.8
280490	Selenium	0.4	94.0	Germany	96.9	US	3.1		
280530	Rare earth metals, scandium, and yttrium (regardless of whether they are mixed or alloyed with each other)	372.7	50.5	Vietnam	65.8	China	25.2	Thailand	8.8
284610	Cerium compounds	71.1	51.2	France	68.4	China	18.4	Taiwan	9.4
284690	Other rare earth metals, inorganic or organic compounds of yttrium or scandium, and mixtures of these metals, whether or not in organic compounds	226.3	69.3	China	82.9	Italy	6.0	Philippines	2.8

Note: HHI is the Herfindahl-Hirschman Index. The closer the index is to 100, the higher the concentration.
Source: Compiled by the study group based on the Ministry of Finance

TABLE 4

Import dependency on rare metals and rare earths (2024) ②

Items		Amount (billion yen)	HHI	Import share					
				1st place		2nd place		3rd place	
				Country/Region	Share	Country/Region	Share	Country/Region	Share
711011	Platinum (unprocessed and powdered)	2,109.7	74.0	South Africa	85.5	Belgium	3.6	Italy	3.0
711019	Platinum (other)	147.2	36.2	Taiwan	54.0	Switzerland	3.2	South Korea	10.1
711021	Palladium (unprocessed and powdered)	1,856.6	43.1	South Africa	57.7	Russia	31.0	US	3.1
711031	Rhodium (unprocessed and powdered)	1,353.9	70.4	South Africa	82.9	Germany	13.0	Italy	1.4
711041	Iridium, osmium, and ruthenium (unprocessed and powdered)	1,225.9	69.2	South Africa	82.2	Germany	12.3	UK	2.9
810110	Tungsten (powder)	14.2	58.0	China	75.1	Germany	11.0	US	4.8
810194	Tungsten lumps (including rods obtained by simple sintering)	52.8	100.0	China	100.0	US	0.0	UK	0.0
810196	Tungsten (wire)	15.3	60.1	China	73.4	India	25.1	US	0.9
810197	Tungsten (scrap)	27.9	22.8	China	38.4	Germany	24.7	Taiwan	9.4
810199	Tungsten (other)	60.5	43.3	China	62.6	Austria	18.8	Germany	4.3
810210	Molybdenum (powder)	26.2	49.8	Germany	53.5	China	46.0	US	0.5
810294	Molybdenum ingots (including rods obtained by simple sintering)	37.9	99.2	China	99.6	US	0.4		
810295	Molybdenum (rods (excluding those obtained by simple sintering), shapes, plates, sheets, strips, and foils)	24.4	44.8	China	54.4	Austria	38.6	US	3.5
810297	Molybdenum (scrap)	46.4	23.8	China	33.4	Austria	25.5	Taiwan	23.4
810299	Molybdenum (other)	12.3	29.9	China	45.3	Austria	26.5	Bulgaria	12.3

Note: HHI is the Herfindahl-Hirschman Index. The closer the index is to 100, the higher the concentration.
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i. Maximum utilization of the WTO and reform of the WTO, including dispute settlement mechanisms and rule-making functions

The principles of free and non-discriminatory trade, such as the most-favored-nation treatment principle and the national treatment principle, which form the foundation of WTO rules, can be said to exist precisely for the purpose of strengthening supply chains. The restoration of WTO functions – rule-making and enforcement, promotion of liberalization, and dispute settlement – is the very foundation for strengthening supply chains. However, as is well known, the dispute settlement mechanism, which is the cornerstone of the WTO, is currently in a critical state because the Appellate Body, which holds the final authority on dispute settlement, cannot function due to US opposition to the appointment of Appellate Body members. Indeed, it is also a fact that the recent decisions of the Appellate Body, which independently interpreted unclear parts of WTO rules and effectively replaced the legislative function, cannot be easily dismissed as unfounded criticism. The restoration of judicial functions through the clarification of the Appellate Body's functions, along with the restoration of rule-making functions based on consensus, is an urgent task. The inability to establish rules commensurate with the severity of 21st-century technological hegemony struggles, such as economic security, is eroding the trust of WTO member states. Reforms to the WTO's dispute settlement mechanisms and legislative processes and decision-making rules are the first step toward strengthening supply chains.

However, the need for reform does not mean that the WTO should not be utilized. Suppose the US administration imposes tariffs on Japanese products without reasonable grounds. Would Japan respond with retaliatory tariffs? This could lead to a global trade war. Japan should file a complaint with the WTO without worrying about an appeal into the void and begin bilateral negotiations. Furthermore, depending on the progress of bilateral negotiations, Japan should consider revising the Japan-US Trade Agreement and amending the Foreign Exchange and Foreign Trade Act. Additionally, Japan should collaborate with economists worldwide to highlight the risks that tariff hikes could push the global economy, including the US, into stagflation. Regarding China, the following options under point i-2 could be considered.

i-2. Utilization of the WTO and MPIA (Multi-Party Interim Appeal Arbitration Arrangement)

Measures that violate WTO rules should be actively considered, including filing complaints with the WTO (including MPIA).

The MPIA is a mechanism designed to resolve disputes through arbitration when a party is dissatisfied with a WTO panel ruling, as appealing to the Appellate Body would result in an appeal into the void. As of March 2025, 53 countries have joined the MPIA. Both China and Japan are participants, and disputes with China can be resolved through a combination of WTO panels and the MPIA. For example, the unresolved issue of the treatment of radioactive wastewater from the Fukushima nuclear power plant is a prime example. Given that China itself emphasizes the importance of rules-based dispute resolution, it is advisable to actively utilize the MPIA as a means to resolve disputes with China in accordance with established rules.

ii. FTA strategies

Although the role of the WTO, which has 166 member countries and regions, remains important, forming a multilateral consensus to realize trade based on rules rather than values is a difficult task in the immediate future. Amid rising geopolitical risks, the most important issue is the integrated realization of free trade and investment and economic security. Furthermore, free trade and investment and economic security are not necessarily mutually exclusive. For example, diversifying supply chains through economic partnership agreements consistent with WTO rules and securing resources, energy, and food through free trade can contribute to economic security. Free Trade Agreements (FTAs) and Economic Partnership Agreements (EPAs) are the most effective means of achieving the integrated realization of free trade and investment and economic security.

Furthermore, as a strategy to overcome the vulnerability of supply chains exacerbated by divisions in the international community, such as the US-China rivalry, there is a concept known as "friend-shoring". In other words, it is an attempt to minimize dependence on hostile or untrustworthy trading partners by fostering economic relations between countries that share common values (like-minded countries). However, excessive friend-shoring is by no means the optimal solution, especially for countries like Japan that rely heavily on overseas resources, energy, and food. To achieve the integrated realization of free trade and investment and economic security, it is important to diversify trade and investment partners and regions, regardless of their political systems or values, and to avoid the risk of supply chain disruptions, provided that they clearly support the principles of free trade. China is Japan's largest trading partner, and it is a reality that Japan depends on China for many mineral resources. While taking measures for economic security, it is important to promote free trade and investment. In this regard, the RCEP strengthens the relationship between ASEAN countries and their main partners, Japan, China, and South Korea.

Of course, we must not overlook the important role that friend-shoring plays in strengthening geopolitical stability and political security. For example, the Quad (Japan-US-Australia-India Quadrilateral Security Dialogue) is a typical example of friend-shoring, with a focus on securing the supply chains for semiconductors and rare earths, which are essential for technological innovation and industrial development. From the perspective of maintaining technological superiority against countries engaged in strategic competition or countering the potential threat of economic coercion, friend-shoring is of significant importance.

FTAs and EPAs provide a structural framework for trade liberalization, economic cooperation, and investment facilitation, fostering strong, interconnected supply chains among member countries. For example, the CPTPP promotes trade liberalization and supply chain integration among 11 Pacific Rim countries, including Japan, Canada, and Australia, as well as the United Kingdom. By reducing trade barriers and fostering economic cooperation, the CPTPP enables member countries to form resilient and interconnected supply chains.

Furthermore, the Japan-EU EPA aims to facilitate trade and investment relations between Japan and the EU by providing a foundation for cooperation in areas such as environmental technology

and digital rules. In this way, the CPTPP and the Japan-EU EPA, in particular, support friend-shoring by reducing trade barriers between allied countries with close trade relations. Furthermore, they promote investment in strategic industries such as semiconductors, renewable energy, and advanced manufacturing, while improving market access and ensuring the smooth flow of goods between member countries by enhancing supply chain resilience.

iii. Utilization of the plurilateral agreements

FTAs and EPAs are, in essence, multilateral agreements between countries. In contrast, plurilateral agreements are issue-based multilateral agreements in the trade domain, enabling responses to sector-specific challenges, allowing participating countries to select their partners, and facilitating early adaptation to new industry needs such as digitalization. Currently, negotiations on e-commerce under the WTO are being conducted as one of the initiatives by like-minded countries toward establishing new rules within the WTO. In July 2024, a "Stabilized Text on the Agreement on Electronic Commerce" was published. This serves as a concrete example of a plurilateral agreement and marks the first step toward the formation of global digital trade rules. In this way, it also enables countries to take the lead in establishing new rules by leveraging the benefits mentioned earlier.

iv. Diversification of critical supply chains

Diversifying supply chains by expanding the range of suppliers and production bases is important for mitigating risks associated with geopolitical tensions, trade restrictions, and economic pressure. This will increase the flexibility and resilience of supply chains, making it easier to mitigate the effects of global economic fragmentation.

To achieve this, a multifaceted strategy is necessary. In addition to utilizing FTAs and EPAs, it is essential to increase domestic production and invest in emerging markets in the so-called Global South, particularly in Africa and Latin America, to develop new sources of critical minerals and other raw materials. The importance of the Global South, led by India, lies in its large young population and high potential as a consumer and labor market.

In Asia, strengthening trade and investment ties with countries such as India, Vietnam, and Indonesia can reduce dependence on traditional hubs like China. These countries offer low labor costs, growing industrial bases, and strategic locations within the Indo-Pacific supply chain. For example, Vietnam has become a key player in the electronics industry, while Indonesia is emerging as a hub for nickel production, a critical material for electric vehicle batteries. Of course, many Global South countries face numerous challenges, including the need for investment in infrastructure to support mass production and exports, as well as adapting to different regulations, labor practices, and environmental policies. However, considering that the diversification of supply chains is essential for long-term economic resilience and security, it is extremely important today, when geopolitical risks are expected to continue for the long term. In terms of trade policy, it is important to expand the membership of existing FTAs and EPAs and conclude new ones with countries, such as the Mercosur nations. In particular, negotiations toward the EU's accession to the CPTPP are highly desirable, as members share common characteristics and the benefits derived from traditional rules-based multilateralism, and could serve as a steppingstone toward the revitalization of the WTO.

Among the Global South, relations with India, which is considered a champion of this group of nations, are extremely important. India is strategically located in the Indian Ocean, connecting Africa and ASEAN, and has easy access to both markets. In addition to this geopolitical importance, India is currently pursuing a "Make in India" policy, which aims to dramatically boost economic and industrial development. How to integrate such a country into Japan's supply chain is a major challenge.

v. Responding to economic coercion through rule-making

In specific markets, can international rules regulate economic coercion by countries that have significant market power due to economies of scale? One option is to discuss this issue in international forums, such as the OECD, where agreements are not binding.

(2) Responses from the perspective of industrial policy: strengthening economic security and building resilient supply chains

Current industrial policies are increasingly focused on creating a broad strategy that aims to foster long-term technological innovation and robust supply chains from an economic security perspective, separate from the protection of specific sectors, and to create an environment that enables such innovation. Such industrial policies, which do not involve the protection of specific sectors, seek to implement non-protectionist policies by providing financial incentives for research and development, infrastructure investment, and public-private partnerships. This is typically seen in fields such as AI, advanced semiconductors, and electric vehicle batteries. Additionally, special consideration is important to prevent the outflow of economically significant technologies through the use of foreign exchange laws.

Industrial policies vary depending on a country's economic structure and policy advantages, making international harmonization extremely difficult. On the other hand, China's industrial policies heavily rely on extensive state-sponsored subsidies to dominate strategic global industries such as electric vehicles, solar panels, and semiconductors. These subsidies provide Chinese companies with significant cost advantages through direct financial support, tax exemptions, and preferential access to funds, thereby expanding their share of the global market. These Chinese subsidies can be said to create unfair competition in the global market.

i. Complementing WTO rules and forming new rules

Although China claims to support a rules-based international trade order, it must be said that many of the policies it is implementing in terms of trade and industrial policy are inconsistent with international rules.

In order to correct China's excessive production and unfair competition caused by subsidies, the current WTO subsidy rules are insufficient to regulate the scale and opacity of Chinese subsidies. It may be time to begin discussions within the WTO and other forums on establishing rules to ensure the transparency and fairness (equity) of subsidies. In doing so, it may be worthwhile to begin discussions with

a focus on "economies of scale", as mentioned earlier in the section on "economic coercion". In addition to rule-making in multilateral forums, like-minded countries such as the EU states, Japan, the US, Canada, and Australia could consider establishing guidelines that include mechanisms to penalize anti-competitive behavior related to permissible subsidies.

ii. Promoting cooperation on industrial policy through regional cooperation (e.g., IPEF, FTAs, and EPAs) (US participation is desirable, but it is also important to consider frameworks with major countries such as the EU states, Canada, Australia, South Korea, and India, even without US participation)

Cooperation between like-minded countries in industrial policy regarding important sectors (semiconductors, critical minerals, environmental technology, etc.) has the potential to enhance supply-chain resilience and foster technological innovation. RTAs such as the CPTPP and the Japan-EU EPA provide platforms that enable such cooperation. This will further facilitate regulatory harmonization, promote trade and investment in strategic industries, and strengthen the overall economic security of the group.

iii. Enhancing "strategic indispensability" as a response to economic coercion

The market dominance of key industries by superpowers and economic coercion stemming from this dominance have emerged as major geopolitical risks. Examples include the 2010 territorial dispute between Japan and China over the Senkaku Islands, which led to China imposing restrictions on rare earth exports, and China's imposition of trade restrictions on Australian exports such as coal and wine in response to Australia's request for an independent investigation into the origins of the coronavirus in 2020.

In addition, the US has begun to use economic policy tools such as economic sanctions and tariffs as means of diplomatic policy, and there are growing concerns among US allies about the risks posed by excessive dependence on US technology. In particular, the Trump administration's tariffs on steel and aluminum have been imposed not only on rival China but also on other regions, demonstrating that even countries considered friendly to the US may face economic coercion if their policies are perceived as contrary to US interests. This has heightened concerns about excessive reliance on US-dominated supply chains, technology, and financial systems.

To address such economic coercion, it is important to diversify supply chains as mentioned above. At the same time, it is crucial for countries to increase domestic production capacity and promote technological innovation in key industrial sectors such as semiconductors, thereby strengthening their economies and reducing dependence on a single country. In addition to semiconductors, environmental technologies such as electric vehicle batteries, solar panels, and hydrogen fuel cells are good examples. Currently, while China holds a very large share of production in many renewable energy-related products such as lithium-ion batteries and solar cells, the US remains a leader in environmental technology patents.

This also means that by raising self-sufficiency and in some cases creating products that countries exerting economic coercion must depend on, it would be possible for those non-superpowers to increase their own "strategic indispensability" and deter economic coercion.

The pursuit of strategic indispensability aimed at deterring such economic coercion is also evident in efforts to develop unique digital infrastructure. From data privacy frameworks to telecommunications networks, the digital ecosystem is increasingly recognized as an area where dependence on foreign countries creates serious vulnerabilities. The implementation of the EU's General Data Protection Regulation (GDPR) not only enables the EU to reduce its dependence on US technology by establishing global standards for data privacy but also lays the foundation for developing a digital ecosystem with independent sovereignty.

Furthermore, investment in cutting-edge communication infrastructure such as 5G networks has broad strategic significance. By cultivating their own digital ecosystems, they can acquire the ability to protect data, maintain security, and guarantee economic sovereignty. Pursuing such strategic indispensability not only contributes to the strengthening of supply chains but also advances the restructuring of the global power balance, reduces asymmetries that enable the success of economic coercion, and contributes to the realization of a stable and fair international system. Additionally, it is crucial to prevent the outflow of technologies that create "strategic indispensability". However, it is necessary to maintain sufficient communication to ensure that the pursuit of such "strategic indispensability" is not perceived as economic coercion toward third countries.

(3) Cooperation and competition with China

China has also applied to join the CPTPP, but it is necessary to thoroughly examine whether it truly meets the requirements for membership. We should speak up and engage in frank discussions. With regard to trade measures that are unacceptable, such as restrictions on graphite exports, it may be necessary to file a complaint with the WTO.

On the other hand, global issues such as environmental problems and aging populations are common challenges that we face as neighbors, and we should engage in frank exchanges of information and opinions. The channels for such exchanges should be maintained. This is because open exchanges of opinions as friends and neighbors on common issues could provide a breakthrough for resolving issues that are currently causing conflict.

(4) Response from the perspective of foreign policy: how to deal with global governance

The second Trump administration in the US is expected to prioritize its "America First" policy, raising concerns about friction with allies, particularly in Europe. Cooperation with international organizations and international agreements is also unlikely, and the US is not expected to take the initiative in global governance. Against this backdrop, the US, led by Secretary of State Marco Rubio, quickly launched the Quad Security Dialogue. It is important to maximize cooperation through this framework.

On the other hand, it is also important for the so-called middle powers, such as the EU, the UK, and Japan, to exert their influence. Japan's contribution to global governance through such like-minded

countries is expected. If continued participation by the US in global governance is essential, the G7 will remain important. However, if it is better to increase the number of like-minded countries, it would be a good idea to consider a mechanism such as a G9 or G10 by adding Australia and South Korea. Additionally, given the importance of the Indo-Pacific region, specialized security frameworks such as the Quad should be fully utilized.

4. Conclusion

There are three types of risks that must be addressed to strengthen supply chains: (1) physical risks, (2) cyber risks, and (3) geopolitical risks. Close cooperation between the public and private sectors is essential. In addition to efforts by the private sector, it is particularly important to implement the policies mentioned above to address geopolitical risks. Furthermore, effective measures cannot be taken without information sharing. Cyber security is a good example of this.

From the perspective of trade policy strategy, unfortunately, the influence of multilateralism is currently declining. In response, we should pursue layered globalization. This involves building multifaceted, multi-layered cooperation through regional, bilateral, or issue-specific plurilateral agreements. This will allow countries to selectively engage in partnerships that align with their interests. Global consensus is not necessary. As a result, the WTO remains important, but even if the functions of international organizations and rules covering a wide area, such as the WTO, decline, it will still be possible to ensure a certain level of international cooperation and norms.

Another important advantage is flexibility. Since it is permissible to assert specific needs and priorities, participating countries can make decisions independently of major countries. In addition, because international cooperation is duplicated, cooperation can be maintained even if one cooperative relationship breaks down. This also strengthens interdependence among like-minded countries. Of course, careful management is essential to ensure that such cooperation does not lead to the exclusion of others.

The utilization of international organizations or meetings that are characterized by non-binding, open exchanges of opinions is also important in terms of brainstorming. Specific examples include the OECD and APEC. These are ideal forums for discussing solutions to new challenges such as economic coercion and the harmonization or collaboration of industrial policies.

The key word for this era is cooperation. “Cooperation between the public and private sectors”, “multilayered international cooperation” and “information sharing” are the key phrases for overcoming difficult situations. JS

POINT

Policy Recommendations Toward a More Resilient Supply Chain
Points

JEF Japan Economic Foundation

I. Current status and issues of the three risks

① **Physical risk**
- Natural disasters such as earthquakes and floods, and a land prone to disasters: in recent years, these disasters have become more frequent and severe.
- Accidents, battles, terrorism, infectious diseases: risks are increasing due to instability in the international situation.

② **Cyber risk**
- Frequent cyber attacks from outside the network perimeter increase the risk of supply chain disruptions.

③ **Geopolitical risk**
- Expanded due to the Russia-Ukraine war, the Israel-Hamas conflict, and the US-China rivalry

→Fragmentation of the international system, G-zero situation →Economic security and supply chain resilience as key issues

→How can we reduce our high dependence on trade with specific countries for important products (such as critical minerals) and mitigate the economic coercing exerted by those countries? At the same time, how can we promote economic efficiency through trade?
- The US MAGA (Make America Great Again) tariff policy is causing serious confusion.

II. Responses by companies

① **Physical risk**
- AI-based disaster prevention

Precise disaster prediction through data analysis, optimal distribution of relief supplies during disasters, personal disaster prevention assistants, visualization of disaster risks and preventive measures

② **Cyber risk**
- Sharing data to help assess the risk of companies being targeted

③ **Geopolitical risk**
- Corporate efforts (development of alternative routes, stockpiling of critical goods, development of substitutes, local production for local consumption, risk management for economic security)

III. Policy responses

① **Physical risk**
- Terrorism prevention through public-private cooperation

Collaboration with managers of large commercial facilities where large numbers of unspecified individuals gather (joint training for the prevention of terrorism, etc.)
- Realization of international cooperation for the promotion of international counter-terrorism measures

② **Cyber risk**
- It is important to strengthen public-private cooperation for proactive cyber defense and to establish a security clearance system for that purpose.

③ **Geopolitical risk**

(1) Response from the perspective of trade policy

→ Realization of rules-based layered globalization

i. WTO reform, including dispute settlement mechanisms, and utilization of the MPIA arbitration body in the immediate term

ii. FTA strategy (in addition to fostering economic relations with like-minded countries and realizing friend-shoring, cooperation with trading partners that support free trade principles despite differing values). Utilization of the CPTPP, RCEP, Japan-EU EPA, and Quad; consideration of EU accession to the CPTPP

iii. Utilization of the Pluri-Agreement

iv. Diversification of important supply chains (cooperation with the Global South, such as India, Vietnam, and Indonesia)

v. Responding to economic coercion through rule-making

(2) Responses from an industrial policy perspective

→ Strengthening economic security

i. Complementing WTO rules (subsidy rules)

ii. Promoting cooperation in industrial policy through RTAs

iii. Enhancing strategic indispensability as a countermeasure against economic coercion

(3) Cooperation and competition with China

→ Consistent counterarguments and criticism in trade policy and cooperation on global issues

(4) Response from a foreign policy perspective

→ Responding to global governance
- Utilization of the Quad
- Utilization of middle power

Source: The Study Group on Supply Chain Resilience

JEF initiated the Study Group on Supply Chain Resilience with prominent Japanese experts in January 2025 and concluded its role in March 2025.