Chapter 2 New “Opening” of Japan and Innovation

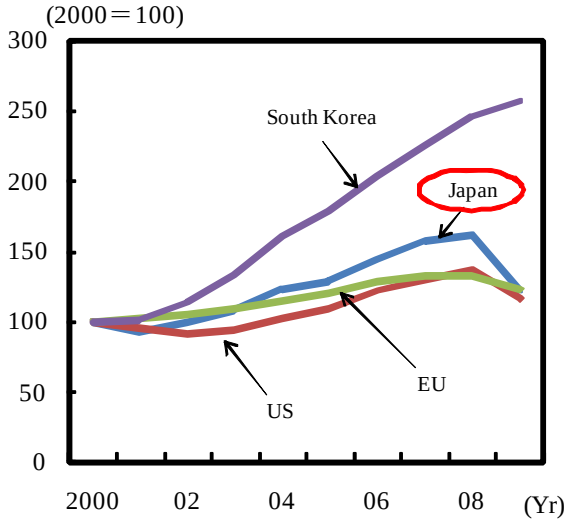
Section 1 Globalization of the Japanese Economy: Review

- Growth in Japanese exports was relatively slow in nominal terms in the 2000s.

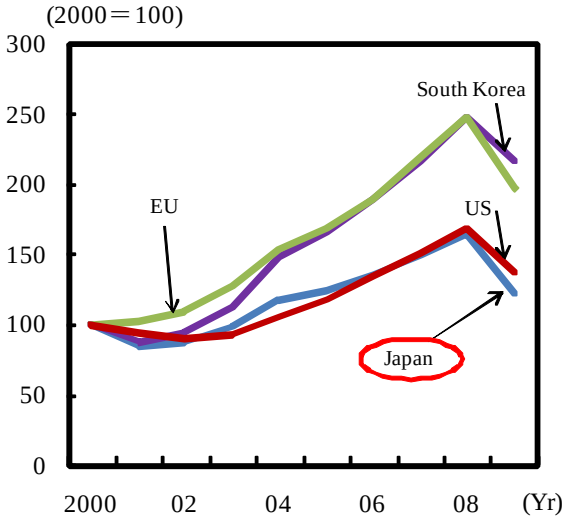
Figure 2-1-7 Changes in exports to major countries

In real terms, exports from Japan grew faster than exports from the US and the EU.

(1) Real exports (to the rest of the world)



(2) Nominal exports (to the rest of the world; on a dollar basis)

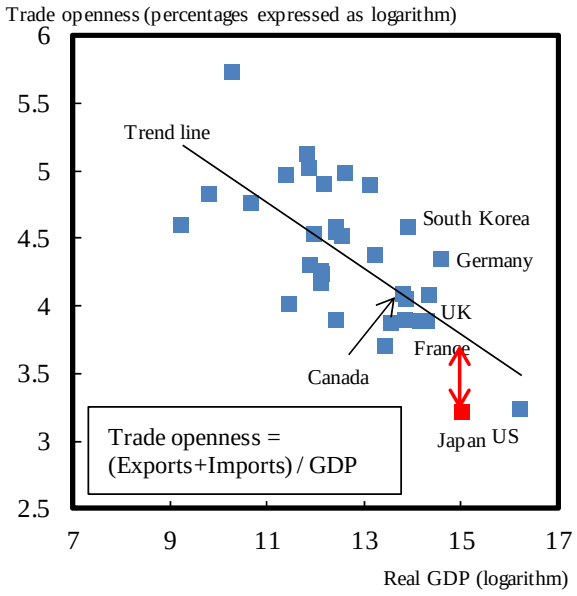


(Note) China includes Hong Kong.

- Japan’s trade openness is low considering its economic size.
- The conclusion of FTAs tends to increase the trade volume.

Figure 2-1-10 Correlation between economic size and trade openness (1) 2009

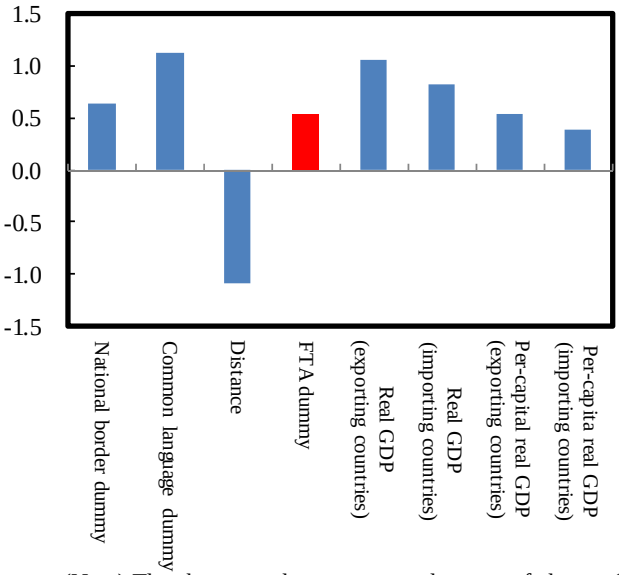
The larger a country's economic size is, the smaller its trade openness tends to be.



(Note) Real GDP is on a dollar basis. Japan's trade openness in 2009 was 24.8% (3.2 in logarithm).

Figure 2-1-11 Variable factors for the volume of bilateral trade

The conclusion of FTAs has a positive impact on the trade volume.



(Note) The above numbers represent the rates of change (%) in real exports with the assumption of the presence or absence of each factor or a 1% change in each factor. The estimate period is from 1990 to 2009.

- Although the balance of inward foreign direct investment (FDI) has increased, it is still small by international standards.

Figure 2-1-13 Changes in outward and inward FDI and the overseas production ratio

(1) Ratio of Japanese FDI to GDP

Outward FDI is on an upward trend.

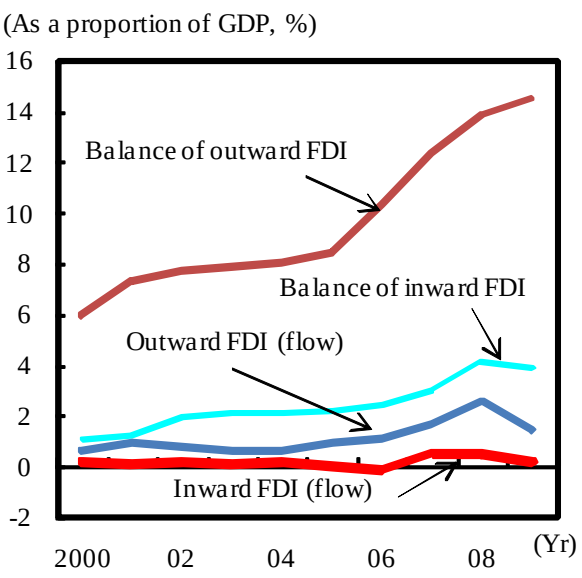
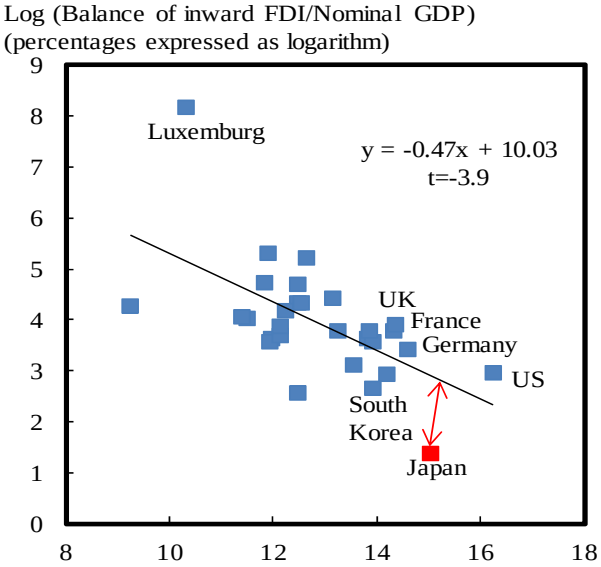


Figure 2-1-14 Correlation between economic size and trade openness

(2) Inward FDI

The balance of inward FDI in Japan is small considering the country's economic size.



(Note) The above is based on data for 2009 compiled by individual OECD countries.

- The ratio of foreign workers in Japan is small and growth in their number is also low.
- The number of foreign students accepted into Japan is not necessarily small considering language problems.

Figure 2-1-16 Utilization of foreign workers

(1) International comparison of the ratios of foreign workers

The ratio of foreign workers in Japan is small.

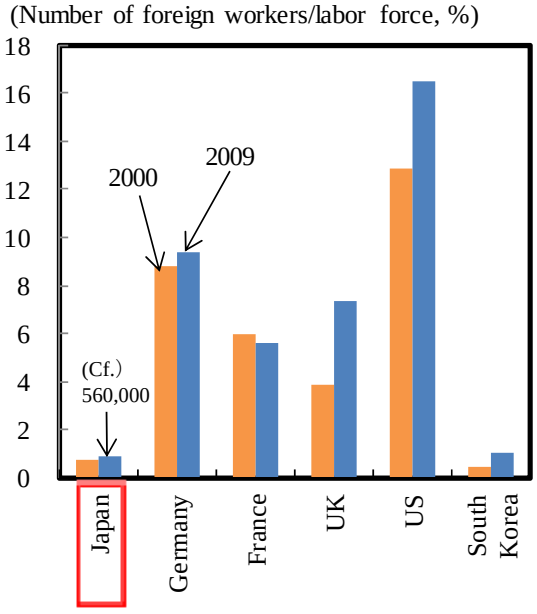
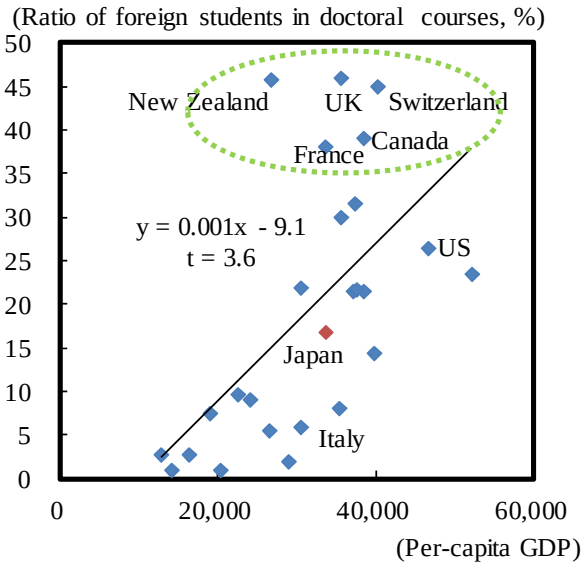


Figure 2-1-17 Acceptance of foreign students

(2) Foreign students in doctoral courses and per-capita GDP

The number of foreign students accepted into Japan is not necessarily small.



(Note) The data for per-capita GDP are on a purchasing power parity basis.

Section 2 Impact of Globalization on the Domestic Economy

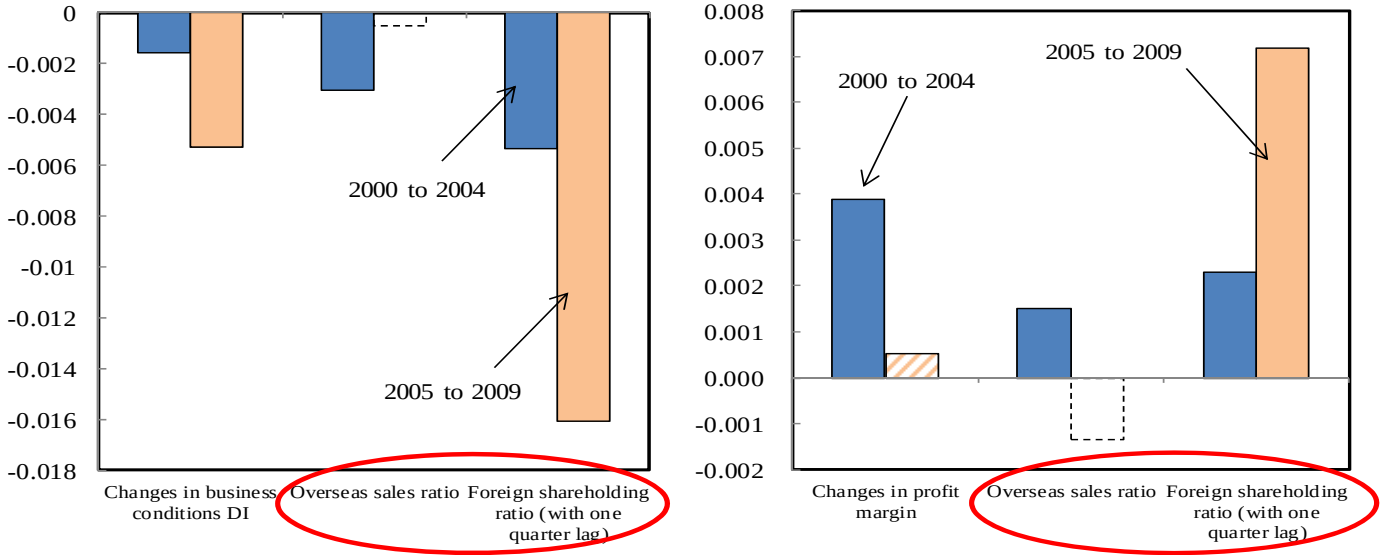
- While the globalization of corporate activities lowers labor's share of income, it raises the wage level by capturing foreign demand and increasing value added through improved governance.

Figure 2-2-3 Globalization of corporate activities and personnel costs

(1) Labor's share of income

(2) Wages

Although the globalization of corporate activities lowers labor's share of income, it has a positive impact on wages.



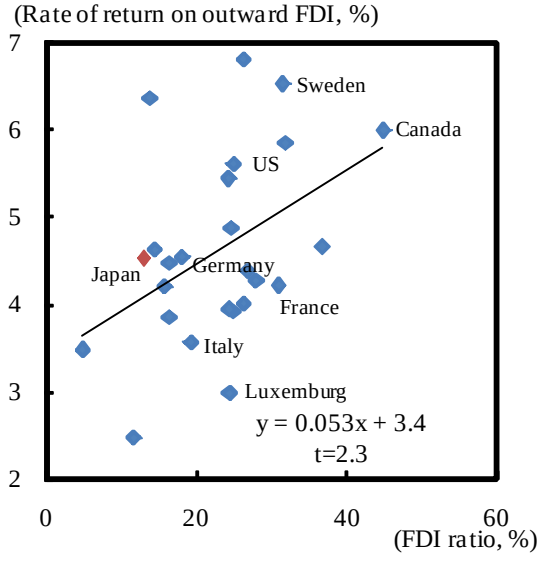
(Note) The above numbers show changes in labor's share of income and per-capita personnel cost on the assumption of a 1 percentage change in each in each variable.

- If the ratio of FDI rises, the average rate of return on FDI will improve.
- The ratio of dividends Japan receives from FDI is not low by international standards.

Figure 2-2-5 International comparative analysis of the rate of return on FDI

(2)Rate of return on FDI and FDI ratio

The higher a country's FDI ratio is, the higher its rate of return on FDI tends to be.

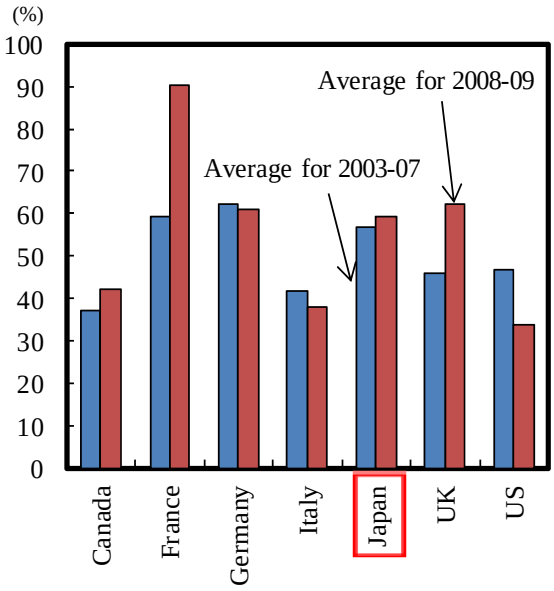


(Note) The above numbers are the averages for 2006 to 2008.

Figure 2-2-6 Dividends received from FDI

(2) Ratio of dividends to returns on FDI

The ratio of dividends Japan receives from returns on FDI is not low compared with the ratios for other major countries.

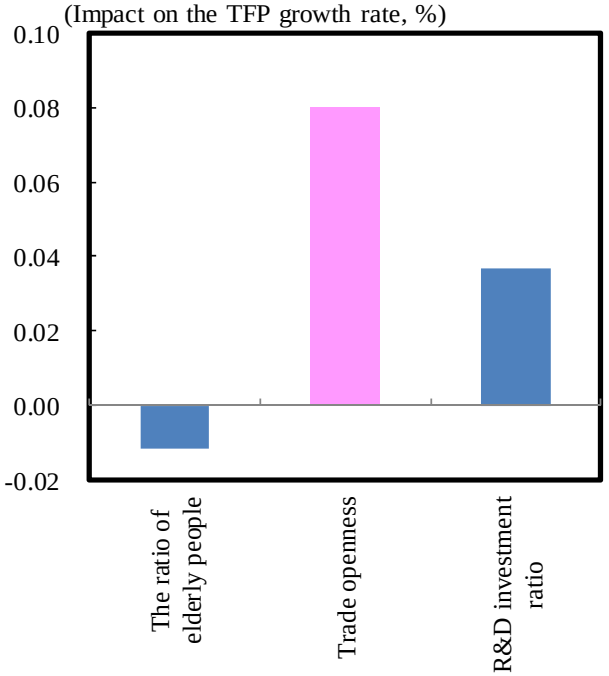


- Expansion of trade and investment has a positive impact on productivity as their fundamental merit.
- However, the perception varies from industry to industry and from company to company.

Figure 2-2-7 Trade openness and productivity improvement

An increase in trade openness contributes to an improvement in the rate of rise in productivity.

(Impact on the TFP growth rate, %)



(Note) The above numbers represent changes in the TFP growth rate on the assumption of a 10 percentage point change in each variable.

Figure 2-2-8 Impact of EPAs, etc on earnings

(1) By industry

Japanese companies generally have a positive stance on FTAs, etc.

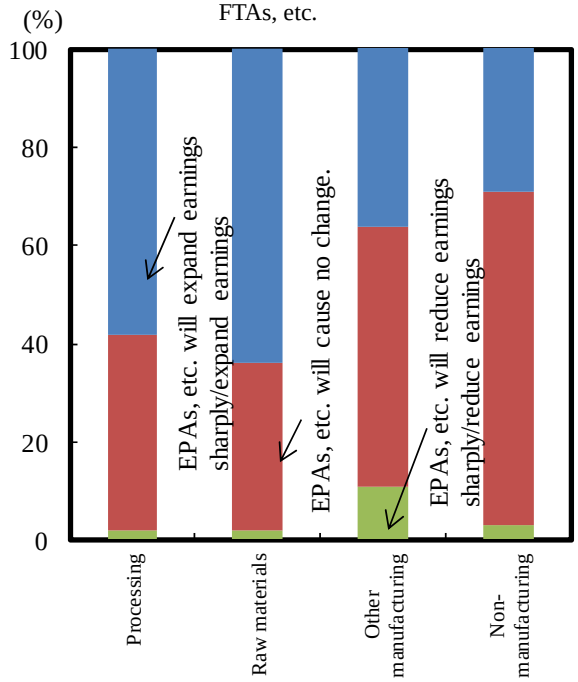
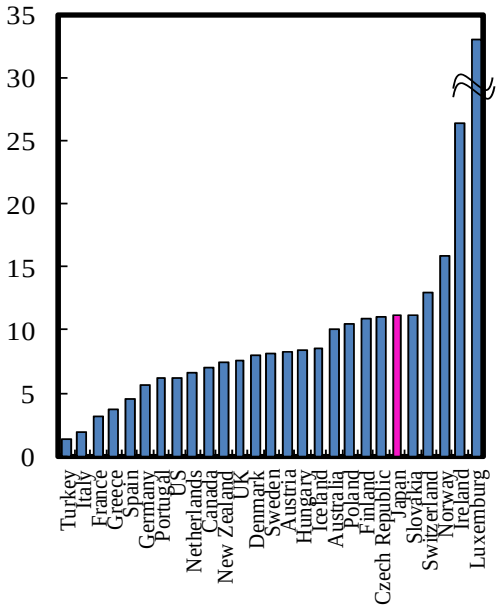


Figure 2-2-10 Foreign companies' returns on FDI

(2) Rate of returns on inward FDI in OECD countries

The rate of returns on inward FDI in Japan is high.

Return on inward FDI, (%)

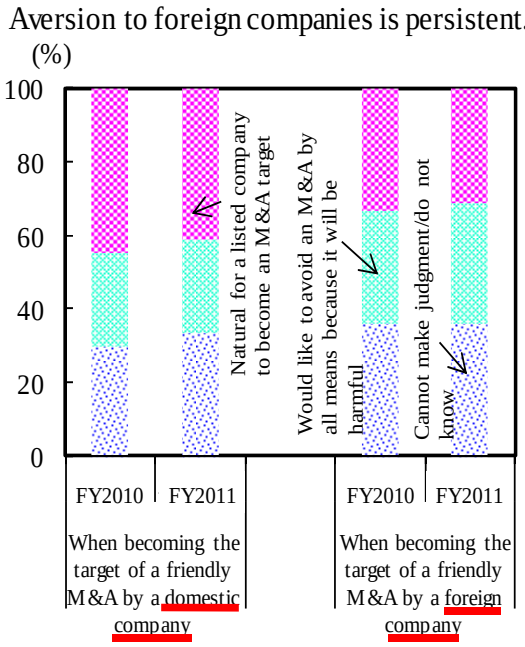


(Note) The rate of returns on inward FDI in Luxemburg is 75%.

Figure 2-2-12 Barriers to inward FDI

(2) Stance toward friendly M&As

Aversion to foreign companies is persistent.



Section 3 Response to Global Shift to Knowledge-Based Economy

- Japanese companies' investments in intangible assets are mainly investments in innovative property including R&D investment. Investment in "economic competencies" including brands and organizational reform is relatively small.

Figure 2-3-12 Changes in investments in and stocks of intangible assets

(1) Classification of intangible assets

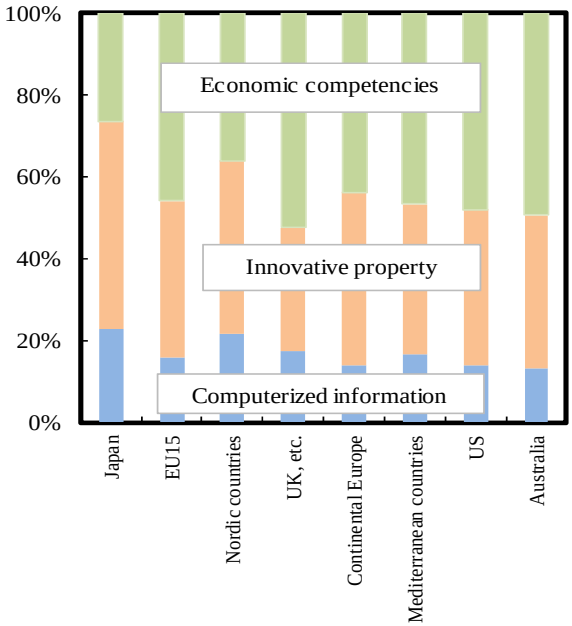
Intangible assets are classified into three types: computerized information, innovative property and economic competencies.

Computerized information	・Custom-made software ・Package software ・Self-developed software ・Database
Innovative property	・Natural sciences-related R&D ・Resource development rights ・Copyrights and licenses ・Other product development, design, non-natural sciences R&D (Design, display, machinery design, construction design, financial product development)
Economic competencies	・Brands ・Corporate human capital ・Organizational structures

Figure 2-3-14 International comparison of investments in intangible assets

(1) Mix of investments in intangible assets

The ratio of innovative property is high in Japan.



(Note) The above data are for 2005. However, the data concerning the US are for 2006.

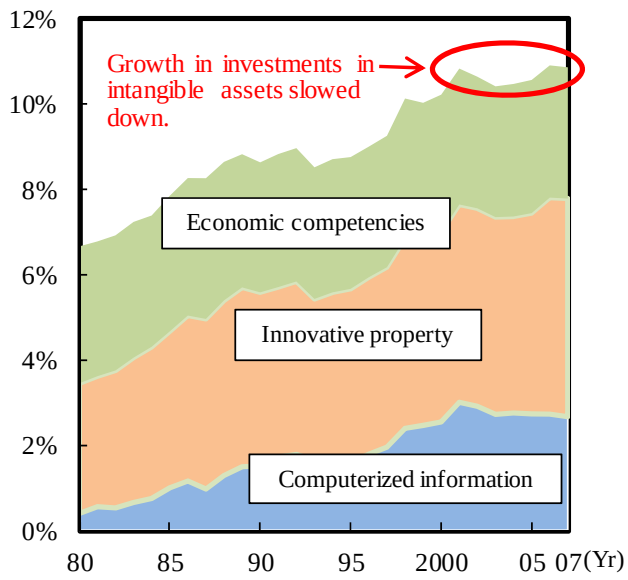
- Since 2000, growth in the ratio of intangible assets to GDP has slowed down on both flow and stock bases (in real terms).

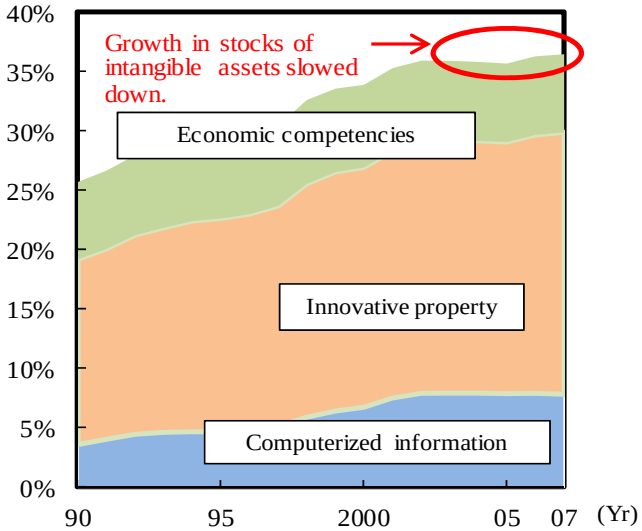
Figure 2-3-12 Changes in investments in and stocks of intangible assets

(3) Ratio of investments in intangible assets to GDP (real)

(4) Ratio of stocks of intangible assets to GDP (real)

Investments in intangible assets by Japanese companies account for slightly more than 10% of GDP.





(Note) The above data are based on estimates by the Cabinet Office. Both intangible assets and GDP are in real terms. Data on intangible assets concern assets held by private companies. Average growth in intangible assets: 4.8% in 1990-1995, 3.7% in 1996-2001 and 2.6% in 2002-2007.

- In Japan there are a large amount of stocks of intangible assets, mainly held by industries with large R&D expenses.
- Globalized companies' investments in intangible assets have significant effects.

Figure 2-3-15 Intangible assets by industry

(2) Stocks

The processing and other manufacturing industries hold a relatively large amount of intangible assets.

(Ratio to overall assets, %)

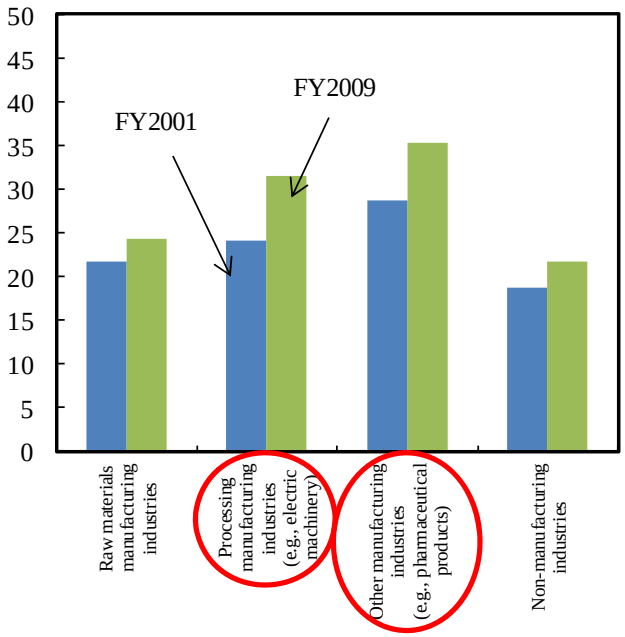
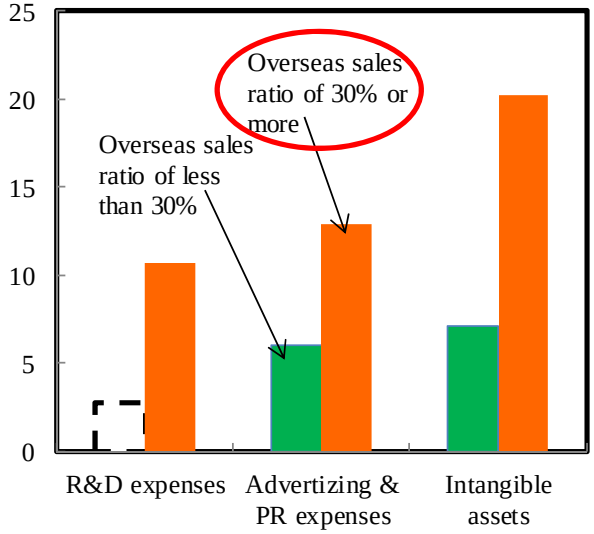


Figure 2-3-17 Market's assessment of investments in intangible assets

Globalized companies' investments in intangible assets have significant effects.

(Improvement in the market's assessment of companies, percentage points)



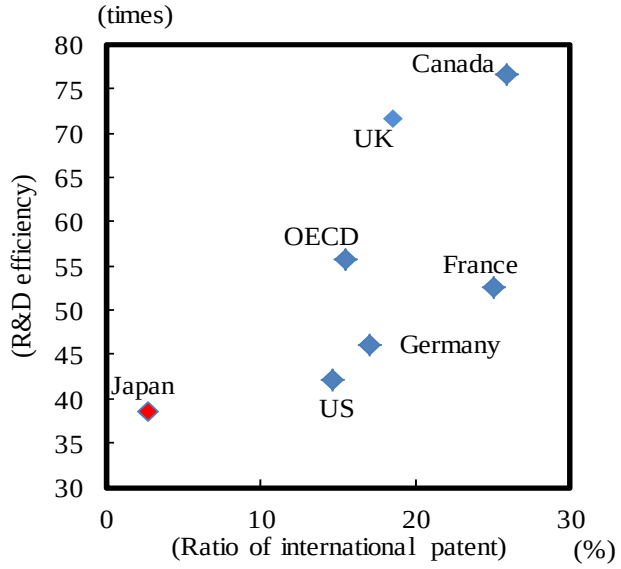
(Note) 1. Tobin's q was estimated on the assumption of a standard deviation change of 1 for each item.
2. Tobin's q = (Market capitalization + Liabilities)/Assets

- As Japanese companies' R&D efficiency is low, it is essential to improve the efficiency through international partnership.

Figure 2-3-7 R&D efficiency and globalization of patents

(2) Changes in R&D efficiency of countries

Japan's R&D efficiency is low compared with other major countries.

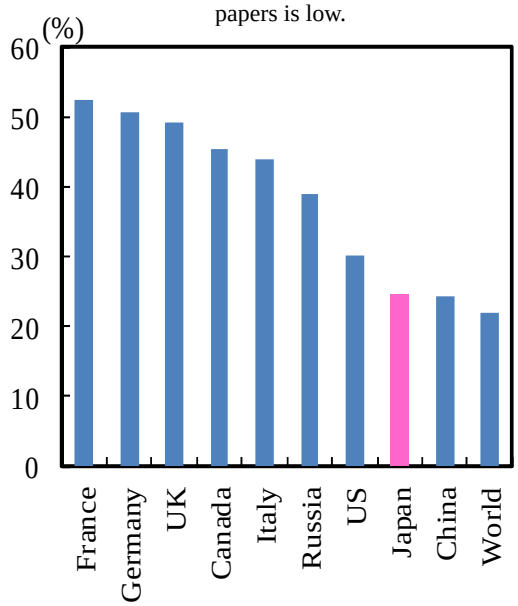


(Note) 1. The above data are for 2008.
2. R&D efficiency = Value added (five-year backward average)/ R&D expenses five years before (five-year backward average)
3. The "ratio of international patents" refers to the ratio of patents on inventions made abroad which are filed by domestic residents in accordance with the PCT (Patent Cooperation Treaty).

Figure 2-3-9 Inter-company technology partnership and internationally co-authored scientific papers

(2) Ratio of internationally co-authored scientific papers

In Japan, the ratio of internationally co-authored scientific papers is low.



(Note) The above data are for 2009.