

# Chapter 2 Increase in Productivity and Corporate Behavior for Future Growth

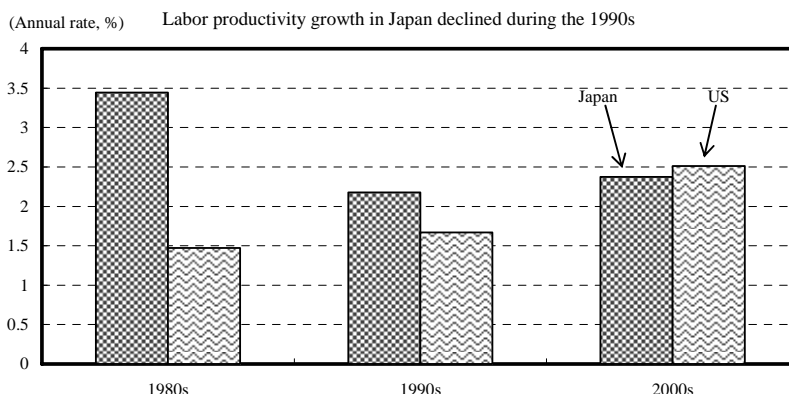
## Section 1 Changes of Economic Structure and Macro Productivity

- There are two channels for realizing labor productivity growth: “capital deepening” based on increasing the capital stock per worker; and “growth of total factor productivity (TFP)” based on the advance of innovation.
- To secure sustainable growth, it is necessary to realize labor productivity growth while balancing the capital deepening and the growth of TFP.

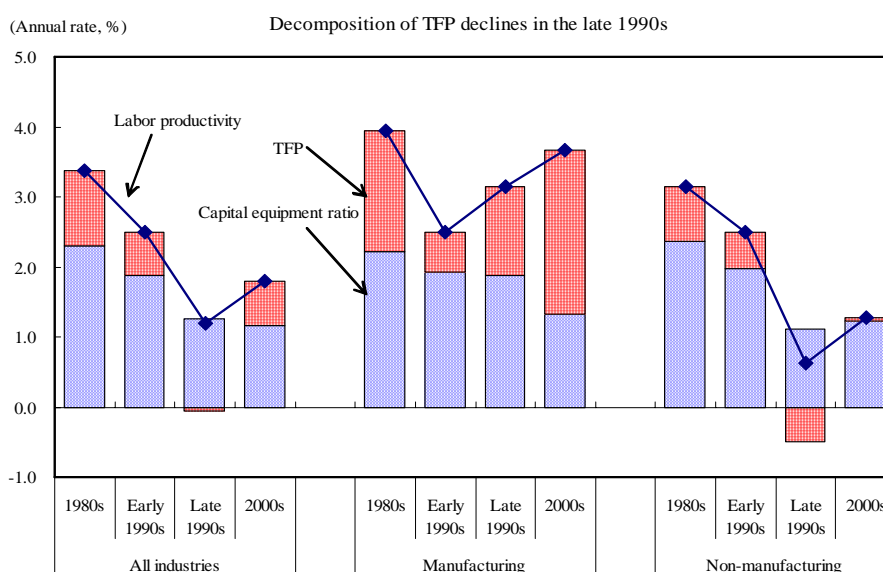
[Analysis]

- The decline in labor productivity in the 1990s was influenced by the decline in the growth of TFP.

**Figure 2-1-2 Labor Productivity Growth Rate in Japan and the US**



**Figure 2-1-3 Decomposition of Labor Productivity Growth Rate**



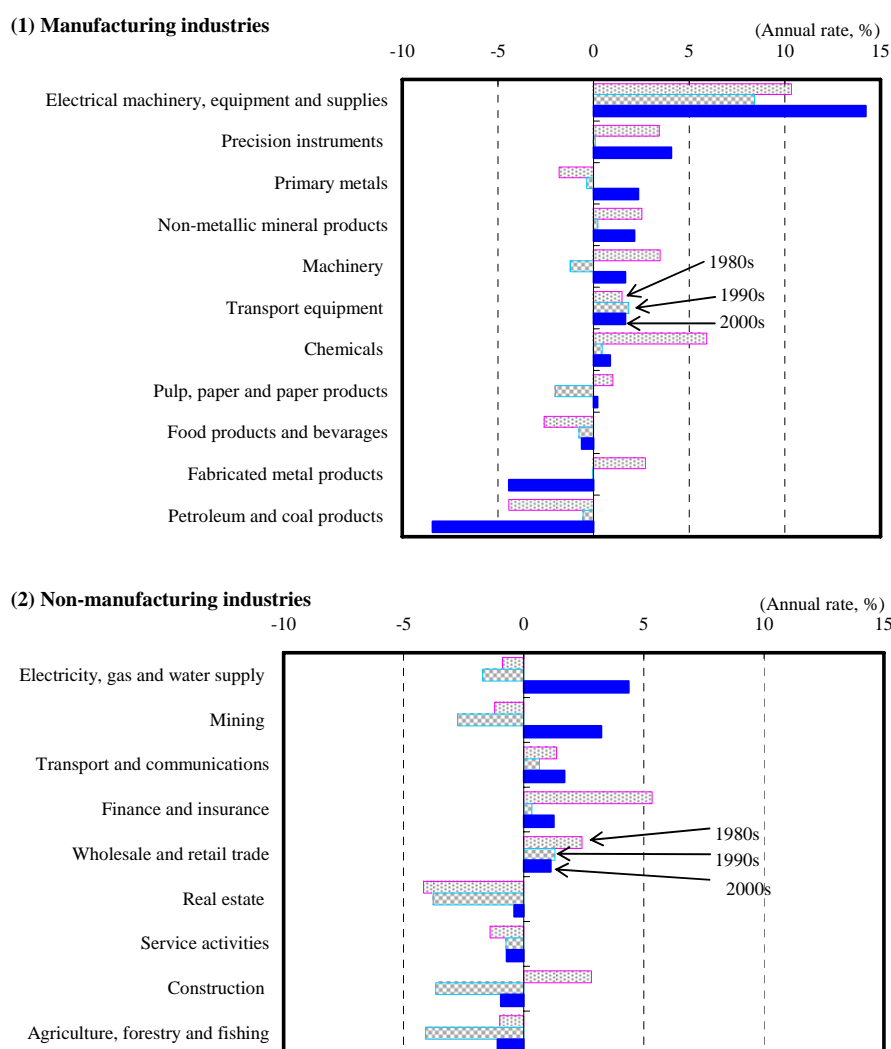
Source: *National Accounts*, Cabinet Office; *Labor Force Survey*, Ministry of Internal Affairs and Communications; *Monthly Labour Survey*, Ministry of Health, Labour and Welfare; *Indices of Industrial Production*, *Indices of Tertiary Industry Activity*, Ministry of Economy, Trade and Industry  
 Note: Values for the late 1990s are derived from 1996-2000 data; values for the 2000s are derived from 2000-2005 data.

- To achieve productivity growth in the macro economy, it is important to increase the labor productivity in individual companies and to achieve a more efficient redistribution of resources among companies and among industries.
- The TFP growth rate of the non-manufacturing industry is lower than that of the manufacturing industry.

[Analysis]

- In the manufacturing industry, strong growth was shown in electrical machinery and precision instruments during the 1980s. This growth subsequently declined during the 1990s, and then picked up again in the 2000s.
- In the non-manufacturing industries, TFP growth has remained consistently low in the services, real estate and agriculture, forestry and fishing industries.

**Figure 2-1-9 TFP Growth Rate by Industry**

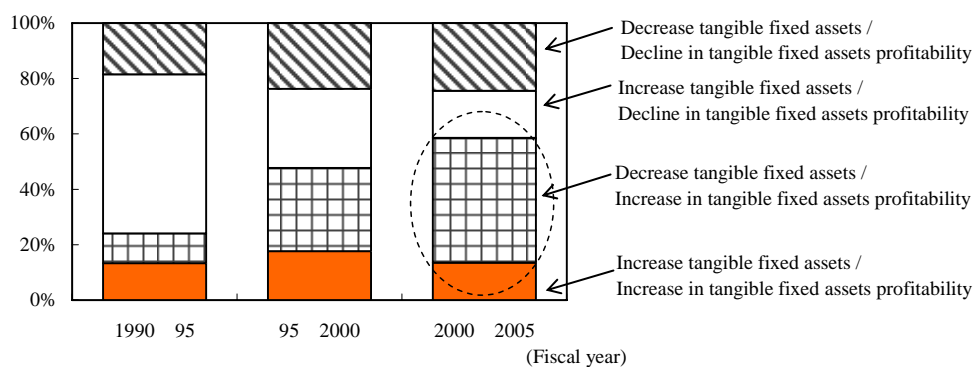


Source: *National Accounts*, Cabinet Office; *Indices of Industrial Production*, *Index of Tertiary Industry Activity*, Ministry of Economy, Trade and Industry; *Short-term Economic Survey of Enterprises in Japan (TANKAN Survey)*, Bank of Japan  
 Note: Values for the 2000s are derived from 2000-2005 data.

## Section 2 Japanese Corporate Behavior from the Perspective of Productivity

- Companies still have a cautious attitude toward the expansion of business investment which lead to productivity growth.
- In an upward trend of business investment, the factors which cause companies to become cautious toward business investment, companies that expand globally have deep concerns about uncertainty, and companies that focus on domestic business expansion are conscious of the scarcity of investment opportunities.

**Figure 2-2-4 Companies Increase Profitability by Narrowing Down Their Tangible Fixed Assets**

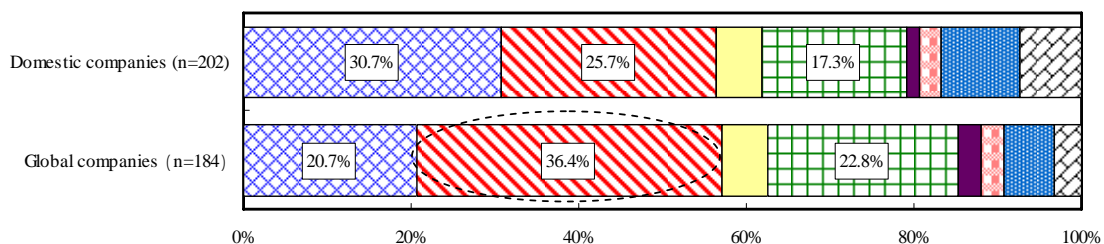


Notes: 1. Nikkei NEEDS

2. Aggregated data on 2,411 companies for which necessary data could be obtained for the four successive periods of FY 1990, FY 1995, FY 2000 and FY 2005.

3. Tangible fixed assets profitability = Operating income (loss) / Tangible fixed assets (excluding land and construction in progress)

**Figure 2-2-6 Constraining Factors for Business Investment**



□ Bearing in mind investment profitability, there are no deals worth investing in

■ Although there are deals that measure up to standard in terms of investment profitability, we must be cautious due to large uncertain

■ Our priority is on debt repayment

□ We are currently limiting the total amount of business investment to a certain level (for example: depreciation expense)

■ We have constraints on external procurement (loans, issuance of debentures, etc.)

□ Even if we were to make a business investment, we are unable to secure capable personnel

■ Other (including: we are unable to obtain necessary requirements; and we give priority to making returns to shareholders)

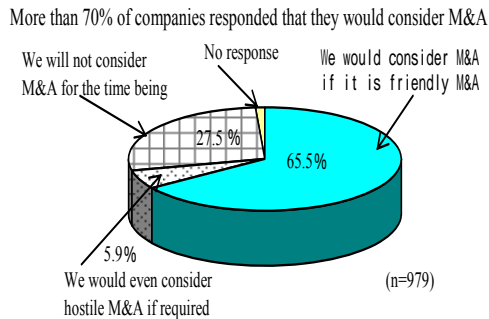
□ No response

Notes: 1. Nikkei NEEDS; 2007 Survey on New Corporate Growth Strategies, Cabinet Office

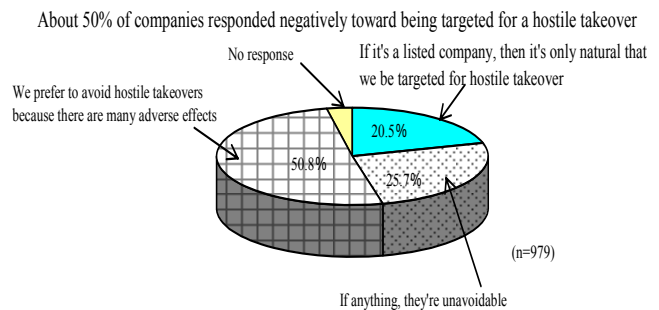
2. "Domestic companies" refers to those which have a ratio of overseas net sales to consolidated net sales of less than 25%, and "global companies" refers to those which have a ratio of 25% or greater.

- M&A are regarded as an effective means of productivity growth, and 70% or more companies consider M&A.
- With regard to being targeted for a hostile takeover, approximately 50% of companies respond negatively, stating “we prefer to avoid a hostile takeover because there are many adverse effects.”
- Looking at the attitudes toward takeover defense strategies, more than 50% of companies prioritize avoiding the takeover risk confronting them, and nearly 30% of companies take a positive view toward the crossholding of shares as a defense strategy against hostile takeovers.

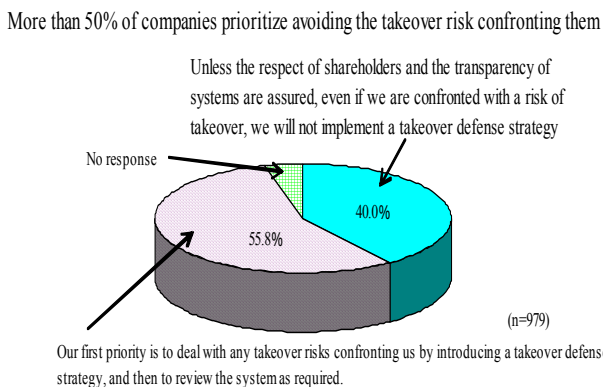
**Figure 2-2-8 (2)**  
**Philosophy toward M&A**



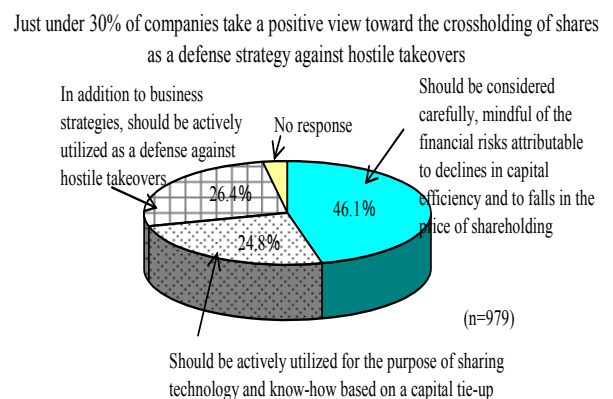
**Figure 2-2-13 (1)**  
**Attitude to being Targeted for Hostile Takeovers**



**Figure 2-2-14 (2)**  
**Attitude to Takeover Defense Strategies**



**Figure 2-2-15**  
**Attitude of Companies toward Cross Shareholdings**

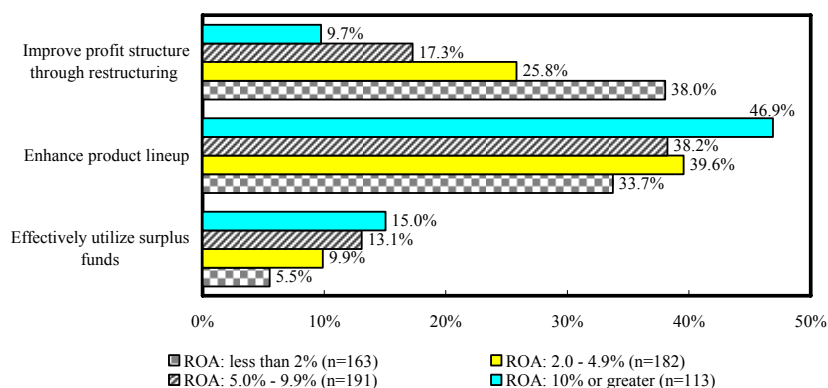


Note: 2007 Survey on New Corporate Growth Strategies, Cabinet Office

- As for the purpose of M&A, less profitable companies tend to emphasize earnings recovery through restructuring, while highly profitable companies tend to focus on enhancing their product lineup and effectively utilizing their surplus funds.
- M&A in Japan focuses on cost-saving synergy effects. There is further scope for utilizing M&A as a means for productivity growth in Japan.

**Figure 2-2-10 Profitability and M&A**

(3) The lower a company's ROA, the more likely it is to regard M&A as a means for restructuring; conversely, the higher a company's ROA, the more likely it is to regard M&A as means for enhancing its product lineup and effectively utilizing its surplus funds



Note: 2007 Survey on New Corporate Growth Strategies, Cabinet Office

[Analysis]

- Companies that have been taken over have shown greater improvement in profitability (ROA: return on assets) than other companies three years after an M&A.
- An factor for improvement in profitability is improvement in the sales cost ratio. Cost-saving synergy effects, such as the standardization of parts, joint purchasing and downsizing on asset, is mainly contributing to the improvement in profitability. Increased sales does not show obvious effects on improvement in profitability.

**Table 2-2-12 (2)**

**Changes in Business Performance by Acquired Companies Before and After M&A**

The degree of profitability improvement is greater for companies acquired through M&A compared to companies that have not participated in M&A

t-1	t+3 financial index variation	Average of acquired companies (387 companies)	Average of other companies (17,434 companies)	t value	Significance level
	ROA variation (%)	2.32	0.29	-6.346	***
	ROS variation (%)	2.63	0.69	-3.956	***
	Total asset turnover ratio variation (times)	0.08	-0.02	-5.469	***

Notes: 1. Nikkei NEEDS; MARR database, RECOF

2. The surveyed businesses were divided into three groups: M&A acquiring companies, M&A acquired companies, and companies that have done neither; and t-tests were conducted on the average values of the financial data of each group.
3. Of all the listed companies for which each of the financial indices was accessible, companies that were not within  $\pm 4\sigma$  from the mean of each of the financial indices, and companies which had both acquired and been acquired through M&A in the same year were excluded. The remaining 19,393 companies were tested.
4. \*\*\* in the table indicates that it is significant at 1% level.
5. The shaded areas in the table indicate the group of companies with the largest average value for the improvement margin of each of the indices: ROA, ROS and total asset turnover ratio.

- Attitude to human capital investment for improving productivity is different depending on company.
- The more profitable a company is, the more active it is in human capital investment.

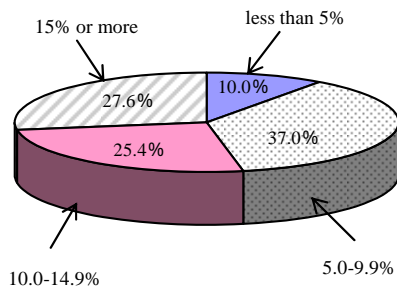
[Analysis]

- On quantitative analysis of the ratio of time spent on human capital investment, companies that consider capacity building is “the responsibility of the company” tend to actively invest in human capital.

**Figure 2-2-16 Questionnaire Survey on Human Capital Investment**

**(1) Ratio of time spent on human capital investment**

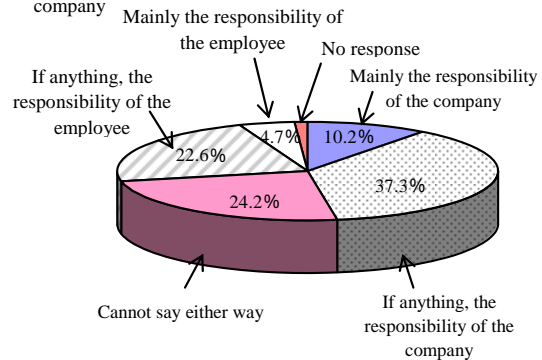
About 70% of companies have a ratio of less than 15%



(n=519)

**(2) Philosophy on the capacity building of regular employees**

Almost 50% of companies regard it as the responsibility of the company



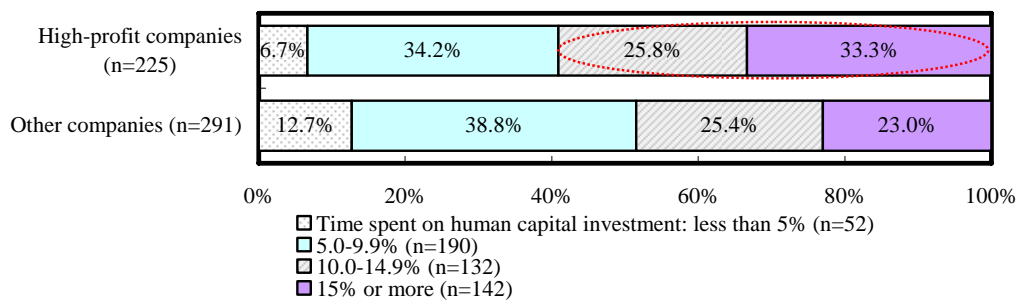
(n=979)

Notes: 1. 2007 Survey on New Corporate Growth Strategies, Cabinet Office

2. Based on the survey questionnaire, the total value of [ratio of time spent on workplace training] x [the composition ratio of employees by position] was calculated, and this was used as the ratio of time spent on workplace training for each employee.

**Figure 2-2-18 Relationship between Human Capital Investment and Business Performance**

There is a tendency for human capital investment to be active in companies with high ROA

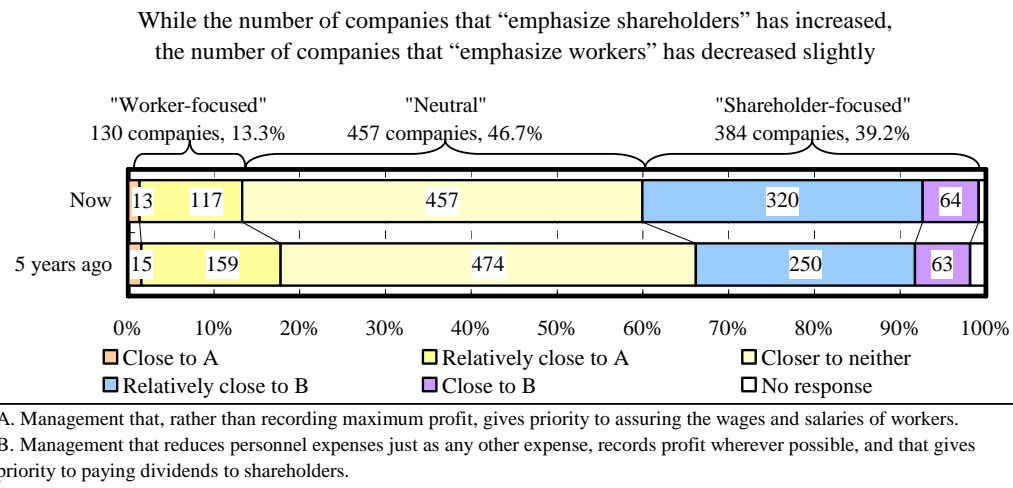


Notes: 1. 2007 Survey on New Corporate Growth Strategies, Cabinet Office; Nikkei NEEDS

2. "High profit" refers to an ROA of at least 5%, and "other companies" refers to those with an ROA of less than 5%.

- Assessing the governance of a company is important from the perspective of productivity growth.
- In terms of the corporate governance, number of companies that “emphasize shareholders” have increased, while the number of companies that “emphasize workers” have decreased.
- The decision-making ability of a company affects its business result.

**Figure 2-2-19 "Philosophy on Profits" by Japanese Companies (Present and 5 Years Ago)**

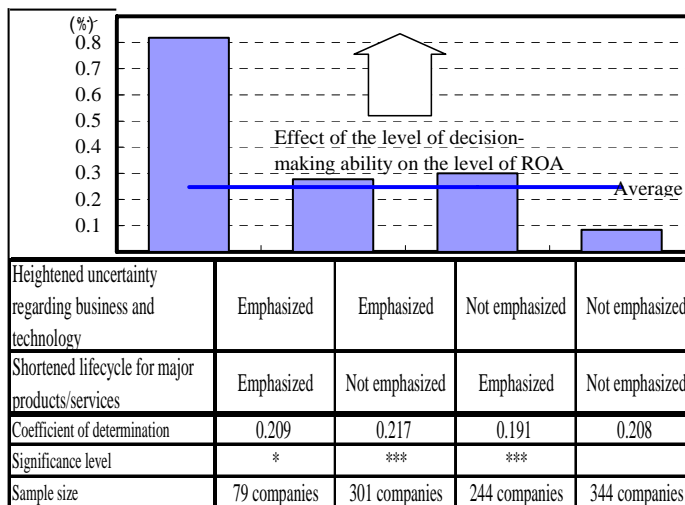


[Analysis]

- Using the survey data and the financial data of companies, estimation of the business results of companies (ROA) shows following situation. In companies facing business uncertainty or technology uncertainty or facing shortened lifecycle of main product/service, decision-making ability reflects well in the improvement of business results.

**Figure 2-2-20 (2) Decision-Making Ability Affects Business Results**

In a competitive environment of heightened uncertainty or shortened product/service lifecycle, decision-making abilities significantly affect business results



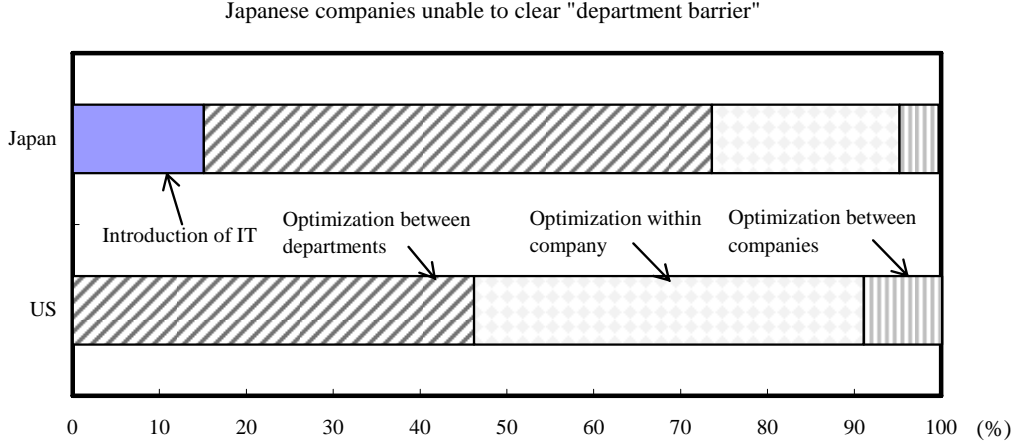
\* The decision-making ability index is the total of the self-assessed points for each of the following items in the questionnaire, with each question being graded out of 5 points.

- (1) Total optimization: Strategic decision-making can be done swiftly
- (2) Differentiation, uniqueness: Unique strategies can be created for own company
- (3) Risk: Even in the face of risk, bold strategies can be created
- (4) Withdrawal decision: Decisions to exit existing business can be made swiftly

### Section 3 IT Usage and Productivity in Japanese Companies

- With respect to utilizing IT for productivity growth, companies have to consider not only introducing IT but also re-engineering both corporate operations and management structure.

**Figure 2-3-2 IT Usage in Japan and the US**



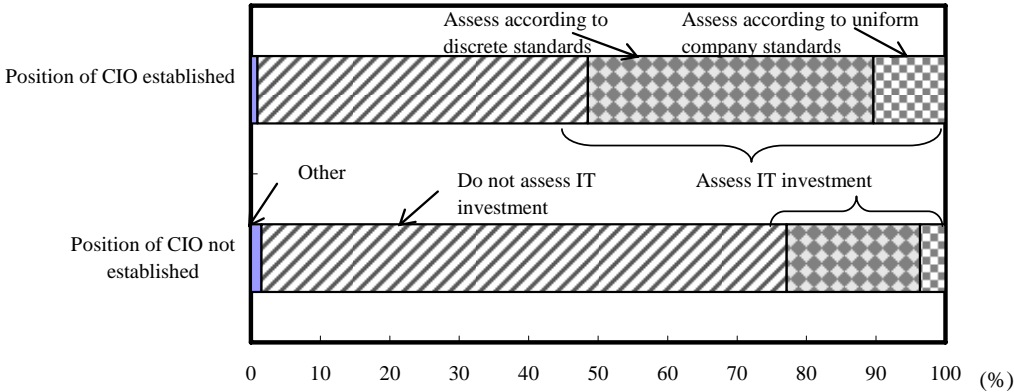
Note: Study of the Current Use of IT in Companies Based on "IT Management Indices", Ministry of Economy, Trade and Industry

[Analysis]

- Use of IT capital remains in departmental optimization in most Japanese companies.
- As a result of estimating labor productivity using the data of 510 listed companies, it was observed that companies, which have a chief information officer (CIO) and which appraise their IT investments, were more likely to have an information system with a broader working scope and were more likely to have higher labor productivity.

**Figure 2-3-5 Assessment of IT Investment by Companies (FY 2004)**

A greater proportion of both companies with CIOs and companies in the manufacturing industry assess their IT investments



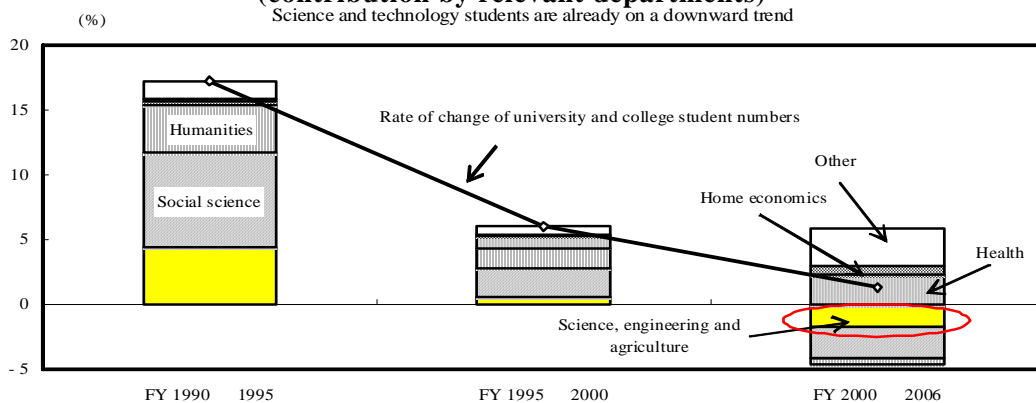
Note: Survey on Information Processing Conditions (2005), Ministry of Economy, Trade and Industry



## Section 4 Issues of Innovation in Japan

- Securing highly-skilled science and technological personnel is important to support future innovation.
- Networks between industry, academia and government which link people and research from a broad range of fields have to be created. In Japan, a proportion of company's fund in a college resource for research and development is lower than that of US, EU and Korea.

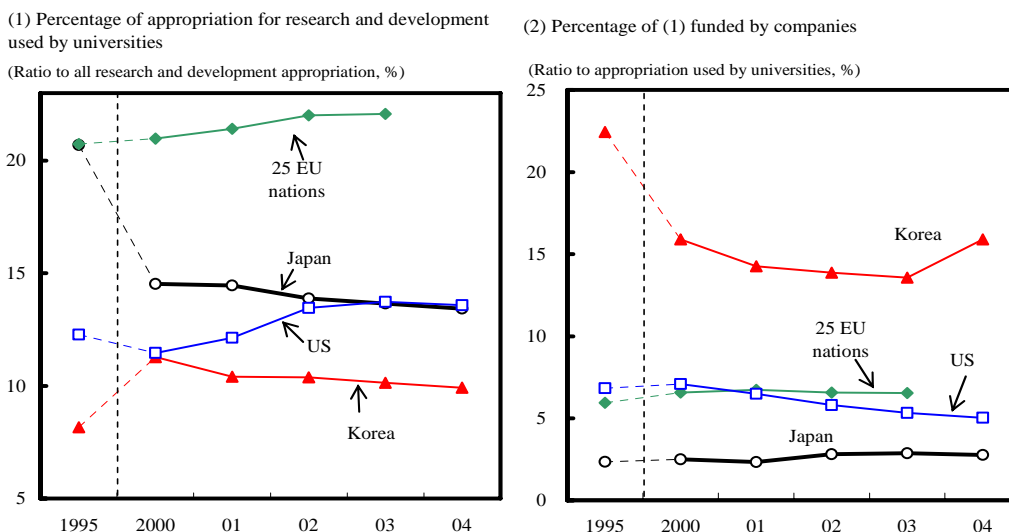
**Figure 2-4-2 Changes in University and College Students  
(contribution by relevant departments)**



- Notes: 1. *School Basic Survey*, Ministry of Education, Culture, Sports, Science and Technology  
 2. With regard to the classification of relevant departments, some of the categories in the basic statistics have been reorganized as follows:
- |   |                                      |
|---|--------------------------------------|
| [Categories in School Basic Survey]         | [Categories in this table]           |
| Science + Engineering + Agriculture         | Science, engineering and agriculture |
| Mercantile marine + Art + Education + Other | Other                                |

**Figure 2-4-7 International Comparison of Research and Development Costs Incurred by Universities**

The flow from companies to universities is low



- Notes: 1. *Main Science and Technology Indicators*, OECD (2006)  
 2. The US figures for 2003 and 2004 are provisional figures.  
 3. (1) is the ratio against all appropriation for research and development;  
 (2) is the proportion of (1) funded by companies.

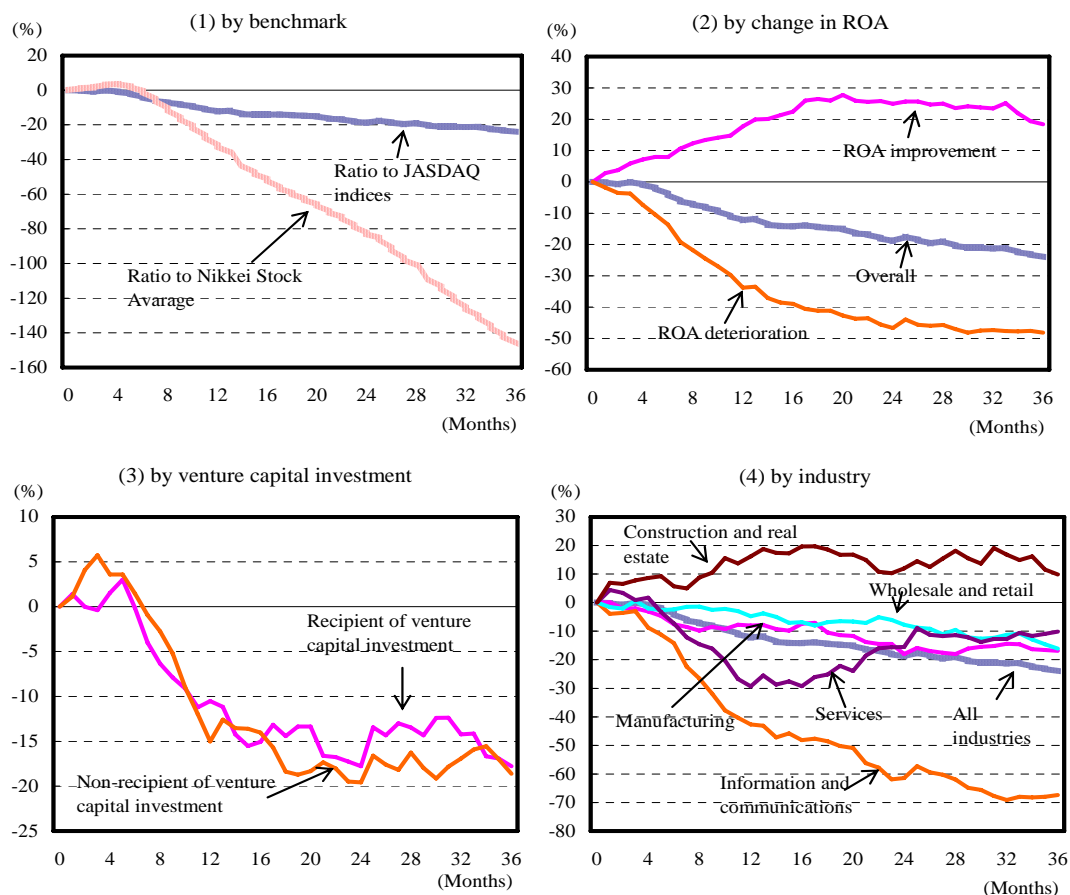
- In addition to the investment towards venture capital, the development of the securities market for venture companies is important for improving the environment for supporting venture companies.
- Venture companies which have succeeded in raising large amounts of funds may have failed to fully utilize the funds.

[Analysis]

- Looking at the evaluation in the stock market over the three years since being publicly offered, a number of distinctive characteristics can be cited for companies initially offered on JASDAQ (1999-2003), including: a stock price performance (cumulative excess return) that fares poorly in comparison with the Nikkei Stock Average, and a poor stock price performance of both companies with worsening ROA and companies in the information/communications field.

**Figure 2-4-9 Price-Earnings Ratios of Initial Public Offerings (cumulative excess return)**

The price-earnings ratios of IPO firms has declined



Source: Nikkei NEEDS

- Note:
1. The horizontal axis shows the number of months passed since being offered to the public; and the vertical axis shows the cumulative abnormal return relative to the benchmark.
  2. JASDAQ indices are used for all benchmarks except for the ratio to the Nikkei Stock Average in the “by benchmark” graph.