

# White Paper on Manufacturing Industries 2025

(FY2024 Measures to Promote Core Manufacturing Technology)

## Summary

May 2025

Ministry of Economy, Trade and Industry, Ministry of Health, Labour and Welfare, and Ministry of Education, Culture, Sports, Science and Technology



経済産業省



厚生労働省



文部科学省

# White Paper on Manufacturing Industries 2025

- A statutory report based on the Basic Act on the Promotion of Core Manufacturing Technology, which was established in 1999 under the sponsorship of legislators and enforced in the same year. The report is submitted to the Diet annually, starting from 2001. This is the 25th report.
- Prepared jointly by three ministries: Ministry of Economy, Trade and Industry (METI), Ministry of Health, Labour and Welfare (MHLW), and Ministry of Education, Culture, Sports, Science and Technology (MEXT)
- Composed of two parts: Part 1 describing the challenges and initiatives to be addressed and implemented by the government in the year; and Part 2 compiling a range of measures carried out to promote the manufacturing industry.

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**Chapter 4: Strengthening competitiveness of Japan’s manufacturing industry (METI)**

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### Part 2: Policy Measures Taken in FY2024 for Promoting Core Manufacturing Technology

# Summary of White Paper on Manufacturing Industries (1)

- Recently, many countries in the world have been accelerating the development of industrial policies, while addressing the three themes of industrial competitiveness, decarbonization and economic security in combination. **Given the increasingly uncertain business environment, manufacturing companies should consider issues related to decarbonization and economic security comprehensively and promote medium- to long-term growth investment strategies while incorporating such consideration.**
  - For the purpose of strengthening industrial competitiveness, **manufacturing companies should promote DX strategies to improve their earning power and accelerate GX promotion and other efforts.**
- In the area of economic security, 60% of the manufacturing companies are yet to take appropriate measures, due to difficulties identifying and analyzing business risks and building internal understanding of this issue. Many of the leading companies in this area have determined that benefits will more than offset costs in the medium to long term, with quite a few carrying out company-wide activities to build internal understanding. In order to move forward further in this area, the government will work to enhance public-private dialogue and understanding on relevant issues.

Current situation

## DX for strengthening competitiveness of manufacturing industry

- Digitalization and efficiency strategies promoted by individual companies have produced a certain degree of effect.
- While many manufacturing companies have begun conducting activities in **advanced and extensive areas chiefly related to product, service, and business model transformation** in order to improve their earning power, they are having **difficulties generating adequate effect.**

## Sustainable growth of manufacturing companies in consideration of economic security

- **About 60% of manufacturing companies are yet to implement measures for economic security,** indicating slow progress in this area compared to environmental efforts, such as for decarbonization, and DX initiatives.
- The most popular benefits reported by companies that have implemented economic security measures are for “business continuity.” Many manufacturing companies have determined that **a decline in revenue resulting from failure to address economic security risks will exceed costs in the medium to long term.**

Ideal state to aim for / essential measures

- In addition to individual companies promoting digitalization and efficiency strategies, **cross-company cooperation should be promoted to improve the industry’s overall business efficiency, looking to increase the added value of products and services.**  
Also, as a way to address challenges associated with labor shortages, it is important to promote development and **utilization of robotic and AI technologies** with the aim of raising productivity and industrial competitiveness.
- In the context of DX promotion, the key is **to utilize data and digital technologies both for the purpose of individual companies and across the entire supply chain.** It should be noted that cross-company data sharing and utilization can contribute to increasing the resilience of supply chain systems.
- In order to enable companies to avoid the possibility of facing unexpected loss of profits while utilizing benefits from DX promotion, the government is preparing guides for appropriate security measures and data management.

- Our view is that **manufacturing companies should take economic security measures to ensure stable business operations, such as for procurement, production, and supply, with the aim of increasing their profitability and decrease the possibility of loss in the medium to long term.**
- Moving forward, for Japanese manufacturing companies to achieve sustainable growth, **they first need to fully understand the need to take economic security measures for that purpose.**  
With the above understanding properly built, **companies should move to the following steps to establish suitable internal systems and implementation procedures while promoting relevant activities autonomously from a medium- to long-term perspective.**
- **The government will support such efforts to promote economic security measures, chiefly by publishing a collection of best practices.**

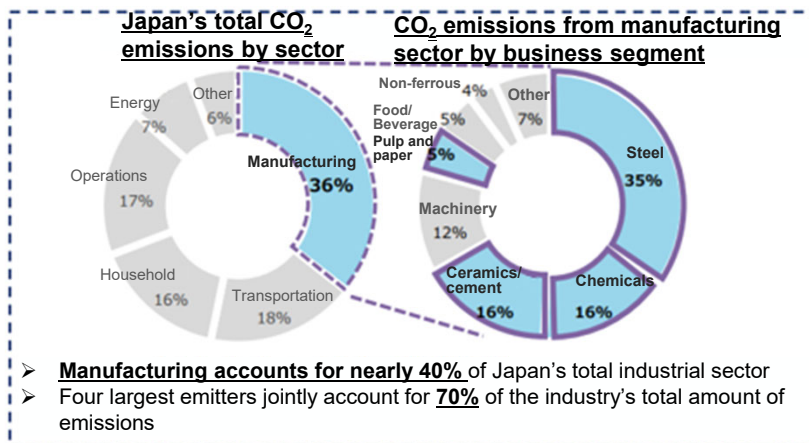
# Three themes to consider in combination for strengthening competitiveness of manufacturing industry

- Recently, many countries in the world have been accelerating the development of industrial policies, while expanding the scope of themes to address. Such economic and industrial policies being developed around the world are characterized by trends of many governments aiming to strengthen industrial competitiveness by addressing two other themes of decarbonization and economic security in combination with it, as suggested by the Draghi Report published in Europe and the policy changeover made by the Trump Administration in the U.S.
- Given the increasingly uncertain business environment, manufacturing companies should consider issues related to decarbonization and economic security comprehensively and promote medium- to long-term growth investment strategies while incorporating such consideration.

## GX promotion by manufacturing companies (iron and steel, etc.)

- In Japan, while producing about **20% of the GDP**, the manufacturing sector is **responsible for 36% of the national total CO<sub>2</sub> emissions**. Within the sector, 70% is engaged in businesses where further emissions reduction is difficult, indicating that these businesses **particularly suitable for pursuing the aim of promoting decarbonization and strengthening industrial competitiveness at the same time**.
- Against the above background, in January 2025, the Study Group on Green Steel for Green Transformation (GX) was launched and results of meetings held were compiled into a report.

Figure 1. Percentage composition of CO<sub>2</sub> emissions from manufacturing industry



Source: Sector-Specific Investment Strategies (ver.2) by METI (December 2024)

## Encouraging efforts for economic security measures

- **Economic security policies aim to identify various threats and risks** using economic instruments and **take measures needed to improve the autonomy of the Japanese economy as well as ensure the superiority and indispensability of Japan's technical capabilities, thereby contributing to maintaining and enhancing its industrial competitiveness**.
- In March 2025, *A Collection of Private Sector Best Practices Ver. 2* was published as a tool for encouraging private business operators to take economic security measures. In the document, **best practices are categorized into three groups of different issues: (1) building organizational systems to address economic security issues; (2) taking measures to prevent technology leakage; and (3) addressing supply chain-related risks**. Each report of activities is accompanied by the indication of challenge level.

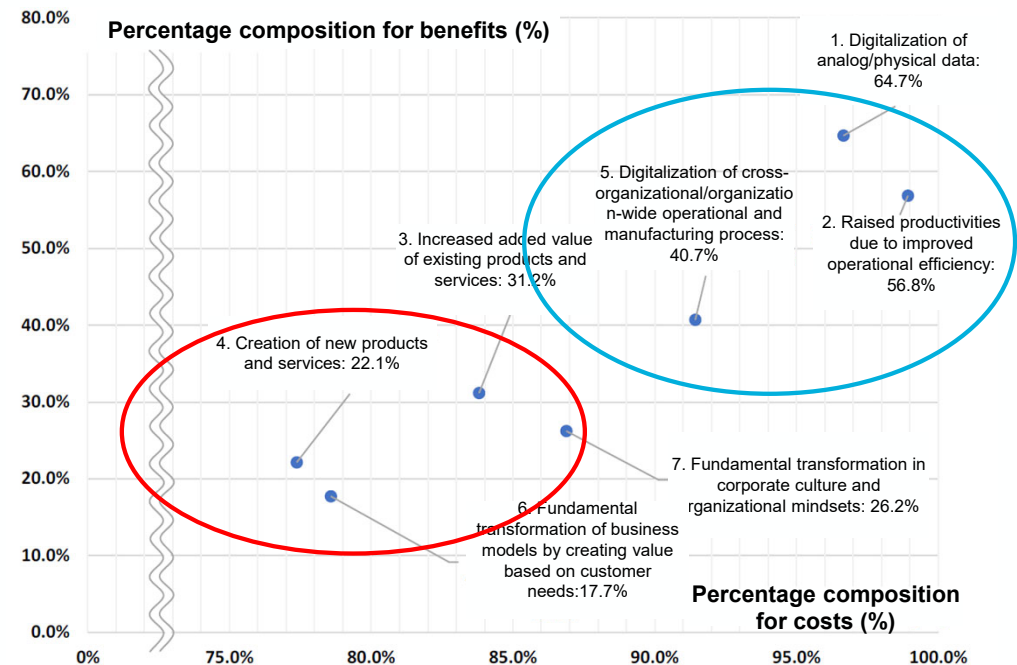
# DX for strengthening competitiveness of manufacturing industry

- For the purpose of strengthening industrial competitiveness, manufacturing companies should promote DX strategies to improve their earning power and accelerate GX promotion and other efforts.

## DX for improving the earning power

- Compared with a certain degree of benefits produced from digitalization and efficiency strategies promoted by individual companies, **benefits from efforts made in advanced and extensive areas, such as for business model transformation, are quite limited.**
- The **key** to generating benefits in such areas is **the management's commitment.**
- Aiming to strengthen the industrial competitiveness as a whole, **many different operators composing the supply chain should promote cross-company cooperation and collaboration to raise business process efficiency** and increase the added value of products and services.
- Also, as a way to address challenges associated with labor shortages, it is important to promote development and utilization of robotic and AI technologies with the aim of raising productivity and industrial competitiveness. **To enable the industry to build capabilities to accommodate increasingly sophisticated and diversifying needs, including for high-mix low-volume production, the government is supporting efforts for developing robotic systems and developing and utilizing AI applications.**

Figure 1. Cost-benefit comparison related to promoting DX by issue to address



Note: The statistical population used to prepare the above chart also includes companies from industries other than manufacturing.  
Source: Created by METI based on "DX Trends 2024" (June 2024) by Information-Technology Promotion Agency, Japan

## DX for supporting GX promotion and other efforts

- In the context of DX promotion, the key is to utilize data and digital technologies both for the purpose of individual companies and across the entire supply chain.
- **The Ouranos Ecosystem has built industry-wide data sharing platform across automobile and storage battery sectors for the purpose of carbon footprint calculation.**
- Cross-company data sharing and utilization can **contribute to increasing the resilience of supply chain systems**, in addition to improving earning power and promoting DX.
- In order to enable companies to avoid the possibility of facing unexpected loss of profits while utilizing benefits from DX promotion, the government is preparing and publishing guides for appropriate security measures and data management.

# Situation of manufacturing companies implementing economic security measures (1)

- According to the survey on Japanese manufacturers' understanding of economic security issues, while the percentage of respondents who "have never heard of the topic" was low at about 6%, the most popular response was "have heard of the topic but have no clear understanding," chosen by about 70%.
- One notable finding from the comparison between "economic security," "environmental friendliness," represented by decarbonization, and "DX" in terms of the situation of companies as to implementing relevant measures, was "no measures are taken" for economic security by about 60% of the companies, indicating less attention given to this area relative to the other two.
- This indicates companies in general are yet to understand the need for taking measures for economic security though having a certain degree of recognition of the term.

Figure 1. Manufacturers' understanding of economic security issues

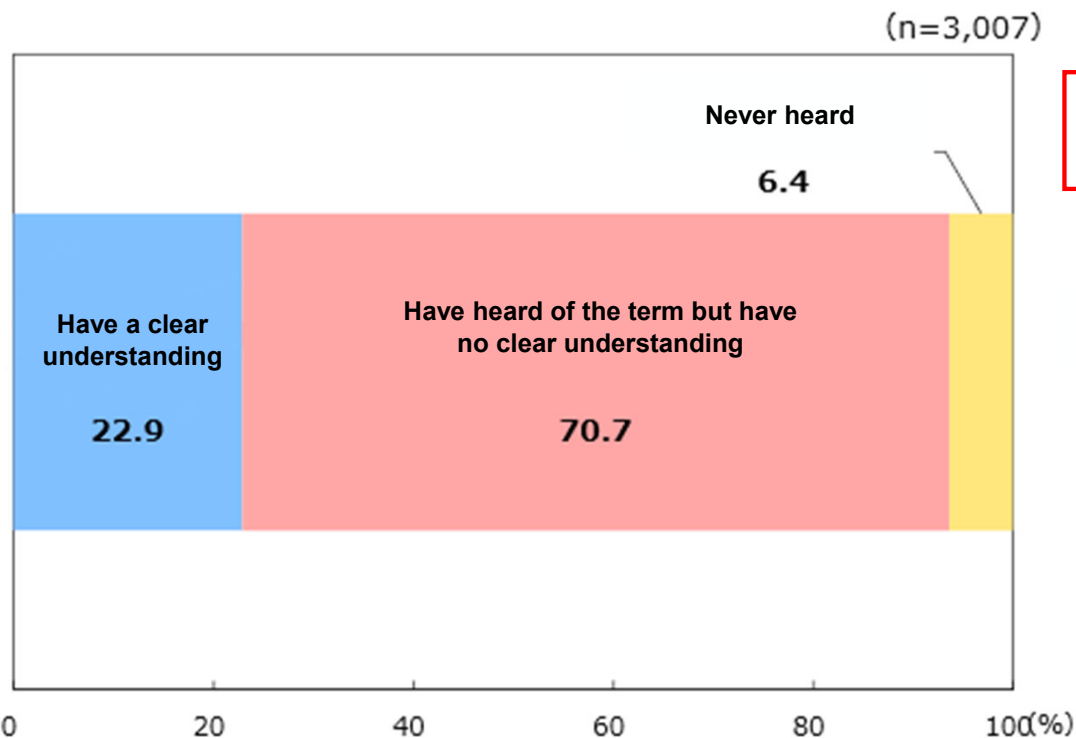
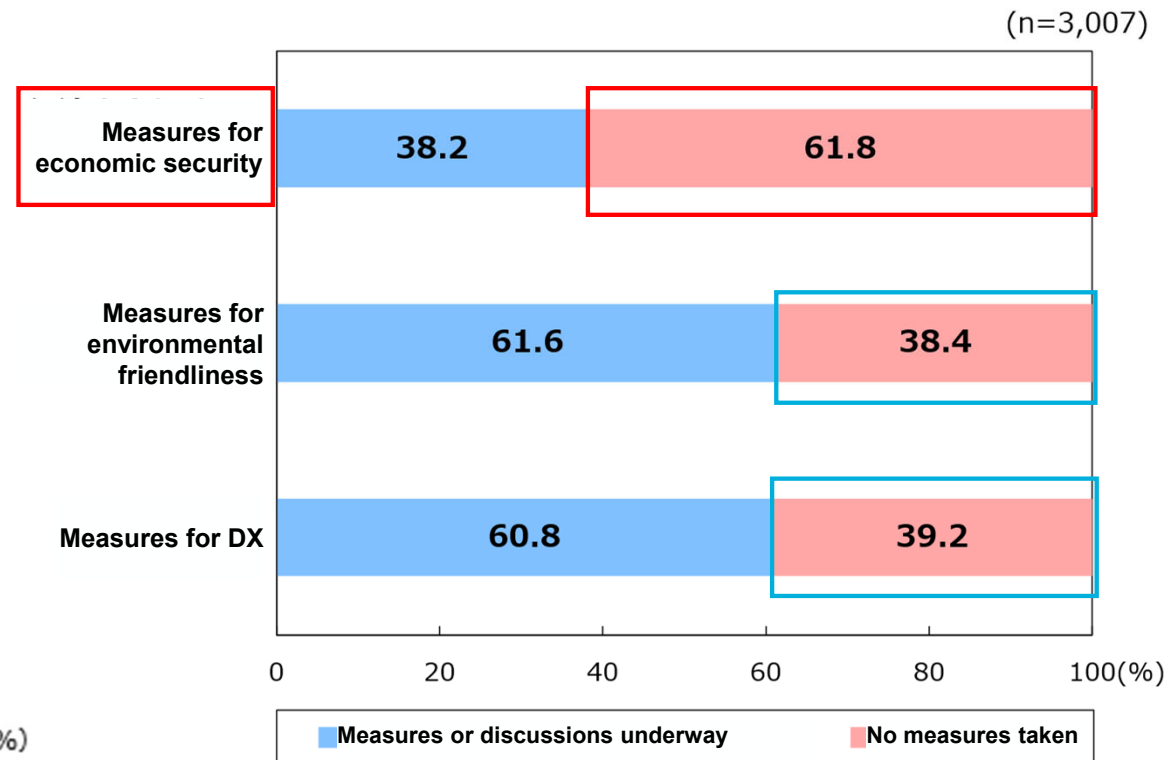


Figure 2. Manufacturers' status of implementing measures for different issues



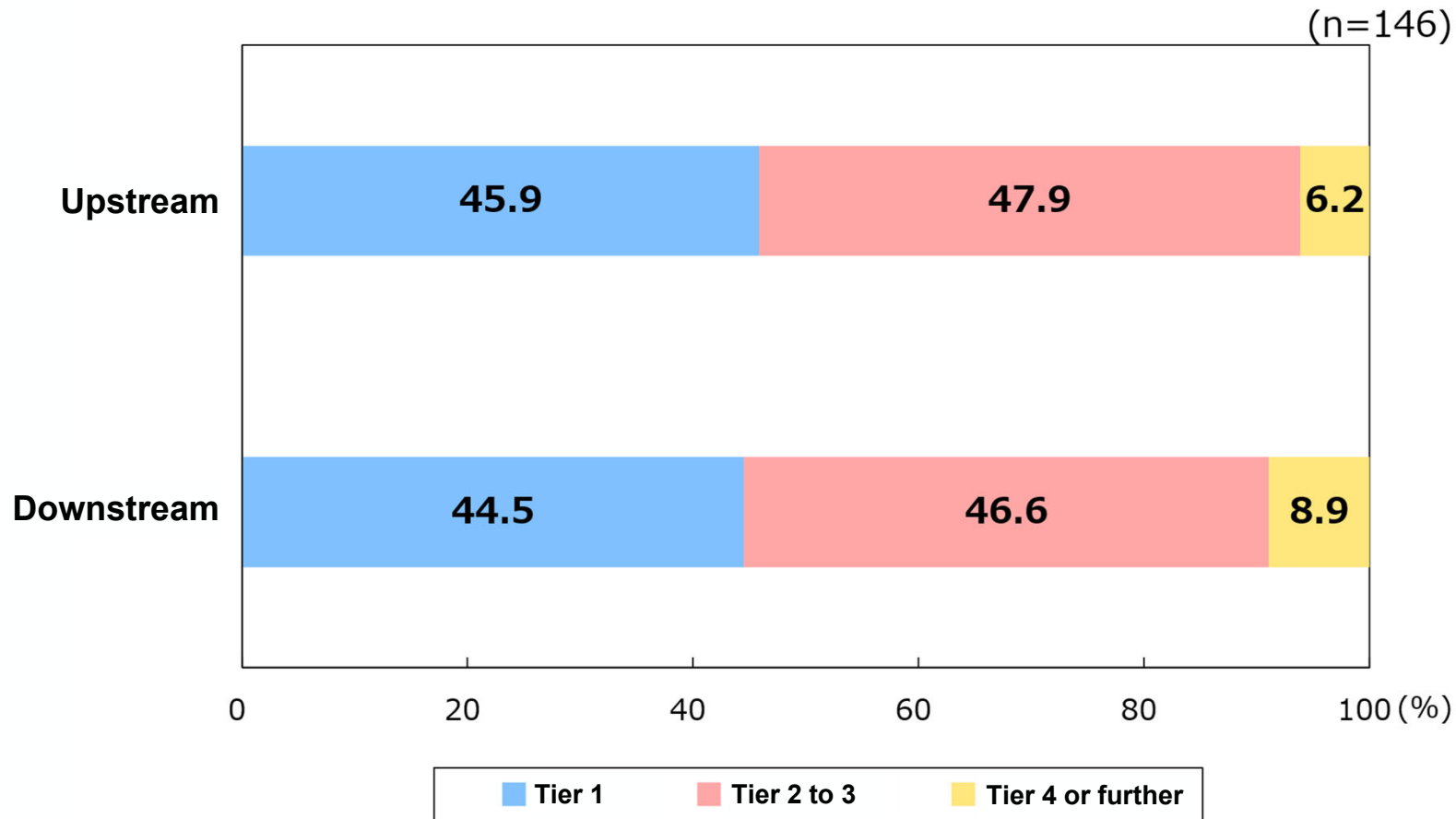
Note: (Figure 2) In this document, "DX" means "to utilize data/digital technology to make a transformation to products, services, business models, operations, organizations, work processes, and corporate culture/climate."

Source: "FY2024 Survey Report on Core Manufacturing Technology (Survey on Issues and responses of Japan's Manufacturing Industries)" by Accenture PLC (March 2025)

# Situation of manufacturing companies implementing economic security measures (2)

- At a large percentage (90% plus) of the manufacturing companies, the scope of companies in the supply chain given a certain level of consideration when conducting risk analysis is limited to up to tier 2 or 3 upstream and downstream alike.

Figure 1. Scope of supply chain given a certain level of consideration when conducting risk analysis



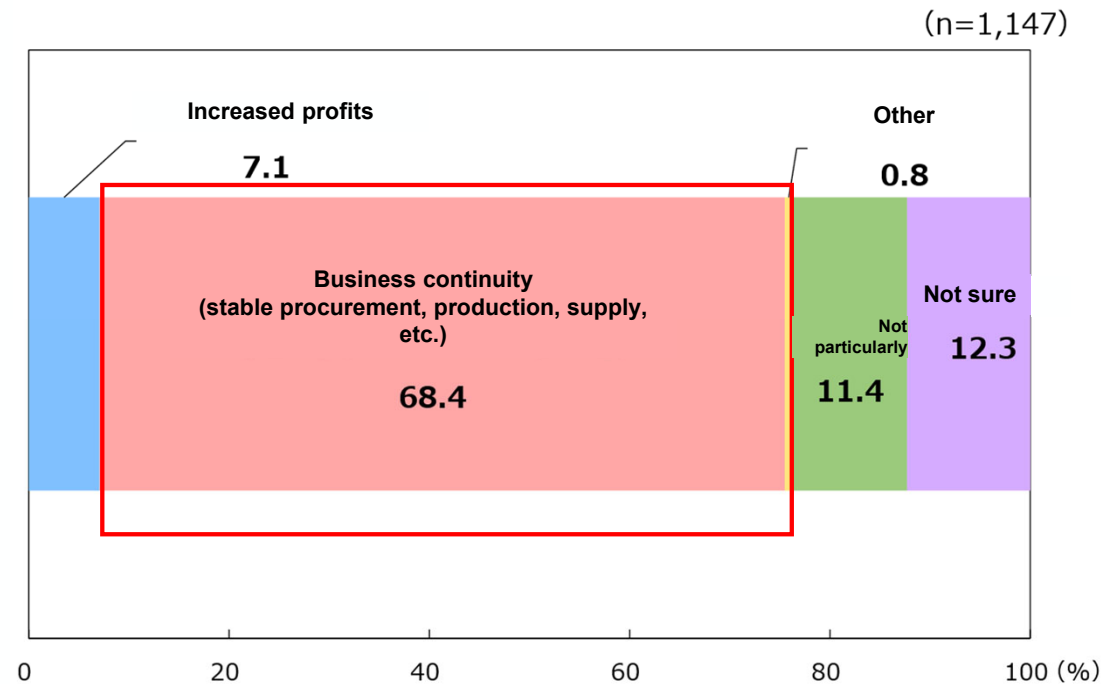
# Aiming to support sustainable growth of manufacturing companies by promoting economic security measures

- **“Feel no need for the purpose of our business management” and “Not know what to do” are the two most popular responses chosen to provide reasons for taking no measures.** In comparison, many companies implementing measures chose positive responses, such as stable “business continuity,” to describe benefits.
- Aiming to achieve sustainable growth, manufacturing companies need to, first, **understand the need for taking economic security measures.** Then, **companies should move to the following steps to establish suitable internal systems and implementation procedures while promoting relevant activities autonomously from a medium- to long-term perspective.**
- The government needs to work to increase understanding, principally by publishing best practices and encouraging public-private dialogue.

Figure 1. Reasons for not taking economic security measures



Figure 2. Felt benefits from taking economic security measures



Note: (Figure 1) 1. Respondents limited to manufacturing companies reporting not taking economic security measures.

2. Percentages may not add to 100 due to multiple answers allowed.

(Figure 2) Respondents limited to manufacturing companies reporting taking economic security measures.

Source: “FY2024 Survey Report on Core Manufacturing Technology (Survey on Issues and responses of Japan’s Manufacturing Industries)” by Accenture PLC (March 2025)