Survey on Planned Capital Spending for Fiscal Years 2015, 2016 and 2017

(Conducted in June 2016)

Fifth straight year of increase driven by enhancement of business infrastructure including for new products

Investment also continues for improvement of urban functions

August 4, 2016

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 industry by industry.

(2) Opinion poll

This survey is mainly designed to identify the attitude and perspective of firms on key current issues.
This year's survey focuses on corporate "investment in a broader sense," including R&D and M&A as well as investment in tangible fixed assets.

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 24, 2016. Most of the responses to the questionnaire were obtained in June.

4. Response (questionnaire sent to 3,146 firms)

Number of firms giving responses on domestic capital spending: 2,077 (response rate, 66.0%)
Number of firms giving responses on overseas capital spending: 1,020 (response rate, 32.4%)
Number of firms giving responses for the opinion poll: 1,243 (response rate, 39.5%)

5. Detailed results

Please visit http://www.dbj.jp/investigate/equip/index.html.

Contents

Executive Summary

1. Planned domestic capital spending in FY2016 by major firms (capitalized at JPY 1 billion or over) shows an increase for the fifth consecutive year overall, up 10.9%, with positive growth expected in both the manufacturing (up 14.5%) and non-manufacturing (8.8%) sectors.

2. Characteristics of domestic capital spending in FY2016 identified from the survey results

(1) The increase in planned capital spending in the manufacturing sector is driven by investment for new models in transport equipment and investment in the development of business infrastructure, including for new materials in chemicals and for facility replacement/consolidation in iron & steel.

(2) Planned capital spending in the non-manufacturing sector is led by transportation and real estate for security, disaster prevention and the enhancement of urban functions in the run-up to the Tokyo Olympics/Paralympics, as well as railways for infrastructure development.

3. In the manufacturing sector (up 14.5%, contribution of 5.4%), spending is expected to rise in transport equipment for new automobile models leveraging new technology for environmental, safety and comfort considerations, and for production line renovation to improve efficiency. Increased spending in chemicals is driven by investment in pharmaceuticals, cosmetics and hygiene goods, and in R&D centers, while the iron & steel industry plans to increase investment in the development of business structure, including for coke oven relining, and facility replacement/consolidation to improve productivity and cost competitiveness. In addition, aircraft-related investment is expected to drive spending in multiple industries such as transport equipment and general machinery.

In the non-manufacturing sector (up 8.8%, contribution of 5.6%), spending is expected to increase in transportation for the speeding-up of railways, safety and disaster prevention, and the development of logistics facilities. Wholesale & retail, particularly supermarkets, shows an increase in investment in new and existing outlets, whereas large-scale development projects are expected to increase in real estate featuring international business hubs and disaster prevention functions mainly in the Tokyo metropolitan area, as per medium- and long-term plans.

4. This year, our opinion poll focuses on "investment in a broader sense," including R&D, M&A and human investment, as well as investment in tangible fixed assets.

Asked about investment in a broader sense, many manufacturers responded that they are focusing on R&D and human investment, in addition to tangible fixed asset investment. An increasing number of firms are concerned about securing the necessary workforce, as many specifically cite shortage of young skilled labor to lead field workers. Under these circumstances, many emphasized on-the-job training and promotion of young skilled workers in the field as the focus of human investment. As regards investment in information technology, 70% of both manufacturers and non-manufacturers responded that it has been on the rise in recent years. Also, the responses indicated that 36% of manufacturers and 23% of non-manufacturers have closed at least one M&A deal since FY2010, mainly for the purpose of scaling up their business, increasing their market share or expanding their scope of business.

1. Trends in Domestic Capital Spending

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

A 5th straight year of increase is planned, mainly to develop business infrastructure, including for new products.

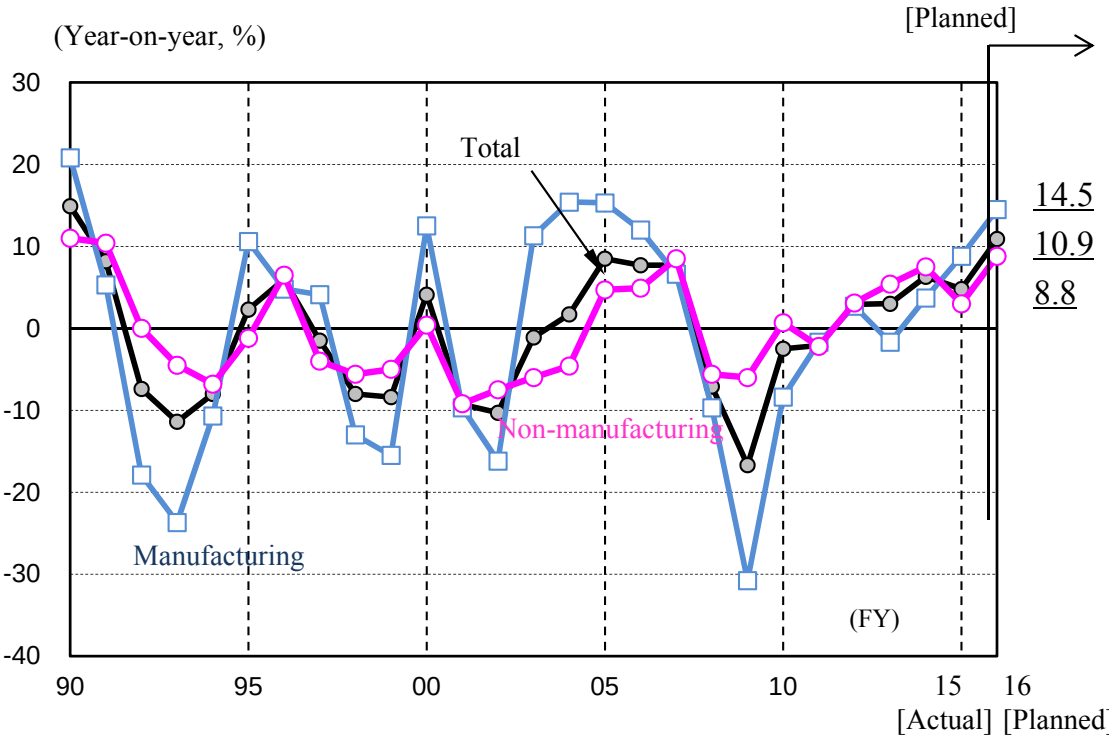
- The increase in planned capital spending in the manufacturing sector is driven by investment for new models in transport equipment and investment in the development of business infrastructure, including for new materials in chemicals and for facility replacement/consolidation in iron & steel.
- Planned capital spending in the non-manufacturing sector is led by transportation and real estate for safety, disaster prevention and the enhancement of urban functions in the run-up to the Tokyo Olympics & Paralympics, as well as railways for infrastructure development.

Figure 1-1. Domestic Capital Spending

(Year-on-year, %
Figures in parentheses are contribution ratios.)

	FY2015 (actual) (1,973 firms)	FY2016 (planned) (2,077 firms)
Total	4.8	10.9
[excluding electric power]	[3.5]	[10.9]
Manufacturing	8.8	14.5 (5.4)
Non-manufacturing	3.0	8.8 (5.6)
[excluding electric power]	[0.5]	[8.6]

Figure 1-2. Growth in Capital Spending (FY1990-2016)



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 1-3. Planned vs. Actual Capital Spending Growth (Total)

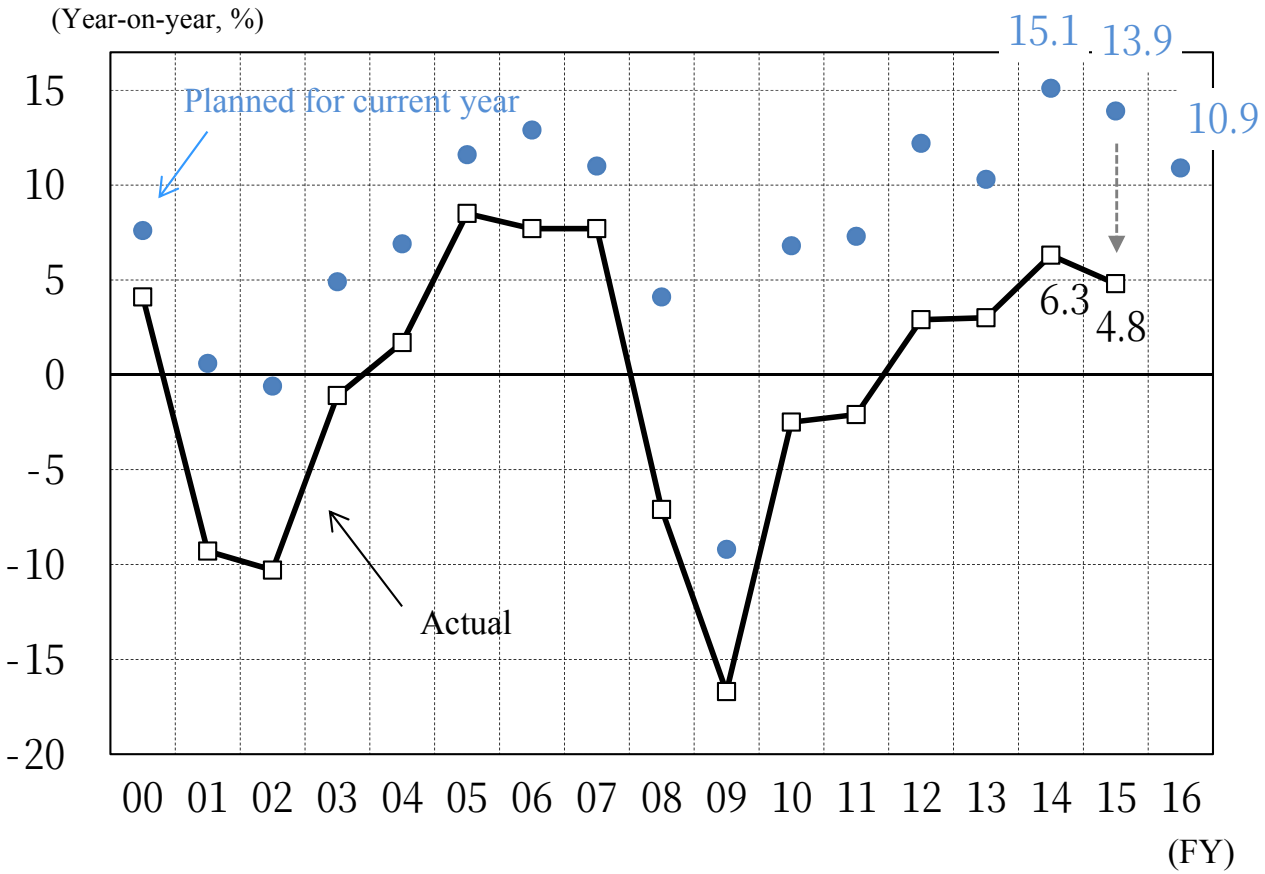
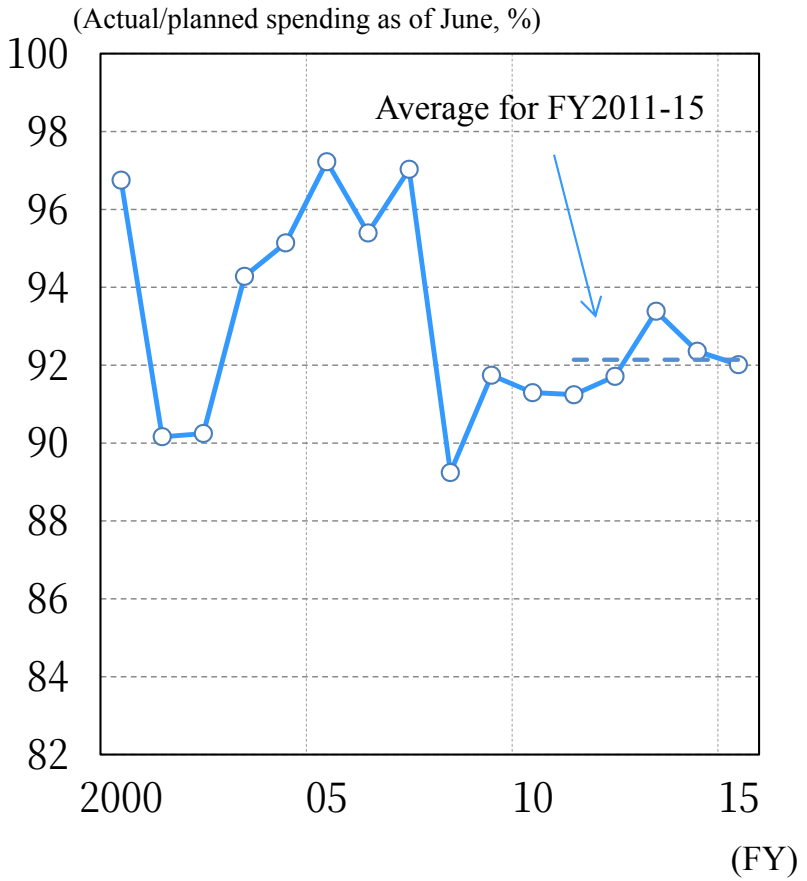
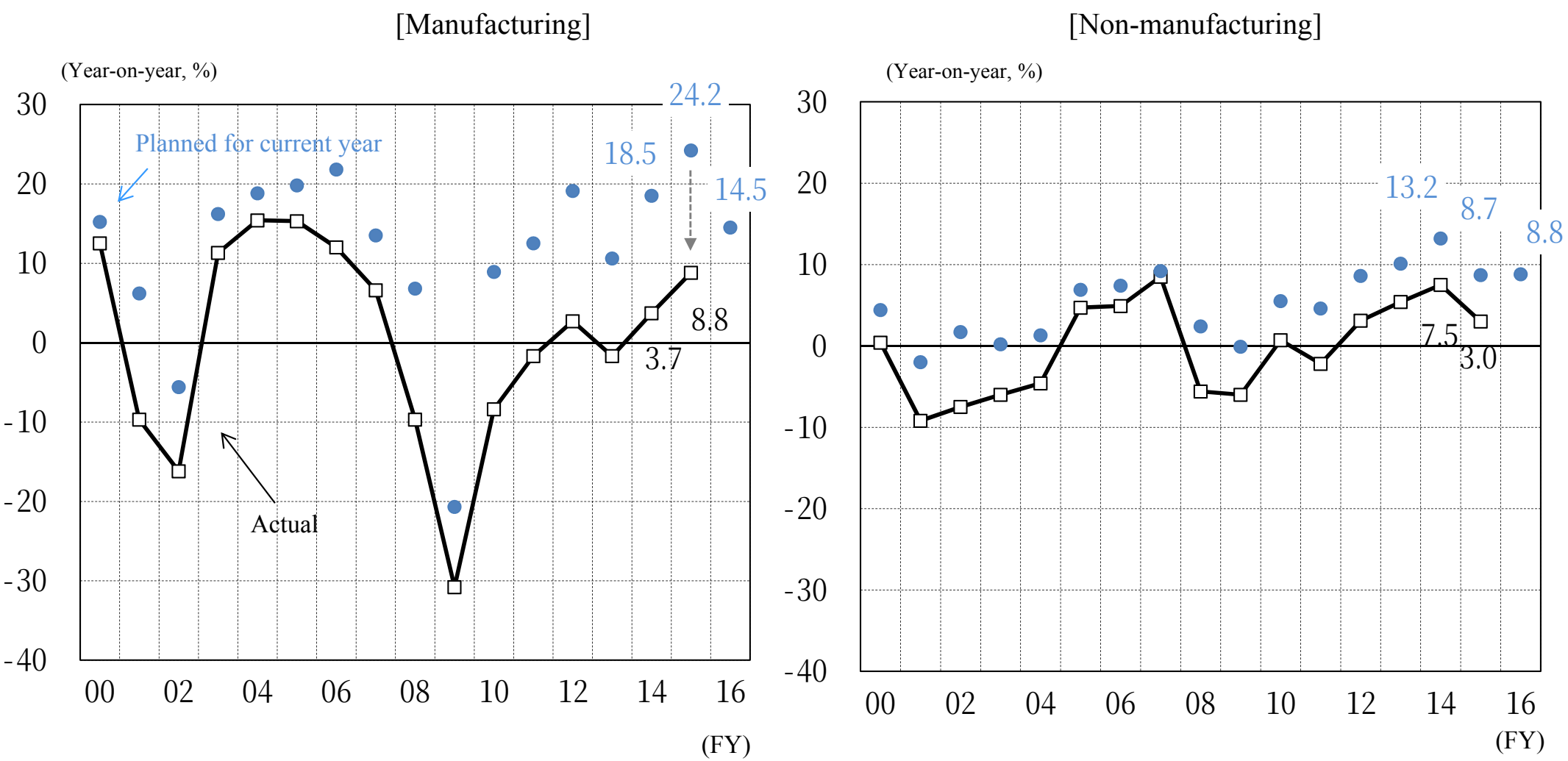


Figure 1-4. Plan Realization Rate (Total)



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

Figure 1-5. Pattern of Revision to Capital Spending Growth (Planned → Actual)

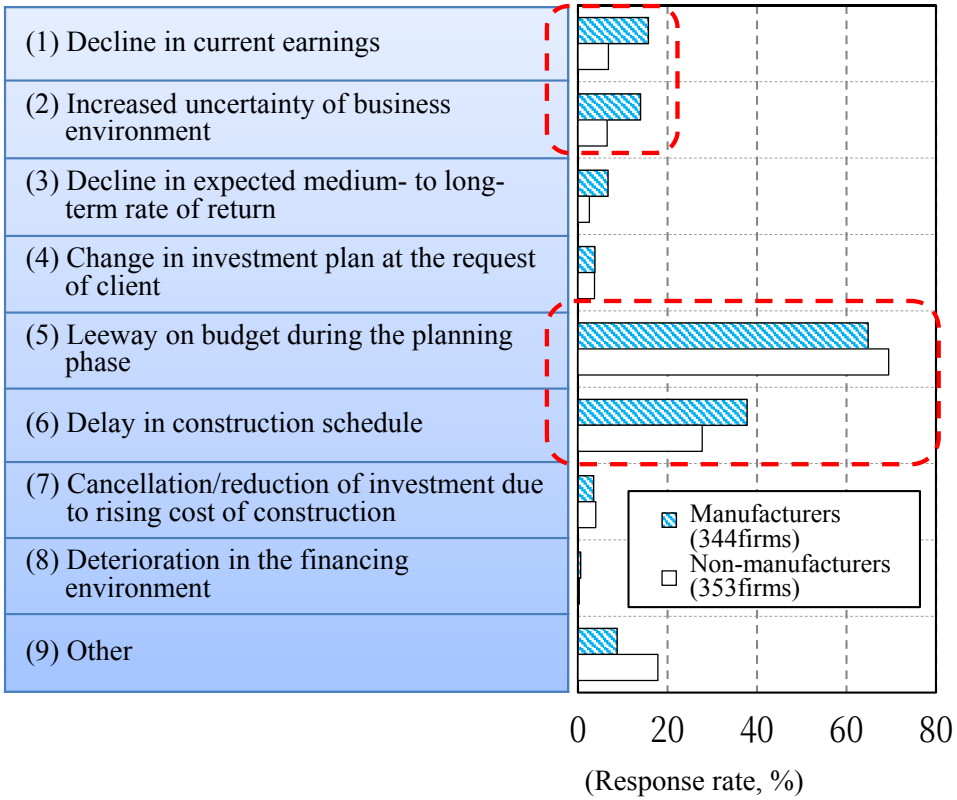


1-4. Factors for Downward Revision to Capital Spending in Previous Year

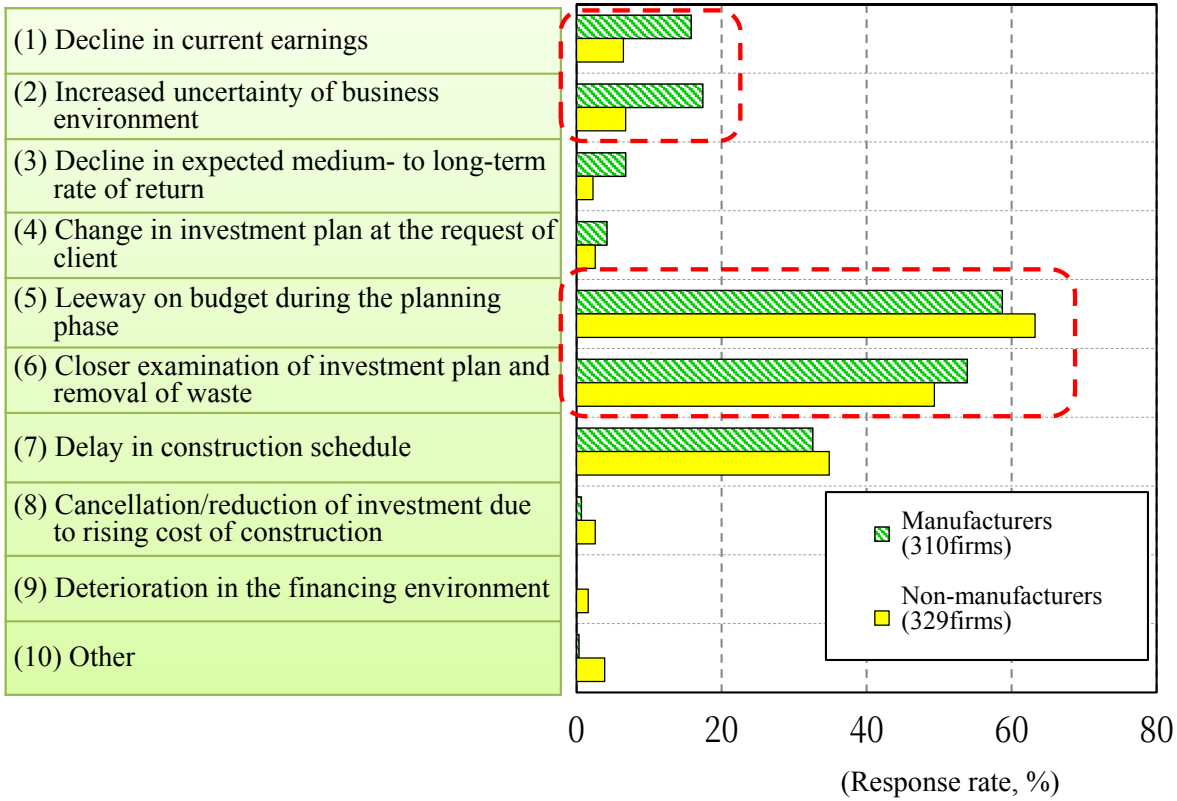
- Actual capital spending often fails to reach planned spending in both the manufacturing and non-manufacturing sectors largely due to leeway on budget during the planning phase, or closer examination or revision of the plan. In many cases, the gap is also attributable to delay in construction works.

Figure 1-6. Factors for Downward Revision to Capital Spending Planned in Previous Year

[FY2015 survey](for reference)



[FY2016 survey]



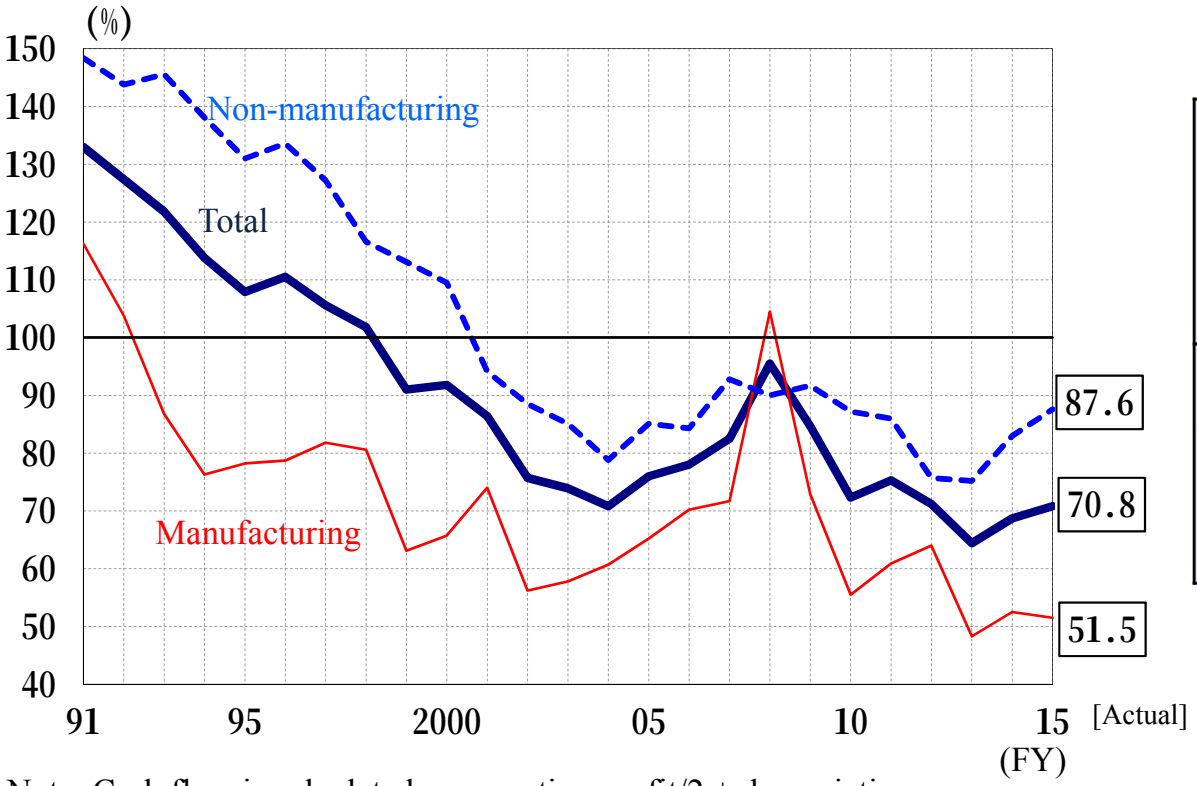
Note: Respondents may choose up to three answers. Data only covers the firms reporting less-than-planned capital spending. Option (6) was added in the FY2016 survey.

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 FY2015 indicate a slight increase in the total capital spending/cash flow ratio.
- The improvement in the diffusion index (DI) on operating profit slowed in FY2016 from the previous year. It should be noted that any further yen appreciation would exert stronger downward pressure on the operating profit of manufacturers.

Figure 1-7. Trend of Capital Spending/Cash Flow Ratio



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

Figure 1-8. DI on Sales & Operating Profit

(Percentage points)

	DI on sales		DI on operating profit	
	FY2015 actual 1,109 firms	FY2016 planned 1,314 firms	FY2015 actual 1,109 firms	FY2016 planned 1,314 firms
Total	5.2	14.6	18.8	2.3
Manufacturing	-5.0	8.6	7.0	3.8
Non-manufacturing	13.1	19.3	27.8	1.1

Note: DI on sales, DI on operating profit =

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

1-6. Macroeconomic Environment for Capital Spending

Concern about downside risk due to macroeconomic environment

- Factors propping up capital spending in FY2016 include (1) economic stimulus package; (2) expectations for the effect of the growth strategy; (3) continued improvement in the employment and income conditions; (4) increased demand for materials and components in which Japanese firms maintain substantial global market shares; and (5) planned infrastructure development in the run-up to the Tokyo Olympics & Paralympics, among others.
- The macroeconomic environment contains significant risk factors emanating from overseas, including (a) Brexit (the UK leaving the EU); (b) continued yen appreciation, and (e) the Chinese economy, marked by excessive production capacity.

Figure 1-9. Macroeconomic Conditions Affecting Capital Spending

Factors propping up capital spending

1. Implementation of economic stimulus package in support of business
2. Progress in governmental growth strategy
3. Continued improvement in employment and income conditions
4. Increased demand for specific materials and components in which Japanese manufacturers maintain substantial global market shares
5. Planned infrastructure development in the run-up to Tokyo Olympics & Paralympics

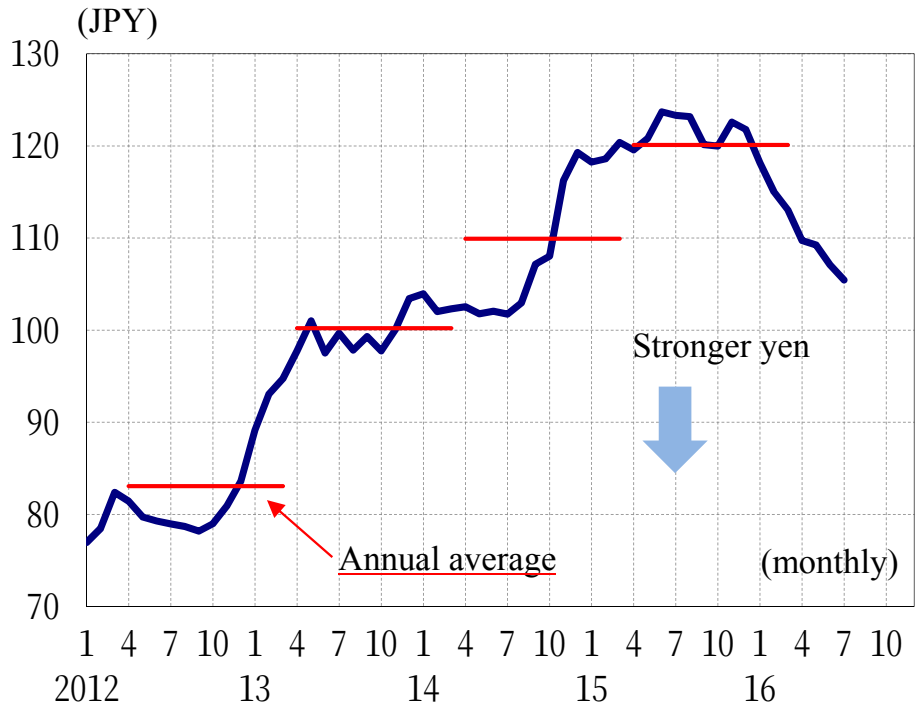
Downside risks for capital spending

a. Adverse effect of Brexit on the global economy
b. Continued yen appreciation, affecting business performance
c. Slowdown in the US economy in the aftermath of interest rate increases
d. Downswing in resource-rich economies due to slumps in oil and other commodity prices
e. Downswing in the Chinese economy, marked by excessive production capacity

1-7. Foreign Exchange Rate Assumed by Manufacturers

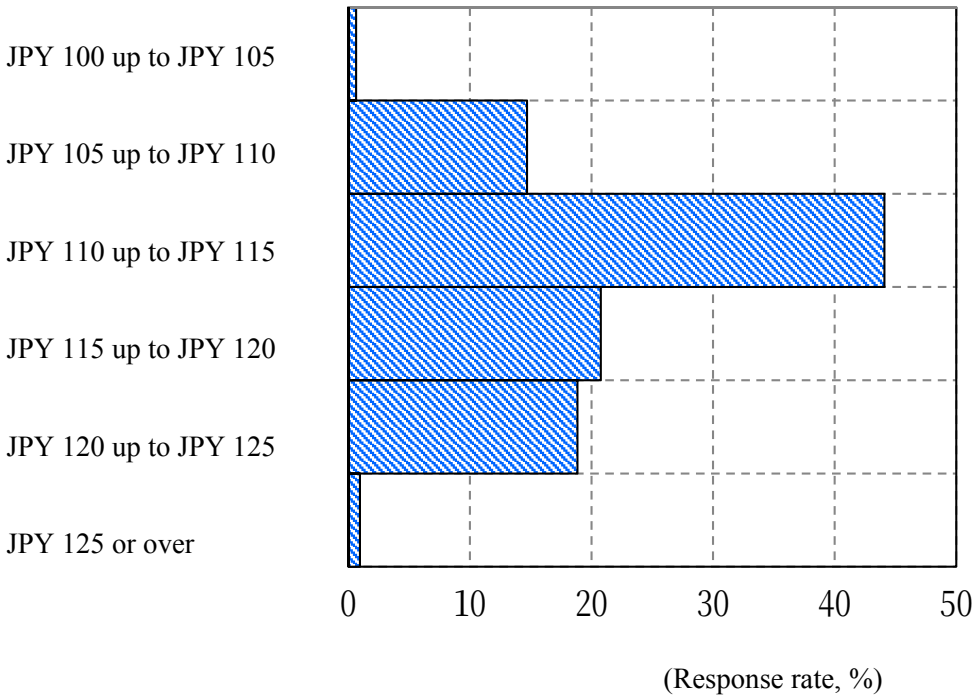
- Most manufacturers assume a foreign exchange rate of USD 1 = JPY 110-115. In other words, their annual plans are built on the assumption of a weaker yen in comparison with the actual data for July. Thus, if the exchange rate stays at the level of July, it may trigger downward revisions to actual performance, particularly for firms with high overseas sales ratios.

Figure 1-10. Actual USD/JPY Rate



Source: Bank of Japan, monthly average of interbank rate at 17:00.

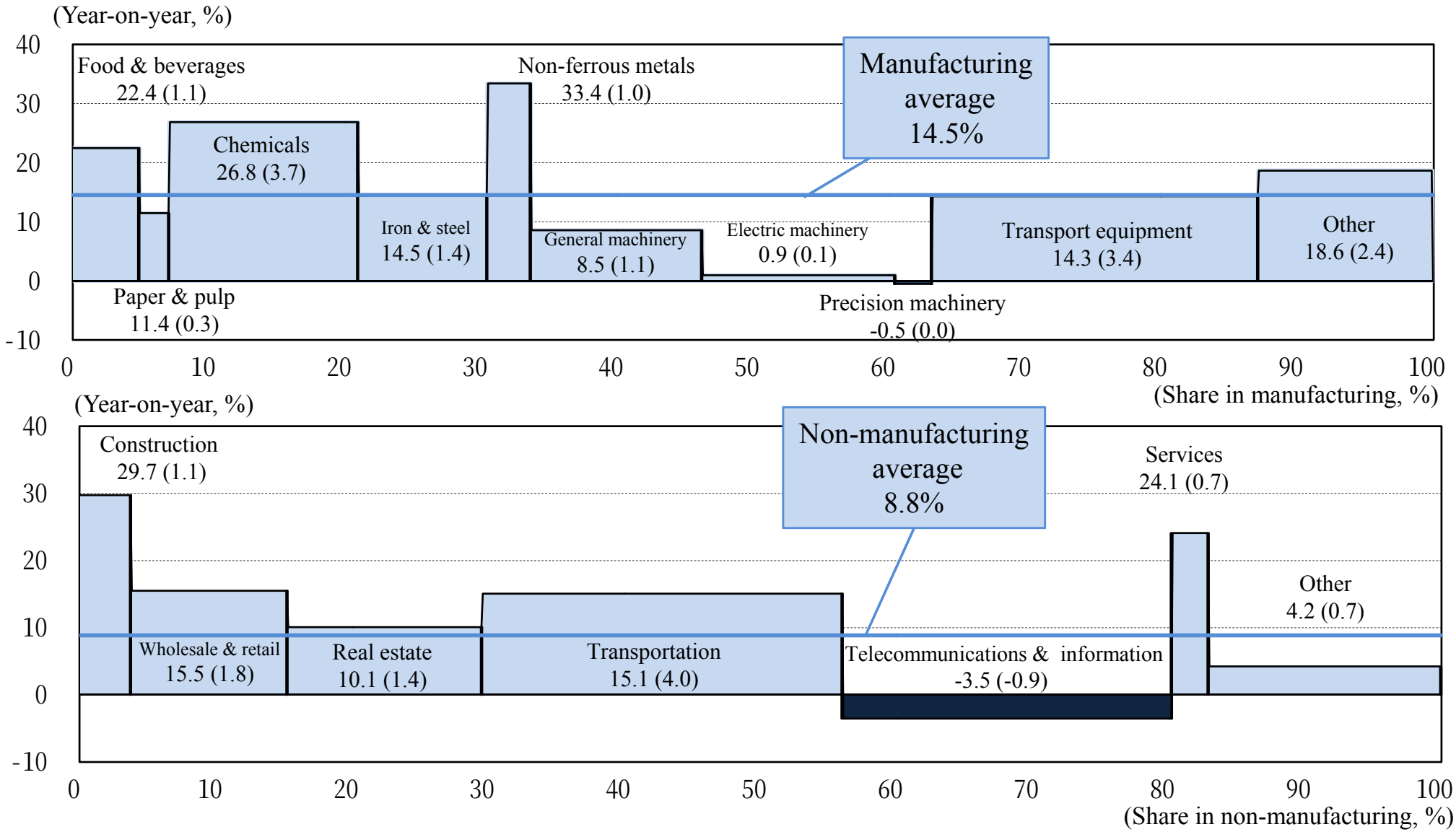
Figure 1-11. USD/JPY Rate Assumed by Manufacturers (313 Firms)



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

1-8. Plan for FY2016 (Skyline Graph)

Figure 1-12. Composition and Growth of Capital Spending, by Major Industry (FY2016 Plan)



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

1-9. Trends in the Manufacturing Sector (Ⅰ)

Driven by chemicals, transport equipment, iron & steel

- In the manufacturing sector, planned capital spending shows a decline in textiles and is almost constant in electric and precision machinery. Other industries plan robust growth. A double-digit increase in capital spending is planned in chemicals, as well as in heavy-weighted industries such as transport equipment and iron & steel.

Figure 1-13. Industries with the Greatest Contribution to Planned Capital Spending for FY2016 (Manufacturing)

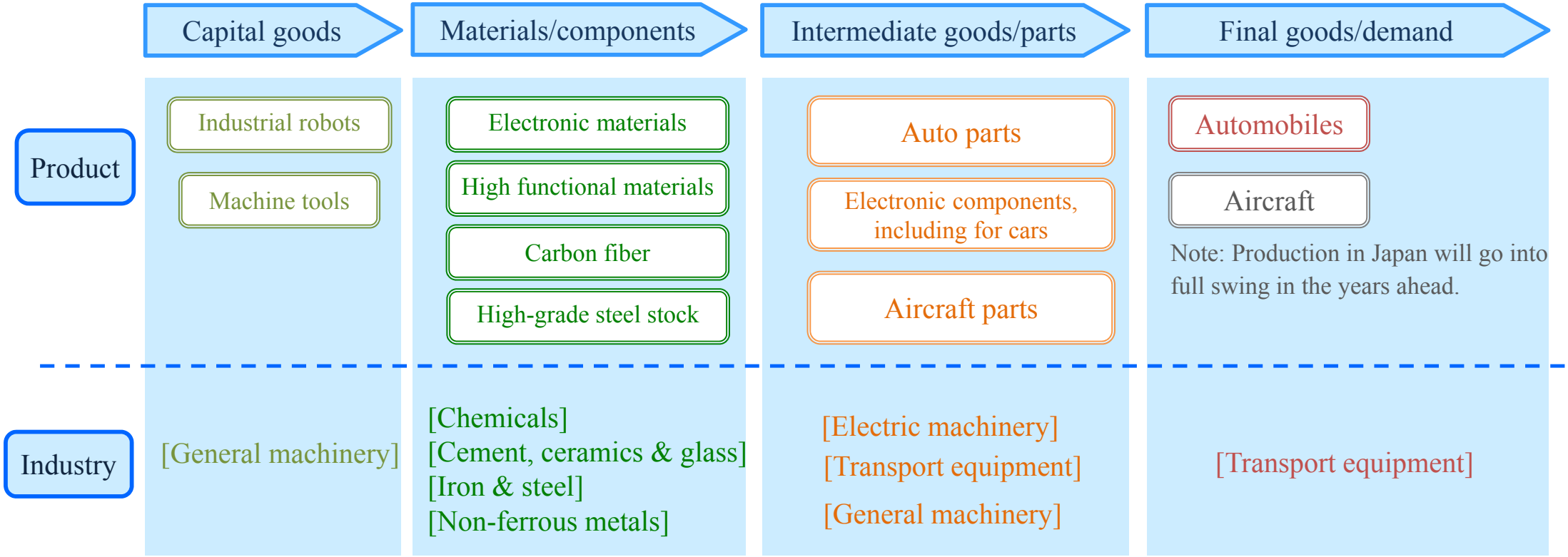
(%)	Year-on-year	Contribution ratio*	Drivers for the increase/decrease
(1) Chemicals	26.8	3.7	Investment in pharmaceuticals, cosmetics, hygiene goods, R&D facilities, etc.
(2) Transport equipment	14.3	3.4	New automobile models leveraging new technology for environmental, safety and comfort considerations, and production line renovation for improving efficiency
(3) Iron & steel	14.5	1.4	Investment in maintenance and replacement, including for coke oven relining Investment for facility replacement/consolidation to improve productivity and cost competitiveness
Manufacturing total	14.5	*Contribution to growth in the whole manufacturing sector.	

1-10. Trends in the Manufacturing Sector (Ⅱ)

Increased spending in materials, parts and other specific fields where Japanese manufacturers enjoy substantial global market shares

- Although foreign manufacturers have substantial shares in the international market for many final goods, including aircraft, Japanese manufacturers remain highly competitive in materials, parts, intermediate goods, and capital goods required for producing those final goods.
- The development of emerging economies is pushing up the demand for final goods such as aircraft. In some industries such as automobiles, Japan even has an edge over international competitors. Many Japanese firms have advantages or substantial global market shares in capital goods or specific parts and components. It is those firms that will increase capital spending in the years ahead.

Figure 1-14. Highlights of Planned Capital Spending for FY2016 in the Manufacturing Sector



1-11. Trends in the Non-manufacturing Sector (Ⅰ)

Driven by railways and development investment mainly in the Tokyo area

- In the non-manufacturing sector, spending will increase in transportation, real estate and other infrastructure-related industries, and in wholesale & retail led by investment in new and existing supermarket outlets.
- However, capital spending continues to decline in telecommunications & information due to a lull in spending for LTE base stations.

Figure 1-15. Industries with the Greatest Contribution to Planned Capital Spending for FY2016 (Non-manufacturing)

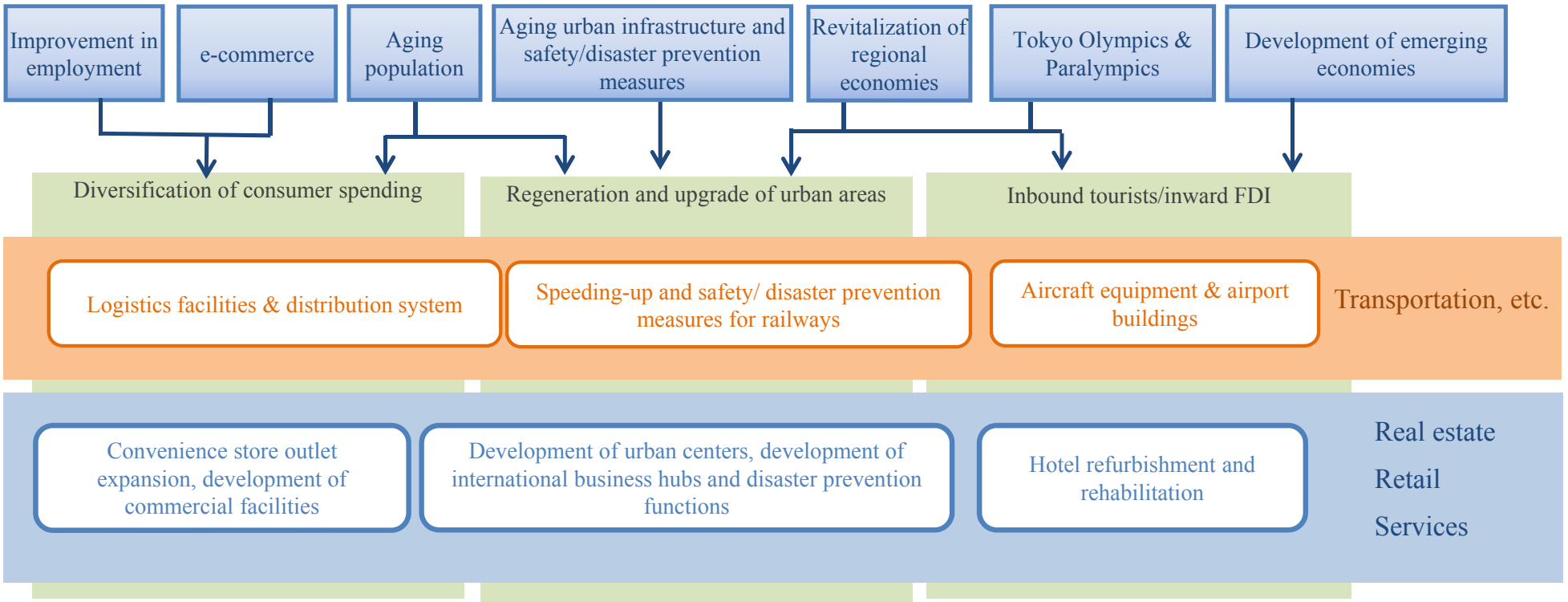
(%)	Year-on-year	Contribution ratio*	Drivers for the increase/decrease
(1) Transportation	15.1	4.0	Speeding-up and security measures in railways, logistics facilities in warehousing/cargo transport, ships in marine transportation
(2) Wholesale & retail	15.5	1.8	Investment in new/existing supermarket outlets, etc., recovery in convenience store outlet expansion
(3) Real estate	10.1	1.4	Investment in large-scale urban center development projects featuring international business hubs and disaster prevention functions
Non-manufacturing total	8.8	*Contribution to growth in the whole non-manufacturing sector.	
(Other) Telecommunications & information	-3.5	-0.9	A lull in spending for mobile phone base stations

1-12. Trends in the Non-manufacturing Sector (Ⅱ)

Propped up by investment based on long-term planning, including in traffic/logistics infrastructure

- In the non-manufacturing sector, the planned increase in capital spending is driven by the transportation and real estate industries with investment for safety; disaster prevention and speeding-up measures in railways; real estate development, mainly in urban centers; and logistics facility development.
- Although the population decline continues to curb personal consumption, capital spending in the non-manufacturing sector is propped up by investment in response to the diversification of consumer spending and the emergence of e-commerce, as well as investment for infrastructure development in the run-up to the 2020 Tokyo Olympics/Paralympics.

Figure 1-16. Backdrop of Capital Spending in the Non-manufacturing Sector



1-13. Planned Capital Spending for FY2016, by Industry

Manufacturing

- Food & beverages (-5.0%→22.4%)
  Spending will increase led by investment in production rationalization and new dairy and processed livestock products.
- Chemicals (0.9%→26.8%)
  Spending shows an increase for the third consecutive year with increased investment in pharmaceuticals, cosmetics and hygiene goods, and the continued growth of R&D investment in a wide range of industries.
- Petroleum (-20.4%→30.1%)
  Spending is expected to increase with investment in maintenance & repair, rationalization and power generation projects at refineries.
- Cement, ceramics & glass (13.3%→13.6%)
  Despite a cutback in cement, spending shows the fourth consecutive year of positive growth, driven by a substantial spending increase in automobile components.
- Iron & steel (-2.8%→14.5%)
  Spending is expected to record a double-digit increase led by coke oven relining and facility replacement/consolidation.
- Non-ferrous metals (30.8%→33.4%)
  A double-digit increase is expected driven by capacity enhancement and maintenance/repair related to products for automobiles and electronic devices.
- General machinery (11.6%→8.5%)
  Planned capital spending shows a continued increase with capacity enhancement in products for aircraft and automobiles, and widespread projects for plant automation and networking.
- Electric machinery (32.5%→0.9%)
  Spending is expected to stay on a par despite product sophistication, mainly in electronic parts for automobiles, now that major capacity enhancement projects have been completed.
- Precision machinery (22.5%→ -0.5%)
  Spending is expected to decline slightly despite increased investment in medical equipment for new products and R&D, due to cutbacks in semiconductor manufacturing devices and measuring instruments.
- Automobiles (16.2%→14.2%)
  The fifth straight year of increased spending is expected driven by new models leveraging advanced technology for environmental, safety and comfort considerations, and product line renovation for greater production efficiency.

Non-manufacturing

- Wholesale & retail (-8.9%→15.5%)
  Double-digit growth in spending is expected with investment in new and existing supermarket outlets and resumption of outlet expansion in convenience stores.
- Real estate (6.1%→10.1%)
  Spending shows an increase for the fourth straight year, led by investment in large development projects in urban centers including the development of international business hubs and disaster prevention functions.
- Transportation (13.1%→15.1%)
  The fifth straight year of spending increase is upcoming with projects for speeding-up and safety/disaster prevention in railways and continued development of logistics facilities.
- Telecommunications & information (-13.8%→ -3.5%)
  Spending is expected to decline for the third consecutive year despite investment in data centers, due to continued cutbacks on fixed-line telecoms and LTE base station development.
- Services (19.6%→24.1%)
  A double-digit spending increase is expected driven by the replacement and refurbishment of hotels and the development of new attractions in theme parks.

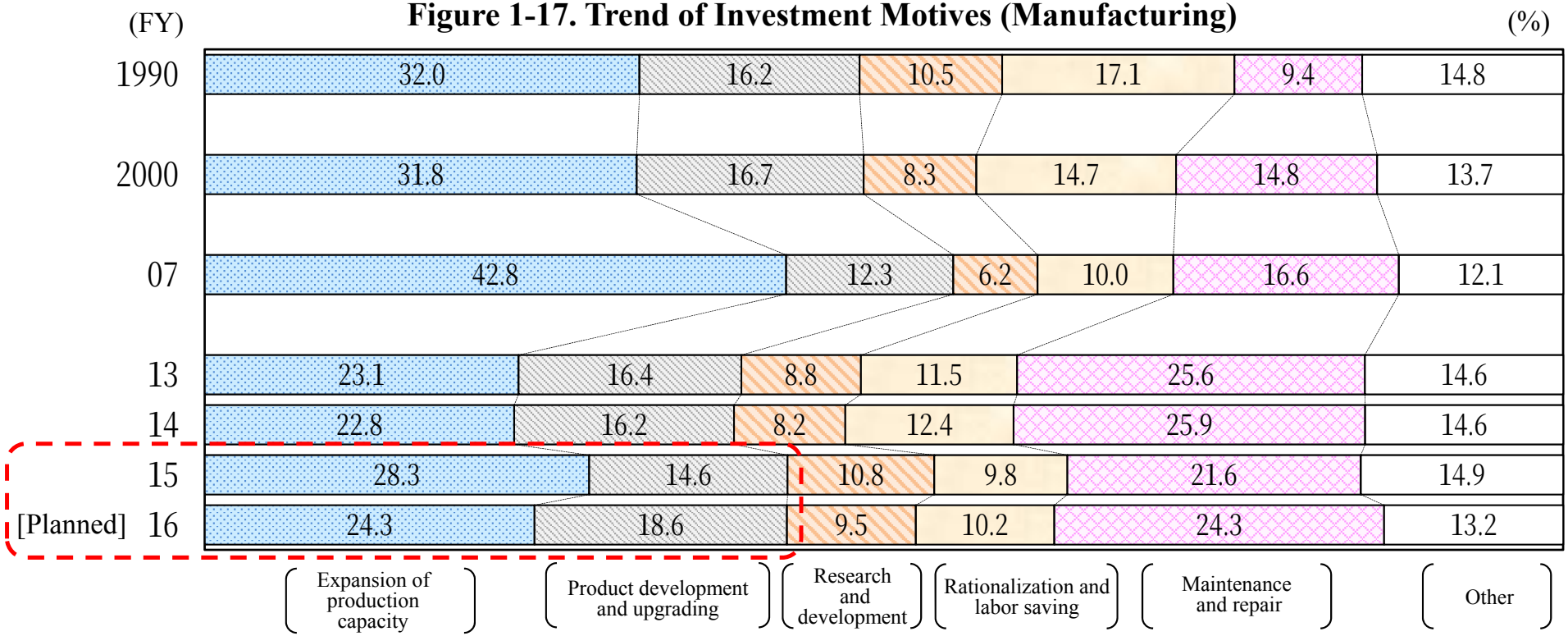
Note: Figures in parentheses ( ) indicate changes in capital spending in the industry concerned (FY2015 → FY2016).

1-14. Investment Motives (Manufacturing)

"Expansion of production capacity" and "product development and upgrading" combined account for over 40% of the motives.

- Looking at investment motives in the manufacturing sector for FY2015, the weight of "expansion of production capacity" rose on the previous year for the first time since the 2008 financial crisis, while that of "maintenance and repair" declined for the first time since FY2010.
- In FY2016, the weight of "expansion of product capacity" declines slightly but that of "product development and upgrading" increases. Thus, the two motives combined maintain the level of FY2015, exceeding 40% of the investment motives. Despite the slight increase in the weight of "maintenance and repair," the survey results indicate manufacturers' forward-looking attitude toward investment.

Figure 1-17. Trend of Investment Motives (Manufacturing)



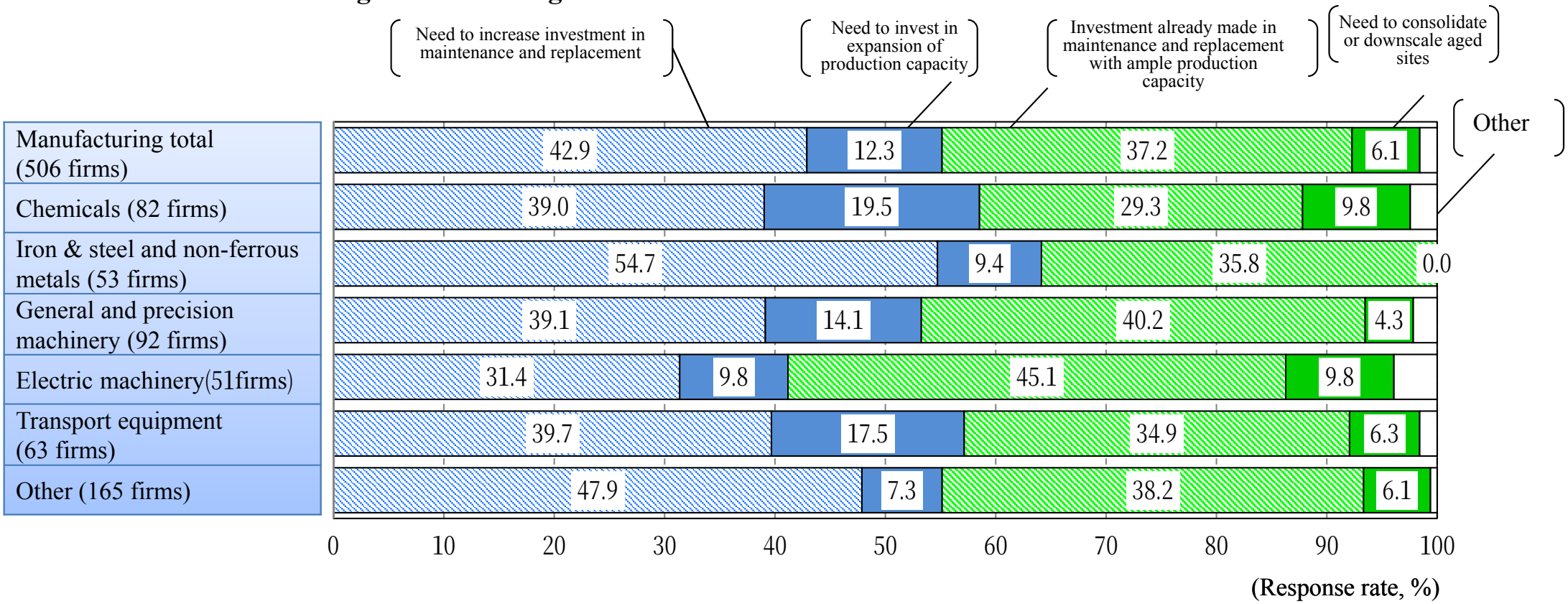
Note: Share of each investment motive in total capital spending in terms of value.

1-15. Current Situation of Primary Domestic Production Base

About 40% of manufacturers recognize the need to increase investment in maintenance and replacement

- Roughly 40% of manufacturers replied that they need to increase investment in maintenance and replacement, indicating the importance of spending on maintenance and replacement as facilities age. Also, over 10% of manufacturers felt that it was necessary to invest in the expansion of production capacity.
- By industry, many recognized the necessity of maintenance and replacement investment in iron & steel and non-ferrous metals. Some also cited the necessity of consolidating or downscaling aged production sites, particularly in chemicals.

Figure 1-18. Recognition of Overall Situation of Domestic Production Base



1-16. Recognition of Capital Spending Level

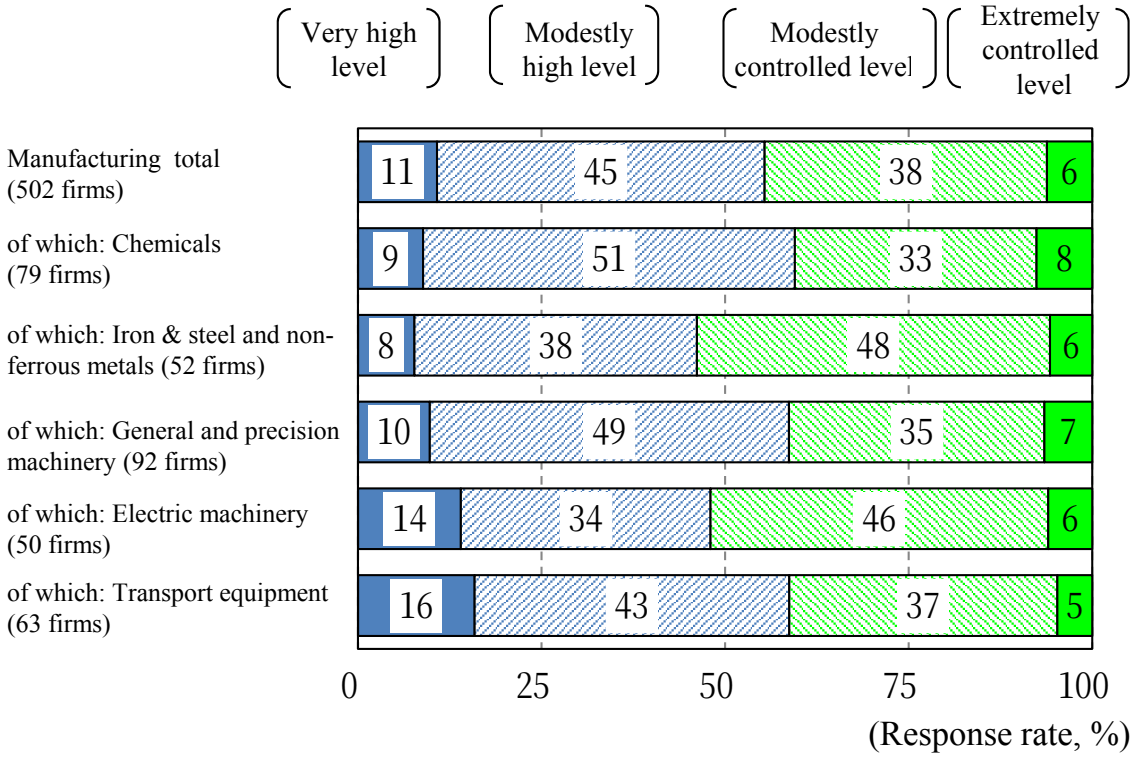
50:50 split in the recognition of capital spending level: high or controlled

- In both the manufacturing and non-manufacturing sectors, some 50% of the respondents considered that their capital spending was at a high level, while the remaining 50% saw it as controlled.
- By industry, the percentage of "high level" is significantly high in transport equipment, while many electric machinery manufacturers reported "modestly controlled" or "extremely controlled" capital spending. In the non-manufacturing sector, the shares of "very high" and "modestly high" levels of capital spending are larger in electric power & gas than in the sector as a whole.

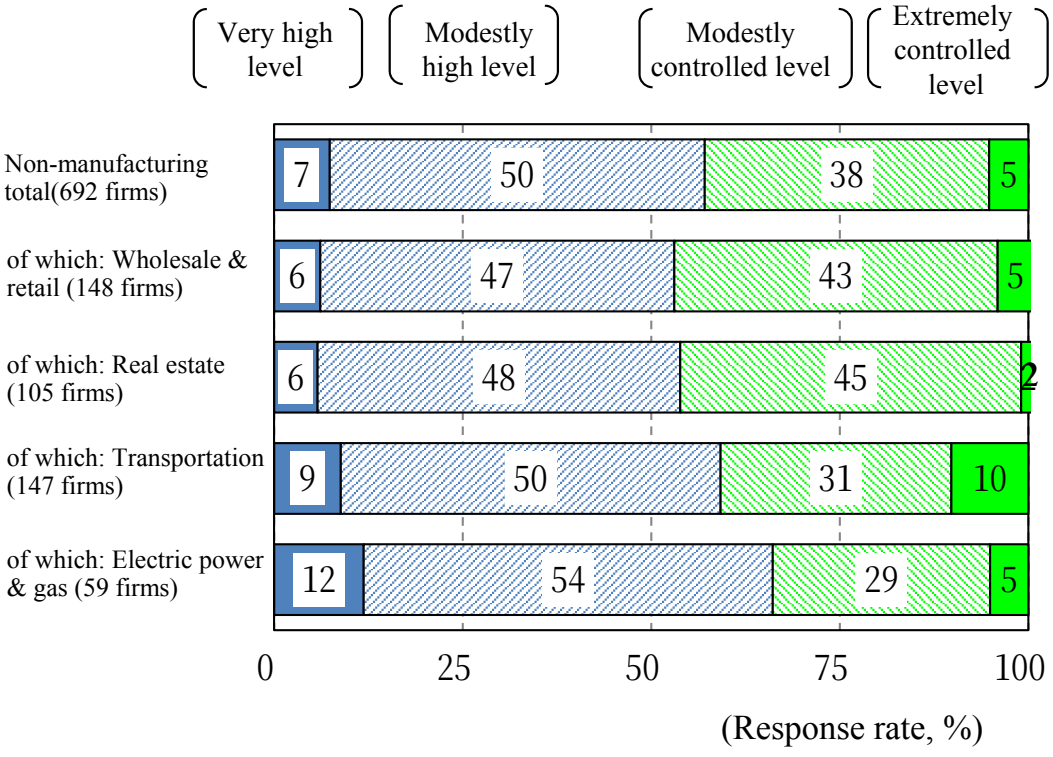
Figure 1-19. Recognition of Domestic Capital Spending over the Last Three Years

(Comparison with profit level, business scale, pre-2008 financial crisis level etc.)

(1) Manufacturing



(2) Non-manufacturing



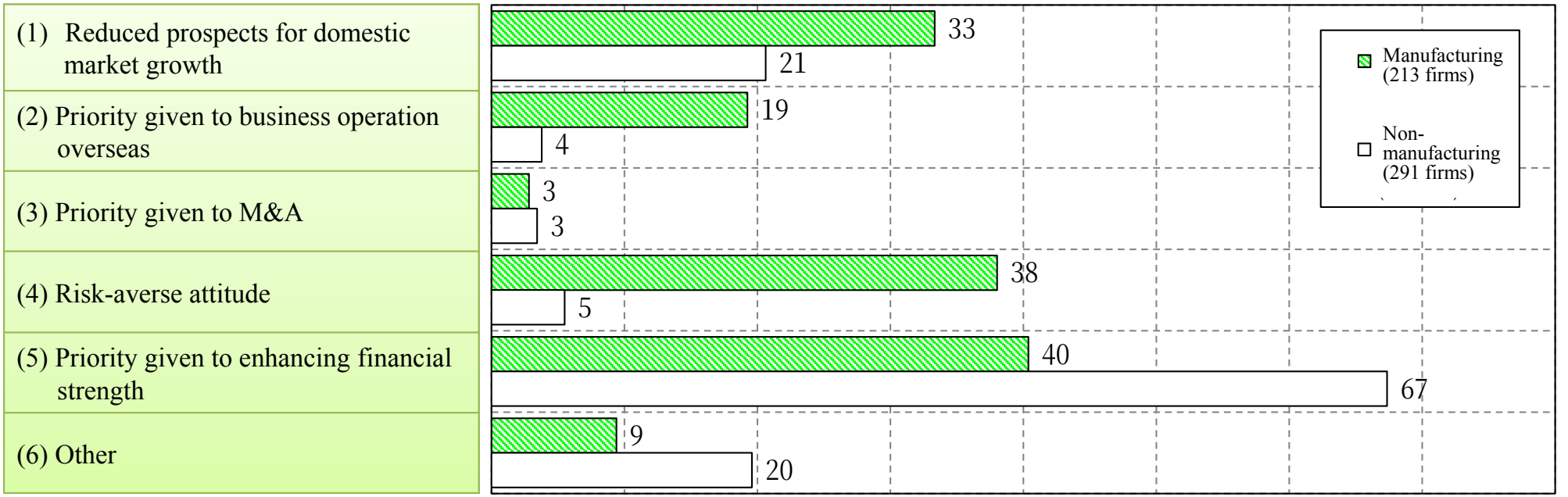
1-17. Recognition of Capital Spending Level

Enhancing financial strength, risk aversion and reduced prospects for domestic market growth are major reasons for controlled investment.

- In both the manufacturing and non-manufacturing sectors, primary reasons for controlling capital spending include priority given to enhancing financial strength (item **5** below) and reduced prospects for domestic market growth (item **1**). Many manufacturers also cited risk-averse attitude (item **4**).

Figure 1-20. Reasons for Controlling Capital Spending

(Answers given by firms reporting controlled levels of capital spending in Figure 1-19)



Note: Up to two answers could be chosen.

2. Attitude 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 future corporate growth, survival and improvement of business valuation

Figure 2-1-1. Composition of Investment in a Broader Sense

Item	Scale (by value) (annual amount for all corporations)	Characteristics/description
(1) Domestic tangible fixed asset investment	(approx. JPY 60 trillion)	Acquisition of fixed assets necessary for maintaining and expanding production and sales activities
(2) Domestic intangible fixed asset investment	(approx. JPY 10 trillion)	Acquisition of software, patents, trademark rights, etc.
(3) Overseas tangible fixed asset investment	(approx. JPY 10 trillion)	Investment in tangible fixed assets overseas
(4) M&A (domestic and overseas)	(approx. JPY 15 trillion)	Mergers and acquisitions to increase the scope and scale of business
(5) R&D expenditure	(approx. JPY 13 trillion)	Research activities for future technological advantages and product development
(6) Human investment	(varies depending on definition)	Human resource development and training to improve corporate competitiveness in general

Investment in a narrow sense

Approx. JPY 50 trillion in total

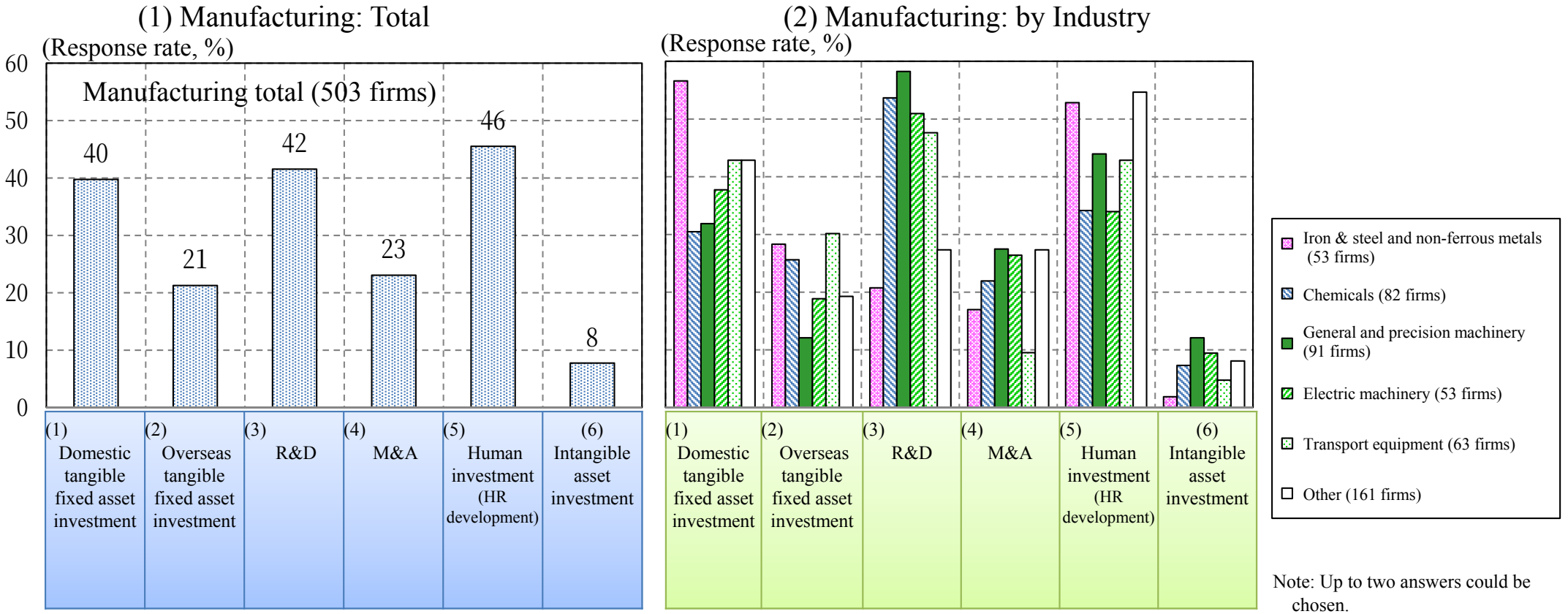
Investment in a broader sense

2-1-2. Priority of "Investment in a Broader Sense"

Three priorities: human investment, R&D and domestic tangible fixed asset investment

- Human investment, R&D and domestic tangible fixed asset investment are the three pillars of "investment in a broader sense."
- Among the key industries, iron & steel and non-ferrous metals give top priority to domestic tangible fixed asset investment, while other industries including general and precision machinery, electric machinery and transport equipment prioritize R&D. Human investment is another priority across the board, particularly in iron & steel and non-ferrous metals.

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



Note: Up to two answers could be chosen.

2-2. Manufacturing R&D and Mother Plant Functions

2-2-1. R&D Expenditure

Robust growth continues.

- Planned R&D expenditure for FY2016 (consolidated basis) shows an increase of 4.0% in total, and 3.9% in manufacturing.
- The 0.5% decline planned in electric machinery is more than offset by a continued increase of 4.9% in transport equipment mainly for environmental and safety technology with pilot projects on advanced driving support systems. Planned R&D expenditure also shows an increase of 6.0% in chemicals led by priority segments including new material development and pharmaceuticals, and 5.8% in general machinery driven by environmental technology and medical equipment in addition to core businesses.

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

	FY2015 (actual) year-on-year (709 firms)	FY2016 (planned) year-on-year (803 firms)	Composition ratio, FY2015
Total	4.2	4.0	100.0
Manufacturing total	4.3	3.9	98.5
Transport equipment	4.3	4.9	41.1
General machinery	3.9	5.8	9.3
Electric machinery	3.7	- 0.5	22.2
Chemicals	4.6	6.0	15.3
Non-manufacturing total	1.0	8.8	1.5

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

2-2-2. Prospects for R&D Expenditure and R&D Efficiency (Manufacturing)

R&D expenditure stays almost unchanged in many firms.

- Many respondents expect their R&D expenditure to remain almost unchanged as a percentage of sales over the next three years, but about 30% of them anticipate an increase in absolute value.
- Over 60% of the firms think that R&D efficiency has improved over the recent 10 years.

Figure 2-2-2. Prospects for R&D Expenditure over Next 3 Years (Compared with Recent 3 Years)

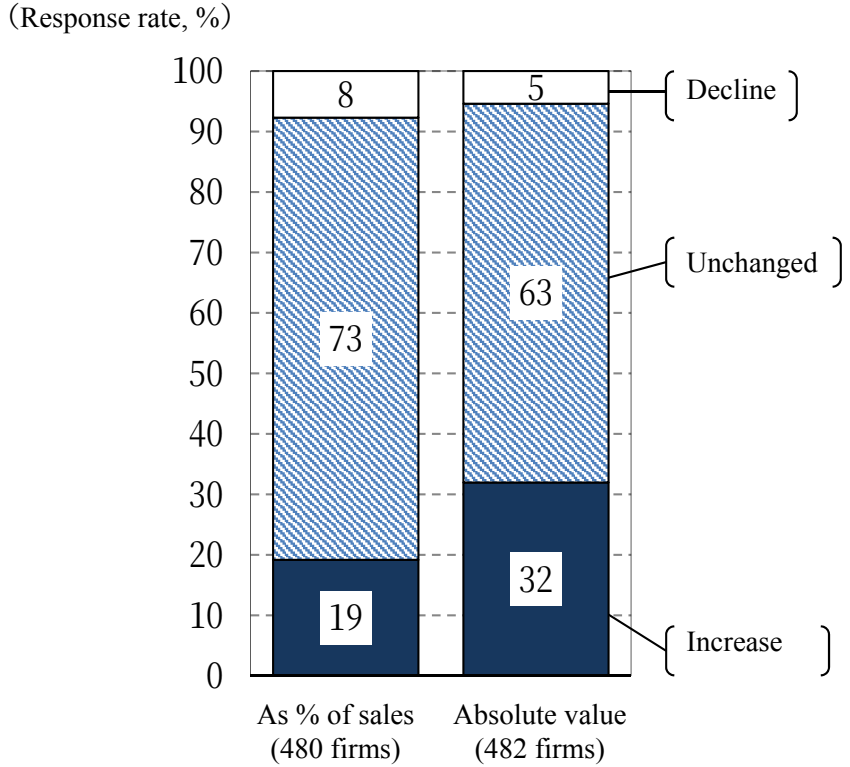
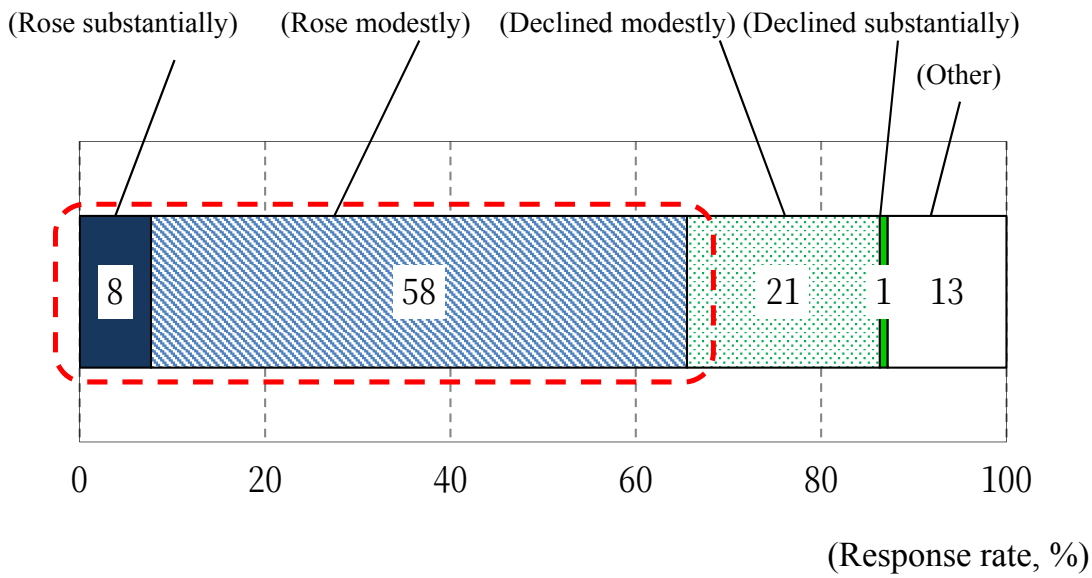


Figure 2-2-3. R&D Efficiency Compared with 10 Years Ago (Manufacturing Total: 351 Firms)

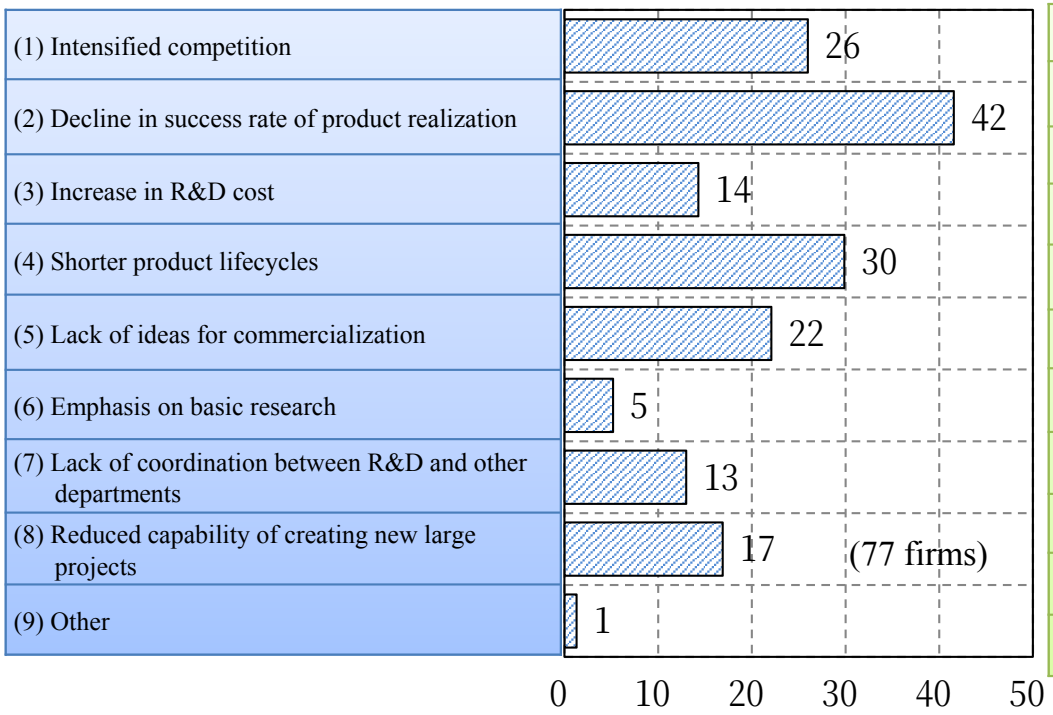


2-2-3. Factors for Reduced R&D Efficiency and Challenges (Manufacturing)

Reduced R&D efficiency is largely attributable to the decline in success rate.

- Asked about factors behind the reduced R&D efficiency, the relevant firms cited decline in the success rate of product realization (item **2**, below left), shorter product lifecycles (item **4**), lack of ideas for commercialization (item **5**), and intensified competition (item **1**), among others.
- Major challenges include delay in product realization (item **c**, below right) and theme selection and lack of ideas (item **b**), and few firms recognize collaboration with other firms or universities (items **e**, **f** and **g**) as challenges.

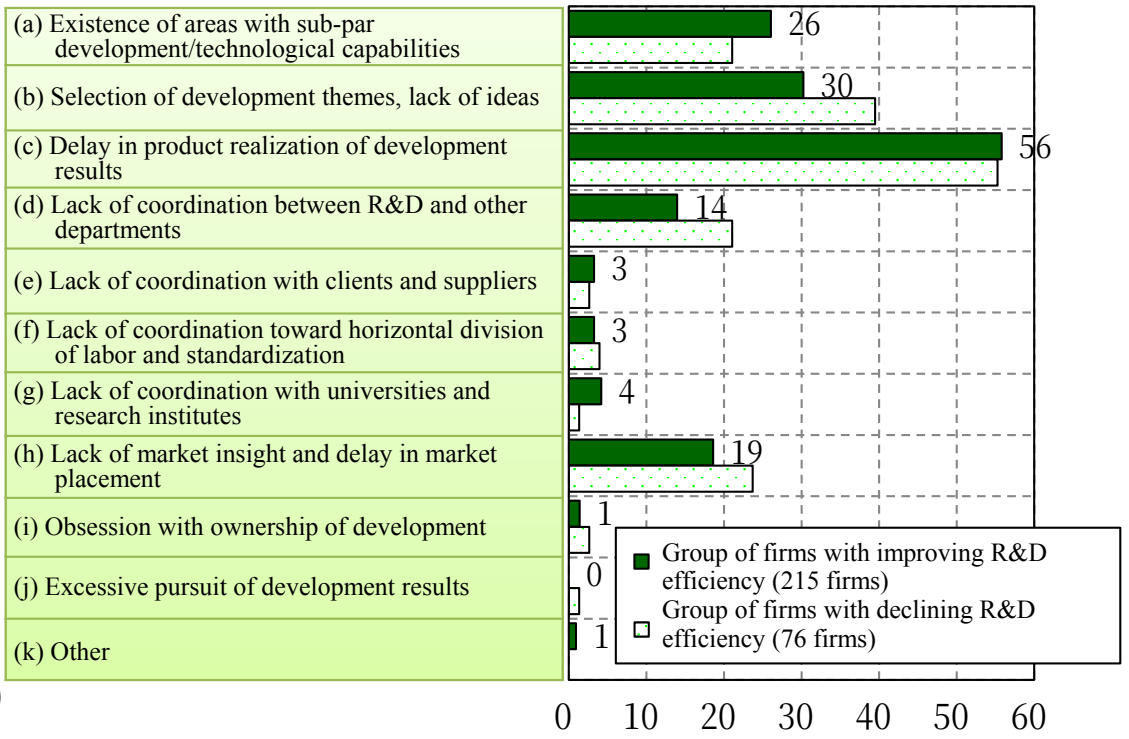
Figure 2-2-4. Factors for Reduced R&D Efficiency



Note: Up to two answers could be chosen.

(Response rate, %)

Figure 2-2-5. Challenges for R&D



Note: Up to two answers could be chosen.

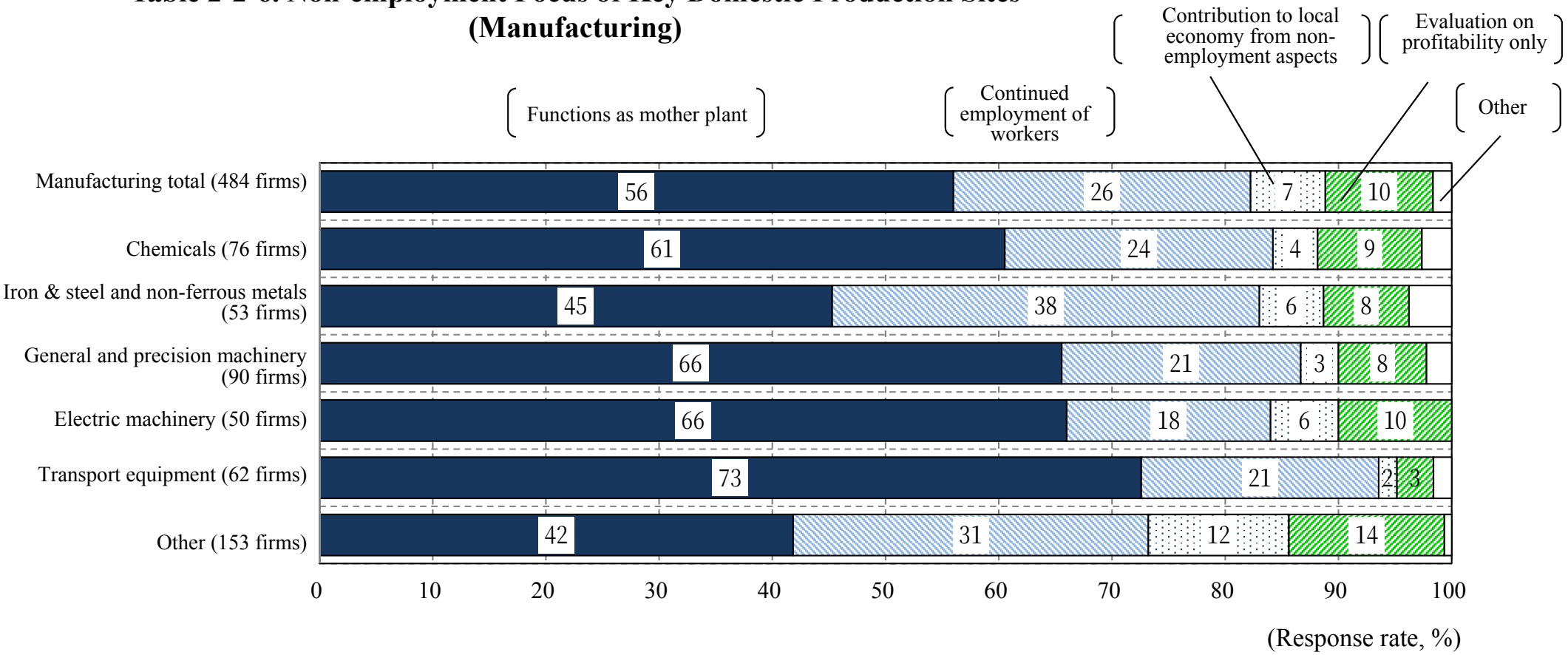
(Response rate, %)

2-2-4. Evaluation of Key Domestic Production Sites, Mother Plant Functions (Manufacturing) (Ⅰ)

Over half of the firms emphasize the function of key domestic production sites as mother plants.

- Asked about the emphasis placed on their key domestic production sites other than profitability, more than half of the respondents cited their functions as mother plants. Other answers included “continued employment of workers” and “contribution to the local economy from non-employment aspects.” Thus only 10% of the firms solely focused on profitability in their assessment.

Table 2-2-6. Non-employment Focus of Key Domestic Production Sites (Manufacturing)

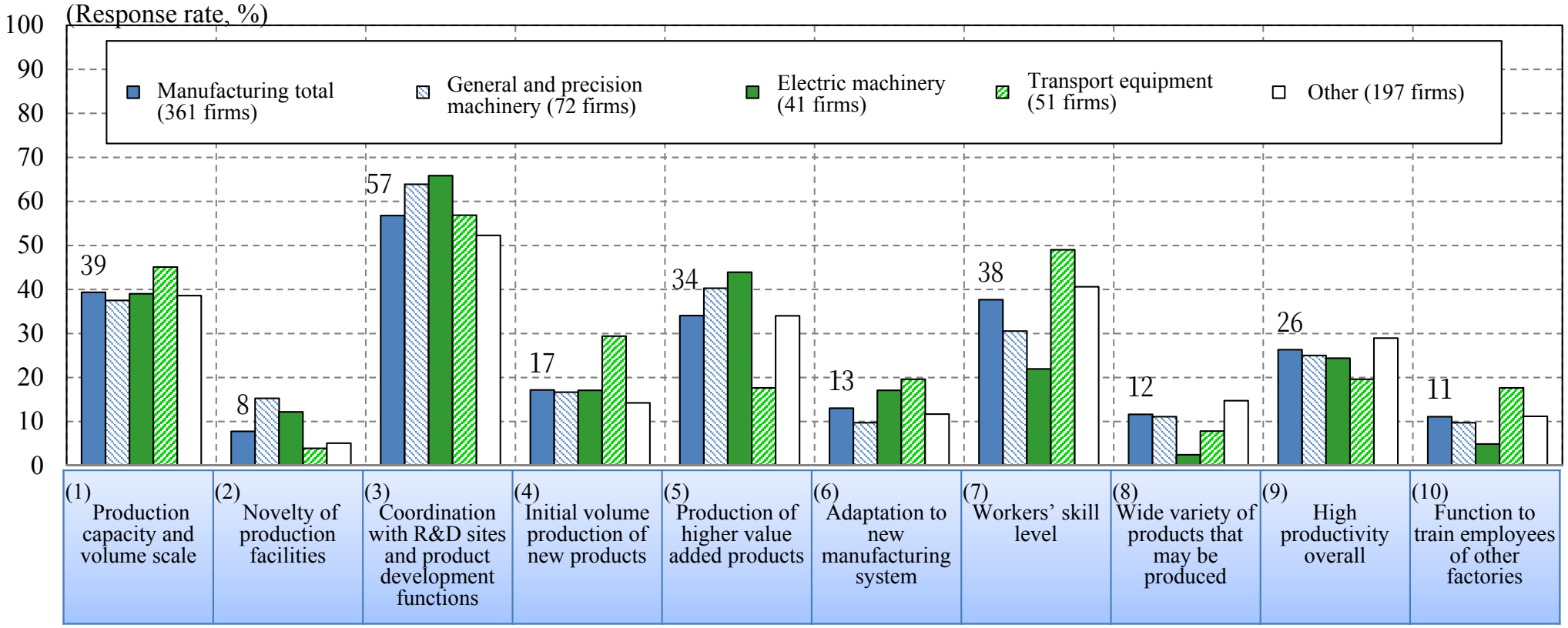


2-2-5. Evaluation of Key Domestic Production Sites, Mother Plant Functions (Manufacturing) (Ⅱ)

Mother plants are characterized by development functions and production capacity.

- The most frequently cited advantages of mother plants over other factories include coordination with R&D sites and product development functions (item **3** below) and production capacity and volume scale (item **1**). A fair number of respondents cited workers' skill levels (item **7**) and production of higher-valued added products (item **5**). Few firms chose novelty of production facilities (item **2**).

Figure 2-2-7. Advantages of Mother Plants over Other Factories (Manufacturing)



Note: Up to three answers could be chosen.

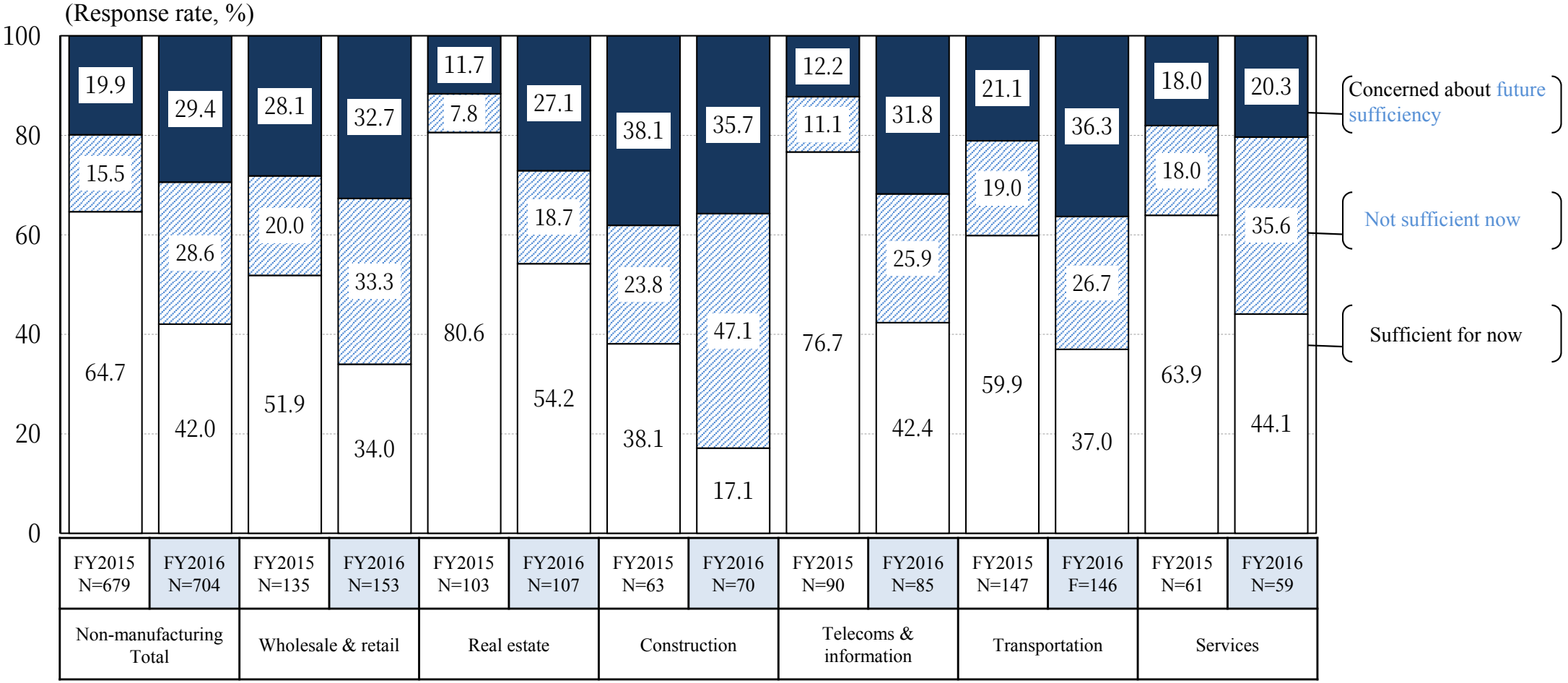
2-3. Human Investment (Human Resource Development)

2-3-1. Labor Shortage (Non-manufacturing)

Securing workforce is a major concern, particularly in construction.

- Many non-manufacturers are concerned about securing sufficient numbers of workers, particularly in construction. The concern about labor shortage is rising as a whole, in comparison with the result of last year's survey.

Figure 2-3-1. Labor Force Situation at Present and in Near Future (Non-manufacturing)

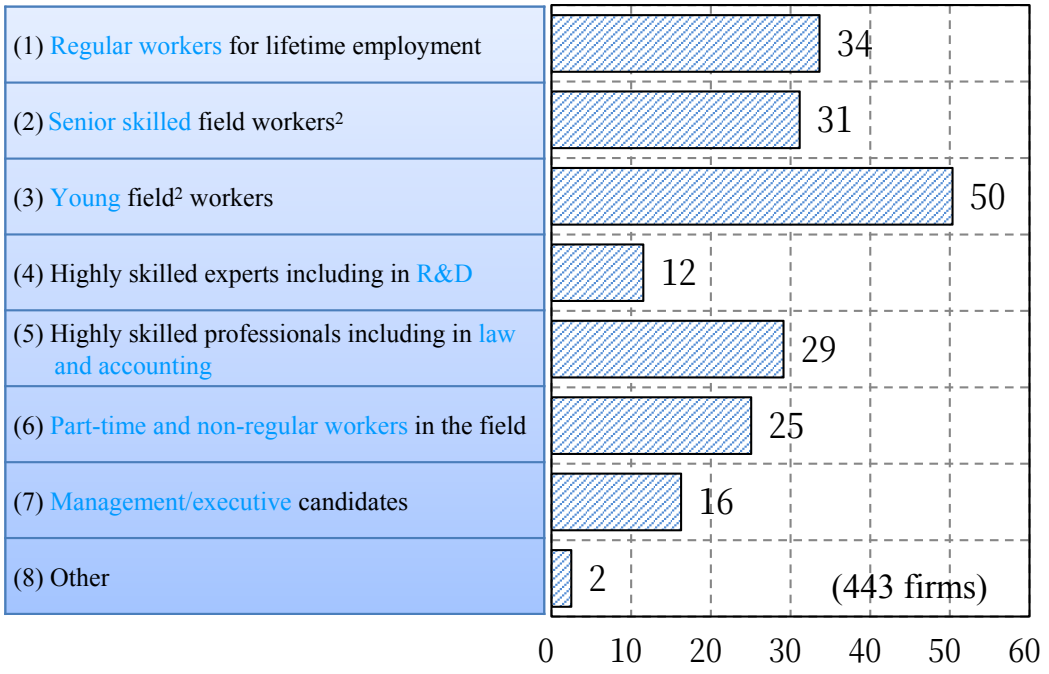


2-3-2. Details of Labor Shortage and Countermeasures (Non-manufacturing)

Skilled field workers are in short supply.

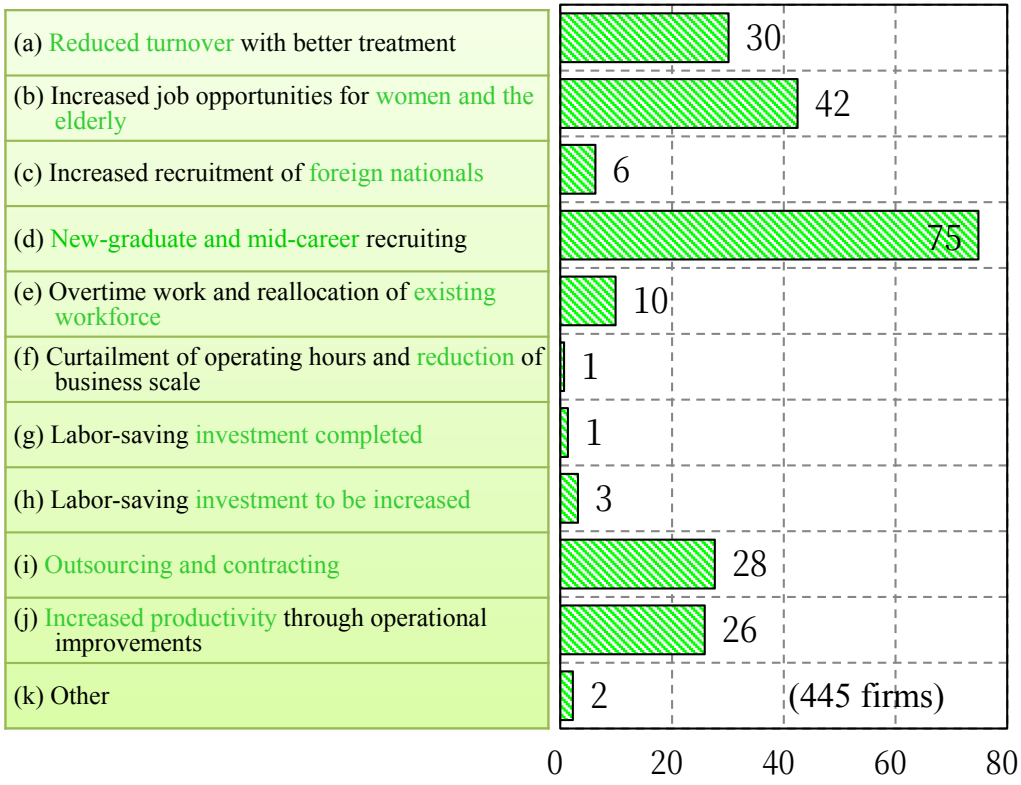
- In the non-manufacturing sector, labor shortage is most acutely felt in young field workers (item **3**, below left) in jobs in construction, transportation, bus driving, train operating and so forth, followed by senior skilled workers (item **2**).
- The most popular countermeasure is new-graduate and mid-career recruiting (item **d**, below right), followed by increased job opportunities for women and the elderly (item **b**). Far fewer respondents cited increased recruitment of foreign nationals (item **c**).

Figure 2-3-2. Workers in Short Supply (Non-manufacturing)



Notes: 1. Up to three answers could be chosen.
2. Workers engaging in tasks requiring specific qualifications or training, such as skilled workers and operators on construction sites.

Figure 2-3-3. Response to Labor Shortage (Non-manufacturing)



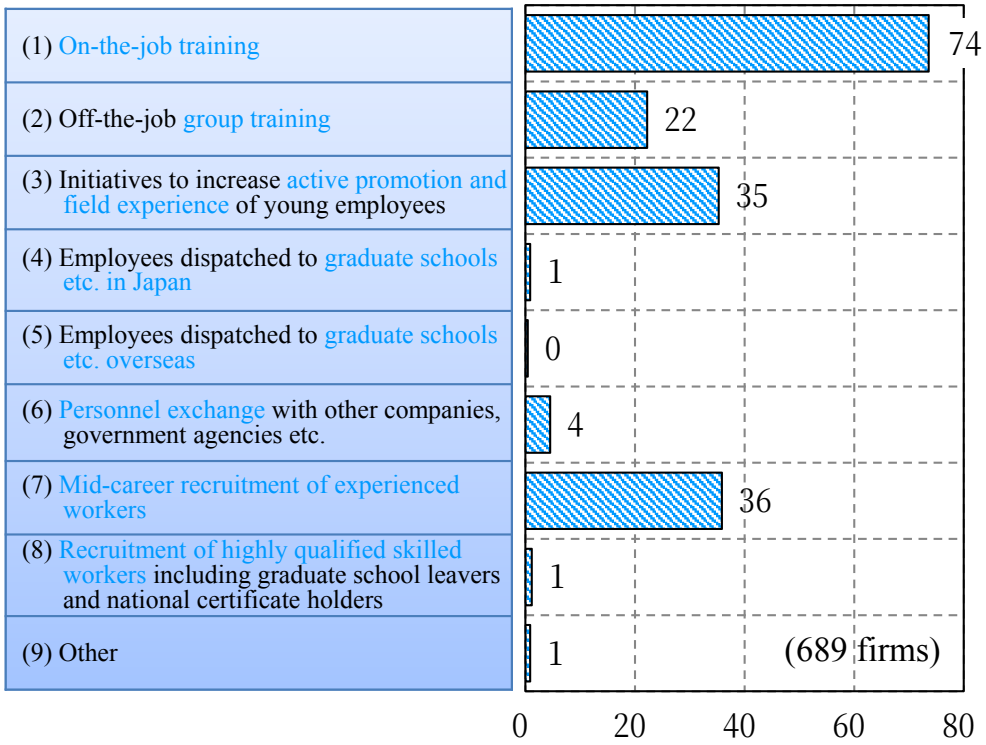
Note: Up to three answers could be chosen.

2-3-3. HR Development and Capital Spending (Non-manufacturing)

OJT-focused HR development and labor-saving software development are the keys.

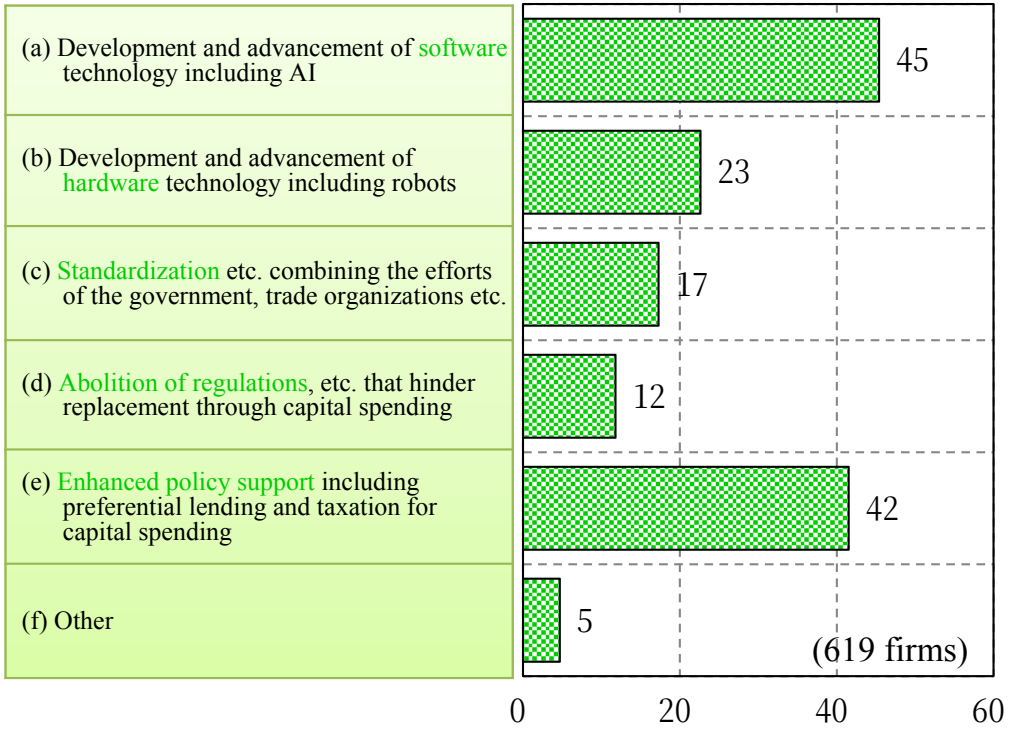
- On-the-job training (item **1**, below left) is the primary focus of human resource development, followed by mid-career recruitment of experienced workers (item **7**).
- As necessary labor-saving measures, many respondents cited development and advancement of software technology (item **a**, below right) and enhanced policy support (item **e**).

Figure 2-3-4. Focus of Human Resource Development and Human Investment (Non-manufacturing)



Note: Up to two answers could be chosen. (Response rate, %)

Figure 2-3-5. Necessary Measures for Labor Saving through Capital Spending (Non-manufacturing)



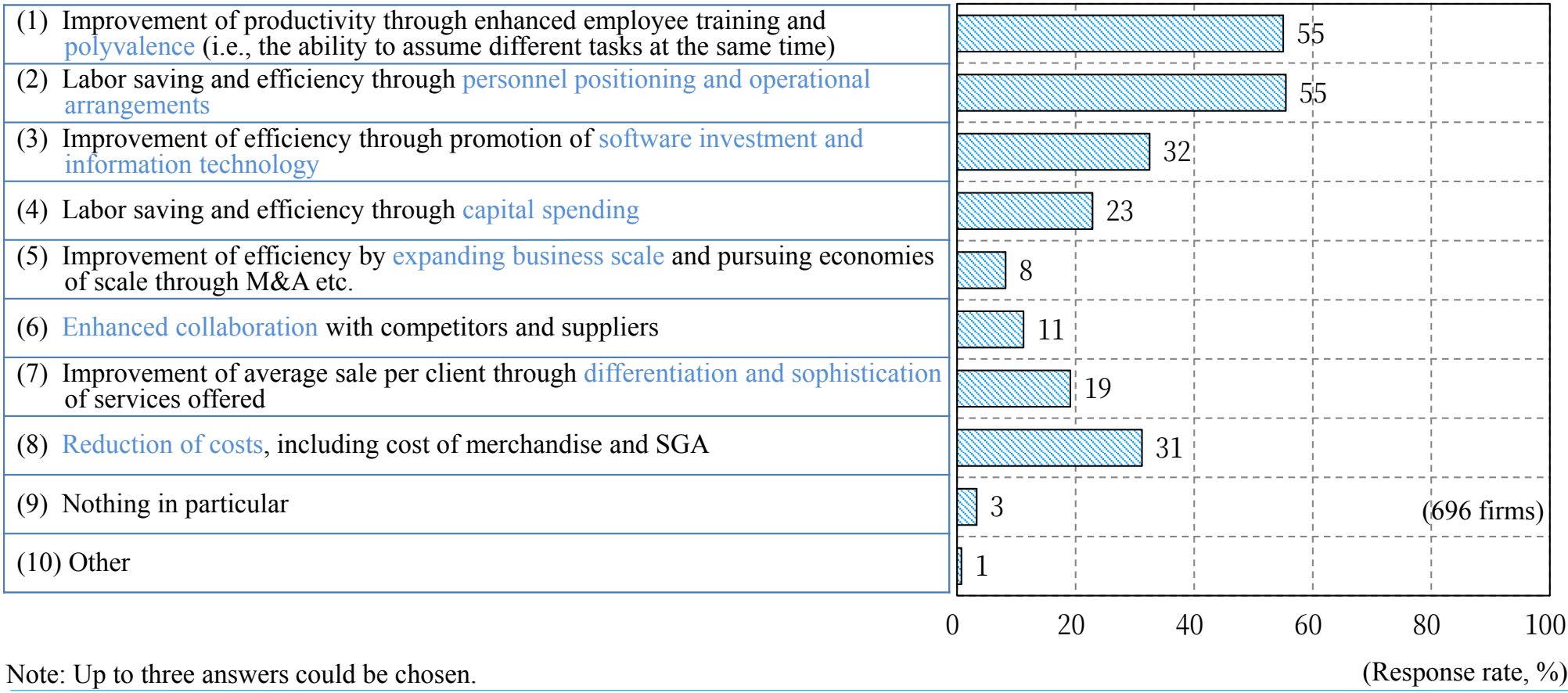
Note: Up to two answers could be chosen. (Response rate, %)

2-3-4.Focus of Efforts for Productivity Improvement (Non-manufacturing)

Focus on skills and software to improve productivity

- In order to improve productivity, many non-manufacturers are focusing on polyvalence of employees (item **1** below), personnel management skills including operational arrangements (item **2**) and software investment and related initiatives (item **3**). A smaller number of respondents cited labor saving and efficiency through capital spending (item **4**).

Figure 2-3-6. Focus of Efforts for Productivity Improvement (Non-Manufacturing)



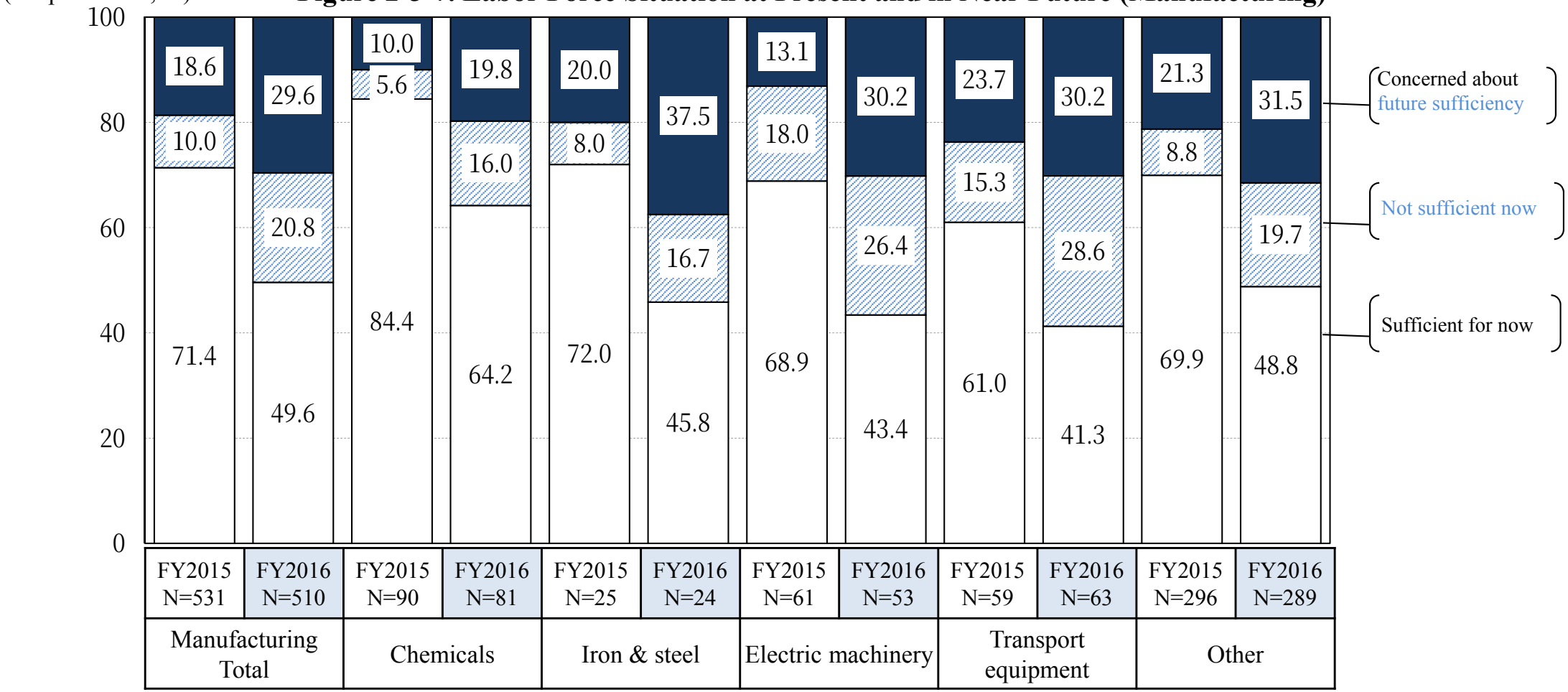
Note: Up to three answers could be chosen.

2-3-5. Labor Shortage (Manufacturing)

About 50% of manufacturers are concerned about how to secure workforce.

- According to the FY2016 survey, 50% of manufacturers do not have a sufficient workforce or are concerned about future sufficiency. In comparison with the FY2015 survey, the result points to rising concern about how to secure workforce in general.

Figure 2-3-7. Labor Force Situation at Present and in Near Future (Manufacturing)

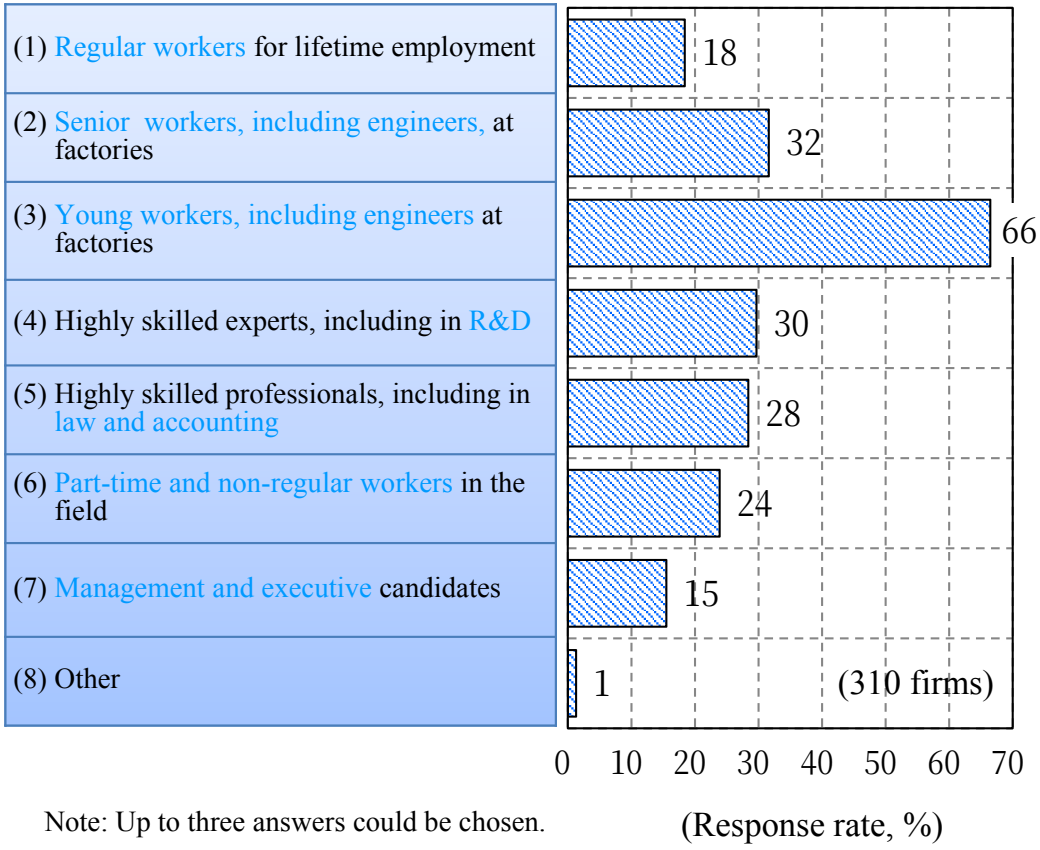


2-3-6. Details of Labor Shortage and Countermeasures (Manufacturing)

Strong concern about the shortage of young engineers

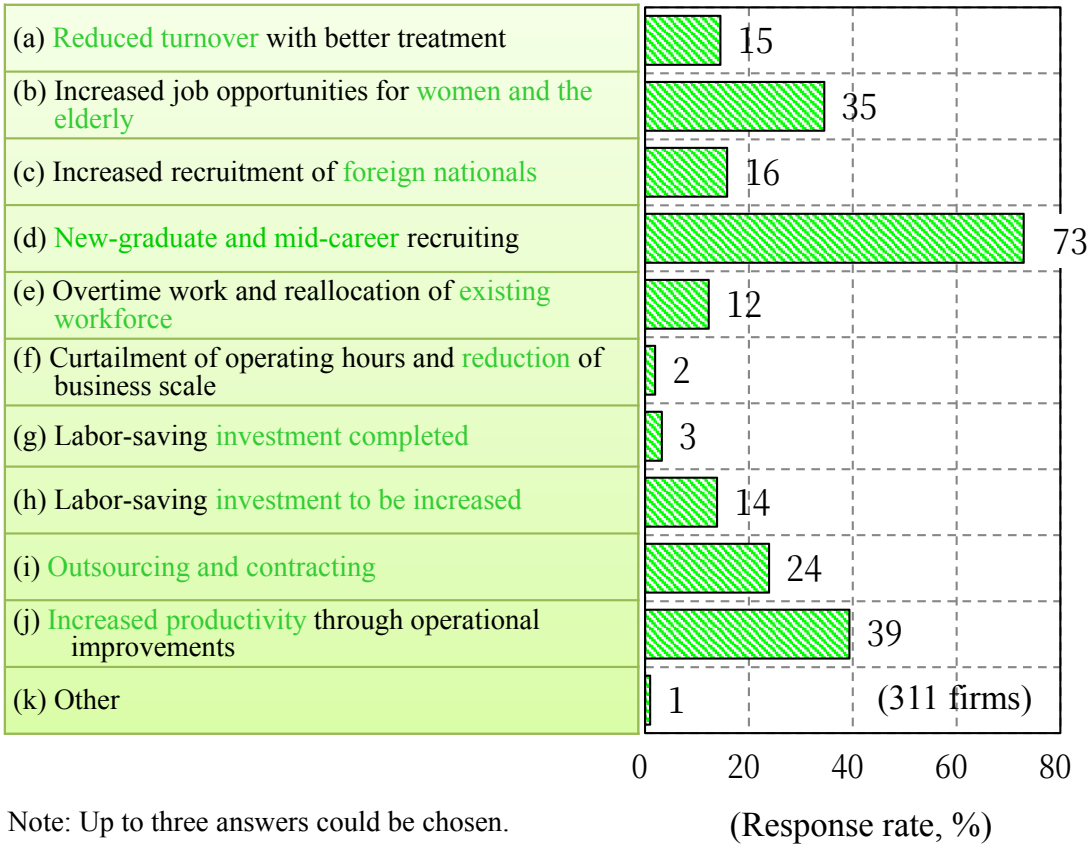
- In the manufacturing sector, the labor shortage is perceived to be particularly acute at production sites, as shortage of young factory engineers (item **3**, below left) was cited most frequently, followed by senior workers (item **2**) and R&D experts (item **4**).
- Key countermeasures include enhanced recruiting (item **d**, below right), followed by increased job opportunities for women and the elderly (item **b**). Far fewer respondents cited increased recruitment of foreign nationals (item **c**).

Figure 2-3-8. Workers in Short Supply (Manufacturing)



Note: Up to three answers could be chosen.

Figure 2-3-9. Response to Labor Shortage (Manufacturing)



Note: Up to three answers could be chosen.

2-4. Capital Spending Overseas and M&A

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

- Planned capital spending overseas (consolidated basis) shows a decline of 1.3% overall.
- In the manufacturing sector, spending is expected to turn up, largely driven by a substantial increase in chemicals, despite continued cutbacks on spending in transport equipment and reduced investment in both general and electric machinery. Planned spending in the non-manufacturing sector shows the first decline in seven years, led by mining.

Figure 2-4-1. Trend of Capital Spending Overseas (Consolidated Basis) (Year-on-year, %)

	FY2015 (actual) (762 firms)	FY2016 (planned) (928 firms)
Total	- 1.6	- 1.3
Manufacturing total	- 3.0	4.7
Chemicals	7.4	30.3
General machinery	16.5	- 5.2
Electric machinery	17.7	- 0.2
Transport equipment	- 9.0	- 1.1
Non-manufacturing total	1.8	- 13.2
Retail	- 11.6	22.8
Real estate	64.0	20.1
Mining	0.0	- 29.1

2-4-2. Overseas Capital Spending Ratio

Capital spending overseas follows a downtrend as a percentage of total capital spending.

- The overseas capital spending ratio (consolidated basis) for FY2016 is 28.3% in total and 34.6% in manufacturing. A decline for the third consecutive year is planned in manufacturing due to the growth rate of domestic spending surpassing that of spending overseas.
- By industry, a decline is planned in transport equipment, which carries a considerable weight, but the overseas capital spending ratio in the industry remains at a high level compared with other key industries.

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

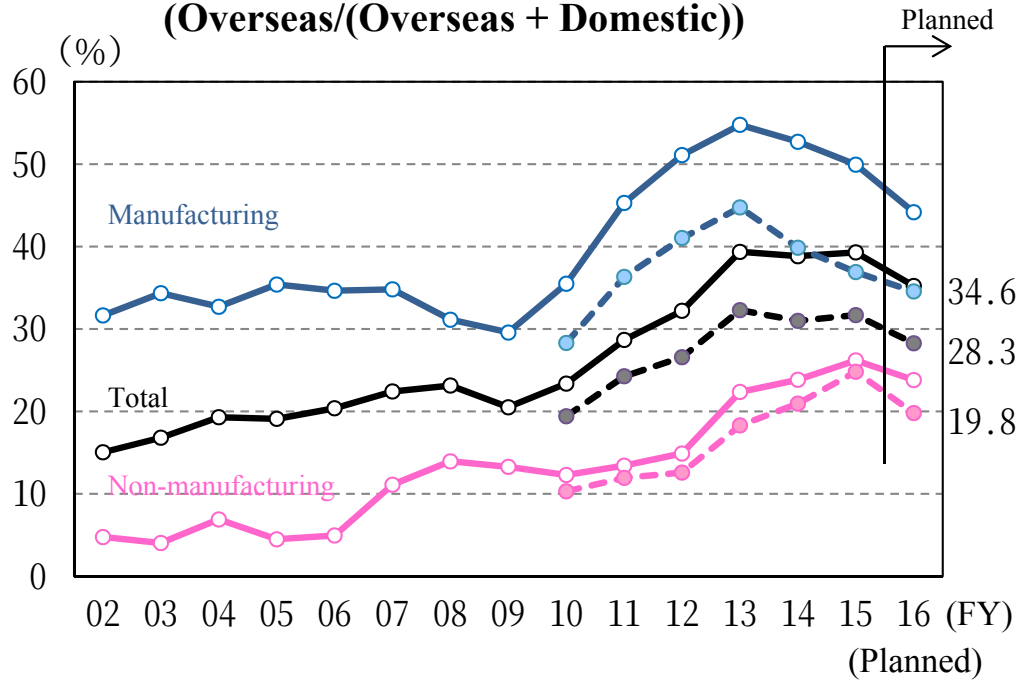
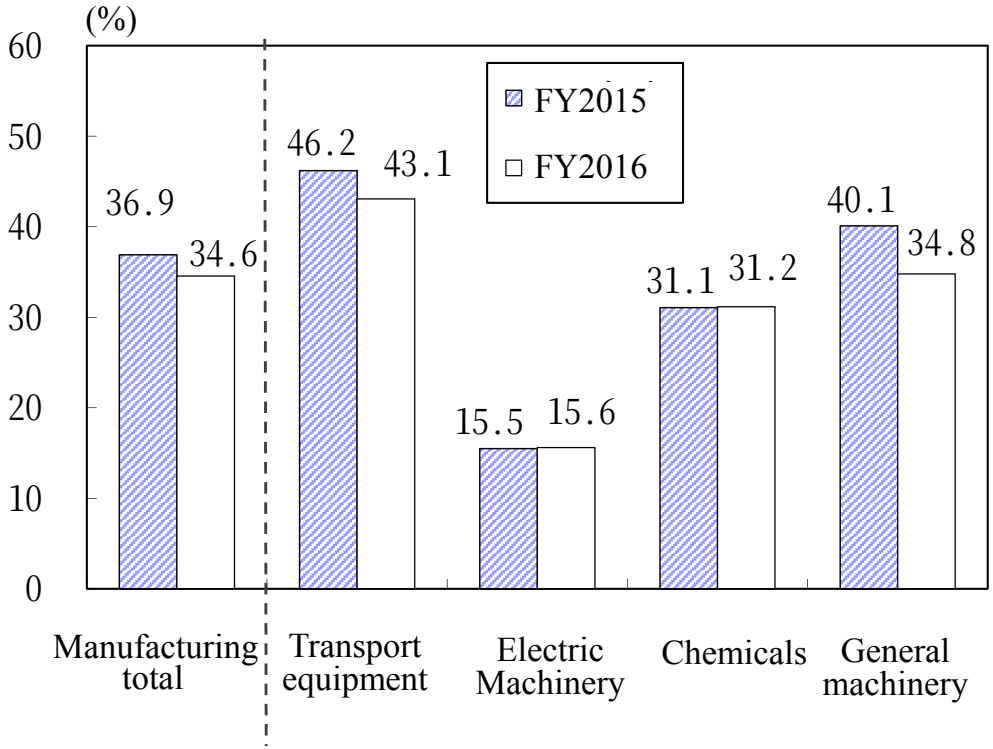


Figure 2-4-3. Overseas Capital Spending Ratio by Industry (Consolidated Basis)

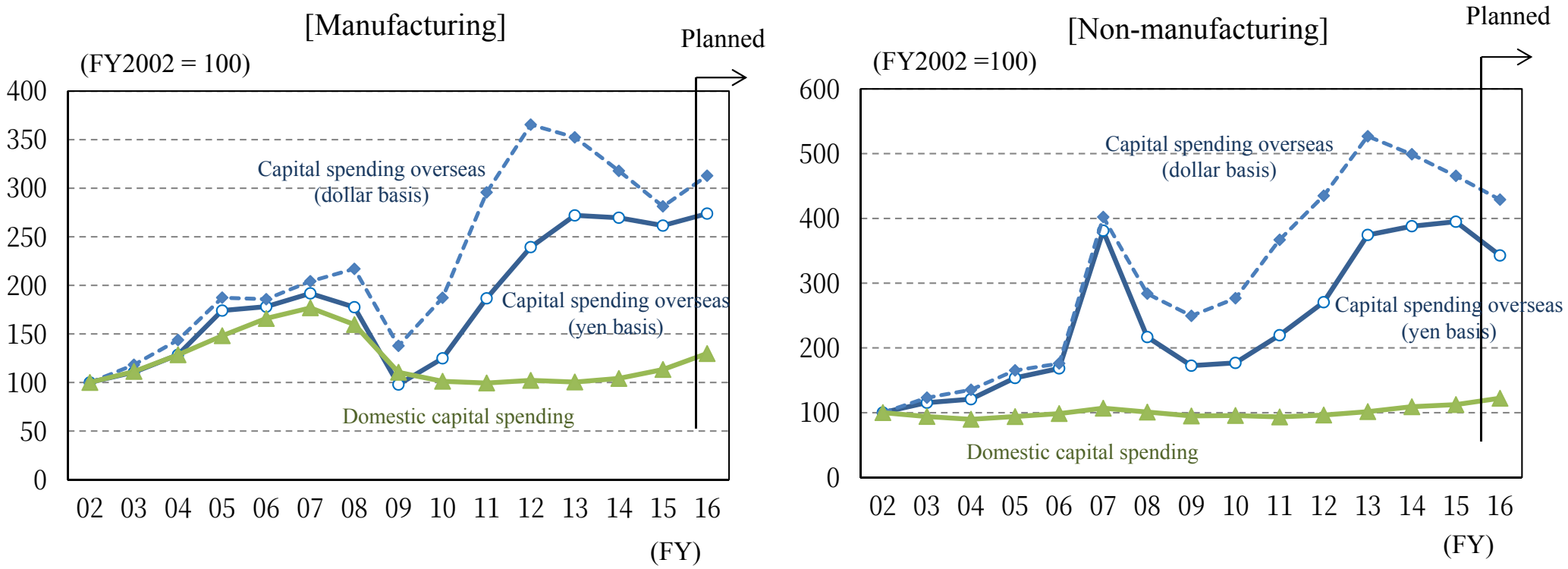


Notes: Solid lines: consolidated overseas/(non-consolidated domestic + consolidated overseas)
Dotted lines: consolidated overseas/(consolidated domestic + consolidated overseas)
Data on consolidated domestic capital spending are available from the FY2010 and subsequent surveys.

2-4-3. Trend of Capital Spending Overseas (Time Series)

- Converted into US dollars using the foreign exchange rates assumed by the firms, capital spending in FY2015 (actual) contracted in both the manufacturing and the non-manufacturing sectors (down 11.5% and 6.7% respectively), largely due to the strong yen.
- Capital spending for FY2016 (planned) shows an increase in both yen and dollar terms.

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



Notes: 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 112.8 for manufacturing, USD 1 = JPY 114.0 for non-manufacturing) are used for FY2016.

2-4-4. Return of Investment to Japan (Manufacturing)

Actual and outlook data both indicate some 10% of investment returning to Japan.

- In view of the Abenomics-induced correction to the unbalanced exchange rates in favor of the yen, 12% of the firms have reportedly brought back investment to Japan from abroad. The three-year outlook indicates that 8% of the companies will do so. However, 70% of the respondents consider that the return of investment will not drive domestic capital spending.

Figure 2-4-5. Return of Investment to Japan (Manufacturing)

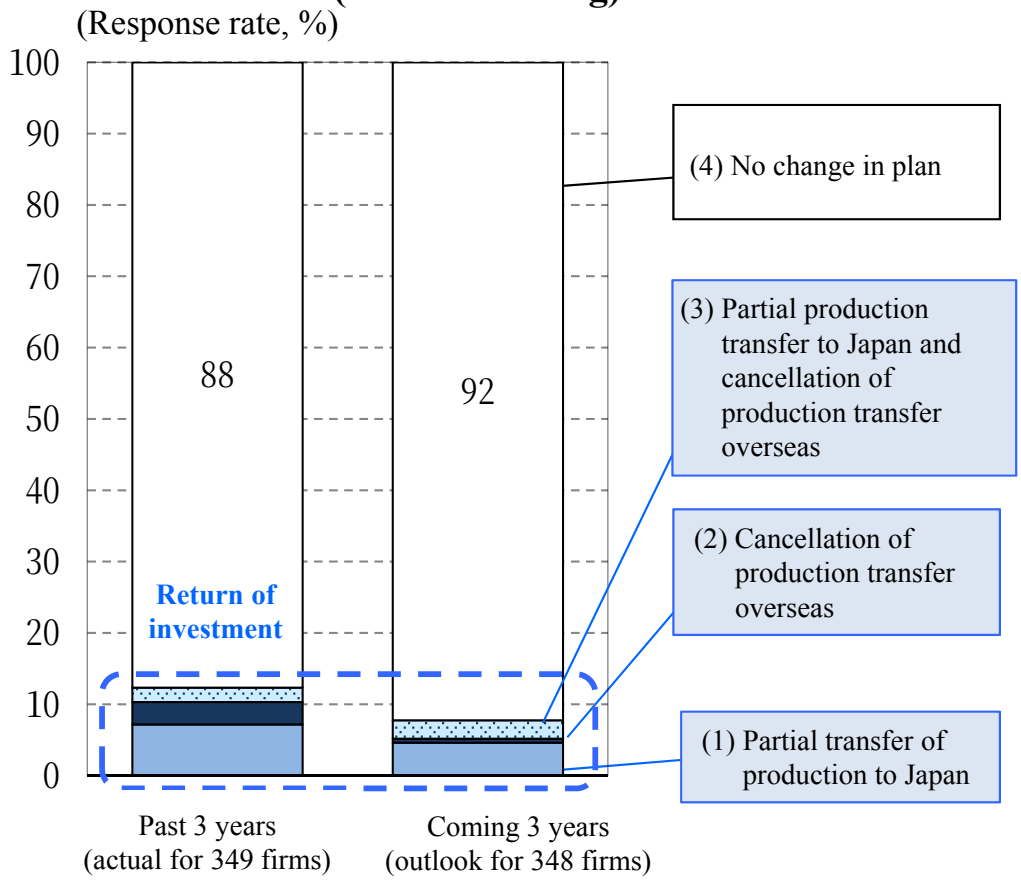
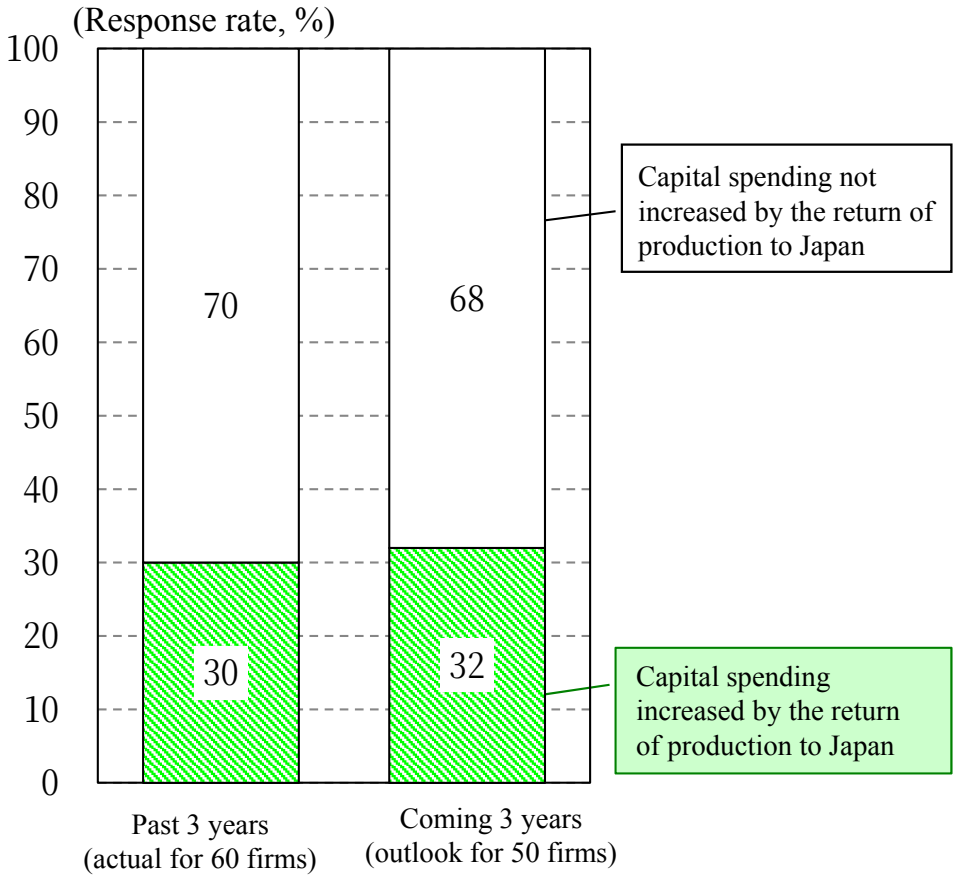


Figure 2-4-6. Impact of Return of Investment to Japan on Capital Spending (Manufacturing)

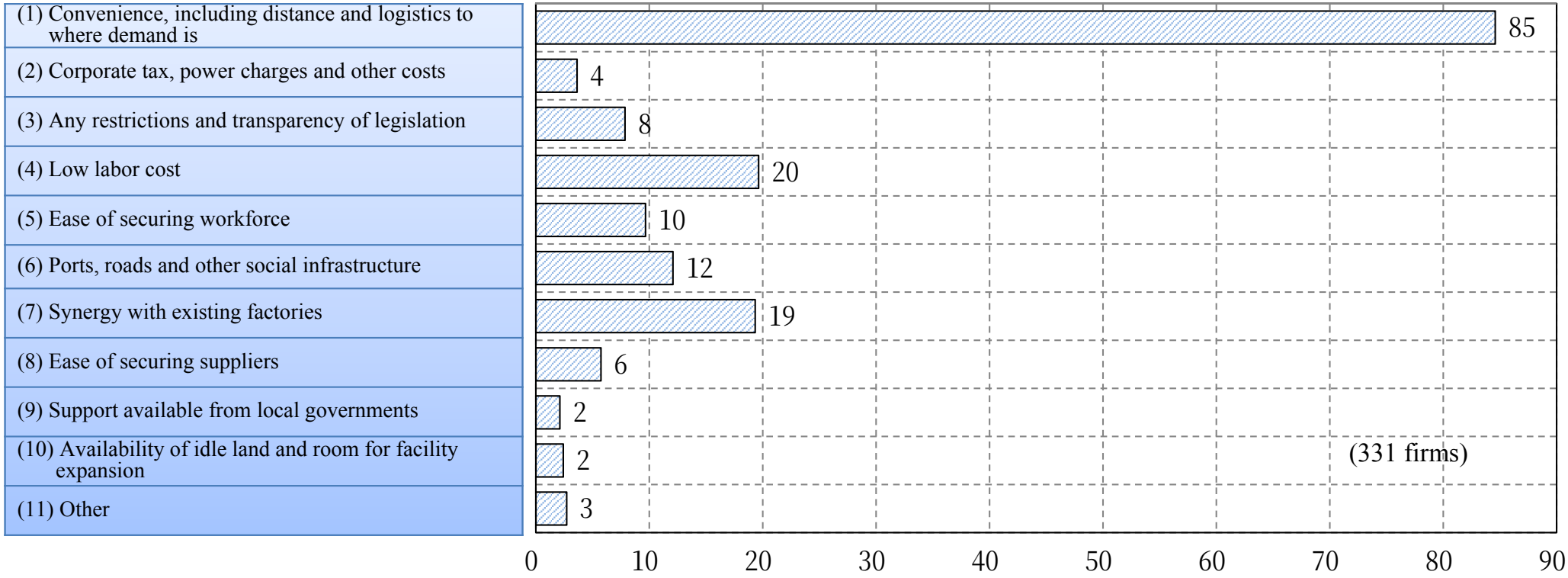


2-4-5. Factors in Selecting Location for Capital Spending in Japan and Overseas (Manufacturing)

Convenience is the key, including distance and logistics to where demand is.

- In deciding where to execute capital spending, firms give priority to the need to serve demand where it exists, as over 80% of the respondents emphasize convenience, including distance and logistics to reach where demand lies (item **1** below). Quite a few firms also cited low labor cost (item **4**) and synergy with existing factories (item **7**).

Figure 2-4-7. Factors in Determining Where to Place Capacity Investment



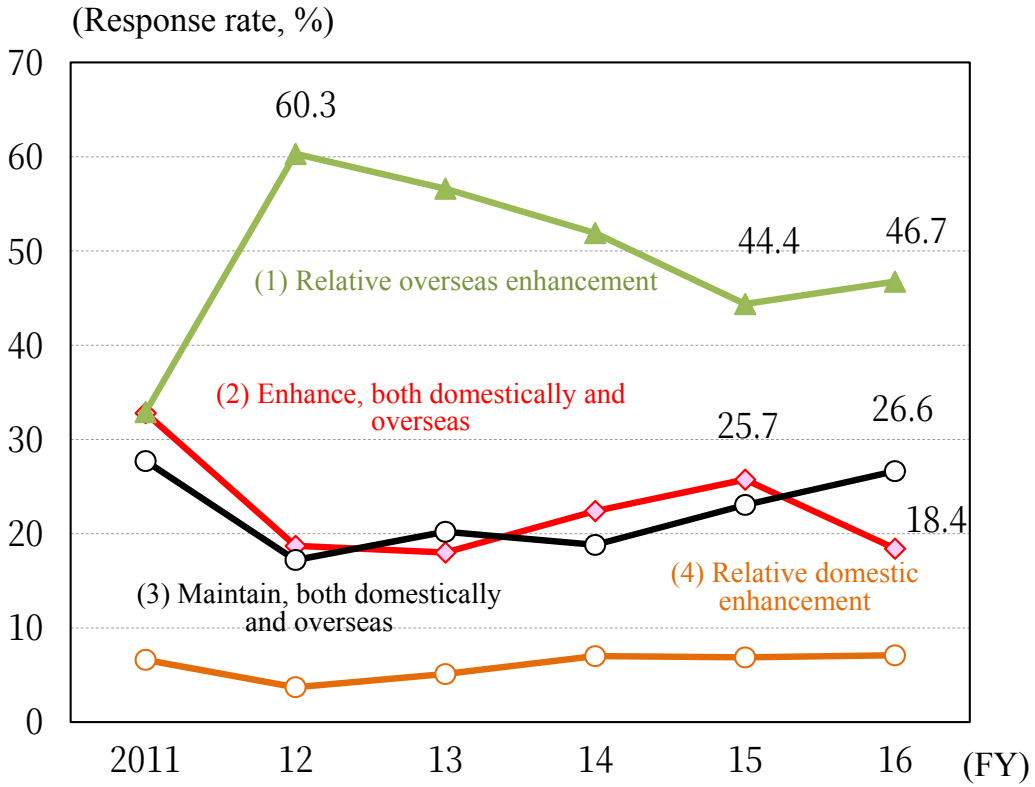
Notes: Up to two answers could be chosen. Data covers firms with production sites overseas. (Response rate, %)

2-4-6. Domestic and Overseas Operation: Medium-term Outlook (Manufacturing)

"Relative overseas enhancement" bottoms out,
while "enhance, both domestically and overseas" loses weight.

- The share of manufacturers that are enhancing medium-term supply capacity overseas without increasing their domestic supply capacity has bottomed out, whereas the share of those enhancing both domestic and overseas supply capacity (item **2** below) in the medium term turned down, after following an uptrend that started in FY2013. The share of manufacturers maintaining both domestic and overseas supply capacity (item **3**), meanwhile, continues to rise.

Figure 2-4-8. Medium-Term (over approx. 3 years)
Domestic and Overseas Supply Capacity (Manufacturing)



Distribution of responses in FY2016

		Domestic supply capacity			Overseas total
		Increase	Maintain	Decrease	
Overseas supply capacity	Increase	(2) 18.4	(1) 41.1	(1) 4.0	63.5
	Maintain	(4) 5.1	(3) 26.6	(1) 1.7	33.4
	Decrease	(4) 0.3	(4) 1.7	1.1	3.1
Domestic total		23.8	69.4	6.8	100.0

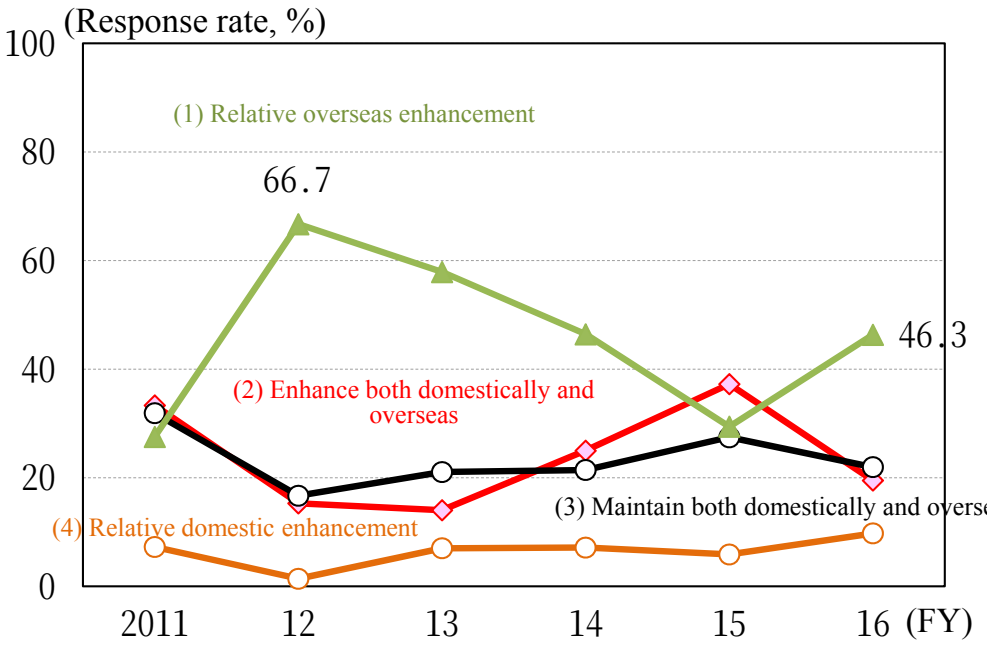
(Firms providing valid responses for the FY2016 survey numbered 353.)

2-4-7. Domestic and Overseas Operation: Medium-term Outlook (Electric Machinery and Automobiles)

Figure 2-4-9. Medium-Term (over approx. 3 Years) Domestic and Overseas Supply Capacity (Electric Machinery and Automobiles)

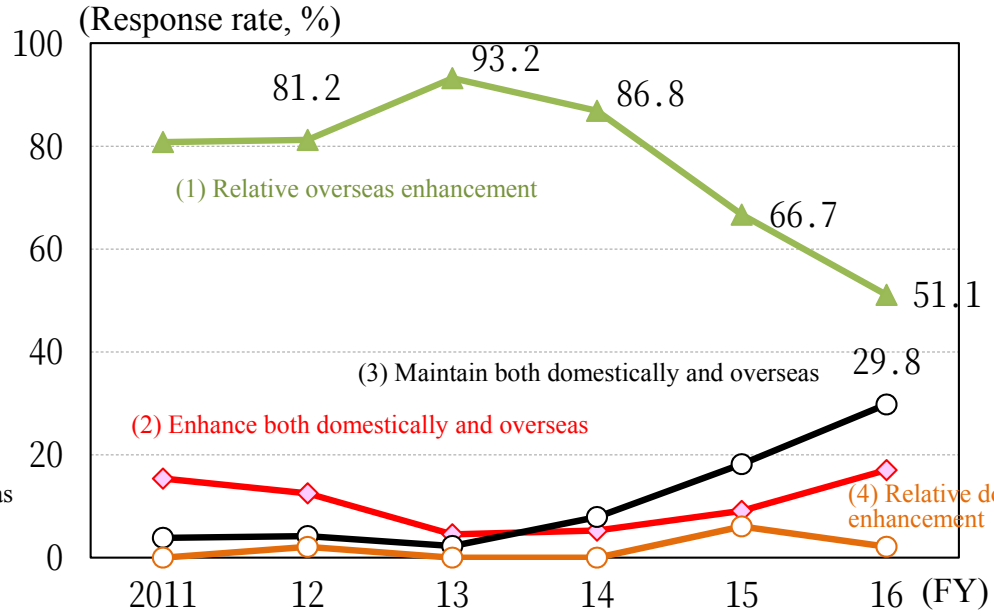
[Electric machinery]

(41 firms gave valid responses to the FY2016 survey.)



[Automobiles]

(47 firms gave valid responses to the FY2016 survey.)



		Domestic supply capacity			Overseas total
		Increase	Maintain	Decrease	
Overseas supply capacity	Increase	(2) 19.5	(1) 43.9	(1) 0.0	63.4
	Maintain	(4) 4.9	(3) 22.0	(1) 2.4	29.3
	Decrease	(4) 0.0	(4) 4.9	2.4	7.3
Domestic total		24.4	70.7	4.9	100.0

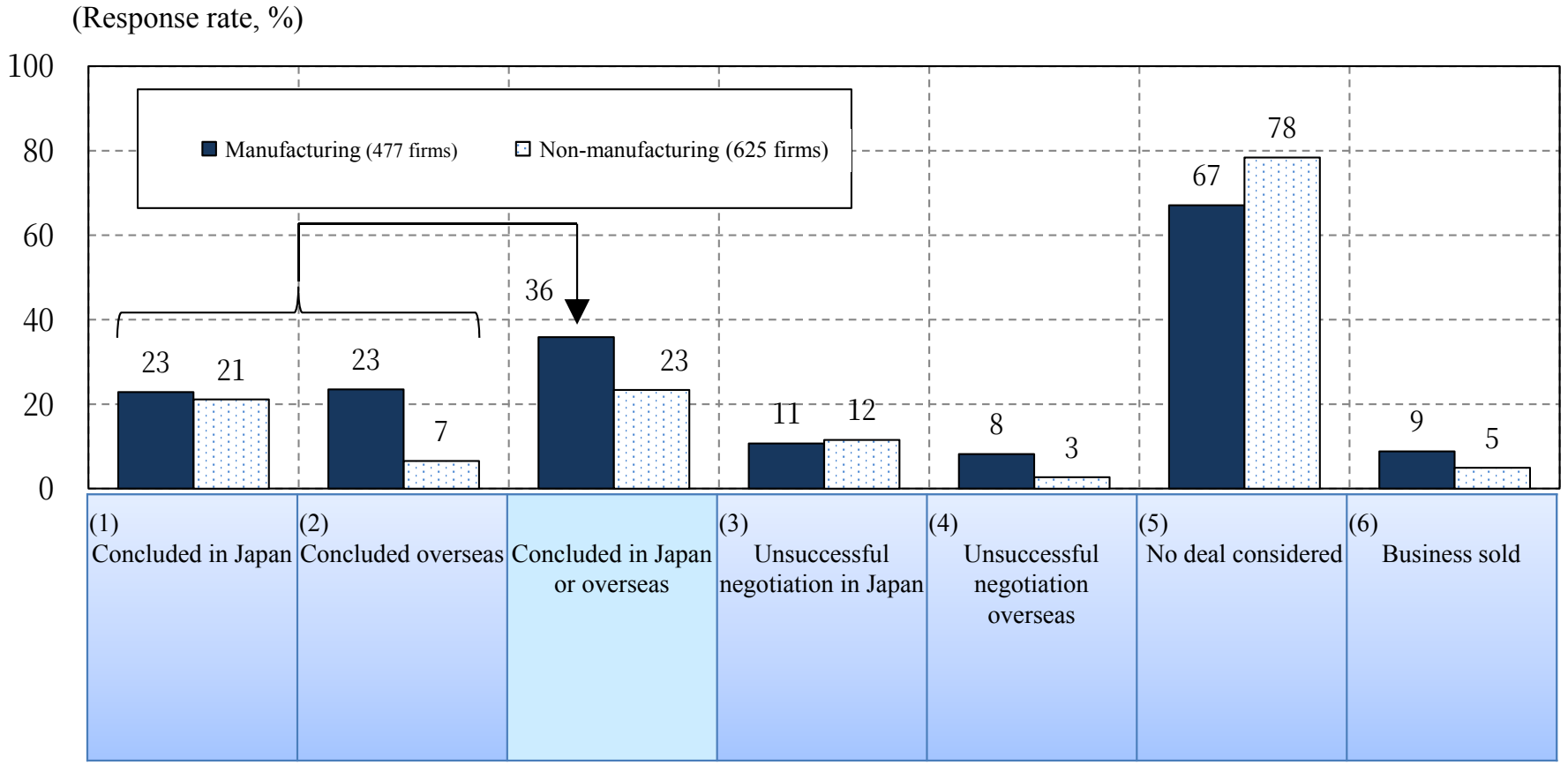
		Domestic supply capacity			Overseas total
		Increase	Maintain	Decrease	
Overseas supply capacity	Increase	(2) 17.0	(1) 42.6	(1) 6.4	66.0
	Maintain	(4) 2.1	(3) 29.8	(1) 2.1	34.0
	Decrease	(4) 0.0	(4) 0.0	0.0	0.0
Domestic total		19.1	72.3	8.5	100.0

2-4-8. M&A Deals and Objectives(Ⅰ)

Many M&A deals are concluded for expansion of business scale or market share.

- About one-third of manufacturers and just over 20% of non-manufacturers have closed M&A deals since FY2010.

Figure 2-4-10. M&A Deals (Actual for FY2010-15)



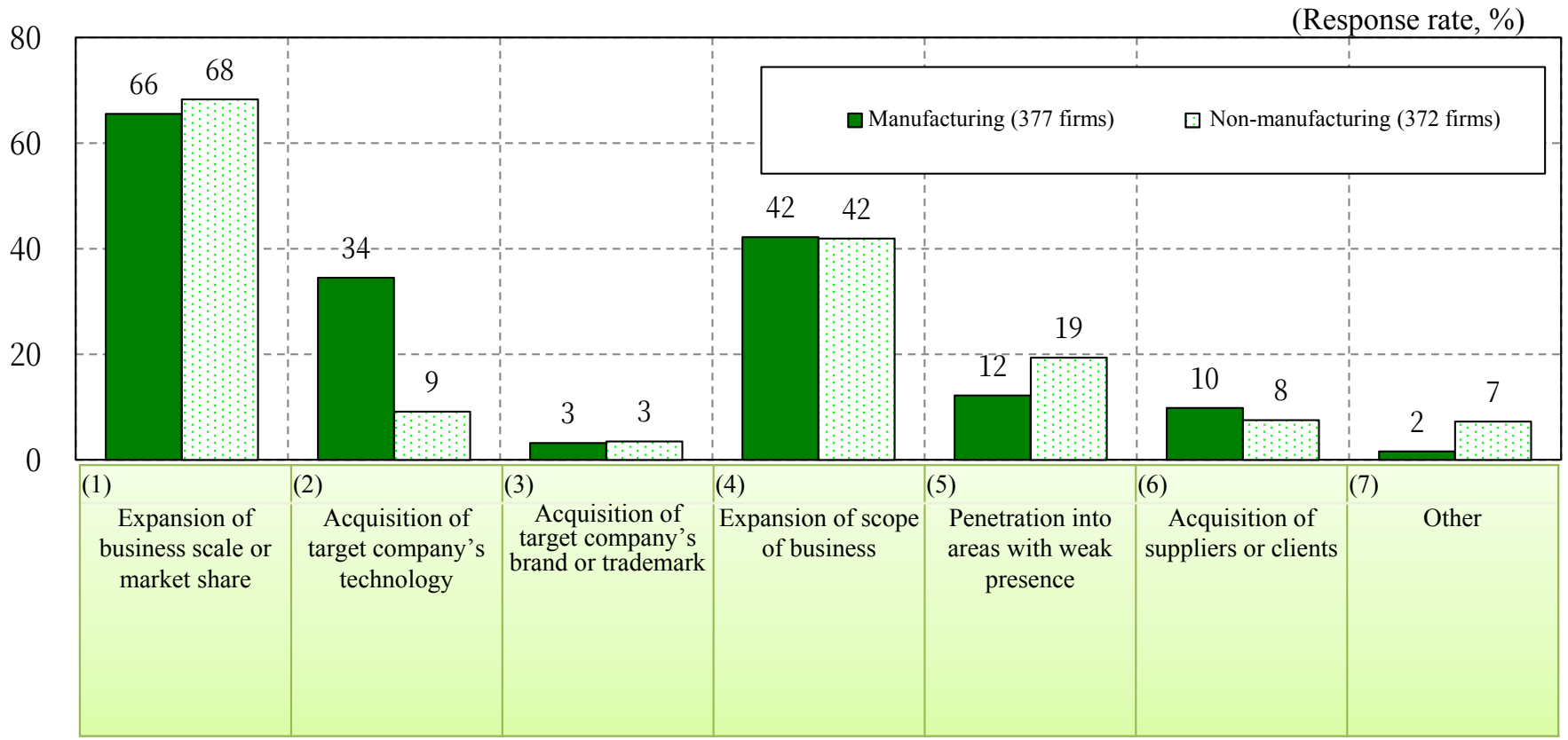
Note: Up to two answers could be chosen.

2-4-8. M&A Deals and Objectives(Ⅱ)

Many M&A deals are concluded for expansion of business scale or market share.

- Primary objectives of M&A include expansion of business scale or market share (item **1**, below right) and expansion of the scope of business (item **4**). Quite a few manufacturers also cited acquisition of target company's technology (item **2**).

Figure 2-4-11. Primary Objectives of M&A



Note: Up to two answers could be chosen.

2-5. Investment in Information Technology

2-5-1. Trend of Investment in Information Technology

IT investment exhibits strong growth.

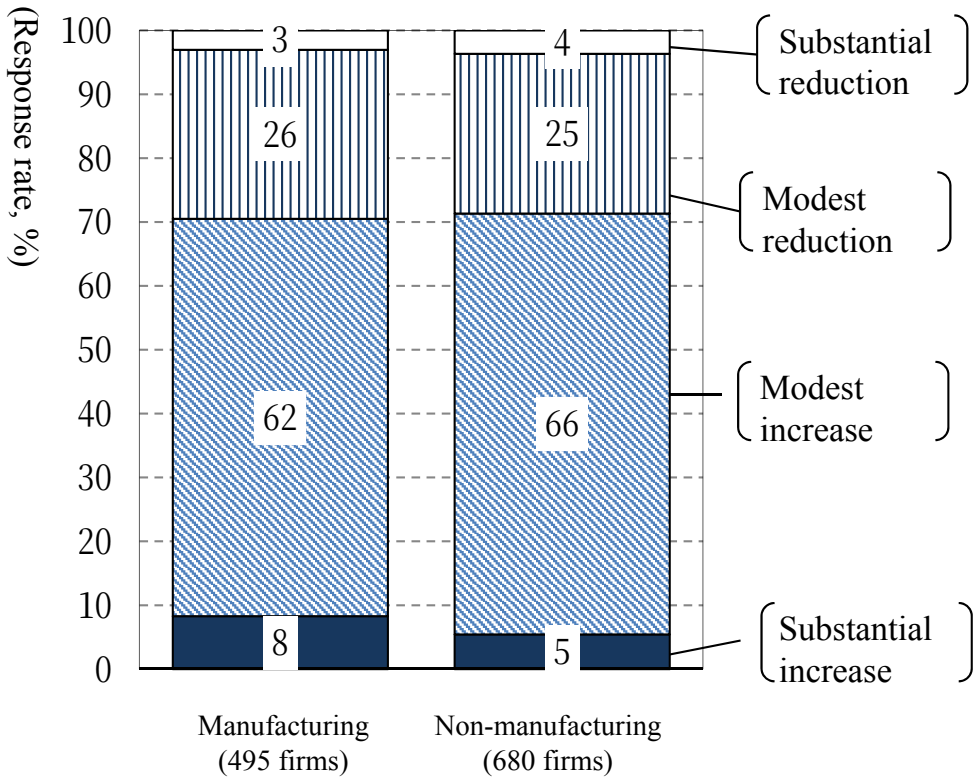
- Planned IT investment for FY2016 is up 26.1% as a whole, with investment rising in both manufacturing (up 16.9%) and non-manufacturing (up 36.4%). Thus, it is the non-manufacturing sector that leads the substantial growth.
- Many firms have been following this uptrend in IT investment in recent years, as 70% of the respondents constantly report a modest increase or substantial increase.

Figure 2-5-1. Plan for IT Investment (Year-on-year, %)

Industry	FY2015 Actual (939 firms)	FY2016 Planned (1,098 firms)
Total	17.1	26.1
Manufacturing total	10.4	16.9
General machinery	- 6.4	19.0
Electric machinery	6.9	- 3.6
Transport equipment	12.5	16.4
Non-manufacturing total	23.1	36.4
Wholesale & retail	20.8	44.0
Transportation	- 10.3	61.2
Electric power & gas	69.3	37.8

Note: IT investment includes costs of acquiring intangible assets and software recorded as expenses.

Figure 2-5-2. Trend of IT Investment in Recent Years (Comparison with Tangible Fixed Asset Investment)

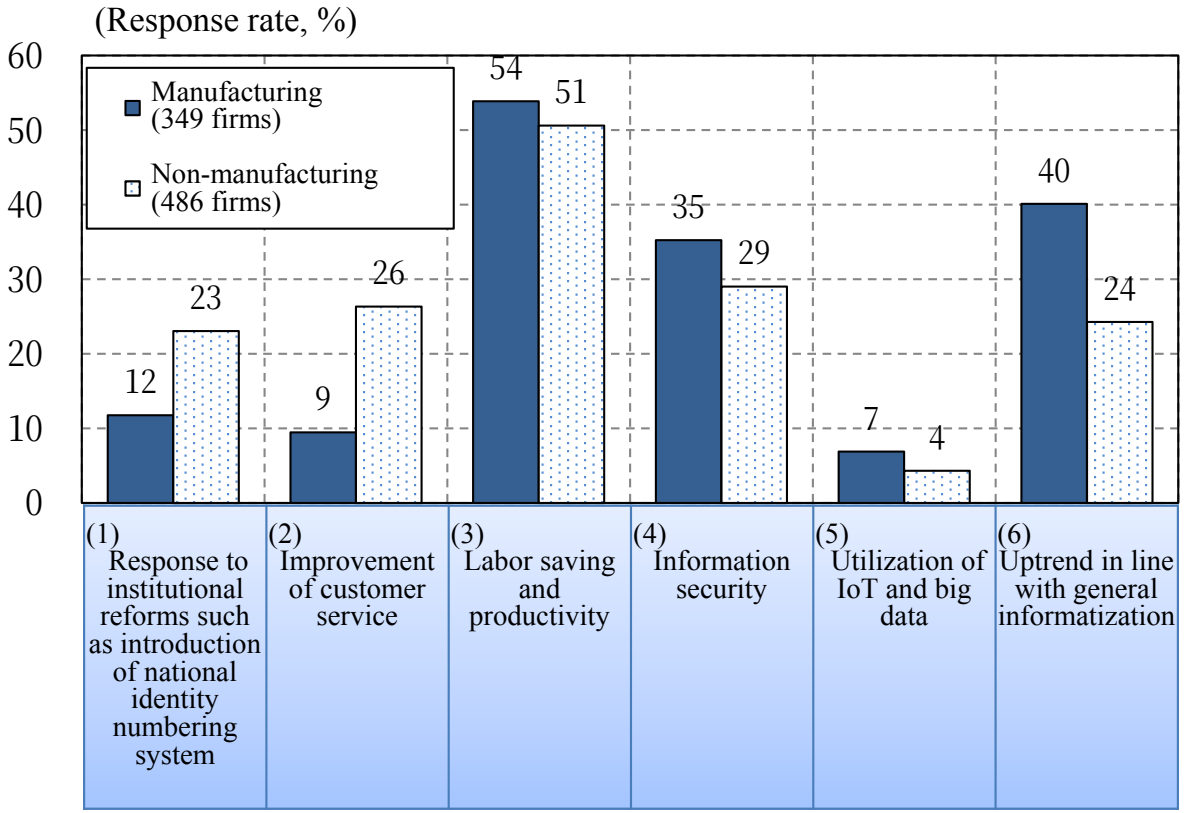


2-5-2. Drivers of IT Investment, Utilization of the Internet of Things

Labor saving and productivity are key drivers of IT investment.

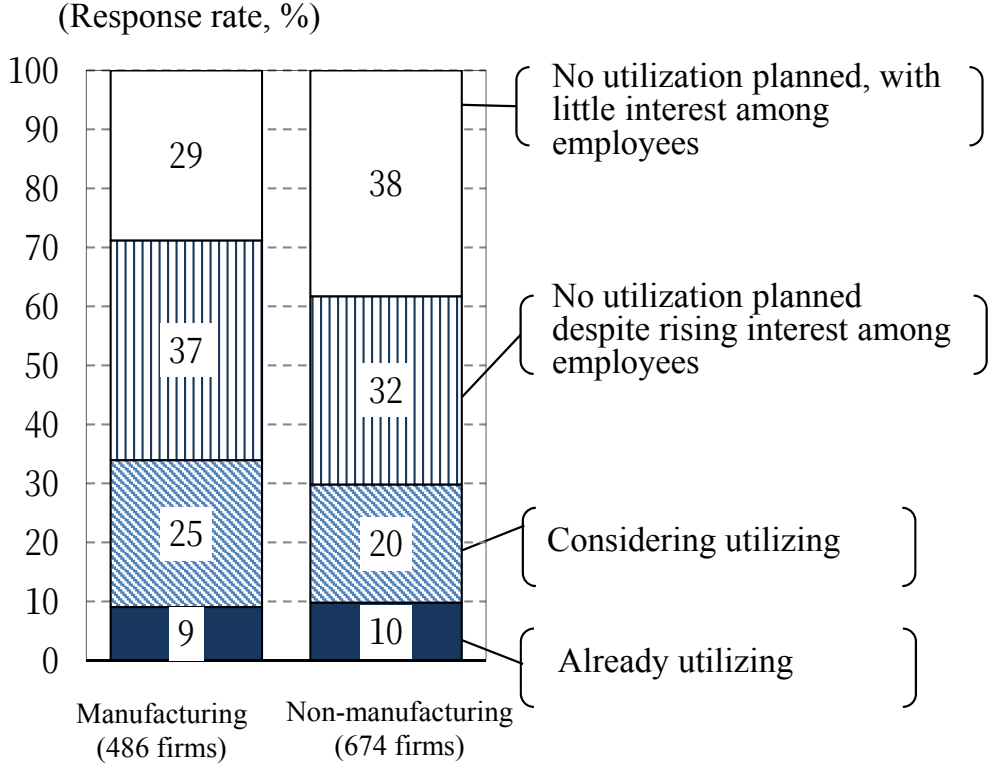
- Many cite labor saving and productivity (item **3** below), and information security (item **4**) as drivers of IT investment.
- Of the responding firms, 30% "already utilize" or "consider utilizing" the internet of things (IoT), up from some 20% last year. Over 30% of the respondents chose the newly added option: "rising interest among employees."

Figure 2-5-3. Drivers of IT Investment in Recent Years



Note: Choose up to two answers.

Figure 2-5-4. Utilization of IoT and Big Data



Note: IoT stands for internet of things.

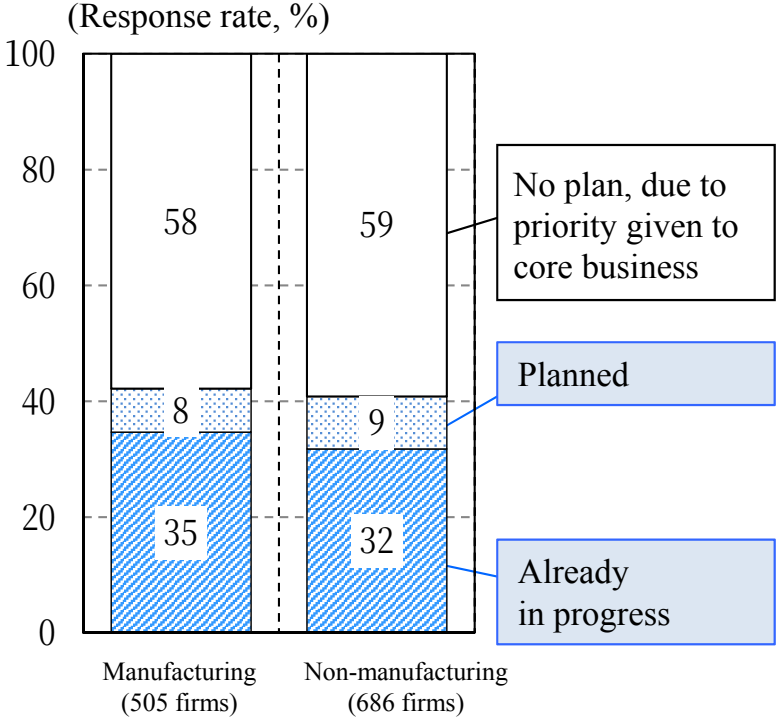
2-6. Actions for Growth and Competitiveness

2-6-1. Exploration of Opportunities in Growth Markets (Ⅰ)

About 40% of the firms are exploring opportunities in medium-term growth markets.

- About 40% of manufacturers and non-manufacturers are exploring opportunities in medium-term growth markets.
- Specific cases include medical care markets for chemicals and other manufacturing industries, as well as hotel operation in response both to the rising number of inbound tourists and to opportunities related to the liberalization of power supply in the non-manufacturing sector.

Figure 2-6-1. Exploration of Opportunities in Medium-Term Growth Markets



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

Figure 2-6-2. Specific Examples of Potential Opportunities in Domestic Growth Markets

	Industry	Examples
Manufacturing	Chemicals	Regenerative/cellular medicine, cancer treatment, generics, fine chemicals, methanol fuel cells, electronic materials
	General machinery	Medical equipment, 3D printers, hydrogen business, water treatment, long-term care, robotics
	Electric machinery	Medical care, power electronics, motors for electric vehicles, automated driving, next-generation energy
	Transport equipment	Components for medical care, motor drive parts, robotic support devices
Non-manufacturing	Transportation	Condominium sales, plant factories, airport operation, seaport operation, tourism, elderly care business, childcare business
	Wholesale & retail	Independent power supply, elderly care business, telecommunications, e-commerce
	Construction & real estate	Hotel operation, commercial operation, environmental business, agriculture, logistics

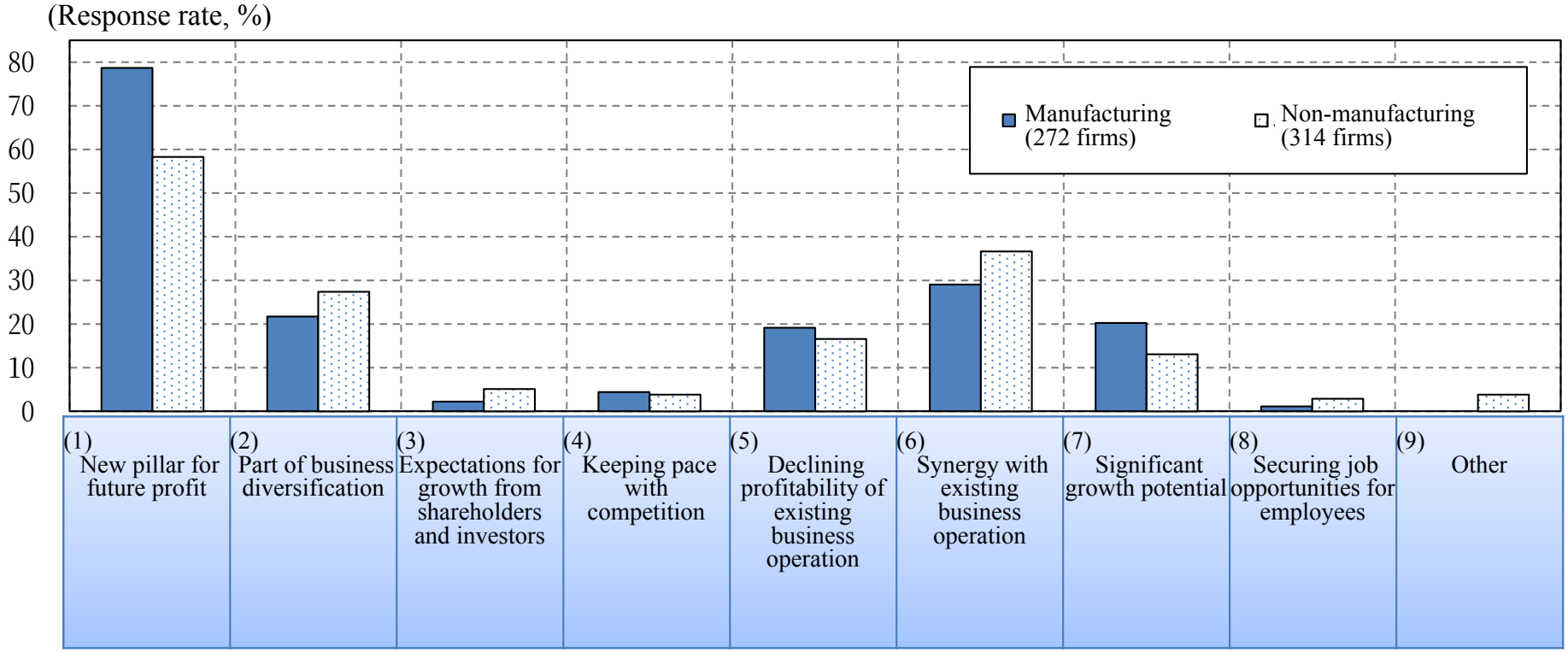
Note: Opportunity in growth market = Offering of any new business or service other than the existing core business.

2-6-2. Exploration of Opportunities in Growth Markets (Ⅱ-ⅰ)

Exploration of opportunities in growth markets as a pillar for future profit

- As reasons for exploring opportunities in growth markets, more respondents cited new pillar for future profit (item **1**, below left) than synergy with existing business operation (item **6**) and part of business diversification (item **2**).

Figure 2-6-3. Reasons for Exploring New Market Opportunities or Business Operation



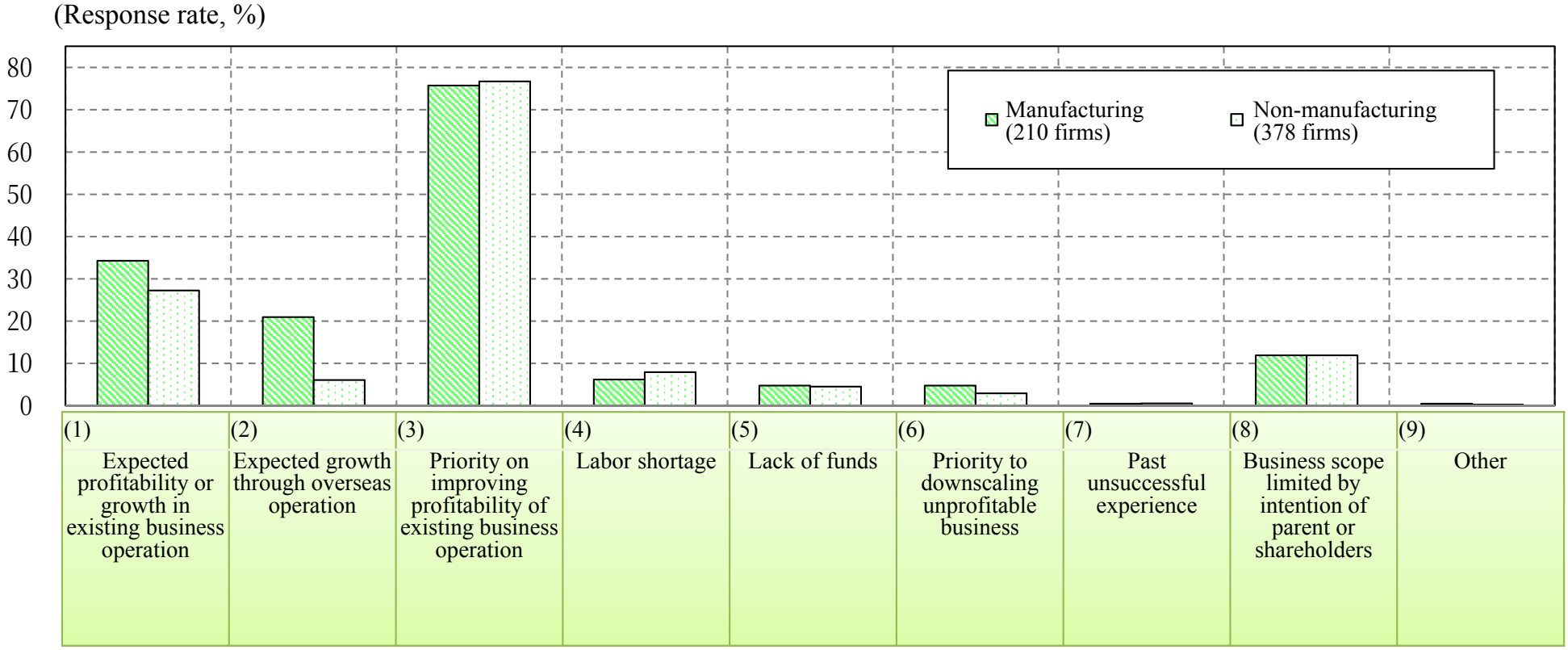
Note: Up to two answers could be chosen.

2-6-2. Exploration of Opportunities in Growth Markets (Ⅱ-ⅱ)

Exploration of opportunities in growth markets as a pillar for future profit

- As reasons for not exploring opportunities in growth markets, the largest number of respondents cited priority given to existing business operation (item **3**, below right), followed by expected profitability or growth in existing business operation (item **1**).

Figure 2-6-4. Reasons for Not Exploring New Market Opportunities or Business Operation



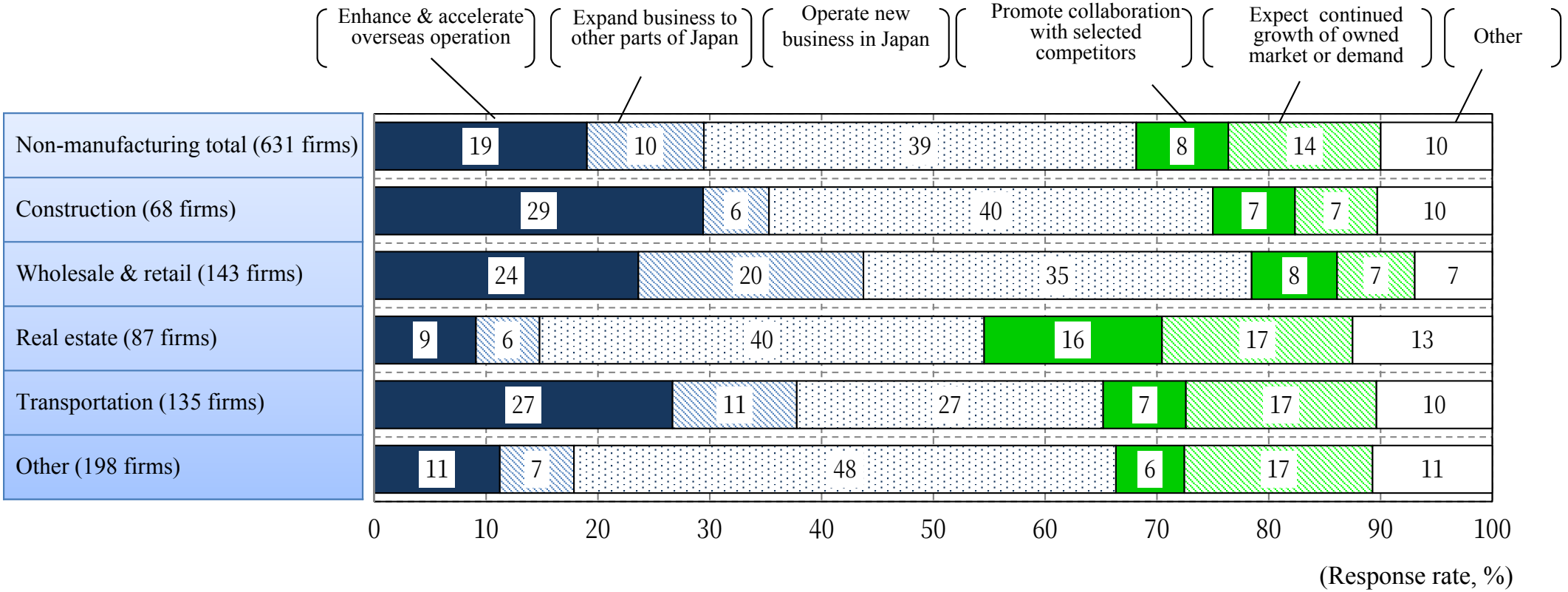
Note: Choose up to two answers.

2-6-3. Growth Strategy of Non-manufacturers

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

- Although future demand is likely to shrink in many of the non-manufacturing industries due to the decrease and aging of the Japanese population, many firms cited new business operation in Japan as the focus of their growth strategy.
- By industry, a relatively large number of firms in construction, transportation 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 2-6-5. Focus of Non-manufacturers for Growth



Appendices

(Appendix 1-1) Capital Spending in FY2015, 2016 and 2017

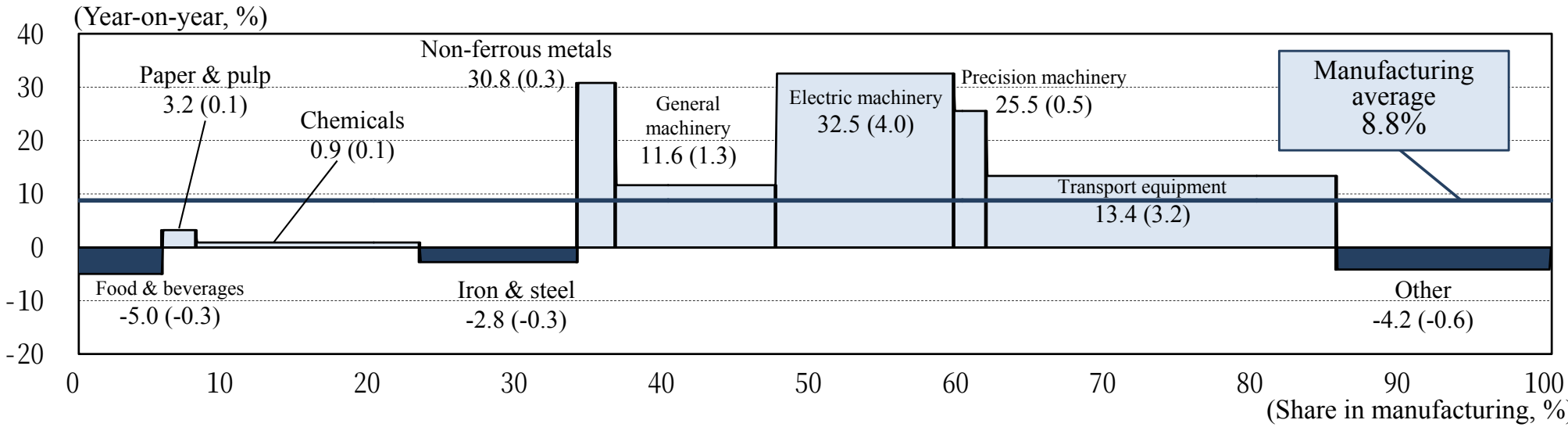
Appendix 1-1. Domestic Capital Spending in FY2015, 2016 and 2017

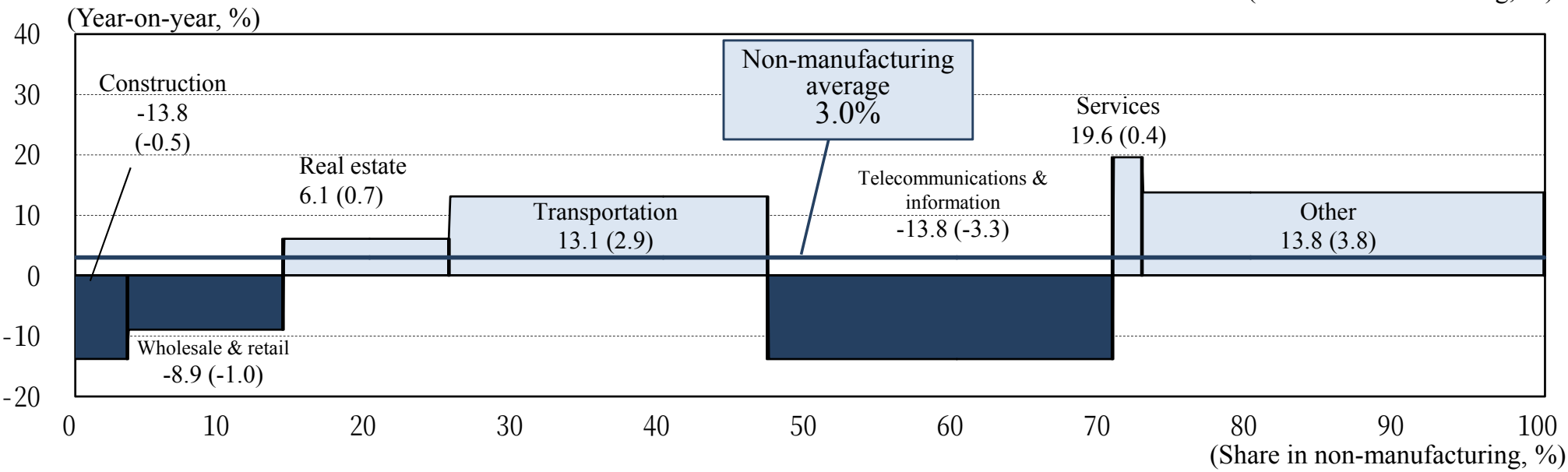
(JPY 100 million, %)

	FY2015 (actual) (1,973 firms)			FY2016 (planned) (2,077 firms)			FY2017 (planned) (883 firms)		
	FY2014 Actual	FY2015 Actual	Change 2015/14	FY2015 Actual	FY2016 Planned	Change 2016/15	FY2016 Planned	FY2017 Planned	Change 2017/16
Total	171,043	179,236	4.8	157,862	175,128	10.9	35,896	33,856	- 5.7
(excluding electric power)	147,963	153,104	3.5	151,822	168,332	10.9	34,591	32,807	- 5.2
Manufacturing	53,090	57,743	8.8	58,196	66,642	14.5	13,888	13,142	- 5.4
Non-manufacturing	117,953	121,493	3.0	99,666	108,486	8.8	22,008	20,714	- 5.9
(excluding electric power)	94,873	95,361	0.5	93,626	101,690	8.6	20,703	19,665	- 5.0

(Appendix 1-2) Actual Performance in FY2015 (Skyline Graph)

Appendix 1-2. Composition and Growth of Capital Spending, by Major Industry (Actual FY2015 Data)





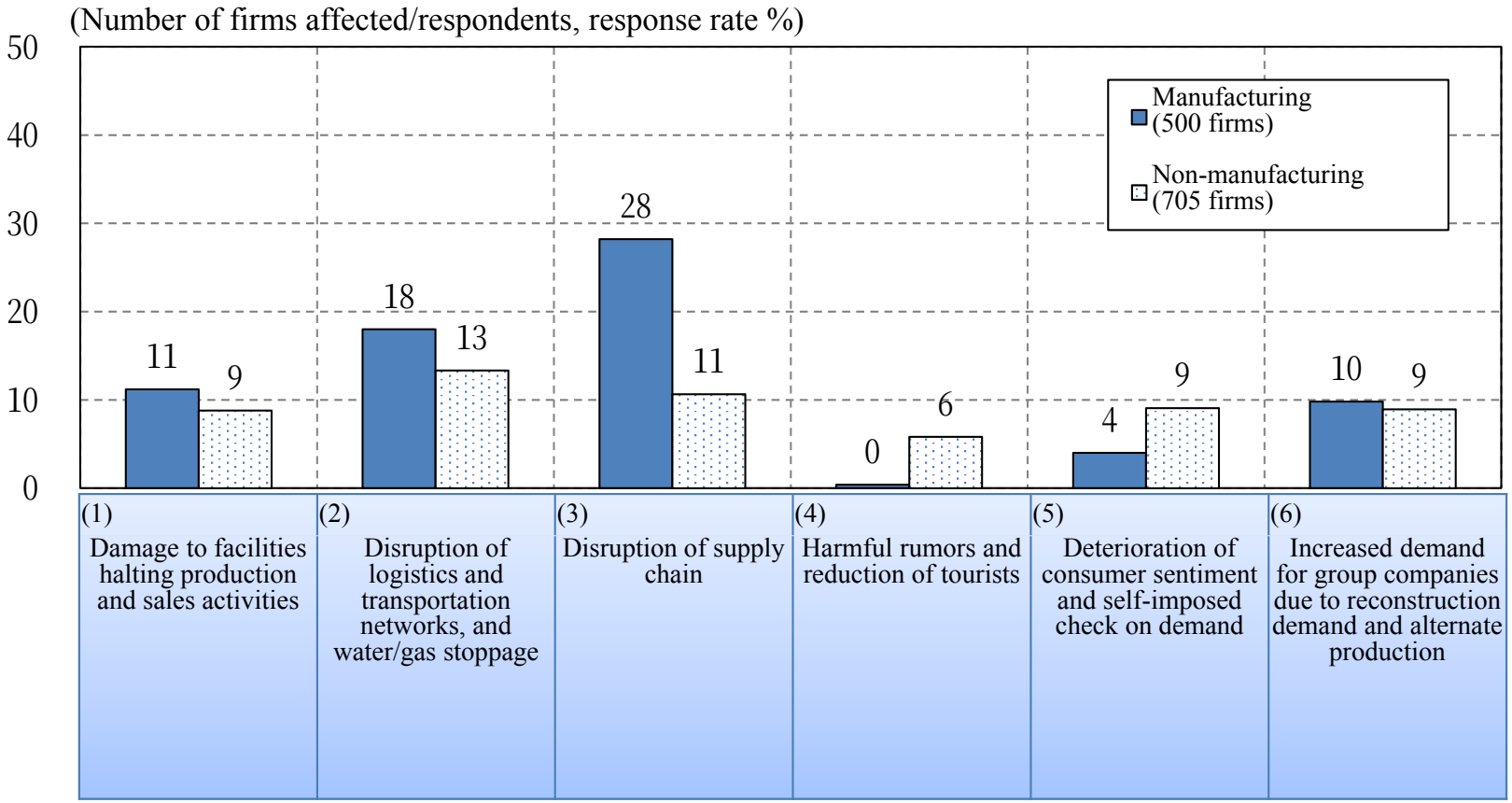
Notes: Figures indicate changes in FY2015 on previous year. Figures in parentheses ( ) indicate contributions to the whole manufacturing or non-manufacturing sector.

(Appendix 2) Impact of Kumamoto Earthquake

Manufacturers experienced supply chain disruption, among others.

- Regarding the impact of the Kumamoto Earthquake in April, many manufacturers cited disruption of supply chain (item **3** below) and disruption of logistics and transportation networks (item **2**), indicating the existence of earthquake and other disaster preparedness problems that are larger than the incidents themselves and out of their control.

Appendix 2-1. Impact of Kumamoto Earthquake (Present Survey)

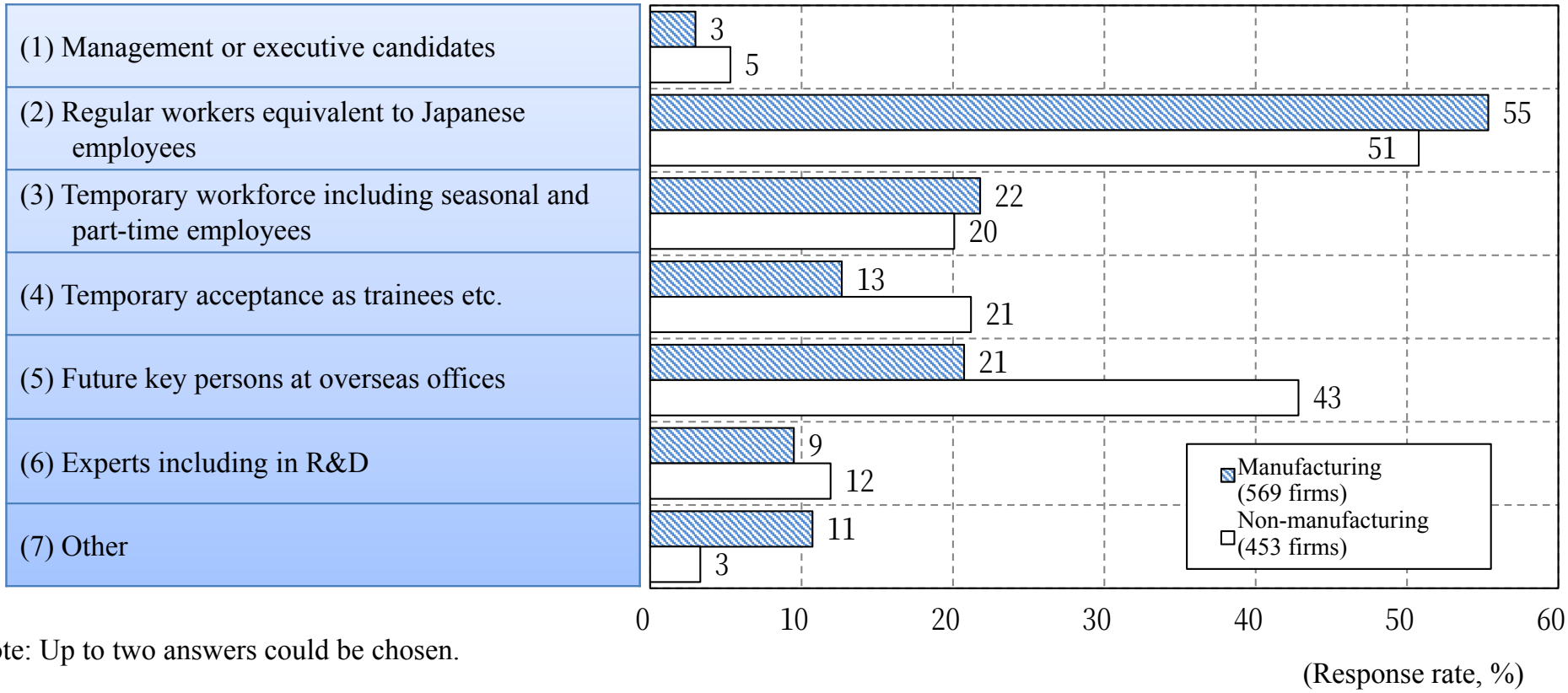


(Appendix 3) Expected Roles of Foreign Nationals

Foreign employees are expected to play the same roles as Japanese employees.

- Many expect hired foreign nationals to serve as regular workers equivalent to Japanese employees (item **2** below). Non-manufacturers often combined this role with that of future key persons at overseas offices (item **5**). Also, a certain number of respondents cited temporary workforce (item **3**) and temporary acceptance as trainees, etc. (item **4**)

Appendix 3-1. Expected Roles of Foreign Employees



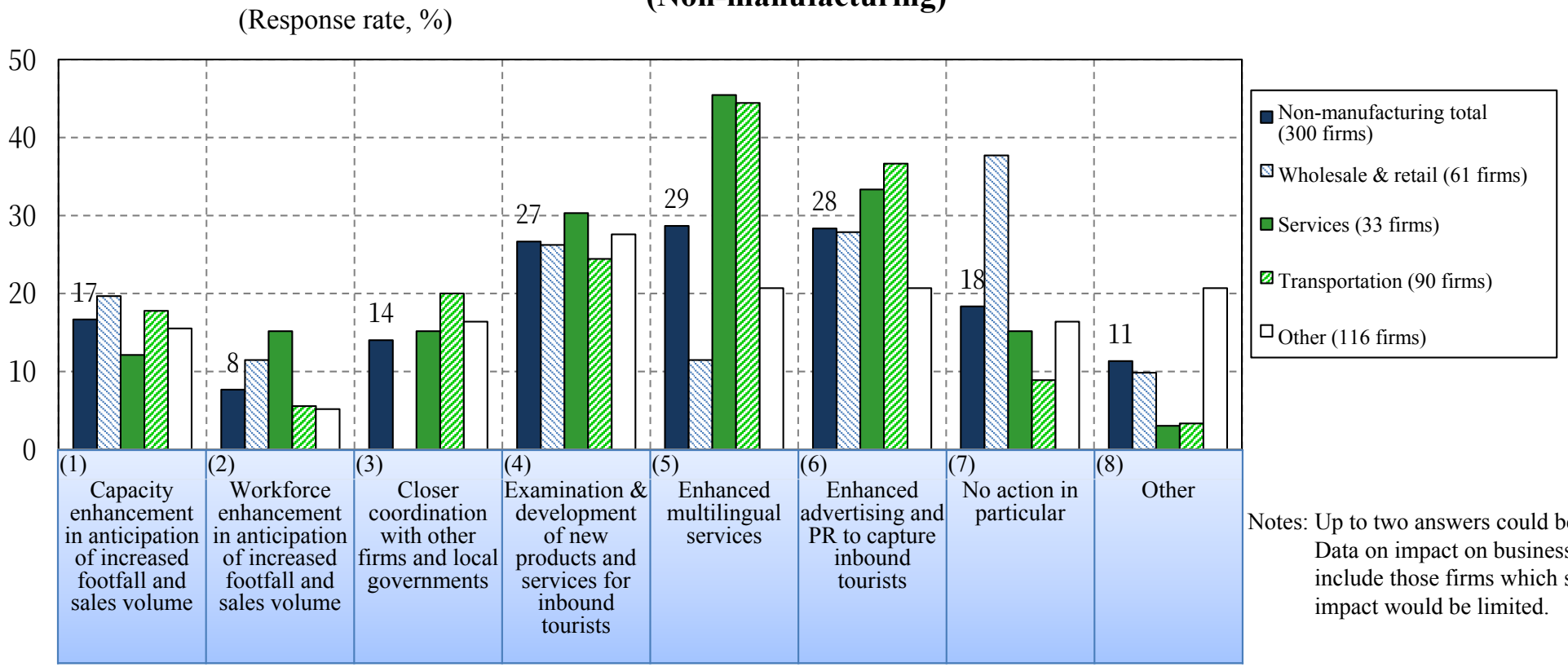
Note: Up to two answers could be chosen.

(Appendix 4) Serving Increased Number of Inbound Tourists (Non-manufacturing)

Focus is on advertising, PR, new service offerings and multilingual support.

- As actions to serve the increasing number of inbound tourists, many expressed the intention to meet the demand by enhancing advertising and public relations (item **6** below) and offering new products and services (item **4**). Respondents in some industries also cited expansion of production capacity to meet the increased demand (item **1**) and emphasis on workforce enhancement (item **2**).

Appendix 4-1. Actions by Firms Expecting Business Impact from Increased Number of Inbound Tourists (Non-manufacturing)



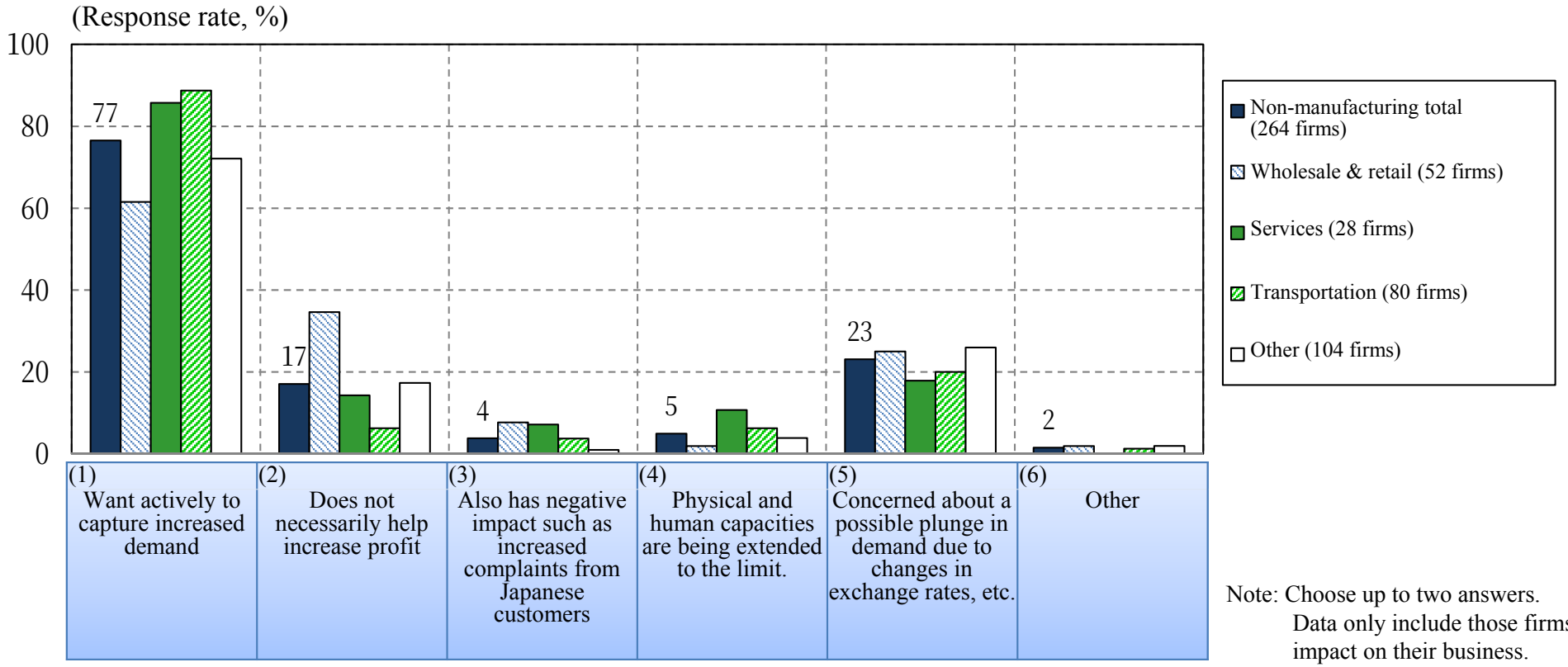
Notes: Up to two answers could be chosen. Data on impact on business do not include those firms which said that the impact would be limited.

(Appendix 5) Awareness of Increase in Inbound Tourists (Non-manufacturing)

Aggressive efforts to capture increased demand

- Almost 80% of the firms whose business is directly impacted by the increase in inbound tourists responded that they want actively to capture the increased demand (item **1** below). However, some respondents are concerned about a possible plunge in demand due to changes in exchange rates etc. (item **5**).

Appendix 5-1. Situational Analysis by Firms Anticipating Impact from Increase in Inbound Tourists (Non-Manufacturing)



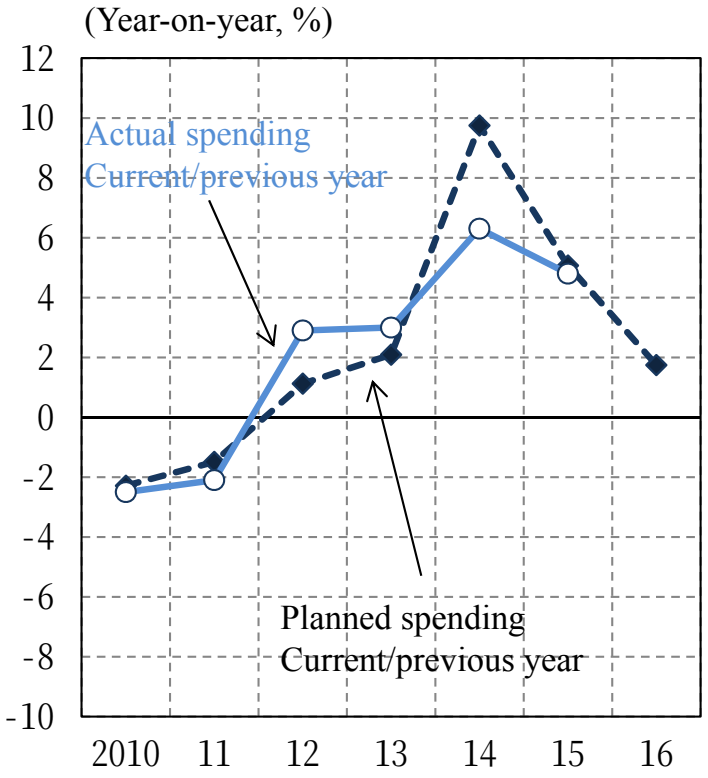
Note: Choose up to two answers.
Data only include those firms reporting impact on their business.

(Appendix 6) Actual Capital Spending vs. Planned Spending for Previous and Current Years

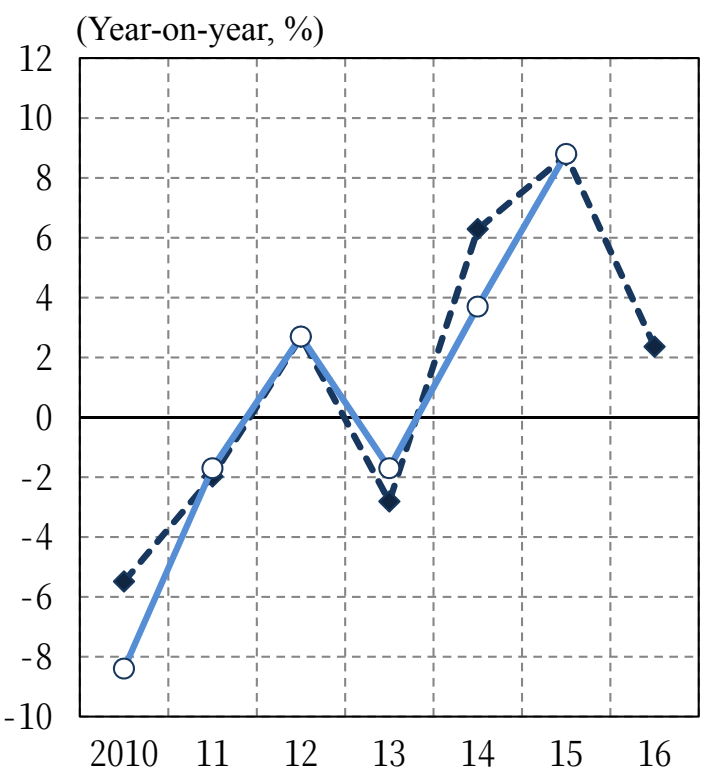
- Experience indicates that the year-on-year change in actual capital spending often approximates the year-on-year change in planned capital spending, thus providing a clue to predicting actual performance in the coming year.
- Our data on the firms responding to the questions on planned capital spending for both FY2016 and FY2015 imply an increase of some 2% in planned, and hence actual, capital spending.

Appendix 6-1. Change in Actual and Planned Capital Spending on Previous Year

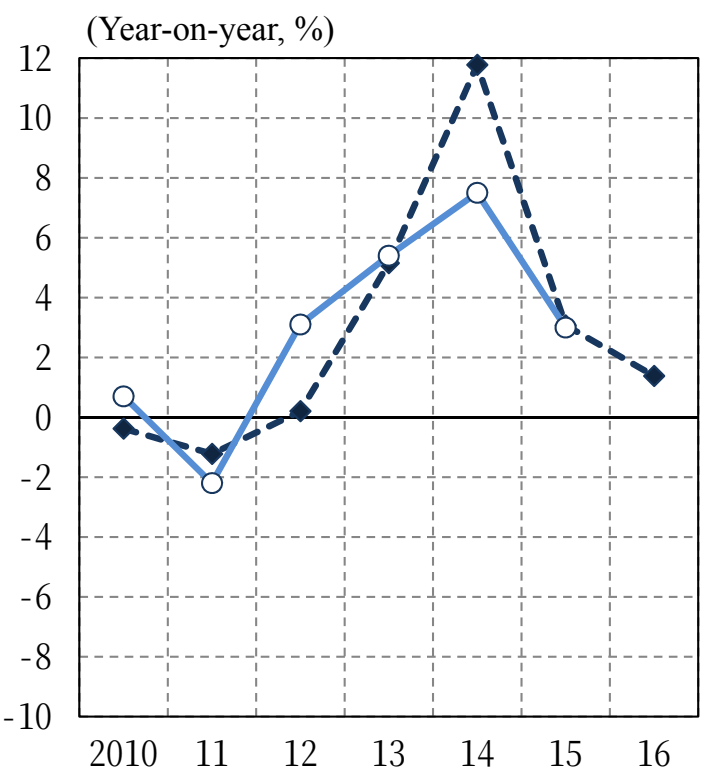
(1) Total



(2) Manufacturing



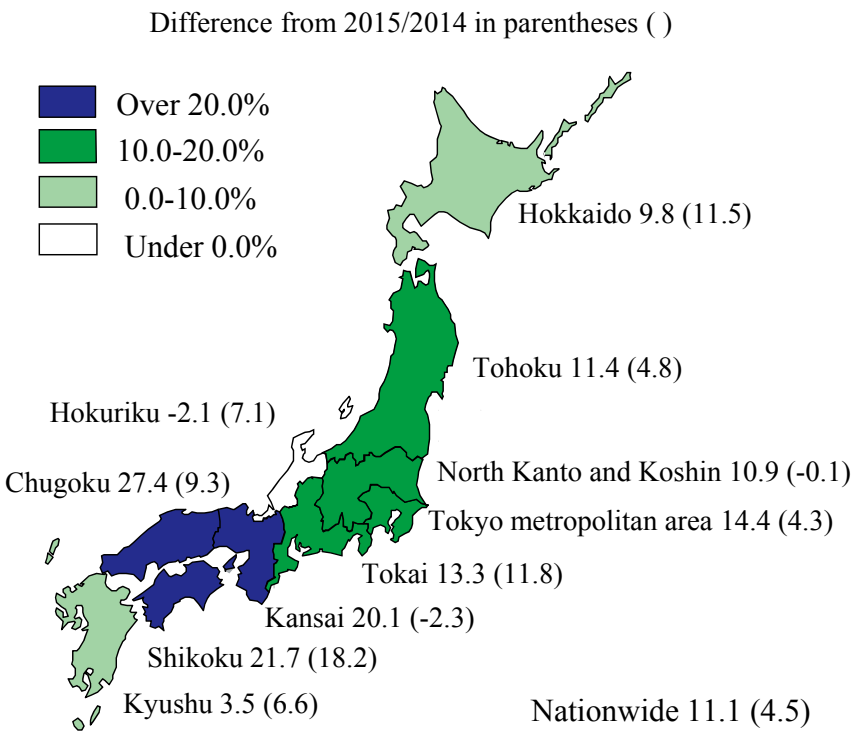
(3) Non-manufacturing



(Appendix 7) Capital Spending, by Region (Planned for FY2016)

- Planned capital spending by region for FY2016 (covering 5,159 companies: see Note) shows the fifth consecutive year of increase overall (up 11.1%), with positive growth observed in all regions except Hokuriku, led by transportation, transport equipment, wholesale & retail, chemicals and real estate.
- Actual capital spending in FY2015 rose for the fourth consecutive year nationwide (up 4.5%), with the decline in North Kanto/Koshin and Kansai more than offset by the increase in the remaining eight regions.

Appendix 7-1. Change in Capital Spending, by Region, FY2016/FY2015



Appendix 7-2. Change in Capital Spending, by Region and by Sector, FY2016

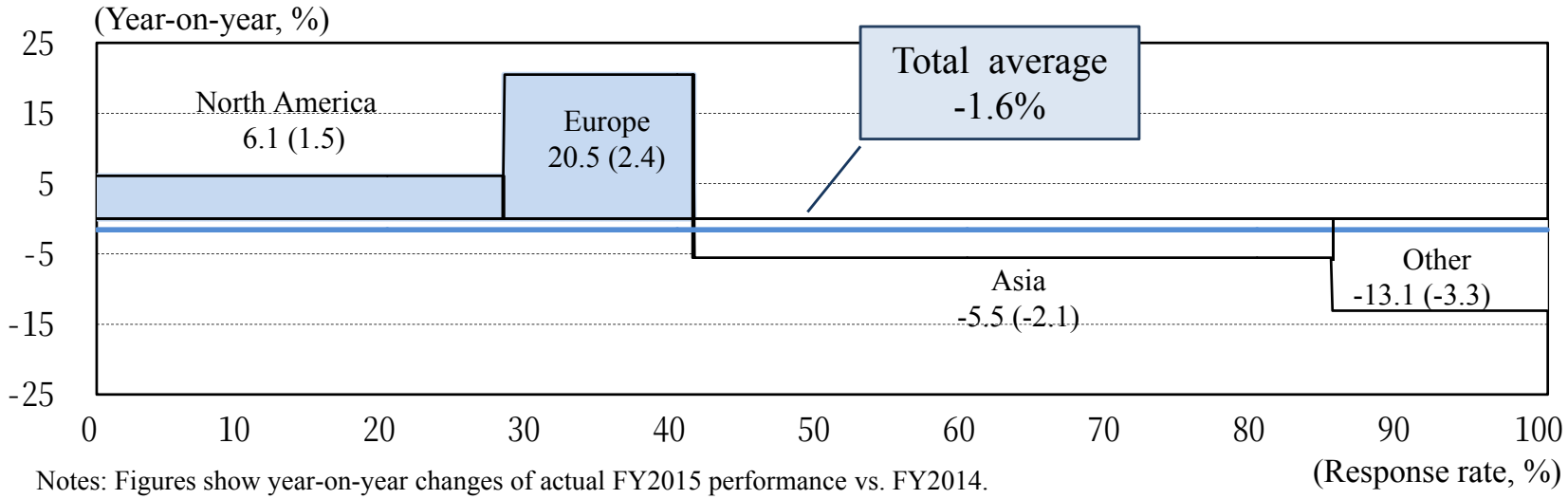
(%)

	Total	Manufacturing	Non-manufacturing
Hokkaido	9.8	- 3.0	13.6
Tohoku	11.4	20.8	1.2
North Kanto and Koshin	10.9	6.8	22.3
Tokyo met. area	14.4	25.5	11.6
Hokuriku	- 2.1	- 1.5	- 2.9
Tokai	13.3	12.5	16.4
Kansai	20.1	15.3	23.0
Chugoku	27.4	31.0	17.8
Shikoku	21.7	17.8	33.4
Kyushu	3.5	2.9	4.2
Nationwide	11.1	14.9	8.9

Note: Our survey on capital spending by region covers medium-sized firms (capitalized at JPY 100 million up to JPY 1 billion), as well as large-sized companies. (11,203 firms in total, of which 5,159 firms responded to the questions on planned capital spending by region).

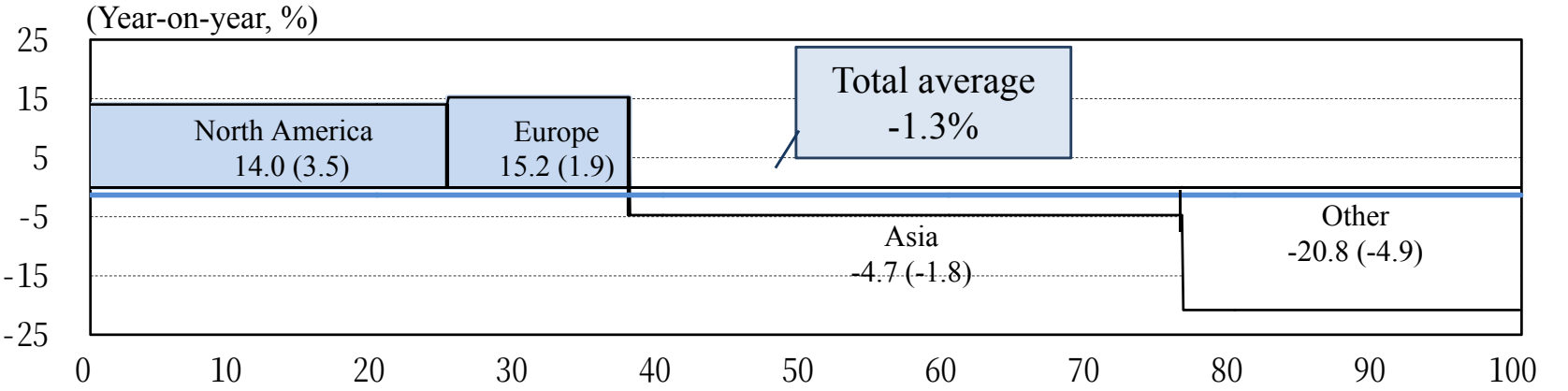
(Appendix 8) Trend of Capital Spending Overseas

Figure 8-1. Composition and Growth of Capital Spending, by Region (Actual for FY2015) (%)



Notes: Figures show year-on-year changes of actual FY2015 performance vs. FY2014.
Figures in parentheses ( ) indicate contributions to the total.

Figure 8-2. Composition and Growth of Capital Spending, by Region (Planned for FY2016) (%)



Notes: Figures show changes of planned FY2016 spending vs. actual FY2015 performance.
Figures in parentheses ( ) indicate contributions to the total. Asia includes China.