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**Industrial Relations in a Changing Economy:  
Japan's Experience**

**Koji Okubayashi**

**Professor**

**Graduate School of Business Administration**

**Kobe University**

**Rokkidai2-1, Nada, Kobe, 657-8501**

**Japan**

**E-mail:okusankj@rose.rokkodai.kobe-u.ac.jp**

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## Industrial Relations in a Changing Economy Japan's Experience

Koji Okubayashi

### 1. Development of Knowledge Economy

#### 1.1 Basic Characteristic of Knowledge Economy

##### 1) General concept of knowledge economy

The United States economy in 1990 's was sometimes called "new economy" or knowledge economy", which differs from traditional and industrial economy. Then what are the elements of knowledge economy? What characterizes the new economy?

The new economy that is different from industrial society is usually called "post-industrial society". Post-industrial society is often characterized as following:

- (1) Service industries develop rapidly in contrast to the mature stage of manufacturing industries.
- (2) Knowledge becomes a driving force of economic development and higher productivity.
- (3) The needs for managers and professional workers increase rapidly.

The knowledge society will come in the next stage of post-industrial society. In that economy, the knowledge in production and many aspects of economic activities plays a very important role and become a main source of added value of products or service.

A new type of company called "knowledge-based company " will contribute to the development of national economy. The knowledge-based company such as consulting company cultivates a new field of economic activities in contrast to labor-intensive or capital intensive companies.

In the knowledge economy, some new social phenomena come out such as the spread of information technology, increase of service sector, emergence of solution business, increase of knowledge workers, and establishment of intellectual property right. These new elements of society characterize the emergence of knowledge economy.

##### 2) Importance of intangible assets

Lands, machines, materials, facilities, and workers are elementary factors of production and business activities and played very important roles to increase productivity and make a profit in the industrial society. These elements of production are all tangible assets, which can be identified by touching them by hands. However,

nowadays the intangible assets such as know-how of production and business, patents, brands, design, music, game-soft, films, pictures, broadcasting, copy rights, and intellectual property become an important source of competitiveness of a company and added value of any products and service. These intangible assets themselves have now tremendous value and become target of exchange as a new commodity, although new laws to identify and protect their value are not yet established well. The knowledge economy is based on the value of these intangible assets.

## 2) Information technology as the precondition of intangible assets

The information technology is a tool to transfer, process, storage information that is also intangible assets. Knowledge is a result of processing and transforming the information in the human brains. Information technology promotes the quick process and mass storage of the information with little cost.

With the information technology, the intangible assets can improve their value, as is the case that a famous brand can increase its value by mass advertisement through websites. The hardware of information technology provides a business chance to build a new system and can increase productivity of production or service. Therefore stimulating the development as well as spread of information technology results in the development of a national economy. The level of IT of a country shows the possibility of her economic prosperity. The spread of information technology is also very important elements of knowledge economy.

## 1.2 Effects of knowledge economy on a national economy

### 1) New economy in 1990s

Typical effects of knowledge economy are easily identified in the rapid recovery of American economy in 1990s after the long depression in 1980s. As is shown in Figure 1, the per capita national income of United States goes up steadily in 1990s and come ahead Japan in the later half of 1990s. They say that the development of IT industry lead the whole American economy upwards and that it opened a new stage of economic development at the time of stagnation of Japanese economy in “the lost decade” of 1990s.

Figure 1, here

On the contrary, Japanese economy could not catch up the rapid spread of IT in US due to the financial problems. The per capita national income of Japan went down in the

later half of 1990s. Therefore Japanese government made a lot of investment into IT industry and software industry to cope with American economy.

## 2) Globalization of economic activities

Another effect of IT revolution is the increase of direct investment of Japanese companies abroad. Due to the spread of IT, Japanese companies extend easily their business to other countries and intensified their business activities in the world market.

Figure 2 indicates the trends of direct investment of Japanese companies in manufacturing industries. In 1998, the manufacturing companies producing and selling their products abroad sell 34.6% of their products in foreign market. It means around one third of their products are sold not in domestic but foreign market. In other words, their business activities are influenced not only by domestic condition but also by world market.

This new direction of economic activities came along the development of IT in 1990s. This globalization of economic activities of Japanese companies is a new dimension of knowledge economy caused by the development of IT.

Figure 2, here

## 2. Government Policy to Prepare for Knowledge Economy

### 2.1. Promotion of IT investment in 1990s

Japanese government had to stimulate IT investment to catch up the “new economy” in United States. Figure 3 shows Japanese trends of IT investment since 1990. It clearly identified the rapid increase of IT investment since 1993. The ratio of IT investment to GDP in 1995 reached 12.5 percent and shared 8.7 % of facility investment in private sector.

Figure 3, here

Government also proposed “e-Japan Plan” to promote utilization of IT. Government provided, for example, much amount of subsidy to elementary as well as secondary school to introduce IT for education. The IT improved drastically the productivity of business, especially efficiency of office work and communication. It also opened a new field of business in website. The market of B2B is estimated to increase drastically and to lead the development of Japanese economy. IT also facilitates global activities of

Japanese companies.

## 2.2. Basic Law of Intellectual Property

For the purpose of protecting the value of intangible assets, Japanese government enacted the “Basic Law of Intellectual Property” in July 2002. It intends to activate economy and society by transforming traditional products and service into high added value. The government sets a target to be a productive country based on intellectual property.

The law declared new strategies to utilize intellectual property such as creation, protection, utilization of intellectual property, and development of human resource to protect these rights. It also established “Strategic Headquarter of Intellectual Property” to provide much information on intellectual property in information-affluent society, to modify patent law, commercial code and copy right. The Government faces the problems of protecting the intangible assets in the world market.

## 3. Structural Change of Economy

### 3.1. Change of industrial structure

Under the knowledge economy, the weight of traditional industries among a national economy also changes. The Table 1 indicates trends of employees engaged in each industry after 1950. In the 1960 during the period of rapid economic growth, employees in manufacturing increased drastically in contrast to the drastic decrease of number of employees in agriculture and forestry.

In 1990s, the number of employees in manufacturing slightly decreased from 11,350,000 persons in 1990 to 12,050,000 persons in 2000. On the contrary, the number of employees in service industry increased 11,420,000 persons in 1990 to 14,780,000 persons in 2000. Many of knowledge workers supporting knowledge economy are engaged in the service industry. This change of industrial structure counted by number of employees engaged in service industry reflects the transformation of economy into new one.

### 3.2. International division of labor in manufacturing process

It is already mentioned that Japanese companies built many factories abroad in 1990s. At that moment, manufacturing process of products is transferred to other countries but another activities like research and development, designing, planning business model, controlling the whole process of business activities cannot be moved to

the other countries. Due to the development of IT, core activities of business are inclined to be concentrated in Japanese headquarter. The departments of Japanese companies dealing with intangible assets remained in Japanese parts of business activities. This division of labor in business activities of Japanese companies promoted the increase of knowledge workers within Japan.

#### 4. Transformation of Company Organization

##### 4.1. Restructuring of company organization

Due to the fundamental changes of economic structure and business environment, Japanese leading companies tried to reform their organization and business domain. For example, as is shown in Figure 4, Sony integrated and concentrated her business into four main fields under the central headquarter. She also divided the process of designing and R&D from manufacturing. Some parts of manufacturing were carried out by Solectron, so-called EMS (Electronics Manufacturing Service), which specialized into manufacturing of electronics products of many companies. The four “companies” concentrated on the designing, research and development, advertisement and supervision of Sony brand. Japanese headquarter engaged in the protection and development of their intangible assets of the Sony group. This type of division of labor would be requested by the competition in global market under knowledge economy.

Figure 5, here

##### 4.2. Flat management organization

Many Japanese manufacturing companies including Sony transformed their organizational structure under the influence of new technology like microelectronics, information and communication technology since 1980s. Figure 5 shows the distribution of four types of organization in Japanese manufacturing industry in 1992.

It identifies that “Loosely-structured Organization” with organic work organization and flat management organization shares around 25.7% of the 142 companies researched. The Loosely-structured Organization is a new type of organization, which corresponds to multi-product small-volume production system. On the other hand, the “Tightly-structured Organization” fit to the single-product mass production system, which was popularly applied in 1960s and 1970s. Therefore trends of organizational change move from Tightly structured to Loosely-structured Organization to adapt to

turbulent management environment in the world market, which were confirmed by long-term field research.

Due to the transformation of organization, many practices of human resource management also had to be changed. Traditional seniority wage system, for example, is moving to performance-based annual salary of managers. Many employees cannot trust the life –time employment until the retirement age of 60 years old in the same company. Some employees prefer a new payment system, which includes retirement allowance in the monthly salary. Therefore organizational change of Japanese companies leads to fundamental transformation of traditional human resource management.

Figure 5, here

## 5. Change of Labor Market

### 5.1. Increased demand for knowledge workers

Figure 6 indicates the trends of the absolute number of employees in each occupational group since 1970. It clearly identified the rapid increase of professional and technical workers, clerical and related workers in 1980s and 1990s. On the other hand, absolute number of craftsmen, manufacturing and construction workers did not increase so much in 1980s and even went down slightly in 1990s. The rapid increase of professionals and technician indicates the demand of many types of knowledge workers such as scientists, engineers, lawyers, marketing specialists, consultants, system engineers, software engineers, patent attorneys, film producers, medical workers, musicians, brand managers, and so on. According to structural transformation of economy into knowledge economy, weight of each occupation is also transformed.

Table 6, here

### 5.2. Increase of software workers

Figure 7 concentrates on the trends of employees related with information technology. It identifies rapid increase of system engineers and programmers in 1990,1991, but number of programmers decreased after 1992. On the contrary, number of system engineers did not decreased so much in 1993 and 1994, and increased again after 1997. Due to the demand of solution business, not the programmers but system engineers are asked to work more.

Figure7, here

### 5.3.Demand of temporary workers

At the same time with the increased demand of professional and technical workers, companies requested more hiring of temporary workers to adapt to the flexible demands of work. Figure 8 shows trends of the number of actually worked as well as registered workers from 1990 to 1997. In the first half of 1990s under the severe economic depression caused by financial difficulty, the number of registered workers at general lease companies increased very much but number of actually worked registrants did not increase in proportion to registered workers. However, number of temporary workers, registered or actually-worked, will grow in proportion to the increase of the number of lease companies due to flexible demand of work and low cost of labor with the use of temporary workers.

Figure 8, here.

### 5.4. Increase of tele-workers

Tele-work is a new type of work in the knowledge economy due to the spread of information and communication technology. Tele-workers do not have to go to their office at the company but stay at home or satellite office near their residence using IT. There are many types of tele-work, but the number of tele-workers who works more than 8 hours per week reached 4,080,000 persons in 2002. Its ratio among employees is 5.7 % and the ratio among self-employee is 8.2 % in 2002. The tele-workers who works less than 8 hours per week share 4,43,000 persons among employees and 1,910,000 persons among self-employees, the ratio 8.0 % and 16.0% respectively. This means the numbers and ratio of tele-workers will increase due to the development of ICT and change the life-style of the workers of new generation.

## 6. New Trends of Industrial Relations

### 6.1. Slow-down of union density

Figure 9 shows estimated ratio of unionization from 1950 to 2001. Just after the Second World War when industrial relations laws were enacted under the new social

regime, the unionization rate was the highest around 50% of all of the workers. But it declined after 1980 because unions were mainly organized in public sectors and large companies of manufacturing industries. Due to the increase of non-regular workers and employees in service sector, unionization rate did not grow in proportions to the increase of employees as a whole in Japan. This low rate of unionization in 1990s limited aggressive attacks of trade unions against employers.

Figure 9 here

### 6.2. Diminishing number of labor disputes

Corresponding to the decreasing rate of unionization, the number of labor disputes like strikes and lockouts diminished drastically in 1990s. Table 2 identified the very small number of labor disputes in Western countries including Japan. Indonesia and Thailand may have another political reasons for large number of labor disputes. The knowledge workers usually do not like to rely on unions to realize their demands, but resolve their problems by themselves.

Table 2, here

### 6.3. Growing role of labor –management consultation system

Low rate of unionization in Japan does not mean that many employees do not have any methods to exchange opinions with management concerning wages, hours and other working conditions. Many Japanese companies with or without unions arrange so-called labor-management consultation system. Under this consultation system, representatives of employees who may or may not be a union member can discuss many aspects of working condition such as wage level, bonus, wage increase, working hours, leaves with payment, training and management policies concerning production and sales, which may influence working life of the employees. The main difference between collective bargain and labor-management consultation consists in the fact that labor –management consultation do not presume strikes to reach agreement between employees and management.

Figure 10 shows the agendas of labor –management consultation system in the last three years ending in 1997. These agendas such as wages, working hours, and employment and personnel affairs, which are to be interest-conflicting matters between

employees and management, are often dealt with collective bargaining. On the other hand, these agendas such as working environment, welfare, and health care management, which may be common interests for both employees and management are usually dealt with labor-management consulting system. Labor-management consultation can provide information even on important management policy. Based on the realistic information gained through labor-management consultation, both employees and management exchange the opinions and express their realistic demands without bargaining. The labor-management consultation system contributes to Japanese peaceful Industrial relations after 1980.

Figure 10, here

## 7. Industrial Relations Issues under Knowledge Economy

### 7.1. Recent issues in industrial relations

Figure 11 indicates the issues predicted in the near future of Japanese industrial relations by companies researched by Rengo Institution in 2002. Reforms of retirement allowance and company pension, reforms of wages and evaluation system, bonus and allowance, reform of wages, job security, and job security up 65 years old are the main issues, which both employees and management face to solve. These issues concerns mainly wage system and employment system that are changing from traditional seniority wage system and lifetime employment.

Figure 11, here

### 7.3. New concept of employability

Under the severe depression in 1990s, even large companies, which could follow the traditional policy of lifetime employment, had to declare that they couldn't guarantee job security until retirement age of 65 years old. They sometimes asked their employees to choose earlier retirement with additional payment. The aged workers usually accept that offer to keep their retirement allowance. Therefore the job security for aged workers and maintenance of company pension are the important issues for employees at the bargaining table.

Nikkeiren, the leading Japanese employers association, proposed new concept of

employment system for traditional lifetime employment. Figure 12 shows the new idea of employment system based on employability of workers. The new idea emphasizes that employees themselves have to improve their occupational skill and knowledge instead of relying on their company's education and training that are usually provided without any payment by employees themselves. The lifetime employment presumes that the company provides any professional training without additional cost for employees. But under the new concept of employability, employees themselves have to choose their training course and sometimes have to pay some parts of the training cost. Employees with high occupational skill can easily change their company. However, workers with high employability may stay at their company so long as they can improve their skill at their original company. Therefore the concept of employability does not always result in frequent change of company or job for Japanese workers.

Figure 12, here

### 7.3. Transformation of wage system

Based on the concept of seniority wage system, remuneration of managers as well as workers are supposed to increase according to the climbing up of the qualification ladder that is shown at the former qualification ladder of the Figure 13 at a large electronics company. At that system, managers who got high qualification of shuji for example would not get lower wage than that of Shukan, even if his or her performance in a certain term was not so good. Therefore corresponding to the increase of the member of shiji or shukan of the company, the labor cost of that company swell up consistently.

Figure 13 here

At the new system of the Figure 13, managers' job are banded not hierarchal but horizontally. It means that the job and performance of each manager of that company are evaluated every year according to the content of their job in a certain term. Therefore his or her annual salary will change according to his or her job and performance of a certain term. The labor cost of that company becomes quite flexible in proportion to the real content of job that the each manager carries out at a certain term. The labor cost of the managers will be controlled by the real activities of each manager. This is the new

principle of remuneration against seniority wage system, which is often called “performance-based remuneration”.

## **8. Recommendations to I R Issues**

### **8.1. Promotion of IT education**

Under the rapid development of IT, many young people are quite eager to use those new machines and facilities. Employees are also requested to manipulate new tool of IT to carry out efficiently their own jobs. However some people who are aged and not accustomed to use new tools of IT cannot catch up the rapid change of life style and have to limit their activities to traditional and narrow area of life. This shadow side of IT development is often called to be “digital divide” which means division people between one who can utilize IT and one who cannot use IT at all. The digital divide brings an obstacle to further development of IT society in 21 century. Therefore the IT education and training for every people including children and aged people are urgent necessity for a nation at the entrance of knowledge society.

### **8.2. Recurrent education of knowledge workers**

Professional skills and knowledge in knowledge society will develop quite rapidly. These new skills and knowledge have to be educated recurrently at higher education system such as graduate schools and evening course of universities. Japanese universities introduced much professional graduate school such as law school, business school, accounting school from 2002. Knowledge workers need quite high level of professional knowledge and have to catch up to the front of its development. Therefore a new social system of professional education for professional practitioners is required to a society at the knowledge economy.

### **8.3. Utilization of labor-management consultation for sharing information**

There raise so many issues and problems of industrial relations in the process of rapid transformation into knowledge economy. To solve these problems, both employees and management have to discuss their problems on the base of exact and objective information. The labor-management consultation system provides an efficient mechanism for both employees and management to understand objective situation of each side. Collective bargaining and strikes are not the only and best practice to reach mutual understanding and agreement between employees and management.

Labor-management consultation is quite effective in reaching mutual understanding in the Japanese experiences of industrial relations.

#### **8.4. Labor mobility without unemployment**

In the process of transformation from industrial to knowledge economy, workers have to move from manufacturing to service industry due to the structural change of a national economy. At the same time, companies have to increase or decrease the number of their employees according to the flexible demands of their products and changes of their service. Therefore unemployment of many workers is necessary evil of free labor market. However the matter is not the prevention of the reasonable unemployment but the avoidance of long unemployment of the workers under the transformation process. Labor mobility without unemployment is a new principle of Japanese government to adapt to the flexible labor market under knowledge economy.

#### **8.5. Legal protection of intellectual property**

Intangible assets such as patents, grand, and copyright have a large economic value under knowledge economy. However, these intangible assets were treated to have only a small amount of value under industrial society due to the high evaluation of material goods. Many businesspersons still stick on the traditional value of the material goods. Many imitations of famous brand goods are sold under the cheaper price. Patents invented by employees are sometimes rewarded to the inventors by a small amount of remuneration. This under-evaluation of patents or unlawful imitation of famous bands is to be rigidly regulated by law to protect economic value of intangible assets under knowledge economy. We are still early stage of that development, but need to international corporations among governments to establish the value of these intangible assets in order to move into high stage of knowledge economy.

The end

Figure1 Trends of Per Capita National Income

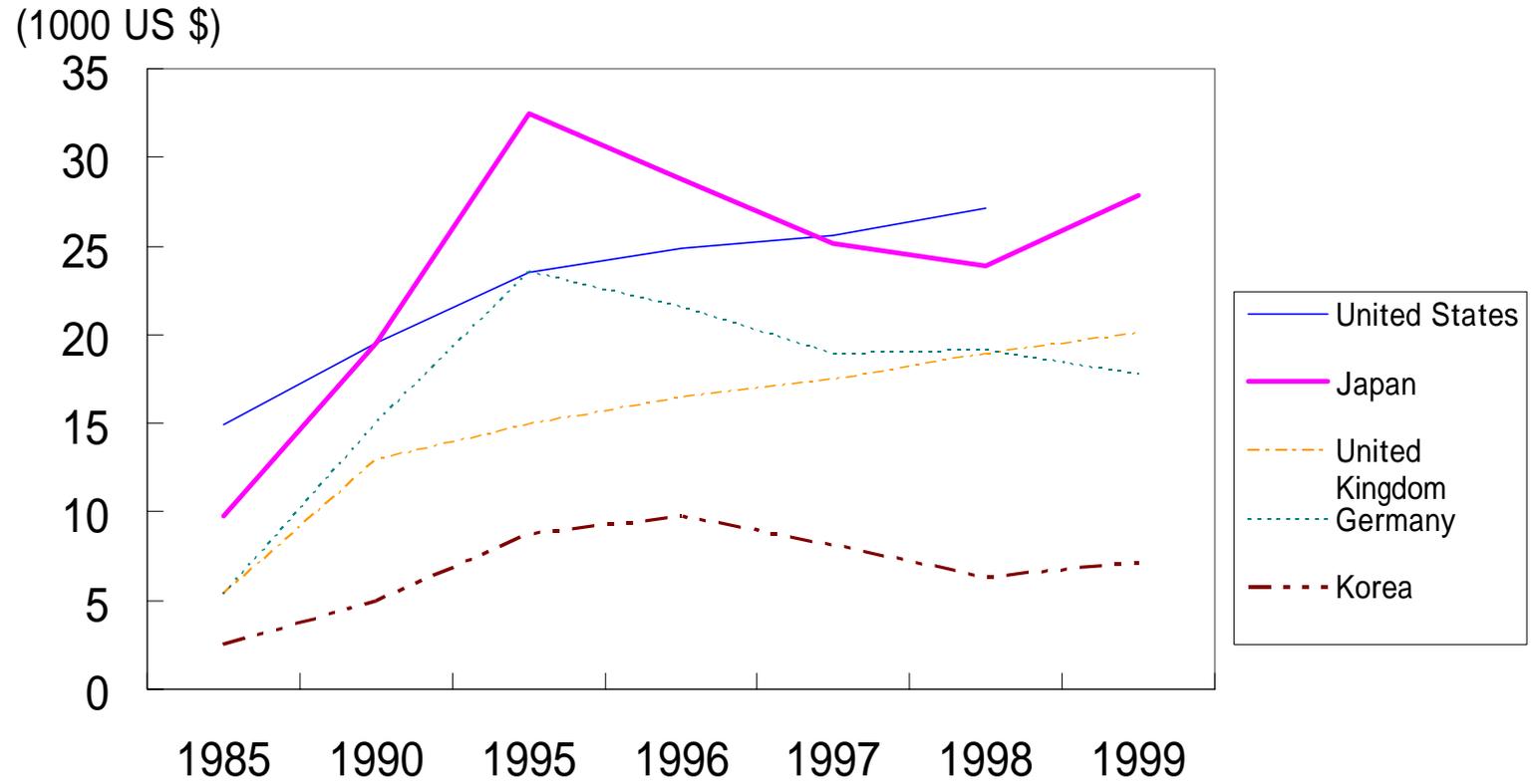


Figure2 Trends of overseas production ratio in Japan

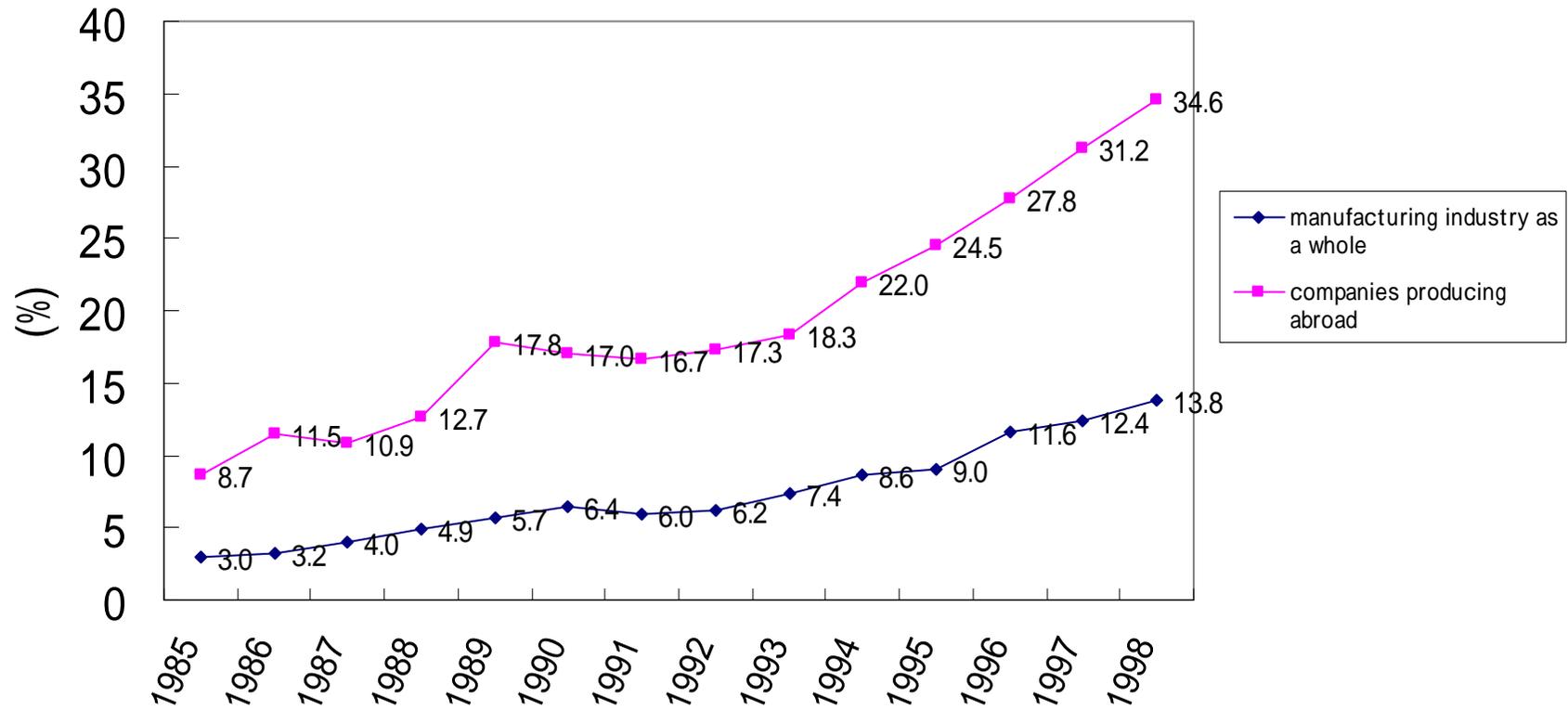
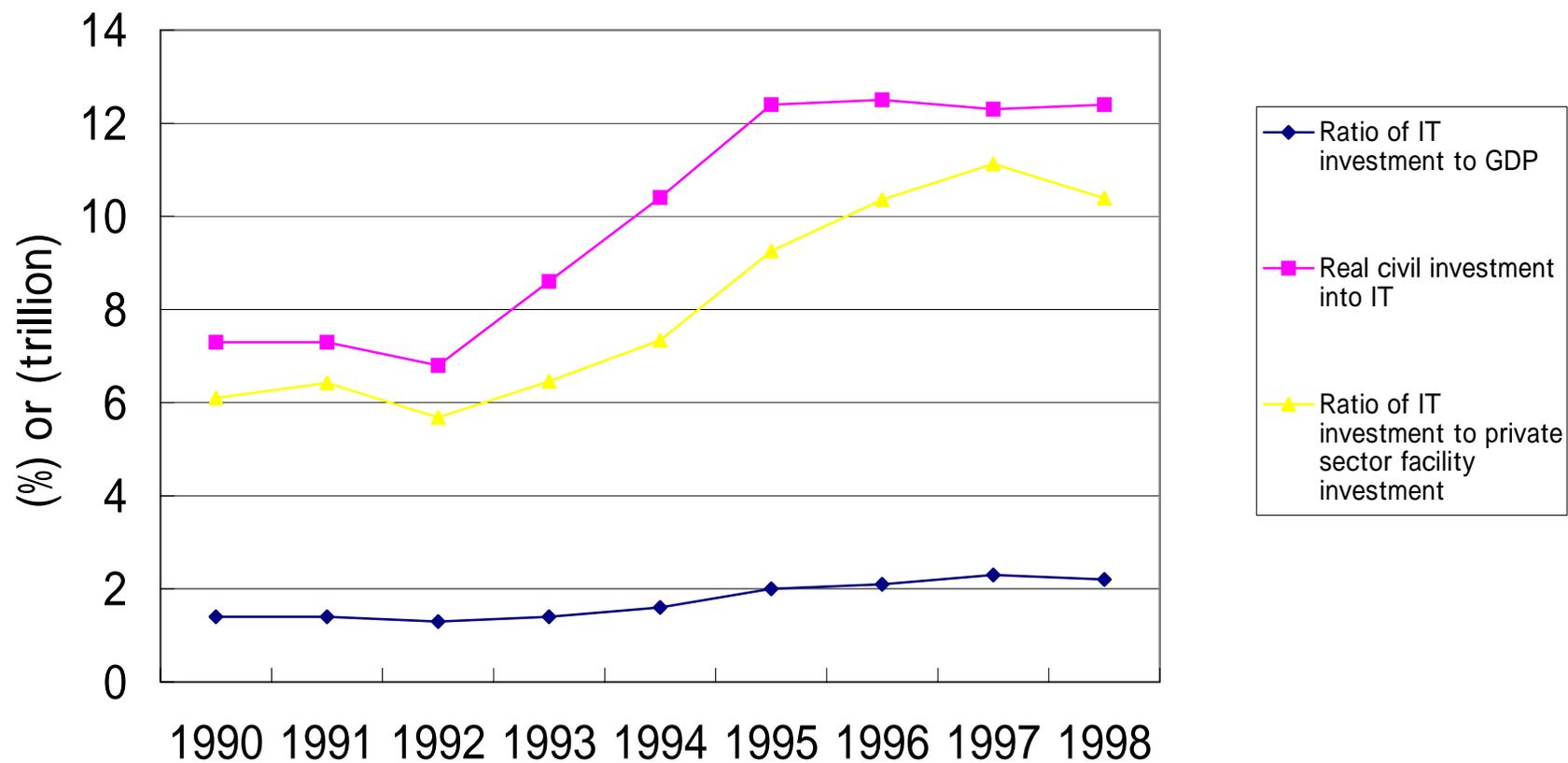


Figure 3 Trends of IT Investment Since 1990



**Table 1 Number of Employees by Industry**

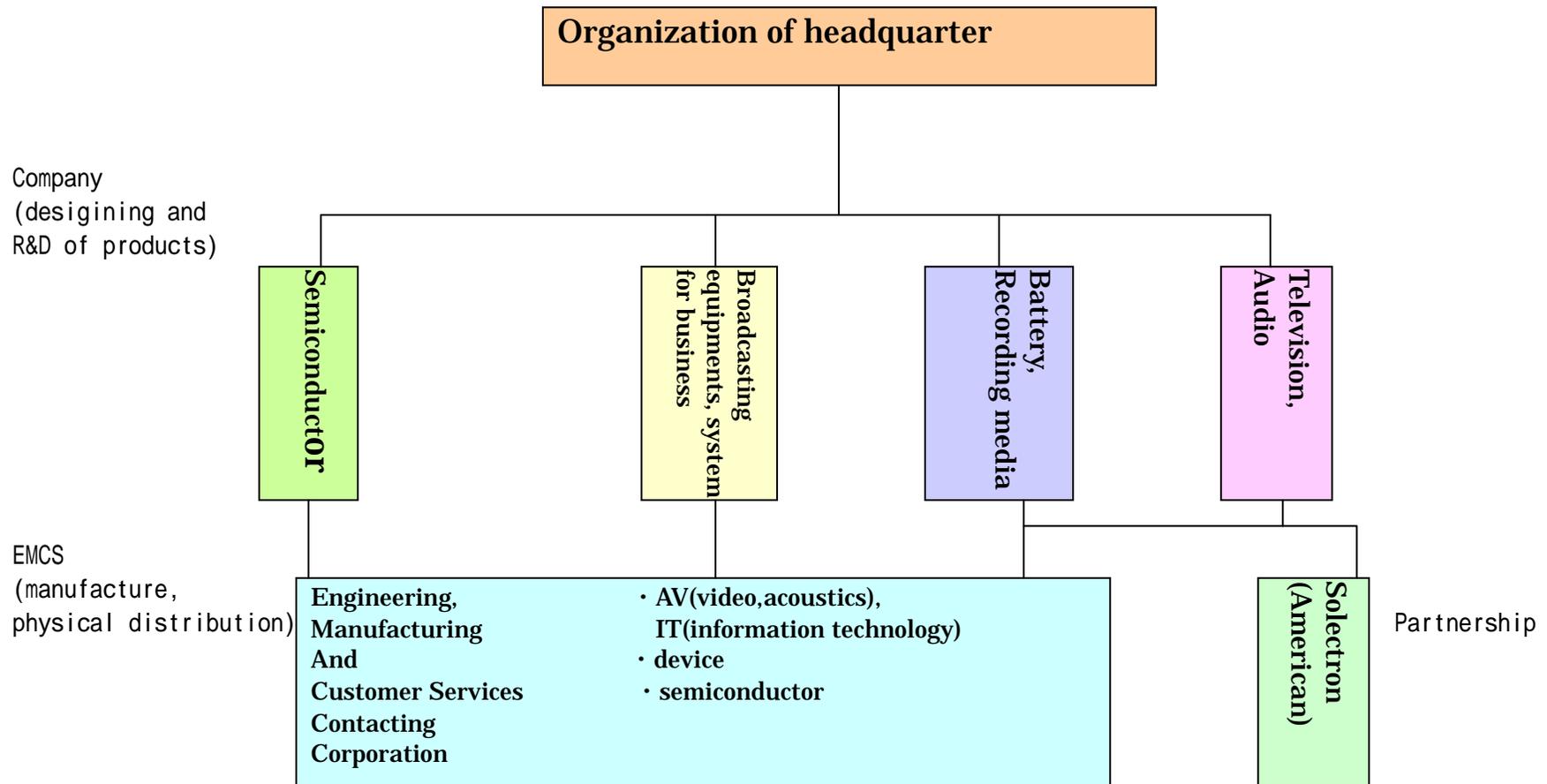
(10 000 persons)

	1950	1960	1970	1980	1990	1996	1997	1998	1999	2000	2001	Male	Female
Total	1,265	2,370	3,306	3,971	4,835	5,322	5,391	5,368	5,331	5,356	5,369	3,201	2,168
Agriculture and forestry	56	94	29	30	29	35	33	33	33	34	38	21	17
Non - agricultural industries	1,208	2,276	3,277	3,941	4,806	5,287	5,358	5,344	5,298	5,322	5,331	3,180	2,151
Fisheries	22	26	18	15	13	10	9	8	7	8	9	7	2
Mining	48	42	18	15	13	10	9	8	7	8	9	4	1
Construction	88	198	305	427	462	551	563	548	544	539	520	440	80
Manufacturing	451	799	1,144	1,135	1,306	1,307	1,307	1,258	1,223	1,205	1,185	793	392
Wholesale and retail trade; financing and insurance; and real estate	162	449	731	1,003	1,288	1,399	1,407	1,426	1,428	1,426	1,423	699	724
Transport and communication and electricity, gas, water and heat supply	161	237	340	362	384	426	426	422	423	427	421	341	80
Services	175	388	558	788	1,142	1,361	1,408	1,432	1,434	1,478	1,536	718	818
Government	120	-	161	199	195	214	215	217	214	214	211	166	46

Source: Ministry of Public Management, Home Affairs, Posts and Telecommunications, **Annual Report on the Labour Force Survey**

Note: Figures for 1980 and thereafter include Okinawa prefecture

**Figure 4 Sony's R&D and Manufacturing System in 1999**



**Figure 5 Four Types of Organizational Structure**

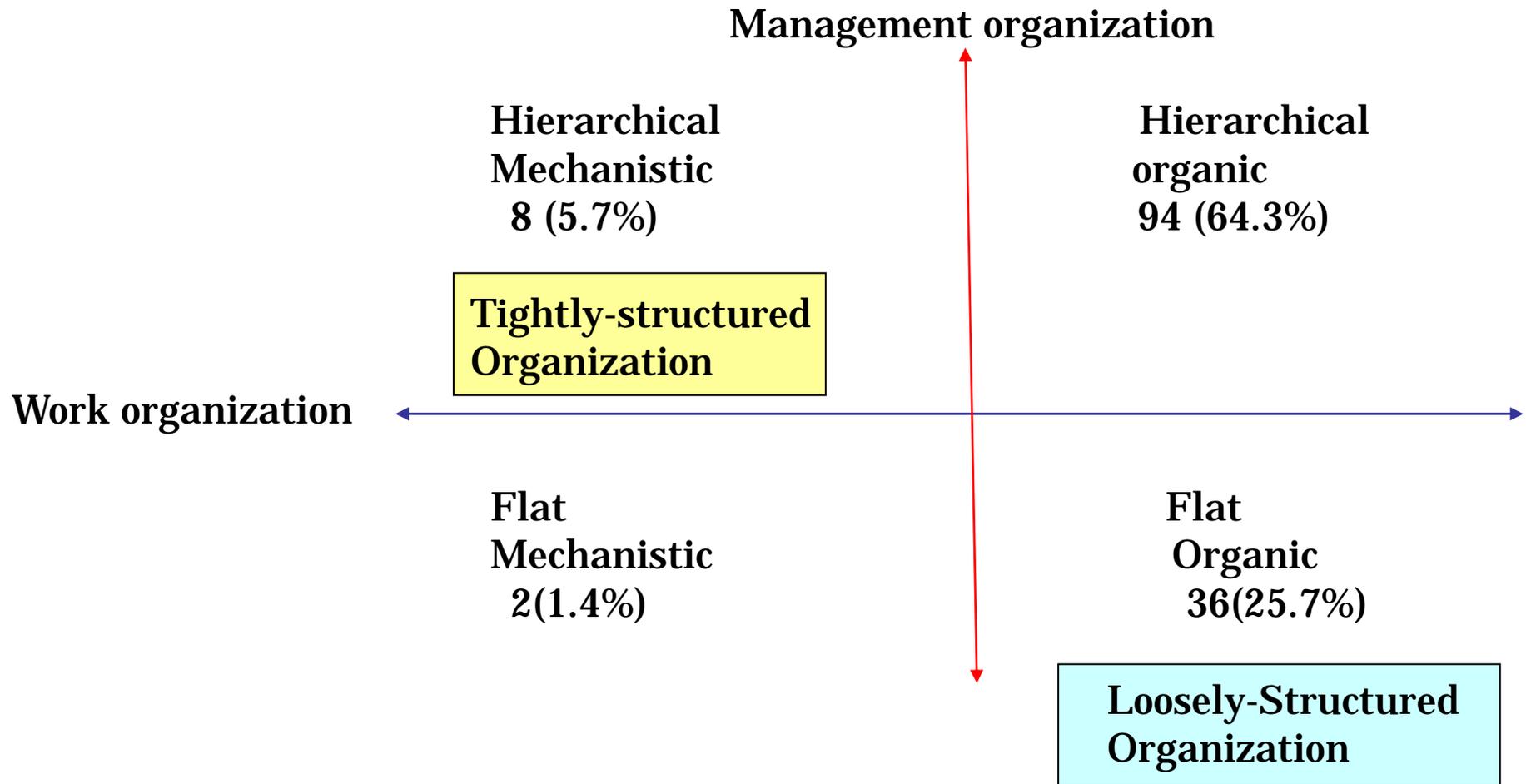


Figure 6 Number of Employees by Occupation

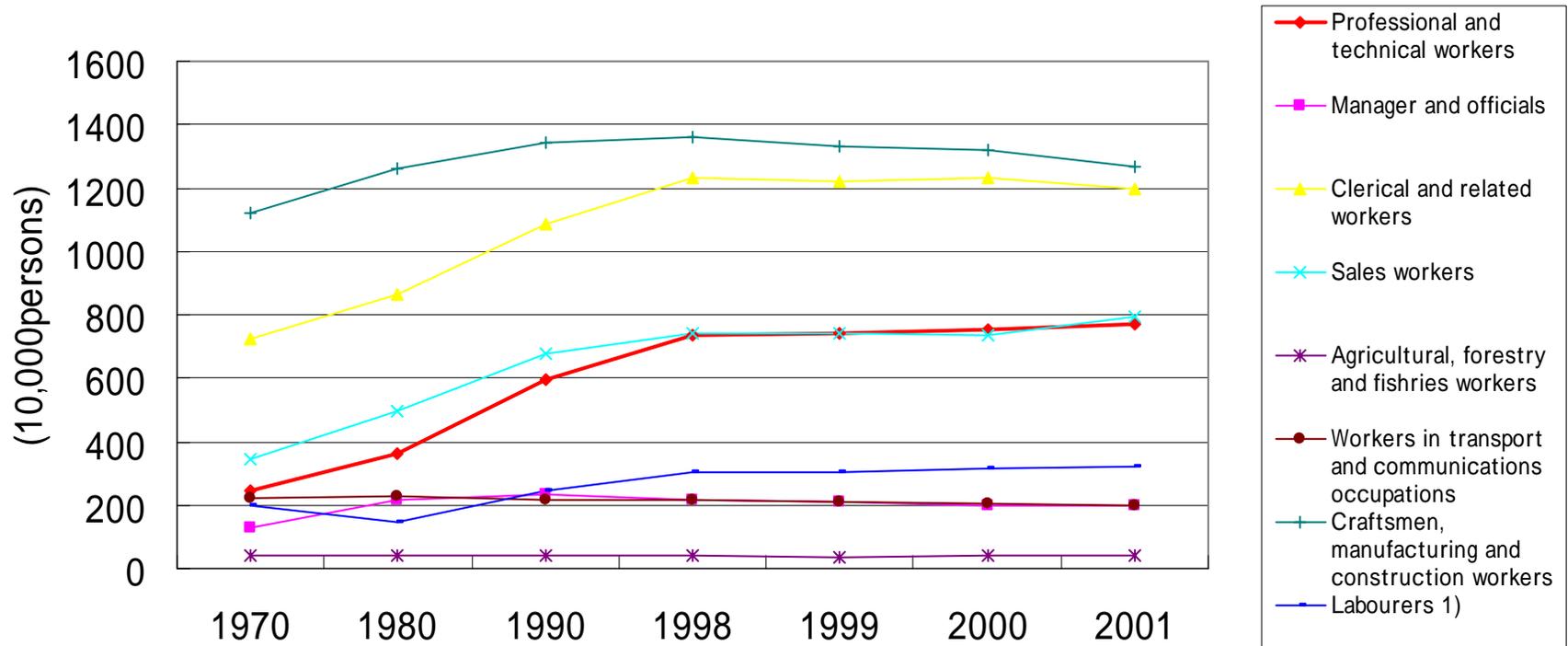
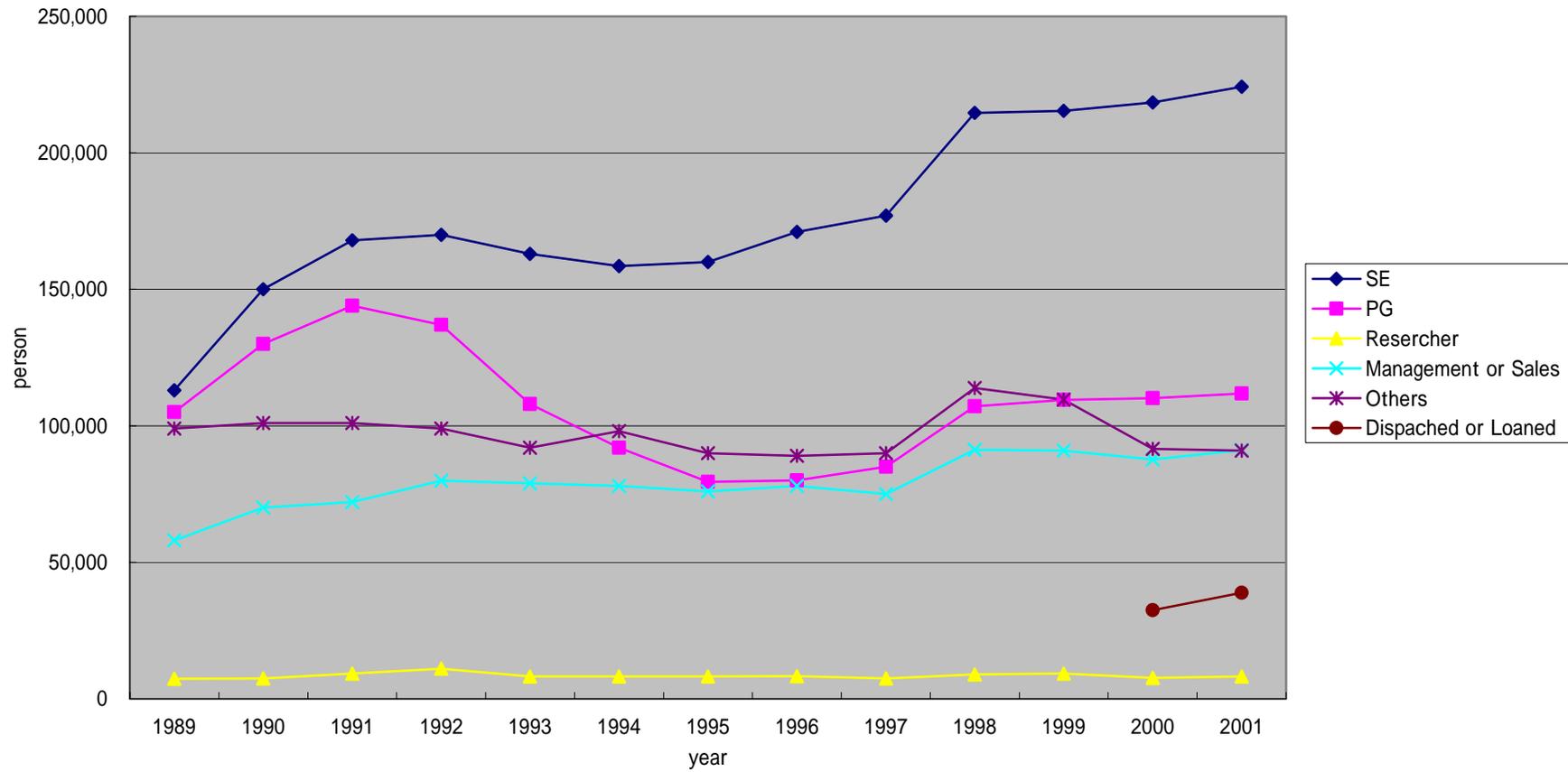


Figure 7 Trends in Number of Workers by Occupation



Source; Ministry of Economy, Trade and Industry, Field Report on Service Industry in 2001 (December, 2002)

Figure 8 Number of Registered Workers and Number of Actually-worked Registrants

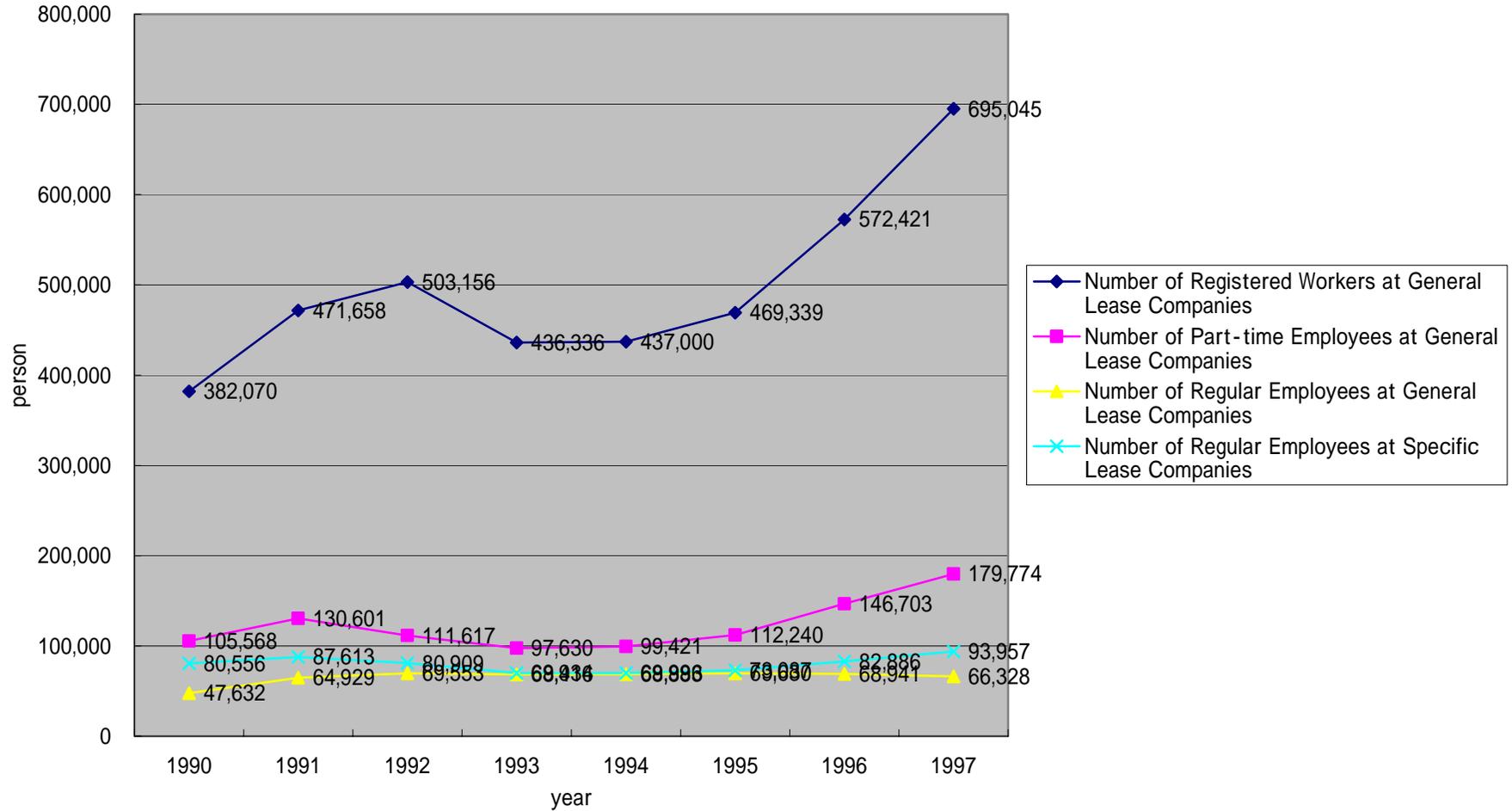
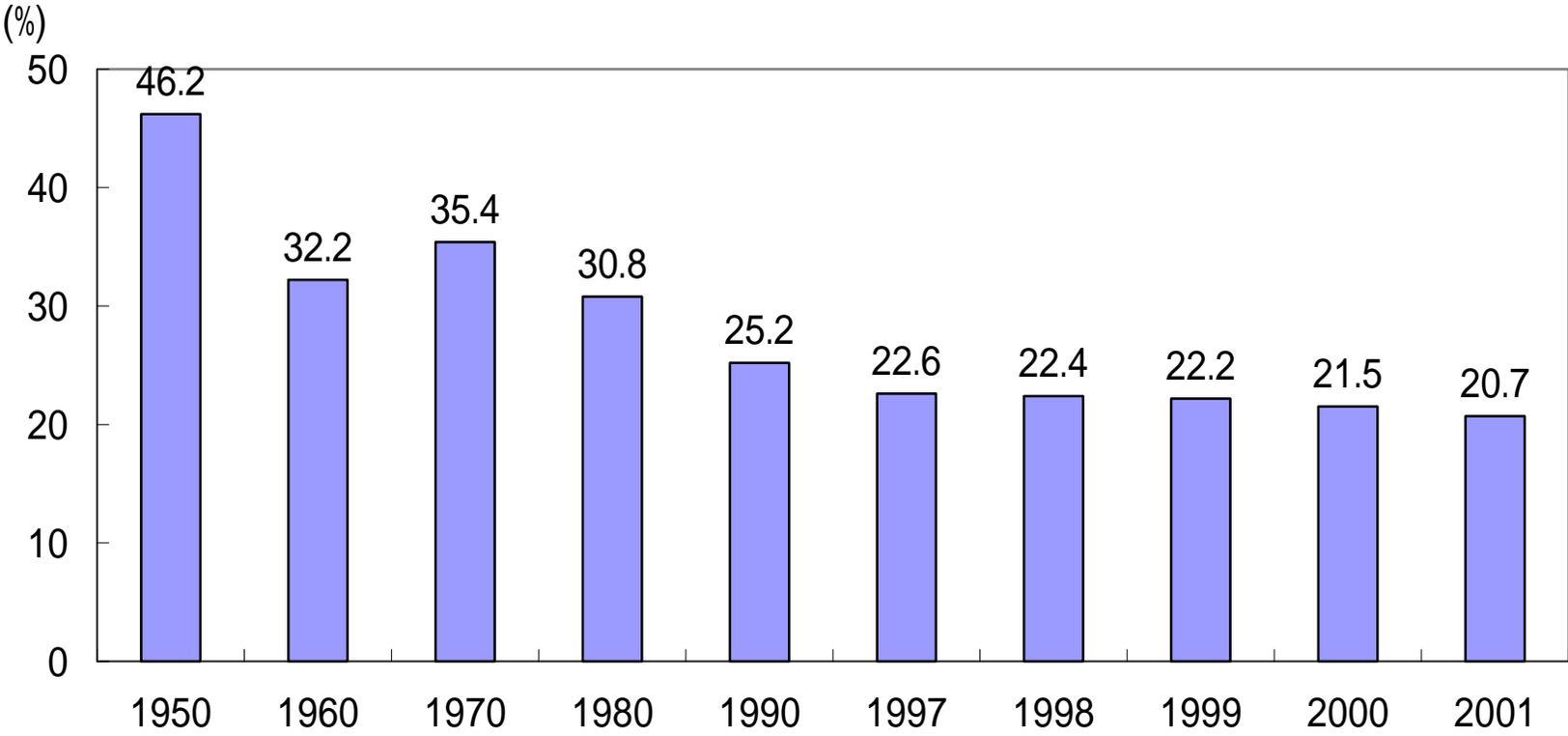


Figure 9 Estimated Unionization Rate



**Table 2 Trends in Number of Labour Disputes, Employees Involved, and Working Days Lost**

		(Disputes,1,000employees,1,000day)				
		1985	1990	1996	1997	1998
Japan 1)	Disputes	627	284	193	178	145
	Employees involved	123.4	84.3	23.2	47.2	26.0
	Working days lost	264.1	144.5	42.8	110.2	98.0
United States 2)	Disputes	54	44	37	29	34
	Employees involved	323.9	184.9	272.7	338.6	387.0
	Working days lost	7,079.1	5,925.5	4,888.6	4,497.1	5,116.0
Germany 3)	Disputes	-	777	200	144	46
	Employees involved	78.2	257.2	165.7	13.5	4.0
	Working days lost	34.5	363.5	98.1	52.9	2.0
Italy 4)	Disputes	1,341	1,094	791		1,103
	Employees involved	4,842.8	1,634.0	1,689.0		435.4
	Working days lost	3,830.8	5,181.3	1,930.0		580.4
United Kingdom 5)	Disputes	903	630	244	216	166
	Employees involved	791.3	298.2	364.3	130.0	91.0
	Working days lost	6,402.0	1,903.0	1,303.0	234.7	282.0
Indonesia 6)	Disputes	78	61	346	234	-
	Employees involved	21.1	31.2	221.3	145.6	-
	Working days lost	557.0	316.6	2,496.5	1,250.4	-
Malaysia 7)	Disputes	25	17	9	4	12
	Employees involved	9.0	98.5	1.0	0.7	1.8
	Working days lost	36.0	302.0	2.6	2.1	2.7
Thailand 8)	Disputes	4	9	18	23	-
	Employees involved	0.6	4.3	8.7	11.9	-
	Working days lost	13.1	71.6	92.1	150.6	-

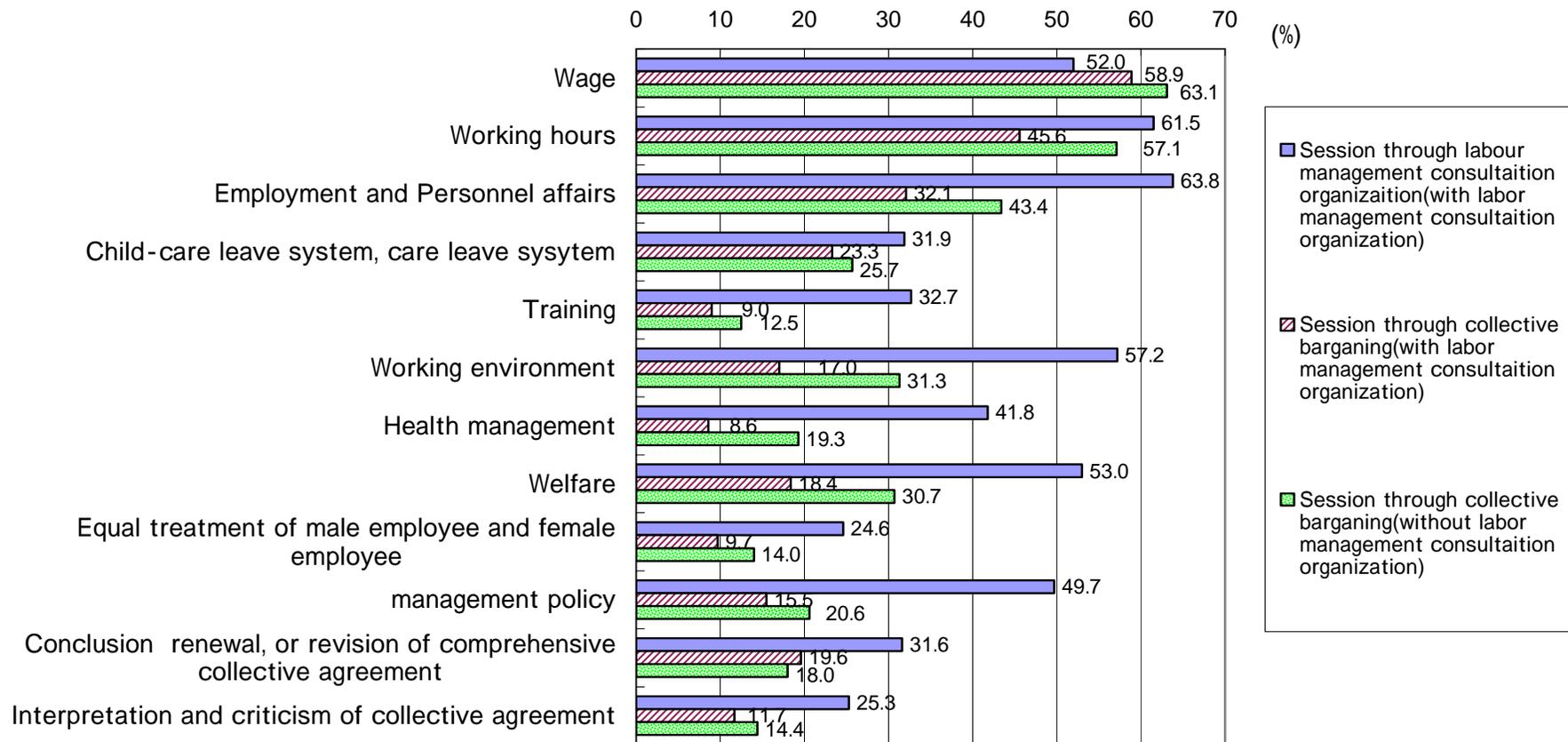
Sources:

Japan: Ministry of Health, Labour and welfare, **Annual Report on Statistical Surveys of Labour Disputes.**  
Germany: German Federal Statistical Office, **Statistisches Jahrbuch 1997.**  
Others: ILO, **Yearbook of Labour Statistics.**

Notes:

- 1) Disputes that last under a half day are excluded. The employees involved is the number of workers who actually took part in the dispute.
- 2) The number of disputes and the employees involved are for disputes that began during the year in question, excluding disputes involving under 1,000 employees and disputes lasting under one day.
- 3) Localized (disputes on the single-enterprise level), agricultural, and civil service disputes are excluded. Starting in 1985, the number of disputes is in establishment units. The number of employees involved is calculated from the average number of empl
- 4) Prior to 1992 data refers to former F.R. of Germany. After 1993 data refers to All Germany. The employees involved and working days lost on March 10, 1990 and earlier are for former F.R. of Germany. When the working days lost exceeds 100, disputes lasting unde
- 5) The working days lost is calculated by the standard of a 7-hour working day.
- 6) When the working days lost exceeds 100, disputes lasting under one day and those involving under 10 employees are included. The number of disputes excluded political strikes.
- 7) The working days lost is calculated by the standard of a 7-hour working day.
- 8) Only strikes are included.

**Figure 10 Ratio of labor unions by solvers of negotiate and sessions**



# Figure11 Issues predicted in industrial relations

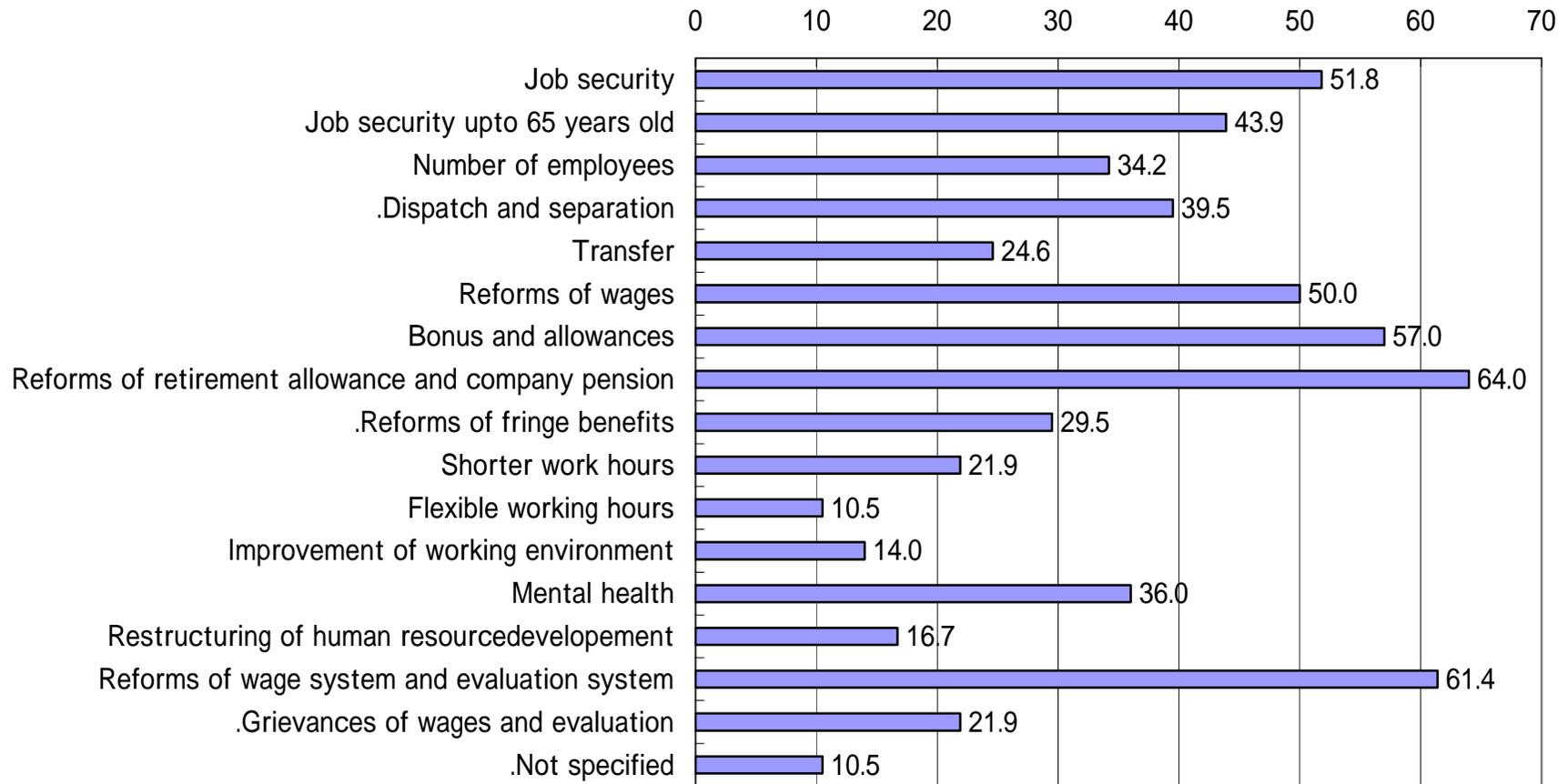
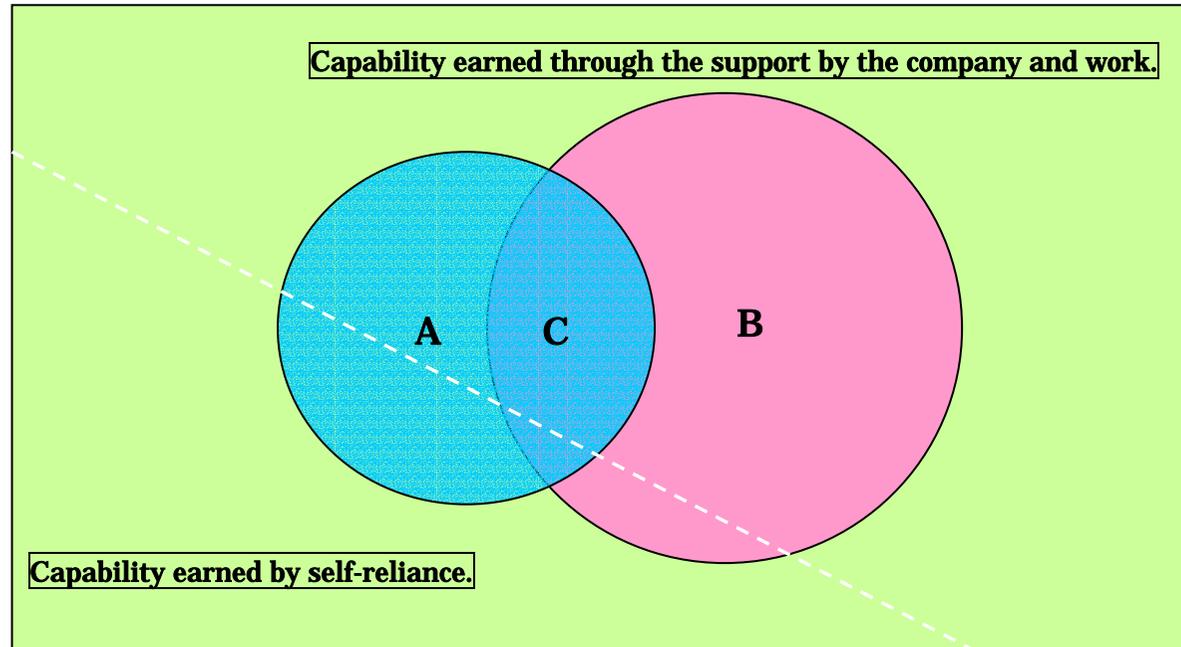


Figure 12 Nikkeiren employability model



(account)  $\text{Employability} = A + B = \text{capability needed for employment}$

A = Capability which enables labor movement.

B = Capability which makes it possible to be demonstrated in the company and to be employed continuously.

C = Capability demonstrated by both of the inside of the company, and outside.

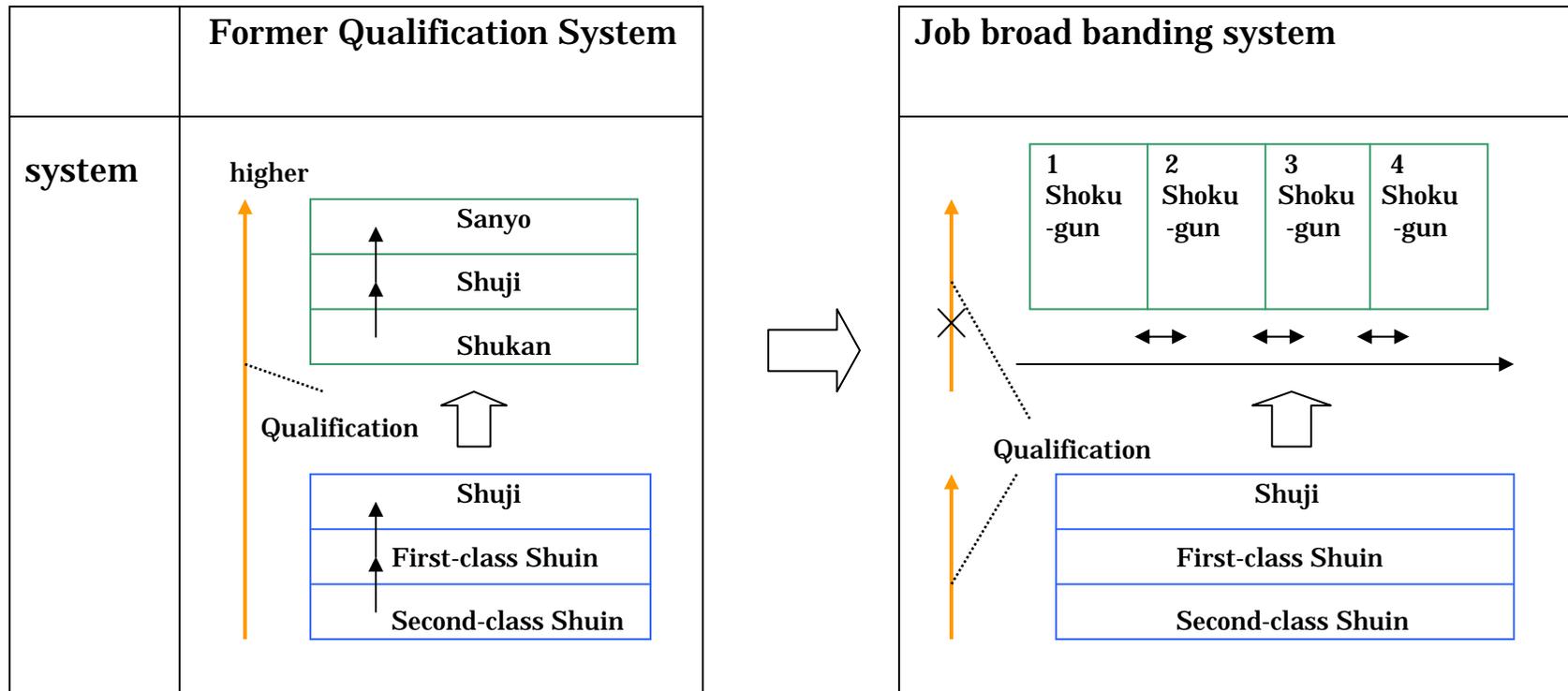
A - B = Capability which cannot be demonstrated in the company.

B - C = Capability which can be demonstrated only in the company.

Each circle expresses with a size about various capability which constitutes Employability for convenience.

About whether it is "Capability earned through the support by the company and work" or each capability is "Capability earned by self-reliance", it classified with the dashed line.

**Figure 13 Change of Qualifications Ladder**



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