Survey on Planned Capital Spending for Fiscal Year 2023

Second Straight Year of Increase Signals New Growth Surpassing Pre-Covid Level

Led by Spending on Digitization, Semiconductors and EVs and Resumed Investment for Increased Movement of People

August 3, 2023

DBJ Development Bank of Japan

Chief Research Office

Outline of the Survey

1. Survey subjects

(1) Planned capital spending

- Carried out since 1956
- Designed to provide an overview of capital spending in Japan by analyzing capital spending activity on a domestic non-consolidated basis, and on a domestic and overseas consolidated basis (in terms of trends, by industry and by prefecture)
- Also covers subjects related to investment motives, profit/loss, R&D expenditure and investment in digitization

(2) Survey of attitudes on corporate activities (special survey)

- Conducted to identify the attitudes and perspectives of firms on key current issues
- This year's survey focuses on the impact of inflation and geopolitical risk, decarbonization, digital transformation, innovation and investment in human resources, among others.

2. Survey period

- Up to Friday, June 23, 2023

3. Companies surveyed

- Private corporations (excluding those in the finance/insurance industries)
- 2,915 major firms capitalized at 1 billion yen or more
- 6,519 medium-sized firms with capital of 100 million up to 1 billion yen (for regional breakdowns)

4. Responding companies and response rates

- Domestic capital spending: 1,706 major firms (58.5%)
  3,726 medium-sized firms (57.2%)
- Overseas capital spending: 611 firms (21.0%)
- Capital spending, by region: 4,535 firms (48.1%)
- Special survey: 1,075 major firms (36.9%)
  2,948 medium-sized firms (45.2%)

5. Detailed results

Please visit https://www.dbj.jp/investigate/equip/index.html (Japanese only).

Contents

Executive Summary

1. Overview of Domestic Capital Spending

Domestic capital spending by major firms (capitalized at 1 billion yen or more) in FY2022 rose 10.7% overall, recording the first increase in three years, driven by the development and increased production of electric vehicles, semiconductors and materials thereof, city-center redevelopment, as well as the resumption of investment postponed during the Covid-19 pandemic.

Planned capital spending for FY2023 shows a sizable increase of 20.7% on the previous year. In addition to investment projects carried over from the previous year, accelerated digitization is driving spending on enhancing semiconductor production capacity, including in materials industries for silicon wafers. Investment in electric vehicles is also on the rise. Furthermore, spending on safety measures for railways and new aircraft is expected to resume while city-center redevelopment continues, resulting in the second consecutive year of increase in both the manufacturing and non-manufacturing sectors.

2. Supply Chains and Capital Spending Overseas

The rising raw material and labor costs, as well as risks of conflict between China and the US, are prompting moves to diversify overseas sourcing and expand business where demand is robust. Enhancement of production sites in Japan is a notable change from the pre-pandemic period.

3. Decarbonization

Investment continues to be led this year by renewable energy, energy conservation and electric vehicles. Despite the emergence of new energy forms such as sustainable aviation fuel (SAF), decarbonization shows no substantial increase this year as a percentage of capital spending or R&D investment. More firms are now citing procurement as a key challenge for decarbonization, to the detriment of development cost.

4. Digitization

Spending on digitization shows an increase led by investment related to decarbonization and for user convenience in railways. Despite the increased use of, and interest in, generative and other types of artificial intelligence (AI), most of the spending on digitization is intended to update existing systems. The medium- to long-term outlook for office space is improving as the downgrading of Covid-19 to a Class 5 disease is prompting many companies to adopt a return-to-office policy.

5. Investment in Innovation

R&D investment shows an increase, mainly for electrification, IoT and decarbonization. Although companies are actively investing in talent development as the labor shortage remains the largest obstacle to innovation, only 10% of firms are planning to partner with startups. Expansion of collaboration with startups will require support for information platform development as well as for joint research.

6. Investment in Human Resources

Faced with the need to retain talent, companies are making proactive efforts not only in recruitment but also pay increases. Most firms cited investment in automation as an alternative measure to talent recruitment.

7. Characteristics of Capital Spending, by Region and by Medium-Sized Firms

As spending grows rapidly across Japan, substantial increases are planned in Hokkaido, Hokuriku and Kyushu in particular, driven by the automobile and semiconductor-related industries. Medium-sized firms are also moving toward raising the prices of their products and the wages of their employees, but few of these companies are planning to increase the prices of their products and services to achieve carbon neutrality.

1. Overview of Domestic Capital Spending

Capital Spending in FY2022, FY2023 and FY2024

- Domestic capital spending by major firms in FY2022 rose 10.7% overall, recording the first increase in three years, driven by the development and increased production of electric vehicles, semiconductors and materials thereof, city-center redevelopment, as well as the resumption of investment postponed during the Covid-19 pandemic. However, the actual figure represents a significant downward revision as compared with the planned increase of 26.8%, due mainly to delays in construction works.
- Planned capital spending for FY2023 shows a sizable increase of 20.7% on the previous year. In addition to investment projects carried over from the previous year, accelerated digitization is driving spending on enhancing semiconductor production capacity, including in materials industries for silicon wafers. Investment in electric vehicles is also on the rise. Furthermore, spending on safety measures for railways and new aircraft is expected to resume on the back of increased movement of people while city-center redevelopment continues, resulting in the second consecutive year of increase in both the manufacturing and non-manufacturing sectors.

Capital Spending in FY2022, FY2023 and FY2024

(unit: 100 million yen, %)

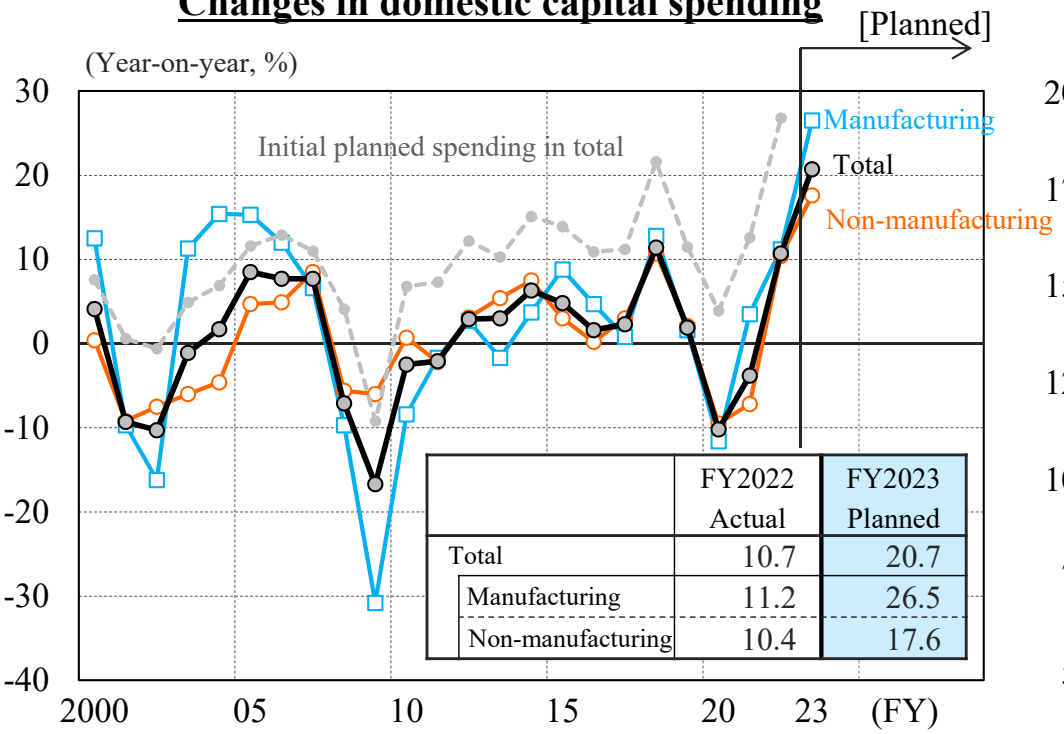
	FY2022 (actual) (1,624 firms)				FY2023 (planned) (1,706 firms)			FY2024 (planned) (1,733 firms)		
		Plan as of FY2022	FY2021 Actual	FY2022 Actual		FY2022 Actual	FY2023 Planned		FY2023 Planned	FY2024 Planned
Total	10.7	(26.8)	169,162	187,209	20.7	170,815	206,152	-0.3	42,579	42,447
(Excluding electric power)	10.5	(25.2)	145,505	160,826	19.8	156,419	187,397	0.7	40,350	40,651
Manufacturing	11.2	(30.7)	56,229	62,550	26.5	59,501	75,243	-0.0	17,599	17,594
Non-manufacturing	10.4	(24.8)	112,933	124,658	17.6	111,314	130,908	-0.5	24,980	24,853
(Excluding electric power)	10.1	(21.9)	89,276	98,275	15.7	96,918	112,153	1.3	22,750	23,057

Note: Major firms.

Robust Investment in Materials Manufacturing Industries

- Following two consecutive years of decline in spending in FY2020 and 2021 due to Covid-19, capital spending in FY2022 (up 10.7%) marked the highest increase since FY2018 (up 11.4%), just before the Tokyo 2020 Olympics.
- Planned spending for FY2023 (up 20.7%) shows the third largest growth since the 1980s, following last year (up 26.8%) and FY2018 (up 21.6%). Continuing from last year, the manufacturing sector plans higher growth than the non-manufacturing sector, driven by semiconductor-related investment in a wide range of industries.
- Within the manufacturing sector, the materials industries show more robust domestic spending than the processing & assembly industries, which have rapidly expanded their overseas operations in the wake of the Great Recession. Planned investment for FY2023 also shows active spending led by investment for capacity expansion in semiconductor materials.

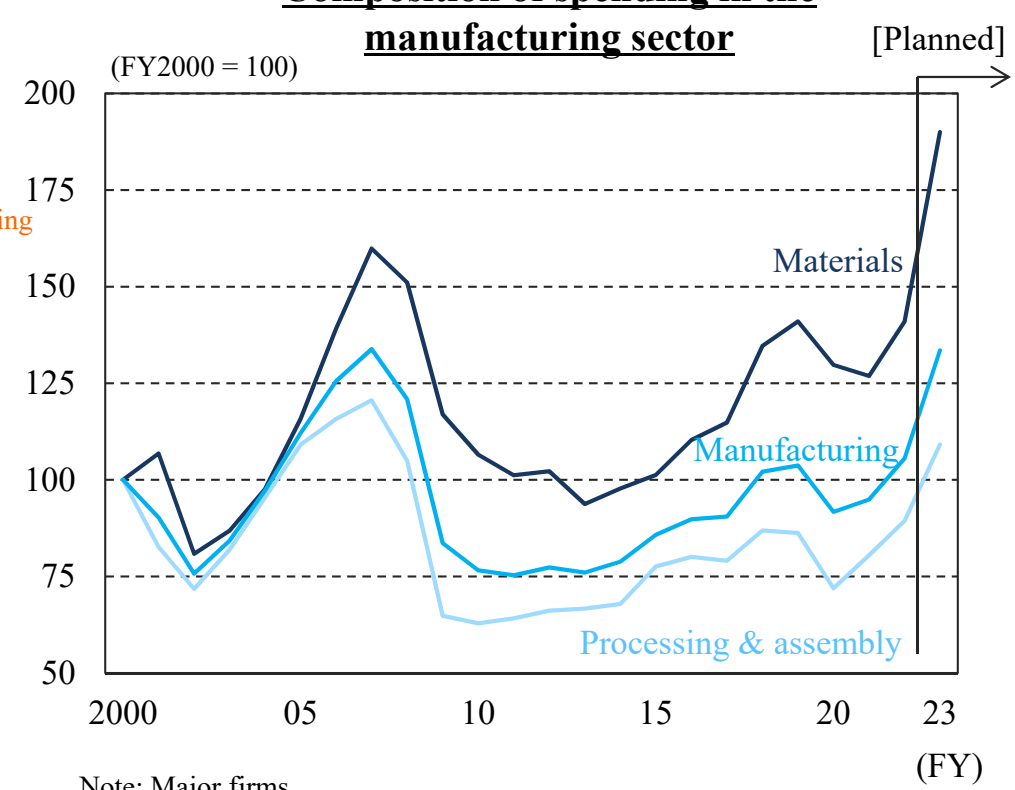
Changes in domestic capital spending



	FY2022 Actual	FY2023 Planned
Total	10.7	20.7
Manufacturing	11.2	26.5
Non-manufacturing	10.4	17.6

Note: Major firms.

Composition of spending in the manufacturing sector

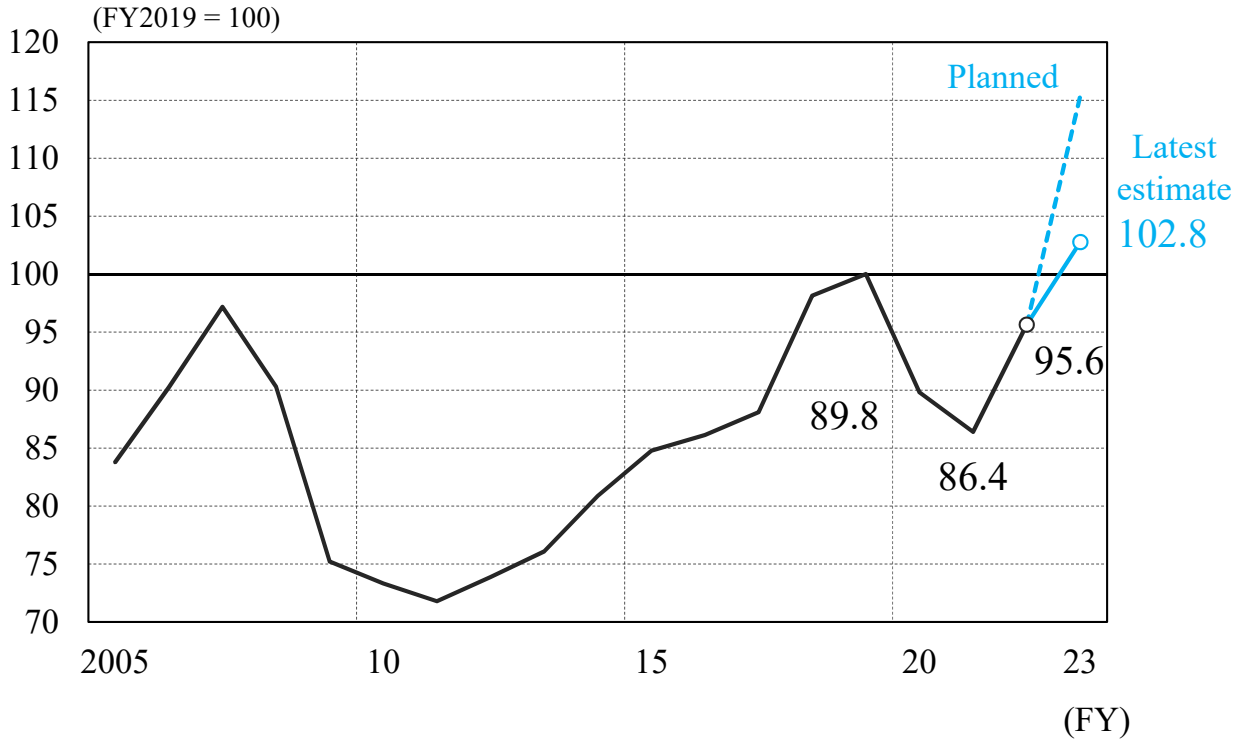


Note: Major firms.

Second Straight Year of Increase to Surpass Pre-Covid Level and Reach Record-High in Real Terms

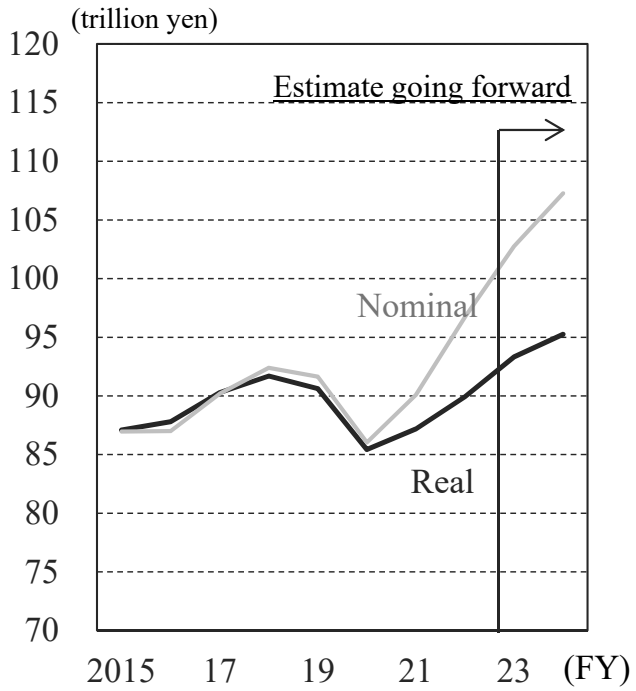
- In light of the pre- and post-Covid pattern of revision, capital spending will end up growing some 7% in FY2023, thus recovering, and even surpassing, the pre-Covid investment level of FY2019.
- Estimated domestic capital spending on a GDP basis using the results of this survey, including investment in R&D and software, may also hit a record-high largely due to projects carried over from the previous year, even in real terms excluding the impact of inflation.

Capital spending levels



Notes: 1. Major firms in all industries.
2. Latest estimate uses the average realization rate for a six-year period before and after Covid (FY2017–22).

Estimated capital spending on a GDP basis

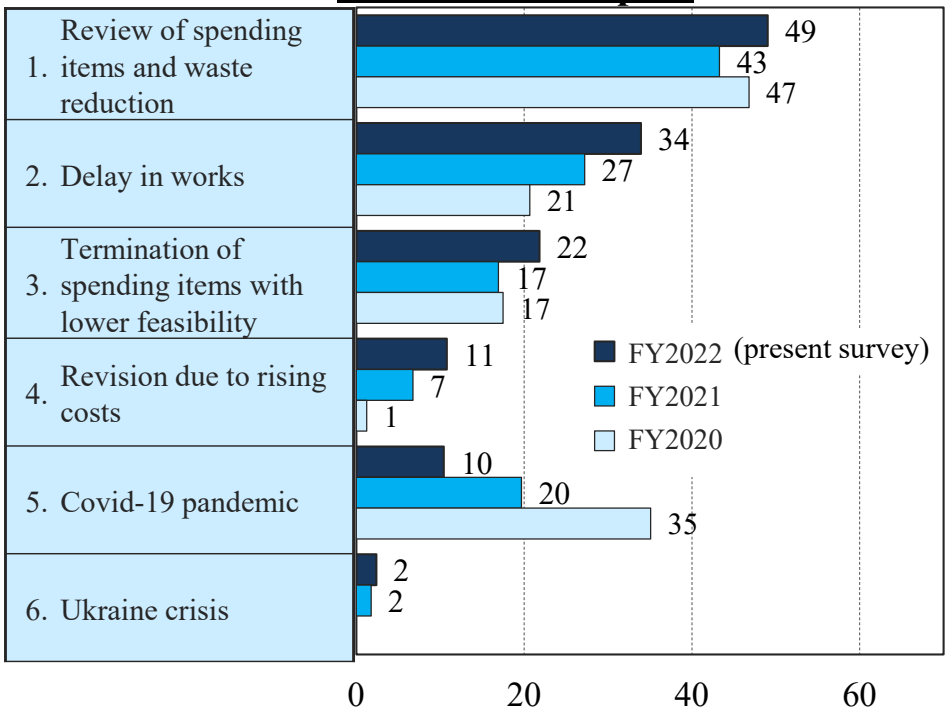


Notes: 1. Cabinet Office, DBJ, Ministry of Finance.
2. Estimates using DBJ survey results and the Financial Statements Statistics of Corporations by Industry.

Downward Revision of Prior Year's Investment Due to Delays in Works and Rising Costs, with Risks in Inflation and FX Fluctuations Going Forward

- The growth of capital spending in FY2022 was substantially revised downward from the highest planned figure in 50 years. While Covid-19 only accounted for some 10% of the reduction, the number of firms revising investment due to delays in works and rising costs mainly due to the labor shortage increased for the second consecutive year.
- Many cited "price inflation" and "foreign exchange fluctuations" as business risks going forward, along with "labor shortage." Many also cited "economic slowdown in Europe and the US" as having the greatest impact.

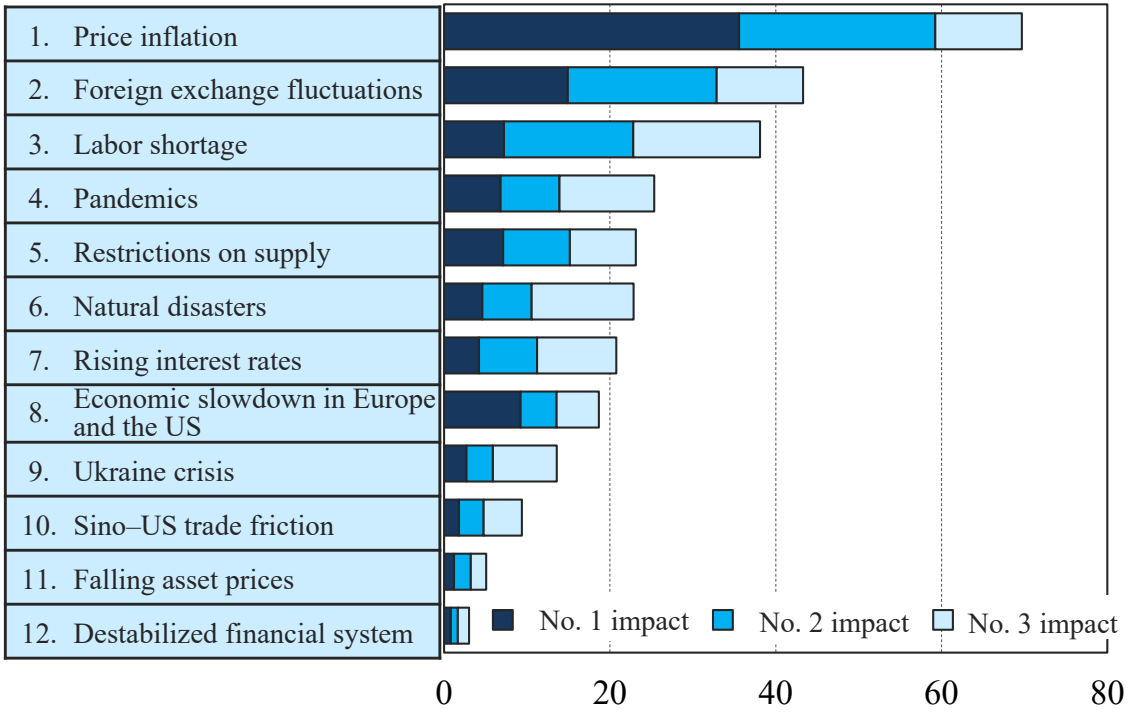
Reasons why last year's actual figures did not reach the initial plan



(% of firms giving valid response)

Notes:
1. Major firms in all industries.
2. Respondents may choose up to three answers.

Business risks going forward

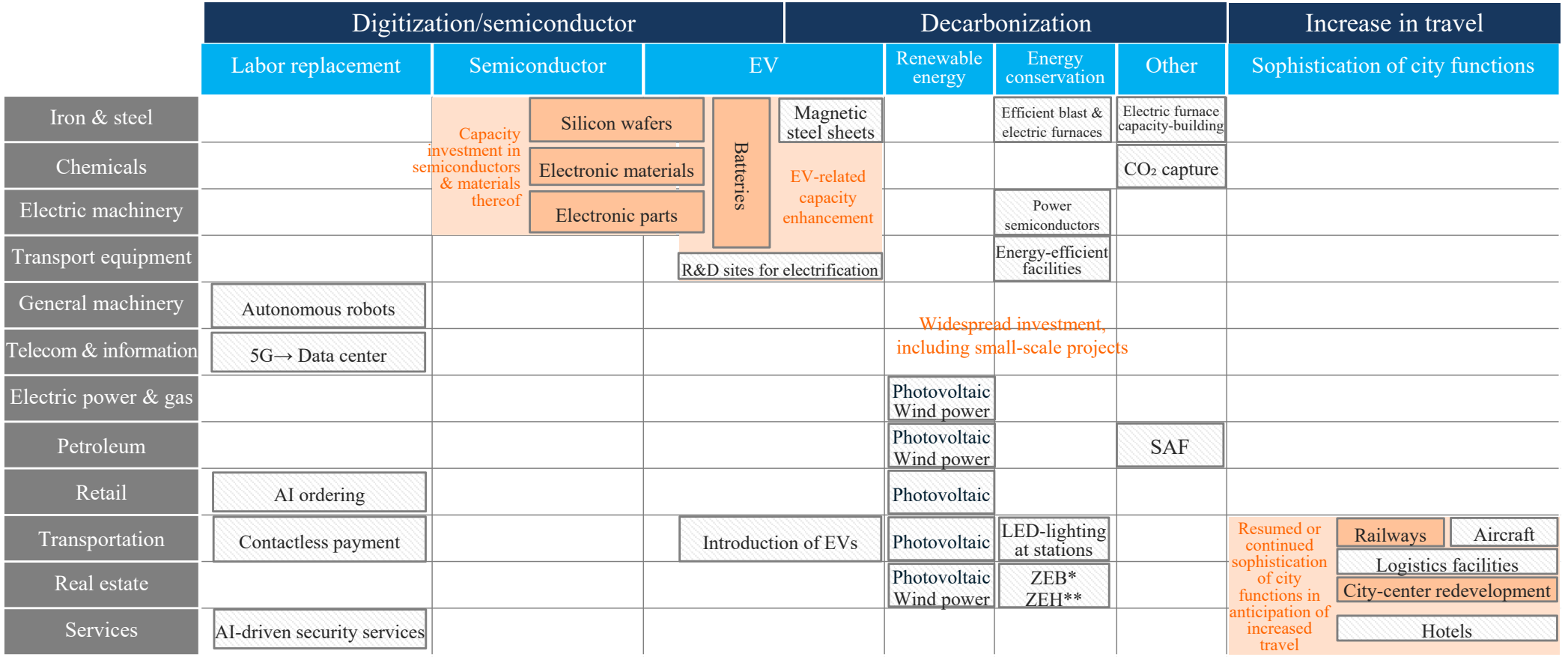


(% of firms giving valid response)

Notes:
1. Major firms in all industries.
2. Respondents may choose up to three answers in order of impact.

Characteristics of Planned Spending for FY2023: Expansion in Semiconductor Materials, Railway Safety Measures, Aircraft, among others

- As digitization accelerates with labor replacement including through AI, semiconductor production capacity will be expanded, including for silicon wafers and other materials in materials industries. Electric vehicle development will be accompanied by increased spending on batteries and magnetic steel sheets.
- With regard to decarbonization, spending on renewable energy and energy efficiency will progress in a wide range of industries, along with investment for new energy production such as sustainable aviation fuel (SAF).
- With the increased movement of people as Covid-19 is downgraded to a Class 5 disease, investment will resume in safety measures for railways, new aircraft introduction and hotels, in parallel with continued spending on city-center redevelopment and new distribution warehouses.

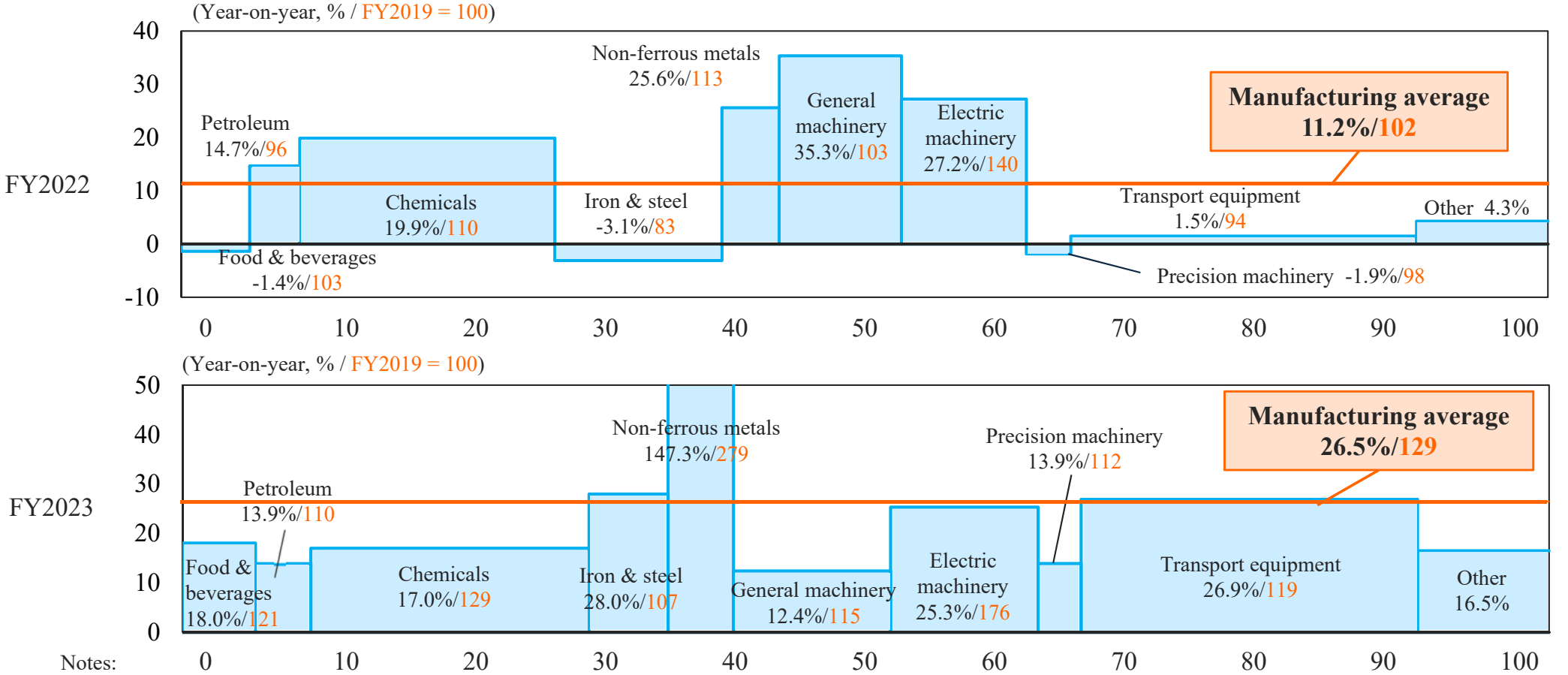


Note: Investment items showing a substantial increase on the previous year are shown in orange.

*ZEB: Net Zero Energy Building. **ZEH: Net Zero Energy House.

Skyline Chart for Manufacturing Sector: Robust Performance of Non-ferrous Metals, Transport Equipment and Chemicals Driven by Semiconductors and EVs

- FY2022 saw a substantial growth of spending in chemicals and general machinery due to strong demand for semiconductor and electric vehicle materials and automation.
- FY2023 will see another large increase in a variety of industries. Non-ferrous metals will substantially increase spending on semiconductor and EV materials. In transport equipment, investment will increase in electric vehicles, including batteries, with the easing of the semiconductor supply shortage. Spending will remain robust in chemicals, led by semiconductor materials and items related to pharmaceuticals, decarbonization and resource recycling.



Notes:
1. Major firms.
2. The larger the area, the greater the contribution to total spending.

Characteristics of Planned Capital Spending: Manufacturing

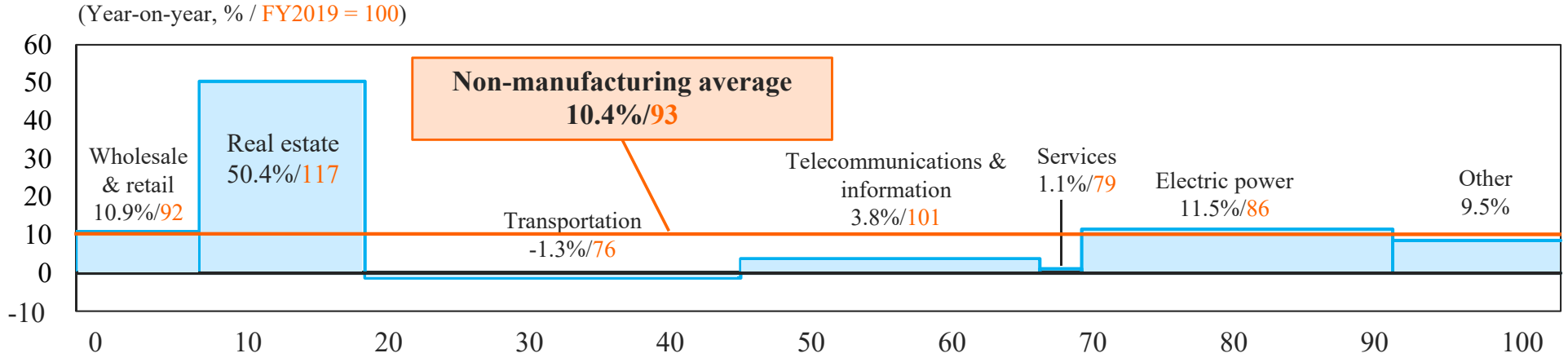
	FY2022		FY2023	
	YoY (%)	Characteristics	YoY (%)	Characteristics
Non-ferrous metals	25.6	Spending increased mainly due to capacity expansion in semiconductor materials in expectation of longer-term demand and in battery materials for electric vehicles.	147.3	A sizable increase is planned as high expectations continue for demand related to semiconductors and automobiles.
Automobiles	0.7	Spending slightly increased led by investment in new models and electrification for decarbonization.	27.1	Spending will increase substantially with the easing of semiconductor supply shortage and enhanced investment in battery/electrification-related projects.
Chemicals	19.9	Spending increased for the first time in three years mainly for electronic materials, healthcare and environment-related items.	17.0	Spending will rise for the second straight year, led by semiconductor materials and items related to pharmaceuticals, decarbonization and resource recycling.
Electric machinery	27.2	Spending rose for the second straight year led by capacity expansion, including for data centers and vehicle electrification.	25.3	Spending will increase for the third consecutive year with continued large-scale investment in data centers and in-vehicle devices.
Iron & steel	-3.1	Spending declined slightly as investment focused on maintenance and replacement amid the ongoing reduction in production capacity targeting the medium term and the stagnant demand.	28.0	Spending will increase mainly for facility updating and capacity expansion in magnetic steel sheets for electric vehicles, albeit with a narrower focus.
General machinery	35.3	Spending increased substantially for capacity expansion as supply constraints eased and demand for automation rose.	12.4	Spending will increase for the third straight year, led by demand for automation, vehicle electrification and capacity expansion related to semiconductors.
Food & beverages	-1.4	Spending declined slightly with the completion of major projects, despite continued investment in health-conscious products.	18.0	Spending will rise in response to the recovery in demand for eating-out and changing preferences for alcoholic drinks, in addition to the health trend.
Petroleum	14.7	Spending rose driven by investment in renewable energy projects.	13.9	A slight increase is planned with the acceleration of renewable energy projects and spending on next-generation fuels, including sustainable aviation fuel (SAF).
Precision machinery	-1.9	Spending experienced a small drop with the completion of new production sites for semiconductor equipment, among others.	13.9	A double-digit increase is planned driven by rising semiconductor demand, including for electric vehicles, and investment for capacity expansion and sophistication in medical equipment.

Note: Industries are listed in order of contribution in FY2023.

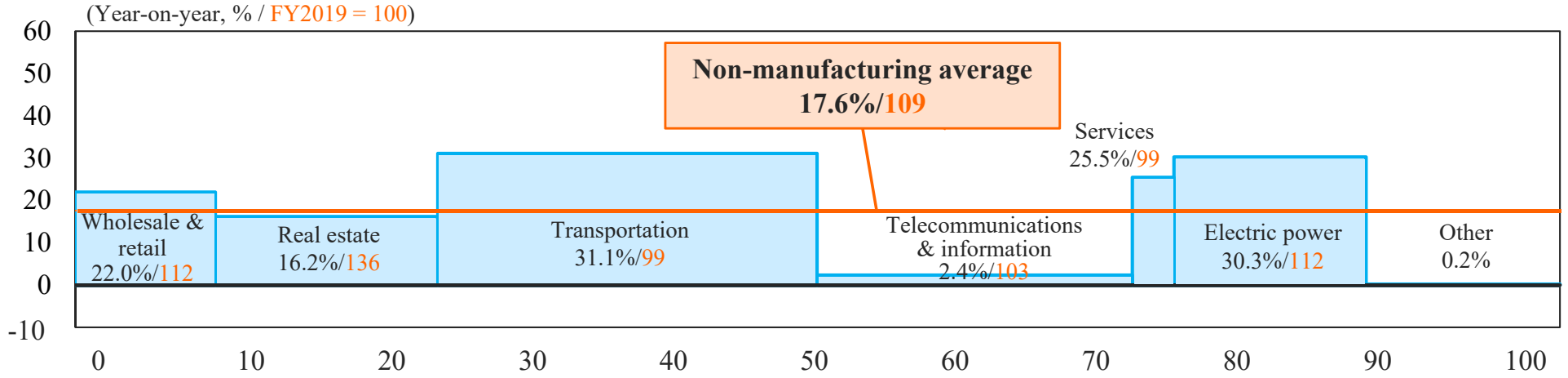
Skyline Chart for Non-manufacturing Sector: Driven by Transportation with Carried-over Investment and Real Estate with Continued Redevelopment

- Despite the downward revision due mainly to project postponement in transportation, spending rose substantially in FY2022, largely buoyed by the development of large-scale business hubs at city centers.
- A sizable increase is also planned for FY2023, led by spending on safety measures and transport capacity enhancement in transportation, continued large-scale development projects in real estate, and renewal of existing outlets in retail.

FY2022



FY2023



Notes:
1. Major firms.
2. The larger the area, the greater the contribution to total spending.

(FY2022 composition rate, %)

Characteristics of Planned Capital Spending: Non-manufacturing

	FY2022		FY2023	
	YoY (%)	Characteristics	YoY (%)	Characteristics
Transportation	-1.3	Spending declined as post-pandemic recovery in demand failed to materialize in aviation and construction works were delayed in railways.	31.1	Investment will recover with the resumption of spending on safety measures for railways in response to the increased movement of people, supported by the introduction of new aircraft and the construction of new distribution warehouses.
Electric power	11.5	Spending increased, mainly for nuclear power generation.	30.3	Spending will continue to increase with investment related to nuclear power plants, as well as maintenance and replacement of existing thermal power facilities.
Real estate	50.4	Spending rose substantially, driven by large-scale business hub development in city centers.	16.2	A double-digit increase in spending is planned with investment in the development of logistics facilities in addition to large-scale business hubs.
Wholesale & retail	10.9	Spending increased by double digits due to POS* digitization, including for self-checkout machines.	22.0	Spending will increase led by the renewal of existing outlets and the introduction of digital technology, including for AI ordering systems.
Services	1.1	Spending rose slightly as hotels and theme parks expected post-pandemic recovery in demand.	25.5	A substantial increase in spending is planned driven by hotels and theme parks in response to the recovery in the movement of people and the application of AI to security services, among others.
Telecom & information	3.8	Investment grew with the expansion of 5G base station/network development projects.	2.4	Spending will increase with the development of data centers and the enhancement of networks in rural areas, despite reduced investment in 5G.

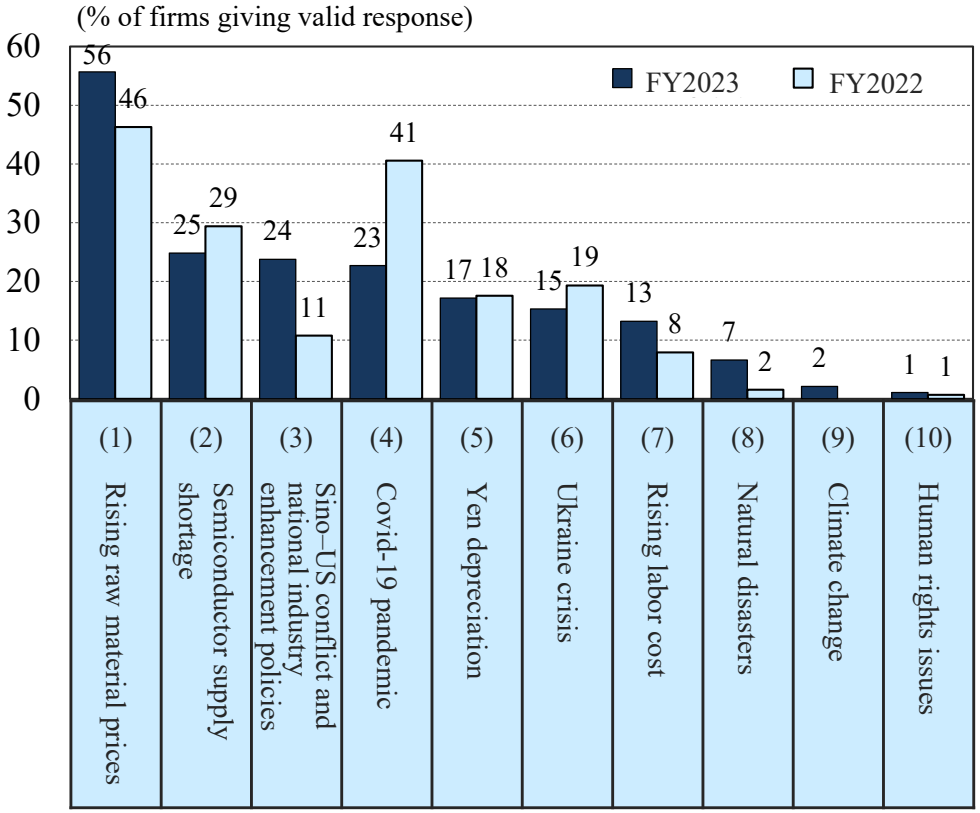
Note: Industries are listed in order of contribution in FY2023. *POS: Point Of Sale.

2. Supply Chains and Capital Spending Overseas

Resource Price Inflation to Trigger Sourcing Diversification, Component Commonization and Business Expansion in Markets with Robust Demand

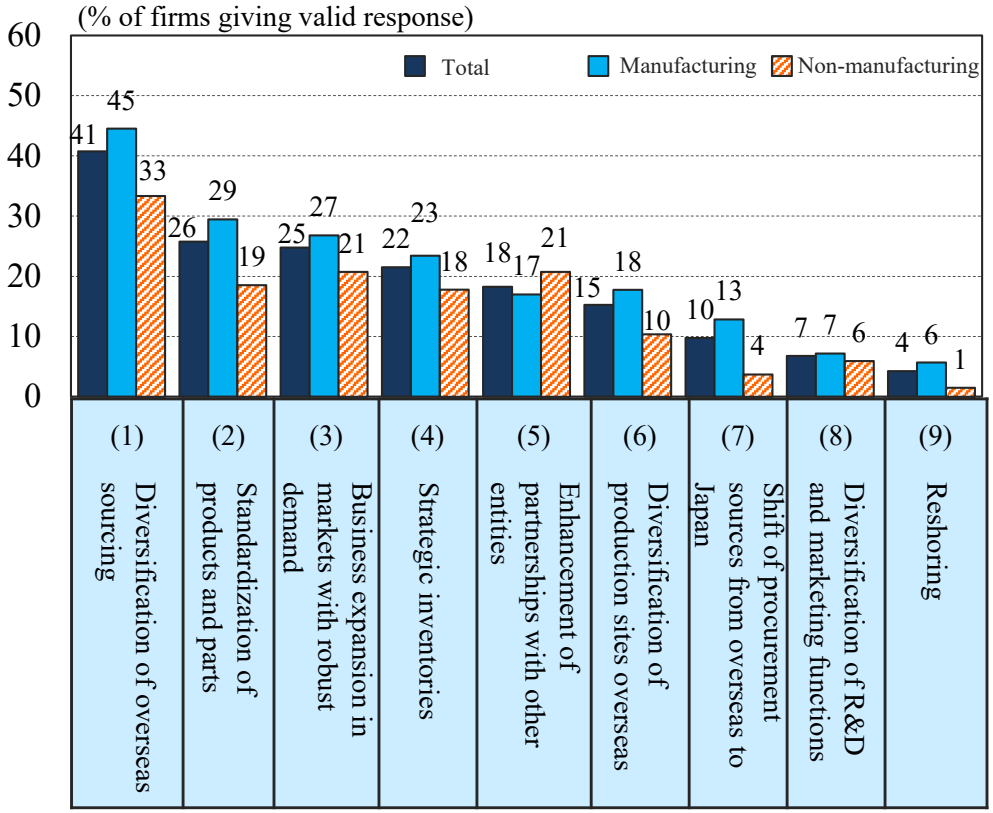
- As regards opportunities for revision of supply chains, fewer companies now cite Covid-19 or the Ukraine crisis, as more firms are now concerned about the rising raw material prices and labor cost, as well as the Sino–US conflict.
- As with the previous year, many companies, particularly manufacturers, cite "diversification of overseas sourcing" and "standardization of products and parts," but a considerable number of companies now cite "expansion of business in markets with robust demand." Meanwhile "reshoring" was only cited by about 5% of the companies, a share that has remained almost unchanged for the last three years.

Opportunities for revision of supply chains



Notes:
1. Major firms in all industries.
2. Respondents may choose up to three answers.

Actions to revise supply chains

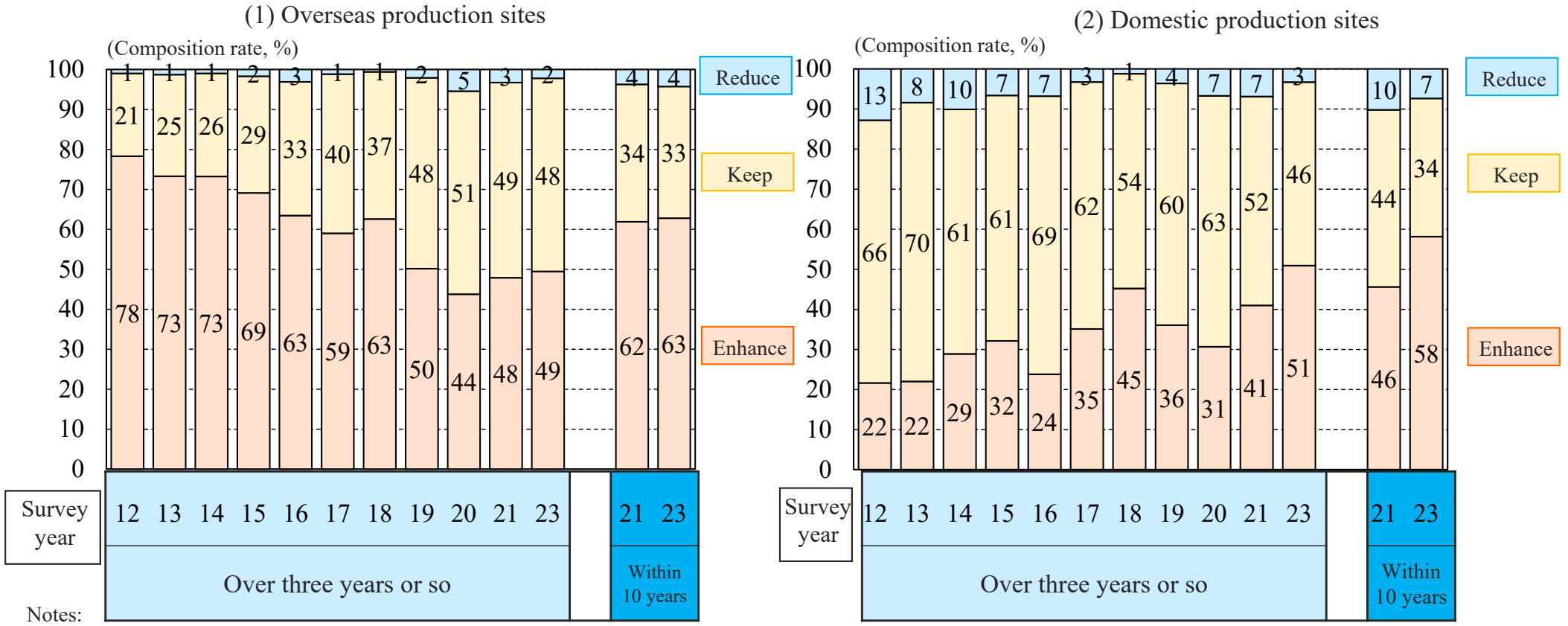


Notes:
1. Major firms.
2. Respondents may choose up to three answers.

Moves to Enhance Domestic Production Sites

- Asked about the medium-term prospects for supply capacity, a slightly larger number of manufacturers now intend to enhance overseas production sites over the next three years, but their share in the total number of manufacturers has not regained the pre-Covid level of 2019. However, more than 60% of the manufacturers now say that they will step up overseas production within 10 years.
- With regard to domestic production, the share of firms that say they will increase capacity over the next three years or so increased by 10 percentage points from two years ago. The 10-year perspective also points to a substantial increase of 12 points. Particularly in precision machinery and transport equipment, firms are now prioritizing domestic production as compared with the pre-Covid level.

Medium-Term Domestic and Overseas Supply Capacity (Manufacturing)



Notes:
1. Major firms.
2. Data covers the firms reporting both domestic and overseas operations (274 firms in FY2023; no data available for FY2022).

Capital Spending Overseas to Slow but Still Grow by Double Digits in FY2023

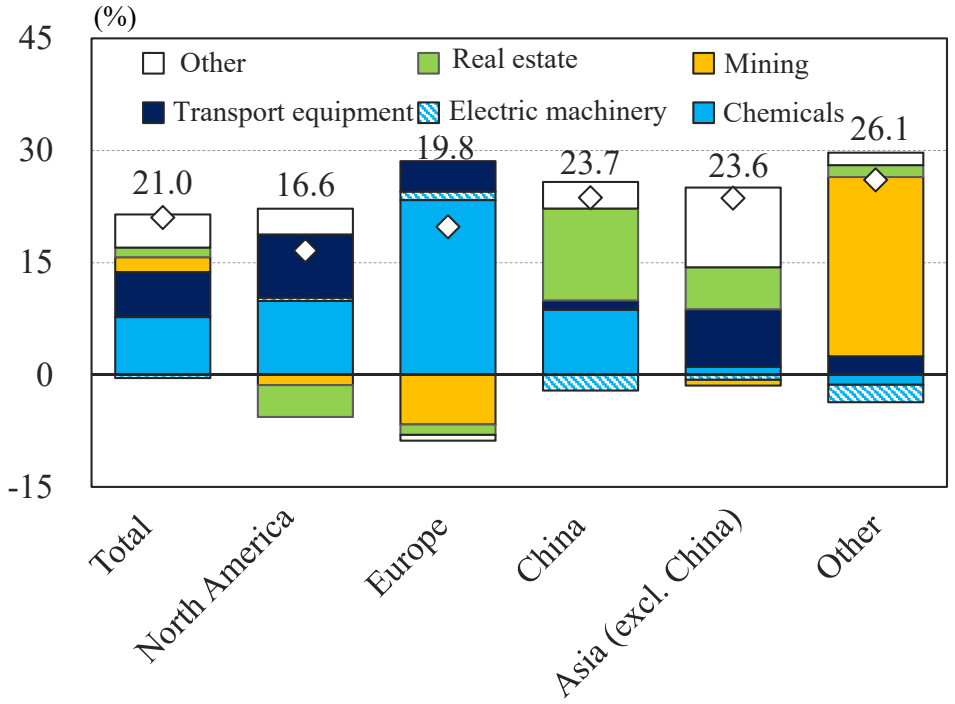
- Actual capital spending overseas in FY2022 recorded substantial growth of 35.9% in total, thus exceeding plans, led by automobiles, chemicals and non-ferrous metals in manufacturing and by mining and real estate in non-manufacturing. By country, the stagnant growth in China due to reduced spending in electric machinery was more than offset by robust spending in automobiles, chemicals and real estate in North America, automobiles and electric machinery in Asia excluding China, and mining and electric machinery in other parts of the world.
- Planned spending for FY2023 shows additional substantial growth of 21%. In China, spending will stagnate, particularly in electric machinery and precision machinery largely due to the completion of large-scale projects for electric vehicles and consideration for geopolitical risk, but will accelerate in real estate and chemicals, among other industries, to accommodate the rising demand. Double-digit growth in the US will continue in automobile batteries and semiconductor materials for chemicals, largely facilitated by the Inflation Reduction Act. In Asia excluding China, spending will continue to increase rapidly in many industries driven by expectations for growing domestic demand and supply chain building. In the "other" regions, investment to secure energy is planned to continue.

Changes in capital spending overseas in FY2022 and 2023

(Year-on-Year, %)	FY2022		FY2023
	Planned (655 firms)	Actual (510 firms)	Planned (611 firms)
Total	29.3	35.9	21.0
North America	19.4	34.5	16.6
Europe	18.4	25.2	19.8
China	12.1	4.8	23.7
Asia (excl. China)	45.0	48.8	23.6
Other	56.7	63.3	26.1

Note: Major firms in all industries.

Changes in FY2023, by region and by industry

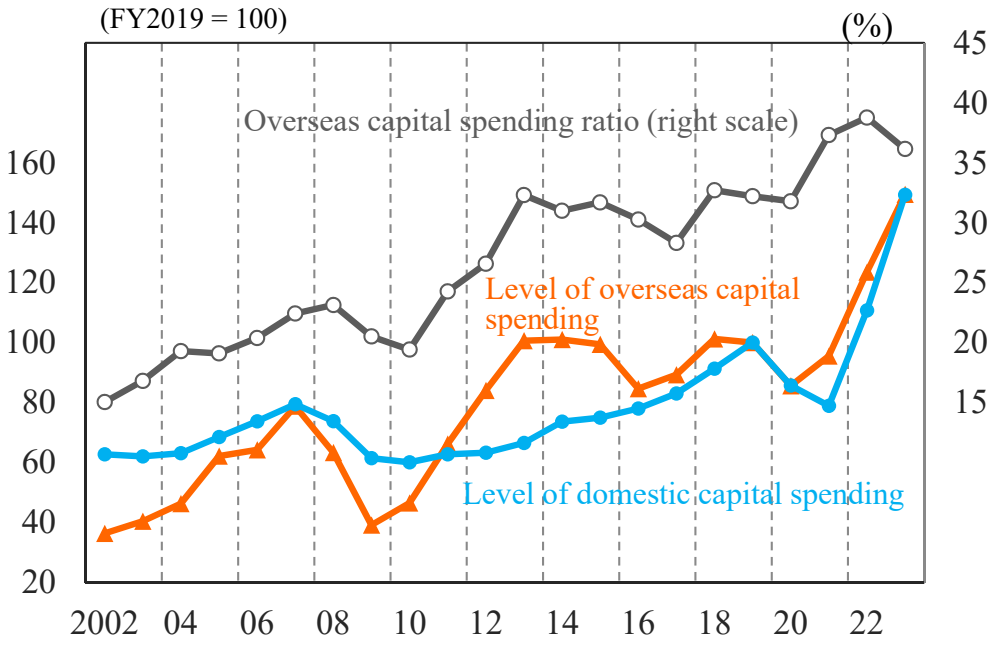


Note: Major firms.

Overseas Spending to Grow Slower than Domestic Spending in FY2023, with China as Second Priority Target Following North America

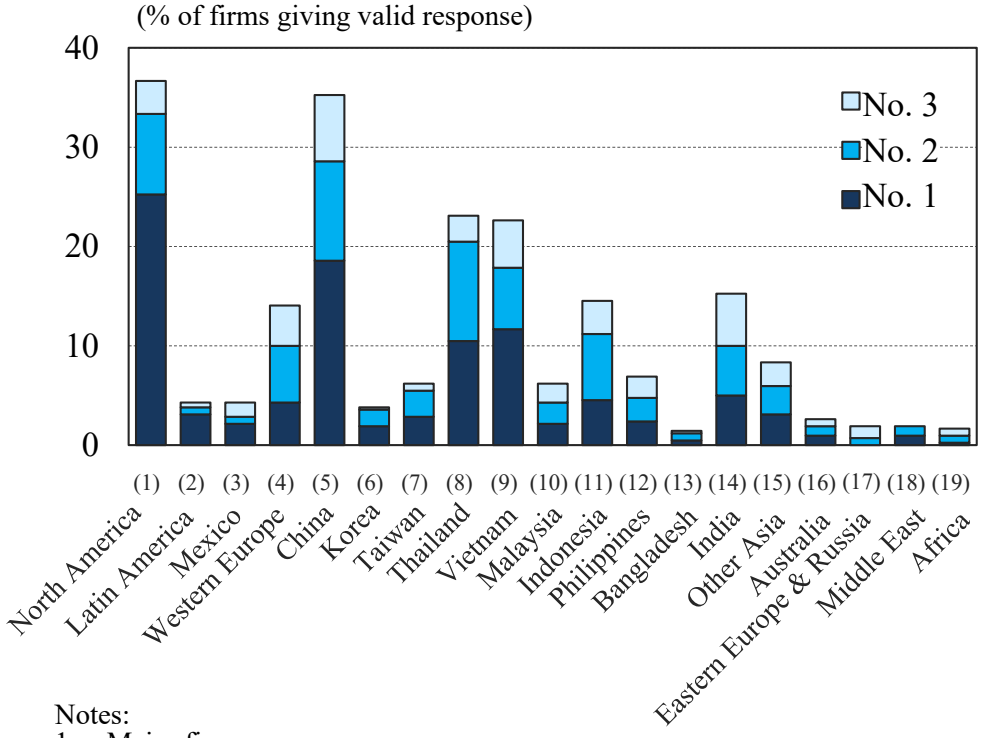
- Capital spending overseas had increased substantially until 2013, buoyed by the yen appreciation after the Great Recession. Subsequently, however, it stagnated as the yen lost its value and the Chinese economy slowed. Following a decline due to the slowdown in overseas economies induced by Sino–US trade friction and the Covid-19 pandemic from 2019, spending started to recover in FY2021, and substantial growth is also expected in FY2023.
- The overseas capital spending ratio rose early in the post-pandemic period, as overseas investment recovered faster than domestic investment. It is expected to decline in FY2023 as investment will grow faster in Japan than overseas.
- North America tops the list of focus markets for capital spending in three years, closely followed by China, and then by Thailand and Vietnam.

Levels of domestic and overseas capital spending and the overseas capital spending ratio



Notes:
1. Consolidated basis, except for domestic spending up to 2009, shown on an unconsolidated basis.
2. Overseas capital spending ratio = Overseas capital spending ÷ Domestic capital spending

Focus markets for overseas capital spending (in three years)



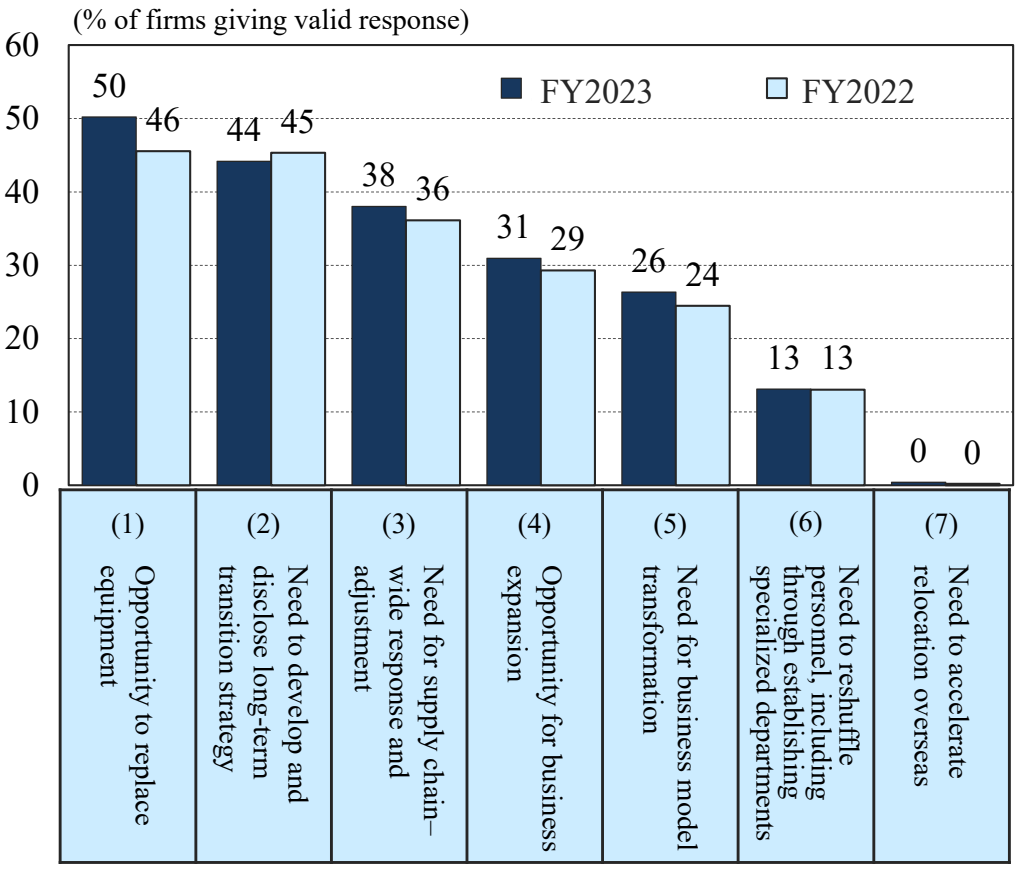
Notes:
1. Major firms.
2. Respondents may choose up to three answers in order of impact.

3. Decarbonization

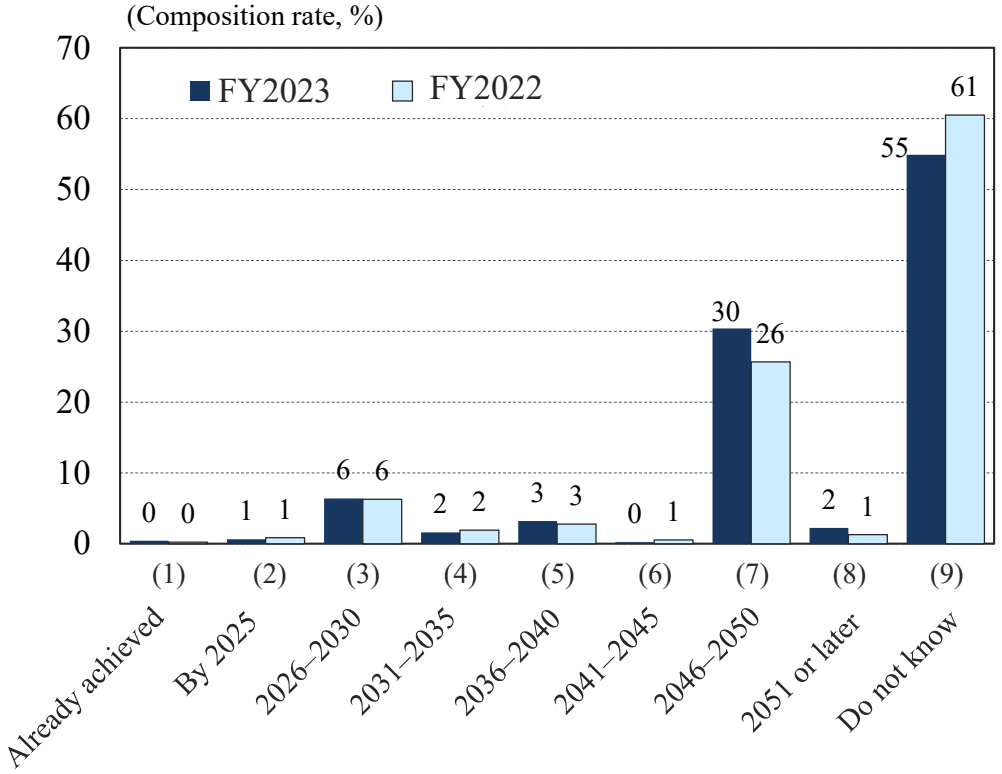
Carbon Neutrality to Trigger Replacement of Facilities, with More Companies Defining Target Date (Mostly 2050)

- More companies are now seeing carbon neutrality as an opportunity for facility replacement, pointing to a potential positive impact on investment.
- Meanwhile, the number of companies not disclosing any target date for achieving carbon neutrality declined on the previous year, but the majority set a 2050 target date, indicating no immediate impact on investment.

Expected business impact of accelerated actions to achieve carbon neutrality on an international scale



Target date for achieving carbon neutrality



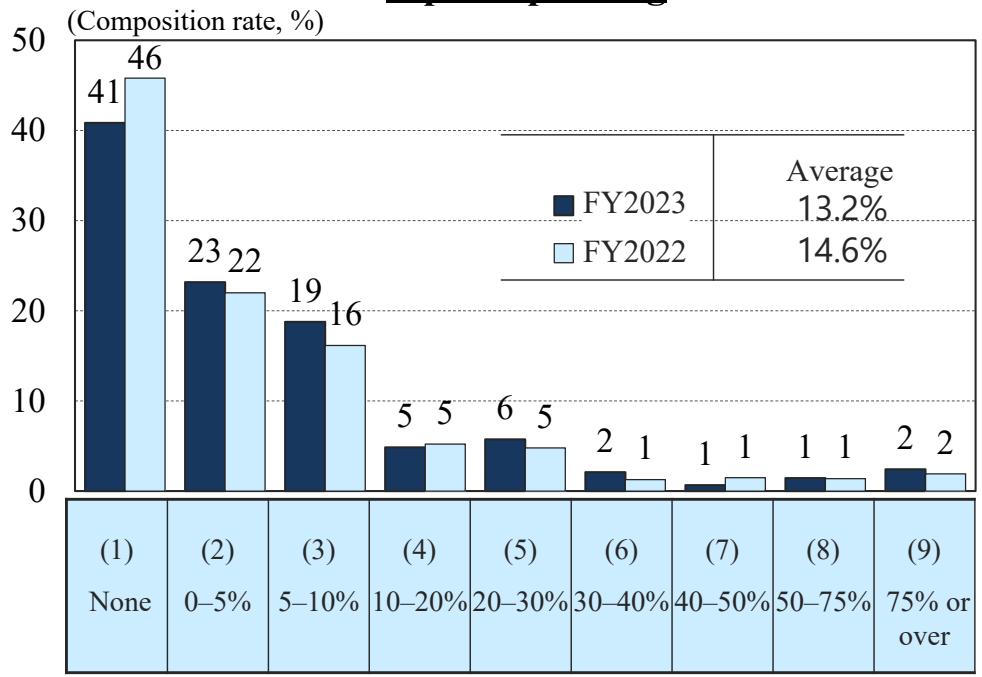
Note: Major firms in all industries.

Notes:
1. Major firms in all industries.
2. Respondents may choose up to three answers.

Decarbonization Investment Ratio Staying at 13%, Still Focused on Energy-Saving and EVs

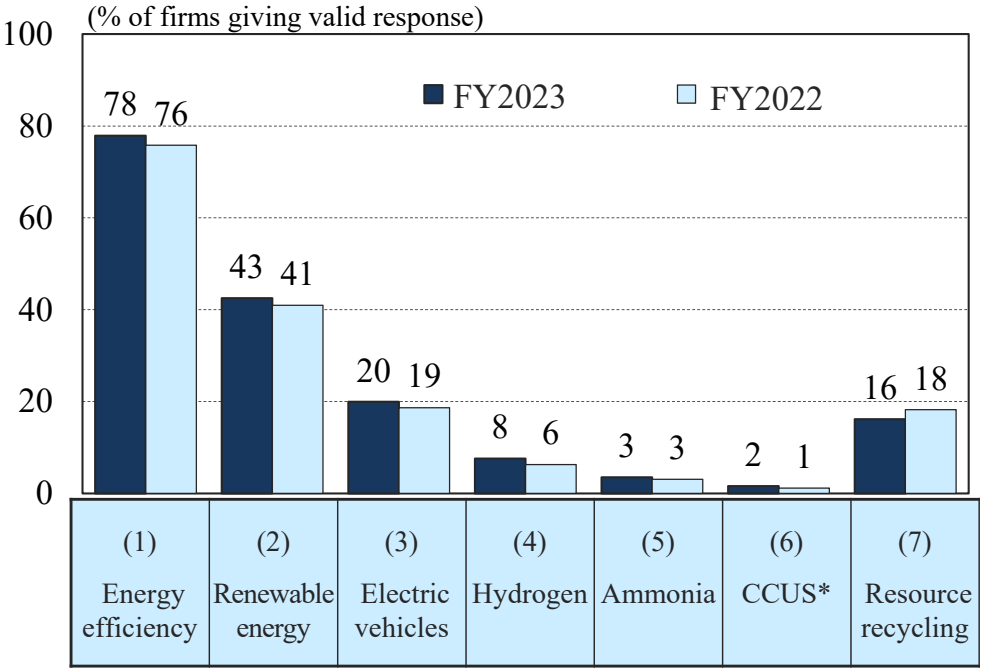
- The number of companies reporting "zero" investment for decarbonization declined as a percentage of planned capital spending for FY2023, with a slight increase in the number of companies reporting "less than 10%." No substantial increase is observed, however, as decarbonization investment only represents 13% of the total in value terms.
- Capital spending on decarbonization is mostly intended for energy efficiency and renewable energy, as 20% of the companies plan EV-related spending. No significant change is observed in the composition of elementary technologies.

Share of decarbonization investment in total capital spending



Notes:
1. Major firms in all industries.
2. The average is weighted using the amount invested by the firms responding to both the FY2022 and 2023 surveys.

Composition of decarbonization investment



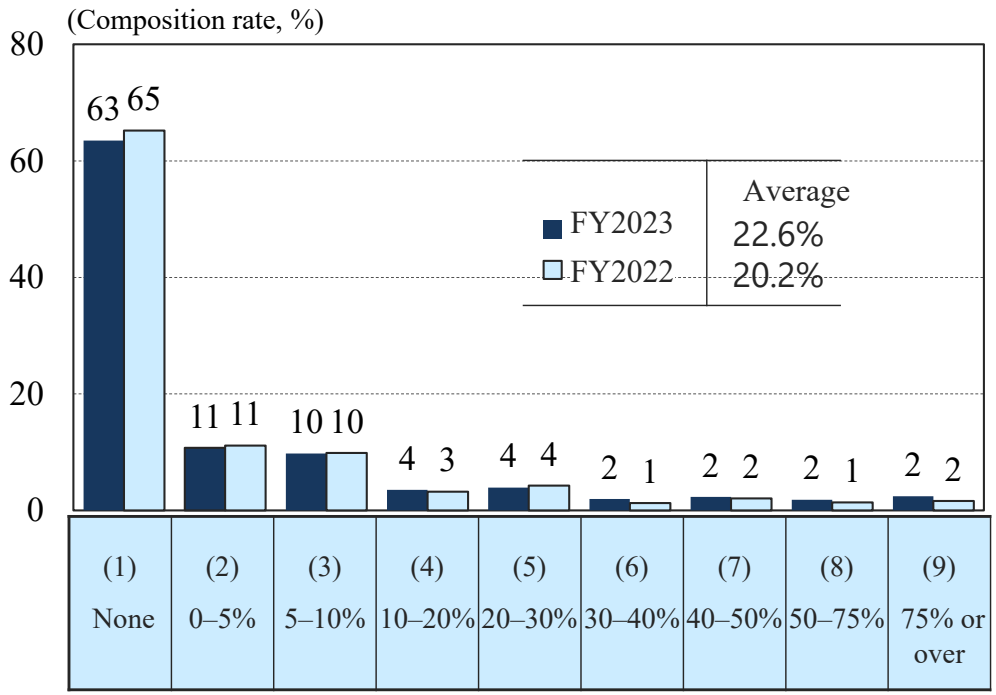
Notes:
1. Major firms in all industries.
2. Respondents may choose up to three answers.

*CCUS: carbon capture, utilization and storage.

Decarbonization Accounts for approx. 20% in R&D, with Slight Increase in Hydrogen

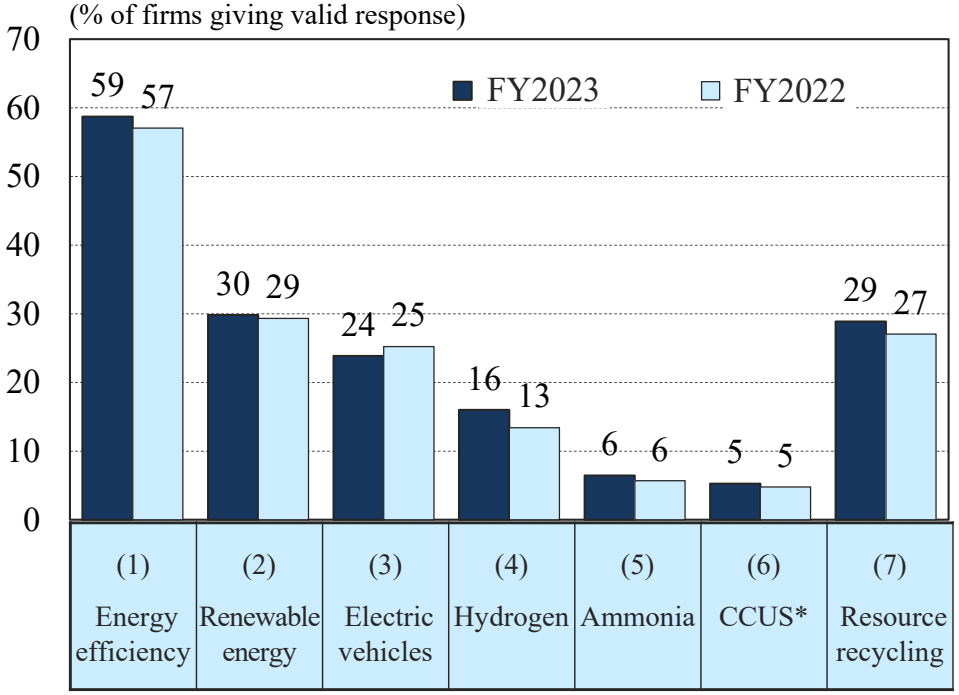
- Decarbonization as a percentage of planned R&D investment for FY2023 is higher in general machinery, a key industry for decarbonization infrastructure development, and in automobiles, leading the development of electric vehicles. In value terms, it accounts for some 20% of R&D investment, thus slightly exceeding its share in total capital spending. The ratio also rose slightly on the previous year.
- The composition of R&D points to sizable shares of electric vehicles and resources recycling, as well as energy saving and renewable energy. Hydrogen also rose 3 percentage points on the previous year.

Share of decarbonization in R&D investment



Notes:
1. Major firms in all industries.
2. The average is weighted using the amount invested by the firms responding to both the FY2022 and 2023 surveys.

Composition of R&D on decarbonization



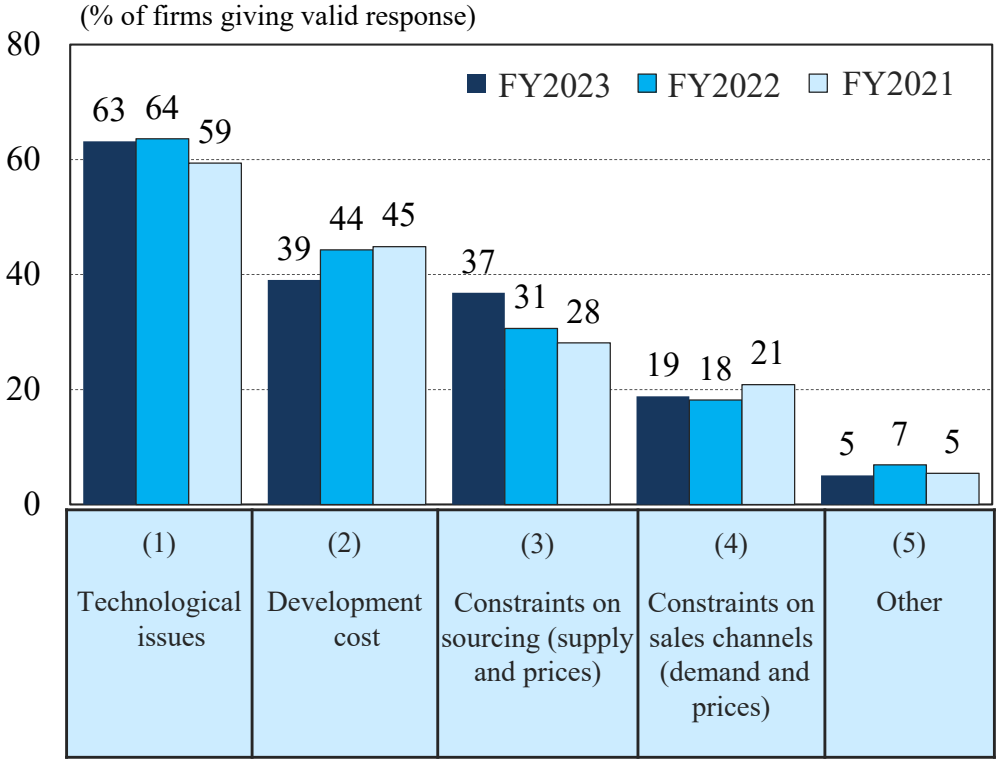
Notes:
1. Major firms in all industries.
2. Respondents may choose up to three answers.

*CCUS: carbon capture, utilization and storage.

Heightened Awareness of Constraints on Sourcing, with High Expectations for Hydrogen as a New Fuel

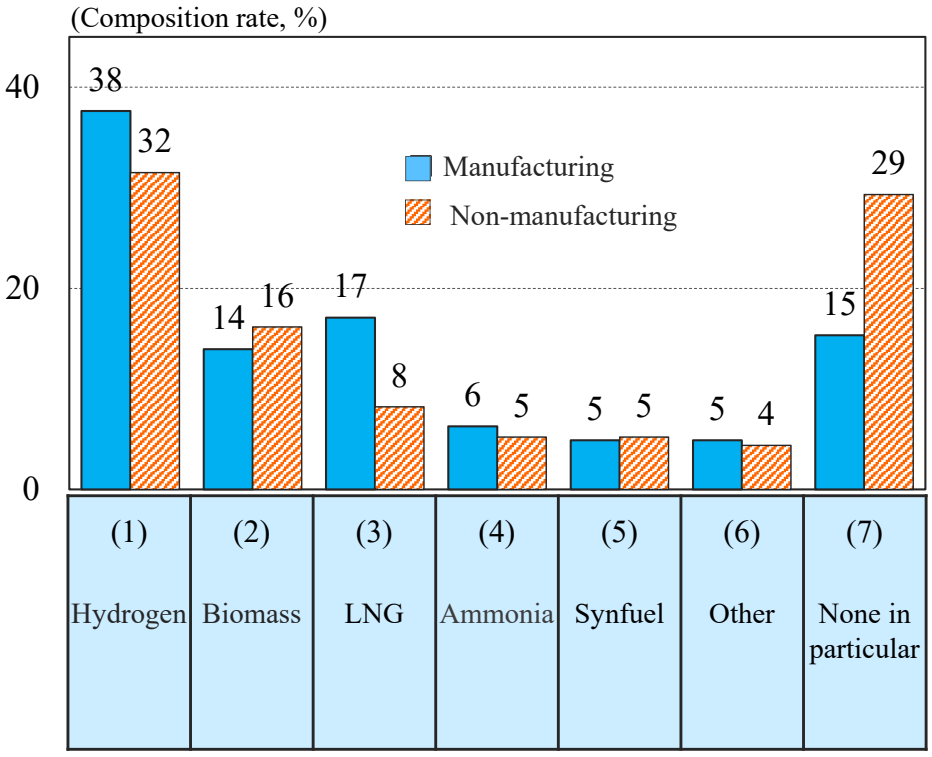
- As challenges for progress in decarbonization efforts, the largest number of companies cited "technological issues," while those citing "development cost" declined. In contrast, the share of "constraints on sourcing" increased.
- Most firms cited hydrogen as a promising fuel for attaining carbon neutrality, particularly in manufacturing industries such as petroleum and iron & steel. Biomass was a fuel of choice for power generation, while many manufacturers also cited LNG as one of the least CO_2-emitting fossil fuels.

Challenges for progress in decarbonization efforts



Notes:
1. Major firms in all industries.
2. Respondents may choose up to two answers.

Promising fuels for decarbonization



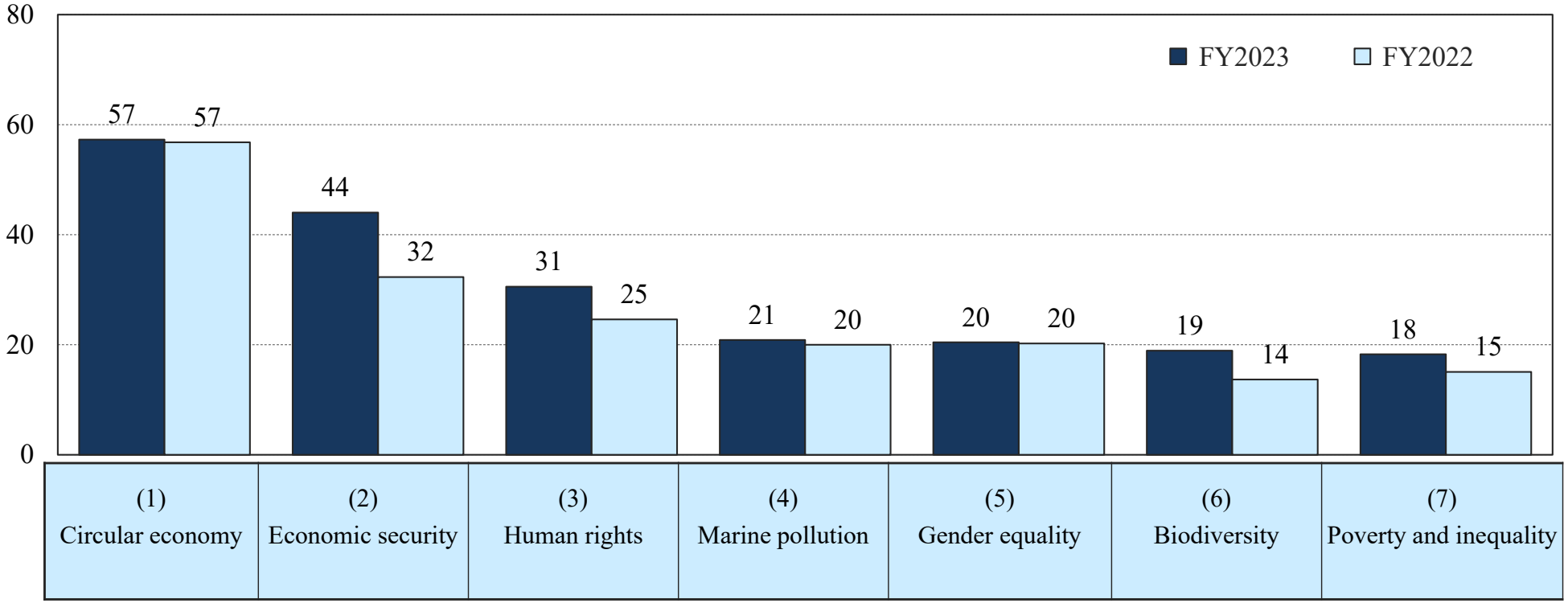
Note: Major firms.

Attention Focused on Circular Economy and Economic Security, with Slightly Higher Interest in Human Rights and Biodiversity

- The circular economy is attracting the greatest interest among the sustainability agenda items excluding climate change. There is also heightened interest in economic security amid rising geopolitical risks.
- Companies also have come to pay slightly greater attention to human rights and biodiversity.

Interest in sustainability agenda items other than climate change

(% of firms giving valid response)



Notes:
1. Major firms.
2. Respondents may choose up to three answers.

4. Digitization

Rising Digitization Investment, Mainly for Decarbonization and Improvement of Railway Convenience

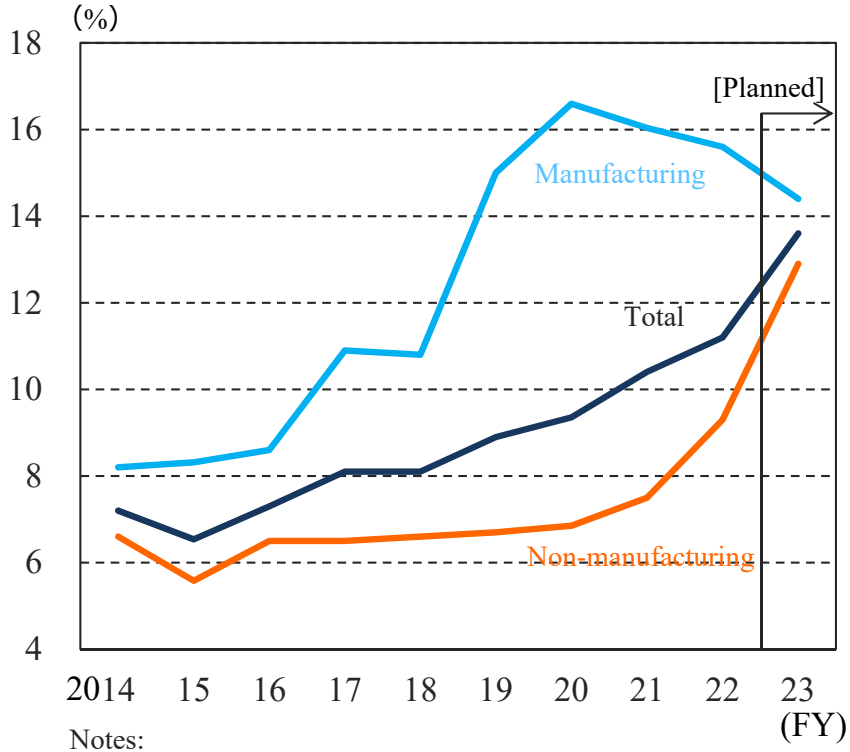
- Despite a downward revision as always, digitization investment increased for the second consecutive year in FY2022, up 8.4% on the previous year.
- Planned investment for FY2023 shows an increase of 33.8% overall. In the manufacturing sector, spending will rise 32.3% led by general machinery for CO_2 management and by transport equipment for decarbonization, including energy management, whereas the non-manufacturing sector plans an increase of 35.3% led by railways for mobility-as-a-service apps and convenience improvement and by electric power & gas for remote maintenance.
- The share of digitization investment in total capital spending will decline in manufacturing on the back of robust investment in tangible fixed assets, but will increase in non-manufacturing, driven by industries with the need to replace labor or respond to inbound tourists.

Change in digitization investment in FY2022 and 2023

(Year-on-year, %)	FY2022		FY2023
	Planned (714 firms)	Actual (583 firms)	Planned (682 firms)
Total	27.9	8.4	33.8
Manufacturing	20.6	1.1	32.3
General machinery	48.5	17.9	59.3
Transport equipment	32.5	3.8	33.1
Non-manufacturing	37.2	14.5	35.3
Transportation	33.5	38.5	54.2
Electric power & gas	110.3	-1.9	39.3

Note: Major firms.

Digitization investment ratio

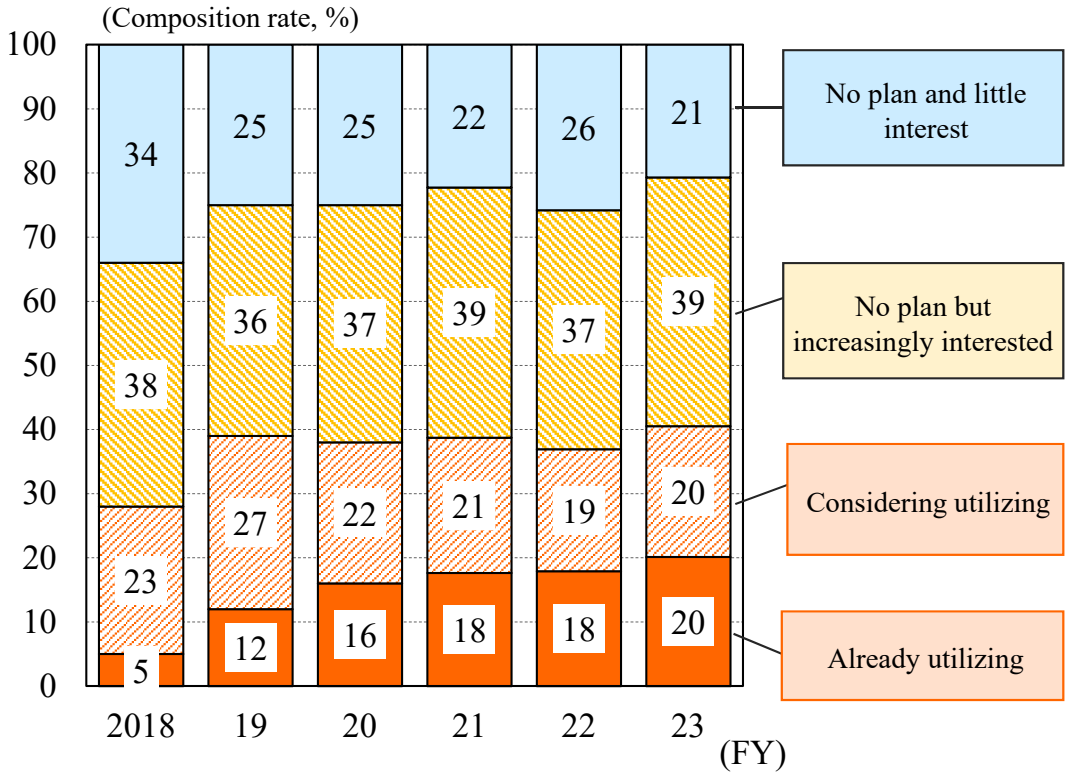


Notes:
1. Major firms.
2. % of total capital spending.

Long Road to Digital Transformation despite Increased Use and Interest in AI

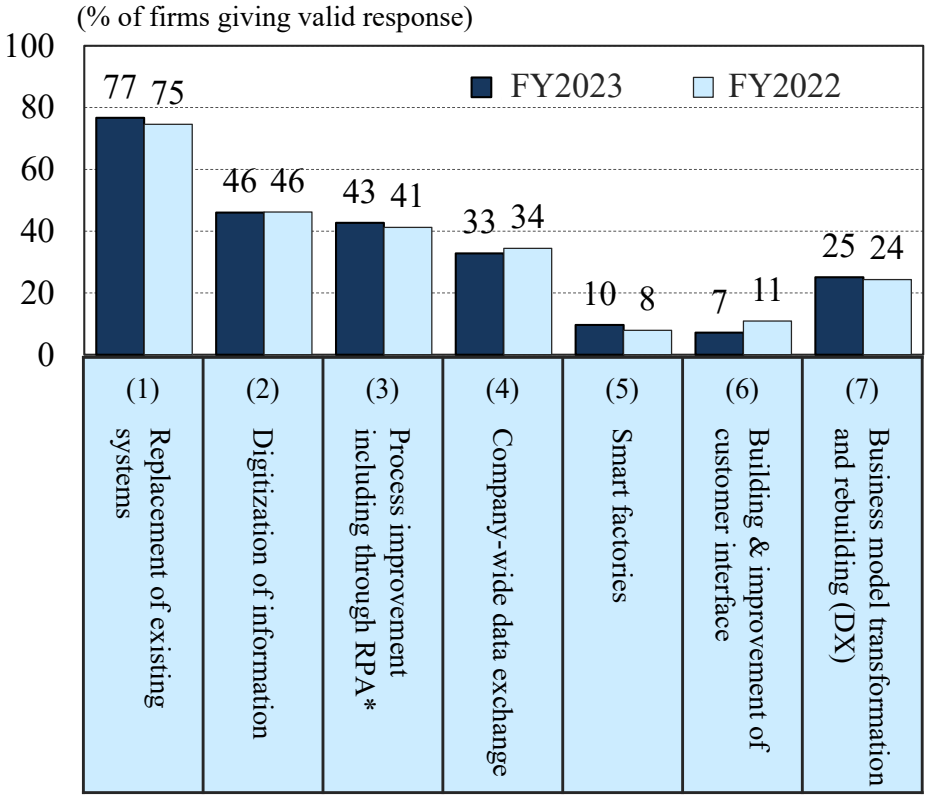
- The share of firms responding "already utilizing," "considering utilizing" or "increasingly interested" regarding the use of AI and IoT, including generative AI, increased on the previous year to reach the highest level since FY2018.
- Actions for digitization show no progress from the previous year. A majority of firms cite replacement of existing systems, while some 40% of the respondents are still in the process of preparing for digital transformation (DX), citing digitization of information or company-wide data exchange. Only about 20% of the firms have reached the DX stage (i.e., business model transformation and rebuilding).

Utilization of AI, IoT and other advanced technologies



Note: Major firms in all industries.

Actions for digitization

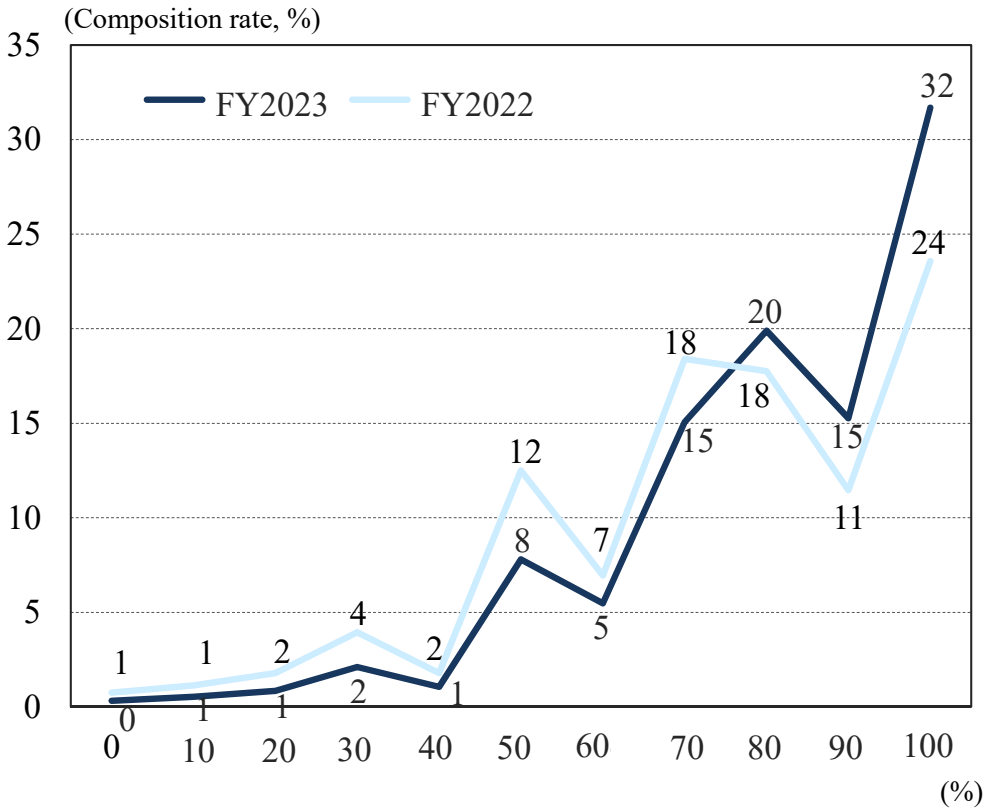


Notes:
1. Major firms in all industries.
2. Respondents may choose up to three answers.
*RPA: robotic process automation.

Improved Prospects for Office Space amid Return-to-Office Movement

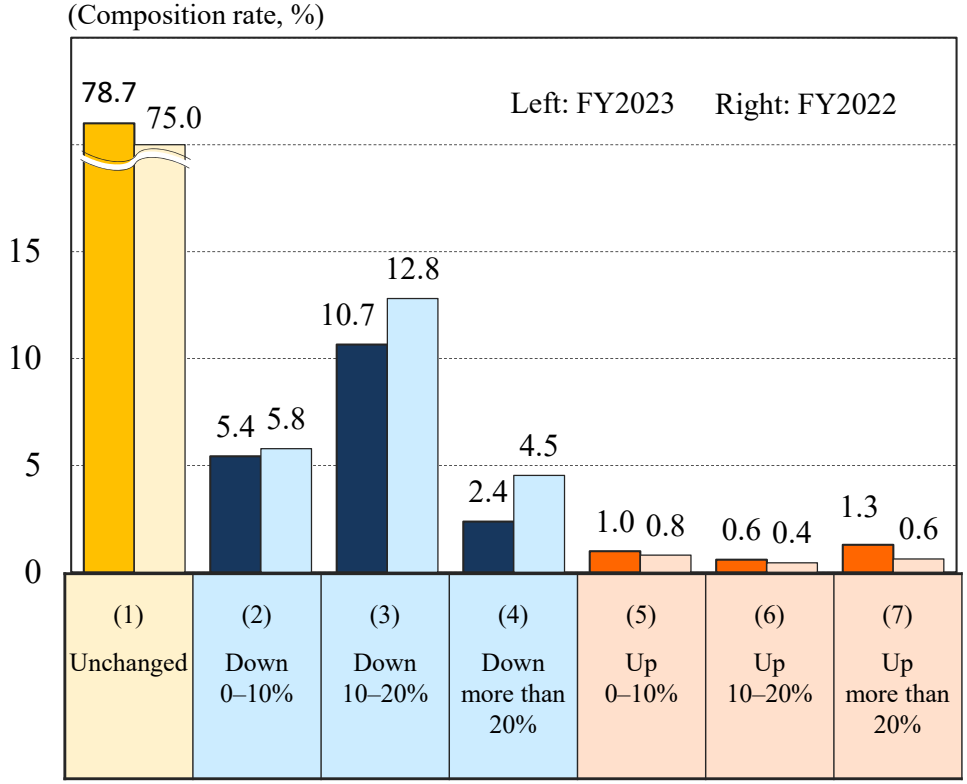
- The ideal percentage of employees present at the workplace increased following the downgrading of Covid-19 to a Class 5 disease. Fewer firms cite 70% or under and more firms cite 80–100%.
- Longer-term prospects for office space improved on the back of this return-to-office movement. Fewer firms now anticipate a decrease of over 10%; whereas, the share of firms expecting office space to remain unchanged rose about 4 percentage points. As a simple average, the expected reduction in office space declined from about 3% in the previous year to about 2%.

Ideal percentage of employees present at the workplace



Note: Major firms in all industries.

Longer-term prospects for office space



Note: Major firms in all industries.

5. Investment in Innovation

Continued Increase in R&D Expenditure Led by New Car Model Development, Electronic Materials and Decarbonization

- Development projects in FY2022 included new model development and CASE(Connected, Autonomous, Shared & Services, Electric)-related and decarbonization-related development in transport equipment, new drugs and electronic materials in chemicals, and decarbonization-related development in general machinery. R&D expenditure increased 9.6% and surpassed the planned level, backed by the recovery in revenue.
- Planned R&D expenditure for FY2023 shows an increase of 5.1% on the previous year, staying within the ordinary growth range. Continued investment for decarbonization will be accompanied by electrification projects in transport equipment and by IoT-related projects in general machinery and electric machinery.

R&D expenditure

(Year-on-year, %)	FY2022		FY2023	Key R&D projects
	Planned (657 firms)	Actual (557 firms)	Planned (608 firms)	
Total	7.9	9.6	5.1	
Manufacturing	7.9	9.6	4.9	
Transport equipment	6.1	9.3	4.1	New model development, CASE-related and carbon neutrality–related (particularly for electrification) development
Chemicals	8.6	10.9	3.2	Development of high-performing products, including for pharmaceuticals, automobiles and electronic materials
Electric machinery	12.3	9.9	1.7	Development for IoT market, electric vehicles, 5G
General machinery	7.7	11.8	12.8	Hydrogen gas turbines/engines, carbon-neutral air-conditioning, IoT imaging technology, facilities related to car parts
Non-manufacturing	9.2	9.4	11.1	

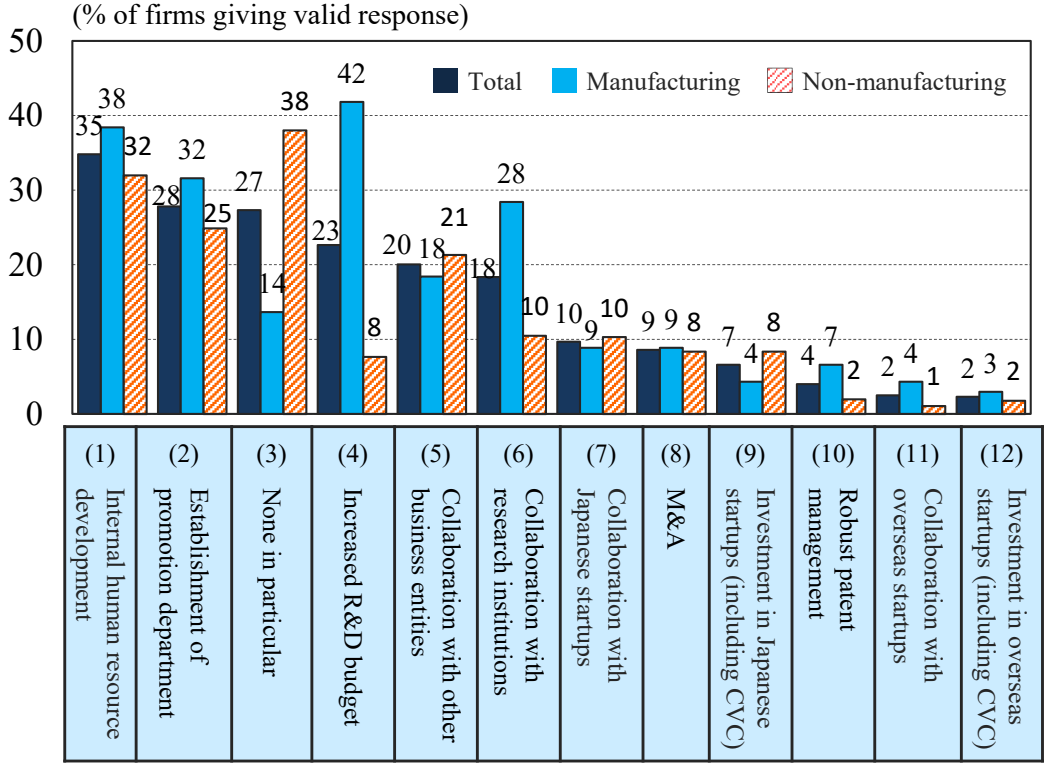
Notes:
1. Major firms.
2. R&D expenditure (consolidated basis) comprises all costs related to R&D, including personnel cost, raw materials cost, depreciation cost and allocated overhead.

Actions to Start with Improving Internal Structure including for Human Resource Development

- Actions to promote innovation include internal human resource development, establishment of a promotion department and improvement of internal structure including for greater budget allocation. Collaboration with research institutions is also being promoted, mainly in the manufacturing sector. The shares of firms working with startups and those investing in startups both remain at about 10%.
- As compared with the previous year, more firms are now citing increased R&D budget, establishment of a promotion department and collaboration with startups, including corporate venture capital (CVC) startups.

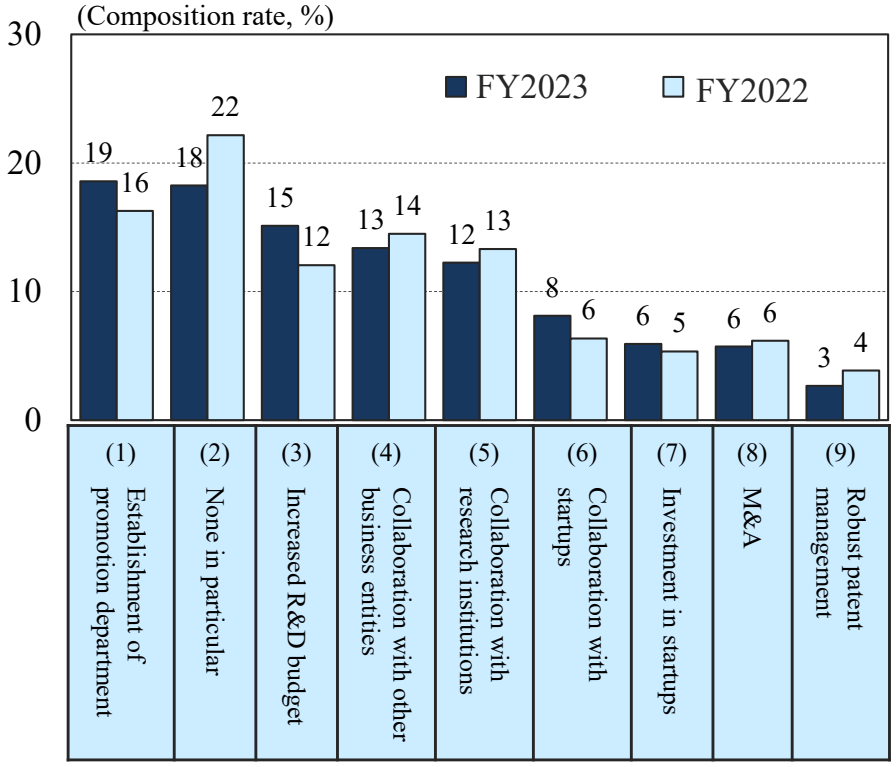
Actions to promote innovation

FY2023 survey



Notes:
1. Major firms.
2. Respondents may choose up to three answers.

Comparison vs. FY2022 survey

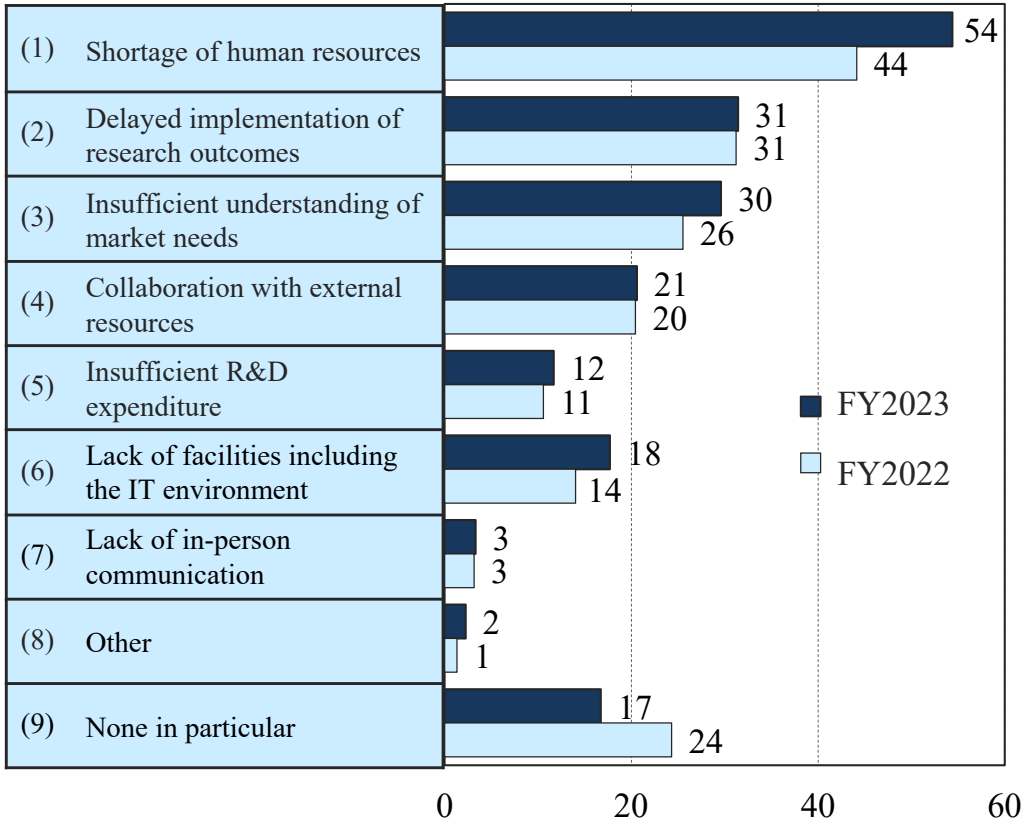


Notes:
1. Major firms in all industries.
2. Recalculated based on common options.

Increased Need to Address the Labor Shortage and Improve the IT Environment, with Development of Information for Collaboration with Startups

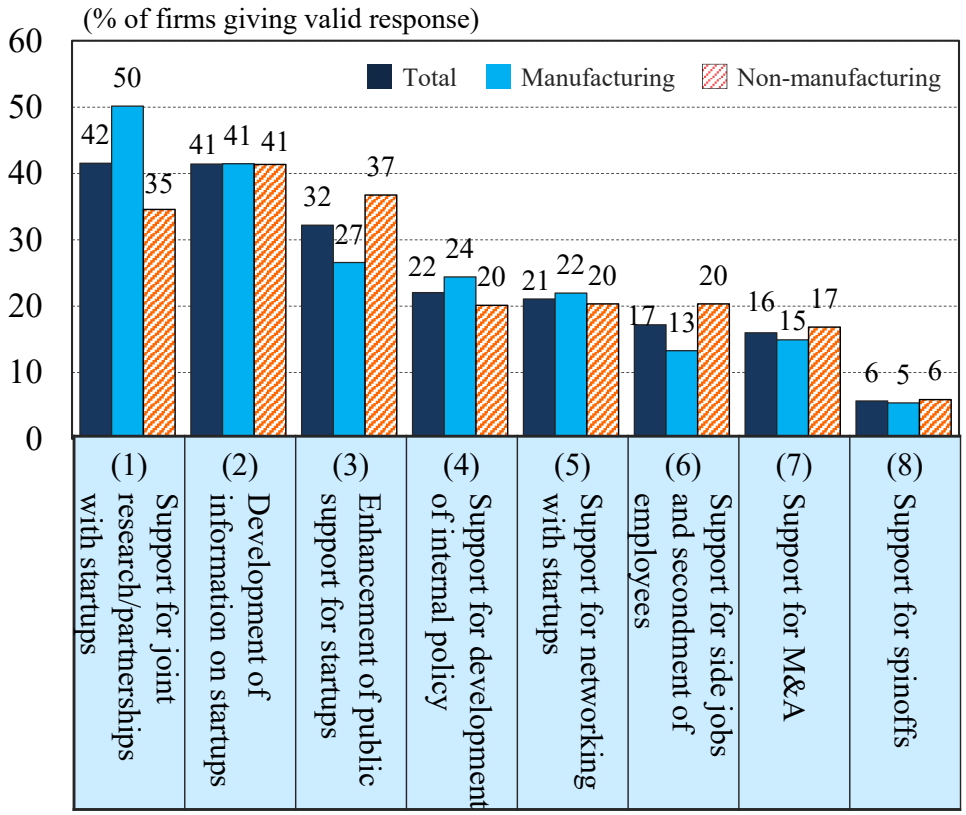
- Asked about challenges for R&D, a record number of firms cited a shortage of human resources, followed by "delayed implementation of research outcomes" and "inefficient understanding of market needs." In comparison with the previous year, more companies now cite a shortage of human resources and lack of facilities including the IT environment.
- As effective policy measures to promote collaboration with startups, the largest number of firms cite support for joint research/partnerships, particularly in the manufacturing sector, while development of information on startups emerged as a common need.

Challenges for research and development



Notes:
1. Major firms in all industries.
2. Respondents may choose up to three answers.

Policy measures deemed effective for promoting collaboration with startups



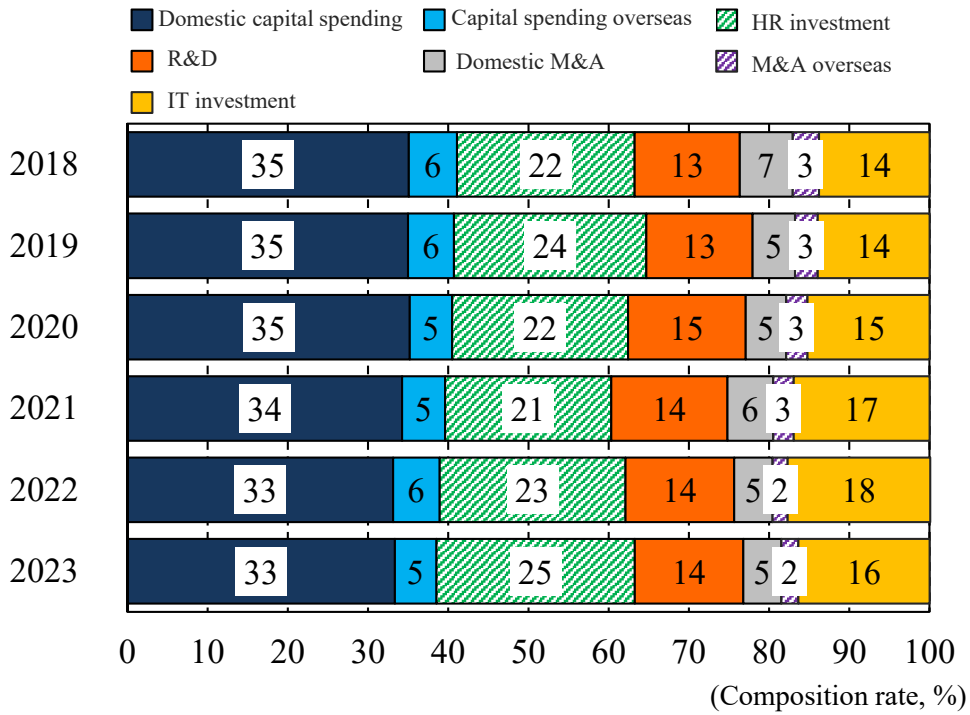
Notes:
1. Major firms in all industries.
2. Respondents may choose up to three answers.

6. Investment in Human Resources

Actions to Improve Recruitment, Training and Pay amid Rising Priority of Investment in Human Resources

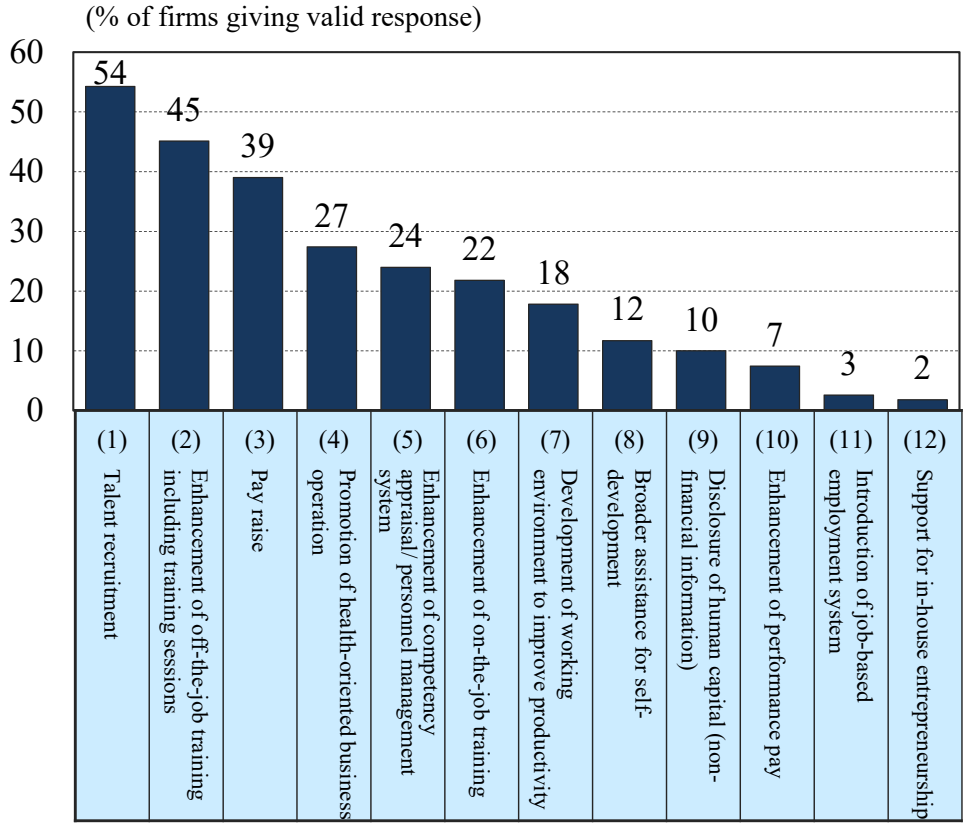
- The priority of HR investment rose on the previous year within investment in a broader sense not limited to tangible fixed assets.
- The composition of HR investment indicates that firms give top priority to talent recruitment, followed by the enhancement of off-the-job training including training sessions. Notably, a significantly higher percentage of firms are now investing in pay raise, an item less prioritized than "development of working environment to improve productivity" in the previous year. Only a small number of firms cite support for in-house entrepreneurship or introduction of a job-based employment system.

Priorities in investment in a broad sense



Notes:
1. Major firms in all industries.
2. Figures represent percentages calculated based on a scoring mechanism giving three points to the top priority, two points to the second priority, and one point to the third priority.

Composition of HR investment

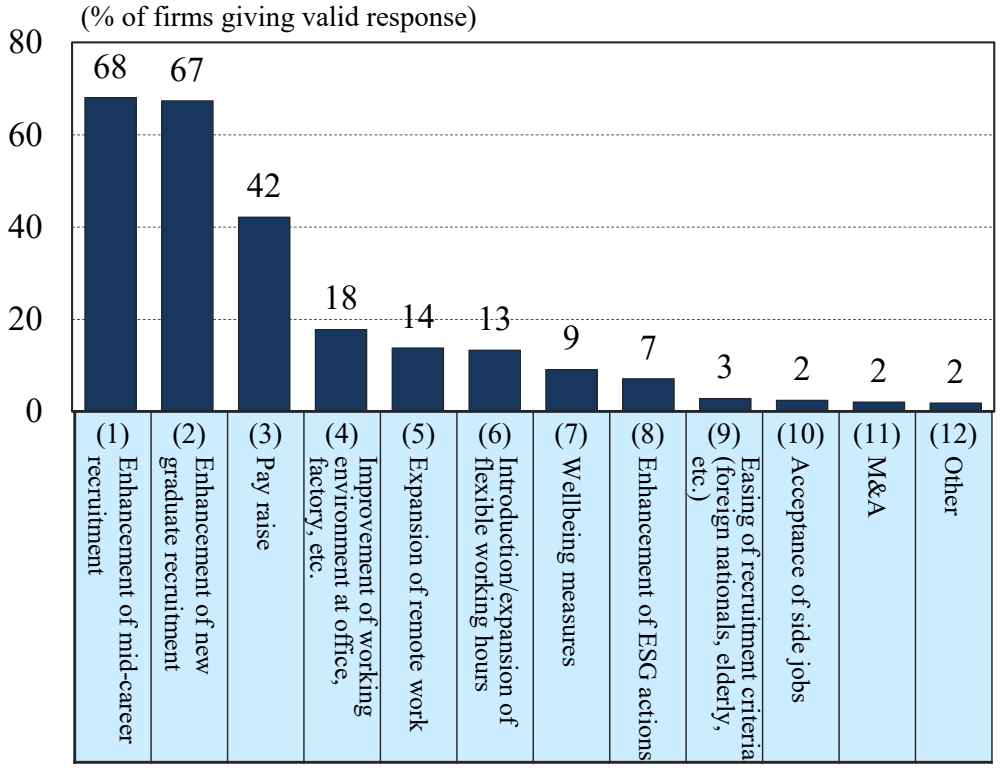


Notes:
1. Major firms in all industries.
2. Respondents may choose up to three answers.

Pay Raise and Improved Working Environment as Recruitment Measures, While Investing in Automation

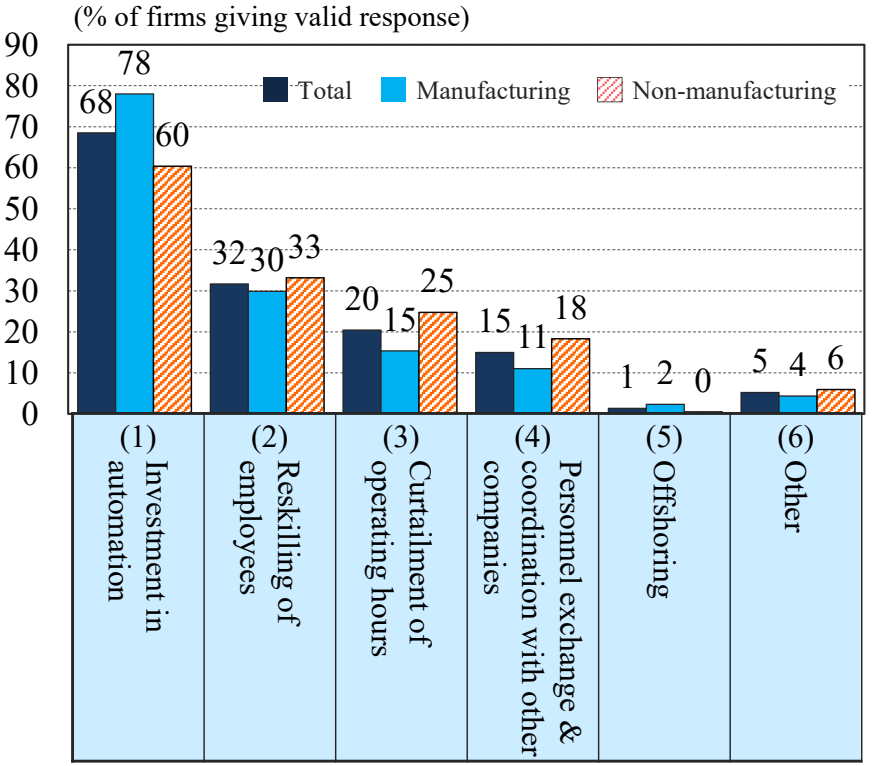
- As measures for talent recruitment, some 40% of the firms cited pay raise, in addition to the enhancement of new graduate and mid-career recruitment. About 20% also recognize improving the working environment at the office, factory, etc. as an effective measure.
- The largest number of firms, particularly manufacturers, cited investment in automation as an alternative measure in case of failing to recruit, while 30% are taking action for reskilling.

Actions for talent recruitment



Notes:
1. Major firms in all industries.
2. Respondents may choose up to three answers.

Alternative to recruitment in response to labor shortage

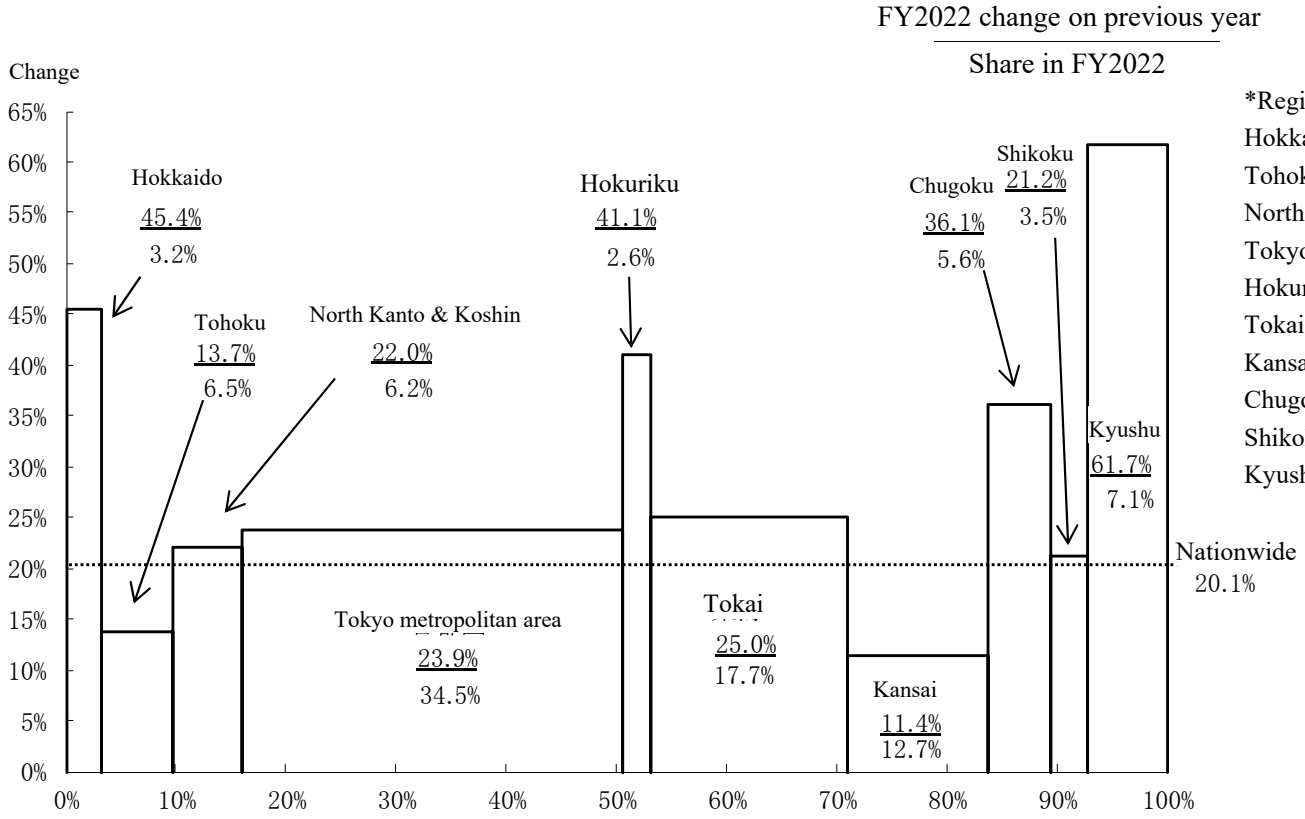


Notes:
1. Major firms.
2. Respondents may choose up to two answers.

7. Characteristics of Capital Spending, by Region and by Medium-Sized Firms

Spending Growth Planned in All Regions, Led by Hokkaido, Hokuriku and Kyushu

- Planned capital spending by large- and medium-sized firms shows a substantial increase of 20.1% nationwide. Although increased spending is planned across the board, the growth is particularly significant in Hokkaido, Hokuriku and Kyushu.
- The Tokyo metropolitan area has the largest share of 30% in total spending, followed by Tokai and Kansai. The largest contribution to the change in total spending on the previous year comes from the Tokyo metropolitan area, Tokai and Kyushu.



*Regional composition
Hokkaido: Hokkaido
Tohoku: Aomori, Iwate, Miyagi, Akita, Yamagata, Fukushima, Niigata
North Kanto & Koshin: Ibaraki, Tochigi, Gunma, Yamanashi, Nagano
Tokyo metropolitan area: Saitama, Chiba, Tokyo, Kanagawa
Hokuriku: Toyama, Ishikawa, Fukui
Tokai: Gifu, Shizuoka, Aichi, Mie
Kansai: Shiga, Kyoto, Osaka, Hyogo, Nara, Wakayama
Chugoku: Tottori, Shimane, Okayama, Hiroshima, Yamaguchi
Shikoku: Tokushima, Kagawa, Ehime, Kochi
Kyushu: Fukuoka, Saga, Nagasaki, Kumamoto, Oita, Miyazaki, Kagoshima

Notes: 1. Nationwide change on previous year includes data on unlocated firms and Okinawa Prefecture.
2. The share of each region reflects the prefectural composition of the respondents. The regional shares do not add up to 100%, due to rounding.
3. Areas in the skyline chart reflect contribution to the nationwide change.

Double-Digit Growth Planned in All Regions, Led by Manufacturing

	Change on previous year (%)				Overview of capital spending, by region
	FY2022 Actual Total	Planned for FY2023			
		Total	Manufacturing	Non-manufacturing	
Hokkaido	-6.8	**45.4**	32.6	48.9	Spending will increase for the first time in four years, driven by transport equipment with production capacity-building to switch production lines and by electric power with facility replacement.
Tohoku	23.0	**13.7**	20.9	4.1	Spending will increase in electric machinery for factory construction/expansion in response to rising demand for EVs and semiconductors and in "other" manufacturing for factory construction.
North Kanto & Koshin	22.4	**22.0**	18.6	29.6	Spending will increase for the third year in a row, as robust investment continues in transport equipment, chemicals and electric power.
Tokyo metropolitan area	32.0	**23.9**	23.1	24.1	Spending will increase for the second straight year, led by transport equipment in response to increased electric/hybrid vehicle production, real estate with property development in city centers, and transportation with investment in airports and aviation.
Hokuriku	-1.6	**41.1**	49.0	14.5	Substantial overall growth will be driven by general machinery with new factories for semiconductor equipment components and by metal products with investment for building materials and automobiles.
Tokai	3.7	**25.0**	25.6	23.0	Spending will increase overall, driven by transport equipment with accelerated investment related to electric vehicles.
Kansai	8.2	**11.4**	11.6	11.3	Spending will increase for the second consecutive year overall, with strong investment appetite in real estate and transportation for the development of city centers and areas along railroads.
Chugoku	-6.2	**36.1**	39.4	27.6	Overall spending will grow substantially, as a considerable increase in investment in capacity enhancement is planned in iron & steel, and in transport equipment including for new products.
Shikoku	1.5	**21.2**	25.3	12.6	Non-ferrous metals will drive overall growth with investment in production capacity-building for EV-related components.
Kyushu	3.0	**61.7**	114.0	29.0	Spending is expected to increase substantially overall, led by semiconductor-related industries including non-ferrous metals, precision machinery and electric machinery with planned factory construction and expansion.
Nationwide	10.0	**20.1**	27.0	16.4	Spending will follow a substantial growth path, continuing from FY2022.

Note: Nationwide change on previous year includes data on unlocated firms and Okinawa Prefecture.

Three Major Urban Areas to Lead Hydrogen, Ammonia and Other Projects in the Demonstration/Implementation Phase

- Investment in renewable energy and electric vehicles will be rolled out nationwide to prop up capital spending across the board.
- Meanwhile, large-sized firms will lead hydrogen and ammonia projects at their core production sites mainly located in the Tokyo metropolitan and Kansai areas.

	Hokkaido	Tohoku	North Kanto & Koshin	Tokyo metropolitan area	Hokuriku	Tokai	Kansai	Chugoku	Shikoku	Kyushu
Energy efficiency	ZEB*-certified building		High-efficiency motor installation	Smart meter Energy-efficient vehicles			Low-carbon complex	Circulating fluidized bed boiler replacement	Energy efficiency & shift to LED	Shift to LED
				District heating and cooling	Energy-efficient lighting		Heat supply facilities			Air-conditioning replacement
Renewable energy	Photovoltaic	Biomass processing	Biomass power	Photovoltaic	Hydropower	Biomass power	Biomass co-combustion	Biomass power		Offshore wind power
	Woody biomass	Wind power	Photovoltaic	Wind power	Photovoltaic Biomass	Photovoltaic	Photovoltaic			Biomass power
	Wind power									Geothermal power
Electric vehicles	EV-motor production equipment	EV-battery production facilities	EV-component production facilities	EV introduction		EV-related investment	Magnetic steel sheet capacity enhancement	Magnetic steel sheet production capacity enhancement	EV-battery positive electrode material capacity enhancement	Magnetic steel sheet production capacity enhancement
				EV-component production facilities		EV-component production facilities	EV-battery production facilities	EV-component production facilities		
Hydrogen, Ammonia		Hydrogen purifier		New liquefied hydrogen production facilities			Hydrogen co-combustion Hydrogen supply chain	Ammonia supply chain	Hydrogen station	
				Research on hydrogen reduction iron-making						
CCUS**	CCS demonstration	CCS demonstration					CO_2 separating film plant	CO_2 collection & recycling facilities		Introduction of CO_2 collection technology
Resource recycling	Methane fermentation equipment		Resource recycling furnace	Chemical recycling plant	Introduction of aluminum can recycling facilities		Recycling facilities		Recycling of waste as fuels	Chemical recycling demonstration facilities
Other	SAF*** production with green hydrogen			Volume production of SAF***			SAF*** production	Next-generation fuel ship	Fuel shift to LNG	Introduction of LNG
							Research on large electric furnace	Research on large electric furnace		Research on large electric furnace

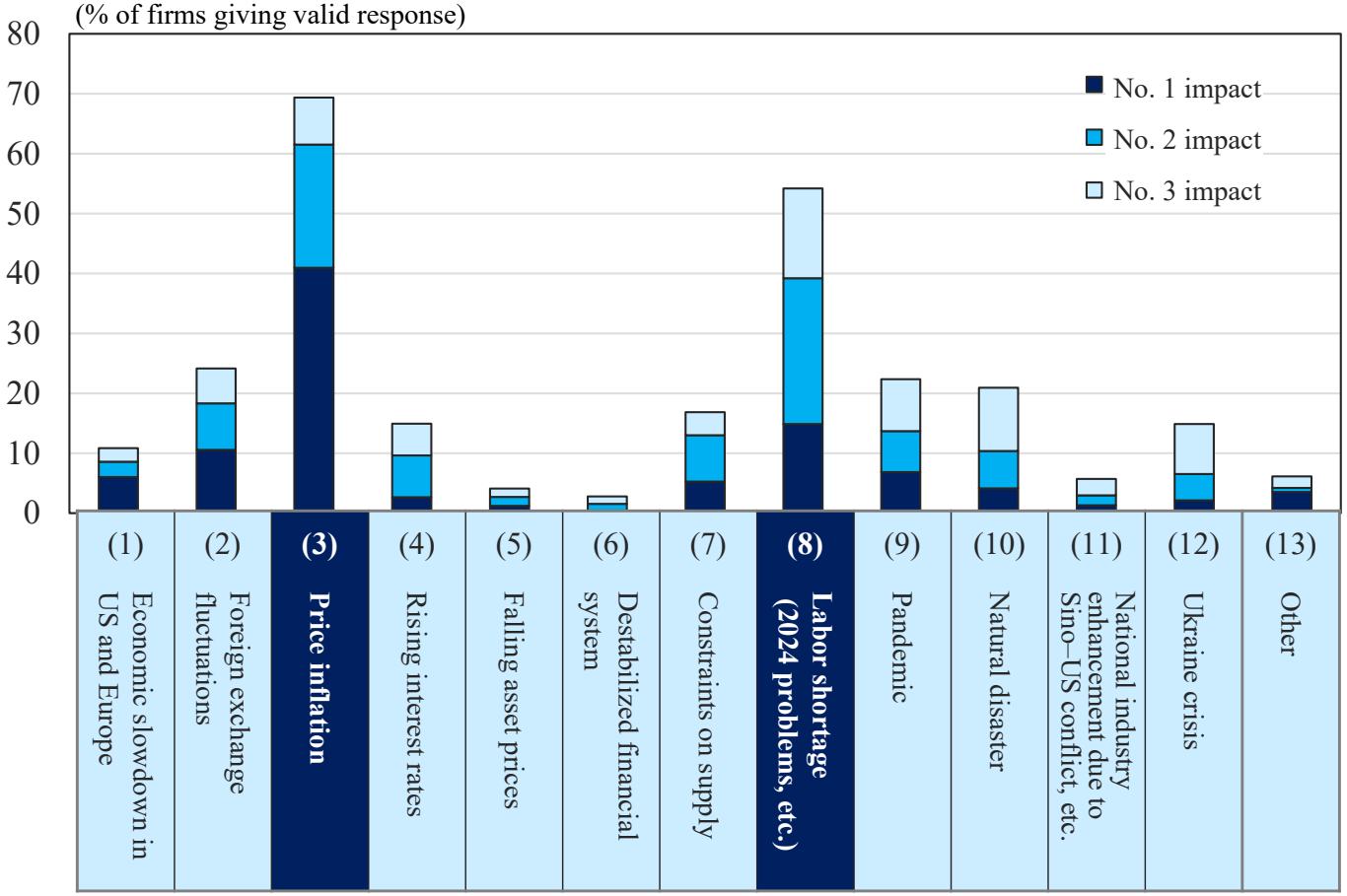
Notes:
1. The table lists key initiatives identified in Surveys on Planned Capital Spending and corporate press releases (blue for capital spending; black for R&D investment).
2. Coloration depends on the amount identified, with darker colors indicating particularly active industries and regions.

*ZEB: Net Zero Energy Building.
**CCUS: carbon capture, utilization and storage.
***SAF: sustainable aviation fuel.

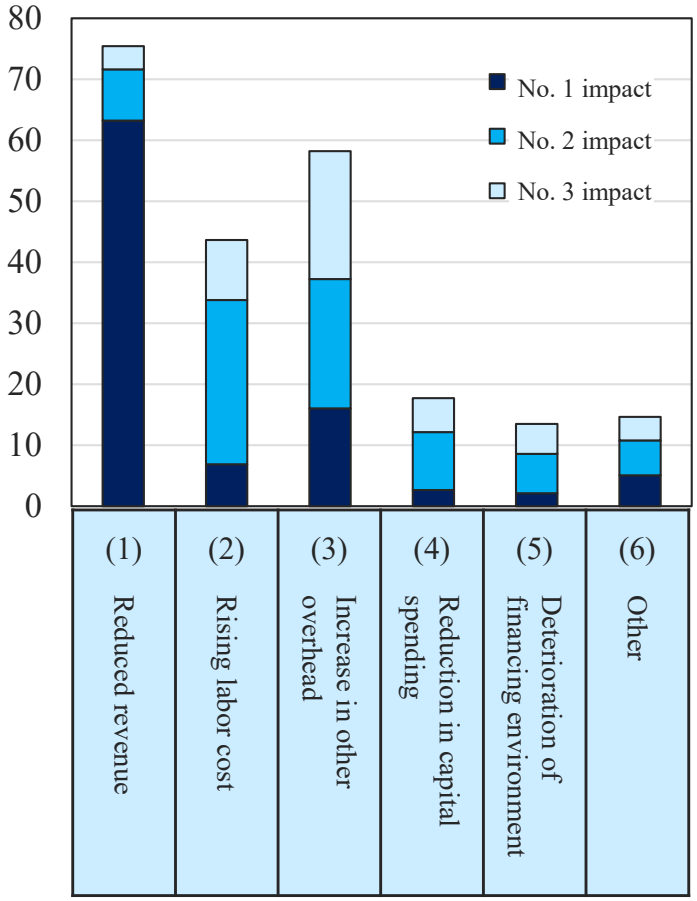
Medium-Sized Firms Keenly Aware of Inflation and Labor Shortage Risks

- In contrast with the risk awareness focus of FY2022 (e.g., resource prices and foreign exchange fluctuations), risk awareness focus now is on price inflation and labor shortage, with concerns about their adverse impacts on business in the form of reduced revenue or rising labor cost.

Business risks



Impacts on business

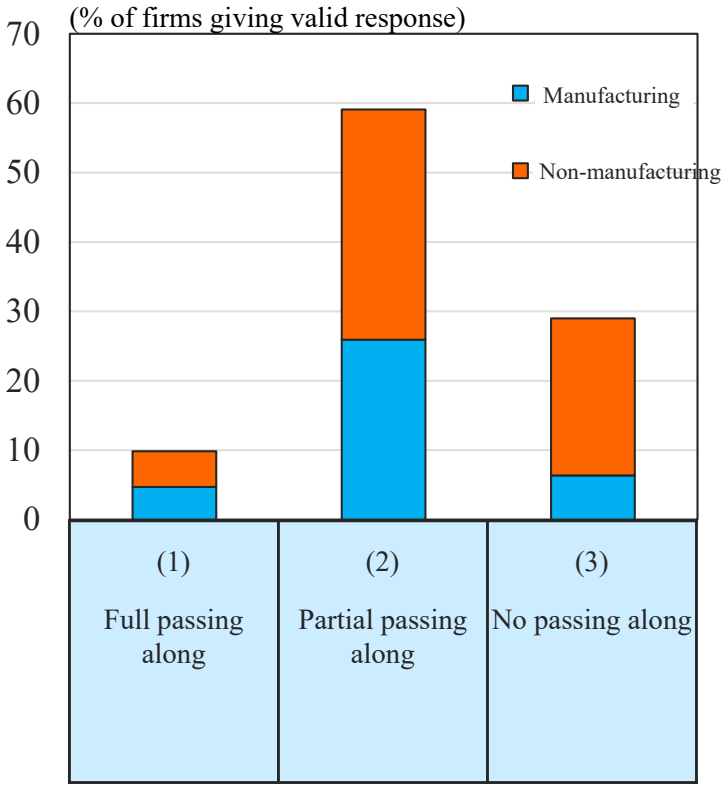


Notes:
1. Medium-sized firms.
2. Respondents may choose up to three answers in order of impact.

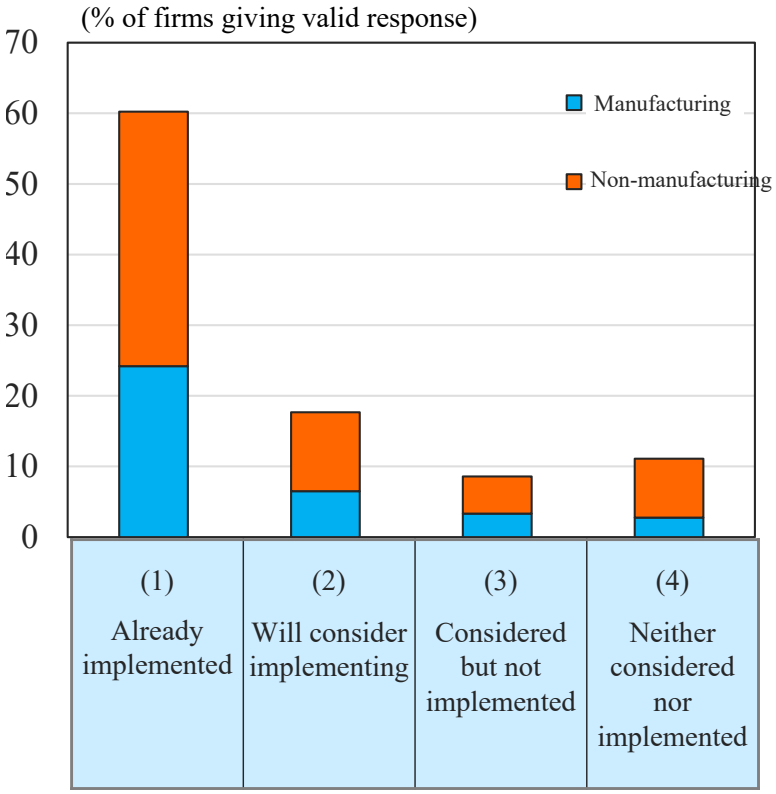
Medium-Sized Firms Also Seeking to Pass Along Costs and Raise Pay

- As the risk of price inflation becomes increasingly visible, medium-sized firms are now seeking to pass along the rising costs to product/service prices. At the same time, many medium-sized firms have implemented or are considering pay raises to cope with the price inflation and labor shortage.

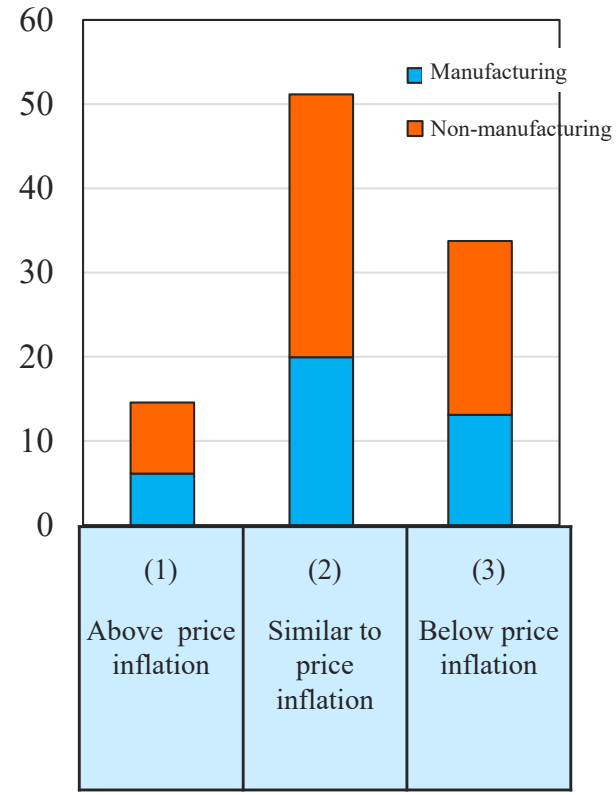
Response to price inflation (passing along to product/service prices)



Pay raise



Pay raise level



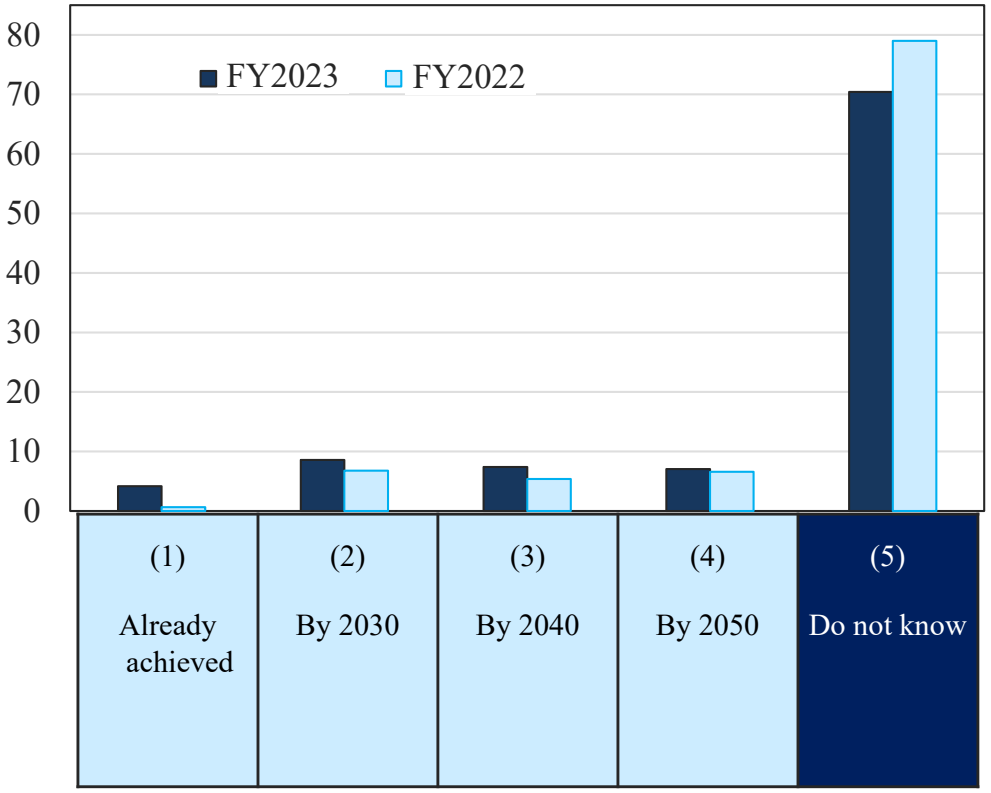
Notes:
1. Medium-sized firms.
2. Pay raise level was calculated as a percentage of the firms that have already implemented or are considering pay raises.

Medium-Sized Firms: Relative Decline in "Do Not Know" about Timing to Achieve Carbon Neutrality

- Although many medium-sized firms still "do not know" about the timing for their achieving carbon neutrality, their share declined on the previous year. The share of "technological issues" in the challenges for achieving carbon neutrality is also declining.

Timing to achieve carbon neutrality

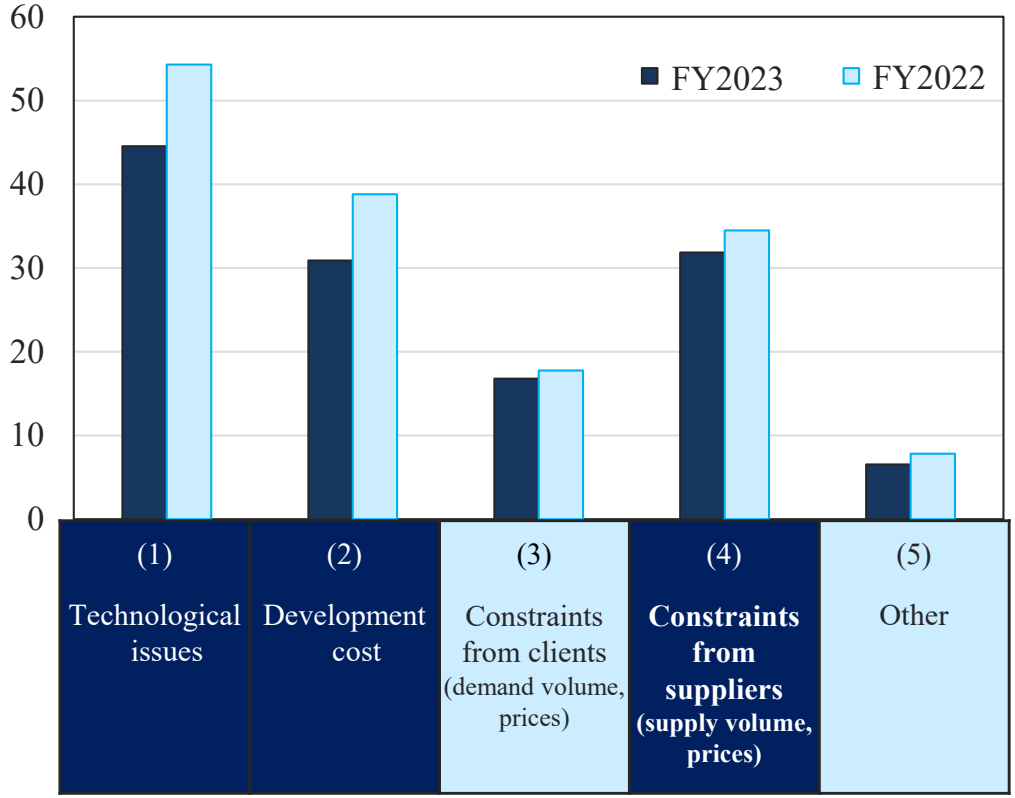
(% of firms giving valid response)



Note: Medium-sized firms.

Challenges for achieving carbon neutrality

(% of firms giving valid response)



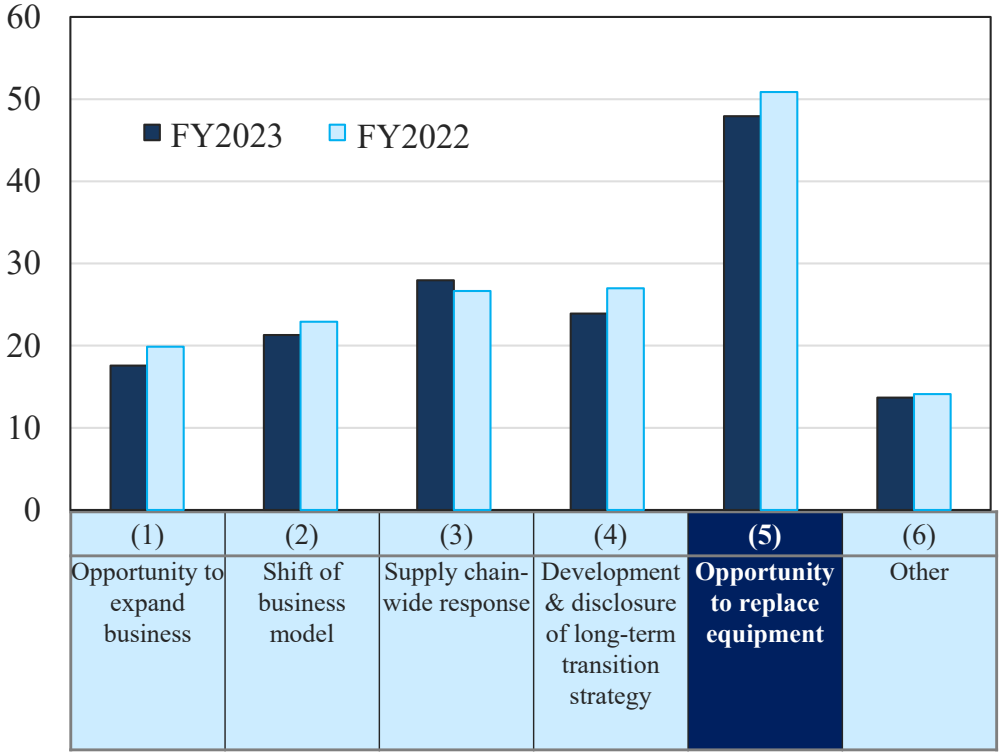
Notes:
1. Medium-sized firms.
2. Respondents may choose up to two answers.

Medium-Sized Firms: Limited Passing Along of Costs to Prices despite the Need for Facility Replacement, etc.

- The accelerated push toward carbon neutrality entails costs for medium-sized companies, including for facility replacement to meet the demand, but those companies have only made limited moves to pass along those higher costs to product and service prices, causing concern about how to finance the required investment going forward.

Business impact of carbon neutrality

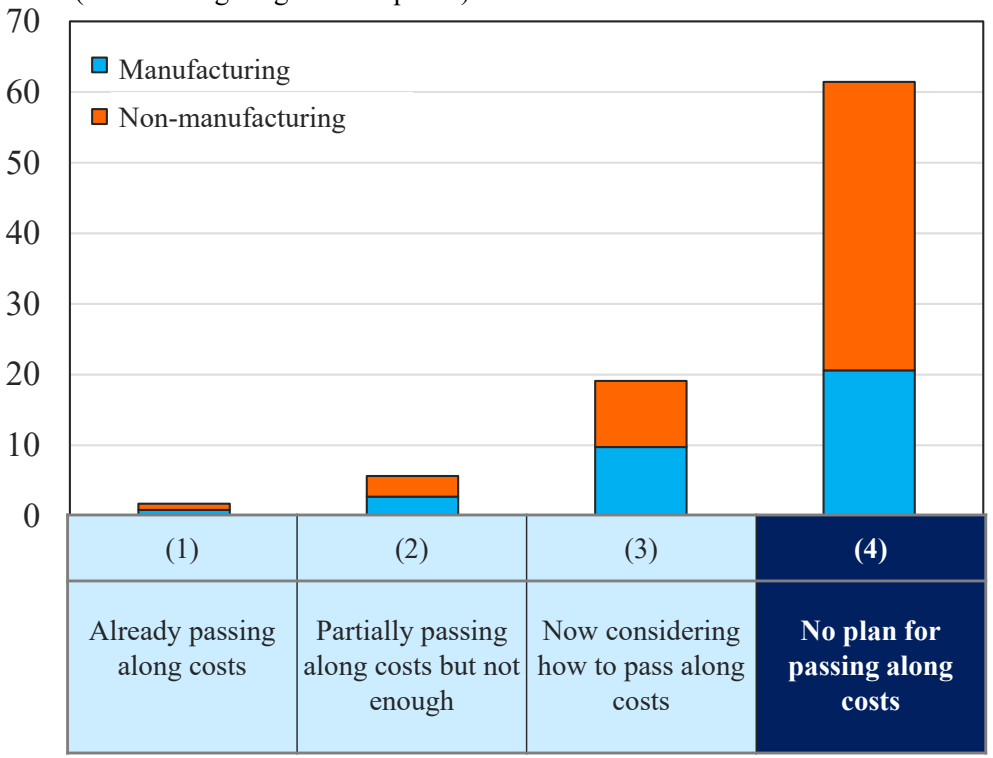
(% of firms giving valid response)



Notes:
1. Medium-sized firms.
2. Respondents may choose up to three answers.

Financing of carbon neutrality–related investment (passing along costs to product/service prices)

(% of firms giving valid response)



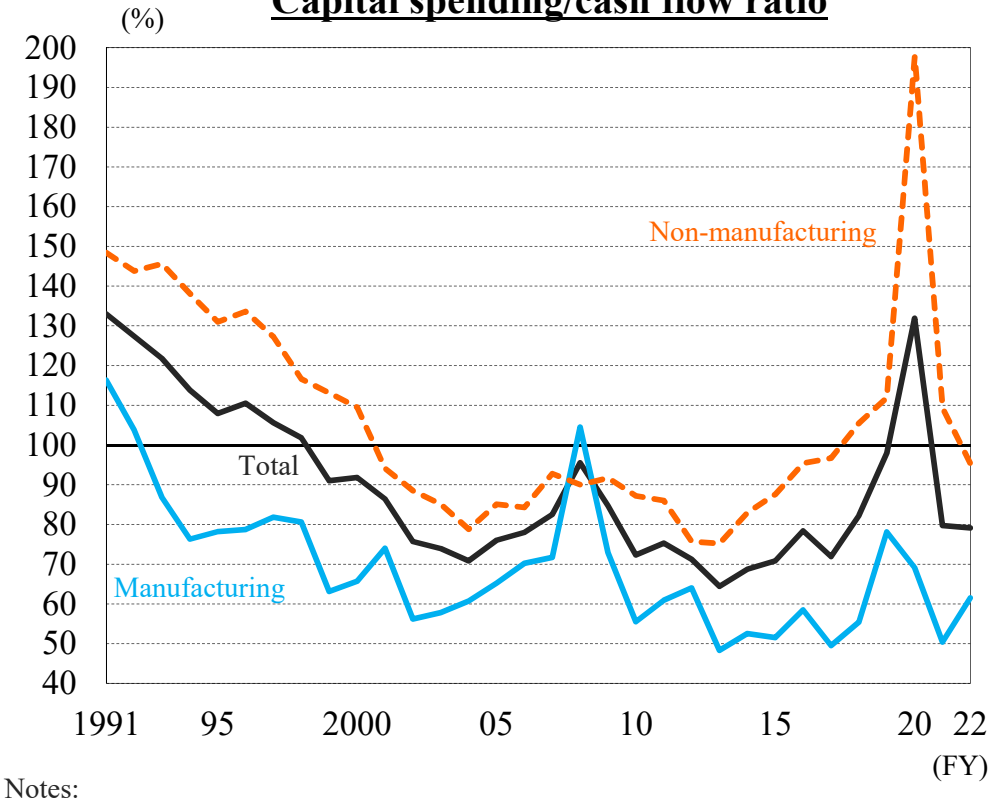
Note: Medium-sized firms.

Appendices

Domestic Capital Spending Staying within Cash Flow

- As capital spending increased in both the manufacturing and non-manufacturing sectors in FY2022, the domestic capital spending/cash flow ratio rose in manufacturing due to reduced profits but declined for the second consecutive year in non-manufacturing as profits improved. Domestic capital spending stayed within the limits of cash flow in both sectors.
- The diffusion index (DI) on ordinary profit, which substantially improved in non-manufacturing in FY2022, is expected to decline for both sectors in FY2023.

Capital spending/cash flow ratio



Notes:
1. Major firms in all industries.
2. Cash flow is calculated as ordinary profit/2 + depreciation expenses (simplified formula assuming an effective corporate tax rate of 50%).

DI on ordinary profit

(in % pts)

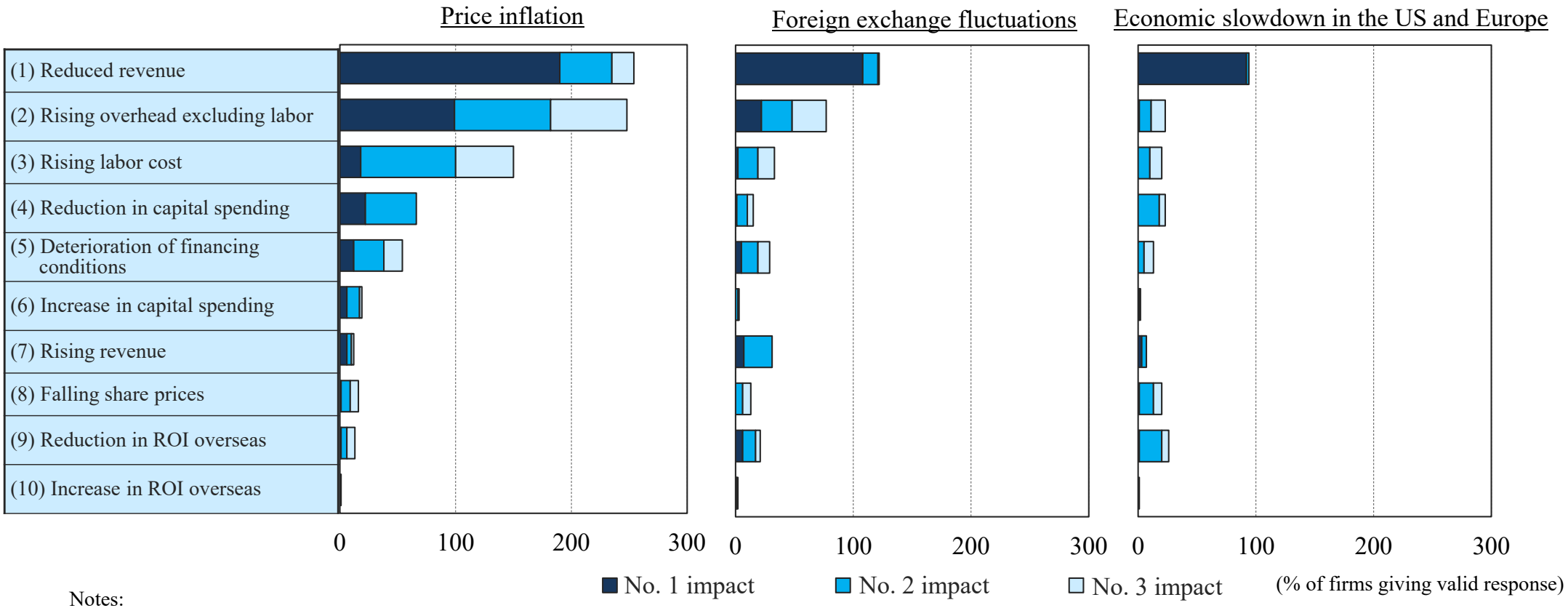
	DI on ordinary profit		
	FY2021 Actual 879 firms	FY2022 Actual 848 firms	FY2023 Planned 1,033 firms
Total	34.9	6.5	-3.1
Manufacturing	39.8	-6.0	-1.6
Non-manufacturing	31.4	15.3	-4.2

Notes:
1. Major firms.
2. DI on ordinary profit = $\frac{\text{No. of responses: Profit increase - Profit decrease}}{\text{Total valid responses}}$

Impact of Business Risks: Concern Focused on Reduced Profits and Rising Costs, with Some Citing Reduction in Capital Spending

- Asked about the impact of price inflation on business, an overwhelming number of firms indicated reduced revenue and rising costs, including labor cost, followed by "reduction in capital spending."
- Some also responded that foreign exchange fluctuations and economic slowdown in the US and Europe will lead to reduced capital spending.

Business risks and their impact going forward

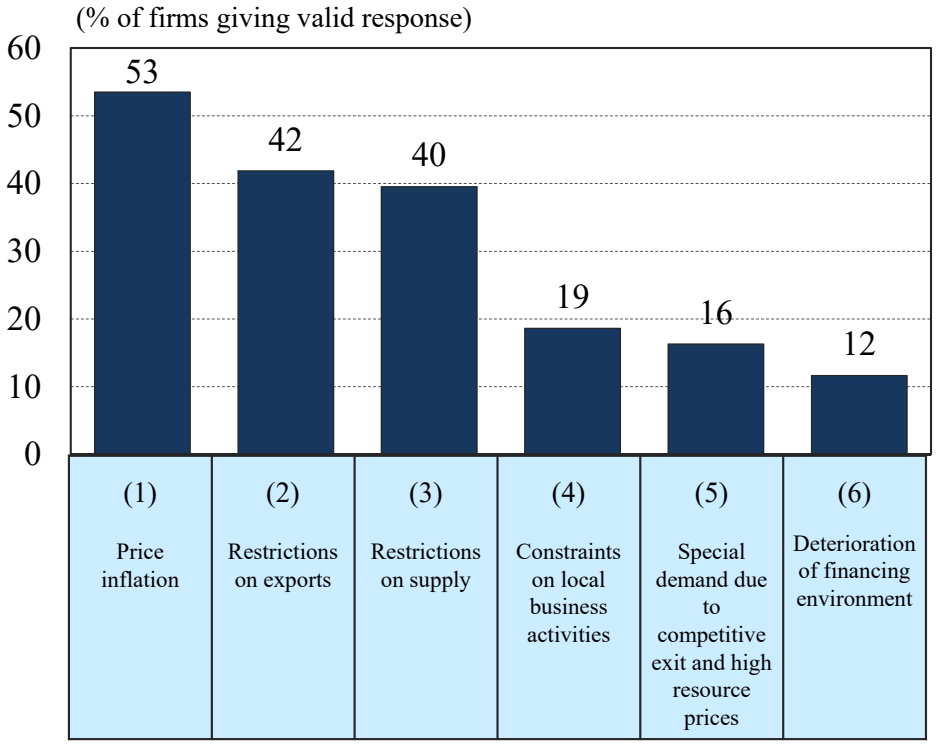


Notes:
1. Major firms in all industries.
2. Respondents may choose up to three answers in order of impact.

Geopolitical Risk: Largest Impact from Price Inflation, Possibly Triggering Revision of Marketing Strategy and Investment Decisions

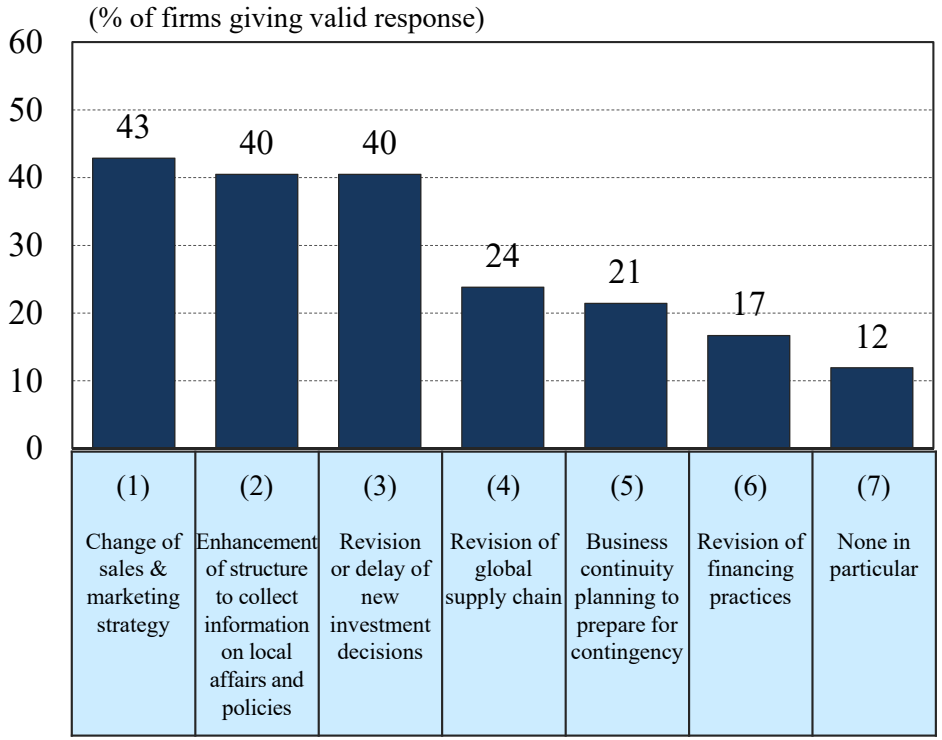
- As for the impact of geopolitical risk on business, most firms cited price inflation, followed by restrictions on exports and constraints on supply.
- Many firms cited change in sales/marketing strategy, enhancement of information collection structure, and revision or postponement of new investment decisions as actions required to address the impact.

Impact of geopolitical risk



Notes:
1. Major firms in all industries.
2. Respondents may choose up to three answers.

Action against geopolitical risk

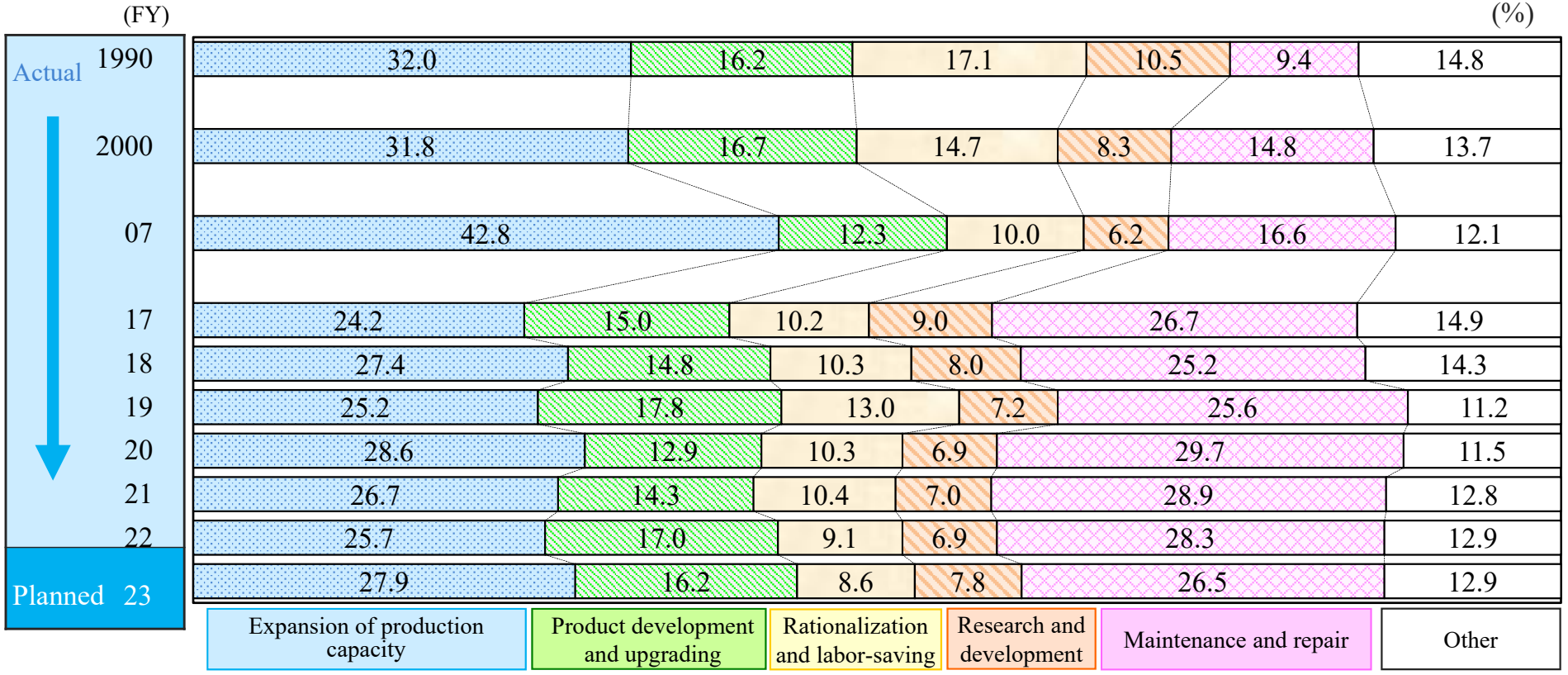


Notes:
1. Major firms in all industries.
2. Respondents may choose up to three answers.

Composition of Investment Motives in Manufacturing: Rising Demand for Capacity Enhancement, Particularly in Materials Industries

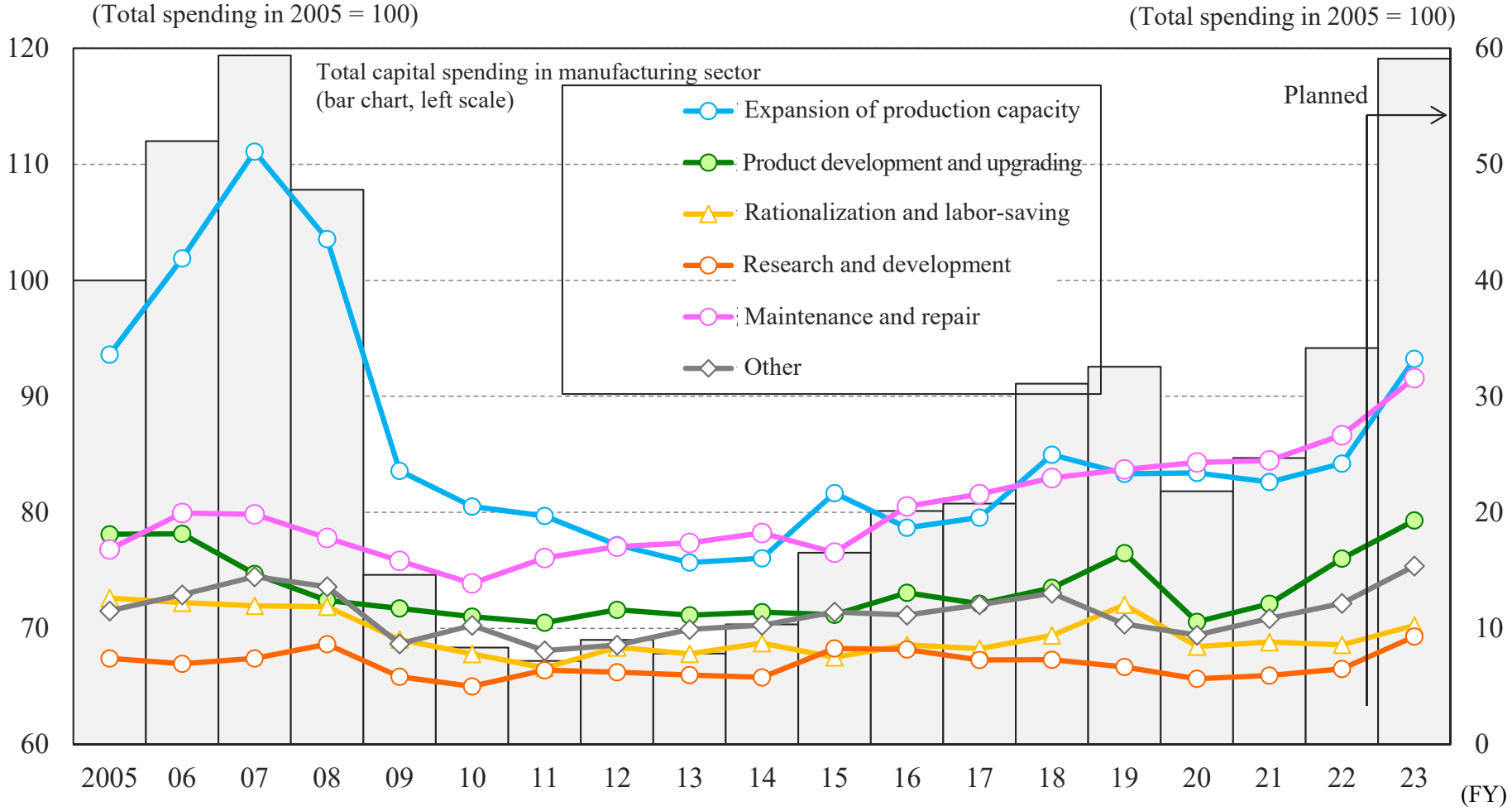
- Among the investment motives of manufacturers in FY2023, “expansion of production capacity” will increase its share, particularly in semiconductor and other materials industries. In contrast, the weight of “maintenance and repair” will decline from the record-high level during the Covid-19 pandemic.

Composition of investment motives (manufacturing)



Notes:
1. Major firms.
2. Share of each investment motive in total capital spending, by value.

Index of Investment Motives (Manufacturing)

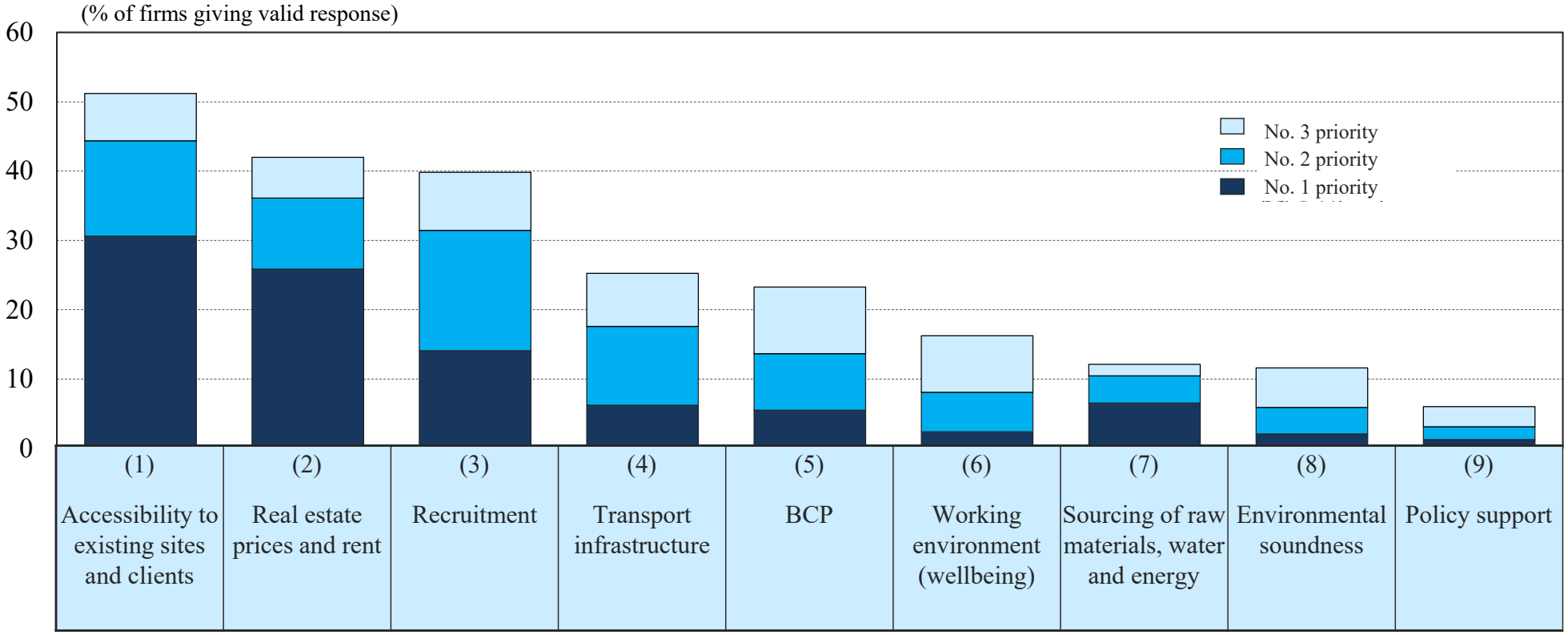


Notes:
1. Major firms.
2. The chart shows capital spending indexed on the total spending in FY2005 in the manufacturing sector. For each year, the capital spending indices (right scale) for individual investment motives add up to the capital spending index for the whole manufacturing sector.

Top Priority Given to Accessibility to Existing Sites and Clients

- Asked about the priorities in selecting production sites going forward, a majority of firms cited accessibility to existing sites and clients, followed by real estate prices and rent. Also, ease of recruitment, transport infrastructure, and BCP were each cited by at least 20% of the firms.

Priorities in selecting production sites going forward

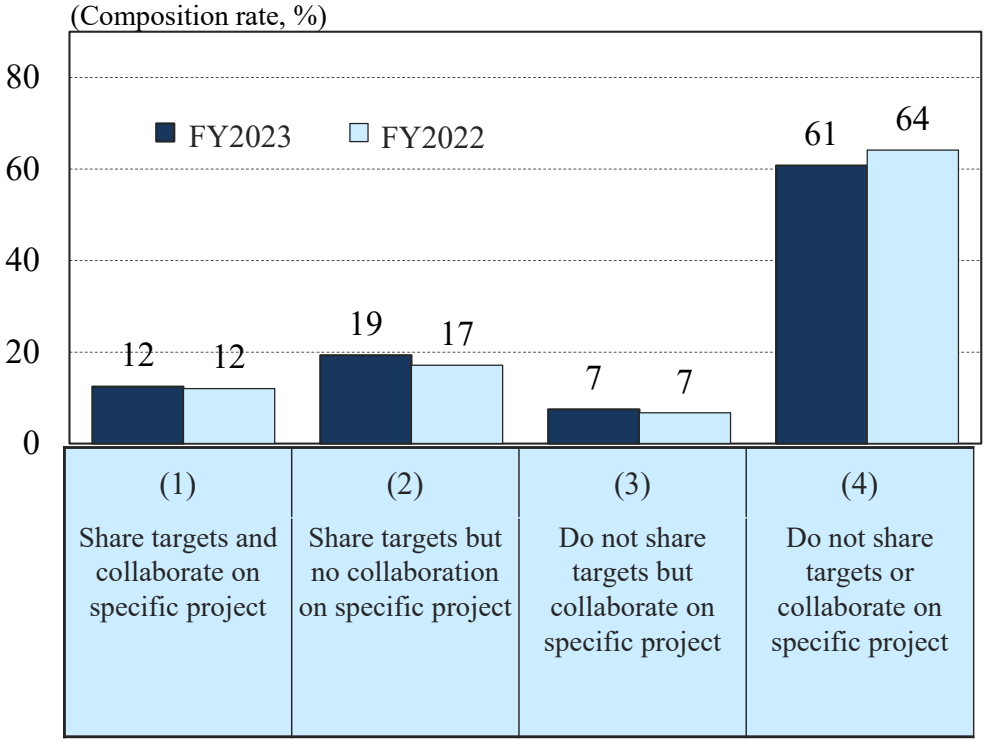


Notes:
1. Major firms in all industries.
2. Respondents may choose up to three answers in order of priority.

One-third of Firms Collaborate with Business Partners as Internal Carbon Pricing Advances

- About 30% of the firms share carbon-neutral targets with business partners. About 10% of the firms collaborate on a specific project.
- About 7% of the firms have introduced internal carbon pricing, up 2 percentage points on the previous year. The average price rose to 7,500 yen/t-CO_2.

Collaboration with business partners for carbon neutrality



Notes:
1. Major firms in all industries.
2. Collaboration with suppliers.

Internal carbon pricing

	System introduced (%)	Average price (core business, yen/t-CO_2)
Total	6.6 *4.5*	7,577 *5,237*
Manufacturing	10.6 *7.2*	7,574 *5,710*
Non-manufacturing	3.5 *2.4*	7,585 *4,191*

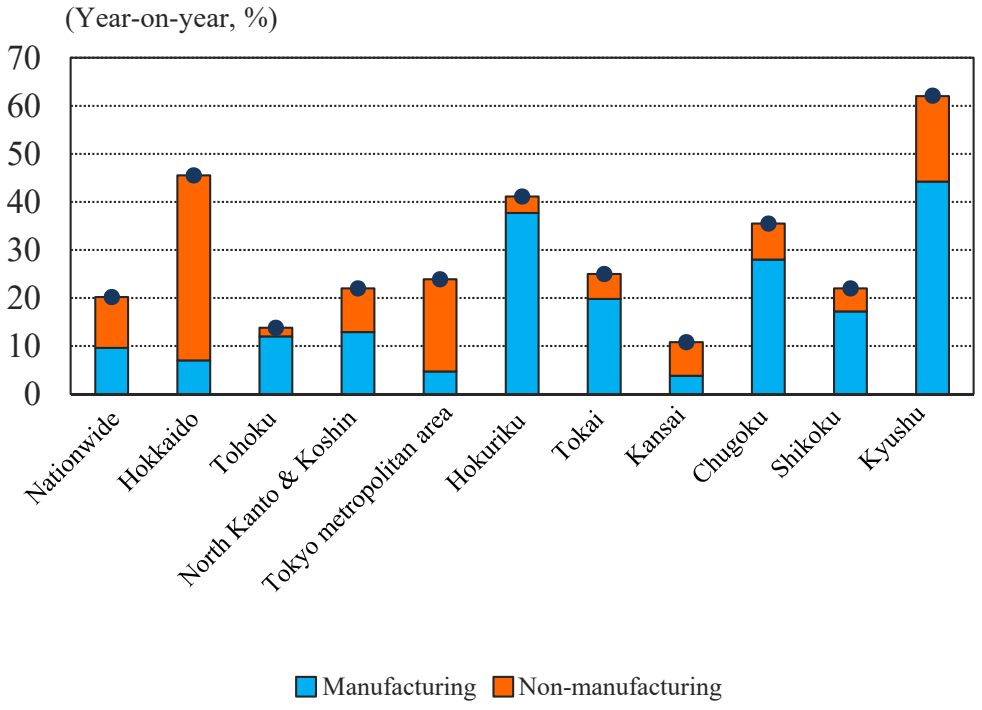
Notes:
1. Major firms.
2. Italics on the lower line are previous year's figures.

Increased Capital Spending by Medium-Sized Firms Contributes to Overall Growth in Nine of the Ten Regions

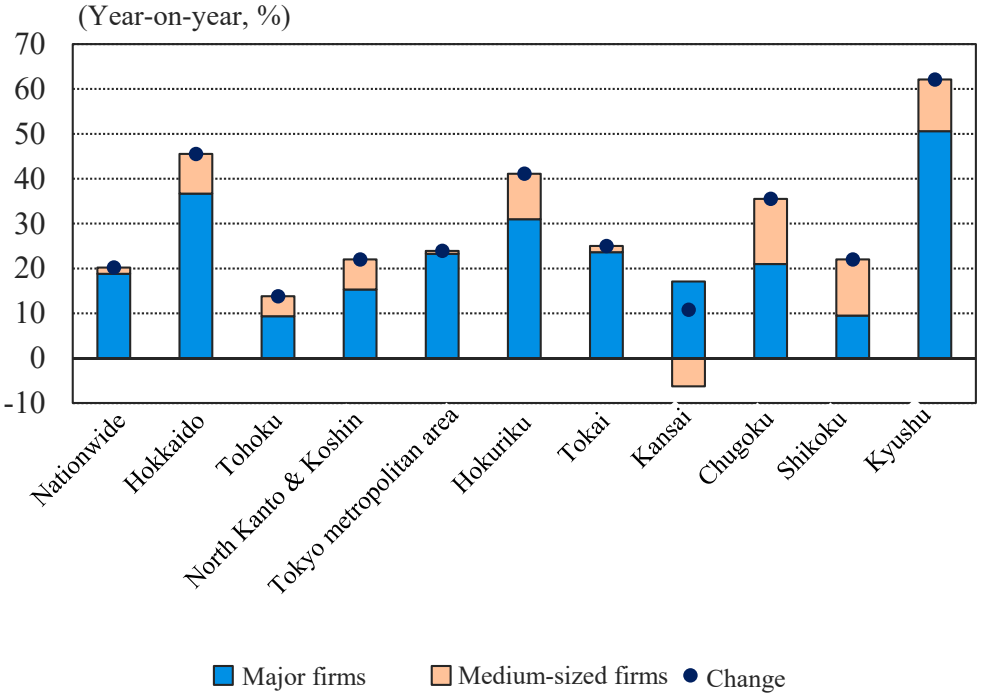
- By sector, among the regions with the highest growth in capital spending, manufacturers lead the growth in Hokuriku, Chugoku and Kyushu, while non-manufacturers lead the growth in Hokkaido.
- By business size, large firms make the greatest contributions, but the contribution of medium-sized companies is relatively large in some regions, including Hokkaido, Hokuriku, Chugoku, Shikoku and Kyushu.

Trend of capital spending, by region

By sector



By business size

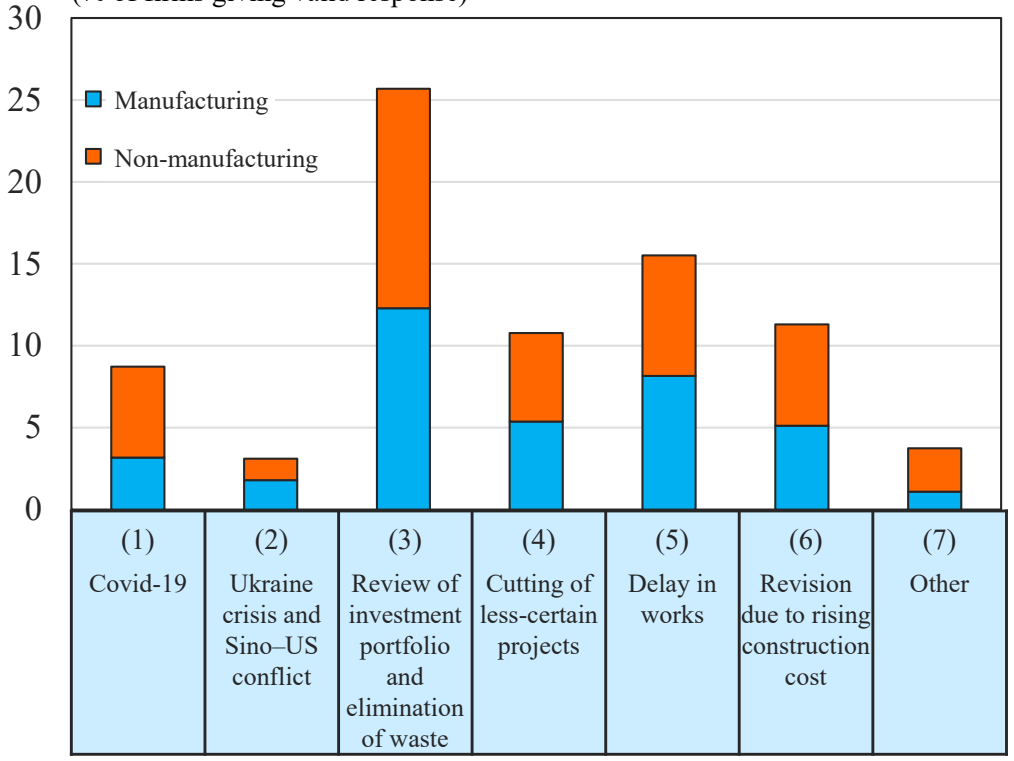


Medium-sized Firms: Downward Revision Mainly Due to Review of Investment Portfolio, with Emphasis on HR Investment Going Forward

- Among the medium-sized firms, actual spending did not reach the initially planned level, mainly due to "review of investment portfolio and elimination of waste." More firms cite HR investment as a priority investment area going forward, exceeding those prioritizing capital spending.

Reason for actual spending below planned level

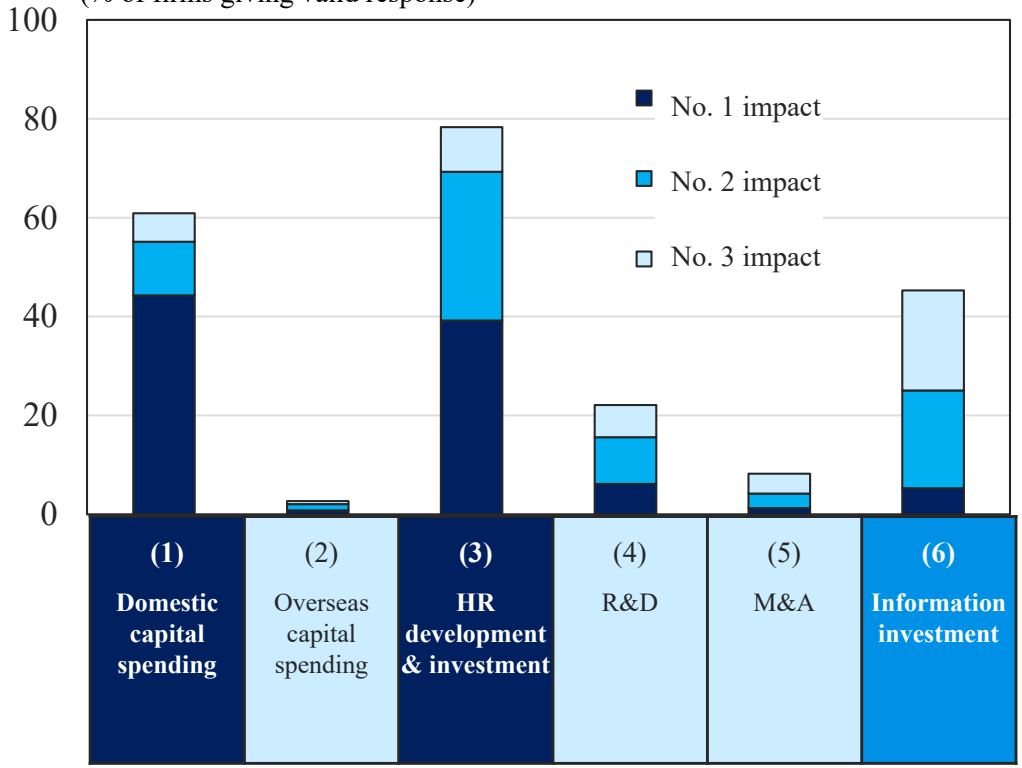
(% of firms giving valid response)



Notes:
1. Medium-sized firms.
2. Respondents may choose up to three answers.

Priority investment area for business growth

(% of firms giving valid response)

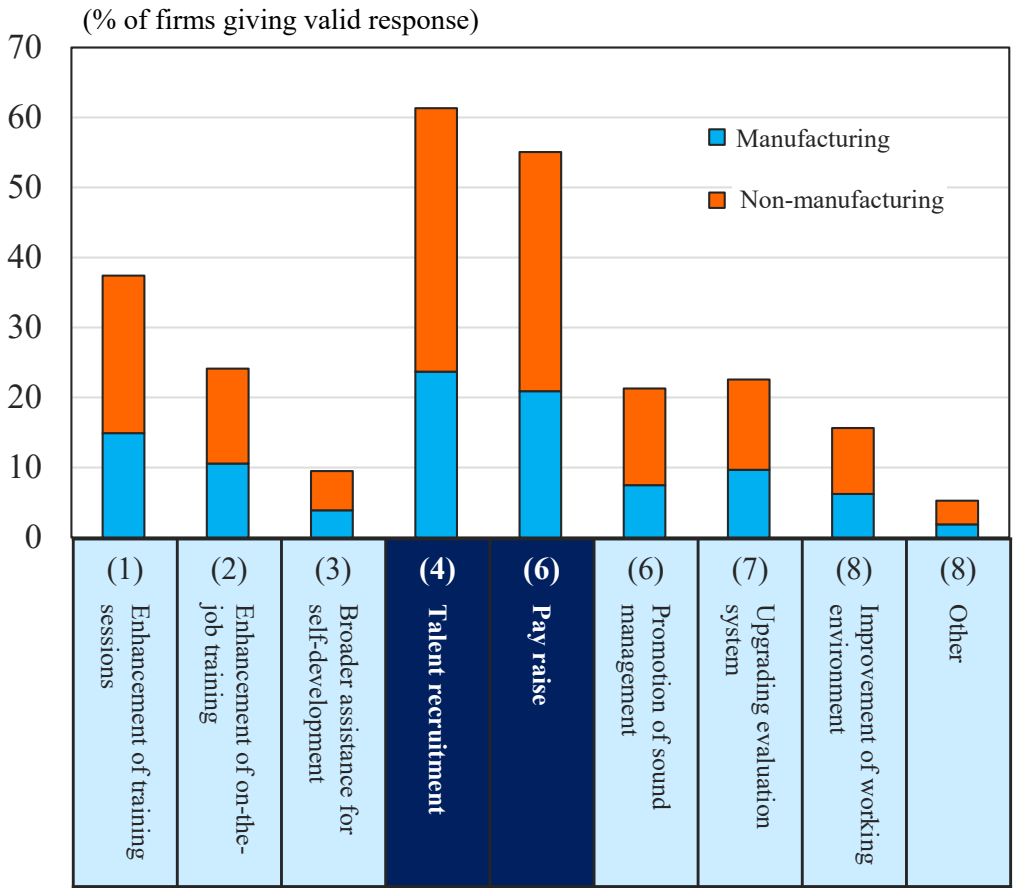


Notes:
1. Medium-sized firms.
2. Respondents may choose up to three answers in order of impact.

Medium-sized Firms: Enhanced Recruitment Accompanied by Pay Raise in About Half of the Firms

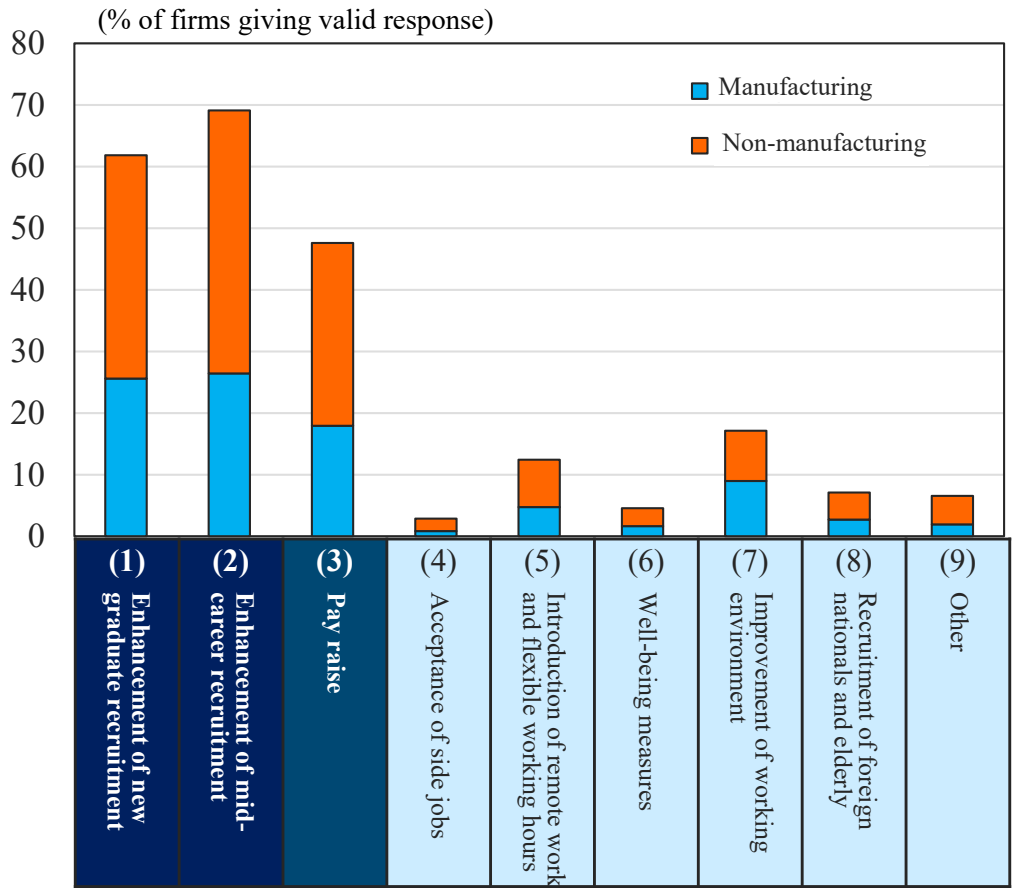
- For over half of the firms, indispensable HR investment for business growth includes spending on "talent recruitment" and "pay raise." As actions to facilitate talent acquisition, many cited "enhancement of (new graduate and mid-career) recruitment" and "pay raise."

Components of HR investment



Notes:
1. Medium-sized firms.
2. Respondents may choose up to three answers.

Action for talent recruitment



Notes:
1. Medium-sized firms.
2. Respondents may choose up to three answers.