

# Survey on Planned Capital Spending for Fiscal Years 2016, 2017 and 2018

(Conducted in June 2017)

Sixth Straight Year of Growth Led by Manufacturing  
Broad-Based Spending on Production Efficiency and Inbound Tourism

August 2, 2017

 **DBJ** Development Bank of Japan

Economic & Industrial Research Department

# Outline of the Survey

## 1. Survey subjects

### (1) Planned capital spending

Carried out since 1956, the survey provides an overview of capital spending in Japan by analyzing capital spending activity by Japanese firms (domestic non-consolidated; domestic and overseas consolidated). Investment trends, motivating factors, and other items are examined by industry.

### (2) Opinion poll

This survey is mainly designed to identify the attitudes and perspectives of firms on key current issues.

This year's survey focuses on corporate "investment in a broader sense," including tangible fixed asset investment, R&D and M&A, as well as on business continuity management activities by the firms.

## 2. Companies surveyed

The survey covers private corporations capitalized at JPY 1 billion or more, excluding those in the finance and insurance industries.

(For the regional breakdowns, corporations with capital of JPY 100 million up to JPY 1 billion were added.)

## 3. Survey period

June 26, 2017. Most of the responses to the questionnaire were obtained in June.

## 4. Response (questionnaires sent to 3,127 firms)

Number of firms giving responses on domestic capital spending: 2,033 (response rate, 65.0%)

Number of firms giving responses on overseas capital spending: 947 (response rate, 30.3%)

Number of firms giving responses for the opinion poll: 1,211 (response rate, 38.7%)

## 5. Detailed results

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

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#### 3-1. Actions for Growth and Competitiveness

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# Executive Summary

1. Planned domestic capital spending in FY2017 by major firms (capitalized at JPY 1 billion or over) shows an increase for the sixth consecutive year overall, up 11.2%, with positive growth expected in both the manufacturing (up 14.2%) and non-manufacturing (9.5%) sectors.
2. Characteristics of domestic capital spending in FY2017 identified from the survey results
  - (1) In the manufacturing sector (up 14.2%), spending for components and materials will increase in chemicals and nonferrous metals, while investment will continue in general machinery, transport equipment and iron & steel, among other industries, for improving production efficiency, including through the consolidation and replacement of production facilities.
  - (2) In the non-manufacturing sector (up 9.5%), spending to capture inbound tourists will continue mainly in transportation, real-estate and services in the run-up to the Tokyo Olympics/Paralympics, as wholesale & retail and other industries are planning investment to cope with the labor shortage.
3. Continuing from the previous year, our opinion poll this year focuses on “investment in a broader sense,” including overseas tangible fixed asset investment, R&D, M&A and human investment, as well as domestic tangible fixed asset investment.

Regarding human investment, international experts and specialists, including in sales were cited by manufacturers and non-manufacturers, respectively, as crucial human resources to be developed in the years ahead. Asked about how to cope with the labor shortage, both manufacturers and non-manufacturers responded that they will not immediately leverage AI and IoT for productivity improvement but that they will do so in five years. As regards R&D, many cited a central laboratory, etc. as the primary driver of basic research while prioritizing onsite activities for development research. Although some 30% of the firms responded that they are actively seeking M&A opportunities either in Japan or overseas, their track record in M&A points to a rather lackluster performance, with impairments recognized by almost half of the firms in overseas deals, and by 40% in domestic projects. Asked about investment in information technology, 40% of both manufacturers and non-manufacturers responded that they are utilizing or planning to utilize IoT, etc., a slight increase from last year’s survey.

Although our survey results point to rising awareness of business continuity management (BCM) among the firms since the Great East Japan Earthquake, with 80% of the respondents adopting the practice of business continuity planning, only 20% of them have disclosed information to major stakeholders, including institutional investors.

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# 1. Trends in Domestic Capital Spending

# 1-1. Trends in Domestic Capital Spending (Overview)

Sixth straight year of growth driven by broad-based spending on production efficiency and inbound tourism

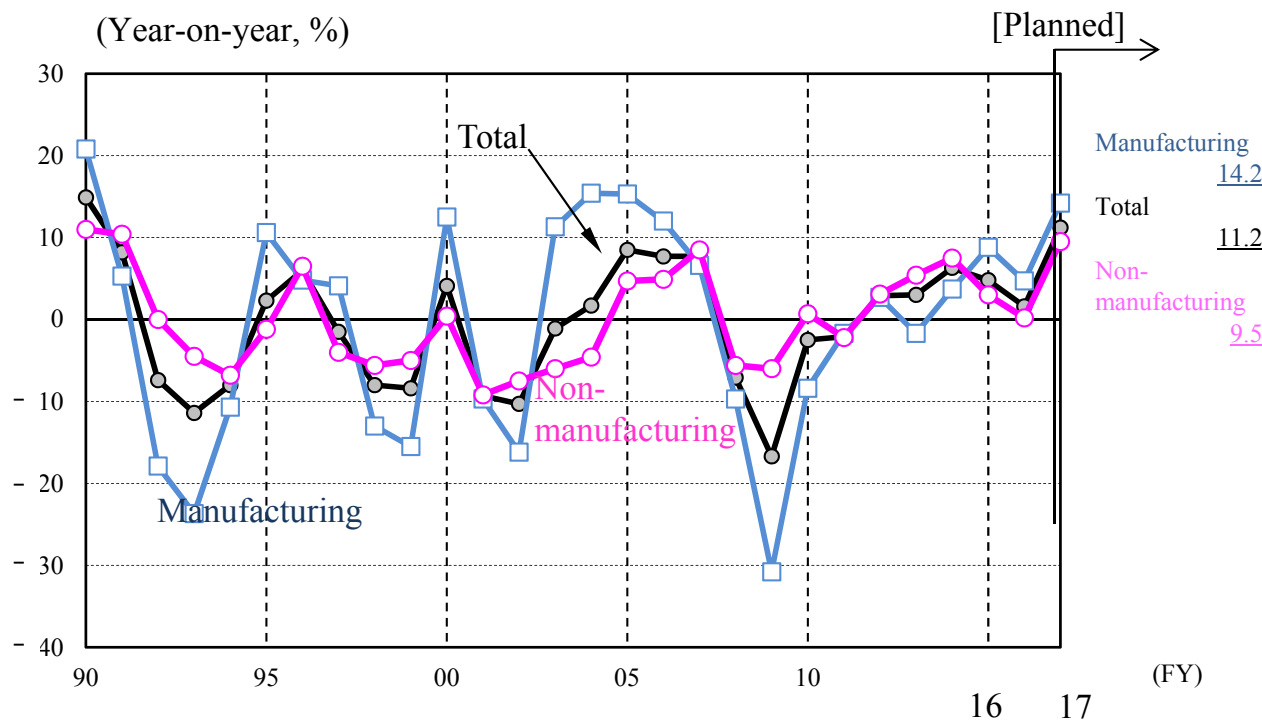
- In the manufacturing sector, spending for components and materials will increase in chemicals and nonferrous metals, while investment will continue in general machinery, transport equipment and iron & steel, among other industries, for improving production efficiency, including through the consolidation and replacement of production facilities.
- In the non-manufacturing sector, spending to capture inbound tourists will continue mainly in transportation, real-estate and services in the run-up to the Tokyo Olympics/Paralympics, as wholesale & retail and other industries are planning investment to cope with the labor shortage.

**Figure 1-1-1. Domestic Capital Spending**

(Year-on-year, %)

	FY2016 (actual) (1,907 firms)	FY2017 (planned) (2,033 firms)
Total (excluding electric power)	1.6 [3.0]	11.2 [10.9]
Manufacturing	4.7	14.2
Non-manufacturing (excluding electric power)	0.2 [2.0]	9.5 [8.9]

**Figure 1-1-2. Growth in Capital Spending (FY1990-2017)**



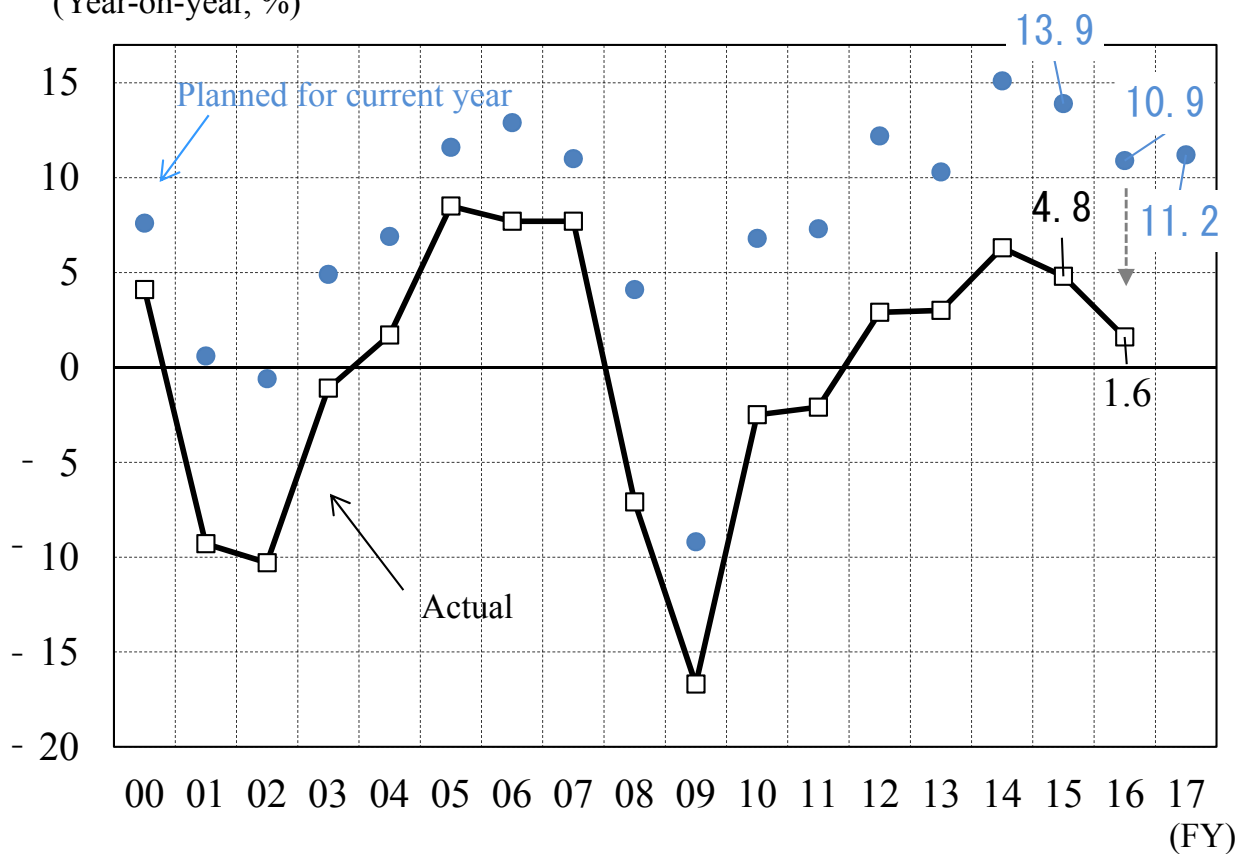
Note: Based on the DBJ Survey on Planned Capital Spending; the same applies hereinafter unless otherwise noted.

# 1-2. Planned vs. Actual Figures

- Planned figures for the current fiscal year tend to be revised downward before being materialized as some of the planned projects do not go as planned due to revision or close examination of the plan or delay in construction works.

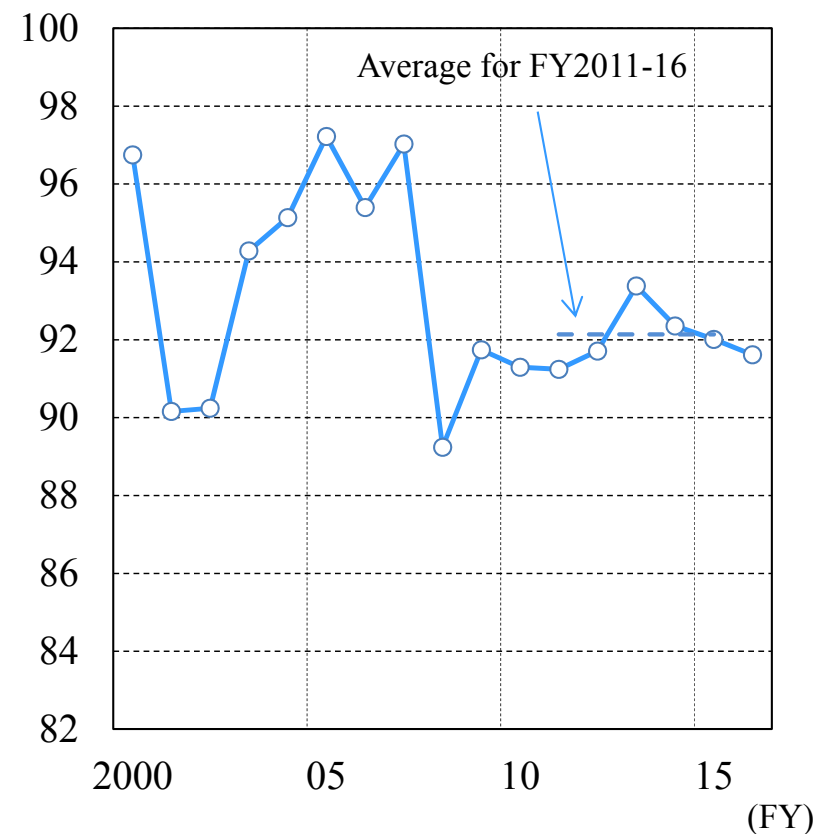
**Figure 1-2-1. Planned vs. Actual Capital Spending Growth (Total)**

(Year-on-year, %)



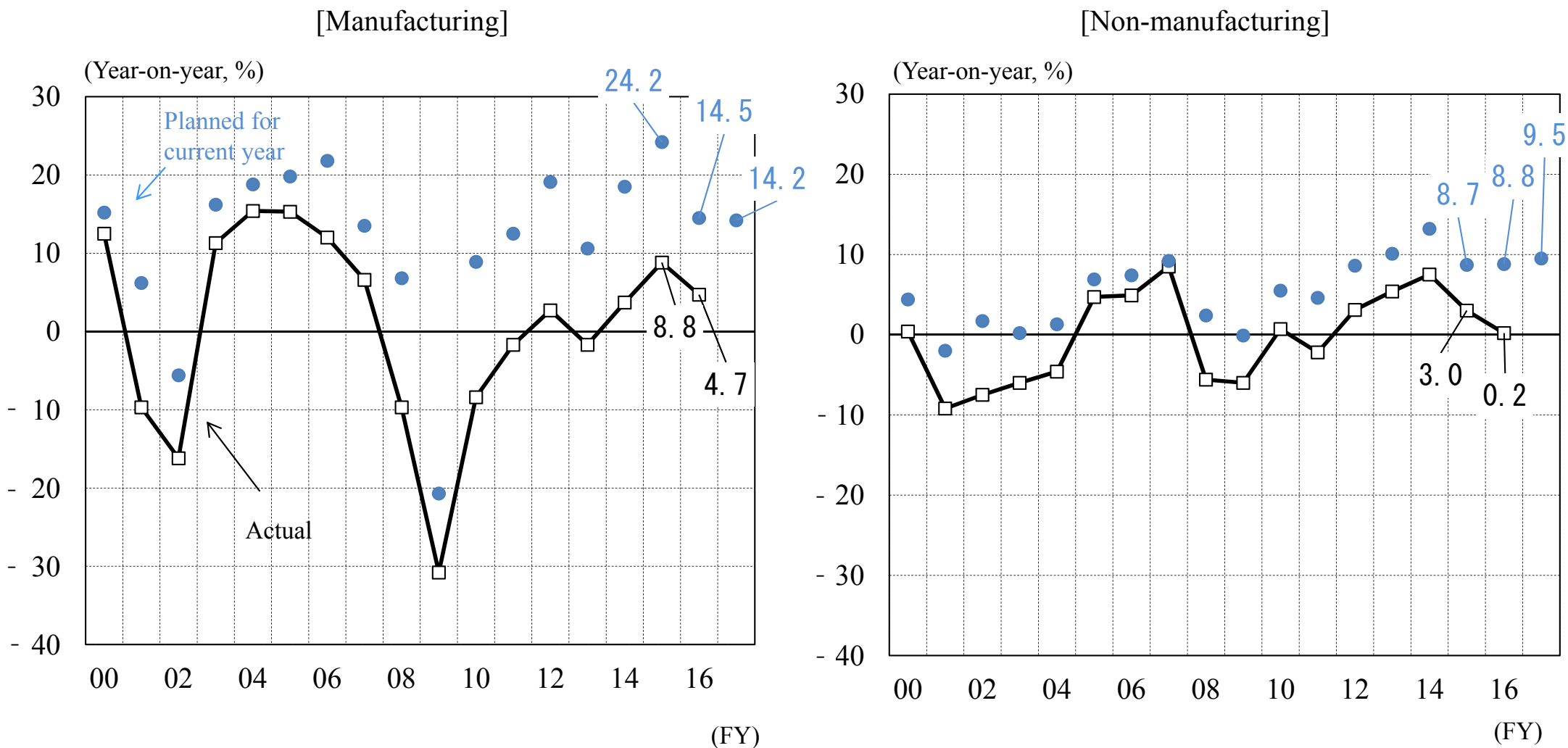
**Figure 1-2-2. Plan Realization Rate (Total)**

(Actual/planned spending as of June, %)



# 1-3. Planned vs. Actual Figures (by Sector) (for reference)

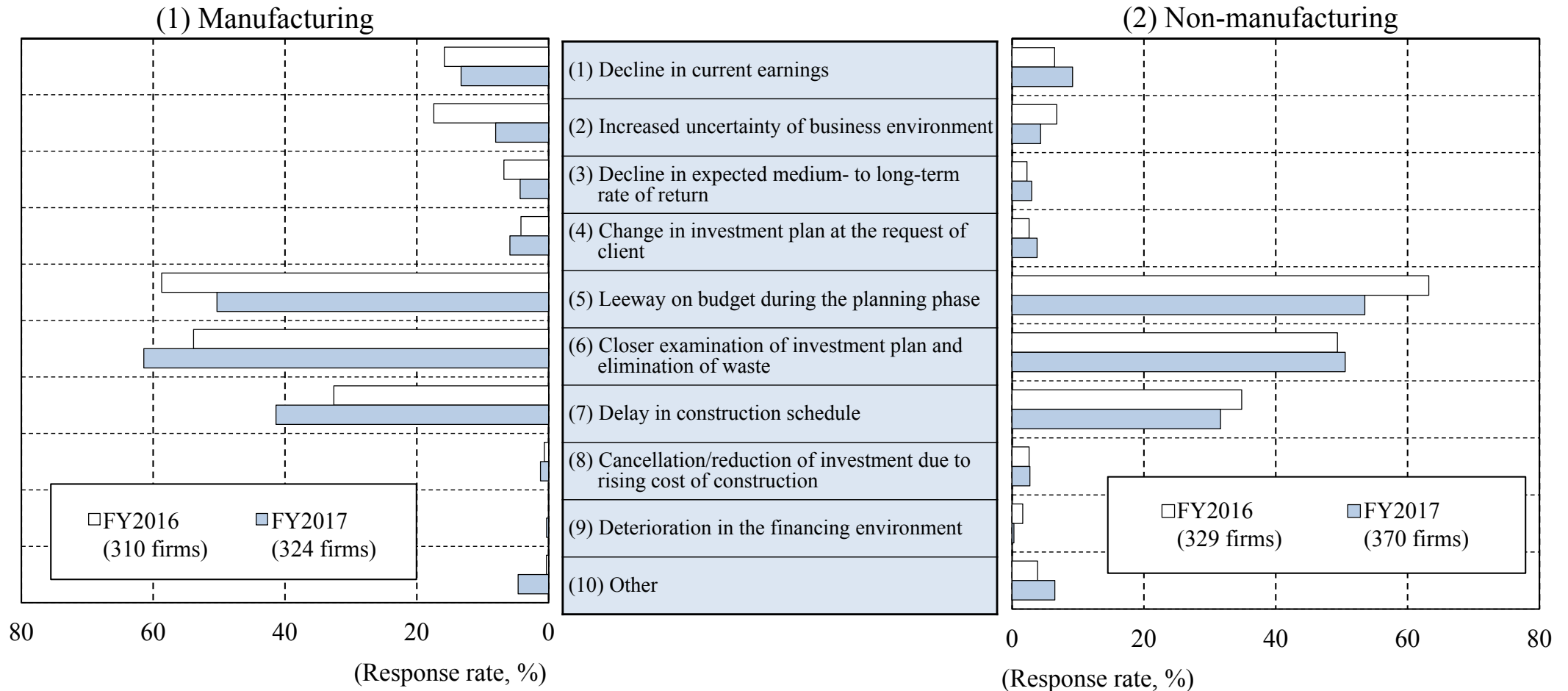
Figure 1-3. Pattern of Revision to Capital Spending Growth (Planned → Actual)



# 1-4. Factors for Downward Revision to Capital Spending in FY2016

- Actual capital spending often fails to reach planned spending in both the manufacturing and non-manufacturing sectors largely due to leeway on budget during the planning phase, or closer examination or revision of the plan. In many cases, the gap is also attributable to delays in construction works.

**Figure 1-4. Factors for Downward Revision to Capital Spending in FY2016**



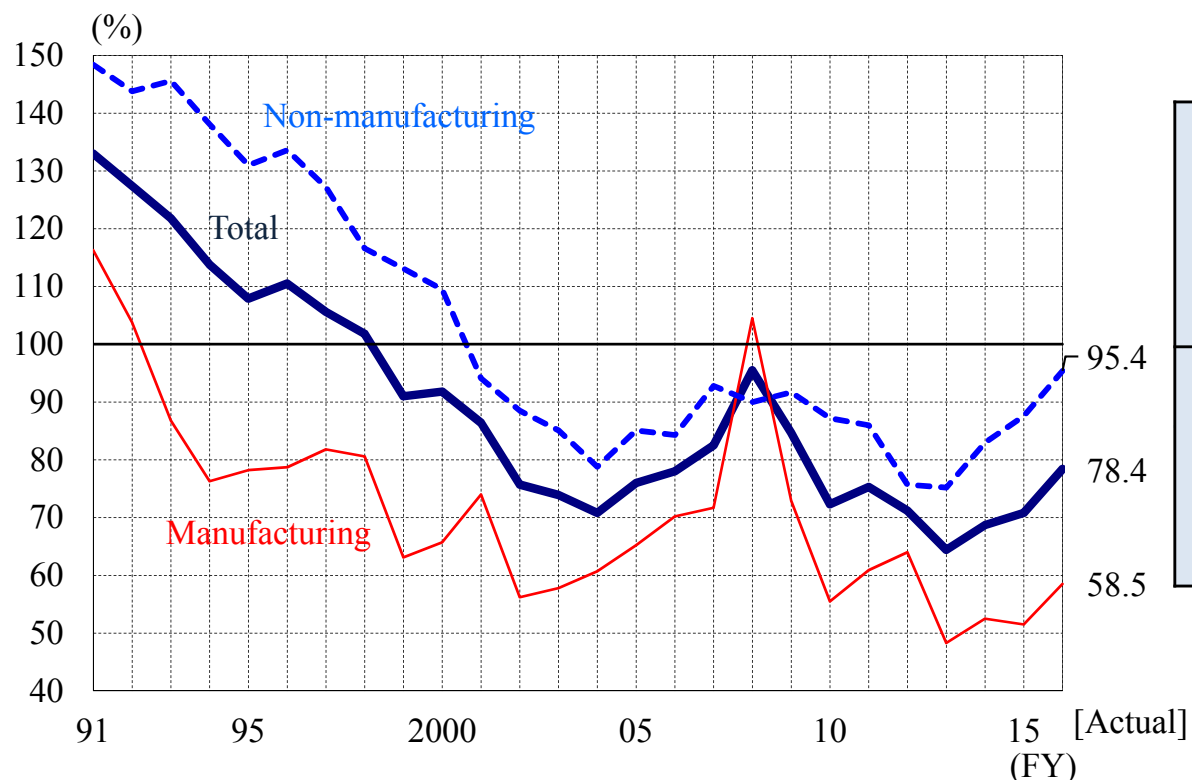
Note: Respondents may choose up to three answers. Data only covers those firms reporting less-than-planned capital spending.

# 1-5. Capital Spending/Cash Flow Ratio and DI on Sales & Operating Profit

Slight increase in capital spending/cash flow ratio

- Although domestic capital spending stays within the limit of cash flow, actual figures for FY2016 indicate a slight increase in the total capital spending/cash flow ratio.
- The diffusion index on ordinary profit remains positive for FY2017, pointing to an uptrend in profit as corporate earnings remain at high levels.

Figure 1-5-1. Trend of Capital Spending/Cash Flow Ratio



Note: Cash flow is calculated as: ordinary profit/2 + depreciation expenses (simplified formula assuming an effective corporate tax rate of 50%)

Figure 1-5-2. DI on Sales & Ordinary Profit

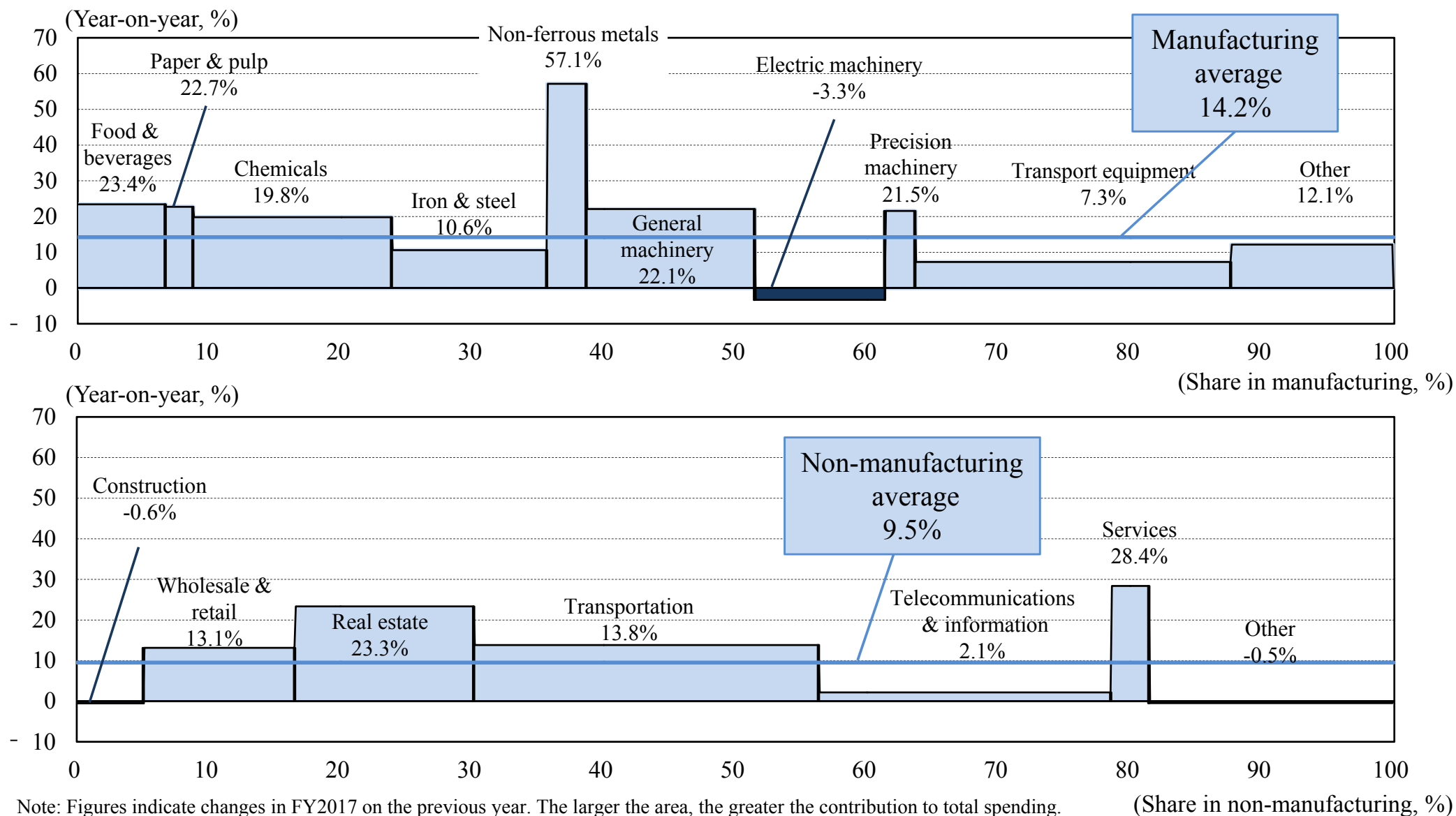
	DI on sales		DI on ordinary profit	
	FY2016 actual	FY2017 planned	FY2016 actual	FY2017 planned
	1,064 firms	1,321 firms	1,064 firms	1,321 firms
Total	-4.6	29.2	9.5	5.2
Manufacturing	-21.4	30.8	4.4	16.6
Non-manufacturing	7.9	28.0	13.3	-3.5

Note: DI on sales, DI on ordinary profit =

$$\frac{(\text{“increased revenue/profit”} - \text{“decreased revenue/profit”})}{\text{Valid total responses}}$$

# 1-6. Plan for FY2017 (Skyline Graph)

Figure 1-6. Composition and Growth of Capital Spending, by Major Industry (FY2017 Plan)



## 1-7. Trends in the Manufacturing Sector (1)

Driven by chemicals and general machinery

- In the manufacturing sector, reduced spending in electric machinery will be more than offset by double-digit increases in other industries, including chemicals and general machinery.
- Transport equipment, a heavyweight in the sector, shows sluggish performance after a long uptrend, but there are still plans to increase spending for the sixth consecutive year, mainly on the introduction of new models and the rebuilding of production systems.

**Figure 1-7. Industries with the Greatest Contribution to Planned Capital Spending for FY2017 (Manufacturing)**

(%)	Year-on-year	Composition ratio	Drivers of the increase/decrease
(1) Chemicals	19.8	15.1	Components and materials for automobiles and electronics/batteries R&D investment
(2) General machinery	22.1	12.9	Capacity investment for aircraft, automobile and industrial robot components Spending on production efficiency, etc.
(3) Transport equipment	7.3	24.0	Introduction of new models featuring next-generation technology Rebuilding of domestic production systems
Manufacturing as a whole	14.2		
Reference: Electric machinery	-3.3	9.9	Termination of large-scale plant construction projects

Note: Composition ratio is defined as the ratio of capital spending by each industry to that of the whole manufacturing sector in FY2016.

## 1-8. Trends in the Manufacturing Sector (2)

Moves to enhance production efficiency, production base and R&D functions

- In the manufacturing sector, (1) investment for enhancing production efficiency and production base, including spending on maintenance and repair, and (2) investment related to R&D are observed in an attempt to improve competitiveness, leading to increased capital spending in a wide range of industries.

**Figure 1-8. Highlights of Planned Capital Spending for FY2017 in the Manufacturing Sector**

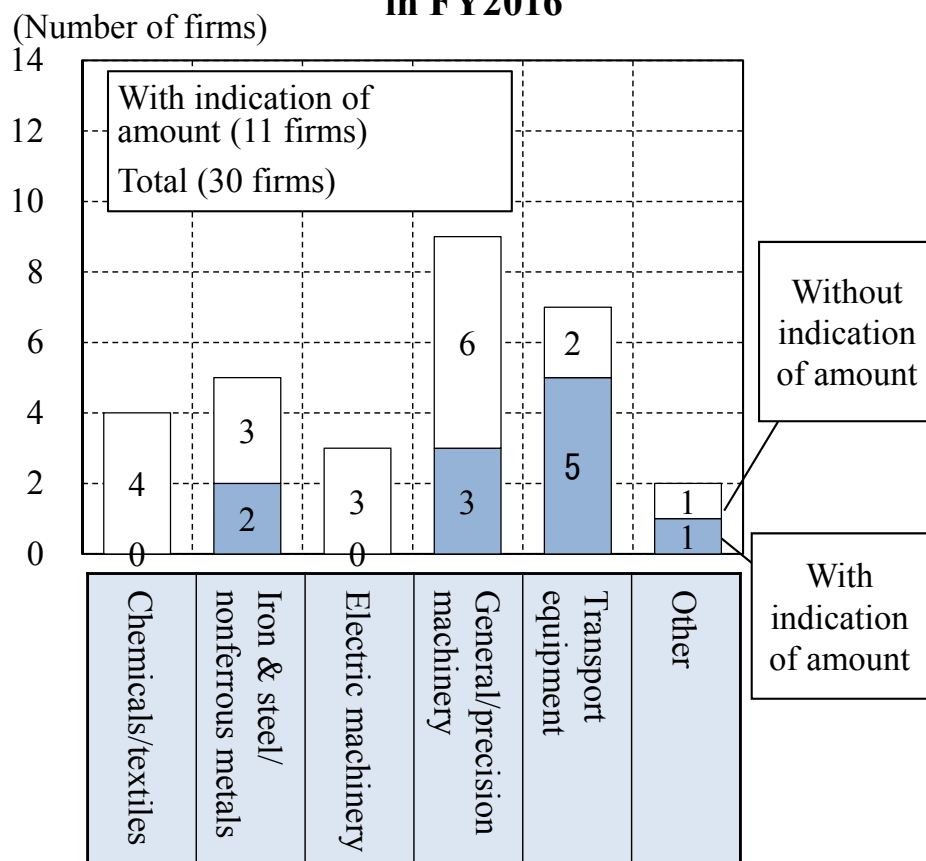
	(1) Enhancement of production efficiency and production base	(2) R&D
Capital goods	<p><b>Electric machinery:</b> Automobile and industrial robot components</p> <p><b>General machinery:</b> Production efficiency improvement and automobile/industrial robot components</p>	<p><b>General machinery:</b> Related to robots</p>
Materials/ components, Intermediate goods	<p><b>Chemicals:</b> Electronic/battery materials</p> <p><b>Iron &amp; steel:</b> Coke oven relining</p> <p><b>Non-ferrous metals:</b> Capacity investment for automobile and electronic device components, etc.</p>	<p><b>Chemicals:</b> R&amp;D facility development</p> <p><b>Electric machinery:</b> Projects to utilize IoT and AI</p>
Final demand	<p><b>Automobile:</b> Introduction of next-generation models and rebuilding of domestic production systems</p> <p><b>General machinery:</b> Related to aircraft</p> <p><b>Food &amp; beverages:</b> Dairy products and processed food</p> <p><b>Precision machinery:</b> Medical equipment</p> <p><b>Petroleum:</b> Distribution facility development, etc.</p>	<p><b>Automobile:</b> Development of advanced driver-assistance/autonomous driving systems</p> <p><b>General machinery:</b> Aerospace</p> <p><b>Precision machinery:</b> R&amp;D facility development</p>

# 1-9. Aircraft-related Capital Spending in Manufacturing

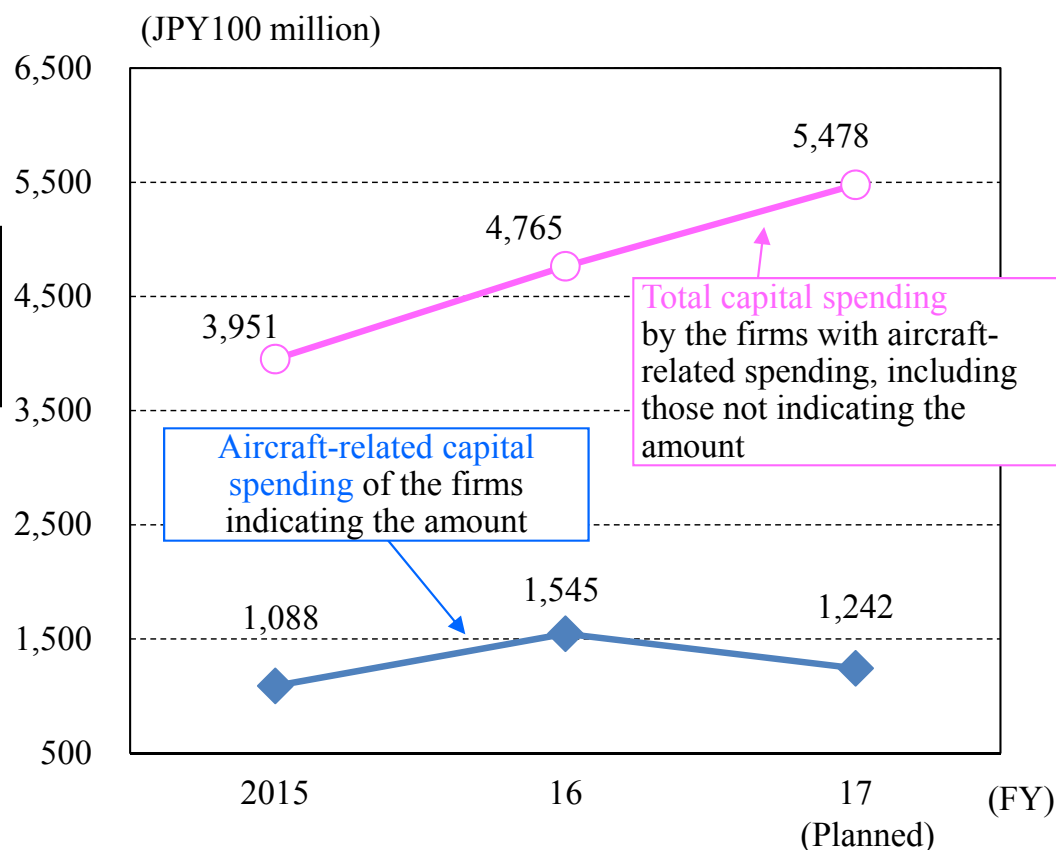
Aircraft-related capital spending increased by about 40% in FY2016

- 30 firms reported capital spending related to aircraft, with 11 of them also indicating the amount of spending. The total aircraft-related spending of those 11 companies in FY2016 rose 42.0% on the previous year. Despite a reactionary drop, the spending in FY2017 will still remain at a high level compared with the FY2015 level.

**Figure 1-9-1. Firms with Aircraft-related Capital Spending in FY2016**



**Figure 1-9-2. Capital Spending by Aircraft-related Firms**

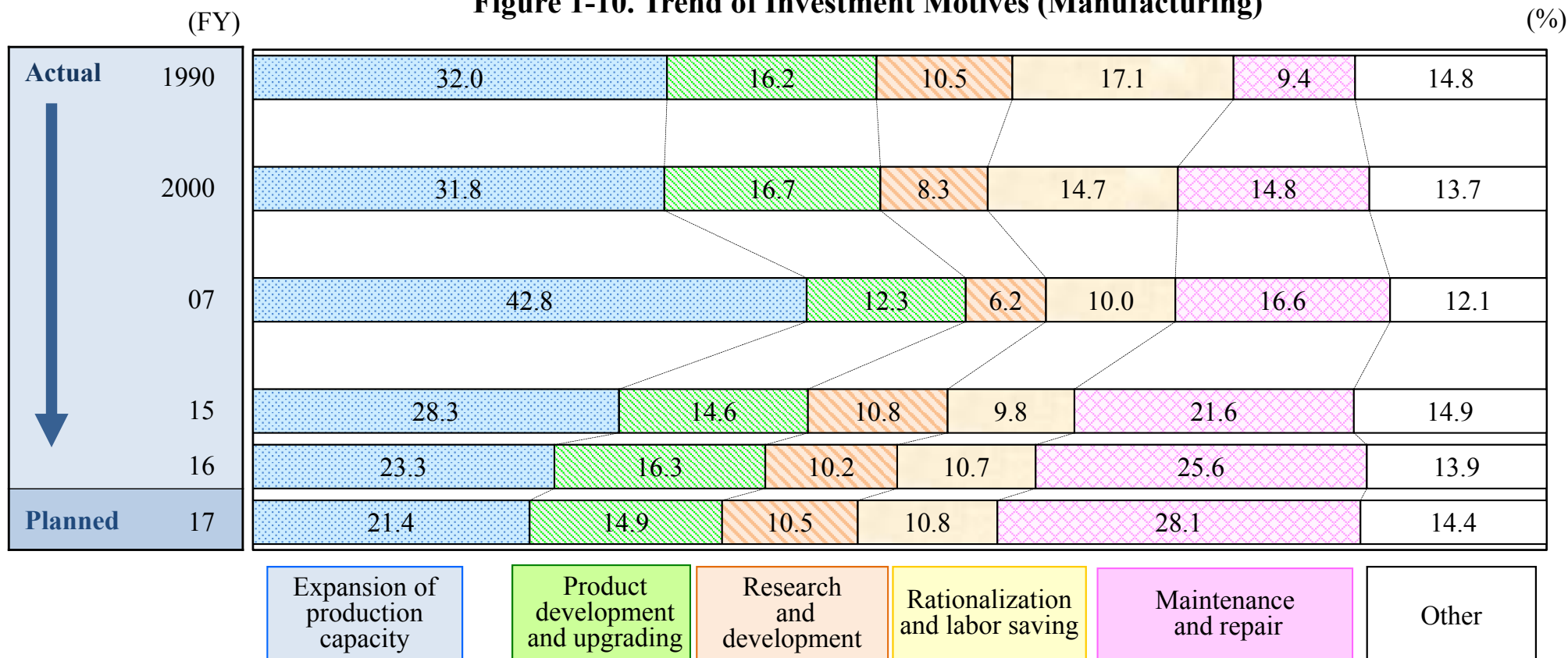


# 1-10. Investment Motives (Composition)

## Maintenance and repair reaches a new record high

- The share of “expansion of production capacity” reached a record low since this survey started in its current format in FY1986. The share of “product development and upgrading” also declined. In contrast, the share of “maintenance and repair” reached a record high, driven by investment for enhancing the production efficiency and production base, including through the replacement of facilities in key plants.

Figure 1-10. Trend of Investment Motives (Manufacturing)



Note: Share of each investment motive in total capital spending by value.

# 1-11. Investment Motives (Absolute Levels)

- As capital spending continues to increase as a whole, the investment motives with declining shares are also following a recovery path in absolute terms.
- Above all, “maintenance and repair” is at the highest level since FY2005.
- Even the level of “expansion of production capacity,” with a record low share since the start of the survey, has been rising after bottoming out in FY2013.

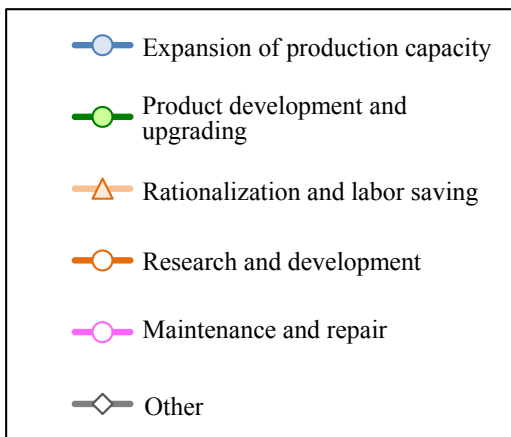
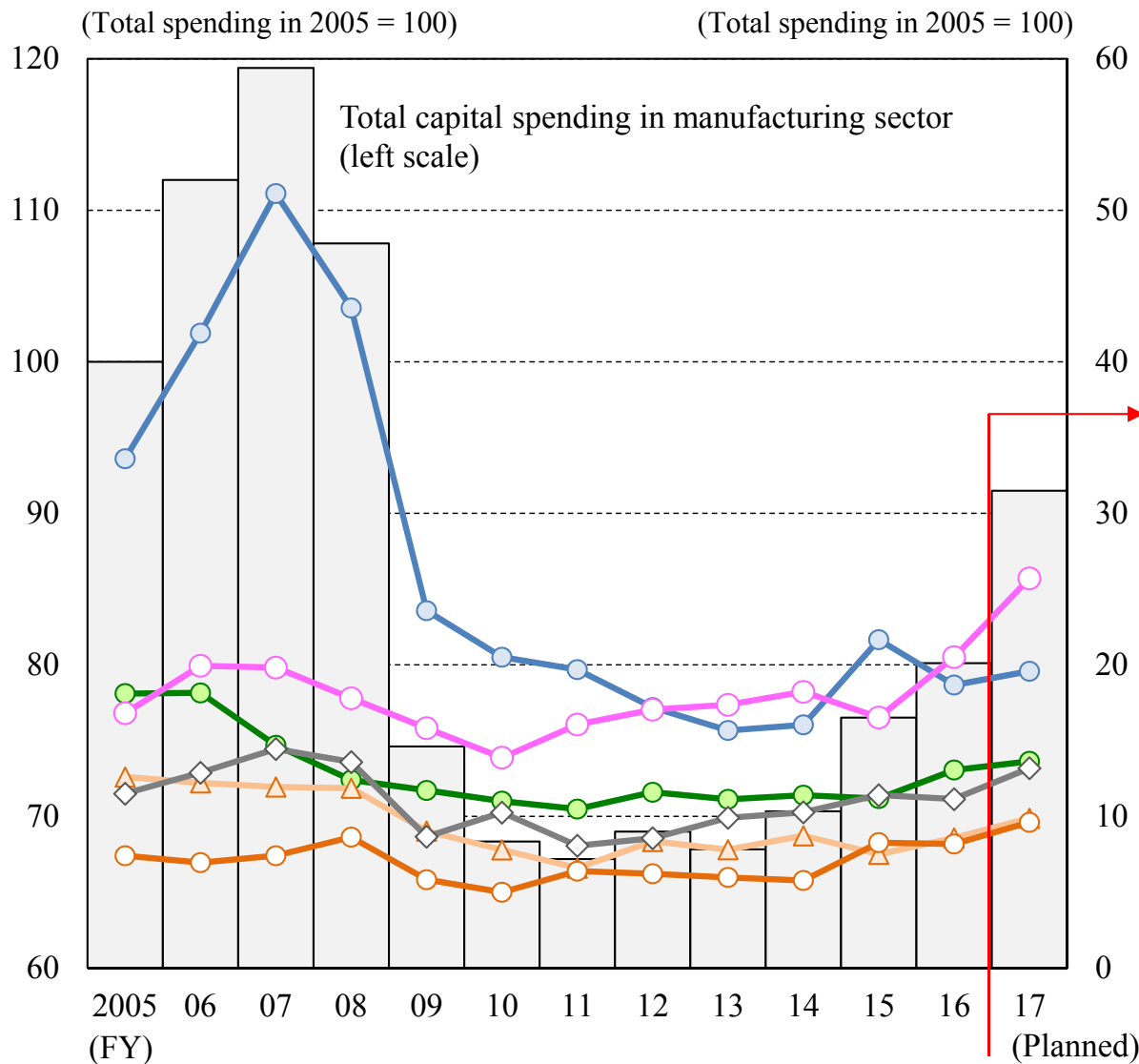


Figure 1-11. Historical Capital Spending by Investment Motive (Manufacturing)



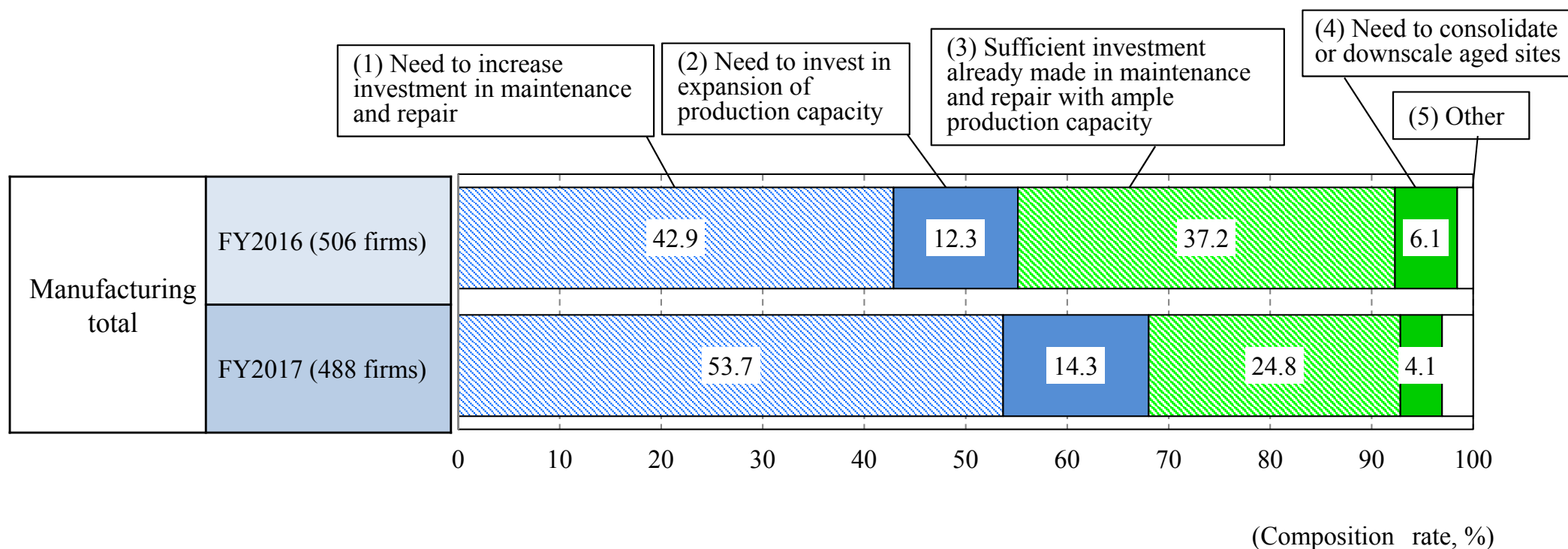
Note: The chart shows capital spending indexed on the total spending in FY2005 in the manufacturing sector. For each year, the capital spending indices (right scale) for individual investment motives add up to the capital spending index for the whole manufacturing sector.

# 1-12. Current Situation of Primary Domestic Production Base

Rising recognition of the need to increase investment in maintenance and repair, and for production capacity

- The rising recognition of (1) “Need to increase investment in maintenance and repair” and (2) “Need to invest in expansion of production capacity” points to growing capital spending in the manufacturing sector.

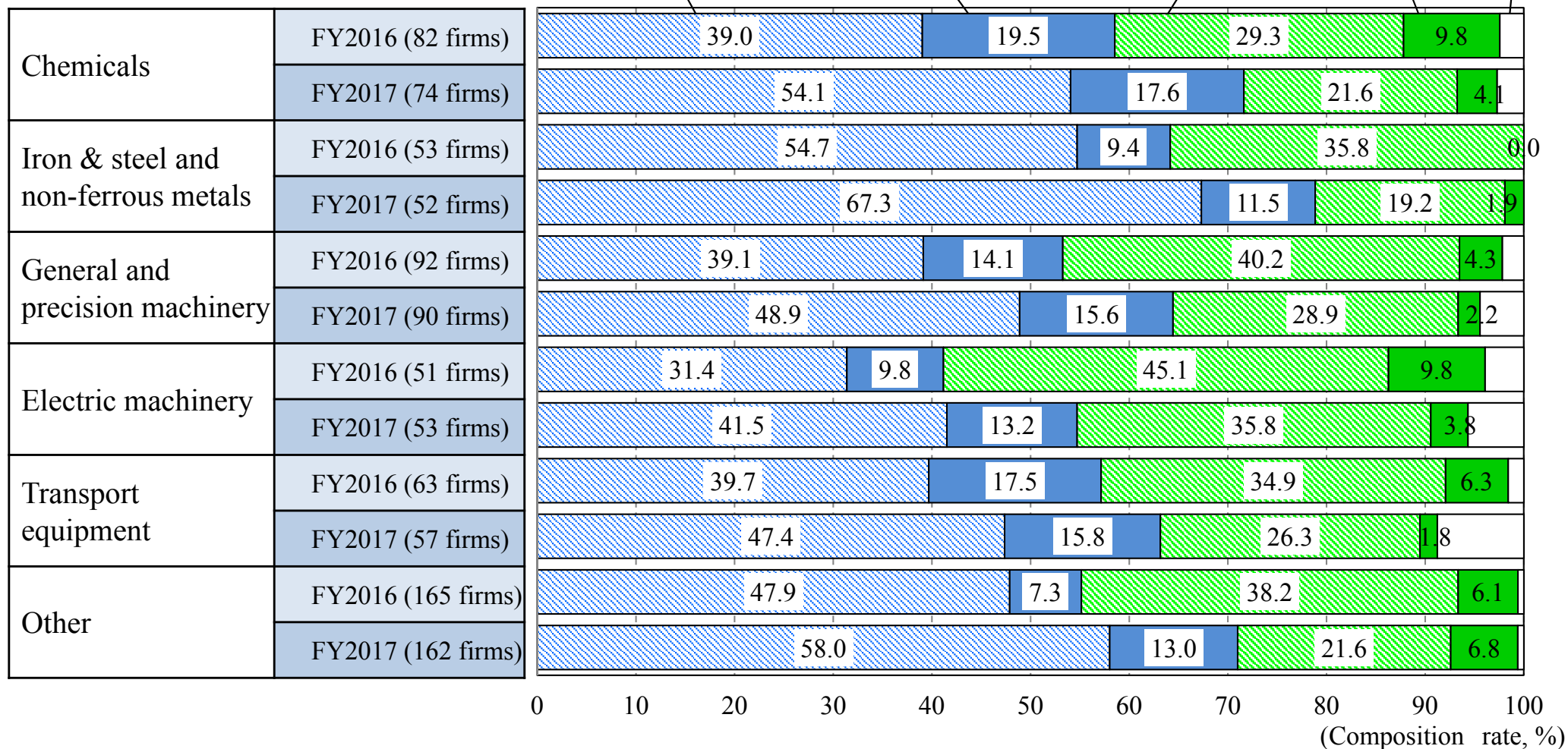
**Figure 1-12. Recognition of Overall Situation of Domestic Production Base**



# 1-13. Current Situation of Primary Domestic Production Base (Major Industries)

Figure 1-13. Recognition of Overall Situation of Domestic Production Base (by Industry)

- (1) Need to increase investment in maintenance and repair
- (2) Need to invest in expansion of production capacity
- (3) Sufficient investment already made in maintenance and repair with ample production capacity
- (4) Need to consolidate or downscale aged sites
- (5) Other



## 1-14. Trends in the Non-Manufacturing Sector (1)

Driven by railways and major development investment projects in the Tokyo area

- In the non-manufacturing sector, capital spending will increase, led by infrastructure-related industries, including transportation and real estate, as well as wholesale and retail with labor-saving investment in CVS outlets. Despite its small share, the service industry is planning a substantial increase in capital spending, driven by investment in hotels and theme parks to capture inbound tourists.

**Figure 1-14. Industries with the Greatest Contribution to Planned Capital Spending for FY2017 (Non-manufacturing)**

(%)	Year-on-year	Composition ratio	Drivers of the increase/decrease
(1) Transportation	13.8	26.3	Speeding-up and security measures in railways, logistics facilities in warehousing/cargo transport, airport facility development
(2) Real estate	23.3	13.6	Large-scale development projects in central Tokyo, including international business centers and disaster risk reduction
(3) Wholesale & retail	13.1	11.5	Enhancement of existing outlet networks, including labor-saving investment in CVS
Reference: Services	28.4	5.7	Investment in hotels and theme parks to capture inbound tourists in the run-up to the Tokyo Olympics/Paralympics
Reference: Telecommunications & information	2.1	22.1	Progressive investment expected in connection with next-generation ultrafast wireless communication (5G)
Non-manufacturing as a whole	9.5		

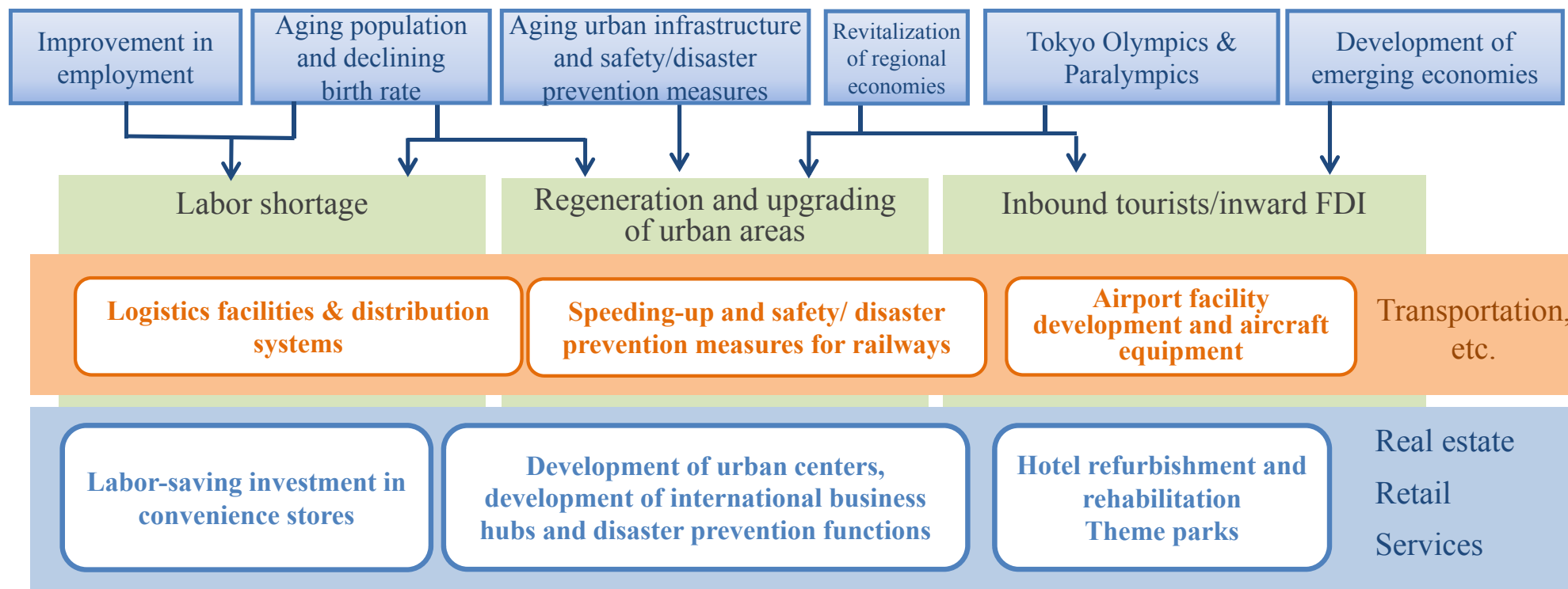
Note: Composition ratio is defined as the ratio of capital spending by each industry to that of the whole non-manufacturing sector

# 1-15. Trends in the Non-Manufacturing Sector (2)

## Expansion of investment to capture inbound tourists

- Capital spending in the non-manufacturing sector continues to be driven by transportation-related industries and real estate, including for speeding-up, safety and disaster prevention in railways, as well as real estate development focused on central Tokyo and the development of logistics facilities nationwide.
- Spending will also be propped up by investment in infrastructure, hotels and theme parks to capture the increase in inbound tourists in the run-up to the Tokyo Olympics/Paralympics in 2020, and by labor-saving investment to cope with the labor shortage.

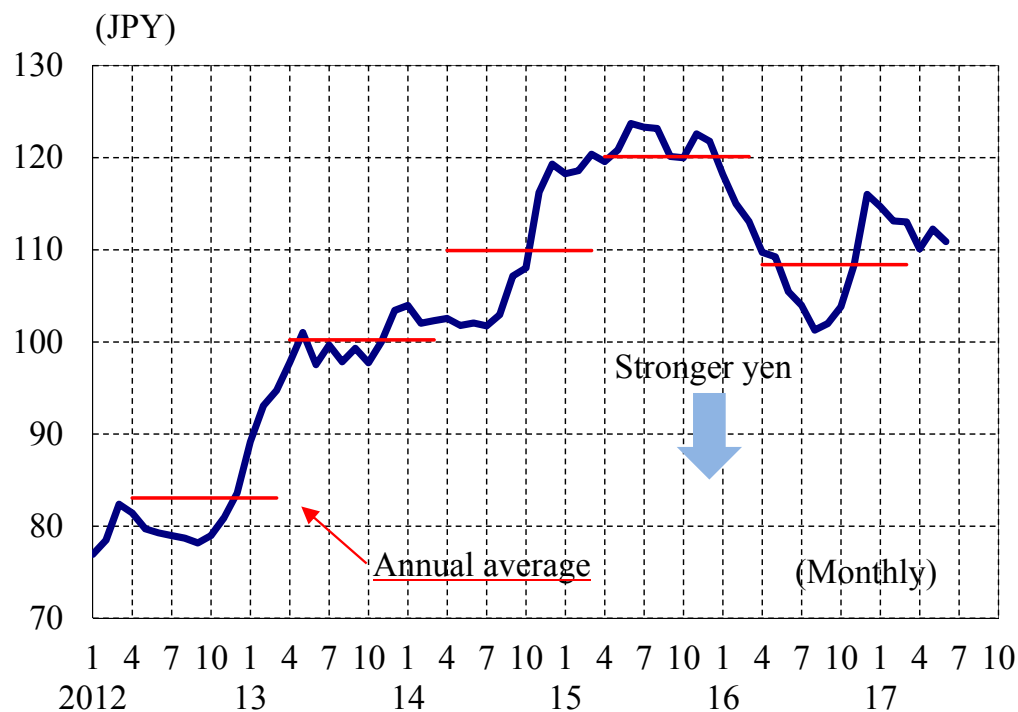
**Figure 1-15. Backdrop of Capital Spending in the Non-Manufacturing Sector**



# 1-16. Foreign Exchange Rate Assumed by Manufacturers

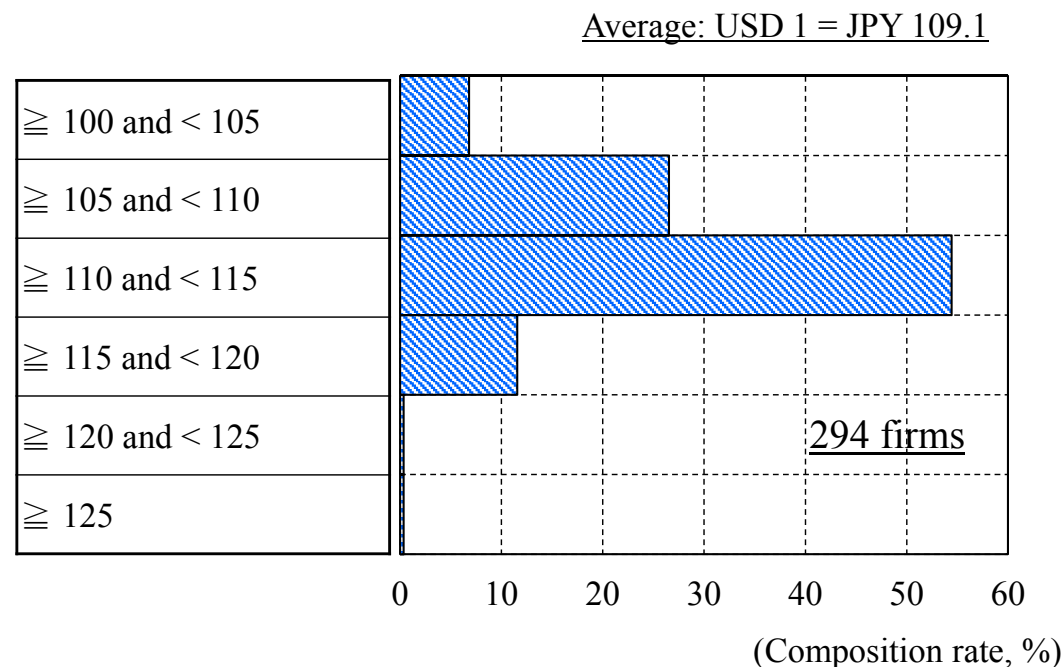
- USD 1 = JPY 110-115 is the foreign exchange rate most commonly assumed by manufacturers, followed by USD 1 = JPY 105-110, with an average of 109.1 yen to the dollar.

Figure 1-16-1. Actual USD/JPY Rate



Source: Bank of Japan  
(Monthly average of interbank rate at 17:00)

Figure 1-16-2. USD/JPY Rate Assumed by Manufacturers



Reference: Assumed EUR/JPY rate  
Average of 183 firms: EUR 1 = JPY 117.4  
Mode:  $\ge 115$  yen and  $< 120$  yen

Source: Development Bank of Japan, "Survey on Planned Capital Spending."

# 1-17. Planned Capital Spending for FY2017 by Industry

## Manufacturing

- Food & beverages (22.8%→23.4%)  
Spending will increase led by capacity investment in dairy/processed livestock products and processed food.
- Chemicals (7.5%→19.8%)  
A fourth consecutive year of increase is expected despite the completion of a round of major investment projects mostly related to hygienic goods, driven by spending on components and materials for automobiles and electronics/batteries and rising R&D investment.
- Petroleum (-6.3%→20.6%)  
Increased spending will be led by active maintenance and repair in refineries and investment in logistics facilities.
- Iron & steel (22.7%→10.6%)  
A second consecutive year of double-digit growth is expected thanks to continued relining of coke ovens in common steel and capacity expansion in specialty steel mainly for automobiles.
- Non-ferrous metals (3.8%→57.1%)  
Capacity investment for a wide range of automobile and electronic device components will result in a sharp increase.
- General machinery (-0.6%→22.1%)  
Spending will rise substantially led by capacity expansion for aircraft, automobile and industrial robot components and extensive investment in production efficiency.
- Electric machinery (-9.1%→-3.3%)  
Extensive capacity investment in electric components for automobiles and industrial robots will not offset the termination of large-scale plant construction projects, resulting in a decline.

- Precision machinery (0.7%→21.5%)  
Spending will continue to increase, driven by extensive R&D investment and capacity investment in medical equipment.
- Automobiles (4.6%→8.9%)  
A sixth consecutive year of increase will be led by the rebuilding of domestic production systems, including through the introduction of state-of-the-art equipment in key plants, as well as spending on the introduction of new models leveraging next-generation technology.

## Non-manufacturing

- Wholesale & retail (1.1%→13.1%)  
Spending will continue to increase despite planned curbs on new GMS outlets, largely propped up by the enhancement of existing CVS outlets, including through labor-saving investment.
- Real estate (-0.5%→23.3%)  
Spending will turn up, led by investment in large-scale development projects in central Tokyo, including for the construction of international business centers and disaster risk reduction.
- Transportation (-3.0%→13.8%)  
A double-digit increase is expected as investment will rise for speeding-up in railways and real estate development, as well as for airport facility enhancement and aircraft acquisition.
- Telecommunications & information (-5.1%→2.1%)  
Spending will increase led by information services and broadcasting, helped by capacity investment in mobile communications networks.
- Services (7.7%→28.4%)  
Spending will rise for the third consecutive year, buoyed by active investment in hotels and theme parks to capture tourists visiting Japan, particularly for the Tokyo Olympics/Paralympics.

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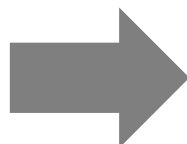


## 2. Attitudes toward “Investment in a Broader Sense”

## 2-1. Concept of “Investment in a Broader Sense”

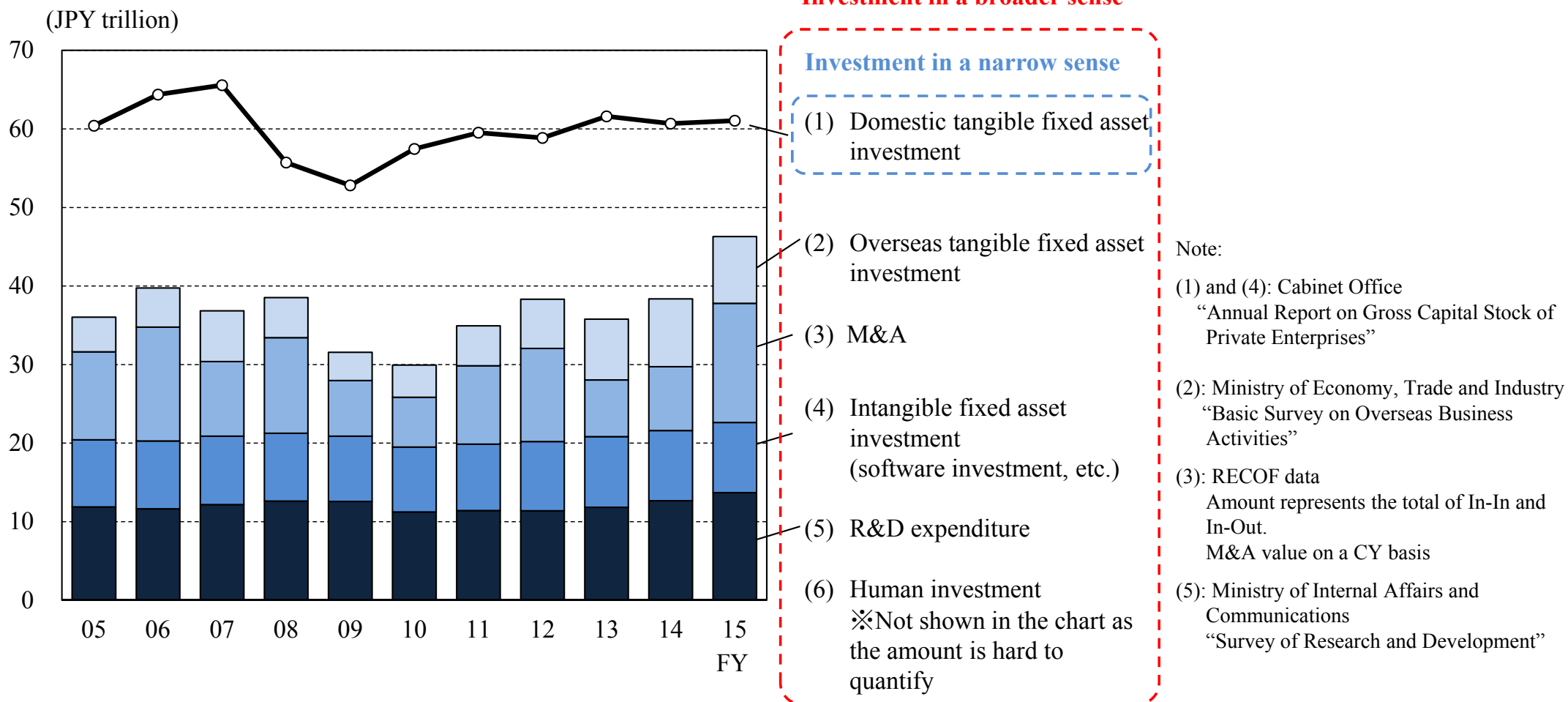
## 2-1-1. Corporate Approach to Future

Corporate approach to future  
“Investment in a broader sense”



General actions for corporate growth, survival and improvement of business valuation in future

**Figure 2-1-1. Domestic Tangible Fixed Asset Investment and Other Investment in a Broader Sense**



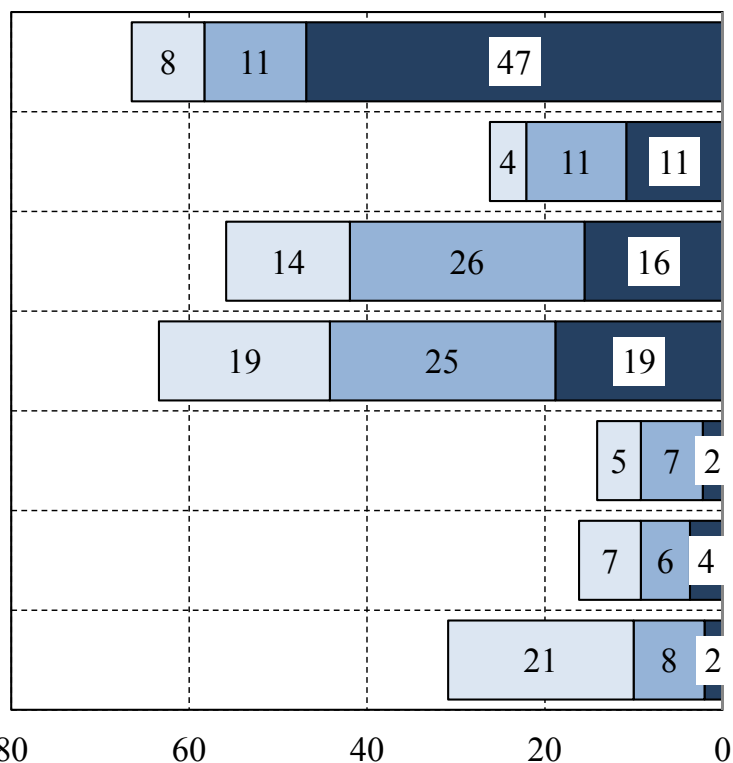
## 2-1-2. Priority of “Investment in a Broader Sense”

Manufacturing sector has three pillars:  
domestic tangible fixed asset investment, R&D and human investment

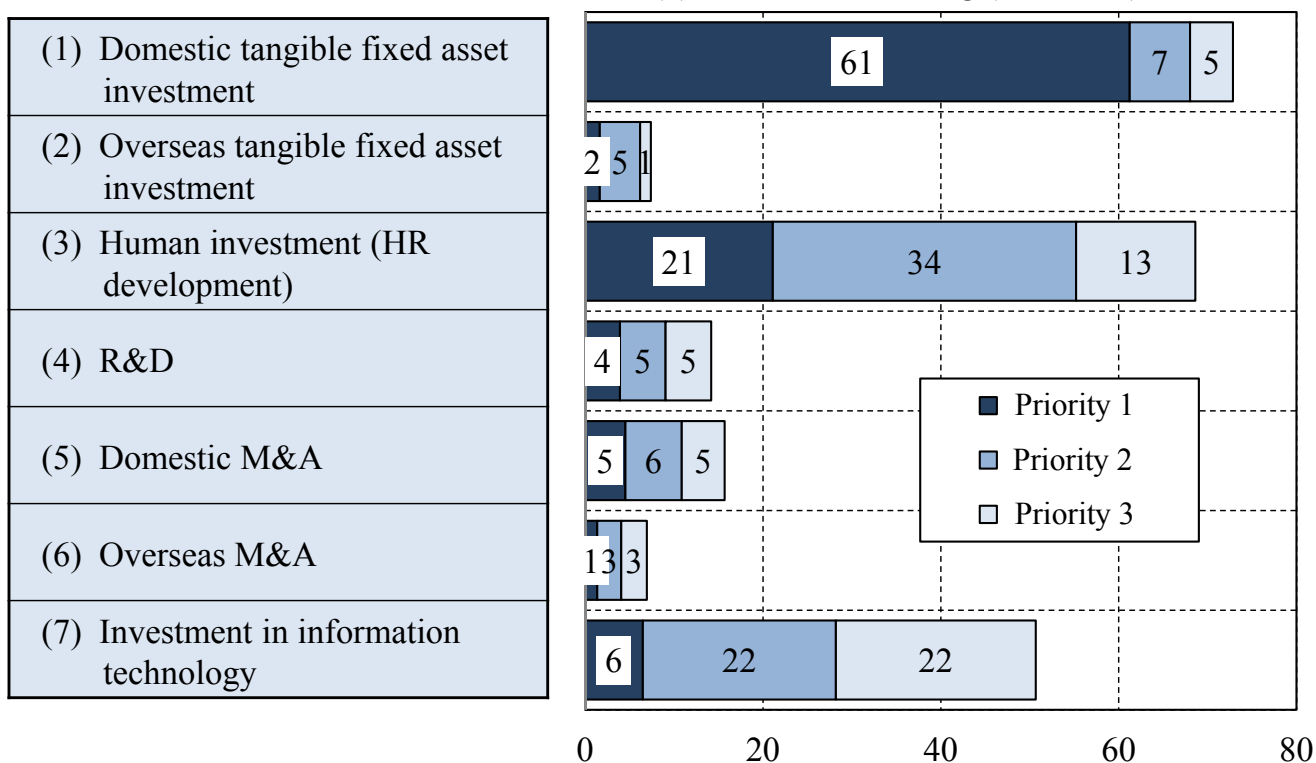
- In the manufacturing sector, (1) “Domestic tangible fixed asset investment,” (3) “Human investment and human resource development” and (4) “R&D” form the three pillars of “investment in a broader sense.” Both manufacturers and non-manufacturers give top priority to (1) “Domestic tangible fixed asset investment,” followed by (3) “Human investment and HR development” in the non-manufacturing sector.

Figure 2-1-2. Priority of “Investment in a Broader Sense”

(1) Manufacturing (489 firms)



(2) Non-Manufacturing (663 firms)



(Composition rate, %)

Note: Choose up to three answers.

(Response rate, %)

## 2-1-3. Downside Risk for “Investment in a Broader Sense” (Manufacturing)

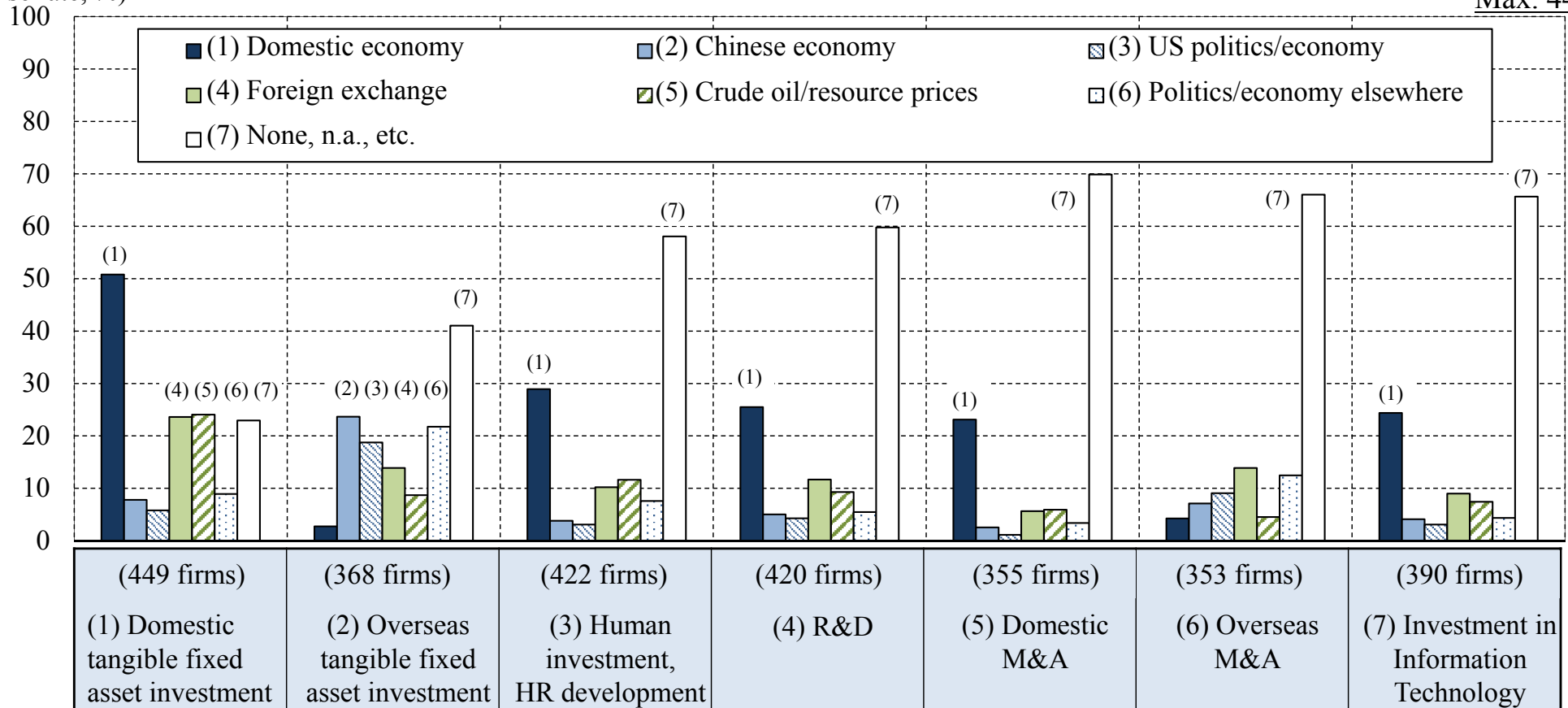
A downswing in domestic/overseas tangible fixed asset investment may be triggered by potential risk factors

- Downside risk factors include the domestic economy, foreign exchange rate and crude oil/resource prices for (1) “Domestic tangible fixed asset investment,” and international political and economic conditions for (2) “Overseas tangible fixed asset investment.”

**Figure 2-1-3. Potential Downside Risk Factors for Investment in a Broader Sense (Manufacturing)**

(Response rate, %)

Max. 449 firms



Note: Choose up to two answers.

## 2-1-4. Downside Risk for “Investment in a Broader Sense” (Non-Manufacturing)

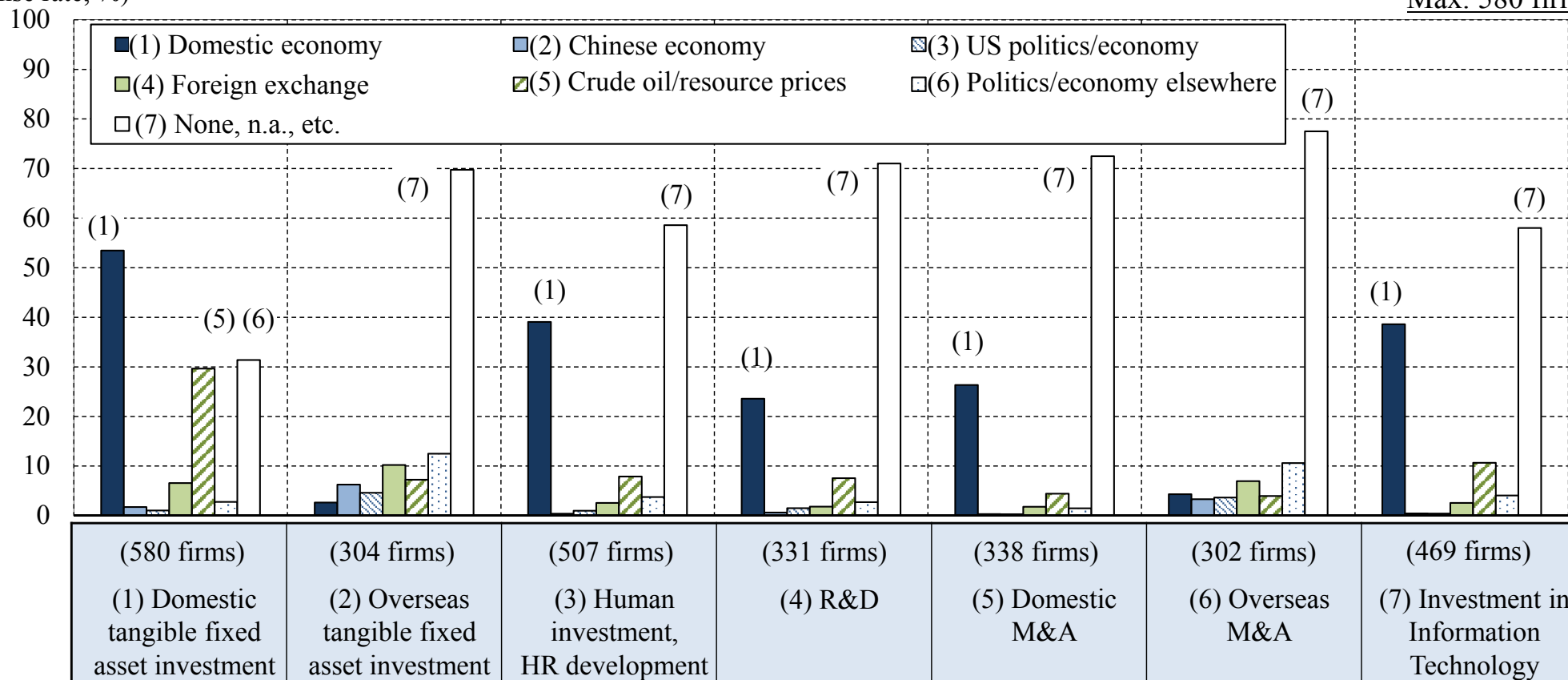
Domestic economy and crude oil/resource prices are major risk factor for domestic tangible fixed asset investment, etc.

- In the non-manufacturing sector, trends in the domestic economy constitute a major risk factor for investment activities in Japan, including (1) “Domestic tangible fixed asset investment,” as well as (3) “Human investment and human resource development” and (7) “Information technology investment,” as most of the firms focus their activities on the domestic market.

**Figure 2-1-4. Potential Downside Risk Factors for Investment in a Broader Sense (Non-Manufacturing)**

(Response rate, %)

Max. 580 firms



Note: Choose up to two answers.

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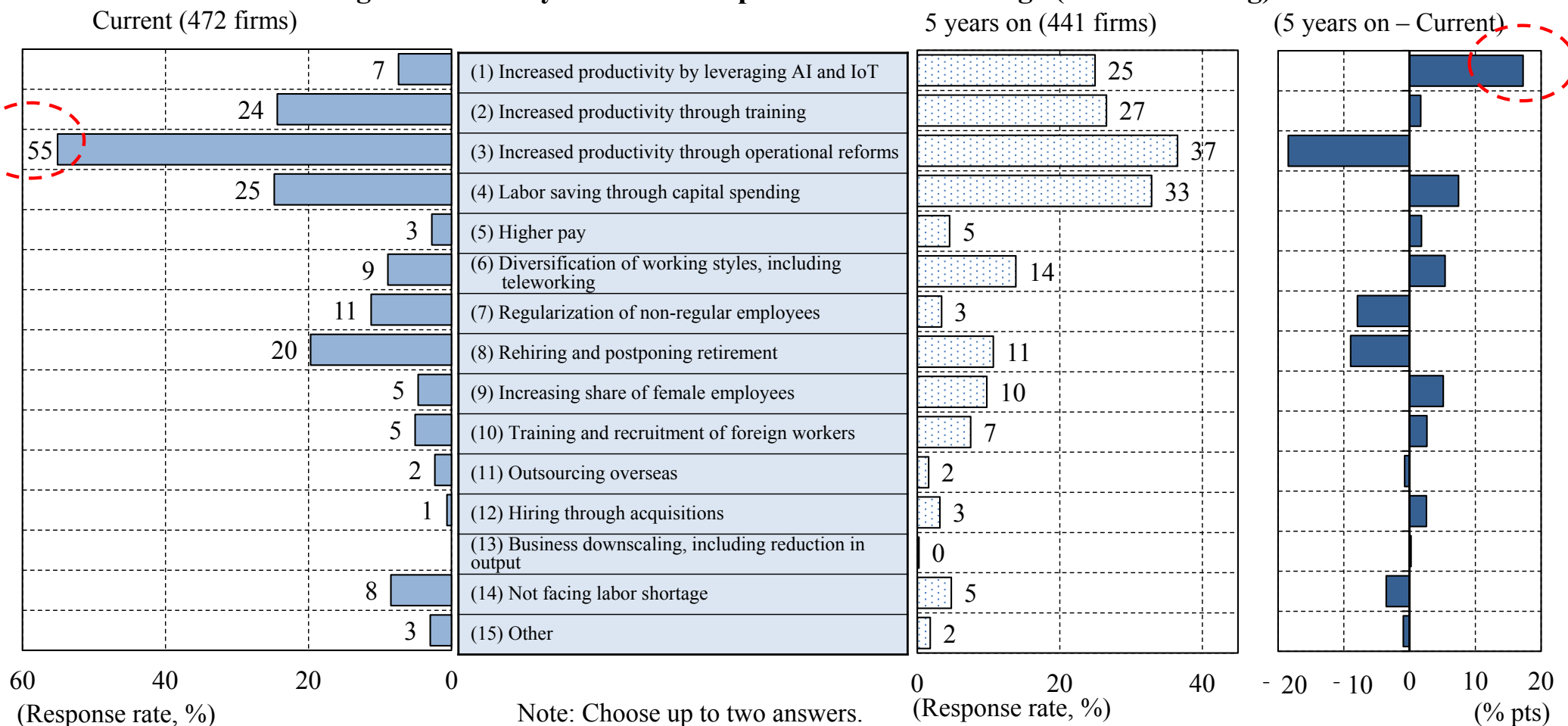
## 2-2. Human Investment and Human Resource Development Activities

## 2-2-1. Actions to Cope with Labor Shortage (Manufacturing)

Improve business now, and leverage AI and IoT in five years

- Although the firms are currently seeking (3) “Increased productivity through operational reforms,” a comparison between current actions and actions to be taken in five years reveals the rising importance of (1) “Increased productivity by leveraging AI and IoT,” indicating high expectations for new technology going forward.

Figure 2-2-1. Key Actions to Cope with Labor Shortage (Manufacturing)

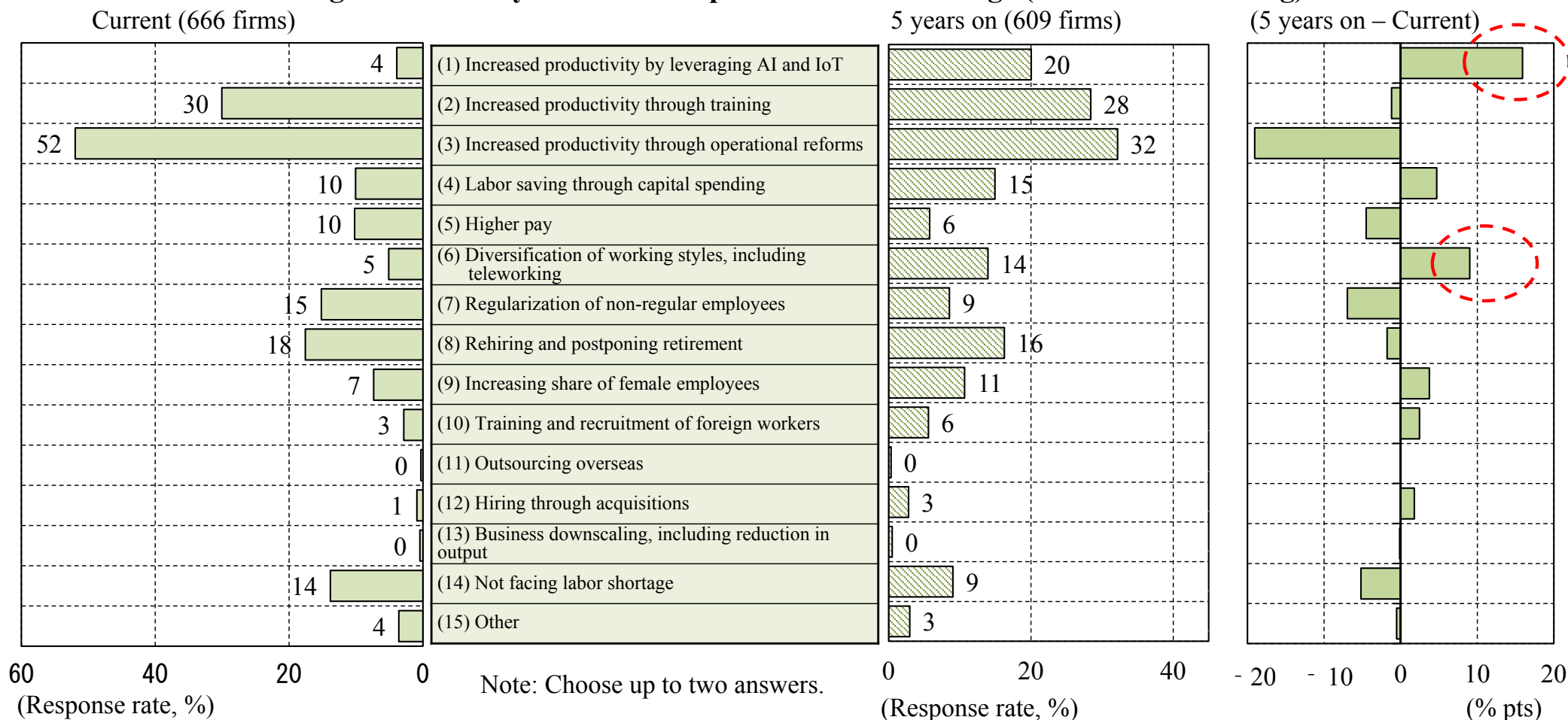


## 2-2-2. Actions to Cope with Labor Shortage (Non-Manufacturing)

Utilize AI/IoT and diversify working styles in five years

- Although (3) “Operational reforms” is the primary action both currently and in five years, (1) “Leveraging AI and IoT” shows the steepest rise in five years, followed by (6) “Diversification of working styles.”

Figure 2-2-2. Key Actions to Cope with Labor Shortage (Non-Manufacturing)



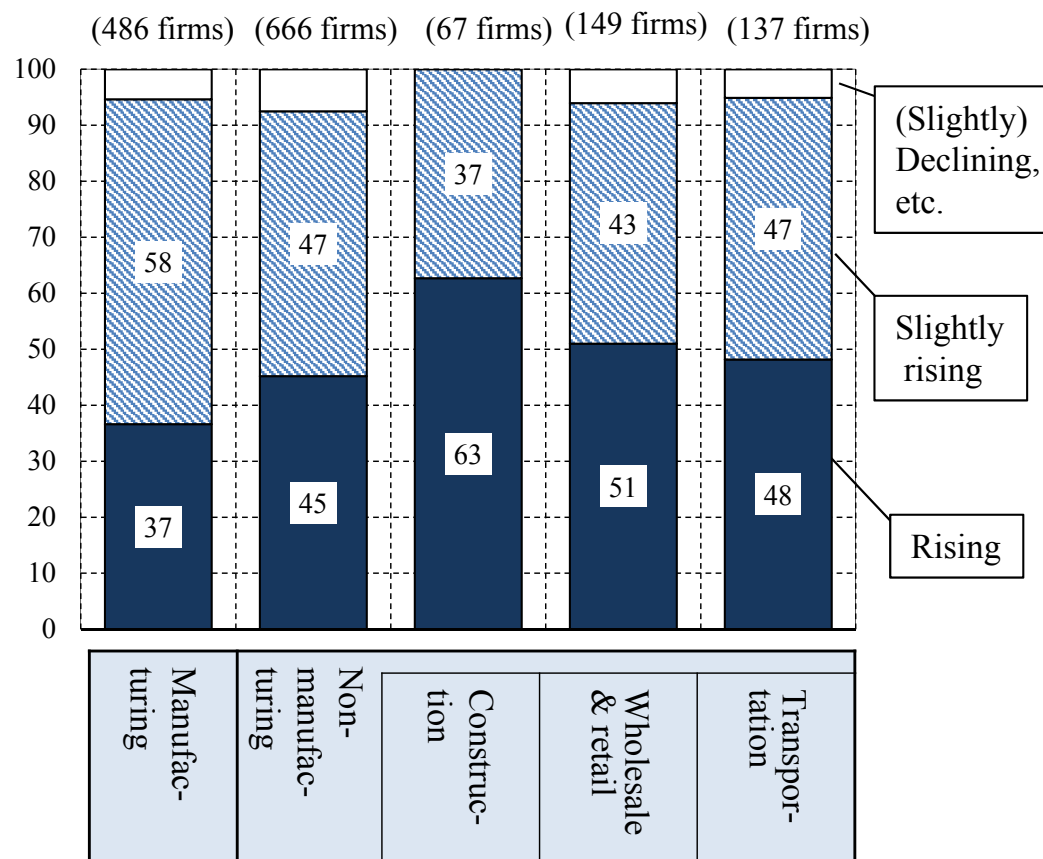
## 2-2-3. Human Investment and HR Development Activities

Many firms recognize increased importance of human investment and HR development

- Many firms now recognize the increased importance of human investment and HR development, in both the manufacturing and non-manufacturing sectors. Half of them also report increased spending on human investment and HR development.

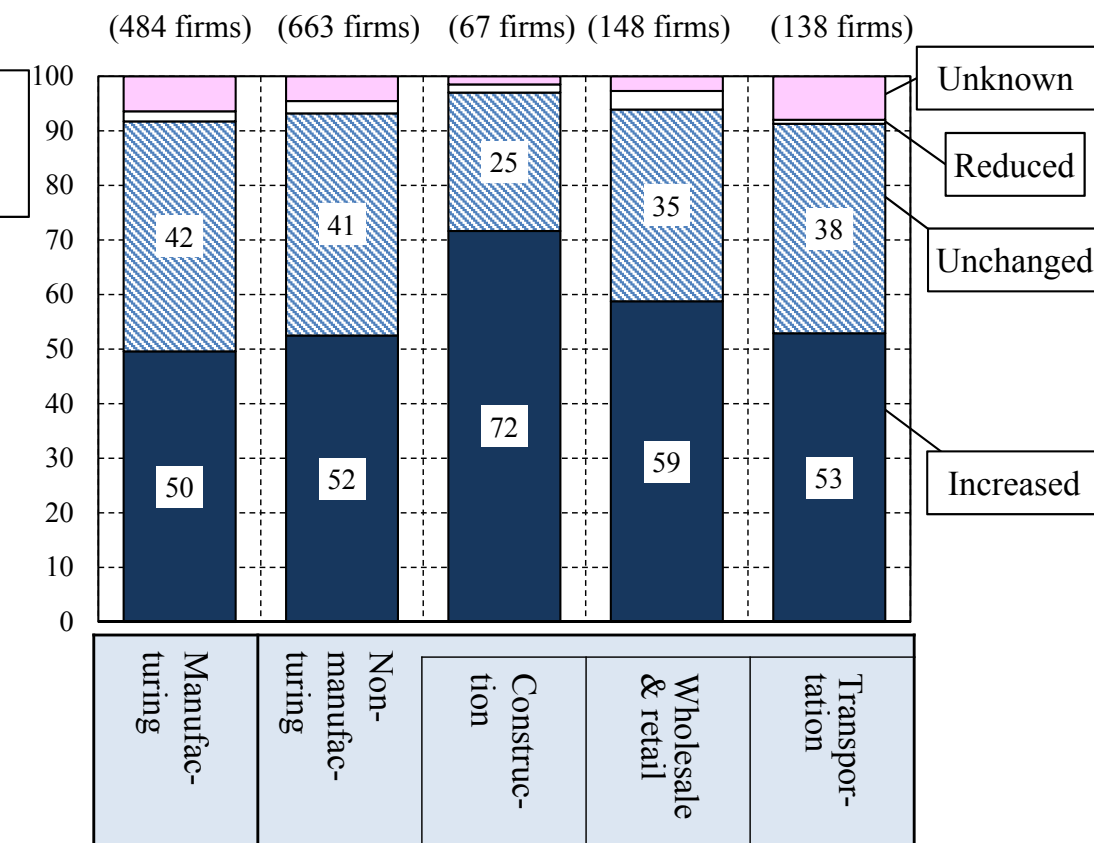
**Figure 2-2-3-1. Importance of Human Investment and HR Development**

(Composition rate, %)



**Figure 2-2-3-2. Spending on Human Investment and HR Development**

(Composition rate, %)

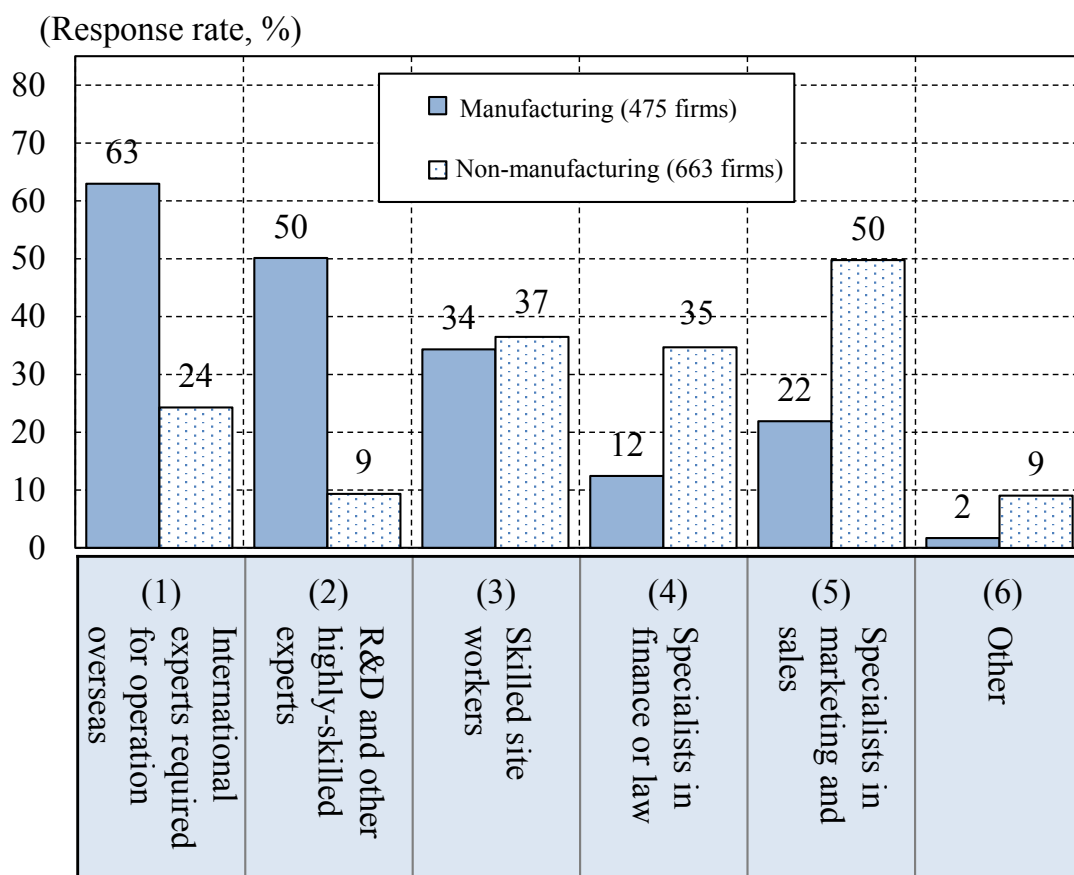


## 2-2-4. Key Experts to Be Developed

Manufacturers seek international and R&D experts, while non-manufacturers prioritize specialists, including in marketing

- Many manufacturers give priority to the development (1) “International experts” and (2) “R&D and other highly-skilled experts,” whereas non-manufacturers mostly cite (5) “Specialists in marketing and sales.”

**Figure 2-2-4-1. Key Experts to Be Developed**



Note: Choose up to two answers.

**Figure 2-2-4-2. Specific HR Development Actions**

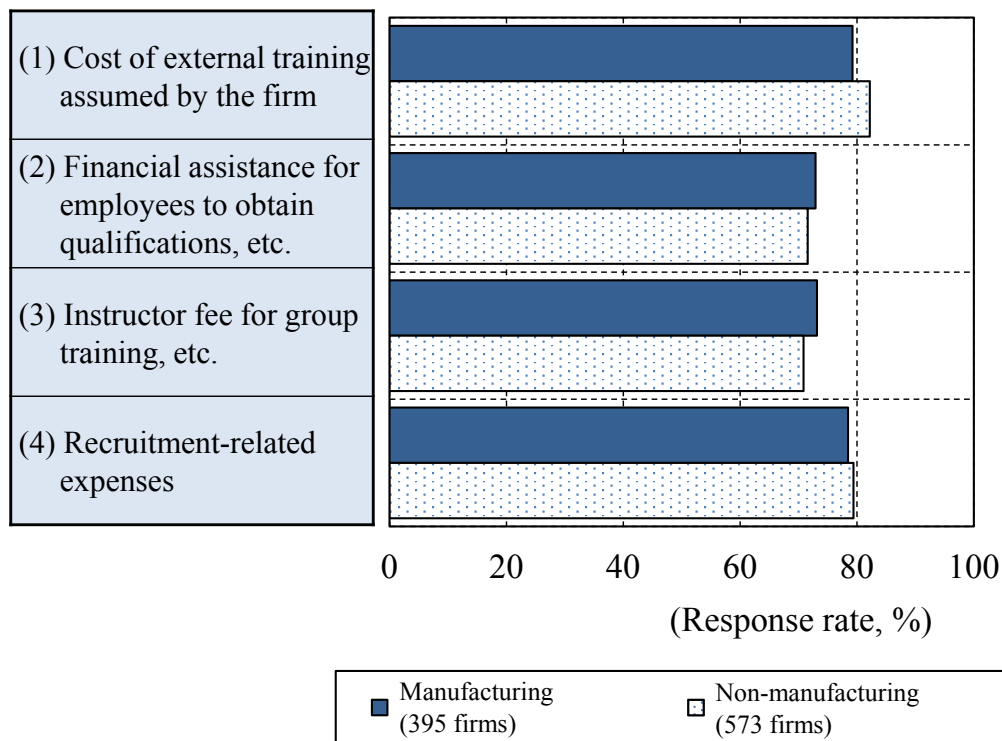
Manufacturing	<ul style="list-style-type: none"> <li>Short-term dispatch of young experts to developing countries (paper &amp; pulp)</li> <li>*Many similar answers regarding improved overseas study and training schemes.</li> <li>Mid-career training of female employees for skill upgrading and additional training by job class (construction)</li> </ul>
Non-manufacturing	<ul style="list-style-type: none"> <li>Establishment of a nautical college in a developing country (transportation)</li> <li>Inter-group personnel exchange (transportation)</li> <li>Increased mobility of experts within the group, including through a job posting scheme (services)</li> <li>Intensive 3-year OJT course for young employees (construction)</li> <li>Establishment of engineer training facilities (construction)</li> <li>Encouragement to obtain national and technical qualifications (transportation)</li> <li>Dispatch of new university graduate recruits overseas (other non-manufacturing)</li> </ul>

## 2-2-5. Expense Items Managed/Identified as Human Investment or HR Development

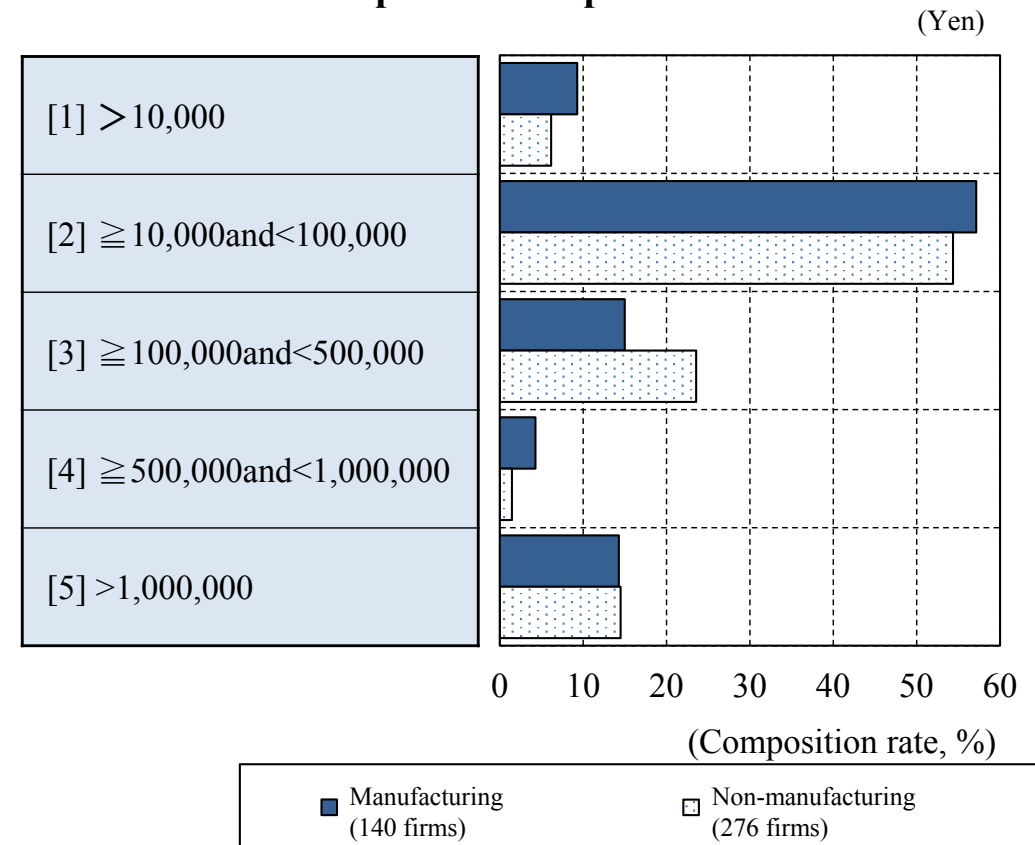
### Limited identification of human investment

- Many respondents cited (1)-(3) “Training related costs” and (4) “Recruitment-related costs” as expense items to be managed/identified as spending on human investment or HR development. Most firms reported human investment and HR development cost per person of [2] “JPY 10,000-100,000,” there were significant variations among firms.

**Figure 2-2-5-1. Expense Items Managed/Identified as Human Investment or HR Development Cost (Items Most Frequently Cited)**



**Figure 2-2-5-2. Amount of Human Investment and HR Development Cost per Person (Yen)**



Note: Choose all applicable answers.

---

## 2-3. R&D Activities

## 2-3-1. R&D Expenditure

### Upturn in planned spending mainly driven by transport equipment

- After three consecutive years of approximately 4% year-on-year increases, the expenditure leveled off in FY2016, down 0.1%.
- R&D expenditure (consolidated basis) in FY2017 is expected to turn up again, rising 6.0% overall and 5.9% in manufacturing.
- Expenditure in transport equipment will increase, driven by cutting-edge technology development for the future, including on driving support and autonomous driving. There are also plans for an increase in electric machinery R&D expenditure, mainly for autonomous driving, IoT, deep learning, robotics and AR.

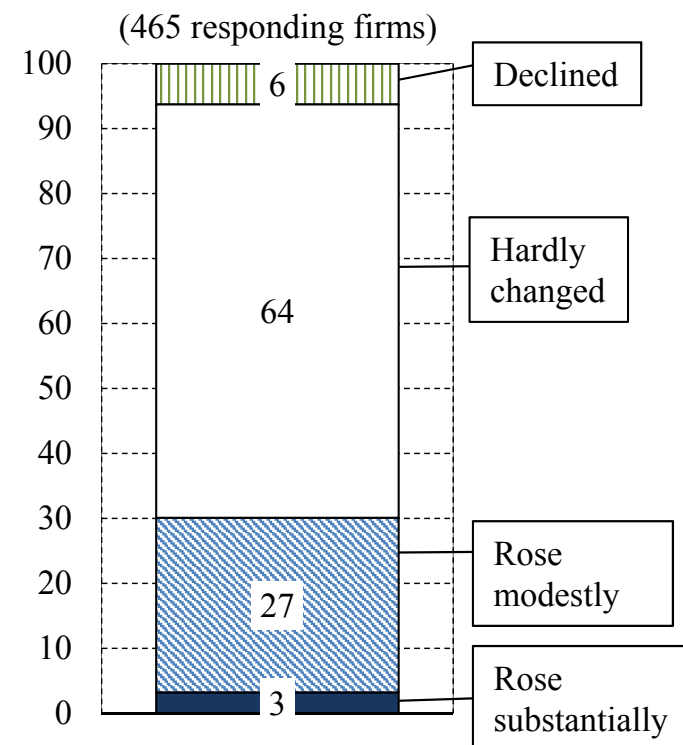
**Figure 2-3-1-1. R&D Expenditure (Consolidated Basis)**

	FY2016 (actual) year-on-year (698 firms)	FY2017 (planned) year-on-year (792 firms)	Composition ratio, FY2016
Total	- 0.1	6.0	100.0
Manufacturing	- 0.2	5.9	98.6
Transport equipment	- 0.1	7.2	43.7
General machinery	- 2.3	7.8	6.8
Electric machinery	- 2.6	4.0	26.8
Chemicals	3.3	2.9	13.1
Non-manufacturing	3.5	11.9	1.4

Note: For the purpose of this survey, R&D expenditure comprises all costs related to R&D, including personnel cost, raw materials cost, depreciation cost and allocated overhead.

**Figure 2-3-1-2. Trend of R&D Expenditure as % of Sales (Manufacturing)**

(Composition rate, %)

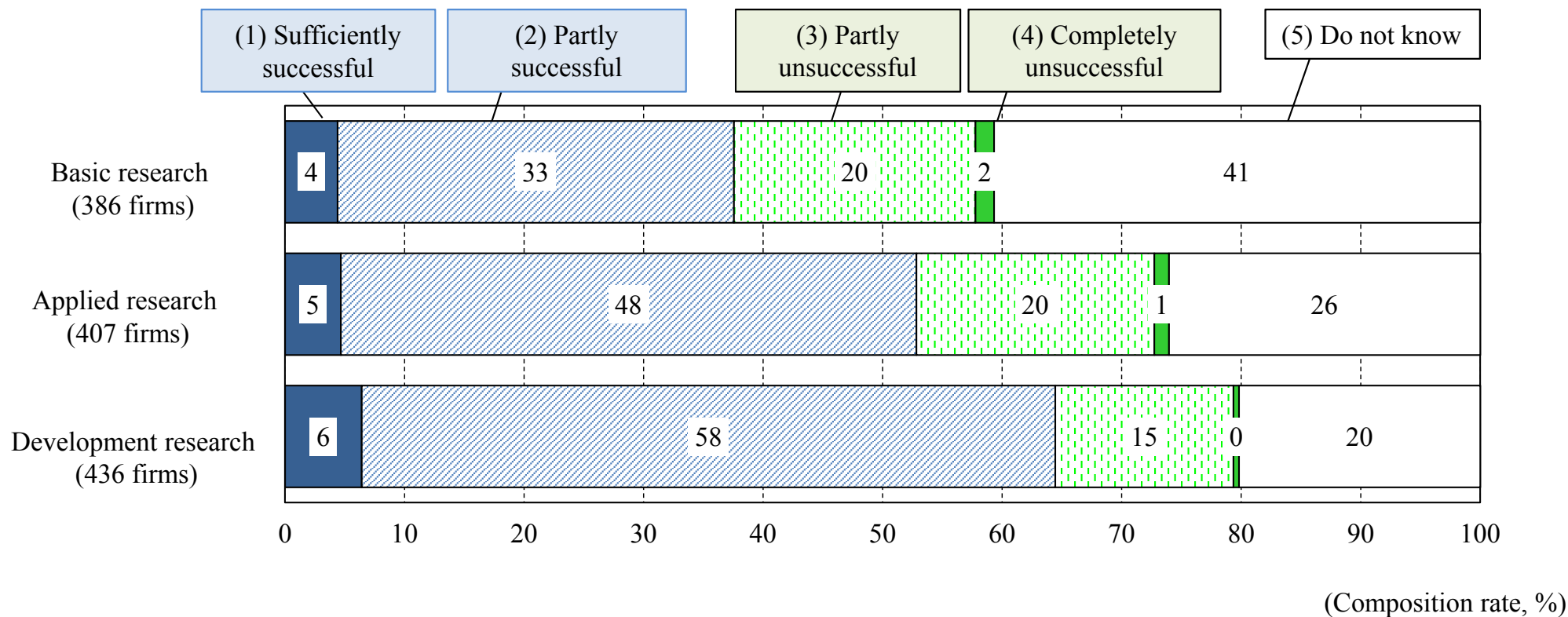


## 2-3-2. R&D Results

### Measure of success differs depending on the stage of research

- As regards basic research well in advance of product realization, over 20% of firms consider the research as (3) “Partly unsuccessful” or (4) “Completely unsuccessful,” while 40% (5) “Do not know” if it is successful or not. At the stage of development research, closer to product realization, more than 60% of the respondents consider the research as (1) “Sufficiently successful” or (2) “Partly successful.”

Figure 2-3-2. R&D Results (Manufacturing)



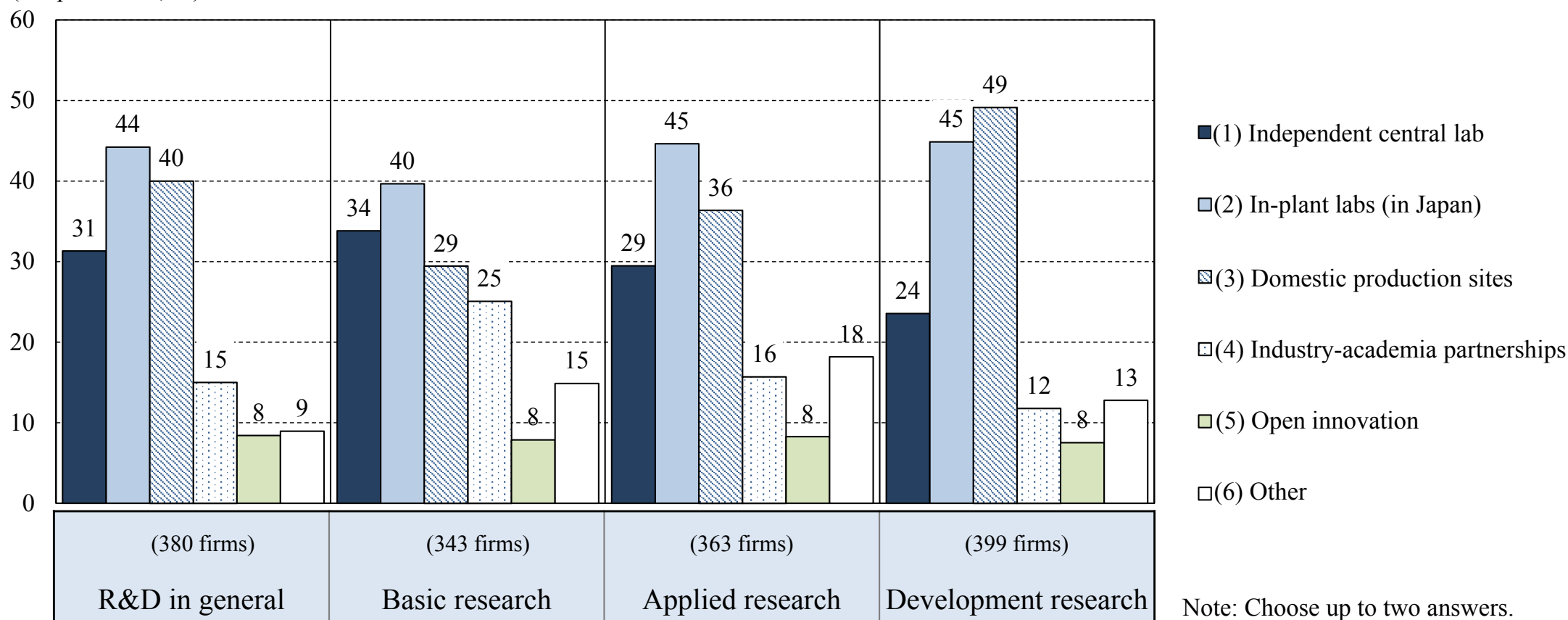
## 2-3-3. Key R&D Organizations and Activities

### Tendency to emphasize onsite R&D

- As regards R&D in general, many firms responded that they give priority to in-house resources over (4) “Industry-academia partnerships” or (5) “Open innovation.” As key R&D drivers, more respondents cited (2) “In-plant laboratories” and (3) “Domestic production sites” than (1) “Central laboratory,” thus indicating most firms’ emphasis on onsite R&D. This tendency is stronger at the stage of development research, closer to actual product development.

**Figure 2-3-3. Key R&D Activities and Organizations for Manufacturers**

(Response rate, %)

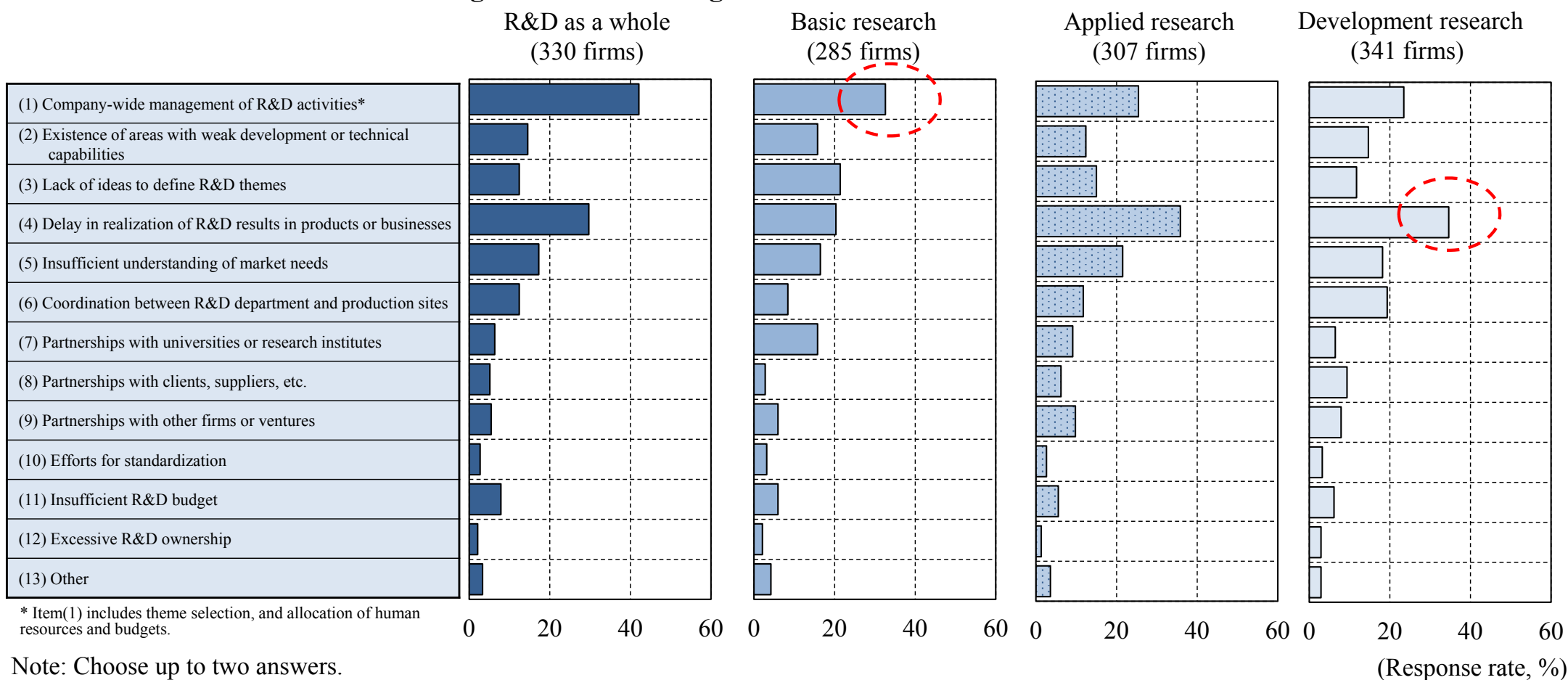


## 2-3-4. Challenges for R&D Activities

Challenges include overall management for basic research, and delays in product or business realization for development research

- (1) “Company-wide management of R&D activities” is recognized as the biggest challenge for basic research, whereas (4) “Delay in realization of R&D results in products or businesses” is a key challenge at the stage of development research.

Figure 2-3-4. Challenges for R&D Activities

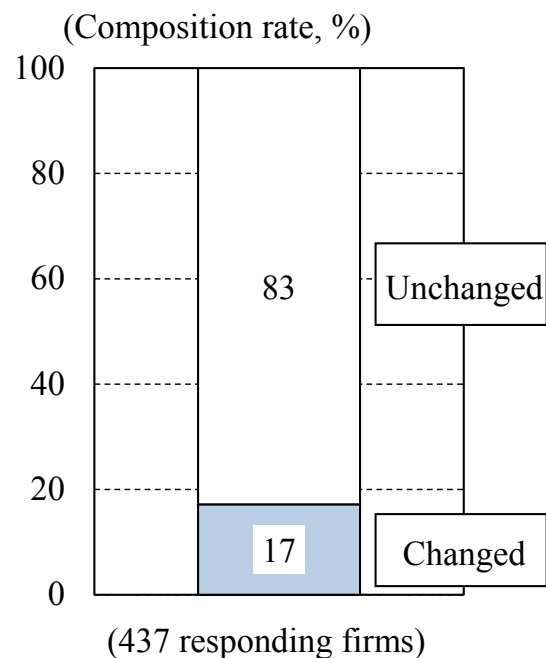


## 2-3-5. Main Decision-Maker on R&D Budget Allocation

Staff other than CTO affect R&D expenditure in half of the firms

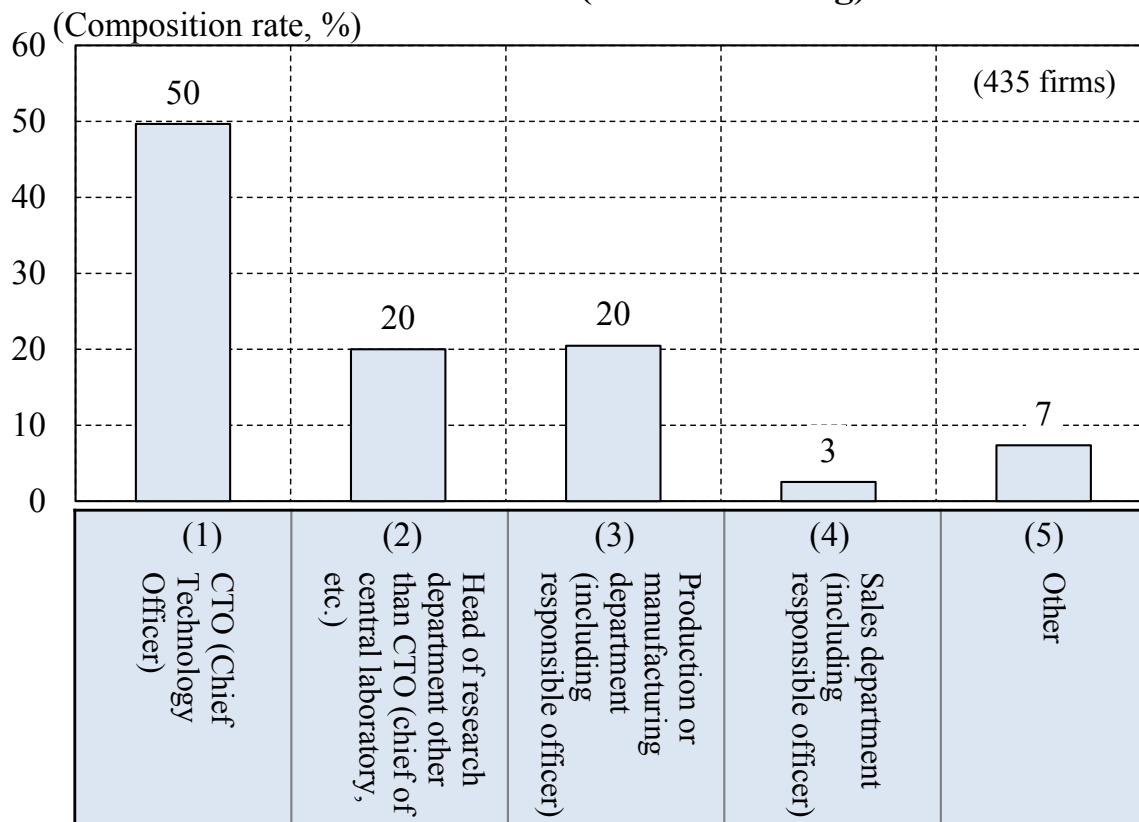
- Over 80% of the firms reported no change in R&D budget allocation. Although half of the firms responded that (1) “Chief Technology Officer (CTO)” was the main decision-maker on R&D activities, other respondents cited (2) “Chief of central laboratory” or (3) “Production or manufacturing department.”

**Figure 2-3-5-1. R&D Budget Allocation (Manufacturing)**



Note: Asked about any change in R&D budget allocation for basic, applied or development research

**Figure 2-3-5-2. Main Decision-Maker on R&D Budget Allocation (Manufacturing)**



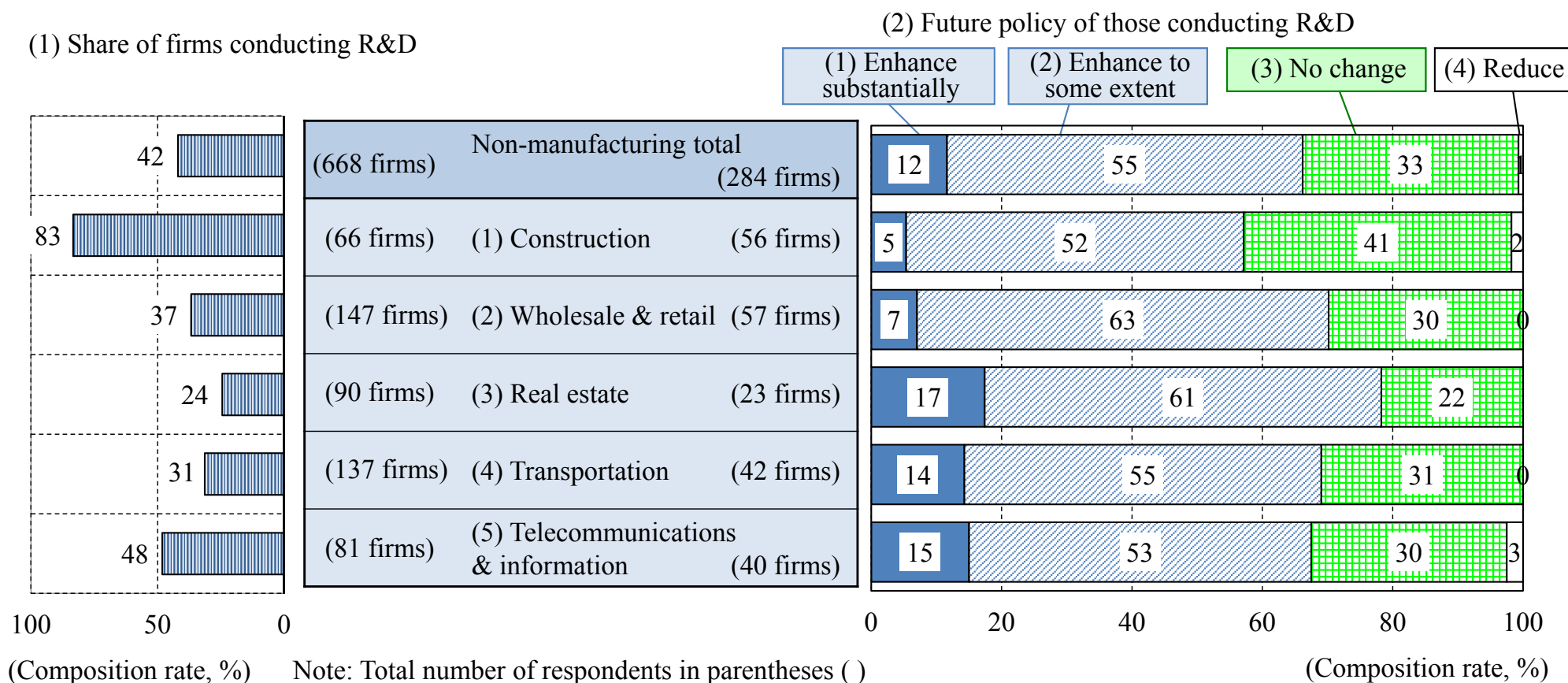
Note: Asked to identify the main decision-maker on theme selection or budget allocation.

## 2-3-6. R&D Equivalent Activities of Non-Manufacturers

42% of the firms conduct R&D on new products or services

- In the non-manufacturing sector, over 40% of the firms reported some form of R&D activities, including on new services or products, including the cases where those activities are not recognized in “R&D expenditure.” Almost 70% of those firms responded that they intend to enhance such activities either substantially or to some extent.

**Figure 2-3-6. Share of Firms Involved in Some Form of R&D Activities, including on New Services or Products and Their R&D Policies**



## 2-4. Capital Spending and Business Activities Overseas

## 2-4-1. Capital Spending Overseas (Overview)

- Actual capital spending overseas (consolidated basis) in FY2016 declined in both the manufacturing and non-manufacturing sectors, led by reduced investment in automobiles for emerging markets and the termination of large-scale projects in mining.
- Planned capital spending for FY2017 indicates an upturn in both sectors, up 14.3% overall on the previous year.

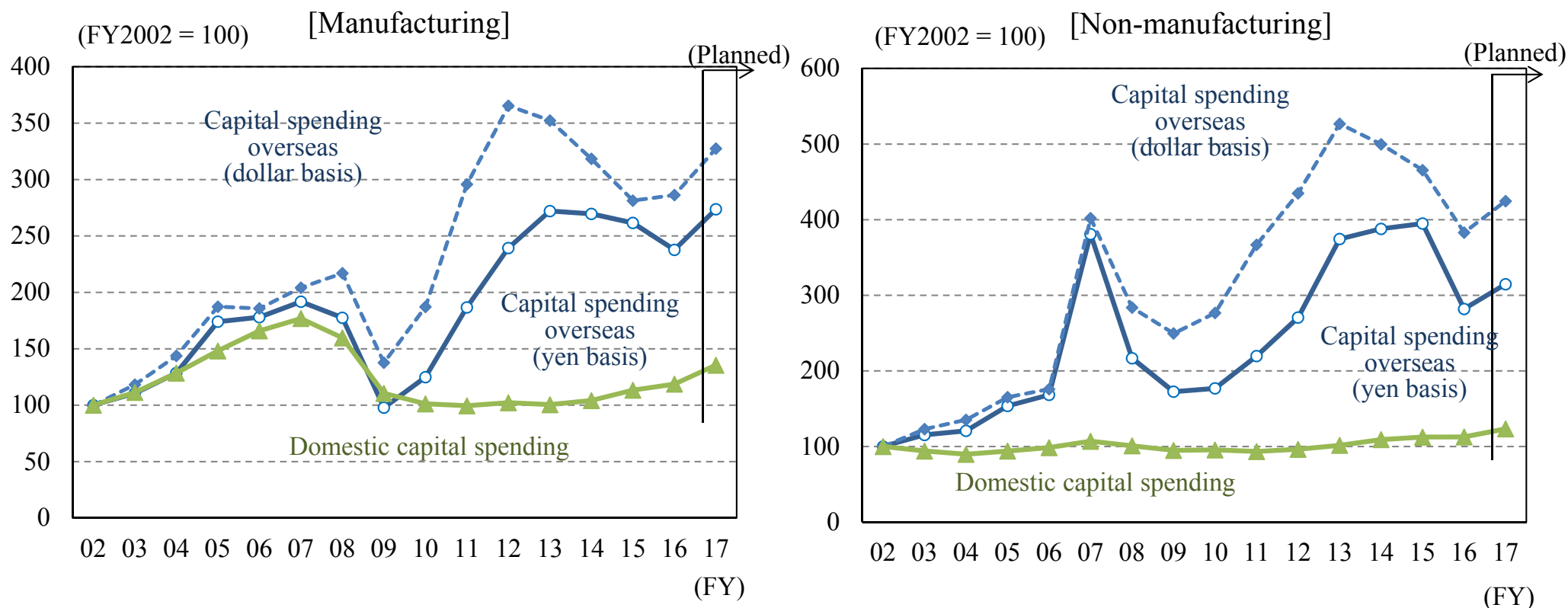
**Figure 2-4-1. Trend of Capital Spending Overseas (Consolidated Basis)**

(Year-on-year, %)	FY2016 (actual) (720 firms)	FY2017 (planned) (848 firms)
Total	-14.9	14.3
Manufacturing	-9.1	15.1
Chemicals	8.1	14.6
General machinery	-14.1	26.4
Electric machinery	-22.7	45.7
Transport equipment	-9.9	8.4
Non-manufacturing	-28.6	11.6
Mining	-40.8	15.0

## 2-4-2. Trend of Capital Spending Overseas (Time Series)

- The growth of actual capital spending overseas in FY2016 as estimated in US dollar terms using the foreign exchange rate assumed by firms amounts to +1.8% for the manufacturing sector and -17.7% for the non-manufacturing sector.
- The firms assume an exchange rate of 110 yen to the dollar, with little change from the previous year's actual average of USD 1 = JPY 108.3. Thus, planned spending for FY2017 shows an upturn on both a yen and a dollar basis.

Figure 2-4-2. Trend of Overseas Capital Spending Ratio



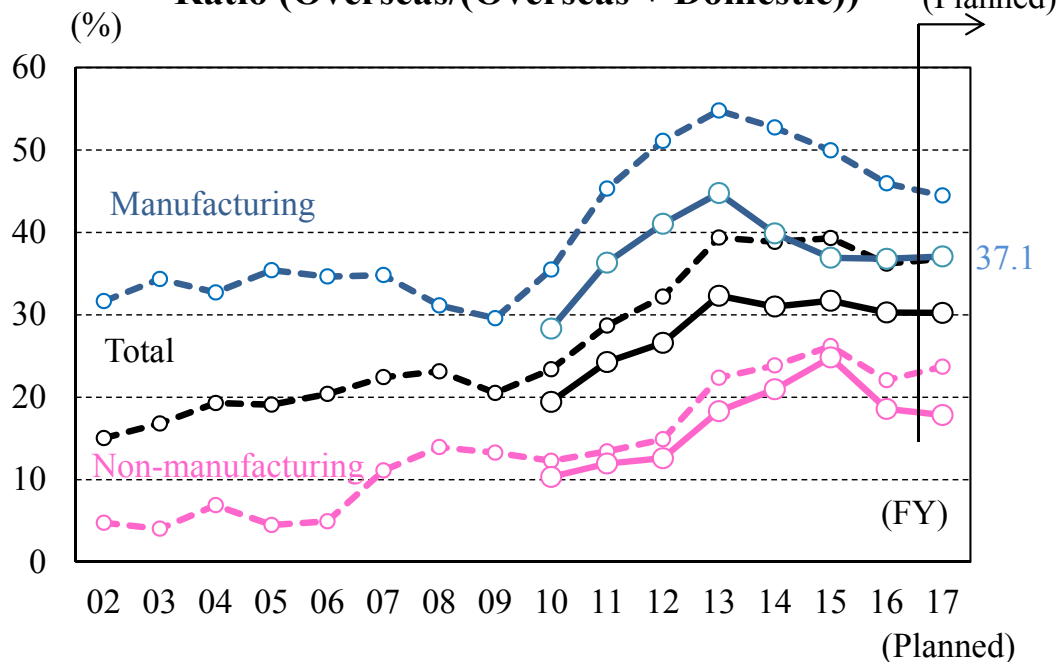
Note: 1. Dotted line: Estimated figures in US dollars calculated using the trend of the dollar-yen rate.  
 2. Assumed exchange rates obtained in the survey (USD 1 = JPY 109.1 for manufacturing, USD 1 = JPY 110.5 for non-manufacturing) are used for FY2017.

## 2-4-3. Overseas Capital Spending Ratio

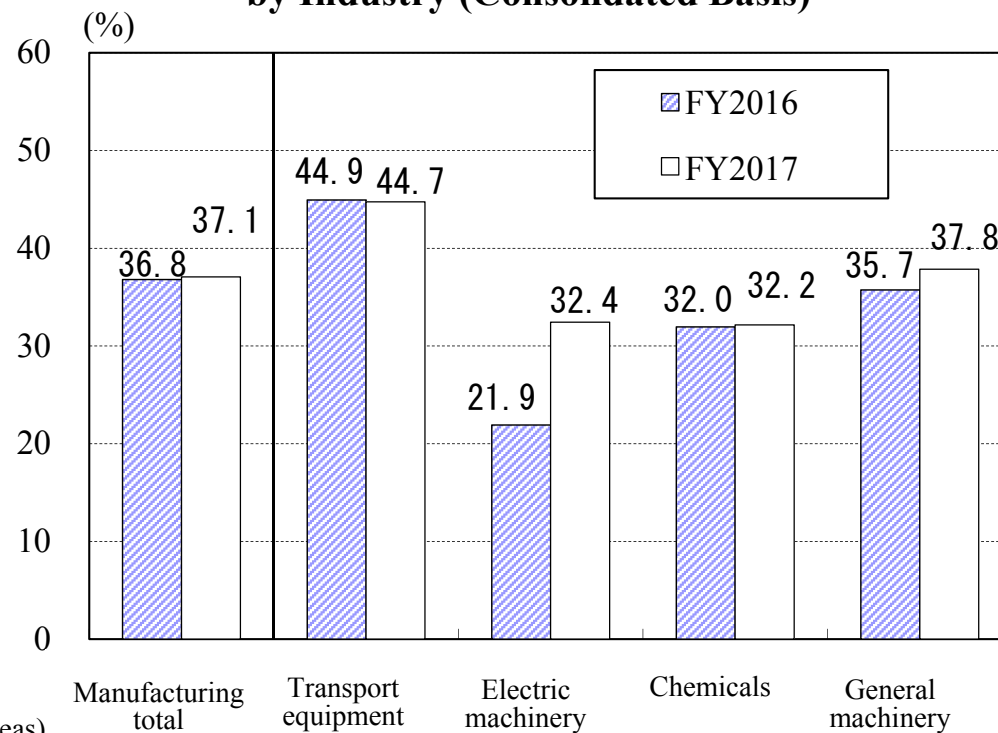
The overseas capital spending ratio is currently steady

- The planned overseas capital spending ratio (consolidated) for FY2017 shows an increase of 37.1% in the manufacturing sector. As domestic spending and overseas spending show similar growth rates, the overseas capital spending ratio (consolidated) in the manufacturing sector is expected to remain steady.
- By industry, the overseas capital spending ratio (consolidated) will remain almost unchanged across major industries, with the exception of electric machinery.

**Figure 2-4-3-1. Trend of Overseas Capital Spending Ratio (Overseas/(Overseas + Domestic)) (Planned)**



**Figure 2-4-3-2. Overseas Capital Spending Ratio by Industry (Consolidated Basis)**



Note: Dotted lines: consolidated overseas/(non-consolidated domestic + consolidated overseas)

Solid lines: consolidated overseas/(consolidated domestic + consolidated overseas)

\*Data on consolidated domestic capital spending are available since the FY2010 survey.

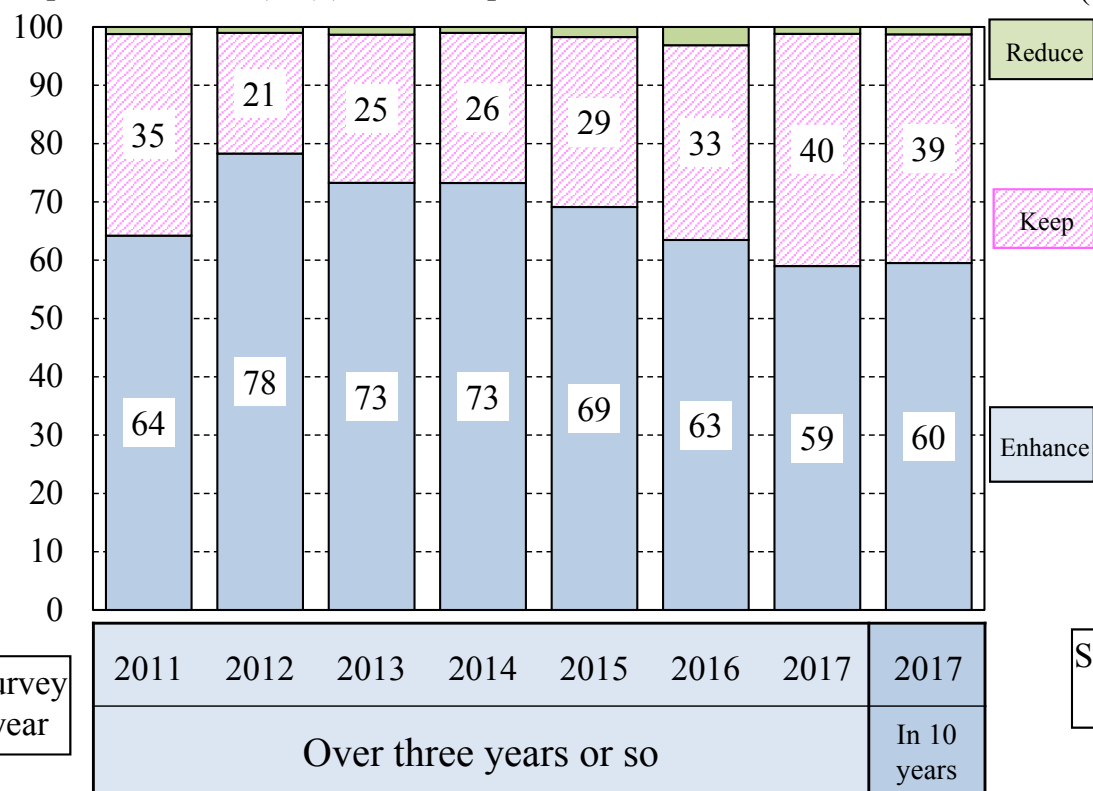
## 2-4-4. Domestic and Overseas Operation: Medium-term Outlook (Manufacturing)

About 60% of firms plans to enhance overseas operation, while about 60% will keep domestic operation at the current level

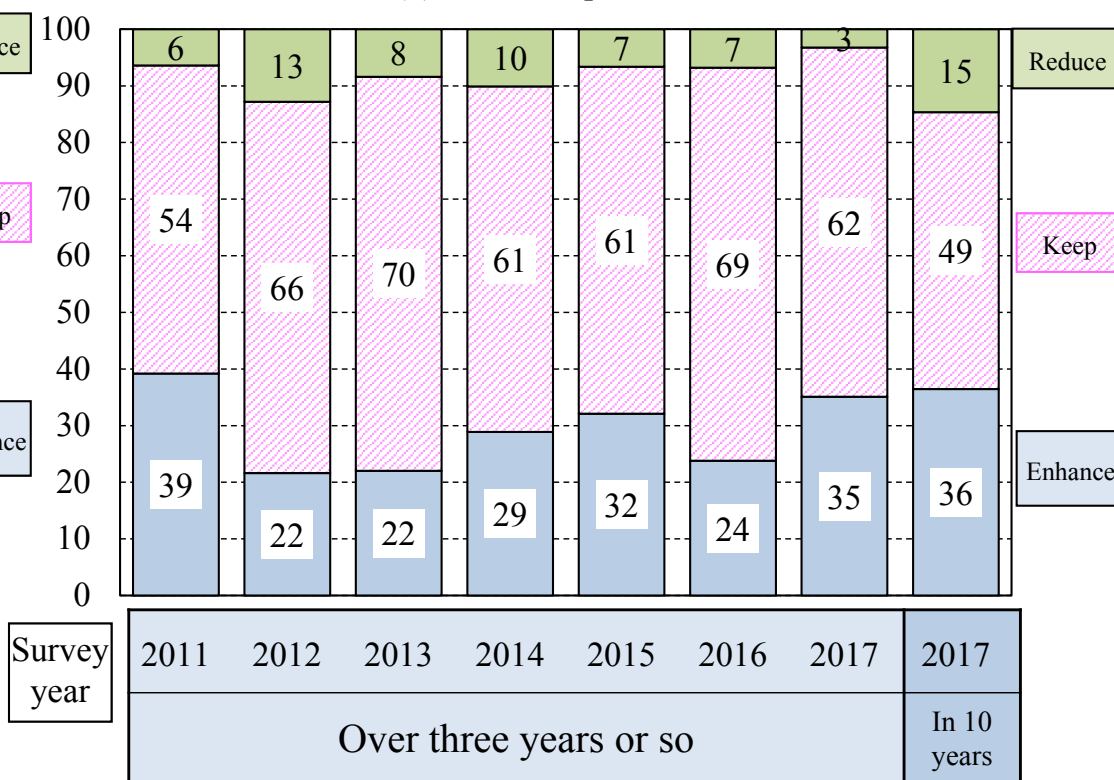
- With regard to medium-term domestic and overseas supply capacity over the coming three years in the manufacturing sector, the share of firms intending to enhance overseas operation follows a downtrend but is still around 60%, which is not expected to change in 10 years.
- Meanwhile, some 60% of manufacturers intend to keep their domestic supply capacity at the current level, but 15% responded that they will reduce domestic capacity in 10 years.

**Figure 2-4-4. Medium-term Domestic and Overseas Supply Capacity (Manufacturing)**

(Composition rate, %) (1) Overseas production sites

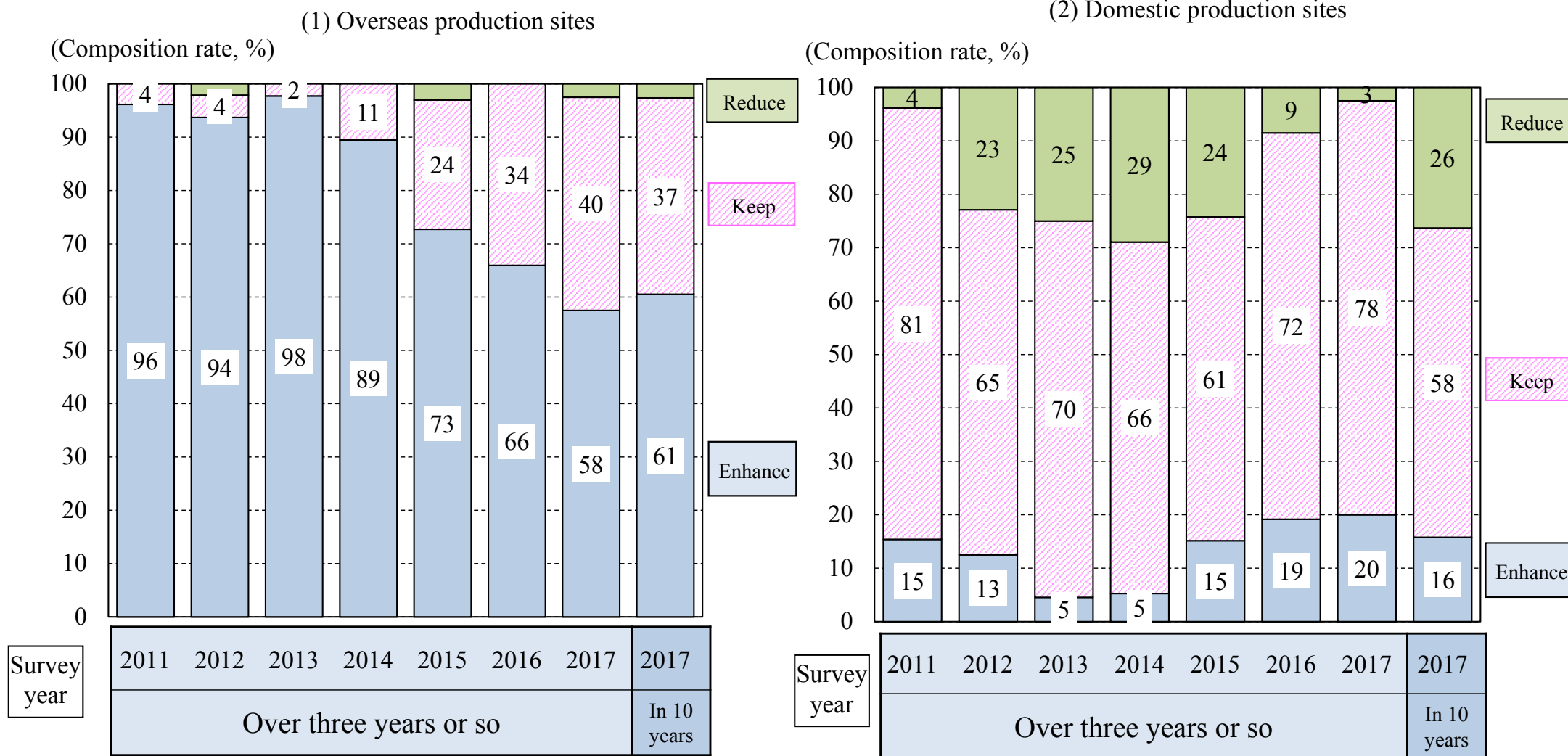


(Composition rate, %) (2) Domestic production sites



## 2-4-5. Domestic and Overseas Operation: Medium-term Outlook (Transportation)

Figure 2-4-5. Medium-term Domestic and Overseas Supply Capacity (Transportation)



## 2-4-6. Reasons for Enhancing Production Capacity Overseas (Manufacturing)

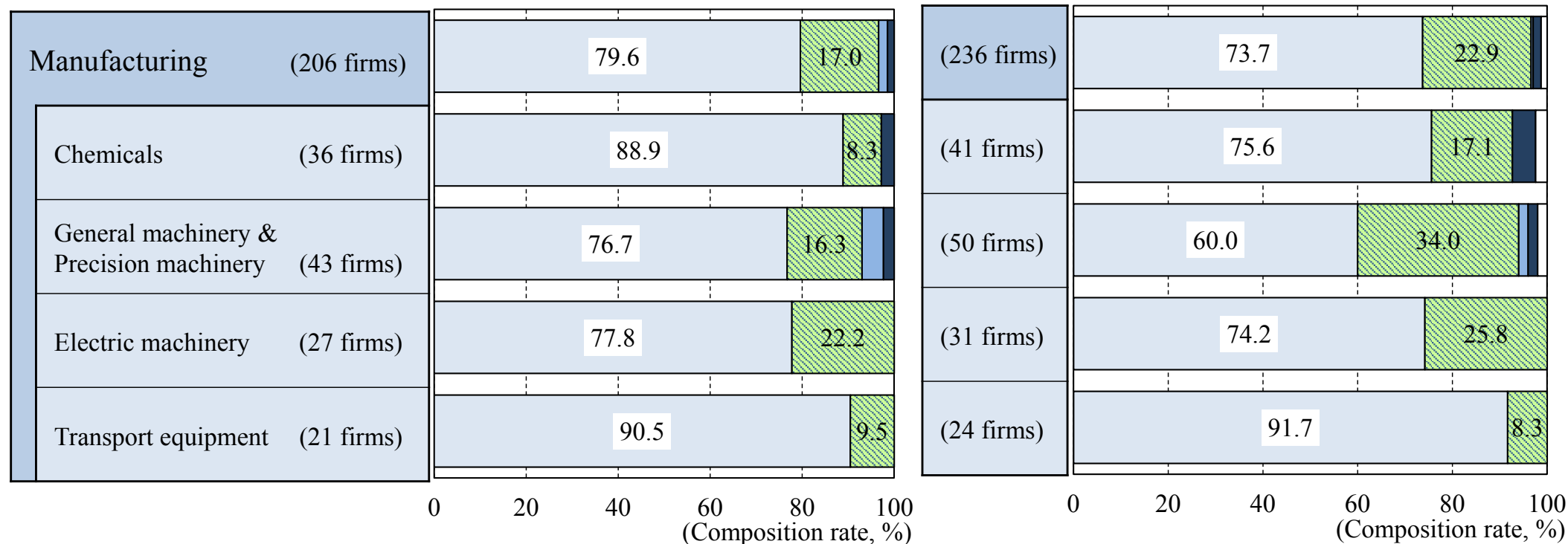
Driven by increased demand in local or neighboring markets

- The most frequently cited reason for the enhancement of production capacity overseas is (a) “increased demand in local or neighboring markets.”
- In comparison with prospects over (1) “Three years or so,” prospects over (2) “10 years or so” indicate an increase in the share of (b) “Improvement of technological capacity and productivity at local plants,” whereas (c) “Ready availability of labor force” and (d) “Low labor cost” are not expected to be significant reasons.

Figure 2-4-6. Reasons for Enhancing Production Capacity Overseas (Manufacturing)

(1) Over three years or so

(2) Over 10 years or so



□ (a) Increased demand in the local or neighboring markets

■ (b) Improvement of technological capacity and productivity at local plants

■ (c) Ready availability of labor force

■ (d) Low labor cost

□ (e) Other

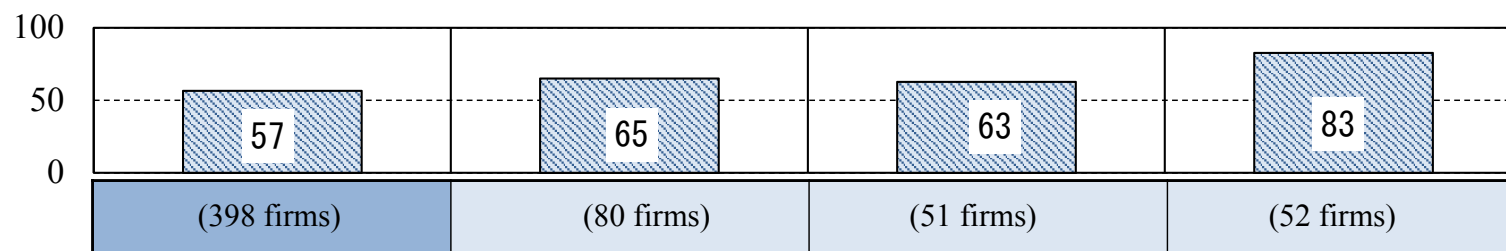
## 2-4-7. Domestic Factories as Mother Plants (Manufacturing)

Half of the manufacturers have a mother plant in Japan

- Half of the firms in the whole manufacturing sector, and over 80% of the firms in the transport equipment industry, responded that they have a mother plant in Japan.
- (4) “Development of production/manufacturing technology” and (5) “Product development and initial volume production” are cited as key functions to be enhanced, rather than (1) and (2) “Support for overseas plants.”

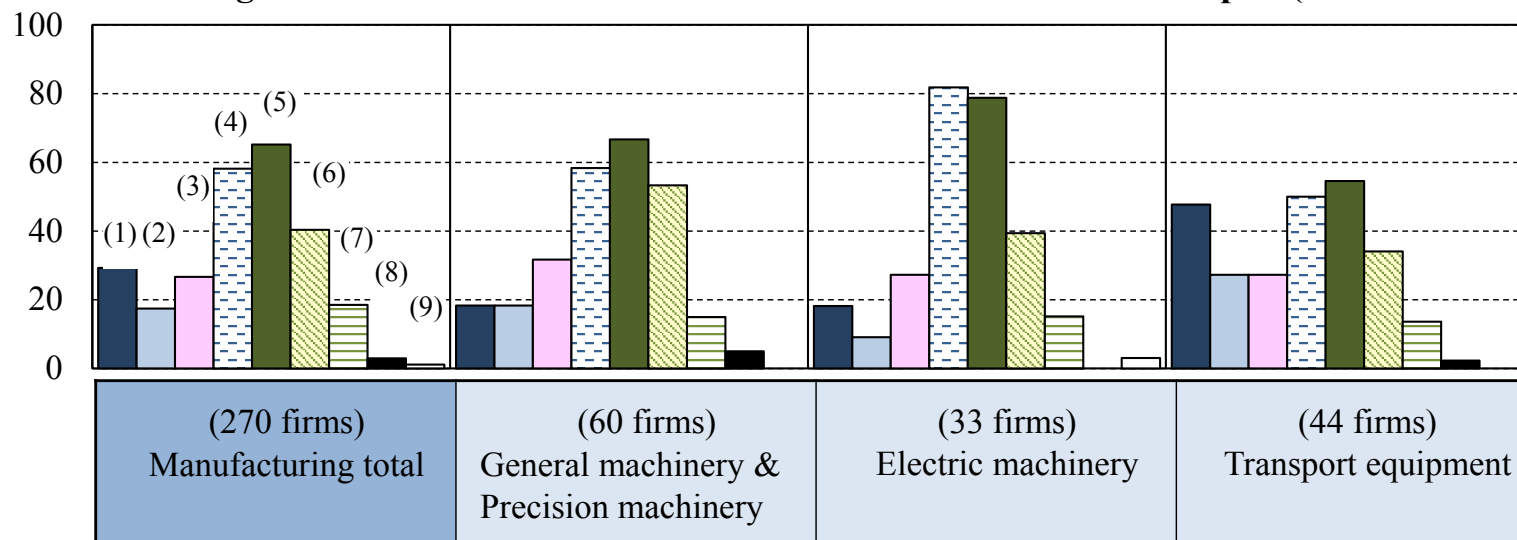
(Composition rate, %)

**Figure 2-4-7-1. Firms with Mother Plant in Japan (Manufacturing)**



(Response rate, %)

**Figure 2-4-7-2. Functions to Be Enhanced at Mother Plant in Japan (Manufacturing)**



- (1) Support for launching overseas plants
- (2) Support for existing overseas plants
- (3) Supervision of global production system
- (4) Development of production/manufacturing technology
- (5) Product development, initial volume production, etc.
- (6) Production of key products
- (7) Flexible volume production
- (8) Industry-academia partnerships at local level
- (9) Other

Note: Choose up to three answers.  
Number of respondents in parentheses ( ).

## 2-4-8. Overseas Operation of Non-Manufacturers

### Further enhancement of activities by firms already operating overseas

- Some 40% of the non-manufacturers are operating overseas, many of which intend to increase the activities still further. By industry, further enhancement of overseas is the most popular choice among constructors.
- (3) “Horizontal rollout of existing business operation” is one of the major reasons for enhancing overseas operation, on the back of (1) “Contraction of domestic market” and (2) “Economic development of emerging countries.”

Figure 2-4-8-1. Overseas Operation Policy for Future

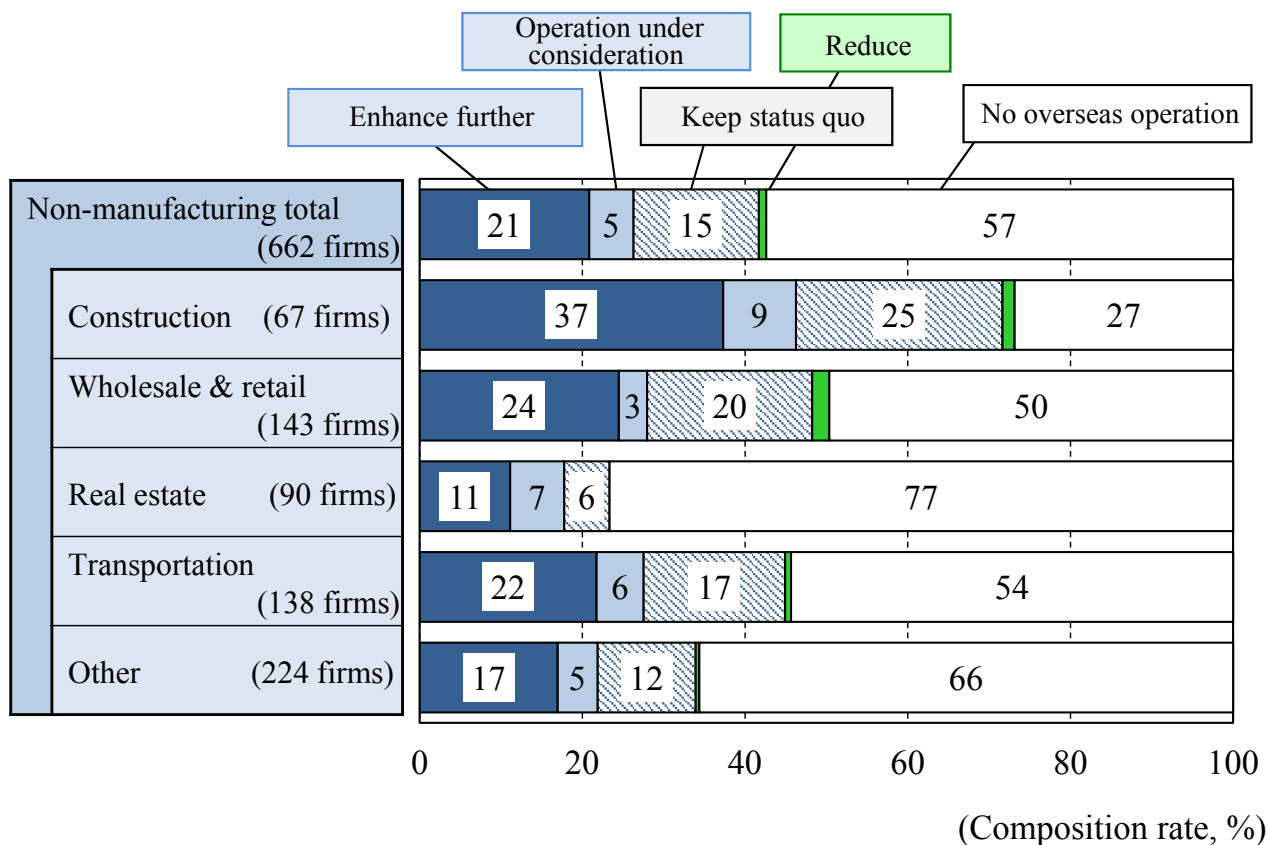
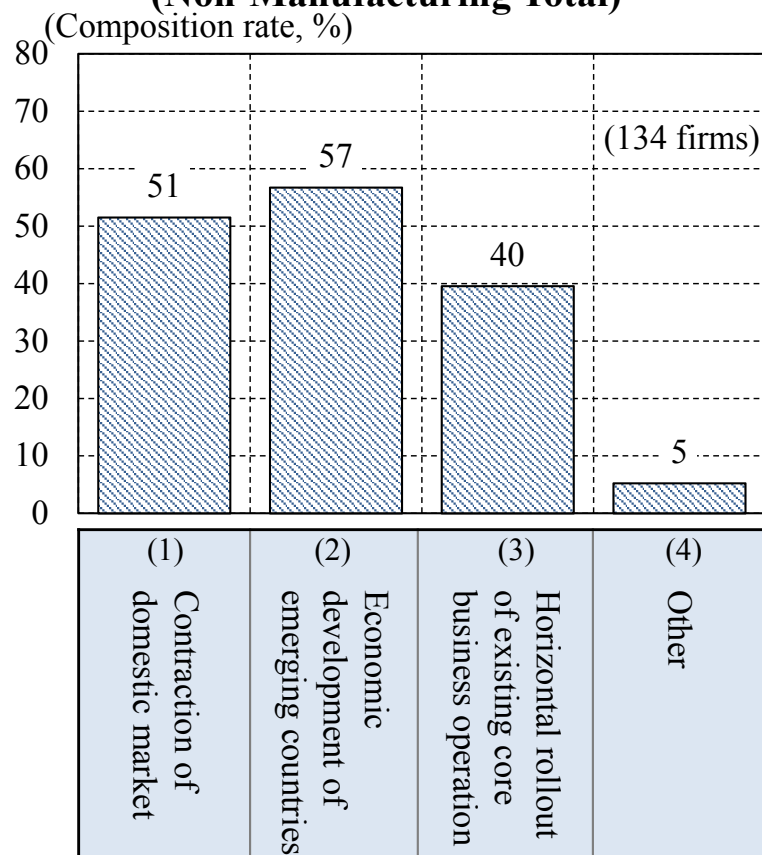


Figure 2-4-8-2. Reasons for Enhancing Overseas Operation (Non-Manufacturing Total)



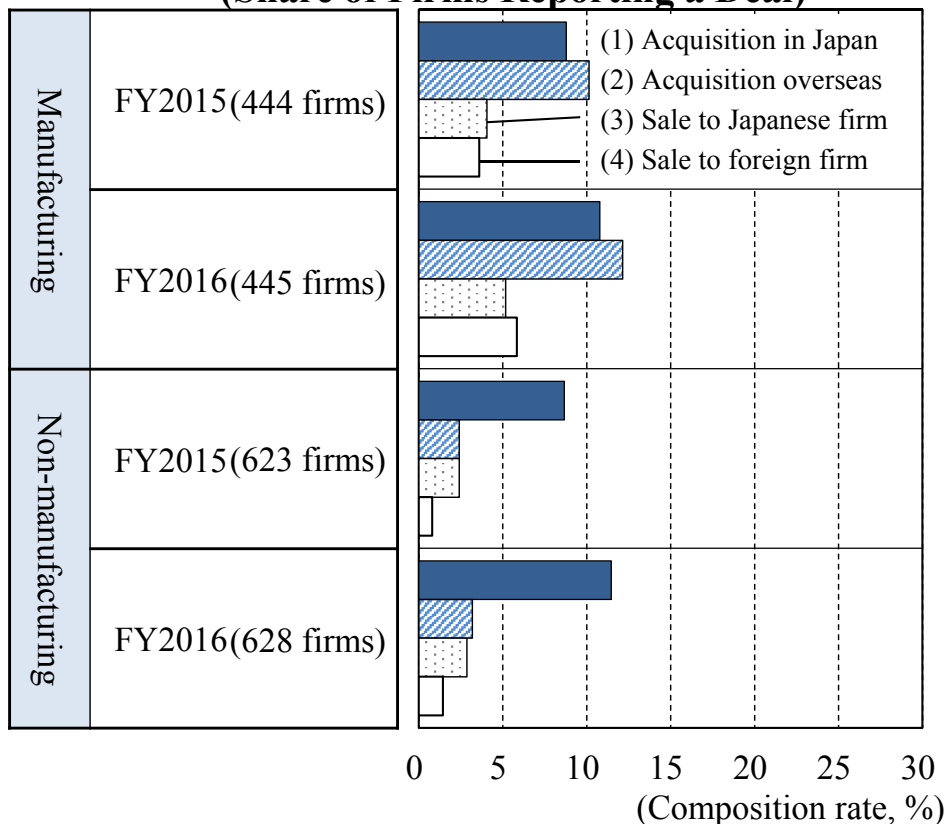
## 2-5. M&A Activities

## 2-5-1. Current Status of M&A Activities

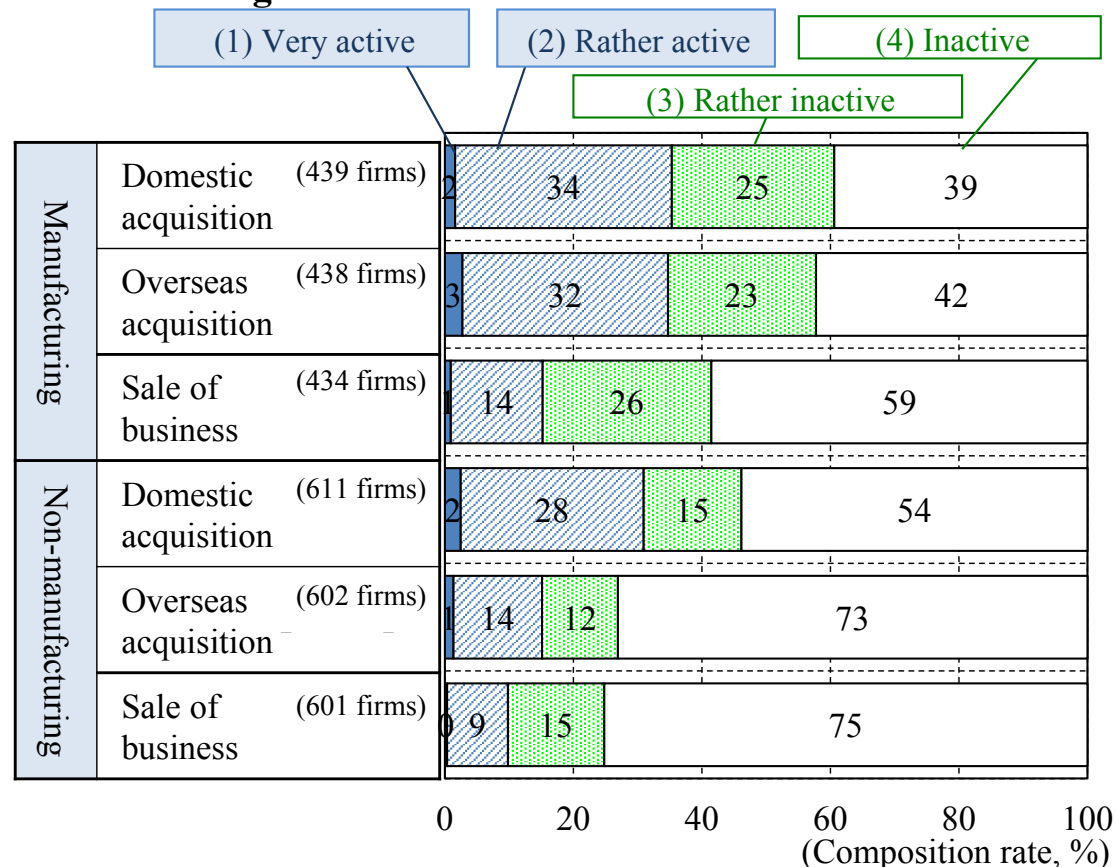
Manufacturers are active both in Japan and overseas, while non-manufacturers focus on domestic deals

- About 10% of both manufacturers and non-manufacturers reported they had closed at least one acquisition deal, in Japan and overseas for the former, and only in Japan for the latter. The number of firms closing a selling deal is less than half of those reporting an acquisition deal.
- Asked about their attitude toward M&A, 35% of manufacturers answered that they are relatively active in seeking opportunities both in Japan and overseas. In the non-manufacturing sector, 30% of firms are relatively active in Japan, while 15% are seeking opportunities overseas.

**Figure 2-5-1-1. Status of M&A Deals  
(Share of Firms Reporting a Deal)**



**Figure 2-5-1-2. Attitude toward M&A**

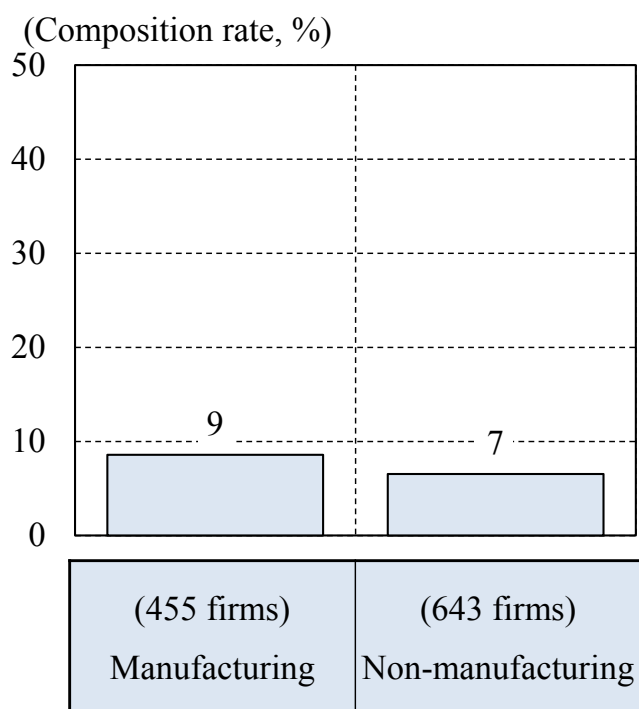


## 2-5-2. Current Status of M&A Activities

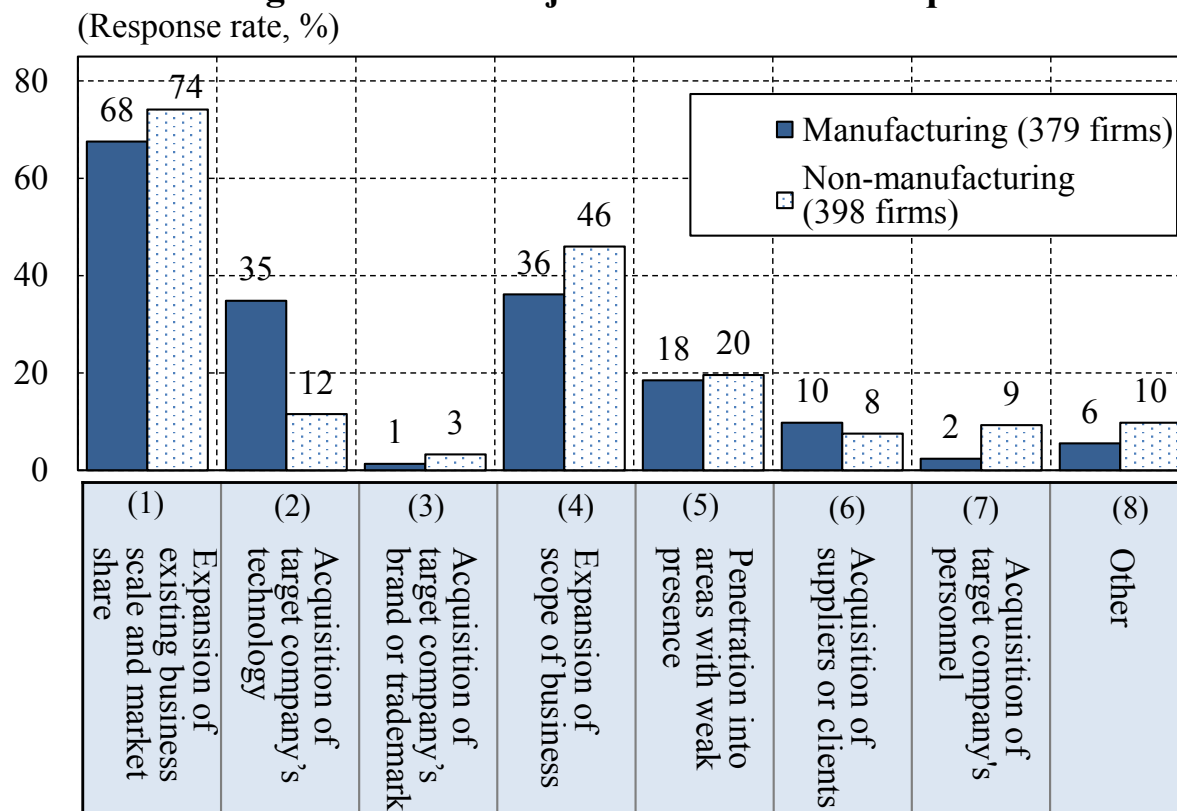
Many close deals to expand existing business scale, market share or business scope

- Less than 10% of the firms set and make public their quantitative M&A targets in the mid-term business plan, etc.
- Major objectives for acquisition include (1) “Expansion of existing business scale or market share” and (4) “Expansion of scope of business,” and in the manufacturing sector, (2) “Acquisition of target company’s technology.” A small number of firms also cited (7) “Acquisition of target company’s personnel.”

**Figure 2-5-2-1. Share of Firms Setting Quantitative M&A Targets in Mid-term Plan, etc.**



**Figure 2-5-2-2. Objective of Business Acquisition**



Note: Choose up to two answers. Includes responses from firms with no M&A experience.

## 2-5-3. Sourcing of M&A Deals and Experience of Impairment

A substantial number of firms have recognized impairment for M&A

- The most common source of M&A deals is (3) “Referral by financial institution,” followed by (1) “Proposal from target company” and (2) “Referral by business partner.”
- Quite a number of firms have recognized some kind of impairment resulting from an M&A deal. According to the responses, such cases frequently concern ex-post recognition of impairment for the acquisition of a foreign company, rather than a Japanese company, in both the manufacturing and non-manufacturing sectors.

Figures 2-5-3-1. Sources of M&A Deals

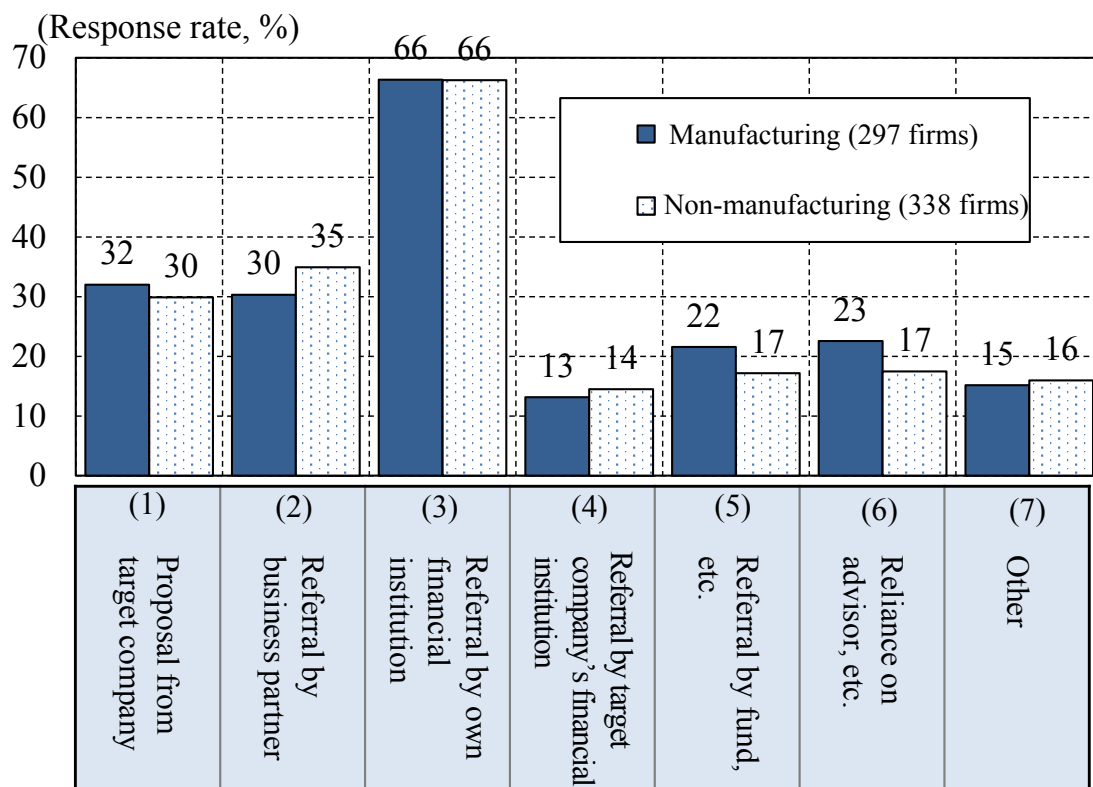
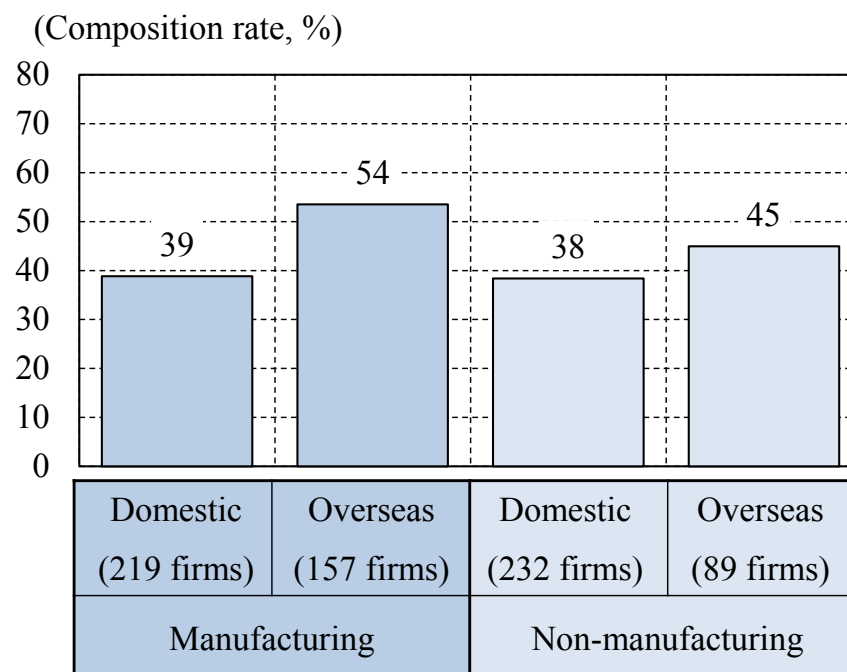


Figure 2-5-3-2. Firms with Experience of Impairment Recognition for M&A Deal



Note: Choose up to two answers. Includes responses from firms with no M&A experience.

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## 2-6. Investment in Information Technology

## 2-6-1. Trend of Investment in Information Technology

### Investment in information technology shows rapid growth

- In FY2016, spending in the manufacturing sector was primarily driven by investment in company-wide IT system development and for productivity improvement in transport equipment. In the non-manufacturing sector, spending was observed on business management/support systems in transportation, among others.
- IT investment in FY2017 will be driven by system replacement in transport equipment among manufacturers, and by spending on store operation systems in wholesale & retail among non-manufacturers.

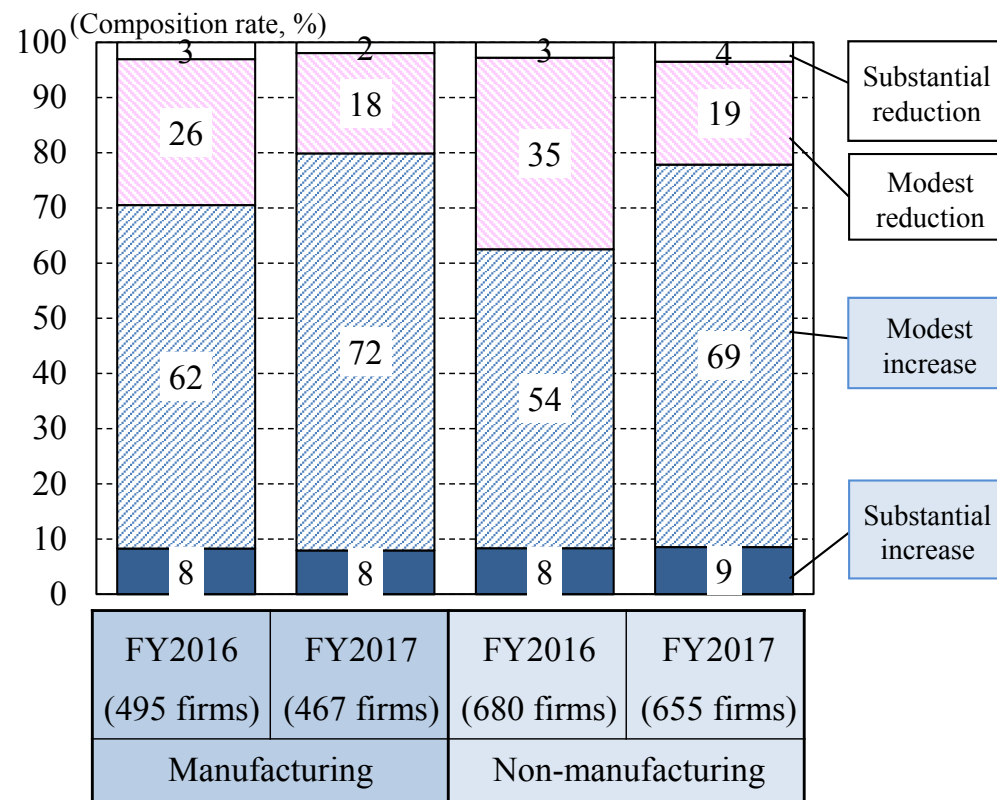
**Figure 2-6-1-1. Plan for IT Investment**

(Year-on-year, %)

Industry	FY2016 Actual (943 firms)	FY2017 Planned (1,128 firms)
Total	7.0	27.6
Manufacturing	11.5	34.7
General machinery	9.3	46.1
Electric machinery	4.6	43.9
Transport equipment	22.3	10.3
Non-manufacturing	3.9	20.2
Wholesale & retail	6.7	26.4
Transportation	31.8	31.0
Electric power & gas	- 0.1	12.0

Note: Includes IT investment accounted for as expenses.

**Figure 2-6-1-2. Trend of IT Investment in Recent Years  
(Comparison with Tangible Fixed Asset Investment)**



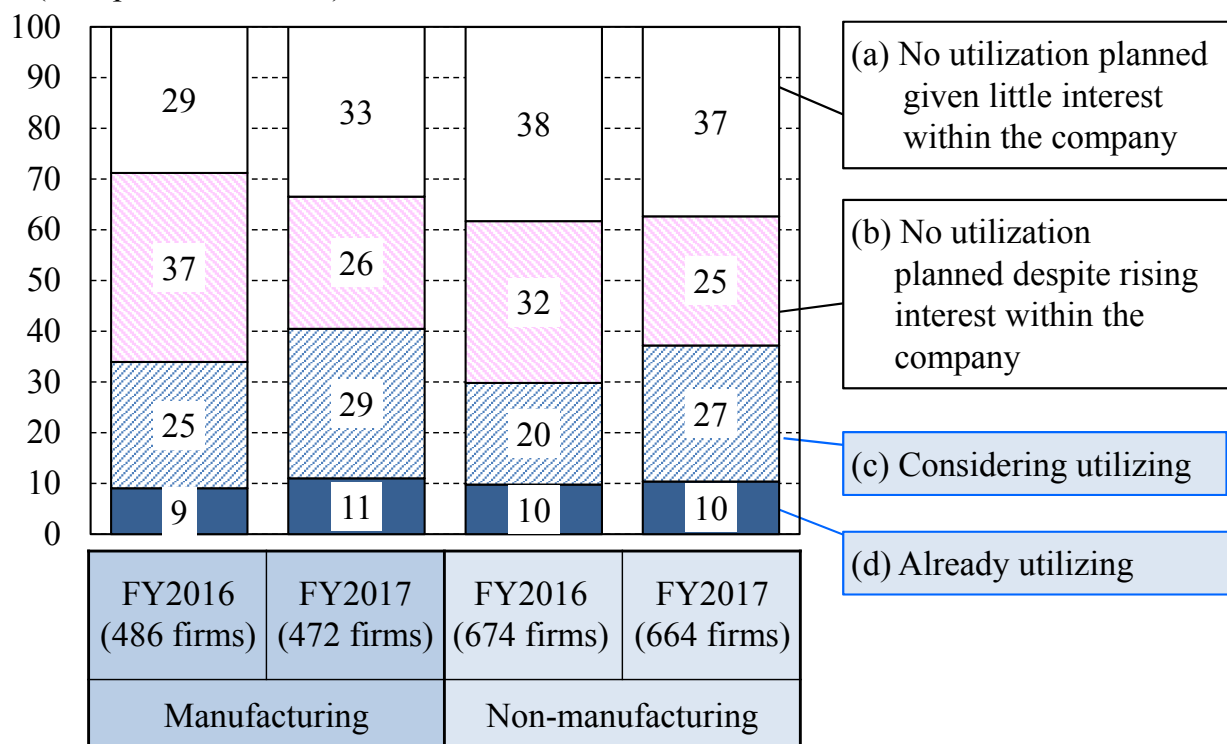
## 2-6-2. Drivers of IT Investment, Utilization of IoT, etc.

### Slight increase in the utilization of IoT and big data

- Some 40% of firms are (d) “Already utilizing” or (c) “Considering utilizing” IoT and big data, a slight increase from last year’s survey.
- (1) “Security measures” is the biggest concern in utilizing IoT and big data, followed by (5) “Lack of understanding in-house,” (2) “Recruitment or development of engineers” and (4) “Investment burden.”

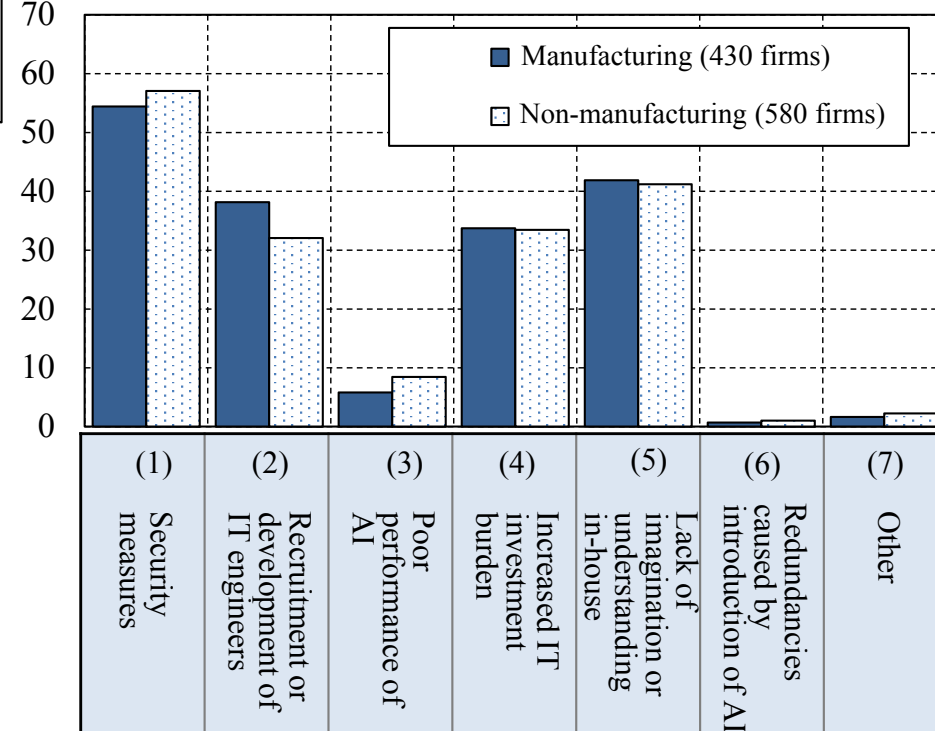
**Figure 2-6-2-1. Utilization of IoT and Big Data**

(Composition rate, %)



**Figure 2-6-2-2. Concerns in Utilizing Big Data, AI and IoT**

(Response rate, %)



Note: Choose up to two answers.

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### 3. Actions for Growth and Competitiveness

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## 3-1. Actions for Growth and Competitiveness

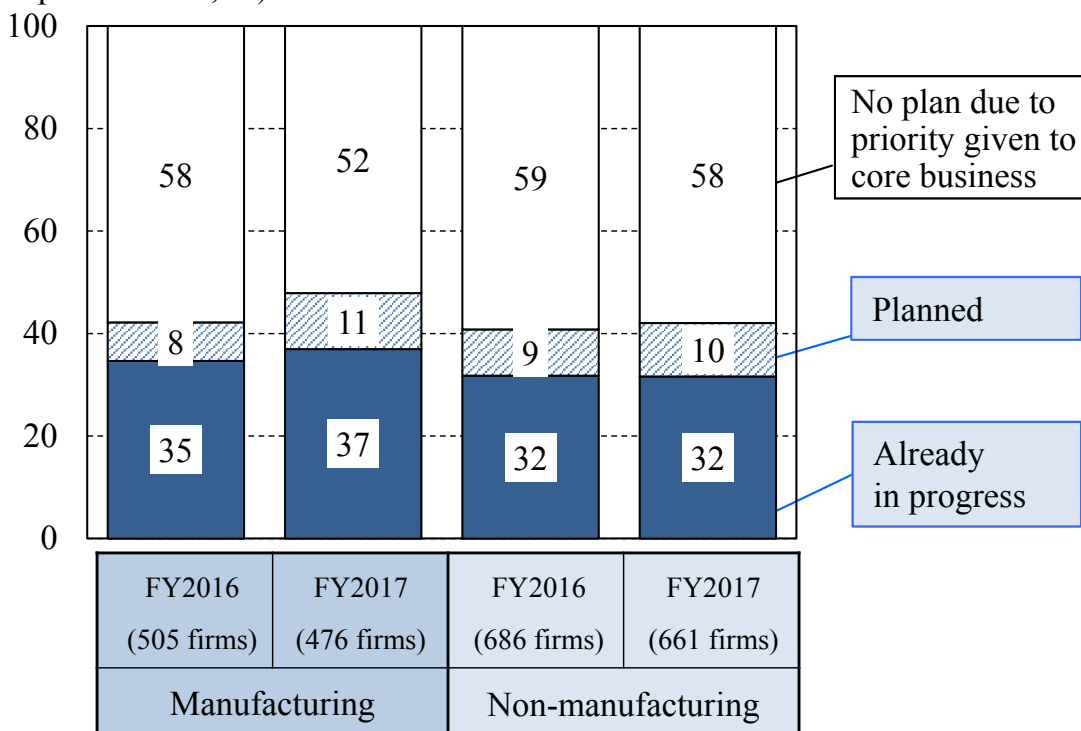
# 3-1-1. Exploration of Opportunities in Growth Markets (1)

Action taken by approximately 40% of firms

- About 40% of the firms are taking action to explore opportunities in growth markets, almost unchanged from the previous year.
- Examples in the manufacturing sector continue to be related to medical care and automobiles, while examples in the non-manufacturing sector may be found in welfare and elderly care as well as in the integrated resort business.

**Figure 3-1-1-1. Medium-term Actions to Explore Opportunities in Growth Markets**

(Composition rate, %)



Note: Respondents include group subsidiaries of major firms and public-private joint ventures established for specific projects, etc.

**Figure 3-1-1-2. Specific Examples of Exploring Opportunities in Domestic Growth Markets**

	Industry	Example
Manufacturing	Chemicals	Medical care, life science, comprehensive community healthcare, materials related to semiconductors, automobiles
	General machinery	Robots, water treatment, 3D metal printers, medical sensors, medical care, IoT
	Electric machinery	Life science, wireless power supply, automobile components, organic EL
	Transport equipment	Products for next-generation vehicles, development & marketing of car-mounted security software, medical devices
Non-manufacturing	Transportation	Real estate business, retail business, integrated resort business, elderly-oriented business, aquaculture business
	Wholesale & retail	Health, renewable energy, electricity retailing, financing business
	Construction & real estate	Vegetable factories, hotel business, elderly care business, medical care business, disaster prevention business, solar PV

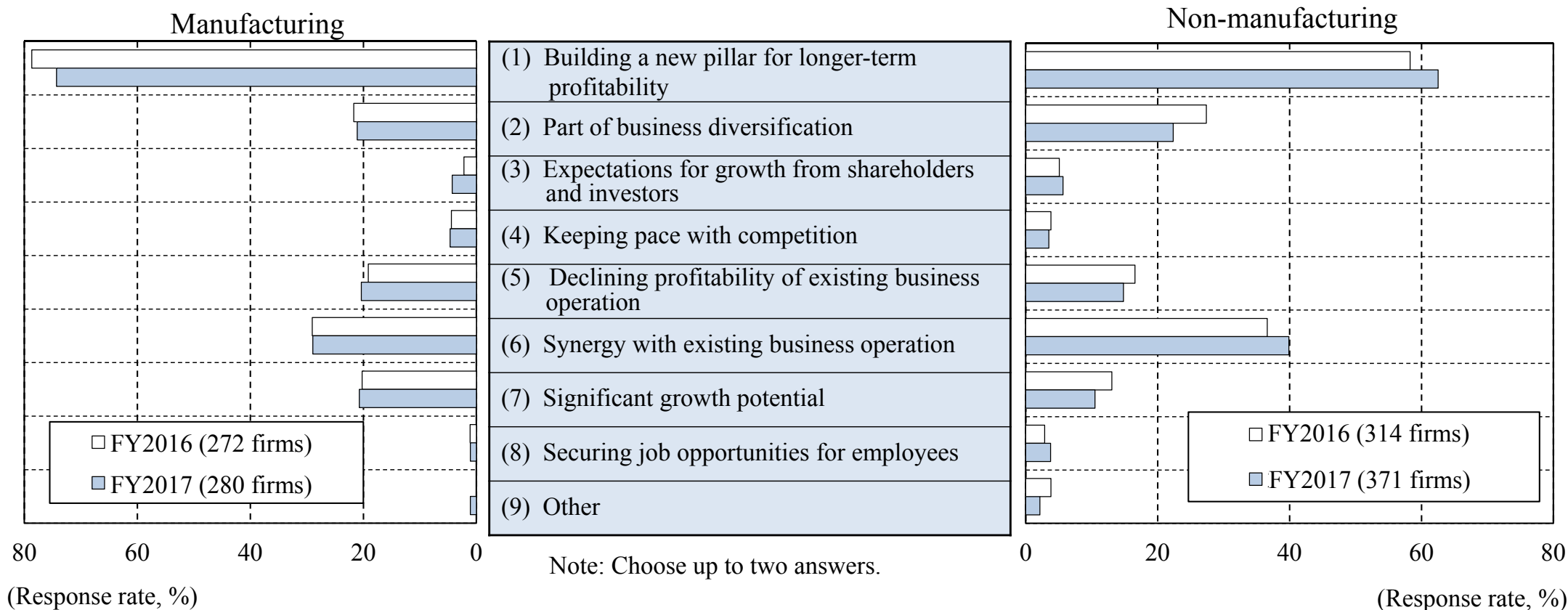
Note: Opportunity in growth market = Offering of any new business or service other than the existing core business

## 3-1-2. Exploration of Opportunities in Growth Markets (2)

### Actions to build pillars for longer-term profitability

- (1) “Building a new pillar for longer-term profitability” remains the most common reason in both the manufacturing and non-manufacturing sectors, indicating no significant change in the overall trend. By sector, (1) “Building a new pillar for longer-term profitability” is cited by almost 80% of the manufacturers, but its share in the non-manufacturing sector stays at just over 60%. In contrast, (6) “Synergy with existing business operation,” cited by 40% of non-manufacturers, is only cited by about 30% of manufacturers.

Figure 3-1-2. Reasons for Exploring New Market Opportunities or Business Operation

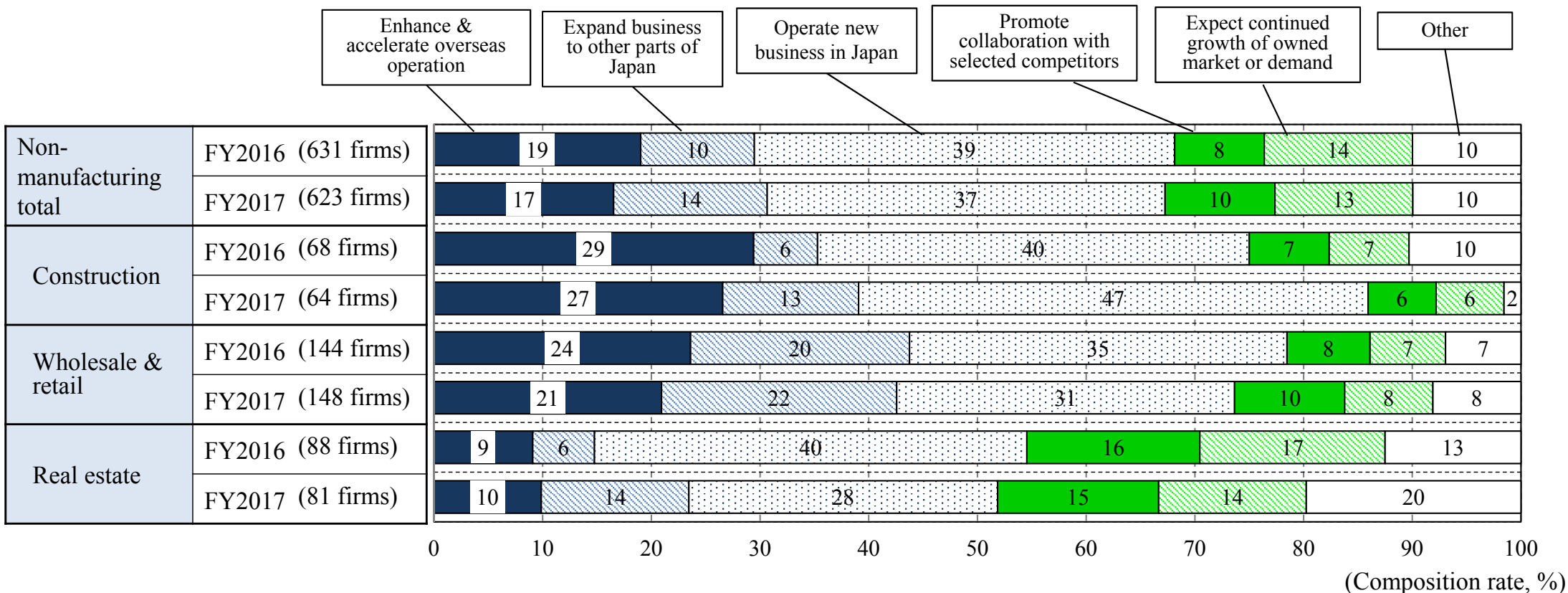


### 3-1-3. Growth Strategy of Non-Manufacturers

Many non-manufacturers are focused on new business operation in Japan

- Although demand is likely to shrink in future in many of the non-manufacturing industries due to the decline and aging of the Japanese population, many cited new business operation in Japan as the focus of their growth strategy.
- By industry, a relatively large number of firms in construction and wholesale & retail responded that they focus on overseas operation. In addition, some wholesale & retail firms cited expansion of business to other parts of the country.

Figure 3-1-3. Focus of Non-Manufacturers for Growth



## 3-2. Challenges and Capital Spending in Major Non-Manufacturing Industries

# 3-2-1. Retail Business Update

Note: Includes cases where a subsidiary operates a retail business or it is not a core business of the firm.

## Meeting challenges amid declining profits

- Recent years have seen declining profitability in an increasing number of retail firms. Although (4) “Intensified competition within industry” is the primary factor for the decline, some firms also cited (2) “Budget-minded consumers” or (3) “Changing consumer needs.”
- Under these circumstances, many retailers cited the challenge of (g) “Enhancement of product or brand,” (b) “Refurbishment or reconstruction of outlets” or (h) “Improvement of gross profit or procurement.”

Figure 3-2-1-1. Trend of Sales in Recent Years

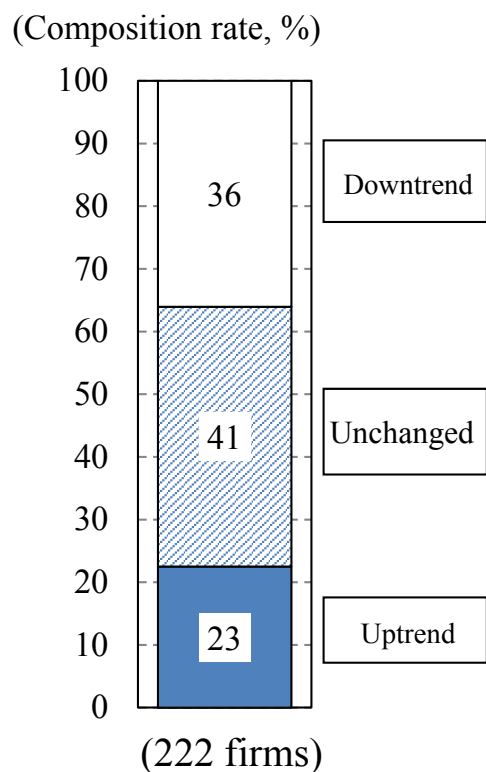
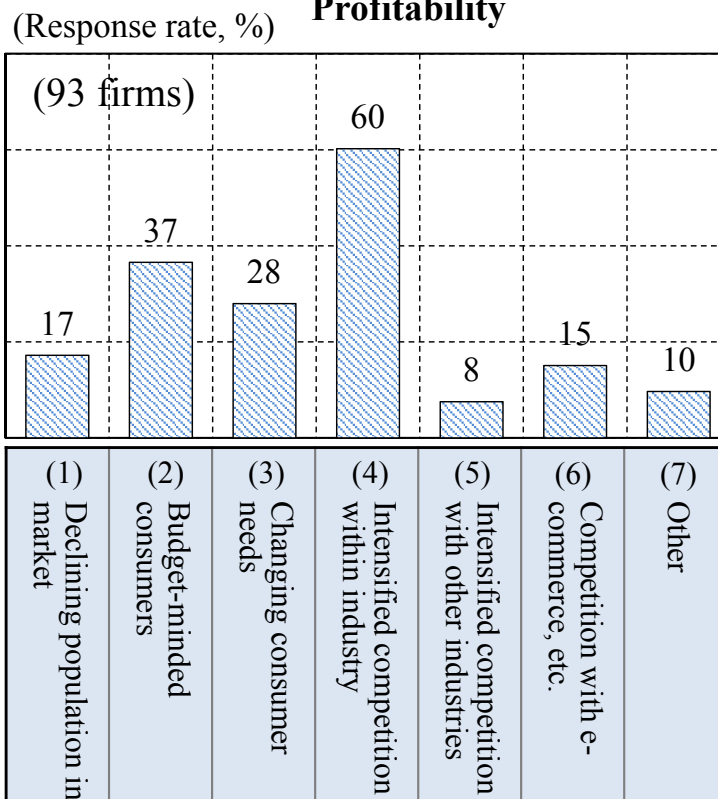
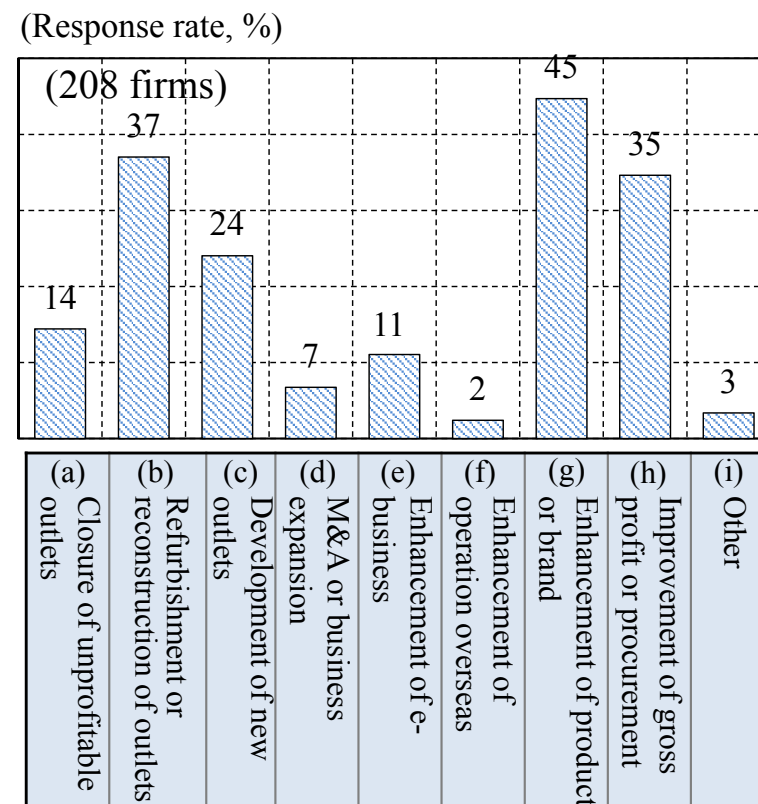


Figure 3-2-1-2. Factors for Downtrend in Profitability



Note: Choose up to two answers.

Figure 3-2-1-3. Challenges for Retail Industry



Note: Choose up to two answers.

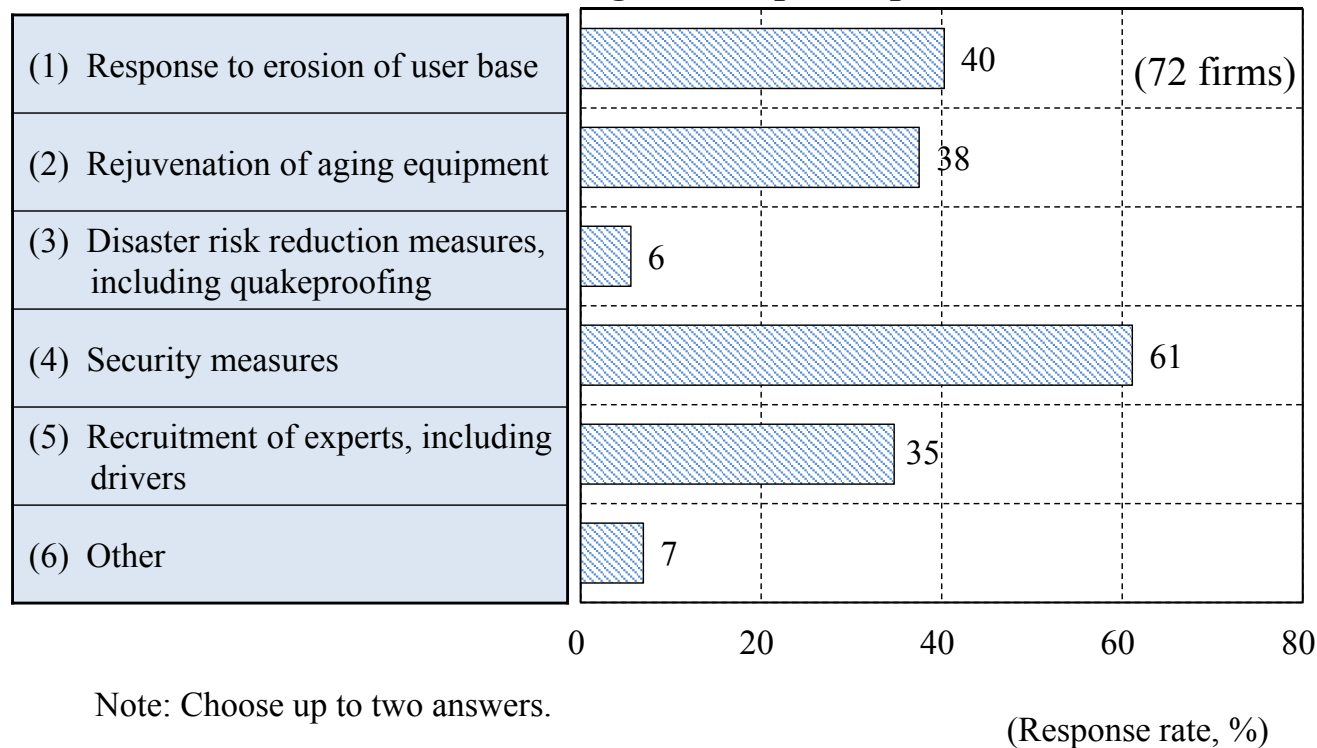
## 3-2-2. Passenger Transport Business Update

Note: Includes cases where a subsidiary operates a passenger transport business or it is not a core business of the firm.

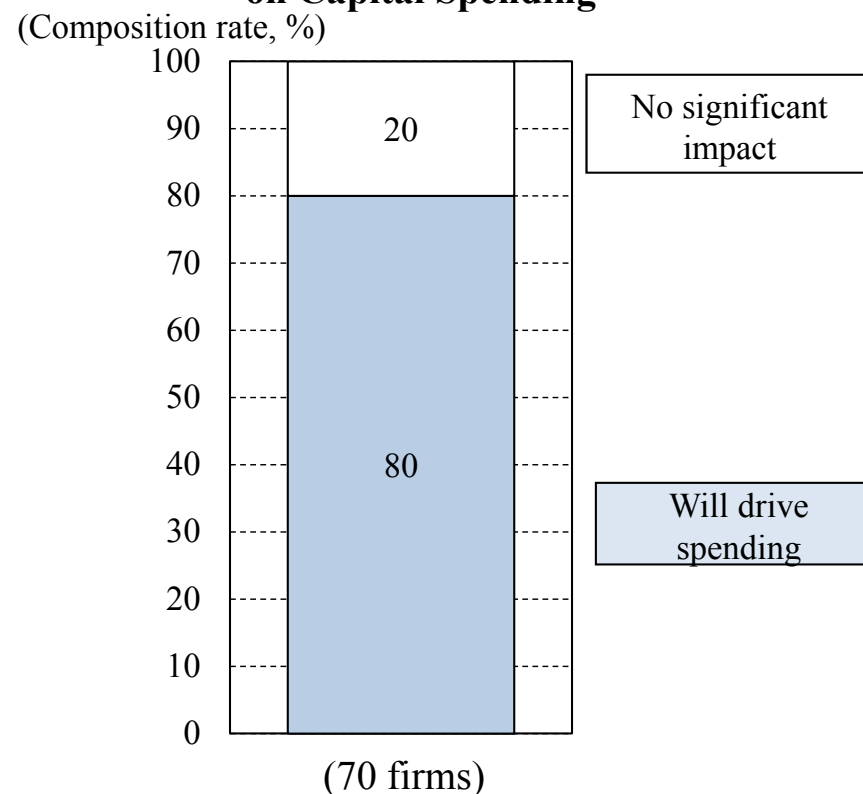
### Security measures represent the biggest challenge

- (4) “Security measures” is the biggest challenge among the railway, bus and other passenger transport operators, followed by (1) “Response to erosion of user base,” mostly cited by railway and bus operators in rural areas. Some of the major operators in metropolitan areas also cited (2) “Rejuvenation of aging equipment.” Many responded that those factors will drive capital spending in the years ahead.

**Figure 3-2-2-1. Business Challenges for Passenger Transport Operators**



**Figure 3-2-2-2. Impact of Business Challenges on Capital Spending**



## 3-2-3. Logistics Business Update

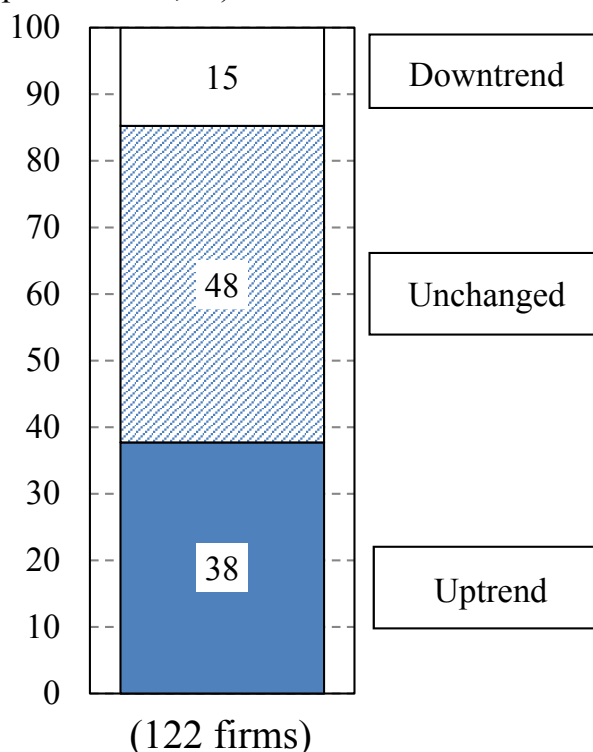
Note: Includes cases where a subsidiary operates a logistics business or it is not a core business of the firm.

Enhancement of logistics facilities is one of the measures for coping with the increase in freight volume

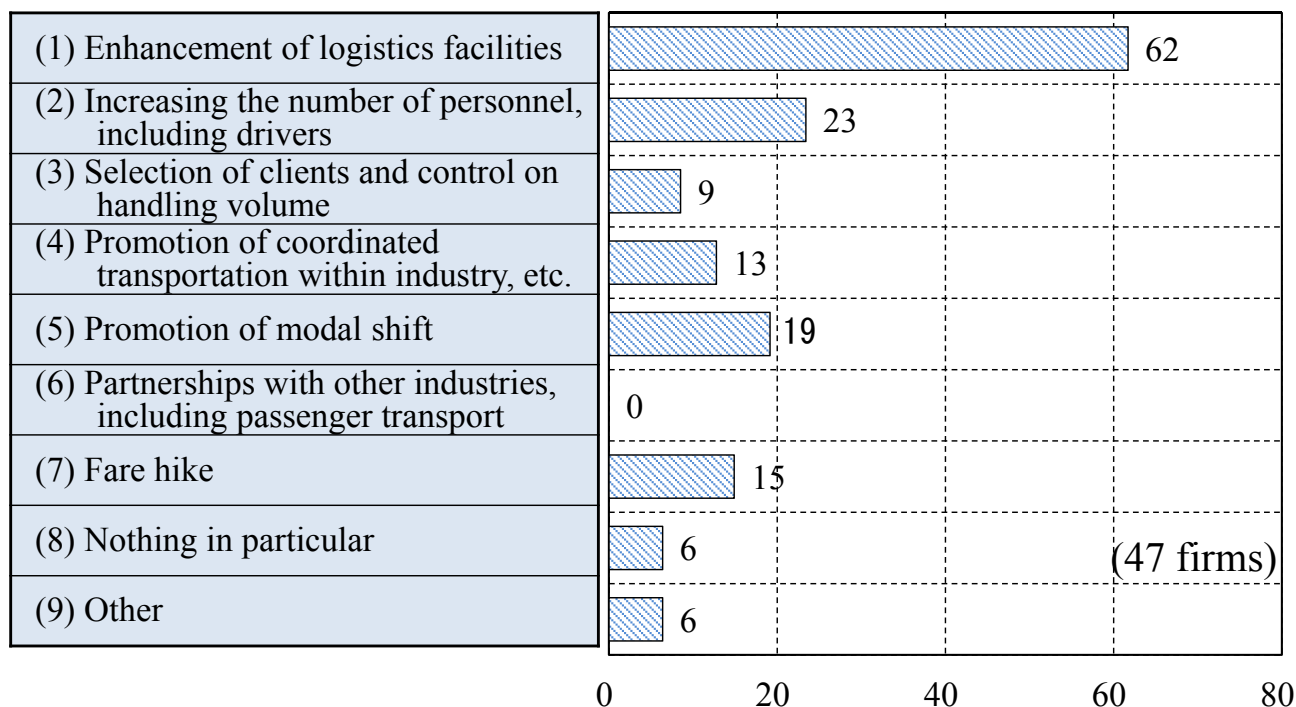
- Many firms, particularly those involved in logistics as a core business, noted that freight volumes are rising. Primary measures to cope with the rising demand are related to increasing capacity such as (1) “Enhancement of logistics facilities,” cited by the largest number of firms, and (2) “Increasing the number of personnel, including drivers.” Other measures cited by quite a few operators include business improvement through (5) “Promotion of modal shift” or (4) “Promotion of coordinated transportation.”

**Figure 3-2-3-1. Trend of Freight Volume**

(Composition rate, %)



**Figure 3-2-3-2. Measures to Cope with Increased Freight Volume**



Note: Choose up to two answers.

(Response rate, %)

## 3-2-4. Hotel & Lodging Business Update

Note: Includes cases where a subsidiary operates a hotel/lodging business or it is not a core business of the firm.

### Increasing number of guests, led by foreign tourists

- Many noted an increase in the number of guests, particularly foreign tourists. Against this backdrop, two-thirds of the firms are planning to construct new facilities or refurbish existing facilities on a large scale.
- Common business challenges include (6) “Aging facilities,” (1) “Recruitment of workers” and (7) “Intensified competition.”

Figure 3-2-4-1. Trend of Number of Guests

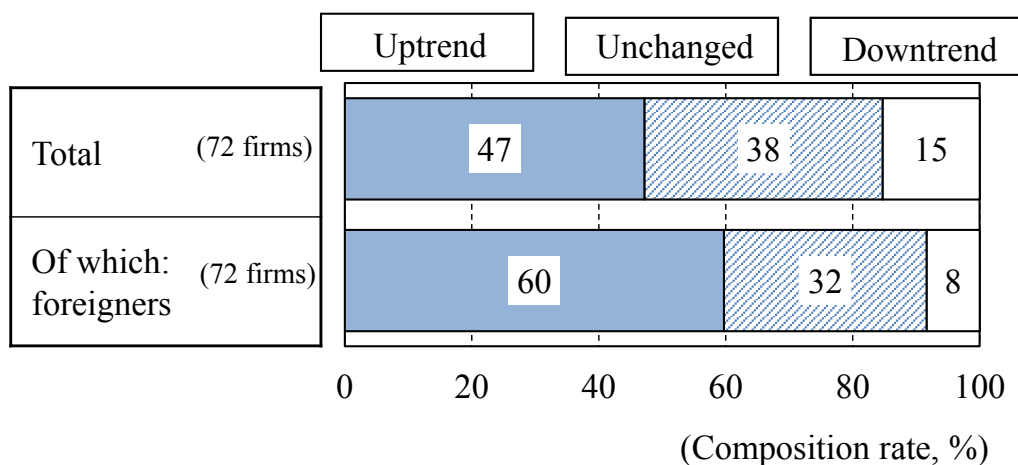


Figure 3-2-4-2. Plan for Construction or Refurbishment of Hotel or Lodging Facilities

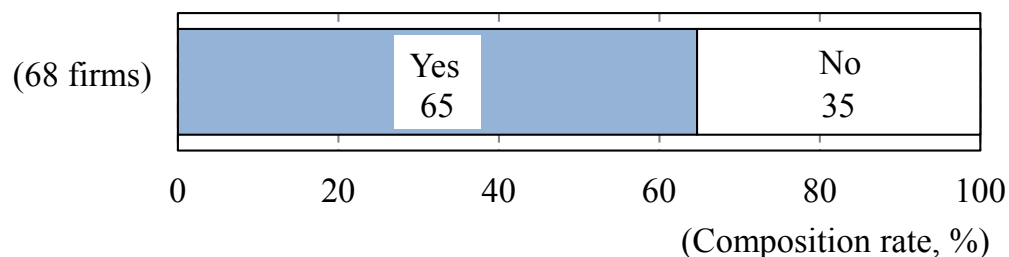
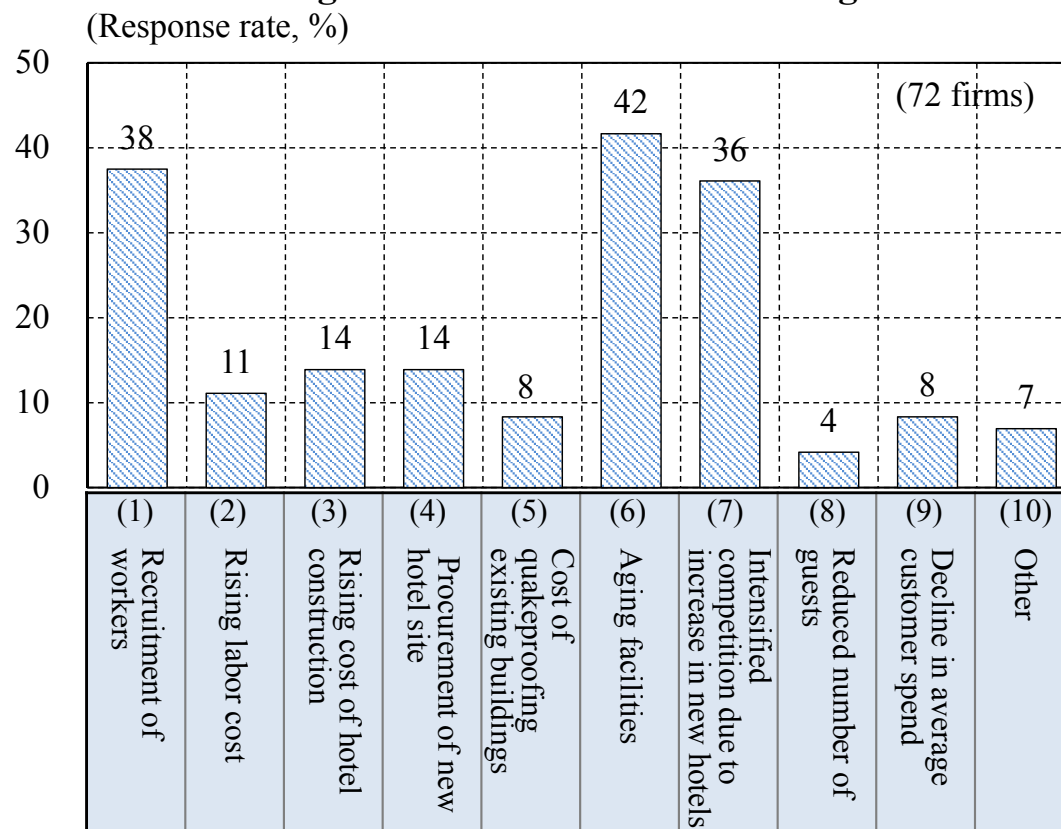


Figure 3-2-4-3. Business Challenges



Note: Choose up to two answers.

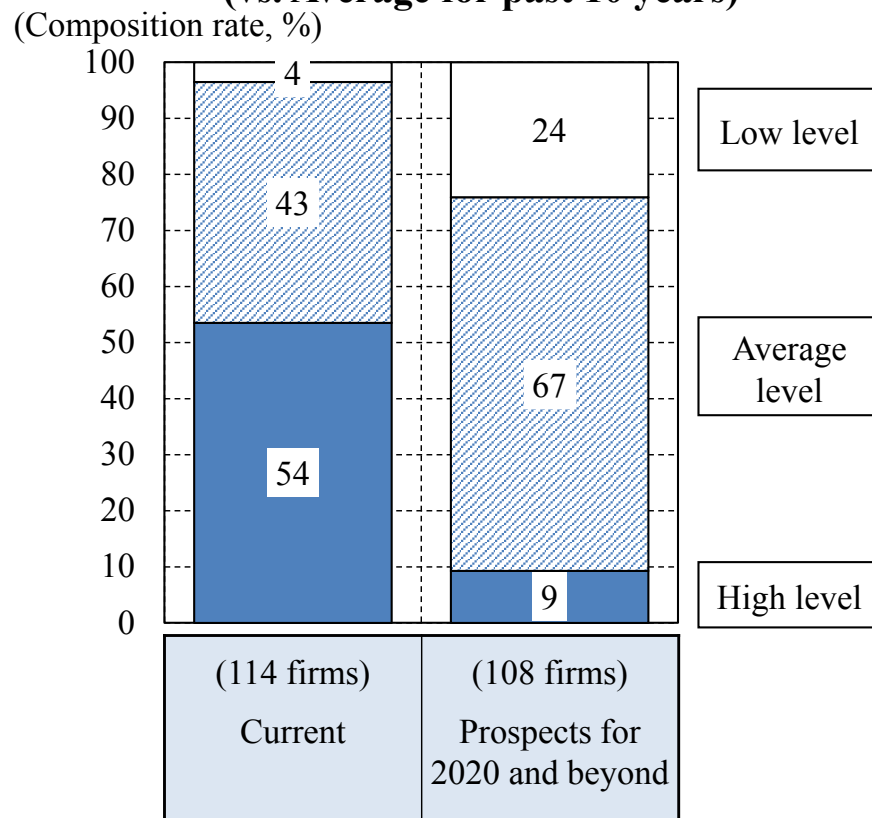
## 3-2-5. Construction Business Update

Note: Includes cases where a subsidiary operates a construction business or it is not a core business of the firm.

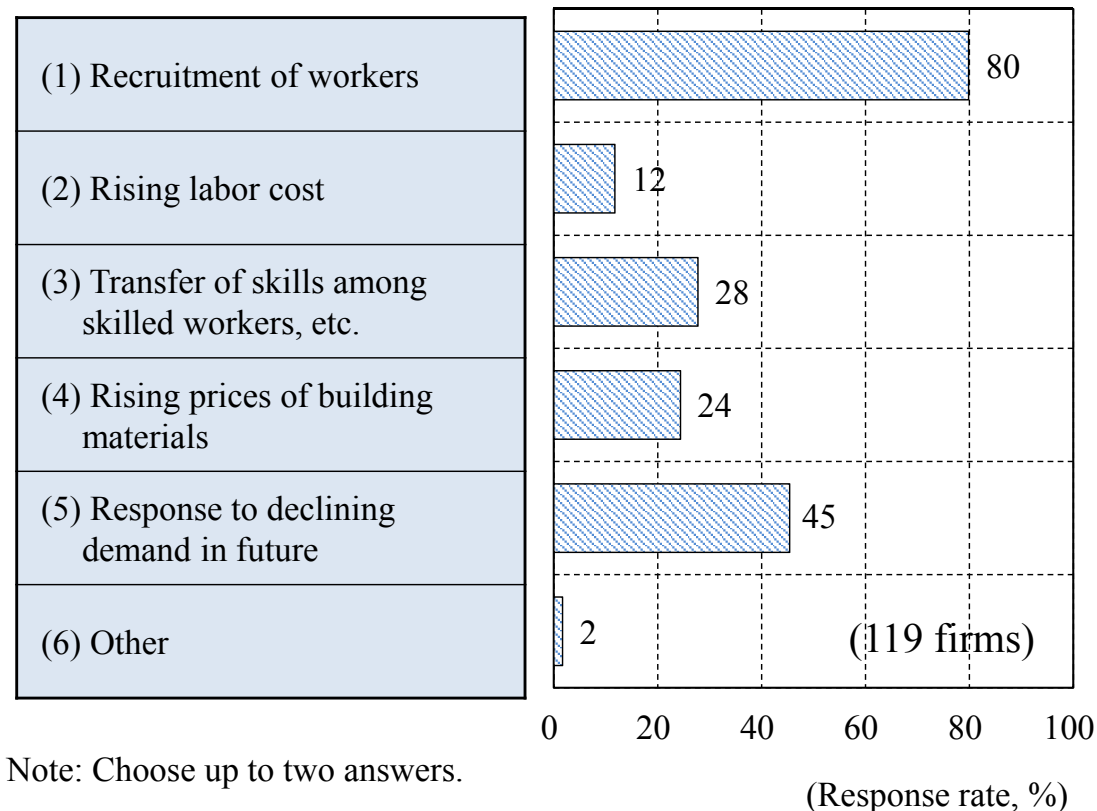
### Concerns about order receipts in 2020 and beyond

- Asked about the current status of orders on hand, half of the firms responded that they exceed the average for the past 10 years, but their prospects for 2020 and beyond are rather pessimistic, with far more firms expecting a low level rather than a high level of business.
- Regarding business challenges, 80% of the firms cited (1) “Recruitment of workers,” followed by (5) “Response to declining demand in future.”

**Figure 3-2-5-1. Orders at Hand  
(vs. Average for past 10 years)**



**Figure 3-2-5-2. Business Challenges**



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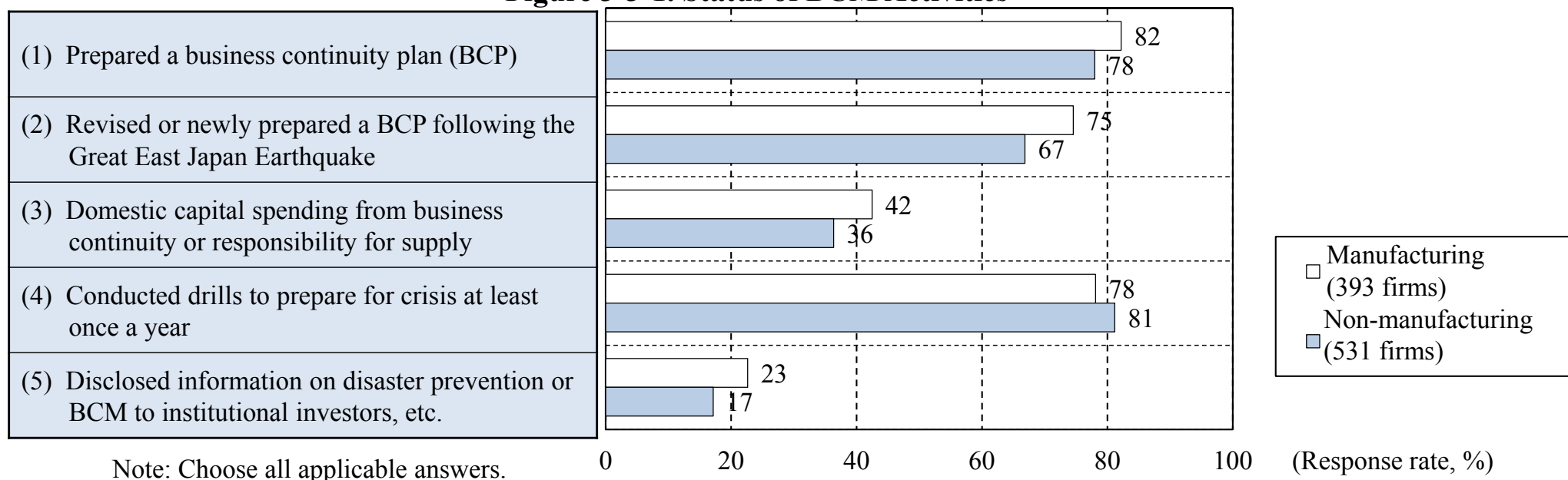
## 3-3. Business Continuity Management Activities

## 3-3-1. Business Continuity Management (BCM) Activities

About 80% of firms practice business continuity planning, but only about 20% disclose information

- (1) About 80% of firms responded that they have prepared a business continuity plan (BCP). In addition, (2) about 70% of firms have revised their BCP or prepared a new BCP in view of the challenges that emerged after the Great East Japan Earthquake. As part of those efforts, (3) about 40% of firms have allocated capital spending to BCM, and (4) about 80% have conducted company-wide drills, thus indicating a rising level of BCM following the disaster.
- However, it was also found that firms are cautious about disclosing information on BCM: only about 20% of respondents reported having made public any information about their BCM. The fact that only about 20% of firms disclose information on BCM raises the concern that their BCM efforts, which should represent one of their non-financial strengths, might not be sufficiently communicated to major stakeholders, including institutional investors.

Figure 3-3-1. Status of BCM Activities

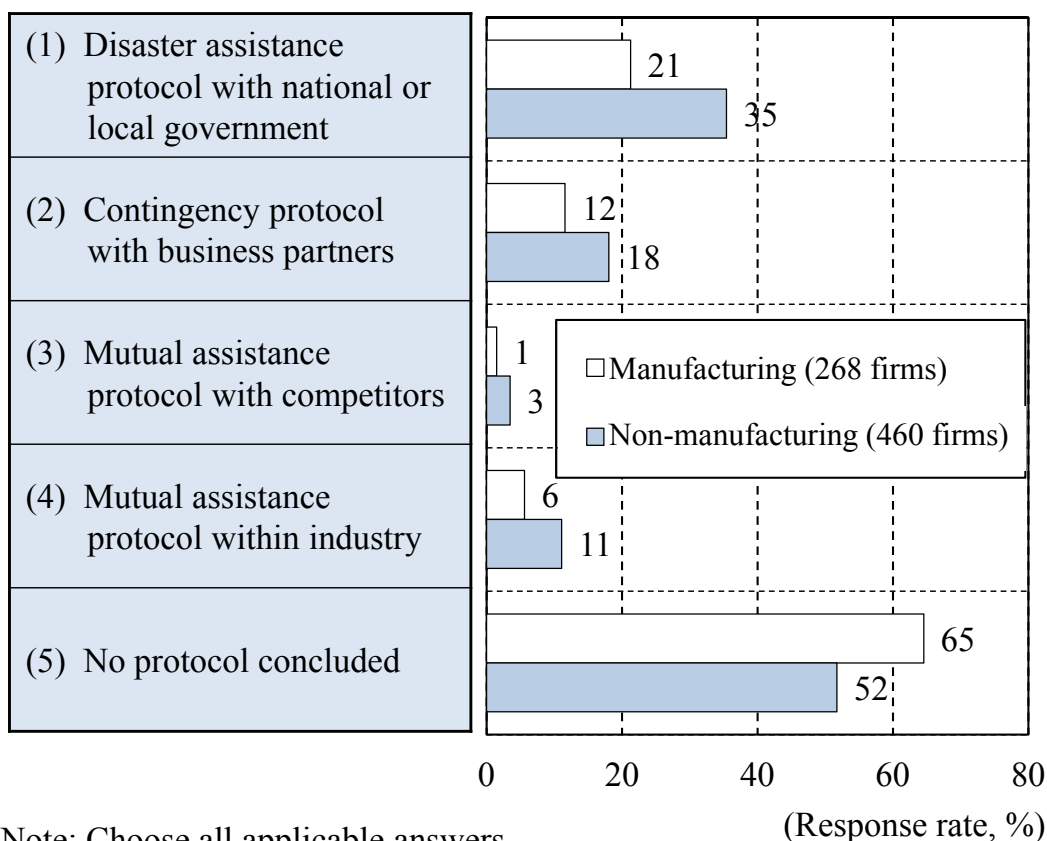


## 3-3-2. Contingency Protocols and BCM Challenges

Less than half of the firms have concluded a contingency protocol to prepare for disasters

- A majority of firms responded that they have not concluded any contingency protocol with an external entity to prepare for disasters. Although (1) quite a number of firms, mostly non-manufacturers, have concluded a disaster assistance protocol with the national or local government, only a few firms have any mutual assistance protocol (3) with competitors or (4) within the industry, thus pointing to difficulties in mutual assistance.

Figure 3-3-2-1. Current Status of Contingency Protocols



Note: Choose all applicable answers.

Figure 3-3-2-2. Examples of BCM Challenges

	Manufacturing	Non-manufacturing
Systemic challenges	<ul style="list-style-type: none"> <li>Difficulty in decentralizing production sites</li> <li>Implementation of effective drills and revision of BCP</li> <li>Ongoing improvement and consolidation</li> <li>Development of contingency stockpile and introduction of employee safety confirmation system</li> <li>Difficulty in defining scope of BCP</li> <li>BCP preparation delegated to individual departments</li> </ul>	<ul style="list-style-type: none"> <li>Maintenance of BCP not keeping pace with business diversification</li> <li>Operational priority while recovering from disaster</li> <li>Joint drills with protocol partners</li> <li>Reconstruction or relocation of head office premises</li> <li>Decentralization of logistics facilities</li> <li>Early preparation or upgrading of BCP</li> </ul>
External challenges	<ul style="list-style-type: none"> <li>Response to natural disaster in neighborhood</li> <li>Recovery of access road to plant</li> <li>Vast range of scenarios to be considered</li> </ul>	<ul style="list-style-type: none"> <li>Stable energy supply</li> <li>Securing communication channels in case of crisis</li> </ul>

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# Appendices

## Appendix 1-1. Capital Spending in FY2016, 2017 and 2018

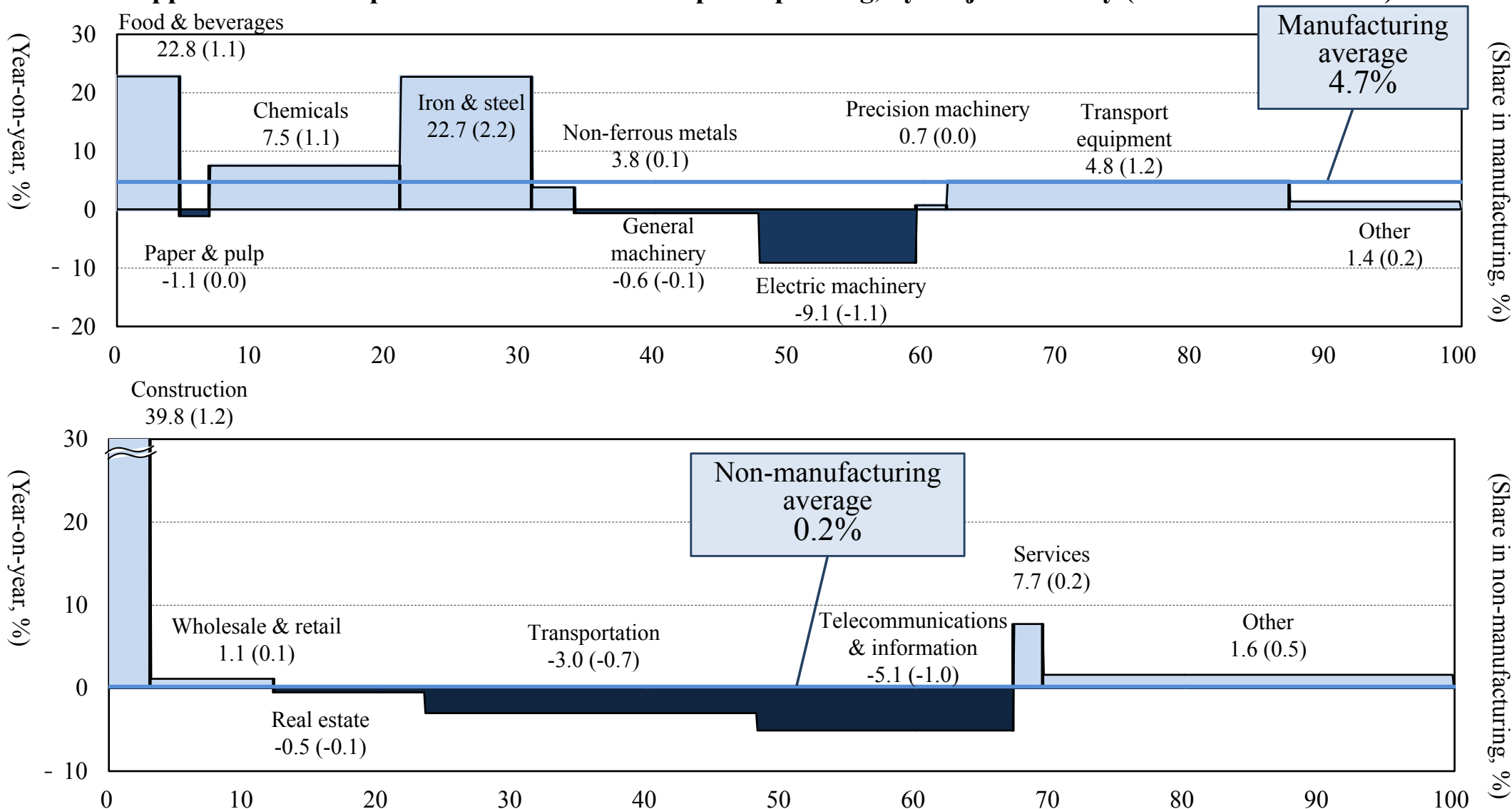
### Appendix 1-1. Domestic Capital Spending in FY2016, 2017 and 2018

(JPY 100 million, %)

	FY2016 (actual) (1,907 firms)			FY2017 (planned) (2,033 firms)			FY2018 (planned) (851 firms)		
	FY2015 Actual	FY2016 Actual	Change	FY2016 Actual	FY2017 Planned	Change	FY2017 Planned	FY2018 Planned	Change
Total	177,690	180,531	1.6	160,372	178,390	11.2	37,998	34,604	-8.9
(excluding electric power)	151,487	156,028	3.0	155,037	172,009	10.9	36,992	33,067	-10.6
Manufacturing	55,719	58,349	4.7	59,833	68,325	14.2	14,960	13,537	-9.5
Non- manufacturing	121,972	122,182	0.2	100,539	110,065	9.5	23,038	21,067	-8.6
(excluding electric power)	95,768	97,679	2.0	95,204	103,684	8.9	22,033	19,530	-11.4

# Appendix 1-2. Actual Performance in FY2016 (Skyline Graph)

## Appendix 1-2. Composition and Growth of Capital Spending, by Major Industry (Actual FY2016 Data)

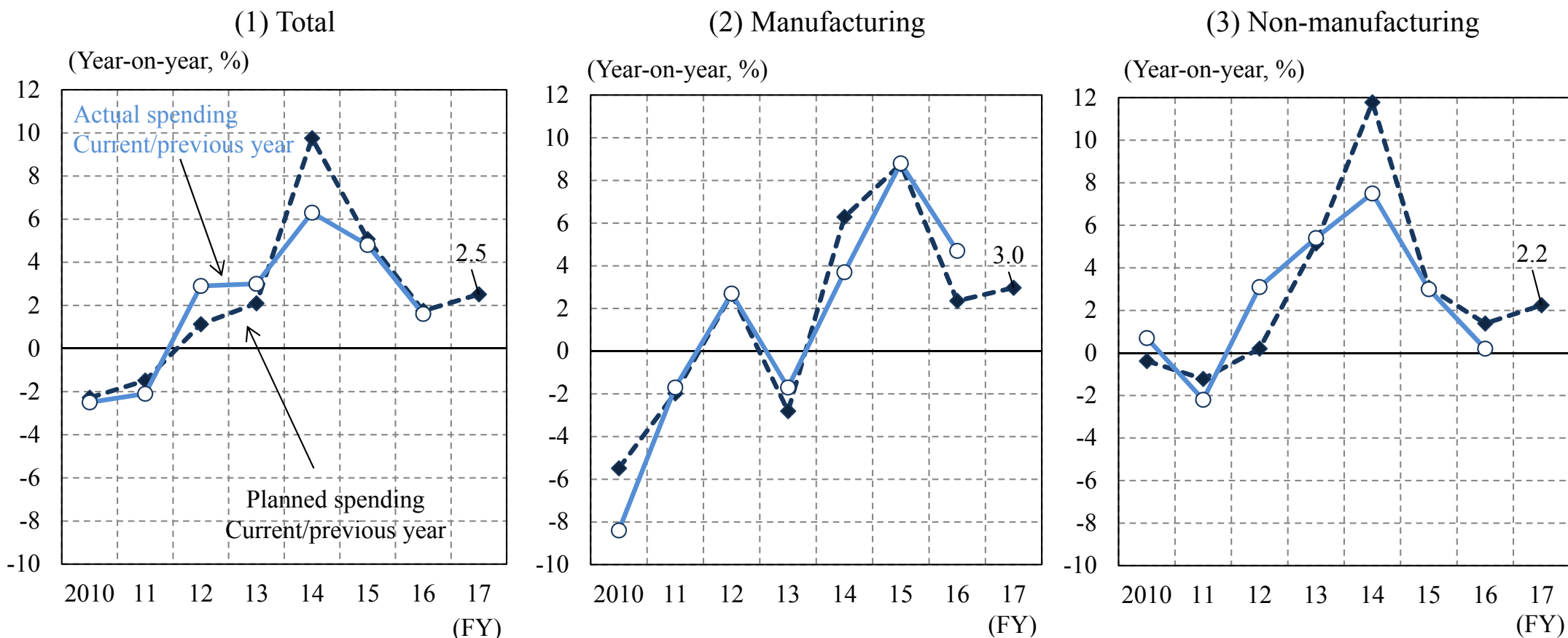


Note: Figures indicate changes in FY2016 on the previous year. Figures in parentheses ( ) indicate contributions to the whole manufacturing or non-manufacturing sector.

## Appendix 2. Actual Capital Spending vs. Planned Spending for Previous and Current Years

- Experience indicates that the year-on-year change in actual capital spending often approximates the year-on-year change in planned capital spending, thus helping to predict actual performance in the coming year.
- Our data on the firms responding to the questions on planned capital spending for both FY2017 and FY2016 imply an increase of some 2% in planned, and hence actual, capital spending.

### Appendix 2-1. Change in Actual and Planned Capital Spending on Previous Year

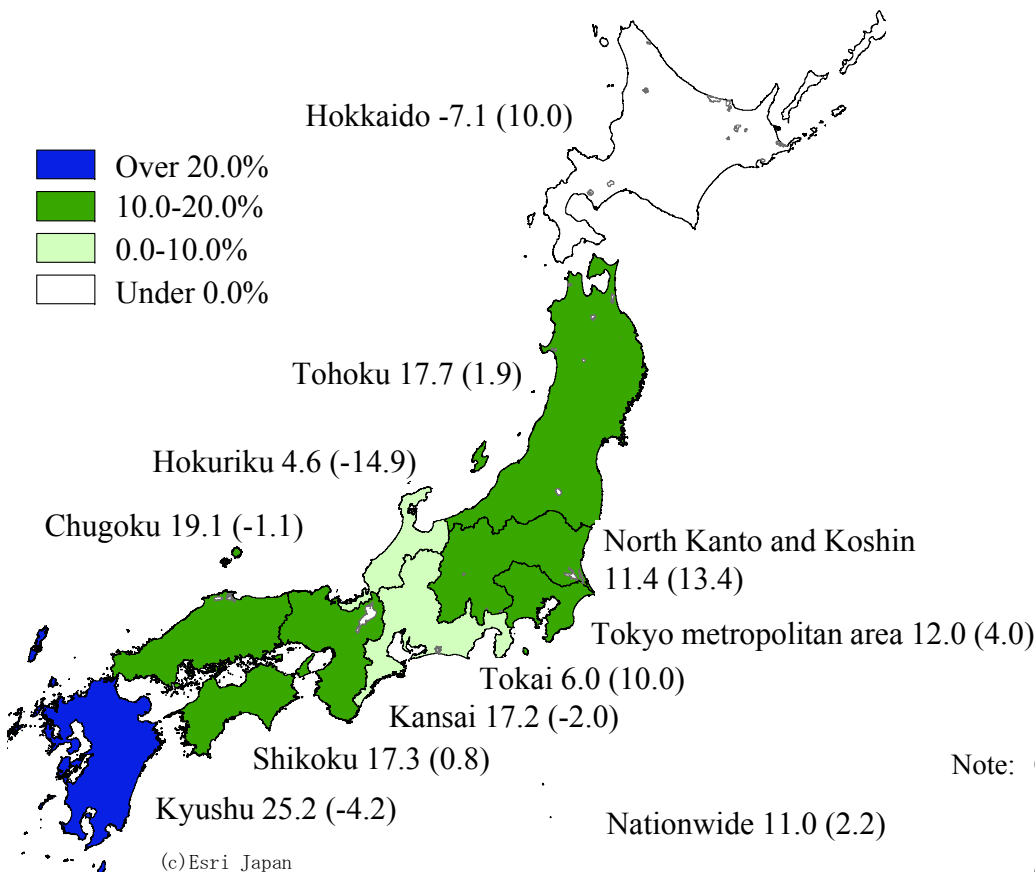


## Appendix 3. Capital Spending by Region (Planned for FY2017)

- Planned capital spending by region for FY2017 (covering 5,271 companies: see Note) shows the sixth consecutive year of increase overall (up 11.0%), with positive growth observed in all regions except Hokkaido, led by real estate, transportation, chemicals and general machinery.
- Actual capital spending in FY2016 rose for the fifth consecutive year nationwide (up 2.2%) with the decline in Hokuriku, Kyushu, Kansai and Chugoku more than offset by the increase in the remaining six regions.

### Appendix 3-1. Change in Capital Spending, by Region, FY2017/FY2016

Difference from FY2016/FY2015 in parentheses ( )



### Appendix 3-2. Change in Capital Spending, by Region and by Sector, FY2017

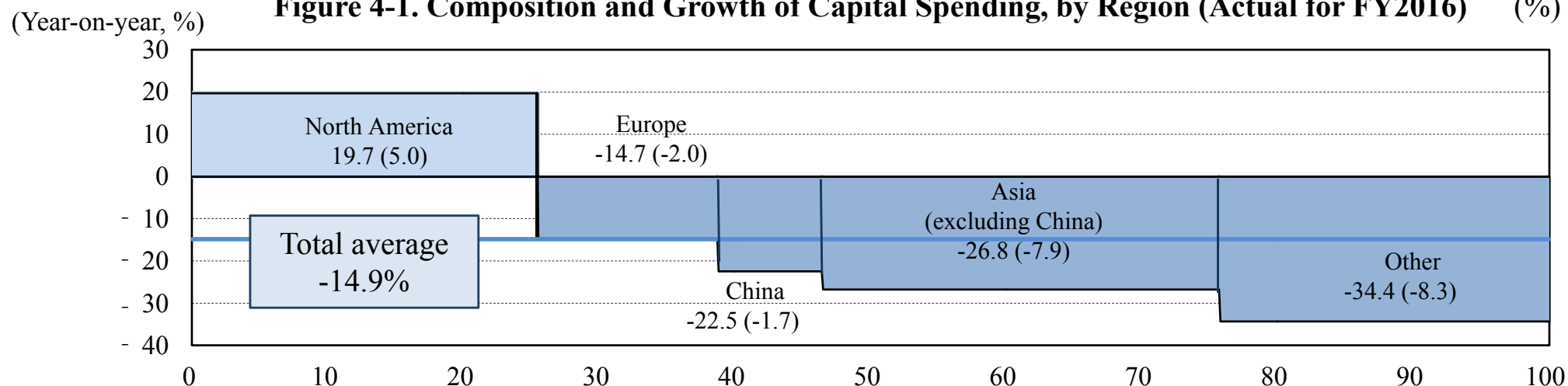
(%)

	Total	Manufacturing	Non-manufacturing
Hokkaido	-7.1	4.0	-9.9
Tohoku	17.7	1.5	40.7
North Kanto and Koshin	11.4	13.8	4.2
Tokyo met. area	12.0	9.8	12.7
Hokuriku	4.6	-9.8	26.8
Tokai	6.0	10.2	-5.9
Kansai	17.2	21.5	14.2
Chugoku	19.1	13.2	33.6
Shikoku	17.3	20.0	11.0
Kyushu	25.2	37.5	12.6
Nationwide	11.0	14.3	8.9

Note: Our survey on capital spending by region covers medium-sized firms (capitalized at JPY 100 million to JPY 1 billion), as well as large-sized companies. (10,263 firms in total, of which 5,271 firms responded to the questions on planned capital spending by region)

# Appendix 4. Trend of Capital Spending Overseas

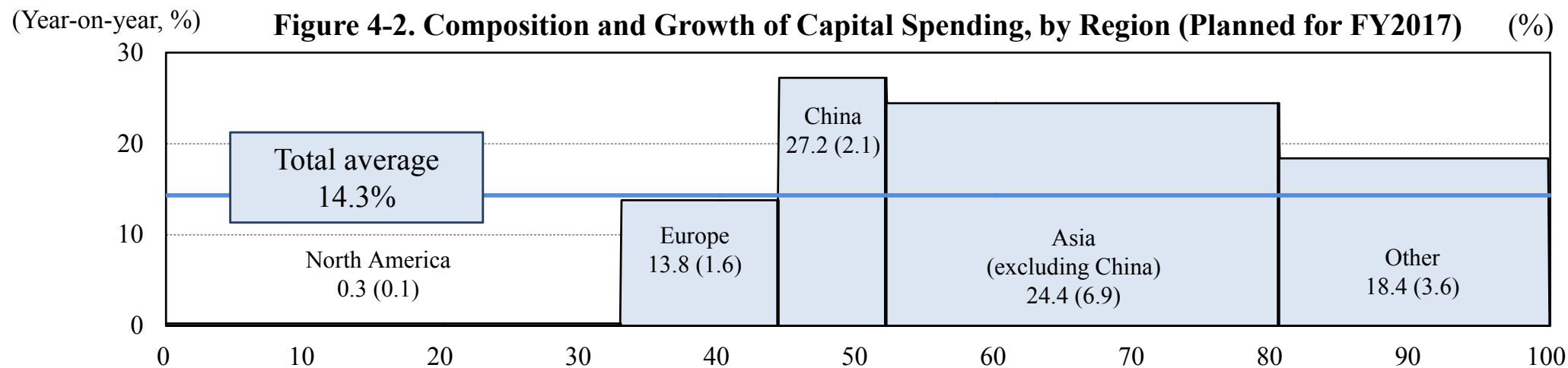
**Figure 4-1. Composition and Growth of Capital Spending, by Region (Actual for FY2016) (%)**



Note: Figures show year-on-year changes of actual FY2016 performance vs. FY2015.

Figures in parentheses ( ) indicate contributions to the total.

**Figure 4-2. Composition and Growth of Capital Spending, by Region (Planned for FY2017) (%)**



Note: Figures show changes of planned FY2017 spending vs. actual FY2016 performance.

Figures in parentheses ( ) indicate contributions to the total.

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