

Survey Report on Overseas Business Operations by Japanese Manufacturing Companies

—Results of the JBIC FY2021 Survey:
Outlook for Japanese Foreign Direct Investment
(33rd Annual Survey) —

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1. Introduction

Japan Bank for International Cooperation (JBIC) has released “Survey Report on Overseas Business Operations by Japanese Manufacturing Companies.” In this survey, questionnaires were sent out in July 2021 and collected by October (965 target companies, 515 valid respondents, 53.4% response rate). We would like to express our gratitude to the companies who participated in the survey under the circumstances of COVID-19.

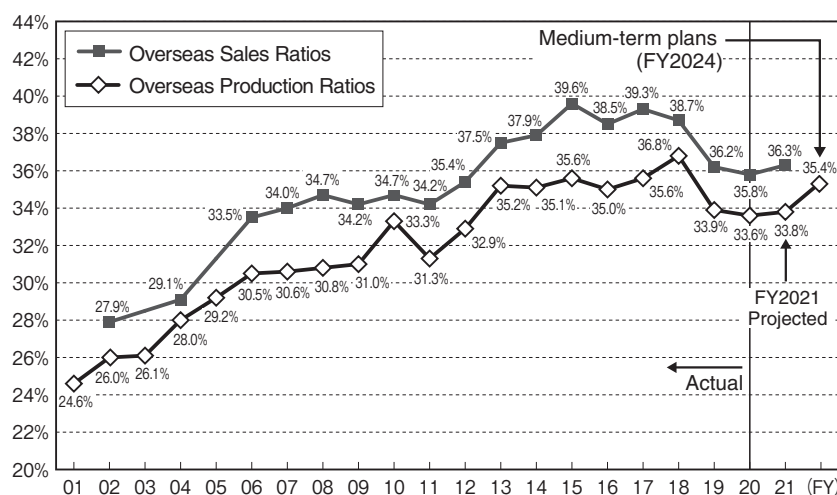
In this survey, we asked questions on “Medium-term Prospects for Supply Chains,” “Initiatives for Digital Transformation” and “Initiatives for Decarbonization” as the special themes, in addition to “Overseas Business Performance,” “Business Prospects,” and “Promising Countries/Regions.”

2. Overseas Production/Sales Ratios

The overseas production ratio¹ in FY2020 was 33.6%, and the overseas sales ratio² was 35.8%. The overseas production/sales ratios in FY2020 continued to fall from last year due to COVID-19, but the decline was smaller than that of last year. Although the impact of COVID-19 remained significant in FY2020, many of the respondents said that the recovery production in the second half of the year made up for it.

The projected results for FY2021 are expected to show a slight increase in both of the production ratio and the sales ratio, and the impact of COVID-19 is expected

Figure 1. Trends in Overseas Production/Sales Ratios (FY2001 onwards, all industries)



to bottom out in FY2020-21. However, although the overseas production ratio is planned to recover to 35.4% in FY2024, it is not expected to reach the pre-COVID-19 level of FY2018. (Figure 1)

Note 1: Overseas Production Ratio = Overseas Production / (Domestic Production + Overseas Production)

Note 2: Overseas Sales Ratio = Overseas Sales / (Domestic Sales + Overseas Sales)

3. Medium-term (Next 3 Years) Prospects for Business Expansion (Overseas/Domestic)

63.7% of the respondents answered that they would “strengthen/expand” their businesses in the medium term while 34.7% answered that they would “maintain present level.” In the last fiscal year, the number of the companies that answered that they would “maintain present level” increased by 11.2 points, which indicates that the spread of COVID-19 infection had put their current judgment on

Figure 2. Medium-term (Next 3 Years) Prospects for Overseas Business Expansion

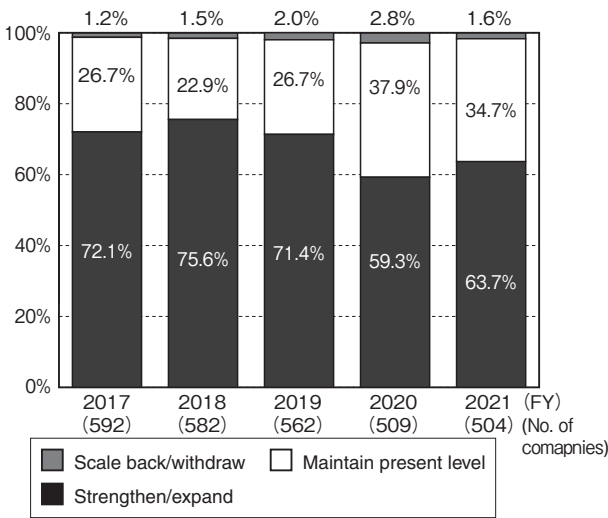
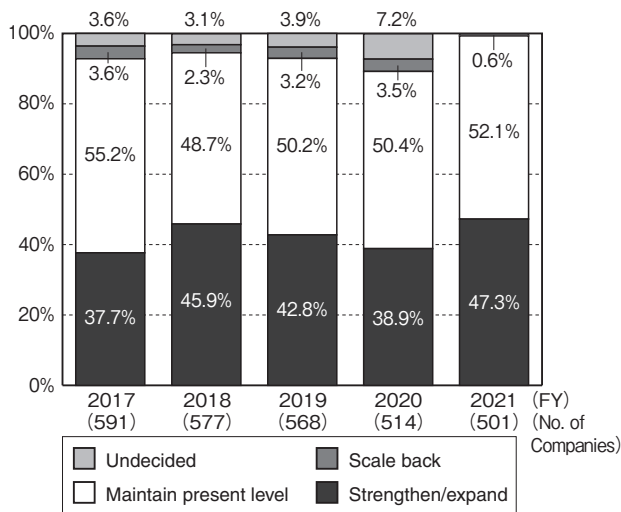
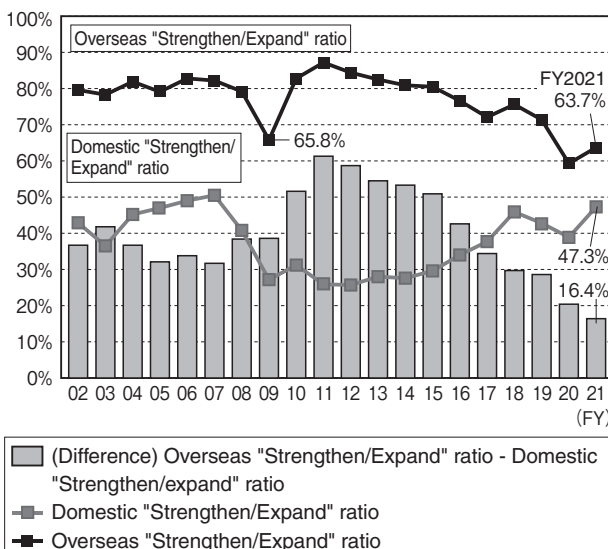


Figure 3. Medium-term (Next 3 Years) Prospects for Domestic Business Expansion



Note: The answer choice "undecided" was eliminated from FY2021 survey.

Figure 4. Shifts in Intentions to Strengthen/Expand Business (2002-2021)



hold. In this fiscal year, the number of the companies that answered that they would “strengthen/expand” in the medium term increased by 4.4 points as the infection is prolonged and they have adapted to the situation. However, the percentages have not yet returned to the level before the COVID-19 pandemic. Among the companies that would “maintain present level,” some said they “cannot make a decision at this time,” indicating that they continue to reserve judgment. (Figure 2)

Due in part to the elimination of the answer choice, “undecided” in this survey, “strengthen/expand” increased to 47.3%, while “maintain present level” increased to 52.1%. In the interviews, some companies chose to “strengthen/expand” their domestic businesses passively, as it was difficult to foresee their overseas businesses due to COVID-19. (Figure 3)

Regarding Japanese manufacturing companies’ overseas business expansion, after the financial crisis of 2008, “strengthen/expand” recovered rapidly from 65.8% (FY2009) to 82.8% (FY2010), but in the wake of COVID-19, it regained only 4.4 points, from 59.3% (FY2020) to 63.7% (FY2021). In the interviews, it was suggested that the recovery process from the COVID-19 pandemic has caused a semiconductor shortage and logistic disruptions and that there is still uncertainty about the impact on businesses. (Figure 4)

4. Promising Countries/Regions

We asked respondents to name up to five countries/regions where they see promising business opportunities in the medium term (next 3 years), and the results were ranked as shown in Figure 5.

China remained at the top in the ranking of promising countries/regions for overseas business over the medium-term, with India in second. In terms of the percentage shares, China saw only a slight decrease of 0.2 points, while India saw a significant drop of 7.8 points. Only the U.S. and Taiwan increased their votes among the top 10 countries/regions, and these two appear to be attracting more attention whereas most of the ASEAN countries saw their votes decline. In recent years, the U.S. has been rising close to India, so future changes in the ranking will be closely watched. With support from chemicals and general machinery, Taiwan made it into the top 10 for the second time in 10 years.

It should be noted that countries/regions from 11th to 20th and thereafter have fewer votes and are easy to change their rankings, but the decline in Myanmar, where the

political and social situation has become unstable, was remarkable (from 10th to 16th), with both the votes and the percentage share falling to less than half.

Figure 5. Promising Countries/Regions for Overseas Business over the Medium-term (Next 3 Years)

Ranking		Countries (Total)	No. of Companies		Percentage Share (%)		
2021	← 2020		2021 345	2020 356	2021	2020	
1	—	1	China	162	168	47.0	47.2
2	—	2	India	131	163	38.0	45.8
3	▲	5	US	113	98	32.8	27.5
4	▼	3	Vietnam	105	131	30.4	36.8
5	▼	4	Thailand	77	111	22.3	31.2
6	—	6	Indonesia	67	96	19.4	27.0
7	—	7	Philippines	31	37	9.0	10.4
8	▲	9	Mexico	30	32	8.7	9.0
9	▼	8	Malaysia	27	34	7.8	9.6
10	▲	12	Taiwan	19	18	5.5	5.1
11	—	11	Germany	17	20	4.9	5.6
12	▲	15	Korea	16	12	4.6	3.4
13	▲	16	Brazil	13	11	3.8	3.1
14	—	14	Australia	12	14	3.5	3.9
14	▲	16	Singapore	12	11	3.5	3.1
16	▼	10	Myanmar	10	25	2.9	7.0
16	▼	13	Bangladesh	10	16	2.9	4.5
16	▲	19	Russia	10	8	2.9	2.2
16	▲	20	Turkey	10	7	2.9	2.0
20	▲	28	Canada	7	3	2.0	0.8

5. Medium-term Prospects for Supply Chains

(1) External Shocks

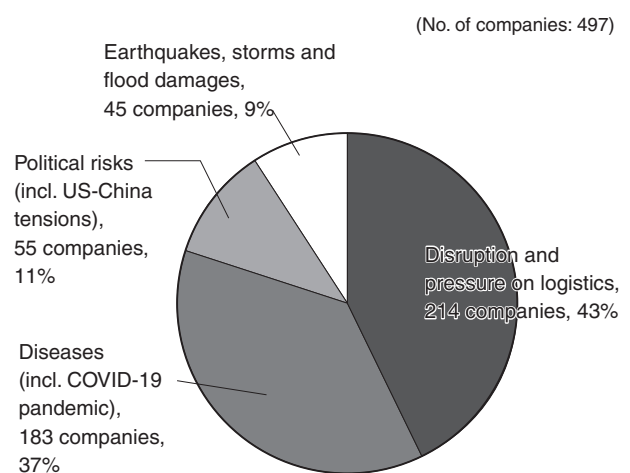
The largest number of the respondents chose “disruption and pressure on logistics” as the most threatening external shock (214 companies, 43%). In the telephone interviews, the following comments were made: “The supply of parts and raw materials was stagnant due to lockdowns” (electrical equipment & electronics), “We were affected by the Suez Canal obstruction” (automobiles and chemicals), “There were lost opportunities due to a shortage of containers in the U.S.” (chemicals), and “Transportation costs soared due to a container shortage and reduced air traffic” (ceramics, cement & glass). It can be seen that companies with long supply chains place the highest priority on logistics.

The second most chosen was “diseases (including the COVID-19 pandemic)” (183 companies, 37%). We heard comments such as “We had no choice but to suspend factory operations because of the infection situation, and the impact was greater this year than last year since there was a series of lockdowns” (chemicals)

and “We reduced mine operations due to lockdowns” (nonferrous metals). Industries and companies which require constant monitoring and invest a large amount of labor place importance on this factor.

The companies that mentioned “political risks (including U.S.-China tensions)” (55 companies, 11%) appear to have important transactions between the U.S. and China, such as “Concerned about increased costs including tariffs on raw materials exported from China to the U.S.” (textiles) and “U.S. affiliates purchase tools from China, so there is a risk of additional tariffs due to the appreciation of the yuan and the friction between the U.S. and China” (metal products). (Figure 6)

Figure 6. Threatening External Shocks



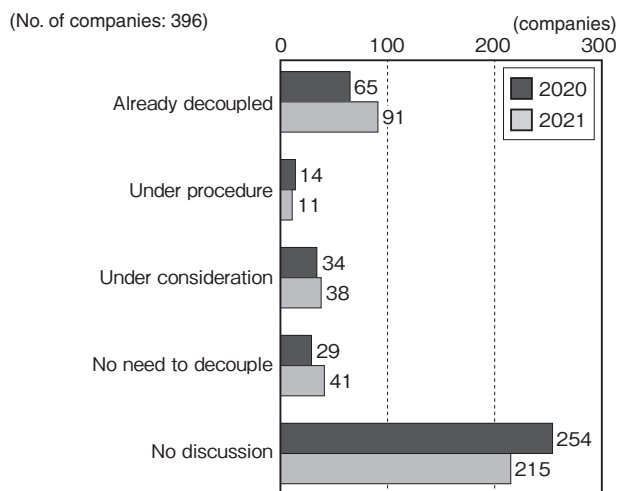
Note: Percentages are calculated using the number of responding companies in each industry as the population parameter.

(2) U.S.-China Decoupling

The number of companies that responded that they have “already decoupled” increased from 65 to 91 when compared to the FY2020 survey. In the interviews, many companies said that their U.S. and Chinese businesses are originally separate, such as “We deliver products manufactured locally or in neighboring countries to customers in the U.S. and China, so our businesses are separate” (automobile) and “Our business is based on local production for local consumption, so there is no direct communication between the U.S. and China” (metal products, nonferrous metals, ceramics, cement & glass). However, there were companies aware of the friction between the U.S. and China, such as, “We separated our U.S. and Chinese operations in consideration of political risks as we diversified our production bases from China due to rising labor costs” (electrical equipment and electronics). Some also pointed out the difficulty of

decoupling, saying “Decoupling is difficult because manufacturing cannot be completed in either the U.S. or China” (precision machinery). (Figure 7)

Figure 7. Response to U.S. -China Decoupling (Companies Responding for 2 Consecutive Years)



Companies that answered that they have “already decoupled”, “under procedure” and “under consideration”, were asked which of their U.S. and China operations they would strengthen. As a result, the most common answer (92 companies) was “Strengthen both of U.S. and China operations,” highlighting the trend of a well-balanced manner in U.S.-China decoupling. As for the companies that would strengthen either their U.S. or China operations, many of them have affiliates either in the U.S. or in China only, and their business policy of prioritizing the existing affiliates stood out.

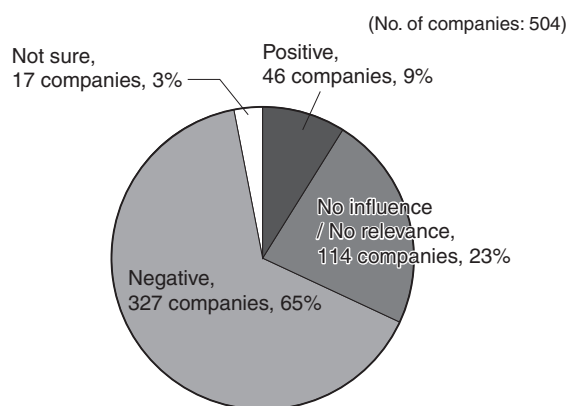
(3) Semiconductor Shortage

When asked about the impact of the global semiconductor shortage, the largest share of 65% (327 companies) answered that they were negatively affected. On the other hand, 9% of companies (46 companies) answered that they have been positively affected. (Figure 8)

The impact of the semiconductor shortage varied greatly by industry. (Figure 9) Among companies that were negatively affected, comments from the demand side for semiconductors were heard, such as “Orders for products decreased due to production cuts of automobiles” (automobiles, metal products, textiles and chemicals) and “Procurement of materials used in products was delayed” (precision machinery). Among companies that received a positive impact, many of the comments came from the supply side of semiconductors, such as “Semiconductor manufacturing equipment business was strong due to

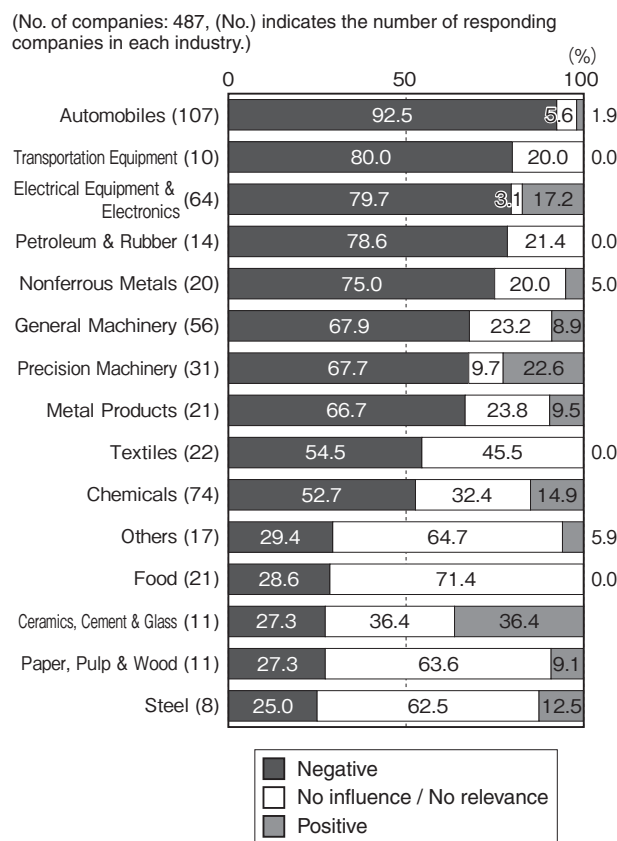
increased semiconductor-related capital investment” (precision machinery, chemicals, ceramics, cement & glass) and “Sales of semiconductor materials were strong” (chemicals). The results of this year’s survey reaffirmed the fact that the semiconductor-related industry encompasses a wide range of industries.

Figure 8. Impact of Semiconductor Shortage



Note: Percentages are calculated using the number of responding companies as the population parameter.

Figure 9. Impact of Semiconductor Shortage (by Industry)

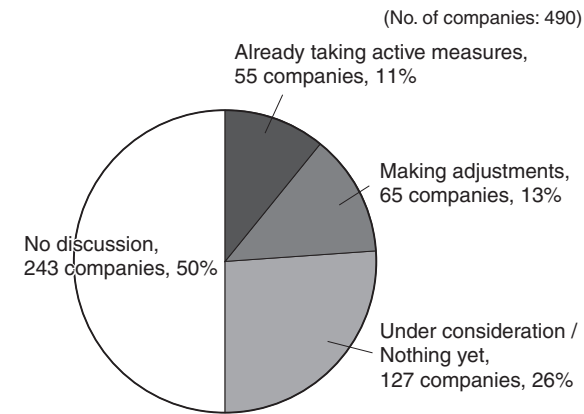


Note: Percentages are calculated using the number of responding companies in each industry as the population parameter, excluding companies that answered “Not sure” in Figure 8.

(4) Human Rights Issues

With regard to human rights issues, 55 companies (11%) are “already taking active measures” and 65 companies (13%) are “making adjustments,” indicating that about a quarter of the companies are working on the issues. (Figure 10)

Figure 10. Response to Human Rights Issues



Note: Percentages are calculated using the number of responding companies as the population parameter.

In the interviews, many cited “strengthening traceability of raw materials” (textiles), while other made comments such as “taking assessments from external organizations regarding child labor” (non-ferrous metals), “receiving assessments for use of conflict minerals” (metal products), and “considering on-site visits to suppliers and the use of surveys in the future” (chemicals). There was also a comment that “European companies have stricter requirements” (ceramics, cement & glass), indicating that there is a growing demand from business partners.

6. Initiatives for Digital Transformation

(1) Progress and Areas of DX Initiatives

When asked about the status of their DX progress, half of the respondents answered, “A certain level of effectiveness is appearing, and the introduction will be accelerated in the future” (14%) and “The effects of the project so far are yet to be assessed, but we will continue to work on it” (35%). Almost half of the companies (45%) said that full-scale consideration will be done from now on, but none said that they would slow down, indicating a positive attitude toward DX. (Figure 11)

Concerning the areas of DX initiatives, there was a strong interest in areas related to the improvement of production processes. Many of the respondents were also

Figure 11. Status of Progress in DX

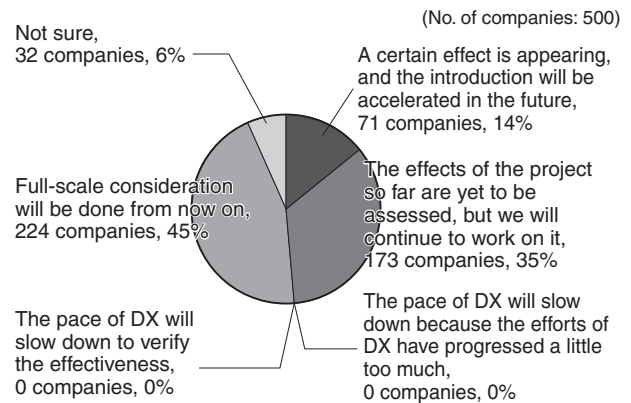
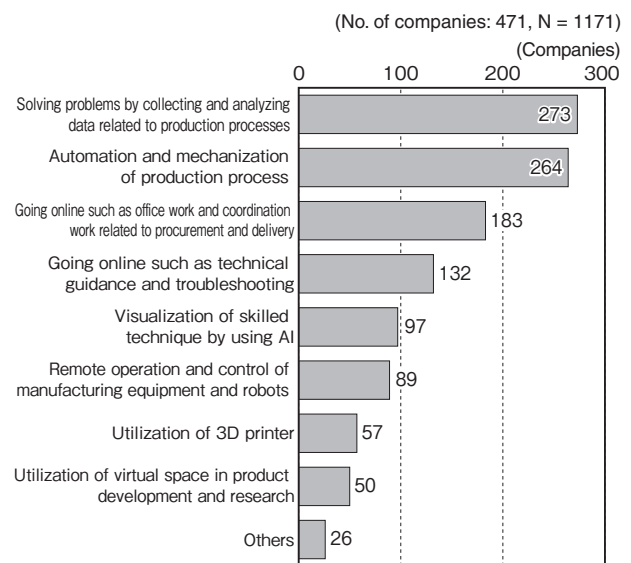


Figure 12. Areas of DX Initiatives



interested in introducing DX in back-office operations, such as procurement and delivery to improve work efficiency. (Figure 12)

We also analyzed differences in areas for DX initiatives by the levels of DX progress. The result showed that advanced companies in DX are relatively more interested in areas such as “remote operation and control of manufacturing equipment and robots” and “utilization of virtual space in product development and research.” This is interesting because it suggests that leading companies are embarking on DX in areas that did not necessarily attract much interest in the overall votes.

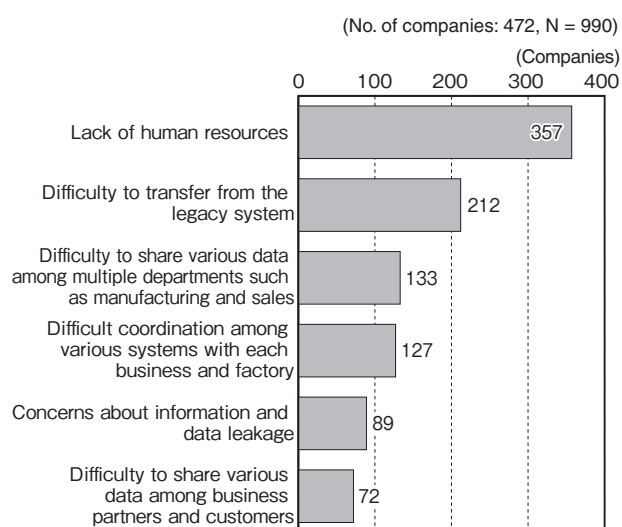
The interviews pointed out not only a growing need for “high demand from clients for online technical guidance and troubleshooting” (precision machinery), but also the difficulty of evaluating the cost effectiveness of DX investments. Their comments were such as “the scale of SMEs cannot afford to invest for DX except for production processes” (metal products) and “setting KPIs

for DX-related IT investments and measuring ROI are issues” (chemicals).

(2) Challenges for DX

Concerning challenges for DX, the most common issue overall was “lack of human resources” (357 companies), followed by “difficulty to transfer from the legacy systems” (212 companies), highlighting how the existence of so-called legacy systems is hindering the promotion of DX. In addition, the lack of data infrastructure for data sharing and inter-system collaboration was also found to be an issue. (Figure 13)

Figure 13. Challenges for DX



We compared the perceptions of the challenges of DX implementation by company size. As a result, it was found that “lack of human resources” is the biggest issue regardless of the size of the companies, but SMEs are more strongly aware that securing human resources is an issue in promoting DX. The second most common challenge was “transfer from legacy system,” which was also frequently mentioned in the interviews. “Coordination among various systems with each business and factory” was a relatively strong issue for large enterprises, and “data sharing among multiple departments, such as manufacturing and sales” was the next most common issue for large enterprises. When asked about the coordination among existing systems and data sharing in the interviews, the respondents said, “The digitization of office work for each business division has progressed rapidly, but data

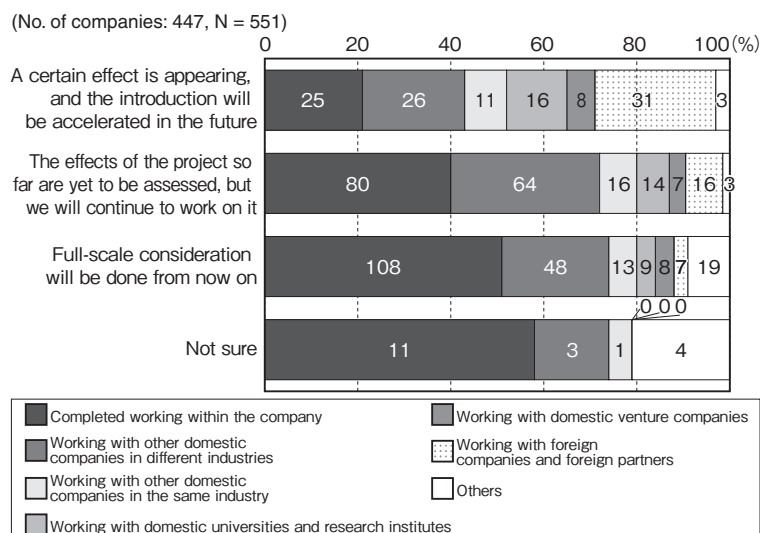
sharing among divisions still takes a lot of time” (precision machinery) and “Although each system of business divisions and factories are connected to the core system, building a seamless and company-wide system development is an extremely difficult task, especially from a cost perspective” (chemicals).

(3) DX Collaboration Partners

Concerning partner companies with which they collaborate for DX implementation, the most common answer was “completed working within the company” (224 companies, 41%), followed by “working with other domestic companies in different industries” (141 companies, 26%). There were also a certain number of companies that chose “other companies in the same industry” and “working with domestic universities and research institutes.” “Others” includes working with governments, parent companies, subsidiaries and external experts such as consultants.

According to the comparison of these DX partnership by level of DX progress of each company, we found that the more advanced the company is in DX, the less likely it is to complete DX projects in-house, and the more likely it is to seek external partnership. In particular, the most advanced companies that would accelerate DX were likely to choose overseas companies as partners. We also found a case in which the headquarters had reimported a good practice of collaboration with local companies by its overseas subsidiaries (metal products), indicating that Japanese manufacturers are expanding their partnership abroad for collaboration in DX implementation. (Figure 14)

Figure 14. DX Collaboration Partners (by DX progress)



7. Initiatives for Decarbonization

(1) Impact of Decarbonization

Regarding the impact of decarbonization, 106 companies (21%) chose “already affected,” and 287 companies (58%) chose “not yet but expected in the future.” The percentages of companies which recognized the impact do not much vary by industry. Those which chose “already affected” include companies which are advanced in decarbonizing their business. For example, one of the interviewed companies said, “We have set a stricter target for decarbonization than the government’s target and are taking proactive measures” (ceramics, cement & glass). (Figure 15)

Companies which chose “not affected now and not expected in the future” also include both advanced companies which expect no further new impact because they had already taken action before decarbonization became the global agenda and some companies who have not taken any concrete action because they do not foresee any impact in the future. Furthermore, one of the respondents said, “Although we can say that we are indirectly contributing to decarbonization through our EV-related business, we answered that there was no impact because we do not label our business as ‘decarbonization business.’” (Chemicals).

Moreover, we asked about the impact of decarbonization on their operations in detail. The most common positive effect was “promotion of research and development of new products” (240 companies). On the other hand, the most common negative impact was “increase in manufacturing costs” (236 companies). In the interviews, we heard many concerns about increasing prices of energy. (Figure 16)

Figure 15. Impact of decarbonization

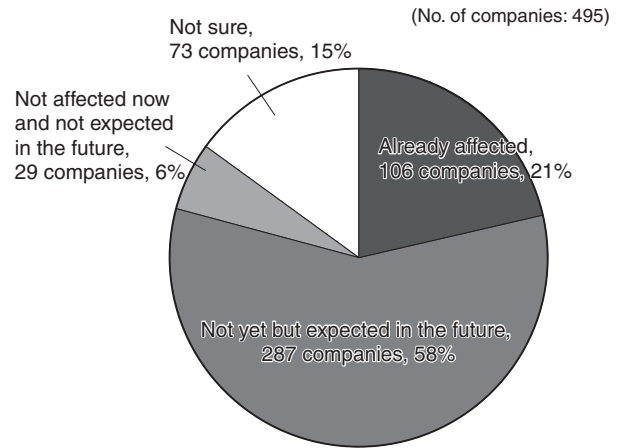
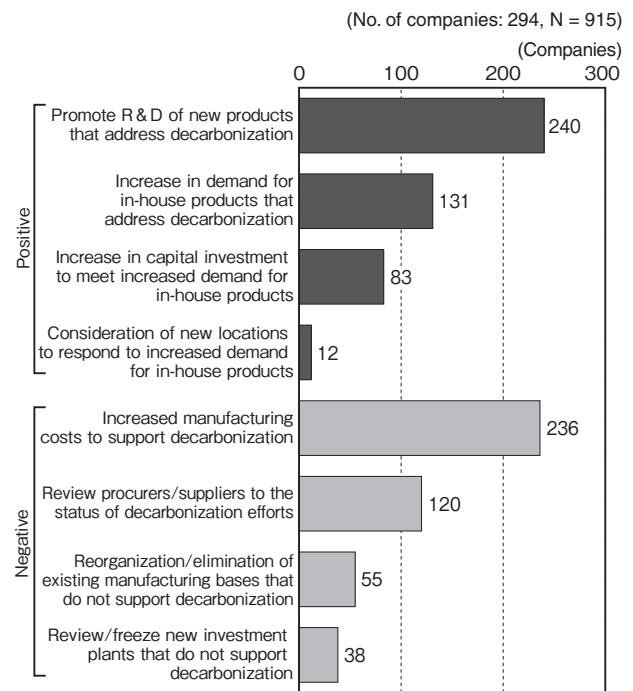


Figure 16. Positive/Negative Analysis on Impact of Decarbonization



(2) Efforts to Identify Emission Sources

Scope 1 of the GHG Protocol was chosen by the largest number of companies (370 companies), while Scope 3 was also chosen by 330 companies, which indicates a high level of interest in decarbonizing supply chains. (Figure 17)

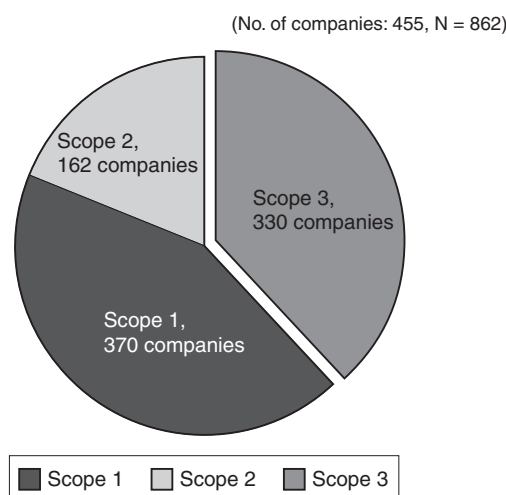
As for the breakdown of Scope 3, many companies selected the categories shown in Figure 18. These categories correspond to emissions associated with transportation of goods and use and disposal of raw materials and products, which are characteristic of the manufacturing industry. One of the interviewed respondents said, “We are measuring and reducing the use of energy and reviewing delivery routes as part of our cost reduction efforts in factories. Rather than for the purpose of ascertaining the amount of emissions, we are naturally collecting information on emissions as we try to reduce production cost” (Chemicals).

In addition, when asked specifically what they were doing to decarbonize their business in the interviews, a large number of the companies answered that they were switching to renewable energy.

8. Conclusion

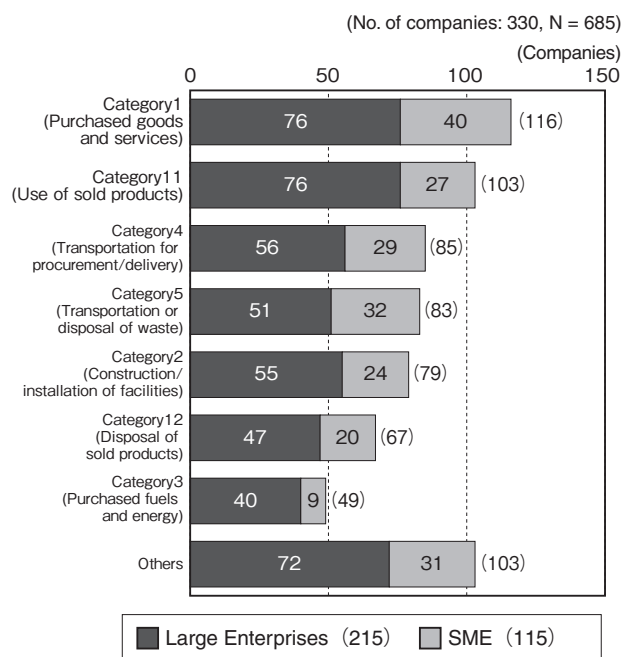
In the course of this FY2021 survey, we found out that the spread of the COVID-19 infection and its subsequent spillover effects, such as logistic disruption and a semiconductor shortage, are expected to continue over the medium term. At the same time, the introduction of DX, which has been attracting more attention since the pandemic’s onset, is accelerating. In the context of decarbonization, there are signs that the manufacturing industry is trying to adapt to a new era by identifying and measuring emission sources and looking for new business opportunities. Although the business environment remains uncertain due to the emergence of new variants, it is important to note that these developments are in steady progress behind the scenes.

Figure 17. Emphasized Emission Sources (by “Scope”)



Note 1: The number of companies for Scope 3 was calculated based on the number of companies that selected at least one from Category 1~15.
 Note 2: The answer choices were prepared by JBIC strategic research department with reference to GHG Protocol, Ministry of Economy, Trade and Industry, Ministry of the Environment and corporate websites, etc.

Figure 18. Breakdown of Scope 3



Note: The answer choices were prepared by JBIC strategic research department with reference to GHG Protocol, Ministry of Economy, Trade and Industry, Ministry of the Environment and corporate websites, etc.