

Chapter 2, Section 1 Structural changes in growth after the global financial crisis

- After the global financial crisis, the growth rate of the economy in general declined, especially in manufacturing and some other sectors. (Fig. 1)
- Seen from the supply side, growth of major economies before the crisis was greatly influenced by total factor productivity (TFP). After the crisis, all factors make only a smaller contribution (Fig. 2)
- Data of labor input suggest the possibility of some structural change taking place in some countries, such as a higher long-term unemployment rate in the United States. (Fig. 3)
- Capital input has also been growing only at a slower rate since the crisis, generally with consequent rises in vintage (age of equipment). (Fig. 4)
- With these trends continuing, the potential growth rate might further decline, with slower growth of TFP working as a main factor. (Fig. 5)

Fig. 1 Contributions of Sectors to Economic Growth
(1) USA (2) Germany (3) Finland

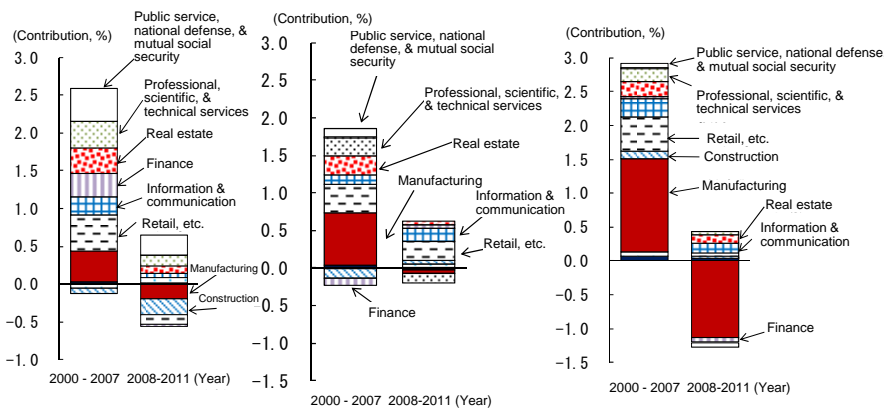


Fig. 3 Long-term Unemployment Rate

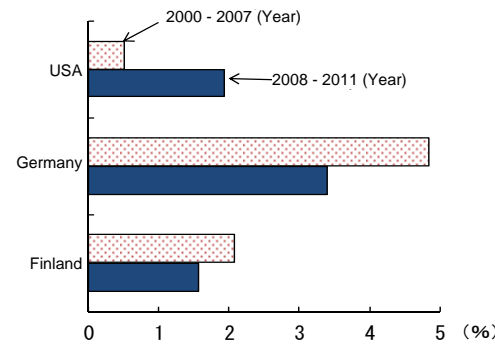


Fig. 4 Vintage (Age of Equipment)

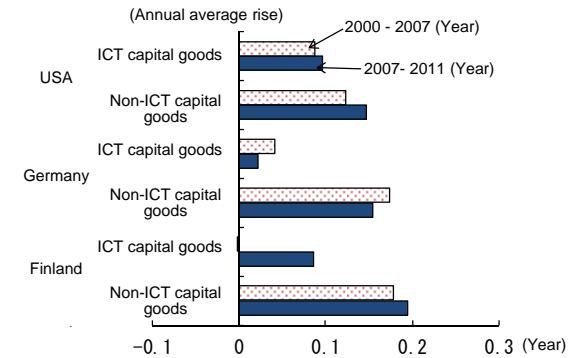


Fig. 2 Economic Growth Rate, and Contributions of Labor, Capital, and TFP
(1) USA (2) Germany (3) Finland

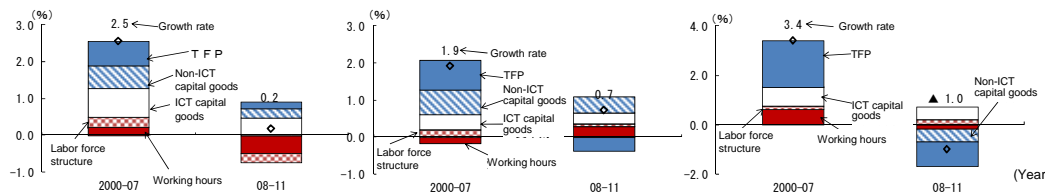
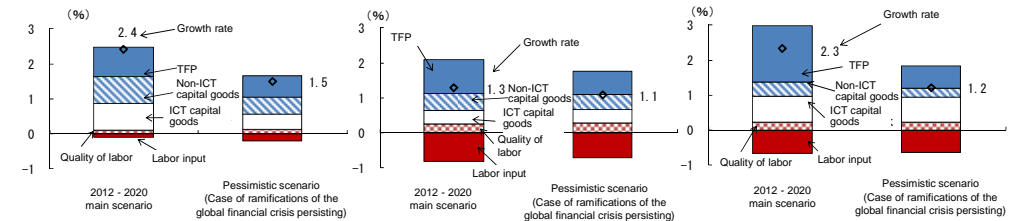


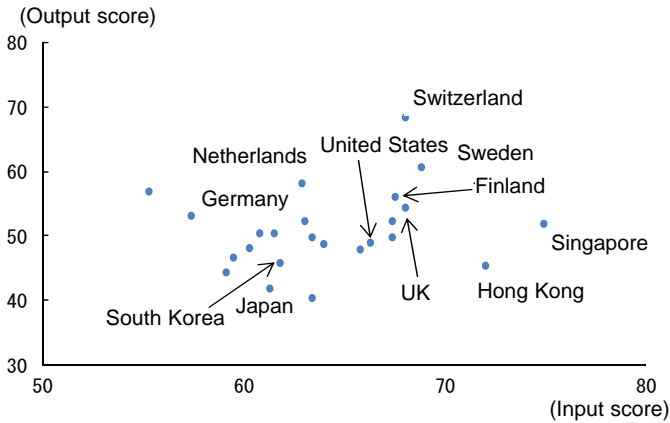
Fig. 5 Estimated Potential Growth Rate (by input factor)
(1) USA (2) Germany (3) Finland



Chapter 2, Section 2 State of affairs concerning innovation in countries, and conditions for creating innovation (1) Comparison of innovation between countries, and backgrounds of the differences

- In the overall ranking of innovation, higher positions are occupied by European countries, especially those of Scandinavia. (Fig. 6 - 7)
- For indexes of input into activities for innovation, Scandinavian and other European countries are conspicuous, while South Korea stands out especially in the size of budget input by the government and development of Internet environments. (Fig. 8 - 11)

Fig. 6 Overview of Major Countries' Innovation Input and Output (2012)



(Note) Adapted from Global Innovation Index 2012

Fig. 7 Overall Innovation Rankings of Major Countries, and Their Rankings for Components (2012)

		(Ranking)			
		United States	Germany	Finland	Japan
Overall rankings		10	15	4	25
Input	Institutions (political & regulatory environments, etc.)	17	26	6	23
	Human capital and research (No. of researchers, R&D spending, etc.)	22	16	3	19
	Infrastructure (effective use of ICT, etc.)	14	16	5	7
	Market sophistication (venture capital deals, etc.)	2	24	26	18
	Business sophistication (academia-industry partnerships, etc.)	9	24	7	21
Output	Knowledge and technology outputs (patent applications, patent royalties received, etc.)	11	12	4	15
	Creative outputs (intangible assets, services, etc.)	33	10	17	69

Fig. 8 Ratio to GDP of Governments' Budget for Science and Technology

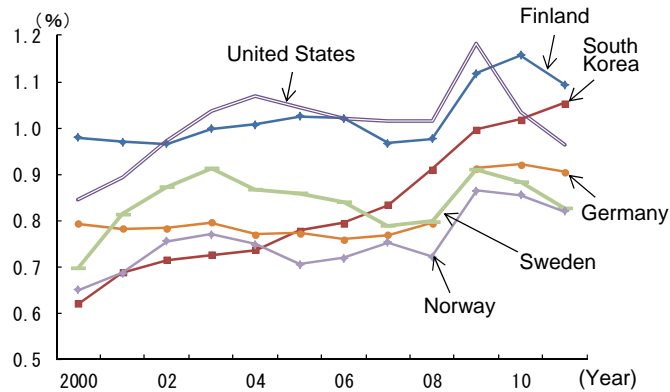


Fig. 9 No. of Researchers per 1,000 Population

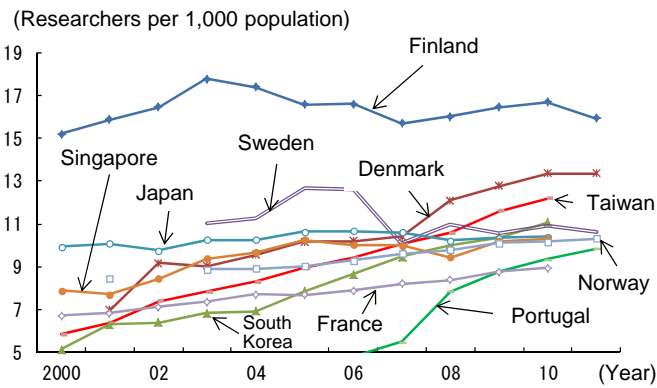


Fig. 10 Penetration of Broadband Equipment

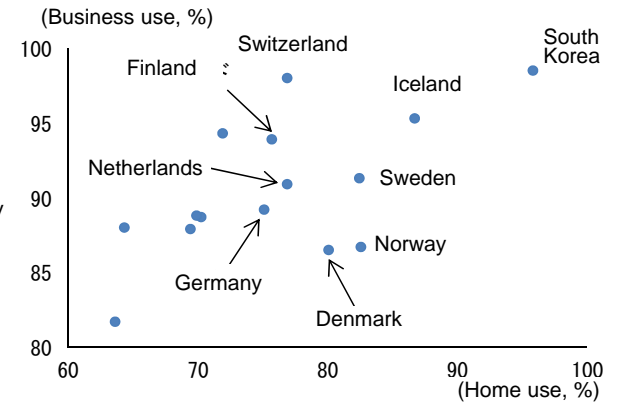
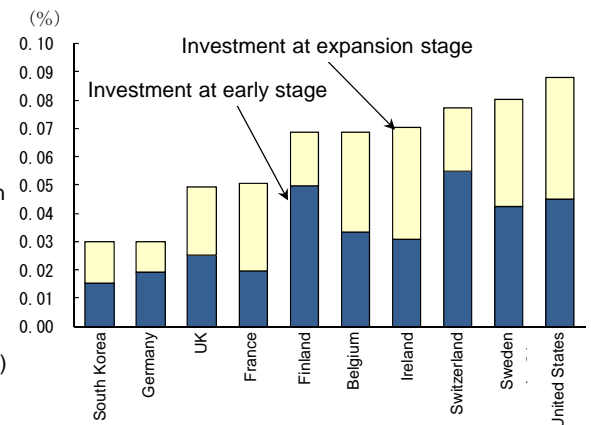


Fig. 11 Countries' Ratio of Venture Capital Investment to GDP



Chapter 2, Section 2 State of affairs concerning innovation in countries, and conditions for creating innovation (2) Overview of characteristic cases of major countries' innovation

- Indexes of outputs show the United States has an overwhelming presence in terms of patent royalties received and brand value. (Fig. 12 & 13)
- The United States also has an advantage in the field of health and hygiene. Through the government's R&D, the National Institute of Health (NIH) is engaged in and provides support for basic research, whose results are commercialized by venture companies. (Fig. 14 & 15)
- Venture companies in the United States also take the lead in the field of Internet content. They have global competitiveness in the field of computer software as well. (Fig. 16)
- In addition, the country is making progress in the extraction of shale gas, one innovation that will result in changes to its industrial structure and enhanced competitiveness. (Fig. 17)

Fig. 12 Patent Royalties (Received)

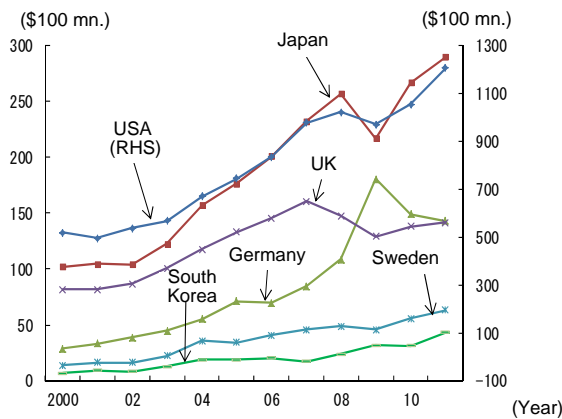


Fig. 14 Share in PCT Patents by Field of Technology

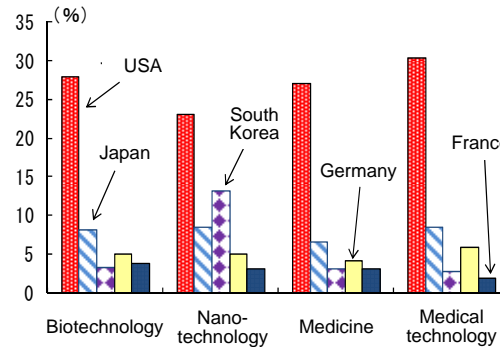


Fig. 16 Breakdown of Patent Royalties & License fees, and Their Trends

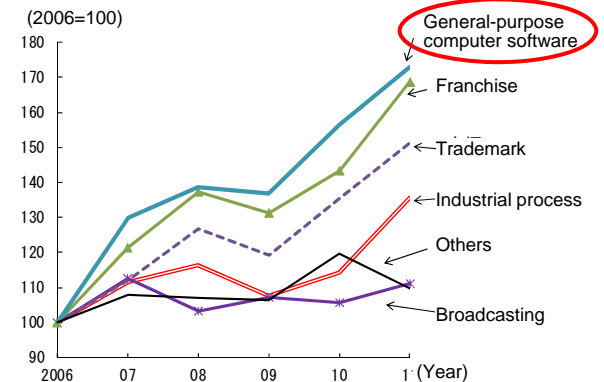
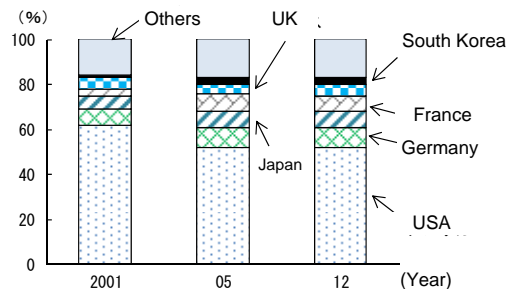


Fig. 13 International Comparison of Global Brands (100 companies)



(Notes) 1. Adapted from Interbrand.
2. For brands that earn 30% or more of their revenues outside the country of origin, value of a brand was evaluated by, for instance, estimating how much of profits is attributable to the brand.

Fig. 15 Biotech Companies and SMEs

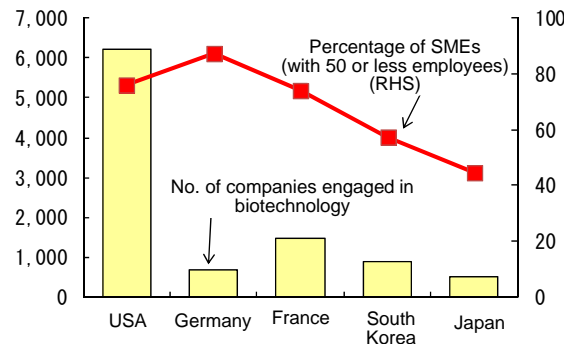
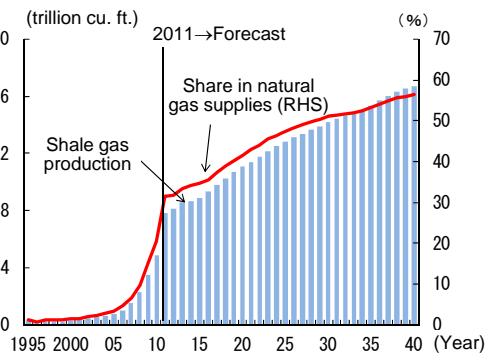


Fig. 17 Shale Gas Production Forecast



Chapter 2, Section 2 State of affairs concerning innovation in countries, and conditions for creating innovation (2) Overview of characteristic cases of major countries' innovation

- Germany is active in promoting innovation in the field of energy, resulting in growing use of renewable energy. However, generous compensations have pushed up surcharges, with sharp rises of electricity rates as a result. (Fig. 18 & 19)
- Finland, centered on information and communication-related sectors in its industrial structure, maintained strong competitiveness. However, since the mid-2000s, its competitiveness has been on the decline, leaving the entire industry unstable. (Fig. 20 & 21)
- South Korea, implementing industrial policies by the united efforts of the government and the private-sector, has opened up markets with R&D led by the corporation sector and excellent marketing strategies. (Fig 22 & 23)

Fig. 18 Germany: Share of Renewable Energy in Total Electricity Consumption

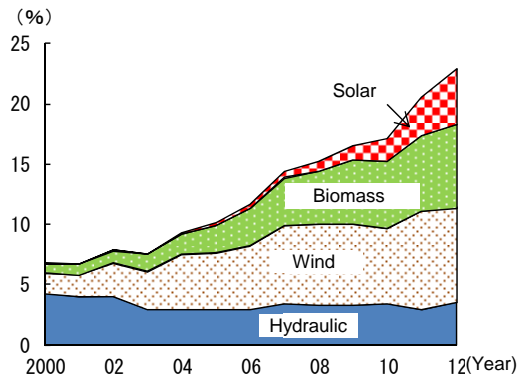


Fig. 19 Germany: Trend of Electricity Rates

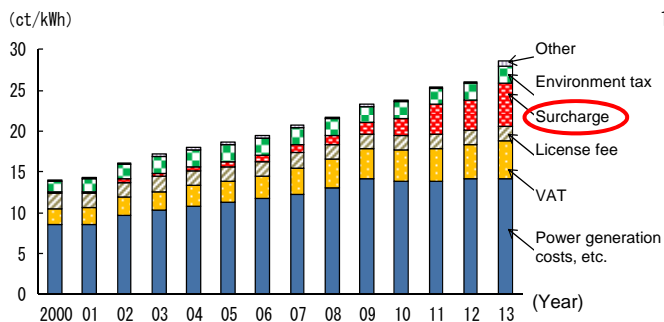


Fig. 20 Major Countries' Investment in ICT Service and Equipment (Ratio to GDP: Since 2008)

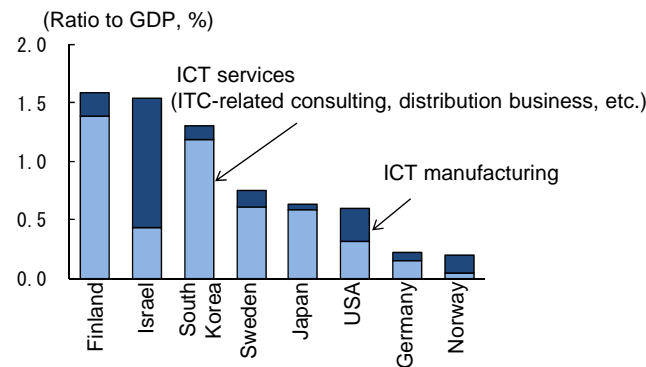


Fig. 21 Finland: Shares of Exported Items

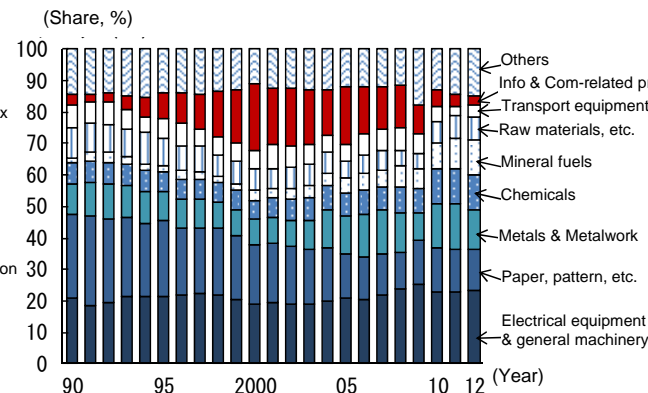


Fig. 22 South Korea: Innovation-related Indicators

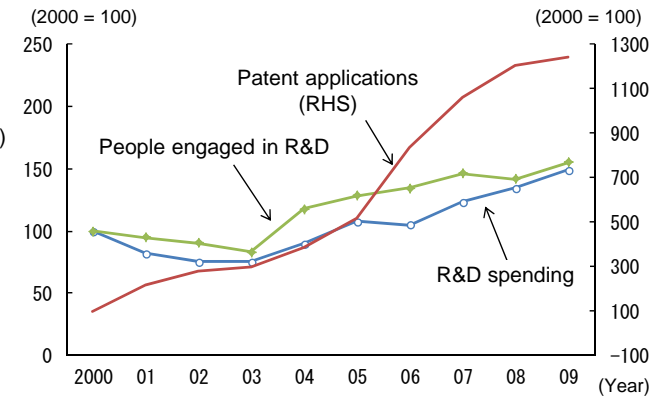
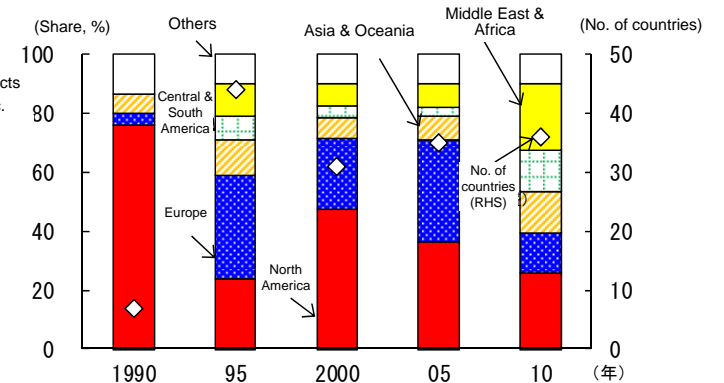


Fig. 23 South Korea: Changes in Destinations of Exported Vehicles



Chapter 2, Section 3 Conclusion

- After the global financial crisis, major countries experienced a slowdown of capital accumulation in major industries and a decline in TFP, resulting in lower growth rates. A key to raising TFP is innovation.
- In addition to human and financial resource inputs, there are some other factors critical to the creation of innovation.
 - Highly developed institutions and infrastructure are needed for creating innovation more effectively.
 - Participation of diverse parties through networks with greater depth between academia, industry, and government, as well as venture enterprises, for instance, accelerates a positive cycle for the creation of innovation.
 - Brand strategies and efforts to open up new markets also provide depth for innovation.
- Meanwhile, while concentrating inputs to specific industries helps to make them internationally competitive, it carries the risk of hindering stable growth.