

Japan

Labor Review

Volume 3, Number 4, Autumn 2006

Special Edition

Trends in Disparities

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EDITORIAL OFFICE

The Japan Institute for Labour Policy and Training

International Affairs Department

8-23, Kamishakujii 4-chome, Nerima-ku, Tokyo 177-8502 Japan

TEL: +81-3-5903-6315 FAX: +81-3-3594-1113

Email: jlr@jil.go.jp

Homepage: <http://www.jil.go.jp/english/index.html>

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NEXT ISSUE (Winter 2006)

The Winter 2007 issue of the Review will be a special edition devoted to **Labor Unions
in Japan Today and Challenges in Labor Relations**

INTRODUCTION

Trends in Disparities

The “equality myth” was one of the terms used to describe Japanese society in the latter half of the 20th century, and was considered to be a particular feature of Japan as it accomplished post-war economic growth after recovering from a war that killed more than 3 million and literally left the country in ashes. However, these days this myth is disappearing, or at least there is a concern that it may be doing so. The unemployment rate has risen to levels not seen in the past, and the number of suicides shows no sign of decreasing. In contrast, much attention has been given to “the rich” who live in upmarket houses in the center of Tokyo, leading to the coinage of the term “Hills-*zoku*” (a tribe of people who manage business or live in the Roppongi Hills building complex in Tokyo). It has been pointed out that not just the economic system, but also Japanese society as a whole is undergoing significant change.

The issue was also discussed in the political arena and gained the attention of a very large number of people, so much so that the arguments were liable to be influenced by the inclinations of certain political forces and consequently thoroughgoing analysis of factual data often went unnoticed. In this feature, we would like to show through discussions based on actual data that there can be varying views on the emergence and disappearance of the “equality myth” in Japan. In relation to the concepts of equality, we particularly focus on general wage differentials, wage differentials between men and women, regional divergences, and sociological divergences, and then summarize the trends of each in recent years.

Mr. Takehisa Shinozaki studied the trends of general wage differentials in “Wage Inequality in Japan: 1979-2005”, and underlined in his paper that there are many excellent statistics that help to shed light on wage differentials in Japan. However, even though the trends in wage differentials differ from statistics to statistics, it is nonetheless commonly observed that wage differentials gradually expanded from the latter half of the 1990s to the 2000s. It is interesting to note that when compared with other existing research, his study shows that when data obtained in the 2000s is included, the trend of expansion in wage differentials becomes clearer. The study also helps us to

understand that while the OECD's report in 2006 on the wage differentials in Japan gained much attention, the data used by the OECD accounts for only a fraction of the available data on the subject. Meanwhile, wage differentials between men and women are not expected to be eliminated. Mr. Masahiro Abe confirmed in "Does Asymmetric Information Influence the Wage Differential between Men and Women" that the causes of actual wage differentials between men and women cannot be explained by what firms perceive as the difference in the average productivity of men and women.

Mr. Kazufumi Yugami indicated in "Regional Divergences in Unemployment Rates in Japan and Their Factors" that there are regional differences in unemployment rates and non-employment rates. However, these differences are only apparent, and when industrial and demographic structures are controlled the differences tend to narrow. The discovery that the differences in regional economic variables are narrowing, whereas the general wage differentials are at the very least not decreasing, is important in the evaluation of the differentials from the viewpoint of welfare.

In Ms. Sawako Shirahase's "Trends in Income Inequality: A Sociologist's Perspective," the author commented on the recent discussions about inequality from the viewpoint of a sociologist. The following observation is particularly interesting: "There have always been disparities in Japanese society, and it is not that they substantially and uniformly widened or that inequality that did not exist in the past suddenly emerged." Associating today's discussions about economic disparities with the "decline in the validity of the 'model of the standard household' used as the basis of various systems," she discusses about public assistance for those who do not fit into the standard model.

This feature consists of the four papers mentioned above, which describe the current state of economic disparities in Japan and provide examples of how they can be interpreted. It is hoped that this feature will help readers to understand that what is currently happening in Japan is not only a linear expansion of disparities and social change, but also a convolution of a wide range of aspects.

Ryo Kambayashi

Associate Professor, IER, Hitotsubashi University

Wage Inequality in Japan, 1979-2005

Takehisa Shinozaki

Lecturer, Faculty of Science and Engineering, Waseda University

1. Introduction

The aim of this paper is to overview the wage inequality observed in Japan from the 1980s to the 2000s, and to examine the relevant influencing factors from the perspective of the aging of the population structure and the increase in non-regular employees.

At the end of the 1990s, when there was a substantial worsening of the employment situation, economic inequality seen in household income gaps and individual wage differentials suddenly started attracting considerable attention in Japan. The expression “*kakusa shakai* (a society of disparity)” further fueled people’s concerns over inequality in the 2000s. In the 2005-06 Diet sessions, in addition to debates associated with tax and social security reforms, active discussions were carried out on the relationship between the expansion of economic inequality and the Government’s structural reform. Coincidentally, multiple major newspapers featured articles on “*kakusa shakai*” and conducted public opinion polls regarding inequality one after another. Many administrative bodies and international institutions also showed a strong interest in this matter. The Annual Report on the Japanese Economy and Public Finance 2006 referred to the income gaps among youth, while the Economic Survey of Japan released by OECD in July 2006 devoted a full chapter to express concern over growing income differentials in Japan¹.

As public attention towards economic inequality grew, results of economic studies concerning income gaps and wage differentials were also accumulated in Japan. With regard to household income inequality an approximate consensus has been reached in terms of the existence of inequality expansion and its determinants. As far as statistics show, several preceding studies² indicated the

¹ The OECD argument that pointed out that wage inequality in Japan became worse than the OECD average is based on Förster and d’Ercole (2005), as well as OECD (2006) Ch. 5 that contains quotes from this paper. However, it should be noted that Förster and d’Ercole (2005) used data available from Japanese statistical survey (the Comprehensive Survey of Living Condition of the People on Health and Welfare: CSLCPHW), which is famous for providing slightly higher income Gini coefficients than do other statistical surveys.

² One example is Ohtake (1999). Other Japanese reports include Ohtake (2000) and

following: a) the household income gap showed a tendency to expand throughout the 1980s and 1990s, and b) the aging of the population structure widened seeming inequality in income to a greater extent. To put these points differently, the expansion of such income gaps stemmed from the increase in the elderly population where there is significant³ income inequality within it.

There also have been several studies conducted on individual wage differentials. The above-cited Ohtake (2000) investigated age-specific wage gaps seen among regular employees until the late 1990s and found that an expansion of wage differentials was not observed within the same age groups, although only a few limited groups of workers, for example regular male employees with a university degree in their late 40s, showed widened base salary gaps. Paying special attention to youth wage differentials, Ohta (2005a, 2005b) pointed out that the expansion of salary gaps among young people which occurred before and after 2000 resulted from an increase in non-regular employees whose wages are generally low and largely variable. Compared to the studies on income inequality, those on wage gaps are smaller in number. Moreover, there is little that has been examined and clarified, especially in terms of the trends and background of wage differentials in the 2000s.

In this paper, I will elucidate the trends and factors related to wage inequality seen in Japan from the 1980s to the 2000s by updating Shinozaki (2001, 2002). The major conclusions made in Shinozaki (2001, 2002), which analyzed wage gaps found until the 1990s, include: a) when looking at the entire mass of employees including both regular and non-regular workers, there was a constant tendency of differential expansion in the salary of female employees from the 1980s to the 1990s, and b) widened wage gaps between regular and non-regular employees resulted in the expansion of wage differentials among female workers. One objective of this study is to examine if the above conclusions will be affected or not when the latest available data available up to the mid 2000s is taken into account.

In addition, I will investigate the trends and background of wage inequality

Oshio (2004).

³ In contrast, some studies, for instance Tachibanaki (2005, 2006), see as a problem the mere fact that the number of households with low income are increasing. Furthermore, as research results stating that expansion of income gaps seem to be present yet do not actually exist are largely losing touch with the public's actual feelings, there are several ongoing studies that try to grasp the background that causes a gap between such research results and the public's sense, such as Ohtake and Tomioka (2004).

among regular employees, which are often referred to in OECD cross-national studies⁴. As of July 2006, the data concerning wage gaps available on the OECD website⁵ are limited to those until 2000. In this paper, I will update the data set to reflect data up until the mid 2000s in order to further examine wage inequality trends, and then will analyze associated influencing factors from the perspective of the aging of the population structure.

Upon analysis of wage differentials, it is extremely important to choose who will be the subjects and what definition of wage will be used. I will look into the trends of wage inequality by calculating wage gaps in the following order: 1) Using data concerning the monthly base salary excluding bonus and overtime payment paid to regular employees who work for private companies with 10 or more workers, 2) Using the annual earnings including bonus and overtime payment paid to regular employees who work for private companies with 10 or more workers and to regular employees working in all private enterprises, and 3) Based on the annual earnings paid to all types of employees (including both regular and non-regular employees) who work for private companies irrespective of the number of workers and central and local government.

I will now describe the background for which I place importance on the analysis subjects and definition of wage and carry out the processes described above. From the late 1990s to the 2000s, Japanese labor markets have experienced several significant changes. In terms of the employment system, for example, the performance-based wage system was widely adopted, mainly in large enterprises. However, Japanese companies tend to reward employees who achieved high performance by increasing bonus payment, rather than by raising their monthly base salary. Under such circumstances, it will be difficult to measure the influence that the introduction of a performance-based wage system has on wage inequality if we only look at monthly payments that employees receive. Furthermore, when a company aims to reduce labor costs in a recession like the one experienced in Japan in the 1990s, it will normally attempt to cut bonuses as the first step. Annual earnings that reflect bonus and overtime payment and monthly payments that exclude such extra rewards may not present the same trend of wage differentials.

⁴ For example, OECD (1996).

⁵ <http://www1.oecd.org/scripts/cde/members/lfsdataauthenticate.asp>

In terms of technological innovation, information and communications technology has been developed and broadly introduced in the workplace. In the United States, development of information and communications technology, as well as an increase in the demand for skilled workers, were regarded as the factors behind widened wage inequality in the 1990s (e.g. Katz and Murphy (1992), Krueger (1993)). In the case of Japan, if there is a gap in skill and technological levels between regular and non-regular employees, and consequently there is a gap in wage premiums paid depending on each employee's skills and ability, such gaps could appear in the form of wage differentials between regular and non-regular employees. Additionally, in Japan the proportion of non-regular employees surged from the late 1990s to the 2000s, especially among the younger generation. Since the wages paid for non-regular employees are in general lower than those paid for regular employees, a rise in the ratio of non-regular workers could lead to an expansion of overall wage inequality, even if other factors remain absolutely unchanged.

Taking these points into account, I will analyze wage inequality observed in Japan. Section 2 will explain the data and analysis methods used in this paper. Section 3 will examine trends of wage differentials and influencing factors, by using data on monthly base salary paid for regular employees who work in private companies with 10 or more workers. Then I will consider annual earnings received by regular employees who work for private companies of various sizes in order to reveal the trends of wage inequality. Section 4 will analyze the impact of the increase in non-regular employment from the 1990s to the 2000s on wage differentials by using data on annual wage paid for all types of employees working in private companies irrespective of the number of workers and central and local government. Section 5 will feature the conclusion.

2. Data and Methods

In the analysis carried out in this paper, only published data are used to calculate wage gaps, excluding any micro data. This is because in Japan there are strict restrictions on the usage of micro data of government survey, which require users of such data to obtain specific permission. At the same time, Japan is one of the countries with an ample amount of readily accessible published wage data. In this paper, several sets of published data are used to study trends of wage inequality and relevant influencing factors. The following

is an explanation about the data incorporated in each section.

Section 3 uses data obtained from the Basic Survey on Wage Structure (BSWS) conducted by the Ministry of Health, Labour and Welfare. This data proves variability in monthly base salary for regular employees who work in private companies with 10 or more workers. Performed annually, the BSWS indicates variability in wages by industry, firm size, gender, academic background, and age. Based on the collected data, gender-specific Gini coefficients are calculated to investigate the trends of wage gaps.

In addition, I will also analyze to what extent the aging of the population structure affects wage inequality, which other studies concerning income gaps in Japan have also placed importance on. In order to measure the impact of the aging of the population structure, the variance of the logarithm (VL) is used as another wage gap indicator, since the Gini coefficient is not suitable for this kind of analysis.

Another statistic is required to consider the annual earnings of regular employees, as well as to cover regular employees who are hired by enterprises with less than 10 workers. In this study, the data collected in the Employment Status Survey (ESS) conducted by the Statistics Bureau of the Ministry of Internal Affairs and Communications is used to calculate wage inequality based on the annual earnings paid for the entire group of regular employees. The ESS is performed every five years. Therefore, as of 2006, the latest available data is that obtained in 2002.

In Section 4, I will calculate wage inequality based on the annual earnings paid for the entire mass of employees, including non-regular workers, who are hired by private companies of various sizes and central and local government. Also, the results of an analysis using the VL are utilized to consider to what extent the increase in non-regular employees influenced the widening of wage differentials among all types of employees. Since wage inequality specifically among non-regular employees cannot be calculated using the data of the ESS, the Special Survey of Labour Force Survey (SSLFS) carried out by the Statistics Bureau of the Ministry of Internal Affairs and Communications is also reflected in this section. The SSLFS is an annual survey and has been performed as part of the Labour Force Survey (LFS) since 2002⁶.

⁶ The SSLFS has not much statistical data by firm size. The reason why the data obtained from the SSLFS is not used in Section 3 for calculating the annual earnings

The VL and methods of decomposition analysis used in Section 3 and 4 are defined by the following formula⁷:

$$VL = \text{var}(\ln w_{it}) = V(s_t, \sigma_t, w_t) = \sum s_{ij} \sigma_{ij}^2 + \sum s_{ij} w_{ij}^2 - \left(\sum s_{ij} w_{ij} \right)^2$$

t : time w_{it} : wage of individual i at time t

j : each group (age group, regular and non-regular workers, etc.)

s_{ij} : population share of group j at time t

σ_{ij}^2 : VL of wage within each group j at time t

w_{ij} : mean of log-wage of each group j at time t

For example, when conducting a decomposition analysis on the expansion of wage gaps from 1994 to 1999 from the perspective of population aging, the following equation can be derived:

$$\Delta VL = VL_{99} - VL_{94} \doteq (\text{ageing effects}) + (\text{within age group effects}) \\ + (\text{between age group effects})$$

$$\text{ageing effects} = VL(s_{99}, \sigma_{94}, w_{94}) - VL(s_{94}, \sigma_{94}, w_{94})$$

$$\text{within age group effects} = VL(s_{94}, \sigma_{99}, w_{94}) - VL(s_{94}, \sigma_{94}, w_{94})$$

$$\text{between age group effects} = VL(s_{94}, \sigma_{94}, w_{99}) - VL(s_{94}, \sigma_{94}, w_{94})$$

The reason why the both sides of the above equation are not necessarily equal is that cross effects occur among three factors.

3. Trends in Wage Inequality of Regular Employees from the 1980s to the 2000s

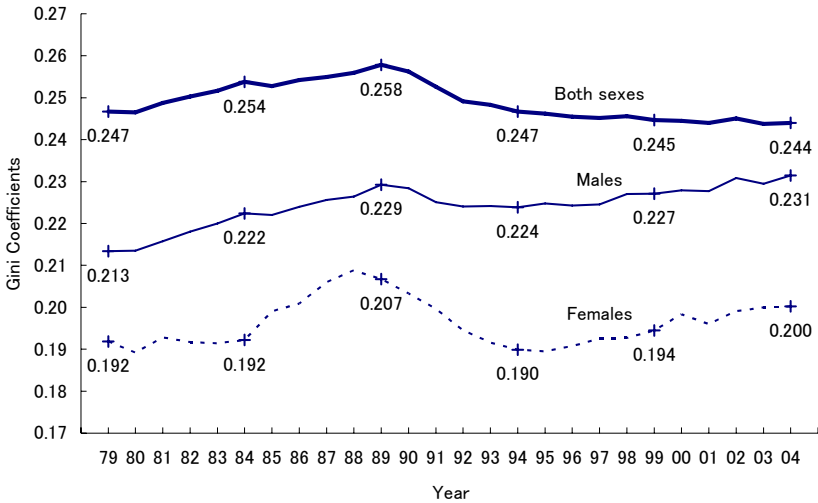
Wage Inequality Using the BSWs Data

Figure 1 indicates wage inequality by gender, which is calculated based on the data obtained from the BSWs regarding the monthly base salary that regular employees who work for private companies with 10 or more workers receive. According to the Figure, the wage gap among both male and female

-based wage inequality among regular employees who work for private companies irrespective of firm size is that it is difficult to work out wage gaps by limiting the subjects to those working in enterprises with 10 or more workers.

⁷ I referred to existing studies such as Deaton and Paxson (1994) and Ohtake and Saito (1998).

**Figure 1. Trends in Wage Inequality for Regular Employees, 1979-2004:
Monthly Base Salary, Excluding Bonus and Overtime Payments**

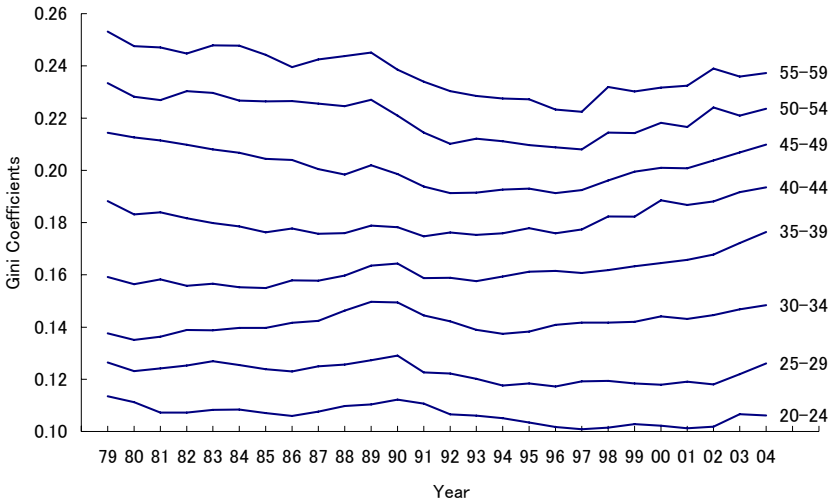


Source: Author's calculations from the BSWS published data.

employees expanded throughout the 1980s, slightly diminished in the early 1990s, and then slowly increased again from the mid 1990s to the 2000s. The Figure also shows that the average Gini coefficient among male workers was higher than that among their female counterparts, and that from the 1980s to the 2000s the fluctuation band of the Gini coefficients was wider among female subjects than among male subjects. What is interesting is that the Gini coefficients calculated using the total figures for both male and female employees slowly declined in a consistent manner after peaking in 1989. This phenomenon suggests that the wage distributions for male and female workers are gradually overlapping. In fact, the wage differentials during the said period between male and female regular employees showed a tendency to slowly shrink.

Figure 2 shows age-specific wage inequality among male employees, calculated based on the data collected in the BSWS. The wage differentials from the 1980s to the 2000s were stable, and the older the subjects became, the more the inequality grew. The wage gaps among the subjects in their 20s and early 30s were stable for about 25 years, although there was an expansion once around 1990. On the other hand, as for the age group between the late 30s and

Figure 2. Trends in Wage Inequality for Regular Male Employees by Age Group, 1979-2004: Monthly Base Salary, Excluding Bonus and Overtime Payments



Source: Author's calculations from the BSWS published data.

early 50s, the wage differentials slowly widened from the late 1990s and the 2000s⁸.

Decomposition Analysis of Wage Inequality Using the BSWS Data

One of the factors that cause fluctuation in wage inequality as seen in Figure 1 is the influence of the aging of population structure, which was also proposed in the preceding studies of income gaps. However, although aging of the population can be regarded as one of the factors that triggered the expansion of wage gaps observed in the 1980s and latter half of the 1990s, it cannot fully explain the phenomenon of reduction in wage inequality that occurred in the early 1990s. Therefore, I divided the analysis subject period into several intervals and examined the extent to which the factor of the aging of the population affected wage inequality, using the decomposition analysis

⁸ Among female workers, wage inequality decreased within almost all age ranges from the 1980s to the 2000s. The only age group that experienced a growth in its wage gap from the mid 1990s was that of the early 20s.

Table 1. Decomposition of the Change in Aggregate Wage Inequality for Regular Employees, 1979-2004 : From the Perspective of the Aging of the Population

(a)Males

Years	ΔVL	Change in inequality due to:		
		Population shares	Within-group inequalities	Mean wage of the groups
1979-2004	0.025	0.003	0.009	0.008
1979-1984	0.012	0.005	-0.003	0.010
1984-1989	0.009	0.004	0.004	0.001
1989-1994	-0.010	0.004	-0.011	-0.003
1994-1999	0.006	-0.004	0.009	0.001
1999-2004	0.007	-0.004	0.013	-0.002

(b)Females

Years	ΔVL	Change in inequality due to:		
		Population shares	Within-group inequalities	Mean wage of the groups
1979-2004	0.011	0.019	-0.007	0.012
1979-1984	-0.007	0.002	-0.011	0.001
1984-1989	0.016	0.001	0.013	0.003
1989-1994	-0.016	0.000	-0.016	0.001
1994-1999	0.011	0.006	0.004	0.003
1999-2004	0.007	0.004	0.003	0.002

Source: Author's calculations from the BSWs published data.

formula incorporating the VL.

Table 1 contains the results from the calculation of changes in the VL between 1979 and 2004 by dividing the whole subject period into five-year durations, as well as those from the decomposition analysis on the VL differentials between each interval. The changes in the VL can be attributed to three factors, that is aging effects, within age group effects and between age group effects.

Table 1(a) shows that the factor of the aging of the population had a relatively small impact on the change in wage inequality of male workers during the long period of 25 years from 1979 to 2004, and that the influence of factors that affect inequality both within same age groups and between different age groups was significant. However, looking at this 25-year term, by dividing it into five-year intervals the aging of the population was found to be the primary factor that widened wage differentials among male employees for

Table 2. Within-group Inequalities, 1994-2004: Breakdown by Age Group

Age	Males		Females	
	ΔVL × 1000	%	ΔVL × 1000	%
Total	21.23	100.0	7.68	100.0
17-18	0.03	0.1	0.03	0.4
18-19	-0.01	-0.1	0.28	3.6
20-24	0.34	1.6	3.22	41.9
25-29	0.95	4.5	0.81	10.6
30-34	1.30	6.1	-0.98	-12.8
35-39	2.12	10.0	-0.52	-6.8
40-44	3.05	14.4	0.64	8.3
45-49	3.46	16.3	1.79	23.2
50-54	3.45	16.2	1.49	19.4
55-59	2.73	12.9	0.44	5.8
60-64	1.98	9.3	-0.02	-0.2
65+	1.39	6.5	0.33	4.3

Source: Author's calculations from the BSWS published data.

the first 15 years between 1979 and 1994, while the same factor contributed to decrease the gaps from 1994 to 2004. The negative effects of this factor after the latter half of the 1990s were offset by the positive ones up until the first half of 1990s, minimizing the impact of this factor in the long run.

Conversely, in the case of female employees the aging of the population factor served as the major cause to expand wage inequality. Its influence was particularly prominent from the latter half of the 1990s, further widening wage differentials among female workers. From the 1980s to the 2000s, the growth in the gap between age groups also increased the overall female wage inequality.

The wage gap among both male and female employees decreased once in the first half of the 1990s. This is in large part attributable to the reduction in inequality within age groups. Compared to the other two factors, within age group effects fluctuates sharply. From the latter half of the 1990s, this factor significantly contributed to the widening of wage gaps for both male and female workers. It has an extremely great impact especially for men, exceeding the gap-decreasing effects provided by the aging of the population factor and that seen between age groups.

As we can see in the VL equation, the value of within age group effects is sum total of the value of each age-specific group effect. Table 2 shows the

contribution of each age group to total within age group effects from 1994 to 2004. According to the Table, the age groups of 40s and 50s had the greatest contributions in male employees, greatly magnifying within age group effects. The age groups that affected female employees the most were those of around the 50s and early 20s. The reason why the age group of males in their 40s and 50s had the greatest impact may lie in the performance-based wage system introduced coincidentally at around the same time. It could be possible to consider that the growth in the wage gap observed within certain age groups should have attracted a high level of public attention towards the issue of widening inequality.

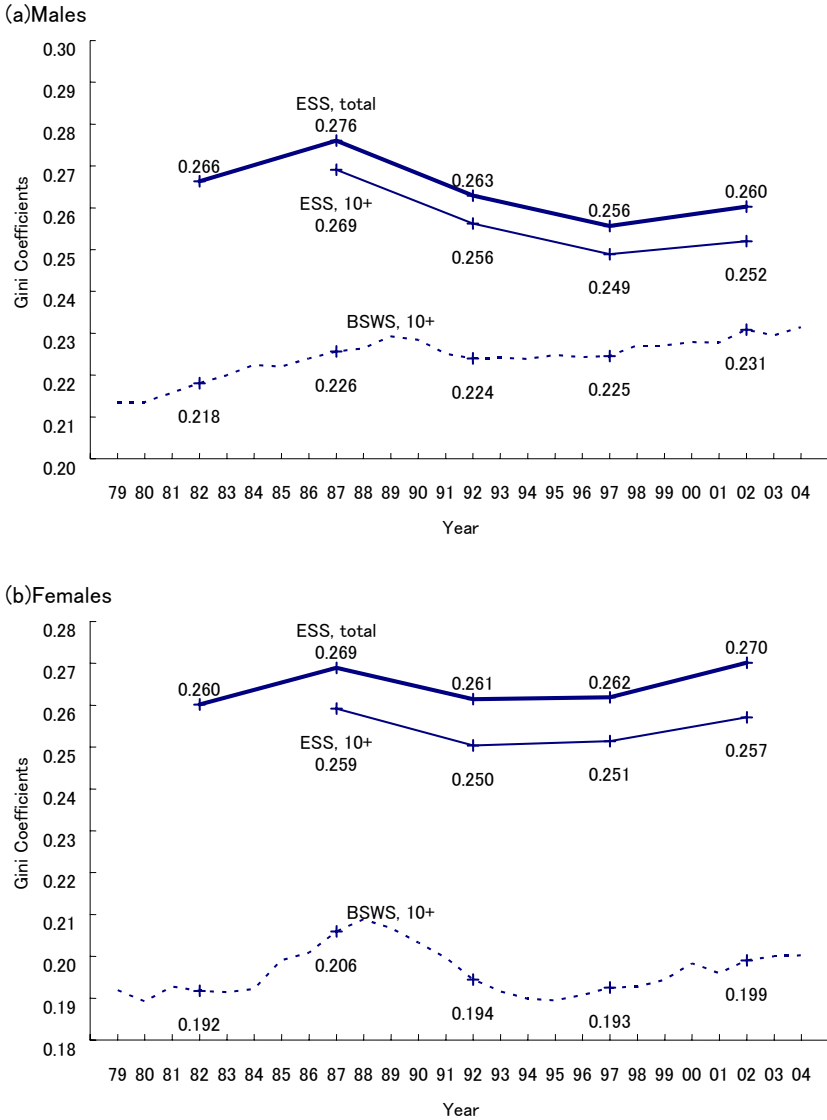
Wage Inequality Using the ESS Data

Now I use the ESS data below to calculate wage inequality based on regular employees' annual earnings and that among regular employees, including those who work for companies with less than 10 workers. Figure 3 indicates the Gini coefficients based on the annual wage, both among regular employees in private companies with 10 or more workers and among those irrespective of firm size. This Figure also shows the Gini coefficients calculated based on the data obtained from the BSWS regarding the monthly base salary that regular employees who work for private companies with 10 or more workers receive.

The line of the male workers' monthly pay-based Gini coefficients goes up after reaching the bottom in the first half of the 1990s, while that reflecting annual wages continued declining even in the latter half of the 1990s, before finally starting to rise. However, the increase seen in both lines remains small. The wage gap in 2002 was not as large as that in 1987, when it recorded the biggest expansion. This contrasts with the wage inequality based on the monthly base salary data provided by the BSWS, which grew the most in the 2000s. The graph also indicates that the Gini coefficients calculated based on the data collected from regular employees from companies of various sizes are generally higher than those whose subjects are limited to regular employees working in private companies with 10 or more workers.

The annual earning-based wage differentials among female workers also show similar trends to those observed among male workers, although the inequality was at its least in 1992. The 1997 wage gap level also almost equated with that in 1992. In 2002, the wage differential grew rapidly and the Gini coefficient among regular employees irrespective of the number of

Figure 3. Trends in Wage Inequality for Regular Employees, 1979-2004:
Annual Earnings, Including Bonus and Overtime Payments for ESS. Monthly Base Salary, Excluding Bonus and Overtime Payments for BSWS



Source: Author's calculations from the ESS and BSWS published data.

workers was slightly higher than that in 1987.

In the case of male workers, the level of the annual earnings-based wage inequality calculated using the ESS data is higher and fluctuates to a greater extent than that based on the monthly wage data provided by the BSWs. This suggests that changes in wage payment for male employees mainly come from outside of their monthly base salary, such as overtime payments and bonuses. Looking at the graph lines for female workers, the wage inequality based on the monthly wage is larger than that based on the annual wage, just as is seen among men. What is different, however, is that the fluctuation band of the monthly wage-based wage gap is wider than that calculated using the annual wage data. It can be assumed that, in the case of female workers, increase and decrease in wages are reflected in the amount of their monthly base salary to some extent⁹.

4. Trends in Wage Inequality of All Employees from the 1980s and to the 2000s

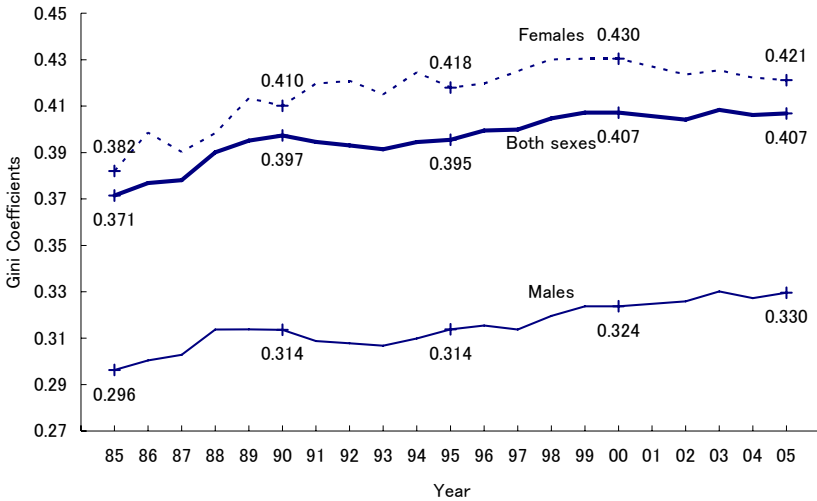
Wage Inequality Using the SSLFS Data

In this section, trends in wage inequality seen among all types of workers including non-regular employees will be analyzed using the data obtained from the SSLFS. Figure 4 shows gender-specific wage inequality, calculated based on the SSLFS data collected from all kinds of employees who work for private companies of various sizes and central and local government.

In general, the wage gaps between the 1980s and 2000s observed among both male and female workers had a tendency to grow, with some minor changes. However, while the wage inequality of male workers became most significant in 2005, that among female workers has been slightly declining after peaking in 2001. Although the analyses in the preceding sections indicated that the annual wage-based Gini coefficients for male and female workers were almost at the same level, when the figures involve non-regular employees, the

⁹ Shinozaki (2001) revealed that most changes in wage gaps based on the monthly base salary among female workers around 1990 were attributable to the within age group effects, and that while the wage inequality expansion seen in the latter half of the 1980s was largely influenced by the factor that widened the differentials among workers in their 40s, the wage gap reduction observed in the first half of the 1990s stemmed from the fact that the wage inequality in the said period shrank in multiple age groups.

**Figure 4. Trends in Wage Inequality for All Employees, 1985-2005:
Annual Wage, Including Bonus and Overtime Payments**



Source: Author's calculations from the SSLFS published data.

coefficients for female workers turned out to be higher than those for male workers. This suggests that in the female employee group there are scores of non-regular workers who accept low wages.

Using the SSLFS data, I estimated how much the Gini coefficients rise by involving non-regular employees. They increased by 0.048 among men and by 0.110 among women (in 2005), and these gaps tended to grow throughout the 1980s and 1990s irrespective of gender.

Decomposition Analysis of Wage Inequality Using the SSLFS Data

I examine the background of why wage inequality among the entire group of employees expanded. The possible reasons may include: a) the ratio of non-regular employees who receive low wages rose, and b) the wage gaps between regular and non-regular employees expanded. I use the method of decomposition analysis already incorporated in the Section 3.

Table 3 contains the results from the calculation of changes in the VL between 1985 and 2005 by dividing the whole subject period into five-year durations, as well as those from the decomposition analysis on the VL differentials between each interval. In Section 3, "population shares" meant the

influence that the increase in the elderly population has, while here in this section, it refers to the impact of the increase in non-regular employees on the change in wage inequality.

Table 3(a) shows that the increase in non-regular employees strongly affected the expansion of wage inequality of male workers in the long period of 20 years from 1985 to 2005. When looking at the results of the decomposition analysis by five-year intervals, this factor seems to have had a dramatic impact, especially between the latter half of the 1990s and the first half of the 2000s. During the said period, the wage gap both among regular and non-regular employees, as well as that between regular and non-regular employees, showed a tendency to shrink. The reason why the wage inequality in this duration slowly grew is that the inequality increasing effect of rise in the number of non-regular employees exceeds the inequality reducing effects of those two factors above.

Table 3. Decomposition of the Change in Aggregate Wage Inequality for All Employees, 1985-2005: From the Perspective of the Increase in Non-regular Workers

(a) Males

Years	ΔVL	Change in inequality due to:		
		Population shares	Within-group inequalities	Mean wage of the groups
1985-2005	0.154	0.105	0.014	0.016
1985-1990	0.080	0.013	0.032	0.030
1990-1995	0.026	0.011	-0.010	0.023
1995-2000	0.047	0.041	-0.008	0.012
2000-2005	0.001	0.100	-0.002	-0.066

(b) Females

Years	ΔVL	Change in inequality due to:		
		Population shares	Within-group inequalities	Mean wage of the groups
1985-2005	0.135	0.002	0.036	0.054
1985-1990	0.096	0.008	0.003	0.078
1990-1995	0.061	0.005	0.010	0.042
1995-2000	0.024	0.014	-0.005	0.014
2000-2005	-0.045	0.002	0.038	-0.086

Source: Author's calculations from the SSLFS published data.

In the case of female workers, the factor that expanded wage gaps between regular and non-regular employees imposed the biggest influence from 1985 to 2005. Although this factor had strong effects to widen inequality up until 2000, it functioned to reduce wage gaps between 2000 and 2005. In the first half of the 2000s, the wage inequality growth both among regular and non-regular workers greatly contributed to the expansion of wage differentials among the entire group of female employees. It is also understood that, compared with these two factors, the effect of the increase in non-regular workers has a weaker influence on wage inequality expansion.

Ohtake (2000, pp. 9) gave some reasons for the growth of wage inequality between regular and non-regular employees including: a) a number of job-seekers who originally wished to join the full-time labor market yet failed to do so flowed into the part-time labor market against their will, ending up being in the state of excess supply of temporary workers and, as a result, lowering the wage paid for part-timers, and b) the supply of part-timers exceeded the demand, leading to decrease in wage for part-timers in a relative sense. In relation to the point b) above, it should be noted that there are many part-timers who intend to voluntarily limit their wage to taxation threshold or less. Such an institutional factor can be also considered as an element that expanded inequality between regular and non-regular employees.

5. Summary of Findings and Conclusions

In this paper, I examined the wage inequality observed in Japan from the 1980s to the 2000s, based on multiple sets of published data. I also analyzed the influence of the aging of the population structure and increase in non-regular employees on growth in wage gaps, using the method of decomposition analysis. The main findings are as follows:

The wage inequality based on the monthly base salary that regular employees receive slowly expanded from the mid 1990s to the 2000s. Looking at the data by age, it was also found that there was a tendency for the wage differentials among male workers in their late 30s and early 50s to slowly grow from the mid 1990s.

In this paper, I analyzed the wage inequality among regular employees from the perspective of the aging of the population structure. Among regular male workers, this factor of the aging of the population had an effect of expanding wage differentials until the first half of the 1990s, while the same

factor contributed to decrease the gaps from the latter half of the 1990s. On the other hand, in the case of female employees, this factor served as the major cause to widen wage inequality from the 1980s to the 2000s. From the latter half of the 1990s, the expansion in wage gaps seen among male workers in their 40s and 50s greatly affected the differential growth for male employees as a whole.

The wage inequality based on the annual earnings that regular employees receive, which continued decreasing up until the latter half of the 1990s, slowly expanded in the 2000s. In addition, the annual earnings-based wage gaps are larger than those calculated based on monthly base salary.

The annual earnings-based wage inequality among all types of employees indicated a tendency to grow from the 1980s to the 2000s. I analyzed this wage inequality from the perspective of the increase in non-regular employees. It was found that, among male workers, the increase in non-regular employees greatly affected the wage differential growth. The effect seemed to be the most prominent from the latter half of the 1990s. Among female workers, the wage gaps observed between regular and non-regular employees contributed to widen the overall inequality. During the 2000s, however, the wage gap growth both within regular and non-regular employees had a large impact on inequality expansion as a whole.

The analysis performed in Shinozaki (2001, 2002) using data obtained up until the 1990s concluded that inequality expanded particularly among female workers, whereas the data obtained in the 2000s show that the tendency of inequality growth among female employees has ceased. Although many earlier studies on wage inequality performed up to the 1990s concluded that an expansion of wage differentials was not observed except for among a certain group of regular employees, the extended data including that obtained in the 2000s indicated that a slow growth in wage gaps did exist even when considering the entire group of regular employees. Particularly among male workers, the wage inequality expansion seen within age groups significantly affected the overall gap growth, which could be regarded as a factor that would make the public conscious of the expansion of inequality.

Since this paper was not able to take micro data into consideration, it remains a further thorough analysis that strictly controls for both academic background and industry. Above all, it is particularly important to calculate and analyze the hourly-based wage inequality by estimating per-hour wages using

working-hour data. This is because in Japan a large number of workers who voluntarily shorten working hours to limit the total amount of income earned can be found among non-regular employees. This paper incorporated repeated cross-section data only. It will be necessary in the future to analyze wage inequality based on panel data, which is not readily available in Japan yet, particularly that collected over a long period of time.

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Does Asymmetric Information Influence the Wage Differential between Men and Women?¹

Masahiro Abe

Assistant Professor, Department of Economics, Dokkyo University

1. Understanding the Related Issues

In 1975, the regular cash earnings of female employees were only 58.9, when assuming that those of male employees were 100. In 2004, the regular cash earnings of women is still only 67.6, and thus the wage differential between men and women still exists today in Japan. During this period, both the Equal Employment Opportunity Law (implemented in 1986 and revised in 1996) and the Law Concerning the Welfare of Workers Who Take Care of Children or Other Family Members Including Child Care and Family Care Leave (implemented in 1991 and revised in 1996) were established and enforced in Japan, and the employment environment for women has gradually improved. Though the participation rate of women in the labor force was 45.7 percent in 1975, it was 48.3 percent in 2004, a 2.6 percent increase. In addition, more women are now receiving higher education in the same way as men. The percentage of women advancing on to university, which was 2.4 percent (13.1 percent for men) in 1955, rose to 33.8 percent (47.0 percent for men) in 2002. Yet even though the employment environment for women has improved and it is considered that participation of well-educated, skilled women in the labor force has increased, why does this remarkable wage differential between men and women still exist?

The real wages of the worker should become equal to the marginal productivity if the labor market is a perfectly competitive market. If a wage differential between men and women can be observed today, then this may reflect the difference in the marginal productivity of men and women. What stipulates the difference in the marginal productivity of men and women? Becker [1957], Madden [1975], Phelps [1972], Arrow [1974], etc. examined economic theories regarding wage differentials. These economic theories explain why wage differentials occur between genders and among different

¹ This paper is written based on a report called "Seminar concerning the wage differential problem between men and women" (Chaired by Yoshio Sasajima). Suggestions and comments were made by attendees at the seminar.

racess, but each of these theories considers different factors as important. The following four factors are typical:

a. Human Capital Theory

What causes the difference in productivity between men and women? One reason is the difference in the human capital that men and women have accumulated. If the amount of human capital differs between men and women, the difference in wages occurs as a consequence. The wage differential between men and women depends on the difference in investment in terms of schooling and on-the-job training as well as experience. Mincer and Polacheck [1974] pointed out that the division of domestic labor by gender greatly influences the wage differential between men and women.²

Under the division of domestic labor by gender, the period during which women supply labor is shorter than that of men due to housework and childcare. The labor force participation rate of women between the age of 25 and 39 years is lower than for Japanese women in other age groups, showing a period of interruption for working women. Therefore, the cost-effectiveness of women worsens compared with that of men, and the incentive for human investment in women is weakened. The existence of the division of labor by gender is a factor causing the gap between men and women in not only their income earning power, but also their accumulation of human capital. In addition, if there is an interruption in the work period, the human capital already accumulated may decline in value as a result of technological innovation during that period. As a result, women are at a disadvantage compared with men in terms of human investment.

b. Statistical Discrimination

The wage differential between men and women may also occur because it is difficult to measure each individual's productivity. The information on individuals' productivity is asymmetric among workers and employers, and a great cost is often required to compensate for this asymmetry. In this case, the average productivity of a group with similar attributes is measured instead of

² Kawaguchi [1999] concluded, using the game theory, which the human capital investment of women decreases according to the traditional division of labor by gender.

individuals' productivity. Gender is one attribute, which is one reason why statistical discrimination between men and women occurs (Phelps, [1972] and Arrow, [1974]).

Higuchi [1991] pointed out that the difference in the number of years of service between men and women is a cause that gives rise to statistical discrimination. For a firm to provide human investment in its workers, higher investment-effectiveness can be expected by employing a group that will provide long years of service and by concentrating education and training efforts upon such a group. Though the average length of service of Japanese women is considered long by international standards, men's length of service is even longer. Therefore, the expected investment-effectiveness of women is not as high as that of men. As a result, even if the potential productivity between men and women is the same, there are differences in hiring, education, and training as well as the wage differential because the average length of service is different.

c. Discrimination by Difference in Preference

In the two hypotheses mentioned above, the wage differential can be considered as economically reasonable in the sense that the gap between men and women is based on the difference in marginal productivity. There may, however, be cases where the differentials are generated by a "discriminatory factor" where a reasonable explanation is difficult to find. According to Becker (1957), when a corporation has a discriminatory preference in employing women in a perfectly competitive market, the corporation bears the psychological cost for employing women and, therefore, the corporation will request compensation for it. Women's wages will decrease since the existence of such a cost may shift the labor demand curve of women to the left of the marginal revenue product curve.

One example is the discrimination caused by the preference and attitude of the employer, colleagues, or customers. For instance, the employer who has a bias might prefer to employ men instead of women, disregarding actual productivity. In such a situation, the additional (psychological) cost of employing women is borne by the employer. Moreover, in addition to the employer, women may also be discriminated against by colleagues in the workplace and by customers. Women's wages decrease since the existence of such additional costs may shift women's labor demand curve to the left of the

marginal revenue product curve.

d. Monopoly

There is a hypothesis that the wage differential between men and women is thought to reflect men's monopoly on power in the labor market (Madden, [1975]). Among the various kinds of jobs in the labor market, there are certain fields with more female employees and thus these jobs are generally thought of as women's work. Due to such a general tendency, if the labor supply of women is concentrated in certain jobs, the wages for those jobs will decrease. As a result, there is a gap between the wages of men and women. If the labor market is monopolized by a certain employer, there is a high possibility that the wage is decided at a lower level than that determined by marginal productivity. In particular, when the labor supply is inflexible, the wage level will be determined at a lower level. In addition, when there are two groups with different elasticity of supply, the enterprise can make more profits by proposing different wages for each group. For instance, if women's labor supply is inflexible compared with men's, women's wages will be suppressed at a lower level.

It is important to identify the factors, among those examined by the hypotheses, which explain the wage differential between men and women when considering policy. This is because the policy to be adopted will differ depending on the factors that give rise to the gap. If the psychological cost to the company is an important factor, it may be preferable to provide subsidies to the enterprise that employ women. If the issue of the demand monopoly is an important factor, a positive action (affirmative action) to reduce the occupational categories in which only men and women can be employed may be adopted as one of the approaches. If statistical discrimination is an important factor, a mechanism to prevent it, such as standardizing occupational ability and publishing the standards, may need to be implemented to address the problem.³

It is important to identify the causes of the wage differential between men and women, but to the author's knowledge, there has been almost no research that has sufficiently dealt with the issue to date. In the following analyses, the

³ In our country, there is no general social standard on which to assess professional abilities in many types of jobs, and such assessment is only conducted within companies. Professional ability standards are used by companies for promotion, but they are seldom made public.

wage differential is examined based on the Basic Survey of Wage Structure and the Basic Survey of Employment Management of Women to determine whether the wage differential between men and women is explained by the statistical discrimination theory or if it is caused by other factors.

2. Working Hypothesis

Is the wage differential between men and women caused by statistical discrimination or by other factors such as difference in gender preference? The analysis done in the past has not necessarily succeeded in identifying the factor of the differential. Hori [2003], who examined the primary factor of the wage differential between men and women by using the Oaxaca decomposition, pointed out that the different price effect of men and women is the main factor of the wage differential between the sexes. This result suggests that the wage differential between men and women is caused by the extent of the difference of the price effect, even if attributes between men and women are equal. However, the question is why the price effect is different among men and women, and this cannot be explained by the Oaxaca decomposition.

I would like to examine whether the statistical discrimination theory forms the background of different price effects among men and women. The hypothesis below is examined for this purpose.

If the statistical discrimination theory explains the wage differential between men and women, the wages of men and women should be determined according to the difference of the average length of service and average productivity between men and women that the workplace has knowledge of. However, if the difference of the average length of service and average productivity between men and women at the corporation concerned does not influence the wage, then the wage differential between men and women is determined by the difference in gender, which cannot be explained by the statistical discrimination theory.

Foster and Rosenzweig [1996] and Neumark [1998] examined this hypothesis as outlined below, paying attention to the wage when starting work, race, gender, and (marginal) productivity. First of all, it is assumed that the accumulation of human capital is disregarded, marginal productivity is constant through life, and an incentive wage is not included in the wage. At this time, according to the statistical discrimination theory, the wage must correspond to expected value $P_s^* (P_s^* = E(P | I_s))$ of productivity when starting work.

$$(1) \quad w_s = P_s^*$$

where w_s is the wage when starting work and I_s is the information concerning (the productivity of) the worker, which the employer can obtain when the employee starts working. In this case, if the wage differential between men and women reflects the difference in productivity, that is, if the statistical discrimination explains the wage differential, the parameter β of the following wage function should be zero:

$$(2) \quad w_s = \alpha P_s^* + \beta female + \varepsilon$$

where w_s is the wage when starting work, '*female*' is the dummy for women, ε is the error term, and α and β are parameters.⁴

If parameter β in Equation (2) is a statistically significant value, it is suggested that even when the difference in the productivity between men and women is controlled, wage differential is still caused by difference in gender. It is difficult to precisely specify what this difference in gender reflects, but Foster and Rosenzweig and Neumark consider it discrimination by preference.

In the analyses above, the wage when starting work and the information about the worker which the employer obtains when the worker is hired and starts work cannot be used. Therefore, the hypothesis is examined by the method outlined below. First, since the wage level differs by age, number of years of service, academic background, company size, and industry, the influence of these factors is controlled. More specifically, we assume a wage function as shown in equation (3):

$$(3) \quad \ln w_i = \alpha + b_1 \exp_i + b_2 \exp_i^2 + b_3 tenure_i + b_4 tenure_i^2 \\ + \sum c_{1s} SCH_s + \sum d_{1s} IND_s + \sum e_{1s} SIZE_s + u_i$$

where \exp is elapsed years⁵, $tenure$ is the number of years of service, SCH is the academic background dummy, IND is the industry dummy, $SIZE$ is the

⁴ Meanwhile, Foster and Rosenzweig and Neumark cannot use the difference in the average productivity as perceived by the enterprise, and thus use the variable that shows the individuals' productivity instead.

⁵ Here, the age when graduating from school is assumed to be the standard age (15 years old when graduating from junior high school, 18 years old when graduating from high school, 20 years old when graduating from junior college, and 22 years old when graduating from university). Therefore, the elapsed years '*kei*' after graduating from school are obtained by (age) minus (years in school) minus (six years).

employee dimension dummy, and u is the error term. Here, kei , which indicates years elapsed after graduating from school, is used instead of age, so that the parameter α is equal to the level of the first salary. Because α is the level of the initial salary (as indicated by natural logarithm), the expected value P^* of the productivity as assumed by the employer and the female dummy 'female' are substituted to the equation (3) in order to examine whether there is a difference in the initial salary of men and women even when controlling the difference in productivity is controlled.

$$(4) \ln w_i = a_0 + a_1 P^* + a_2 female + b_1 \exp_i + b_2 \exp_i^2 + b_3 tenure_i + b_4 tenure_i^2 + \sum c_{1s} SCH_s + \sum d_{1s} IND_s + \sum e_{1s} KIBO_s + u_i$$

In equation (4), it is suggested that there is a gap that cannot be explained by the statistical discrimination in the wage of men and women at the time of their initial salary, when the parameter α_2 is statistically significant.

3. Data

The data used in this paper have been calculated based on the Basic Survey of Wage Structure (2001) and the Basic Survey of Employment Management of Women (2001).

The Basic Survey of Wage Structure (designated statistics No. 94) is based on statistical research that aims to clarify the wage realities of full-time workers in major industries by type of worker, type of occupation, gender, age, academic background, length of service, and years of experience, etc. The survey items are industry, company size, gender, academic background, average age in each age group, year of service, scheduled working hours, extra working hours, regular cash earnings, regular cash earnings, and special cash earnings such as annual bonuses.

The Basic Survey of Employment Management of Women (approved statistics) is conducted each year to gain an overall understanding of the employment management situation of female workers in key industries. The survey items differ each year. In 2001 it focused on understanding the employment management situation of women after the amendment of the Equal Employment Opportunity Law was enforced in April 1999. Businesses are the subject of the survey.

These two kinds of statistical surveys are combined to obtain such information as the attributes and wages of workers, attributes of businesses,

and the employment management methods. In using this data, however, it is necessary to note the following:

Firstly, as the result of combining the two statistical surveys, only the data on comparatively large businesses remained. This is because comparatively large businesses responded to both surveys. As a result of combining the two investigations, we obtained 36,963 samples from 456 businesses with 500 or more employees.

Secondly, as a result of using the two surveys, the sampling rate of each individual survey could not be used. Each survey is conducted based on a list of names at the place of employment of the enterprise statistics research, but the sampling rate becomes meaningless when the two surveys are combined. Therefore, the results shown below are figures that have not been reconstructed to show the trends of the population.

Thirdly, because of the very low number of samples in which the employment situation is “temporary” and the working style is “part time”, these samples have been excluded from the analysis below.

To estimate the equation (4), it is necessary to set a variable that shows the difference in the productivity of men and women as understood by businesses. The analysis below uses the rate of average years of service of men and women in the place of business concerned, the rate of women in the place of business concerned, the degree of balance in the number of executives, the degree of balance in the allocation of employees in key duties, and the degree of balance in promotion.

The rate of average years of service of men and women is obtained by the following formula: $(\text{women's average years of service}) \div (\text{men's average years of service})$. The data are taken from Question 1 of the Basic Survey of Female Employment Management.

The rate of women in the place of business concerned is obtained by the following formula: $(\text{number of full-time female workers}) \div (\text{total number of full-time male and female workers})$. The data are from the phase sheet of the Basic Survey of Employment Management of Women.

The degree of balance in the number of executives is obtained by the following formula: $[(\text{number of female executives irrespective of age}) \div (\text{number of full-time female workers irrespective of age})] \div [(\text{number of male executives irrespective of age}) \div (\text{number of full-time male workers irrespective of age})]$. The data are from Question 7 of the Basic Survey of Employment

Management of Women. This variable is calculated for each of the positions of chief clerk or equivalent, section chief or equivalent, and general manager or equivalent.

As for the degree of balance in the allocation of employees in key duties, the data are from Question 5(2) of the Basic Survey of Employment Management of Women. The gist of this question is: "How are full-time male and female workers, not including executives, distributed in the following areas of duty?" The duties in the question are "duties that a new employee would take a year or two to acquire the skills for," "duties that a new employee would take three to five years to acquire the skills for," and "duties that a new employee would take six or more years to acquire the skills for." Here, for each area of duty, the dummy takes the value of 1 when "there are generally the same number of men as women (either gender making up 30 to 70 percent)," "almost all are women (80 to 90 percent)," and "all are women." The dummy takes the value of 0 when "almost all are men (80 to 90 percent)," "all are men," and "unknown."

As for the degree of balance in promotion, the data are from Question 8 (1) of the Basic Survey of Female Employment Management. The question asks, "Is there any difference between men and women when an average college-educated worker is promoted after joining the firm?" The dummy takes the value of 1 when "there is no difference between men and women" and "women tend to be promoted earlier than men." The dummy takes the value of 0 when "men tend to be promoted earlier than women," "unknown," and "there are no male (or female) employees so that comparison is not possible."

These variables do not directly indicate the difference in the productivity of men and women, but rather show the degree to which women are utilized at the places of business concerned. This degree of utilization, however, is thought to reflect the difference in productivity of men and women as perceived by the businesses concerned.

Table 1 shows a list of variables and the basic statistical values of men and women for each variable. The wage used in the analysis below is the hourly scheduled wage. The scheduled wage is used to exclude the effect derived from the difference in overtime between men and women.⁶ In Table 1, the

⁶ When using the wage census, the hourly wage is obtained by three methods: dividing the scheduled cash earnings by the nominal working hours; dividing the

difference in the average wages of men and women (hourly scheduled wage of women ÷ hourly scheduled wage of men) is about 67.4. The average wage is influenced by elapsed years, the number of years of service after graduating from school, and academic background. When these are compared by gender, the rate of elapsed years after graduating from school between men and women is 0.6958, the rate of years of service between men and women is 0.6039, and the rate of university graduates between men and women is 0.4300. In addition to these variables, Table 1 also shows that the percentage of executives and the industries to which workers belong differ greatly between men and women.

According to the index that shows the degree of utilization of women, it is clear that the average value of the degree of utilization of women is higher among women than among men when all other variables are the same. In men's and women's years of service, the ratio of women in the place of employment concerned, equality concerning assignment to the key duties, and equality in promotion, all have values that are larger for women than for men. This suggests that enterprises in which more women are employed have a high level of utilization of women and a higher degree of equality or that the degree of utilization of women and the degree of equality rises in enterprises that employs many women. The direction of the causal relation, however, is uncertain.

4. Analytical Result

4.1 Reality of the Wage Differential Between Men and Women

Before making the measurement with Equation (4), we will first grasp the reality of the wage differential between men and women by using the combined data. The combined data are unlikely to reflect the characteristics of the population assumed in the Basic Survey of Wage Structure and the Basic Survey of Employment Management of Women and it is also significant to discover the characteristics of the combined data. Figure 1 shows the distribution of the regular cash earnings per hour according to age, academic background,

regular cash earnings by total actual working hours; and dividing the regular cash earnings plus the bonus converted per month by total actual working hours. Overtime is reflected in these, except for the regular cash earnings. Below, the wages between men and women are compared by the regular cash earnings, which do not reflect overtime.

Table 1. Basic statistics of variables

Variable	Details	Men		Women	
		Average value	Standard deviation	Average value	Standard deviation
h_wage1	Regular wage per hour (100 yen)	25.3220	14.2572	17.0650	7.4047
exp	Elapsed years after graduating from school	21.2611	11.5108	14.7928	11.3558
tenure	Years served	18.3765	11.4089	11.0973	9.4209
jh	Junior high school graduate dummy	0.0730		0.0466	
hs	High school graduate dummy	0.5043		0.4226	
jc	Junior college graduate dummy	0.0635		0.3763	
uni	University graduate dummy	0.3593		0.1545	
blue	(High school graduates as reference group) Production worker dummy	0.3730		0.1977	
female	(Clerical work and management as reference group) Female dummy(men as reference group.)				
def_tenure	Differential of years served between men and women	0.6766	0.2693	0.7844	0.4457
per_fem	Ratio of women of workplace concerned	0.1535	0.1479	0.4028	0.2677
per_bucho	Ratio of female general manager of workplace concerned(*1)	2.2715	37.5985	0.3449	14.0321
per_kacho	Ratio of female section chief of workplace concerned(*1)	6.4301	108.5269	0.9846	40.5089
per_kakari	Ratio of female chief clerk of workplace concerned(*1)	0.2103	1.0131	0.2577	0.6014
prod_1	Assignment to duties requiring 1-2 years to master(*2)	0.4088		0.6918	
prod_2	Assignment to duties requiring 3-5 years to master(*2)	0.2985		0.6177	
prod_3	Assignment to duties requiring six years or more to master(*2)	0.2143		0.4911	
ladder	Differential of wage progression and promotion	0.5996		0.6192	
size1	Firms with 5,000 employees or more	0.4199		0.3128	
size2	Firms with 1,000 to 4,999 employees or more (Firms with 500 to 999 employees or more as reference group)	0.3946		0.4111	
bucho	General Manager	0.0316		0.0025	
kacho	Section Chief	0.0721		0.0076	
kakaricho	Chief Clerk	0.0685		0.0176	
syokuc	Chief Clerk	0.0438		0.0026	
mining	Mining industry	0.0023		0.0010	
const	Construction industry	0.0247		0.0119	
food	Food and beverage, tobacco, and feed manufacturing industry	0.0338		0.0385	
texti	Textile industry, clothes and other textile products manufacturing industry	0.0057		0.0196	
lumber	Wood, wooden goods manufacturing industry, furniture and equipment manufacturing industry	0.0037		0.0014	
pulp	Pulp, paper, and paper product manufacturing industry	0.0945		0.0436	
chemi	Chemical industry, plastic product manufacturing industry, rubber product hoard industry	0.1473		0.0762	
ceramic	Pottery industry, earth and stone product manufacturing industry	0.0316		0.0182	
iron	Iron and steel industry	0.0409		0.0055	
nonfer	Nonferrous metals manufacturing industry	0.0373		0.0146	
fab_met	Metal manufacturing industry	0.0296		0.0328	
machine	General machinery apparatus manufacturing industry	0.0415		0.0198	
ele_mach	Electric machine apparatus manufacturing industry	0.0970		0.0828	
transp	Machinery and appliances for transportation manufacturing industry	0.1258		0.0376	
precision	Precision machine apparatus manufacturing, and other manufacturing industry	0.0785		0.0768	
electricity	Electricity, gas, and water industry	0.0327		0.0149	
trans_com	Transportation and communication business industry	0.0251		0.0214	
trade	Wholesale, retail trade industry, restaurant	0.0317		0.0884	
finance	Wholesale, retail trade industry, restaurant Financial insurance business, real estate business industry(sevice industry as reference group)	0.0313		0.0354	
	Number of samples	28634		8329	

(*1) The ratio of women in managerial posts was calculated based on the formula:(number of women in managerial posts) \div (number of female employees) \div (number of female employees) \div (number of men in managerial posts) \div (number of male employees).

(*2) '1' if only women are employed, most employees are women, or number of men and women are almost same., '0' if only men are employed or most employees are men

(*3) '1' if there is no differential between men and women in promotion or if women are promoted earlier than men. '0' if, men are promoted earlier than women, promotion situation is not understood, or there are no male employees who can be subjected to comparison

and gender. The square box in the figure shows the range from the 25th to 75th percentiles, and the horizontal line in the box shows the median. Moreover, short horizontal lines above and below the box correspond to $x[75]+1.5\times(x[75]-x[25])$ and $x[25]-1.5\times(x[75]-x[25])$, respectively. Values above or below these lines are negligible values. This figure shows that the older men and women grow, irrespective of academic background, the more the distribution of the scheduled cash earnings per hour expands. Moreover, paying attention to the size of the box, it shows that the distribution of the wage is wider among those with higher academic backgrounds and among women more than men. As to female university graduates in the over 35 years age group, it shows that in particular that the median is under the box, and that the distribution of the scheduled cash earnings per hour is skewed upwards. So far it has been pointed out that there is a sample selection bias⁷ in women's wage, but the upward distortion of the female university graduate's wage suggests that this problem is especially important with respect to female university graduates.⁸

If we pay attention to the median in Figure 1, it is obvious that there is a wage differential between men and women, even amongst those with the same academic background and those in the same age group. The consequence being omitted, there is the wage differential between men and women in the average scheduled cash earnings per hour. However, this differential is also influenced by the industries in which the women are employed and the size of the businesses. Thus, in order to reexamine if there is a differential or not even when the effect of these industries and the size of the enterprises is controlled, the following Mincer type wage function was presumed:

⁷ Bias occurs since the wage is observed only in persons who are working. According to the theory of labor supply, whether people work or not is decided by the scale size of the prevailing wage and the reservation wage. The reservation wage shows the opportunity cost of the leisure sacrificed by working, and this opportunity cost rises in the case of housework and childcare by women. Therefore, only those women with a high prevailing wage work, which causes the bias in the wage distribution.

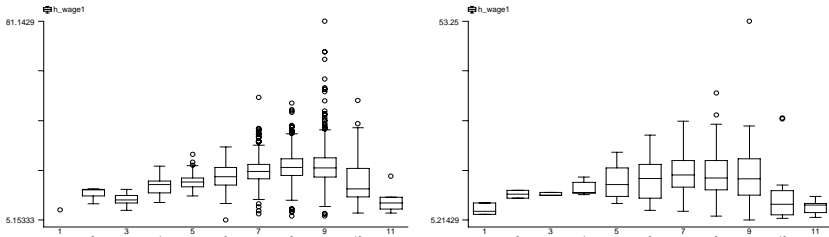
⁸ Higuchi [1991], who analyzed the labor supply behavior of women, mentions that the ratio of female university graduates who rejoin the labor market after they left work due to marriage, childbirth and childcare is much lower compared with women from other academic backgrounds.

$$\begin{aligned} \ln w_i = & a_1 + b_{11}exp_i + b_{12}exp_i^2 + b_{13}tenure_i + b_{14}tenure_i^2 \\ & + \sum c_{1s}SCH_s + \sum d_1 position + e_1 blue \\ & + a_2 female + b_{21}exp_{-f_i} + b_{22}exp_{-f_i}^2 + b_{23}tenure_{-f_i} + b_{24}tenure_{-f_i}^2 \\ & \sum c_{2s}SCH_s_{-f_i} + \sum d_2 position_{-f_i} + e_2 blue_{-f_i} + \sum g_s IND + \sum h_s SIZE + u_i \end{aligned}$$

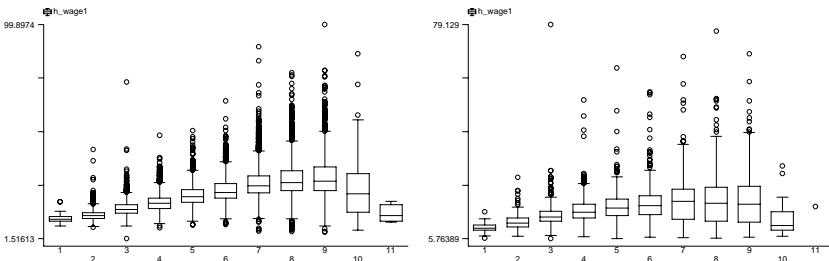
where *exp* is elapsed years after graduating from junior high school, *tenure* is years of service, *SCH* is the academic background dummy, *position* is the job title dummy, *blue* is the production business dummy, *IND* is the industry dummy, *SIZE* is the size of the enterprise, and *female* is the female dummy. The variable that has *_f* at the end is the cross term with the female dummy. Moreover, *a*, *b*, *c*, *d*, *e*, *g*, and *h* are parameters, and *u* is the error term.

Figure 1. Distribution of regular cash earnings per hour according to academic background, gender and age group

Junior high school graduates



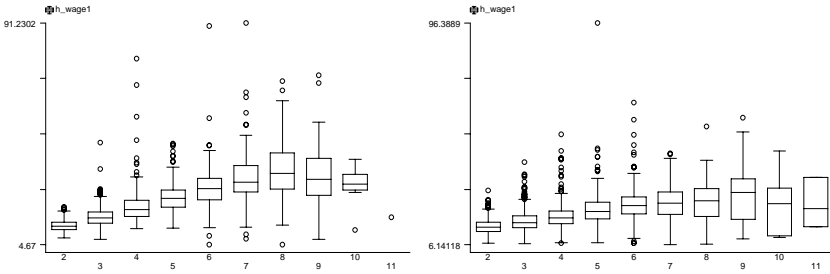
High school graduates



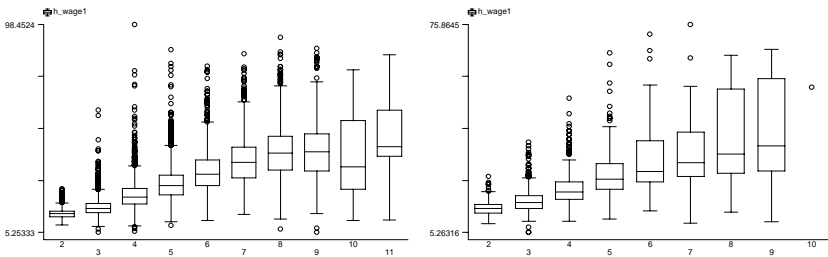
Note: In these figures, the vertical axis indicates the regular cash earnings per hour (the unit is 100 yen). The horizontal axis indicates the age group (at intervals of five years, according to classification by the Basic Survey of Wage Structure). The left side is men and the right side is women.

Figure 1 (continued)

Junior college graduates



University graduates



Note: In the figures the vertical axis indicates the regular cash earnings per hour. (the unit is 100 yen). The horizontal axis indicates the age group (the interval of five years, by the classification of the Basic Survey of Wage Structure). The left side is men and the right side is women.

The estimated results are shown in Table 2. The estimated results are omitted, but the firm size and industry dummies are included in the estimated equation. According to Model 1 of Table 2, the female dummy is -0.1668 , and is statistically significant. After controlling elapsed years after graduating from school, years of service, academic background, job title category, industry, and enterprise size, women's wages are about 16.68 percent lower than men's. Table 3 shows the results estimated by Model 1 by academic background. Focusing on the female dummy, the coefficients are -0.3552 for junior high school graduates, -0.2063 for high school graduates, -0.0910 for junior college graduates, and -0.0816 for college graduates, which are all statistically significant. The estimated results by the academic background show that women's wages are approximately 8 to 36 percent lower than men's wages, regardless of academic background. The wage differential between men and women is large,

Table 2. Estimated result of the wage function

Dependent variable: regular cash earnings per hour
Estimation method: OLS

	Model1			Model2		
	Parameter	Standard deviation		Parameter	Standard deviation	
female	-0.1668	0.0036	***	-0.0067	0.0106	
exp	0.0338	0.0007	***	0.0416	0.0009	***
exp2	-0.0006	0.0000	***	-0.0007	0.0000	***
tenure	0.0129	0.0007	***	0.0110	0.0008	***
tenure2	0.0097	0.0017	***	0.0064	0.0019	***
jh	-0.0713	0.0060	***	-0.0692	0.0065	***
jc	0.1361	0.0047	***	0.0866	0.0064	***
uni	0.2691	0.0037	***	0.2688	0.0041	***
blue	-0.0592	0.0036	***	-0.0469	0.0039	***
bucho	0.2867	0.0086	***	0.2721	0.0086	***
kacho	0.1918	0.0059	***	0.1816	0.0060	***
kakaricho_f	0.0564	0.0057	***	0.0457	0.0059	***
syokuc	0.0184	0.0072	**	0.0029	0.0072	
exp_f				-0.0195	0.0016	***
exp2_f				0.0002	0.0000	***
tenure_f				0.0074	0.0015	***
tenure2_f				0.0046	0.3885	
jh_f				-0.0131	0.0164	
jc_f				0.0659	0.0093	***
uni_f				0.0238	0.0097	**
blue_f				-0.0737	0.0087	***
bucho_f				0.0703	0.0536	
kacho_f				0.0642	0.0314	**
kakaricho_f				0.1041	0.0213	***
syokuc_f				-0.0839	0.0520	
_cons	2.4230	0.0067	***	2.3521	0.0073	***
Number of samples	36835			36835		
F value	2183.92			1706.62		
Adjusted R-	0.6683			0.6805		

Note: ***, **, * indicate that the parameters are statistically significant at one percent, five percent, and 10 percent, respectively.

especially among those with lower academic backgrounds.

However, in Model 2 of Table 2 the female dummy is not assumed to be a statistically significant coefficient. Model 2 is different from Model 1 in that the cross term between each of the elapsed years after graduating from school, years of service, academic background, job category, job title category, and female dummy is included in Model 2. The cross term with the female dummy shows that the effects are different for men and women. The effect of elapsed years after graduating from school, years of service, job category, and job title

Table 3: Estimated result of the wage function according to academic background

Dependent variable: regular cash earnings per hour

Estimation method: OLS

	Graduated from junior high school			Graduated from high school			Graduated from junior college			Graduated from university		
	Parameter	Standard deviation		Parameter	Standard deviation		Parameter	Standard deviation		Parameter	Standard deviation	
female	-0.3552	0.0139	***	-0.2063	0.0049	***	-0.0910	0.0081	***	-0.0816	0.0079	***
exp	0.0192	0.0035	***	0.0202	0.0008	***	0.0170	0.0014	***	0.0456	0.0012	***
exp2	-0.0004	0.0001	***	-0.0005	0.0000	***	-0.0004	0.0000	***	-0.0008	0.0000	***
tenure	0.0193	0.0023	***	0.0163	0.0010	***	0.0206	0.0019	***	0.0044	0.0015	***
tenure2	-0.0113	0.0045	**	0.0065	0.0024	***	-0.0041	0.0055		0.0037	0.0044	
blue	-0.0497	0.0124	***	-0.0628	0.0043	***	-0.1036	0.0145	***	-0.1015	0.0121	***
bucho	0.3131	0.1023	***	0.3649	0.0178	***	0.3548	0.0368	***	0.2141	0.0110	***
kacho	0.2273	0.0453	***	0.2550	0.0102	***	0.2693	0.0213	***	0.1115	0.0080	***
kakaricho	0.1522	0.0266	***	0.0856	0.0084	***	0.1014	0.0182	***	-0.0014	0.0087	
syokuc	0.0399	0.0180	**	0.0229	0.0078	***	0.0168	0.0485		-0.1086	0.0293	***
_cons	2.3629	0.0487	***	2.5723	0.0093	***	2.6725	0.0117	***	2.8666	0.0094	***
Number of samples	2469			17903			4912			11551		
F value	106.57			1225.4			242.3			768.63		
Adjusted R-square	0.562			0.6795			0.6037			0.6732		

category—the coefficients of which are assumed to be statistically significant on the wage—is different for men and women. These causes of the wage differential between men and women are more important than the female dummy, which shows the differential between men and women in their initial cash earnings. In the meantime, among these variables the elapsed years after graduating from school and job category (production division) make women’s wages lower. The influence of elapsed years after graduating from school, academic background, and job title on the wages is larger for women than for men.

Among these factors influencing the wage, the difference between men and women regarding the elapsed years after graduating from school has the biggest impact on the wage differential between men and women. Table 4 simulates the standard worker's hourly wage by academic background and gender using the results of Model 2 of Table 2. “Standard workers” mean workers who have continued to work at the same enterprise after graduating from school with elapsed years and years of service being the same. Table 4

Table 4. Simulated results of the regular cash earnings per hour

	Graduated from junior high school			Graduated from high school		
	Male	Female	Differential	Male	Female	Differential
0 year	9.5387	10.0350	105.2033	10.2149	10.8478	106.1954
5 years	12.4141	12.3864	99.7771	13.2941	13.3896	100.7181
10 years	16.2066	15.3079	94.4552	17.3555	16.5478	95.3460
15 years	21.2236	18.9423	89.2510	22.7282	20.4765	90.0928
20 years	27.8804	23.4689	84.1770	29.8569	25.3697	84.9709
25 years	36.7392	29.1136	79.2441	39.3437	31.4716	79.9914
30 years	48.5636	36.1613	74.4617	52.0064	39.0900	75.1639
35 years	64.3937	44.9713	69.8380	68.9588	48.6136	70.4966
40 years	85.6501	55.9978	65.3798	91.7220	60.5332	65.9964

(unit: 100 yen)

	Graduated from junior college			Graduated from university		
	Male	Female	Differential	Male	Female	Differential
0 year	11.2122	12.4018	110.6095	13.2834	14.4420	108.7222
5 years	14.5921	15.3077	104.9045	17.2876	17.8261	103.1145
10 years	19.0499	18.9183	99.3091	22.5690	22.0307	97.6146
15 years	24.9472	23.4098	93.8375	29.5557	27.2611	92.2363
20 years	32.7718	29.0040	88.5027	38.8258	33.7756	86.9926
25 years	43.1848	35.9800	83.3163	51.1624	41.8993	81.8947
30 years	57.0838	44.6899	78.2881	67.6289	52.0420	76.9523
35 years	75.6913	55.5777	73.4268	89.6737	64.7211	72.1740
40 years	100.6769	69.2048	68.7395	119.2749	80.5901	67.5666

Note: Simulation is based on regular employee.

shows that the greater the elapsed years after graduating from school, the greater the wage differential between men and women, even though there is some difference by academic background. With 10 elapsed years, the wage differential between men and women who graduated from high school is 95.35 and 97.61 for college graduates. With 20 elapsed years, the wage differential between men and women who graduated from high school is 84.97 and 86.99 for college graduates. What is behind the difference between men and women in the effect elapsed years has on wages and why is the effect smaller for women than for men? The effect of elapsed years may reflect the role of wages as guaranteeing livelihood of workers, which might bring about the difference between men and women. In the past, society's predominant view of the division of labor was by gender, with men being employed and women doing housework, and this concept was very likely to be reflected in wages. There is a high possibility that such a mindset about the role of wages still influences the wage differential between men and women.

A summary of the above-mentioned results is as follows: First of all, the wage differential between men and women exists even if worker attributes and the attributes of the workplace are controlled. The wage differential results from difference in academic background, but the scheduled wage of women per hour is about eight to 37 percent lower than that of men. This differential is influenced by elapsed years after graduating from school. Even for a standard worker, when 20 years have passed since joining a company, the wage level of women per hour is about 84 to 89 when that of men is 100.

4.2 Statistical Discrimination

As shown in the estimated results in Table 2, there is an apparent wage differential between men and women even after controlling the attributes of the workers and workplaces. In the following section, I would like to examine whether this differential between men and women is caused by statistical discrimination. The estimated results of Equation (4) shown in the working hypothesis are indicated in Table 5. The firm size and industry dummies are included in the estimated equation.

According to Model A of Table 5, the female dummy is estimated to be a statistically significant negative value even after controlling the attributes of the workers, workplace, and utilization level of women in the workplace. The estimated results of the above-mentioned working hypothesis show that the wage

Table 5. Utilization level of women and wage structure

Dependent variable: regular cash earnings per hour

Estimation method: OLS

	Model A		Model B	
	Parameter	Standard deviation	Parameter	Standard d Err
def_tenure	-0.0015	0.0043	0.0078	0.0042 *
per_fem	0.0248	0.0101 **	0.0398	0.0101 ***
per_bucho	-0.0021	0.0013	-0.0020	0.0013
per_kacho	0.0006	0.0005	0.0005	0.0004
per_kakaricho	0.0193	0.0033 ***	0.0173	0.0032 ***
prod_1	-0.0476	0.0069 ***	-0.0448	0.0068 ***
prod_2	0.0244	0.0082 ***	0.0118	0.0081
prod_3	0.0351	0.0074 ***	0.0237	0.0073 ***
ladder	0.0179	0.0048 ***	0.0176	0.0047 ***
female	-0.1830	0.0038 ***	-0.0107	0.0106
exp	0.0329	0.0007 ***	0.0415	0.0009 ***
exp2	-0.0006	0.0000 ***	-0.0007	0.0000 ***
tenure	0.0129	0.0007 ***	0.0102	0.0008 ***
tenure2	0.0083	0.0017 ***	0.0056	0.0019 ***
prod_1_ten	0.0009	0.0003 ***	0.0010	0.0003 ***
prod_2_ten	-0.0015	0.0004 ***	-0.0005	0.0004
prod_3_ten	0.0010	0.0004 ***	0.0008	0.0004 **
ladder_ten	0.0005	0.0002 **	0.0004	0.0002 *
jh	-0.0658	0.0060 ***	-0.0666	0.0064 ***
jc	0.1204	0.0047 ***	0.0650	0.0064 ***
uni	0.2556	0.0037 ***	0.2555	0.0040 ***
blue	-0.0653	0.0036 ***	-0.0559	0.0039 ***
bucho	0.2871	0.0084 ***	0.2695	0.0084 ***
kacho	0.1854	0.0059 ***	0.1726	0.0059 ***
kakaricho	0.0560	0.0056 ***	0.0449	0.0057 ***
syokuc	0.0172	0.0071 **	0.0030	0.0070
exp_f			-0.0215	0.0016 ***
exp2_f			0.0002	0.0000 ***
tenure_f			0.0070	0.0016 ***
tenure2_f			0.2502	0.3856
prod_1_ten_f			-0.0010	0.0006 *
prod_2_ten_f			-0.0014	0.0006 **
prod_3_ten_f			0.0039	0.0006 ***
ladder_ten_f			0.0004	0.0004
jh_f			0.0153	0.0161
jc_f			0.0740	0.0093 ***
uni_f			0.0181	0.0096 *
blue_f			-0.0546	0.0086 ***
bucho_f			0.0990	0.0518 *
kacho_f			0.0641	0.0311 **
kakaricho_f			0.1033	0.0208 ***
syokuc_f			-0.0791	0.0502
_cons	2.4149	0.0092 ***	2.3367	0.0096 ***
Number of samples	35496		35496	
F value	1632.51		1298.71	
Adjusted R-square	0.6836		0.6973	

differential is still generated by gender, even after controlling the difference in productivity between men and women as perceived by the employer. It shows that the wage level of women is about 18.3 percent lower than that of men. Moreover, R-square of this Model A, where the degree of freedom is modified, is 0.6836. This is a 0.0153-point increase from R-square of 0.6683 from Model 1 in Table 2, resulting from adding the female utilization level in the workplace. In other words, the fitness of the wage function was improved about 1.53 percent by adding the female utilization level in the workplace. The power of explanation of this Model A is higher than 0.6805— R-square of Model A in Table 2 where the degree of freedom is modified—which means that the female utilization level in the workplace is an important factor when explaining the wage structure. It is also important that this female utilization level in the workplace has the following effects on the wage structure: That is, each estimated coefficient of the female ratio (*per_fem*) in the workplace concerned, the equality (*per_kakari*) in the ratio of the chief clerks, the equality (*prod_2,prod_3*) in assignment of duties that last for two to five years and for duties that last for six years or more, and the equality (*ladder*) in proportion is a statistically positive significant value, and the higher the female utilization level, the higher the wage level. While the direction of the cause and effect between the female utilization level and the wage level is not clear in this analysis, it is at least understood that there is a relationship between the two.⁹

As seen in Model 2 in Table 2, the female dummy that shows the differential of the initial cash earnings between men and women was not statistically significant, assuming that the effect of the elapsed years, years of service, and academic background on the wage was different between men and women. There the difference of the effect of elapsed years was important for the background of the wage differential between men and women. Consequently, in Model B in Table 5, the equality in the utilization of men and women was added to Model 2 to test if the female dummy was significant or not.

According to the results of Model B, the coefficient of the female dummy is assumed to be negative, but it is not statistically significant. According to Table 6 where Model B was estimated based on the academic background, it is

⁹ This assumed consequence is thought to reflect the fact that the wage level is high because the enterprises which employ women have higher productivity, or that the wage level and women's utilization level are both high in workplaces that, for whatever reason, have sufficient management ability.

understood that the female dummy is a statistically significant negative value for junior high and the high school graduates. The size of enterprise and the industry dummies are included in this estimated equation. The value is negative for junior college and college graduates, but it is not statistically significant. Therefore, the initial cash earnings of women who are junior high or high school graduates are approximately 12 to 36 percent lower than those of men, even after controlling the difference in the productivity as perceived by the employer.

Will the difference in the degree of utilization equality influence the wage differential between men and women? According to Model B, the difference in the degree of utilization equality will not necessarily have no influence on the wage differential between men and women. Model B includes the cross term ($prod_ten$) of years of service and the degree of utilization equality, and the cross term ($prod_ten_f$) of years of service and the female dummy. An analysis indicating that the effect of years of service on the wage will differ depending on the degree of utilization of women has been made by Higuchi [1991] and Mitani [1997]. The analytical result here is consistent with the research done so far. That is, $prod1_ten_f$ and $prod2_ten_f$ are statistically significant negative values. This means that the effect of years of service by women on the wage is smaller than that of men in workplaces where many women are assigned to duties that require one to two years or three to five years to acquire the necessary skills. In addition, $prod3_ten_f$ is a statistically significant positive value. This means that the effect of years of service of women on the wage is larger than that of men in workplaces where many women are assigned to duties that requires six years or more to master. Such a result seemed to be the same for those in all academic backgrounds. Meanwhile, in a simulation of the differential between men and women when men and women are regular employees and college graduates who have served for 10 years, the value of enterprises with high equality in the assignment of workers to duties requiring six years or more to master is 94.10, whereas the value of enterprises that are otherwise is 84.31. This means that the lower the equality of the enterprise is, the larger the wage differential between men and women.¹⁰ Therefore, the effect of years of service on wages differs according to the degree of utilization

¹⁰ The simulation was made by dividing those enterprises with high equality in the assignment to duties requiring six years or more to master and other enterprises, and by using the results estimated in the wage function of formula (2) by men and women.

Table 6: Utilization level of women and wage structure according to academic background

Dependent variable: regular cash earnings per hour
 Estimation method: OLS

	Graduated from junior high school		Graduated from high school		Graduated from junior college		Graduated from university	
	Parameter	Standard deviation	Parameter	Standard deviation	Parameter	Standard deviation	Parameter	Standard deviation
def_tenure	-0.0173	0.0188	-0.0004	0.0064	-0.0221	0.0070 ***	0.0780	0.0090 ***
per_fem	-0.1945	0.0516 ***	-0.1231	0.0160 ***	0.1561	0.0197 ***	0.1079	0.0182 ***
per_bucho	0.0071	0.0061	-0.0012	0.0014	0.0015	0.0082	-0.0079	0.0046 *
per_kacho	-0.0022	0.0021	0.0004	0.0005	-0.0009	0.0028	0.0025	0.0016
per_kakaricho	-0.0341	0.0102 ***	0.0028	0.0045	0.0454	0.0072 ***	0.0321	0.0065 ***
prod_1	-0.1479	0.0488 ***	-0.0637	0.0101 ***	-0.0385	0.0172 **	-0.0162	0.0117
prod_2	0.1696	0.0585 ***	0.0602	0.0127 ***	-0.0437	0.0180 **	0.0003	0.0144
prod_3	-0.0012	0.0533	-0.0055	0.0116	0.0393	0.0148 ***	0.0076	0.0132
ladder	0.0513	0.0312 *	-0.0056	0.0069	0.0199	0.0111 *	0.0189	0.0088 **
female	-0.3574	0.0949 ***	-0.1208	0.0137 ***	-0.0273	0.0191	-0.0172	0.0198
exp	0.0182	0.0043 ***	0.0273	0.0009 ***	0.0273	0.0023 ***	0.0448	0.0013 ***
exp2	-0.0003	0.0001 ***	-0.0006	0.0000 ***	-0.0006	0.0001 ***	-0.0008	0.0000 ***
tenure	0.0172	0.0027 ***	0.0116	0.0011 ***	0.0243	0.0030 ***	0.0062	0.0017 ***
tenure2	-0.0096	0.0052 *	0.0079	0.0027 ***	-0.0225	0.0080 ***	-0.0031	0.0046
prod_1_ten	0.0045	0.0015 ***	0.0018	0.0004 ***	0.0005	0.0012	-0.0006	0.0007
prod_2_ten	-0.0044	0.0018 **	-0.0022	0.0006 ***	-0.0003	0.0014	-0.0009	0.0009
prod_3_ten	0.0011	0.0017	0.0022	0.0006 ***	-0.0023	0.0013 *	0.0022	0.0008 ***
ladder_ten	-0.0013	0.0010	0.0010	0.0003 ***	0.0006	0.0009	0.0018	0.0005 ***
blue	-0.0286	0.0131 **	-0.0489	0.0045 ***	-0.0590	0.0158 ***	-0.1012	0.0121 ***
bucho	0.3120	0.1001 ***	0.3626	0.0174 ***	0.3251	0.0386 ***	0.2144	0.0109 ***
kacho	0.2371	0.0460 ***	0.2474	0.0102 ***	0.2005	0.0235 ***	0.1066	0.0080 ***
kakaricho	0.1500	0.0266 ***	0.0734	0.0084 ***	0.0610	0.0206 ***	-0.0019	0.0087
syokuc	0.0447	0.0183 **	0.0154	0.0076 **	-0.0431	0.0477	-0.1066	0.0291 ***
exp_f	0.0116	0.0075	-0.0214	0.0017 ***	-0.0166	0.0028 ***	0.0028	0.0031
exp2_f	-0.0004	0.0001 **	0.0003	0.0001 ***	0.0002	0.0001 **	-0.0004	0.0001 **
tenure_f	0.0025	0.0053	0.0087	0.0023 ***	-0.0049	0.0038	-0.0199	0.0049 ***
tenure2_f	0.8026	1.0887	-0.8603	0.5695	1.8847	1.0866 *	5.8050	1.7261 ***
prod_1_ten_f	-0.0021	0.0014	-0.0006	0.0007	0.0007	0.0016	0.0034	0.0025
prod_2_ten_f	-0.0046	0.0015 ***	-0.0007	0.0008	0.0028	0.0017 *	-0.0053	0.0029 *
prod_3_ten_f	0.0050	0.0014 ***	0.0039	0.0007 **	0.0040	0.0016 ***	0.0047	0.0026 *
ladder_ten_f	-0.0008	0.0010	0.0016	0.0005 ***	-0.0015	0.0011	0.0008	0.0017
blue_f	-0.0410	0.0322	-0.0703	0.0094 ***	-0.1566	0.0299 ***	-0.1007	0.0581 *
bucho_f	(dropped)		-0.1982	0.1006 **	0.0812	0.0848	0.0981	0.0924
kacho_f	-0.0014	0.2349	0.0383	0.0626	-0.0730	0.0496	0.1745	0.0586 ***
kakaricho_f	0.0612	0.2359	0.1717	0.0339 ***	0.0591	0.0370	0.0476	0.0414
syokuc_f	0.0199	0.1312	-0.0870	0.0576	0.0354	0.2247	-0.0773	0.1415
_cons	2.4610	0.0655 ***	2.5936	0.0136 ***	2.5598	0.0222 ***	2.7352	0.0159 ***
Number of samples	2405		17375		4684		11032	
F value	61.14		725.96		146.38		440.32	
Adjusted R-square	0.5791		0.704		0.6389		0.6942	

equality, which influences the wage differential between men and women.

4.3 Employment Management System According to Employment Track and Wage Structure

The number of large firms and other enterprises that have introduced the employment management system by employment track has increased since the Equal Employment Opportunity Law was enforced. There are various reasons why these enterprises introduced this system; one of which is to address the “signaling problem”. The signaling problem is the situation whereby the enterprises are hesitant to hire women or avoid human capital investment in women because the average productivity of women is lower than men, or because the average length of service by women is statistically shorter than men. If the relation-specific human capital¹¹ is important for the enterprise, then education and training to allow accumulation of such capital in the employees are indispensable. In this case, to improve the cost-effectiveness of the education and training, the employee's ability and long-term service become important preconditions. Thus, if women's average years of service are short when compared with men, the enterprise has an incentive for giving more education and training to men.

There are people with short periods of service regardless of gender, but it is difficult for the enterprise to acquire private information about an employee's abilities and to predict whether their years of service are likely to be short or not. The enterprise tries to compensate for the asymmetry of the information by using the average value of men and women (=signal). This signaling problem plays an important role as one of the causes of the wage differential between men and women. If the enterprise gives a lot of education and training opportunities to men and not to women because of the signal, then there will be differences in the marginal productivity of men and women. As a result, even if the wage is proportional to the marginal productivity, there will be a wage differential between men and women. This is a reasonable differential reflecting the difference in the marginal productivity. If the enterprise can solve the signaling problem, such a differential will not exist. One solution is

¹¹ The knowledge and skills useful for the enterprise are called the relation-specific human capital. This relation-specific human capital is useful in a specific enterprise, but not in any other enterprises. Therefore, the enterprise bears the cost which is required in educating and training employees to accumulate this human capital.

an employment management system by “employment tracks”. An enterprise which maintains this system generally has two or more courses or tracks, such as the comprehensive work track and the clerical work track, which differ according to the type of job assignment and career path. In the comprehensive or management work track, employment management is provided for employees who perform integral duties, more education and training opportunities are given, and there is no limit to promotions. In the clerical work track, the employment management is provided for employees who perform support duties, relatively few education and training opportunities are given, and there is limit to promotions. If it is possible to make employees select from among such career tracks, the signaling problem can be solved, because the employees will disclose their preferences by selecting one of the courses.

If the above holds as an explanation of the employment management system by employment track, then these systems and the wage system should be in a supplementary relationship. Is there actually a supplementary relationship? In addition, within the employment management system by employment track, some female workers are employed in the comprehensive work track, while others are employed in the clerical work track How is the wage differential among women in this employment system by employment track?

First of all, let us examine in Table 7 the difference in worker's attributes in enterprises that have adopted the employment management system by employment track and in enterprises that have not. First, there is no difference in the regular cash earnings per hour of men as a result of the employment management system by employment track, but the regular cash earnings per hour of women are higher in the enterprises that do not have the employment management system by employment track. Also, when the coefficient of variation of regular cash earnings per hour in the enterprises that have the employment management system by employment track is calculated, the coefficient is 0.4122 and 0.3589 for men and women, respectively. In the enterprises that do not have the employment management system, the coefficient is 0.6275 and 0.4519 for men and women, respectively, which means that the wage distribution is larger in the enterprises that do not have the employment management system by employment track.

The difference in the wage level and the wage distribution also occurs due to the difference in elapsed years and years of service after graduating from

Table 7: Existence of the employment management by employment track, basic statistics of samples

	Workplace with employment management by employment track				Workplace without employment management by employment track			
	Male		Female		Male		Female	
	Average value	Standard deviation	Average value	Standard deviation	Average value	Standard deviation	Average value	Standard deviation
h_wage1	25.2970	10.4306	16.1623	5.8003	25.3351	15.8968	17.3681	7.8477
def_tenure	0.6617	0.2273	0.7338	0.2557	0.6846	0.2889	0.8020	0.4936
per_fem	0.1365	0.1160	0.3180	0.2355	0.1624	0.1614	0.4314	0.2719
prod_1	0.3522	0.4777	0.6050	0.4890	0.4384	0.4962	0.7210	0.4485
prod_2	0.2451	0.4302	0.5119	0.5000	0.3263	0.4689	0.6533	0.4760
prod_3	0.1544	0.3613	0.3473	0.4762	0.2457	0.4305	0.5394	0.4985
ladder	0.6120	0.4873	0.6207	0.4853	0.5931	0.4913	0.6186	0.4858
exp	21.8969	11.6103	15.4900	11.5482	20.9287	11.4447	14.5583	11.2816
tenure	19.4532	11.5397	12.2801	9.9382	17.8135	11.2994	10.6995	9.2072
jh	0.0944		0.0744		0.0617		0.0372	
hs	0.4977		0.4451		0.5078		0.4150	
jc	0.0478		0.2963		0.0716		0.4032	
uni	0.3602		0.1842		0.3588		0.1446	
seisan	0.4191		0.2309		0.3489		0.1866	
size1	0.4488		0.3197		0.4048		0.3104	
size2	0.4645		0.4895		0.3580		0.3847	
bucho	0.0312		0.0024		0.0319		0.0026	
kacho	0.0717		0.0033		0.0723		0.0090	
kakaricho	0.0680		0.0248		0.0687		0.0152	
syokuc	0.0498		0.0029		0.0406		0.0026	
Number of samples	9832		2096		18802		6233	

school. In the enterprises that have the employment management system by employment track, elapsed years and years of service are 21.9 years and 19.5 years, respectively, for men and 15.5 years and 12.3 years, respectively, for women. However, in the enterprises that do not have the employment management system by employment track, elapsed years and years of service are 20.9 years and 17.8 years, respectively, for men and 14.6 years and 10.7 years, respectively, for women. It is understood that in the enterprises that have the employment management system by employment track, the average elapsed years and the average years of service are longer, while the difference between men and women with respect to the average elapsed years and the average years of service is small. Moreover, it is shown that the differences in elapsed years and years of service between men and women are small in the enterprises that have the employment management system by employment track. This suggests that, relatively, there are more workers who are working continuously for the same enterprise than those who are working for enterprises that do not have the employment management system by employment track.

In addition, the attributes of women workers differ depending on whether or not the employment management system by employment track has been adopted. In the enterprises that have the employment management system by employment track, the ratio of female university graduates is relatively high, whereas in the enterprises that do not have the employment management system by employment track, the ratio of female junior college graduates is higher. The ratio of female general managers and section chiefs is a little higher in the enterprises that do not have the employment management system by employment track, whereas the ratio of female chief clerks is higher in the enterprises that have the employment management system by employment track. Moreover, the ratio of women is higher in the enterprises that do not have the employment management system by employment track, and the equality in assignment to integral duties of the enterprise is also higher. However, there is no difference in the equality in wage increase and promotion depending on whether or not the employment management system by employment track is adopted.

Table 8 shows how the employment management system by employment track influences the wage structure. Here the estimation was made by dividing the samples based on whether or not the employment management system by employment track is adopted. The size of enterprise dummy and the industry

dummy are included in the estimated equation. First, the parameter of the female dummy was assumed to be statistically significant negative value in the enterprises that have the employment management system by employment track, while it was not assumed to be a statistically significant value in the enterprises that do not have the employment management system. Although the samples are limited, this result shows that in the enterprises that have the employment management system by employment track, the wage level of women is 3.1 percent lower than that of men, but there is no wage differential between men and women in the enterprises that do not have the employment management system. Moreover, one of the features of the wage structure of the enterprises which have adopted the employment management system by employment track is that the value of the constant term indicating the initial

Table 8. Existence of the employment management by employment track, estimated result of the wage function

Dependent variable: scheduled cash earnings per hour
Estimation method: OLS

	Workplace with employment management by employment track		Workplace without employment management by employment track	
	Parameter	Standard deviation	Parameter	Standard deviation
female	-0.0310	0.0176 *	0.0112	0.0130
exp	0.0384	0.0014 ***	0.0431	0.0011 ***
exp2	-0.0006	0.0000 ***	-0.0007	0.0000 ***
tenure	0.0132	0.0013 ***	0.0098	0.0010 ***
tenure2	-0.0003	0.0030	0.0097	0.0024 ***
jh	-0.0596	0.0083 ***	-0.0740	0.0090 ***
jc	0.0953	0.0102 ***	0.0821	0.0079 ***
uni	0.2272	0.0063 ***	0.2764	0.0051 ***
seisan	-0.0627	0.0058 ***	-0.0410	0.0051 ***
bucho	0.2610	0.0123 ***	0.2771	0.0112 ***
kacho	0.1874	0.0085 ***	0.1774	0.0078 ***
kakari	0.0588	0.0083 ***	0.0422	0.0076 ***
syokuc	0.0056	0.0095	0.0044	0.0097
kei_f	-0.0243	0.0026 ***	-0.0198	0.0019 ***
kei2_f	0.0002	0.0001 ***	0.0002	0.0000 ***
tenure_f	0.0083	0.0025 ***	0.0082	0.0019 ***
tenure2_f	-0.1282	0.6152	-0.0256	0.4862
jh_f	-0.0136	0.0234	-0.0138	0.0217
jc_f	0.0101	0.0156	0.0770	0.0114 ***
uni_f	-0.0354	0.0154 **	0.0446	0.0121 ***
seisan_f	-0.0054	0.0139	-0.0924	0.0108 ***
bucho_f	0.2261	0.0905 **	0.0094	0.0651
kacho_f	0.2298	0.0763 ***	0.0336	0.0356
kakaricho_f	0.1723	0.0298 ***	0.0719	0.0280 ***
syokuc_f	-0.0043	0.0822	-0.1099	0.0647 *
cons	2.3900	0.0129 ***	2.3343	0.0091 ***
Number of samples	11893		24942	
F value	783.4		1094.24	
Adjusted R-square	0.7475		0.6636	

wage is large. In comparison, the effects of elapsed years and years of service are relatively small. To sum up, in the enterprises that have the employment management system by employment track, the level of the initial wage is relatively high, but elapsed years after graduating from school and years of service are not proportional to the wage. Additionally, the value of the cross term of the female dummy and elapsed years is estimated to be smaller in the enterprises that have the employment management system than in the enterprises that do not have this system. Also, the cross term of the executive position and the female dummy is estimated to be a statistically significant positive value in the enterprises that have the employment management system by employment track, and the wage increase due to women's promotion is larger compared with the men's. On the other hand, in the enterprises that do not have the employment management system by employment track, there is no difference in the effect of the executive post on the wage between men and women.

Using the estimated results, we simulate the theory value of regular cash earnings per hour by age group in Table 9. The simulation is based on regular workers who are high school graduates and university graduates. There is no great difference in the wage level among men depending on whether or not the employment management system by employment track is adopted, but there is a large difference in the wage level of women who are university graduates. The wage level of women who work at the enterprises using the employment management system by employment track is low, and their wages do not increase much even after long years of service.

Thus, it is clear that the wage structure is considerably different between the enterprises that do not have the employment management system by employment track and the enterprises that do. As for the wage mechanism at the enterprises that have the employment management system by employment track, the regular cash earnings per hour among women are low on average. Moreover, the longer the elapsed years, the larger the differential, which shows that the employment management system by employment track promotes the wage differential between men and women. The reason for this may be that many of the women employed at such enterprises are on the clerical work track. If the employment management system by employment track exists in order to reduce the problem of asymmetry of information, gender should not be an important piece of information as far as employment management is concerned.

Table 9. Existence of the employment management by employment track, estimated result of the regular cash earnings per hour

(unit: 100 yen)

Graduated from high school	With employment track			Without employment track		
	Male	Female	Differential	Male	Female	Differential
0 year	10.9131	10.5796	96.9444	10.3221	10.3221	100.0000
2 years	12.0996	11.3590	93.8788	11.4788	11.2148	97.7000
4 years	13.4145	12.1954	90.9119	12.7743	12.1936	95.4542
6 years	14.8715	13.0929	88.0403	14.2263	13.2676	93.2613
8 years	16.4859	14.0561	85.2610	15.8547	14.4468	91.1200
10 years	18.2747	15.0896	82.5709	17.6823	15.7424	89.0289

Graduated from university	With employment track			Without employment track		
	Male	Female	Differential	Male	Female	Differential
0 year	13.6969	12.8164	93.5719	13.6079	14.2290	104.5646
2 years	15.1861	13.7606	90.6130	15.1328	15.4596	102.1597
4 years	16.8364	14.7738	87.7492	16.8407	16.8089	99.8114
6 years	18.6651	15.8611	84.9775	18.7549	18.2895	97.5183
8 years	20.6913	17.0279	82.2949	20.9017	19.9150	95.2792
10 years	22.9364	18.2799	79.6984	23.3110	21.7009	93.0928

Note: Simulation is based on standard workers.

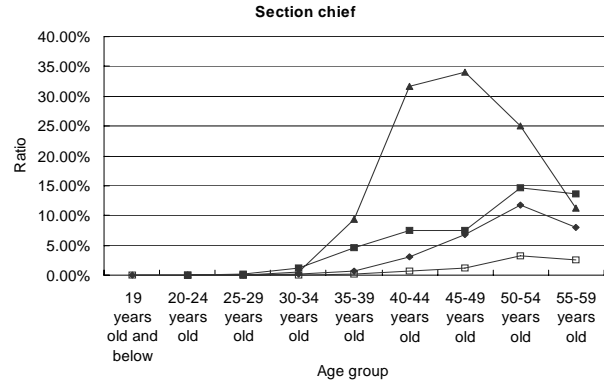
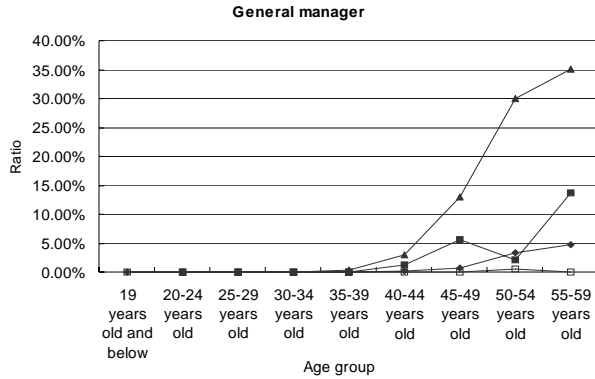
In actuality, however, it may be possible that such enterprises are distinguishing between men and women by putting men on the comprehensive work track and assigning women to the clerical work track, and by applying different wage structures to these tracks.

4.4 Promotion From Within and Wage Differentials

In this section, I would like to focus on promotions and the wage differentials between men and women. As shown in Table 5, the wage level at enterprises with a good level of equality in promoting men and women is relatively high. Let us examine below how much the wage differential between men and women accrues as a result of differences in promotion.

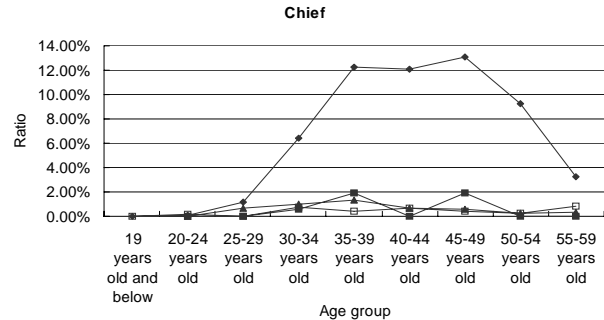
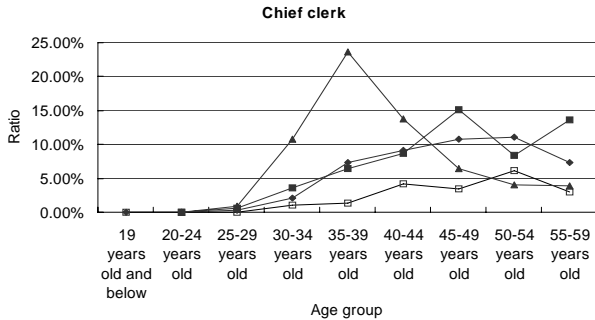
Firstly, let us see how different the promotion structure between men and women is. Figure 2 shows the ratio of male and female workers who hold the posts of general manager, section chief, chief clerk, and chief, broken down into age group and academic background. At all posts, except that of the chief, it is understood that a certain proportion of male university graduates were promoted to those posts. In contrast, a very small proportion female college graduates, and both male and female high school graduates, were promoted to those posts. For instance, in the 40 to 44 years age group, 31.7 percent of male college graduates hold the post of section chief, but only 7.5 percent of female

Figure 2: Differential of the promotion ratio between men and women



◆ male (graduated from high school) □ female (graduated from high school)
 ▲ male (graduated from university) ■ female (graduated from university)

◆ male (graduated from high school) □ female (graduated from high school)
 ▲ male (graduated from university) ■ female (graduated from university)



◆ male (graduated from high school) □ female (graduated from high school)
 ▲ male (graduated from university) ■ female (graduated from university)

◆ male (graduated from high school) □ female (graduated from high school)
 ▲ male (graduated from university) ■ female (graduated from university)

university graduates, 3.0 percent of male high school graduates, and 0.7 percent of female high school graduates hold this post. It is highly probable that the small proportion of certain workers being promoted and the slow speed at which they are promoted are contributing, to no small degree, to the wage differential between men and women and between those of difference academic backgrounds.

Then, to what degree does the effect of promotion on the increase of wages differ between men and women? If the effect of promotion of the increase of wages differs between men and women, the differential will become larger and larger between men and women. According to Model 2 of Table 2, statistically significant positive values are estimated for the general manager (*bucho*), section chief (*kacho*), and chief clerk (*kakaricho*), as the wage rises by promotion. The wage of the general manager is 27.2 percent higher, the wage of the section chief is 18.2 percent higher, and the wage of the chief clerk is 4.6 percent higher than workers not holding managerial positions. As for the cross term of the managerial post dummy and the female dummy, a statistically significant parameter was not estimated for the general manager, but a statistically significant positive value is estimated for the section chief and the chief clerk. The wage level of women who are promoted to section chief and chief clerk is higher than that males who are section chief and chief clerk.

Then, how important is the managerial post in explaining the wage structure? This is checked by examining how the addition of the managerial post dummy will explain the wage structure.

In Table 10, adjusted R-square of five estimation models is shown. First, the explanatory variables of Model 1 are elapsed years after graduating from school and its square term, years of service and its square term, academic background dummy, production worker dummy, enterprise size dummy, and industry dummy. Based on this formula, in Model 2, the managerial post dummy is added to the explanatory variables of Model 1. In Model 3, the female dummy is added to the explanatory variables of Model 1. In Model 4, the cross term among elapsed years after graduating from school and its square term, years of service and its square term, and a female dummy is added to the explanatory variables of Model 3. In Model 5, the cross term of the managerial post dummy and the female dummy is added to the explanatory variables of Model 4. By estimating the above models and comparing them with the R-square of the base estimation model, we can see by comparison which

variable increases the potency of explanation when added. The explanation is most convincing when the female dummy and the cross term of the female dummy are added. This is because when Model 2 is compared with Model 3 or Model 4, the latter has a higher R-square. Of course, the explanation is more convincing when the managerial post dummy is added, but it is not as high as when the female dummy is added.

From the above result, it is shown that the effect on wages after promotion to a managerial does not differ greatly between men and women. Contrary to expectations, when a woman is promoted the wage increases more than when a man is promoted. Moreover, the managerial post itself does not sufficiently explain the wage structure. However, there are relatively few women who are promoted to the managerial posts, which is one of the factors of the differential between men and women of the same academic background.

Table 10. Strength of explanation of the estimated model

	Model 1	Model 2	Model 3	Model 4	Model 5
Adjusted R-square	0.6296	0.6497	0.6514	0.6648	0.6805

Note : *The explanatory variables of Model 1 are elapsed years after graduating from school and its squared term years served and its squared term, academic background dummy, production worker dummy, enterprise size dummy, and industry dummy.

*In Model 2, the managerial post dummy was added to the explanatory variables of Model 1.

*In Model 3, the female dummy was added to the explanatory variables of Model 1.

*In Model 4, the cross term of the elapsed years after graduating from school and its squared term, years served and its squared term, and the female dummy were added to the explanatory variables of Model 3.

*In Model 5, the cross term of the managerial post dummy and female dummy were added to the explanatory variables of Model 4.

5. Conclusion

Various hypotheses on the factors of the wage differential between men and women have been examined in past research. In terms of policy, it is considered important to determine whether the wage differential between men and women is generated by statistical discrimination or if it is generated by economically irrational factors.

According to the analysis of this paper, there is a wage differential that cannot be explained by the difference in the average productivity of men and women as perceived by the employer. This wage differential existing as the effect on the wage of elapsed years after graduating from school, years of service, and other factors, is different between men and women. It is also

difficult to come up with an economically reasonable explanation for the fact that, even when the productivity gap between men and women as perceived by the employer is controlled, the effect of elapsed years after graduating from school and years of service on the wage differs between men and women. Because it is difficult for the enterprise to obtain personal information about workers' abilities and achievements, the enterprise tries to compensate for the asymmetry of the information by using statistically available information. An often-mentioned example is the employment management system by employment track. In the enterprises where the employment track is used, the wage differential between men and women is relatively large, and there is a tendency for the differential to grow larger as more years elapse after graduation from school. In the enterprises that do not have the employment management system by employment track, although there is a wage differential between men and women, it is not that large compared with enterprises that have the system. One of the reasons for this may be that the enterprises with the employment management system are in effect dividing the tracks by gender, and many women can only select the clerical work track. As a result, while there should be a difference in the wage depending on the type of courses, the difference is manifested as a difference between men and women.

Moreover, the promotion structure in the enterprise can also be considered as a factor of the wage differential between men and women. Yet, the effect of promotion to a managerial post on the wage did not differ greatly between men and women, and when women are promoted their wages tended to rise more than men. However, there are relatively few women who are promoted to managerial posts, and this is one of the factors of the differential between men and women of the same academic background.

As mentioned above, the asymmetry of the information on the average productivity gap between men and women as perceived by the employer is an important issue, and it needs to be addressed to eradicate the wage differential between men and women. It is also important to eradicate the gap that arises from other factors which do not make sense. To eradicate these unreasonable factors, it is necessary to ask to enterprises to make greater efforts to ensure equal employment opportunities. As was explained in the above analysis, the wage structure between men and women differs because the enterprises using the employment track are, in effect, allocating workers of a certain gender to

one track and the other gender to another track. It is necessary to review how the employment management system by employment track should be operated. In addition, the problem of the asymmetry of information also influences the wage differential. In order to address this problem, it may be possible to take measures to set down standards for workers' job ability.

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Regional Divergences in Unemployment Rates in Japan and Their Factors[†]

Kazufumi Yugami

Researcher, The Japan Institute for Labour Policy and Training

1. Introduction

The objective of this paper is to quantitatively understand the impact that regional labor market structure has on the regional divergences in unemployment rates and “non-employment rates.”

In the past, many researchers have pointed out the rigid structure of regional divergences in unemployment rates in Japan. For example, Mizuno (1992) confirmed the extremely high correlation among unemployment rates in 47 prefectures at different times between 1970 and 1980, and concluded that the regional unemployment patterns were stable. These trends can also be observed in recent years. In fact, the correlation coefficient between unemployment rates by prefecture in 1990 and 2000 is 0.9320. The stickiness of regional unemployment rates can still be observed.¹

The lack of market functions to adjust through labor mobility has been pointed out as one of the factors contributing to the rigid divergence structure (Montgomery (1993); Ohta and Ohkusa (1996)). Ohta and Ohkusa (1996), who analyzed regional labor markets based on data from the latter halves of the 1970s and 1980s, claimed that while expansion of regional divergences in unemployment rates significantly increased interregional labor mobility, the results of simulation showed that differences in unemployment rates caused by temporary shocks would not be diminished for at least 10 years. Todate (1999), who attempted to explain the sustainability of the divergences from the standpoint of the demand for labor, elucidated that the structure of demand shocks in each major industrial division in each region explained unemployment rates, and that interregional divergences in unemployment rates were sustainable

[†] The population census data used in this paper were originally used in the Center for Spatial Information Science at the University of Tokyo's joint research project of the spatio-temporal socio-economic system research divisions. I would like to express my appreciation for their cooperation.

¹ This is also true when the period of unemployment is taken into consideration. According to Shinozaki (2004), the relation between short-term unemployment rate of less than a year of unemployment and long-term unemployment rate of a year or longer is stable in each prefecture from 1992 to 2002.

because this structure was more or less unchanged over 20 years from 1975 to 1995.

The fact that the divergences in unemployment rates over time are stable obviously gives rise to an interest in the causes of static regional divergences at a given time. Several researches have attributed the cause of static divergences to regional difference (characteristics) in the labor market structure, and have reported significant correlation between regional demographic attributes and industrial structures on one hand and regional unemployment rates on the other (Mizuno (1992); OECD (2000); Ministry of Health, Labor and Welfare (2003)). This research, however, does not mention to what degree each of these attributes explain the actual regional divergences. Therefore, in this paper we examine, more directly, the impact that labor supply attributes (such as gender, age, and schooling) and the labor demand structure (represented by the composition of workers by industry) have on the regional divergences in unemployment rates. At the same time, we attempt to gauge such divergences in unemployment rates when the effect of these attributes is removed (hereinafter called the “control”).

In analysis of unemployment rates, only those in the labor force and active in the labor market are usually examined. It has been pointed out, however, that those not in the labor force are also responsive to economic fluctuations. As seen in Europe, policies for activating the entire population have been proposed since the 1990s. From this point of view, attention is also focused on the behavior of those not in the labor force. In Japan too, efficient utilization of those not in the labor force, including unemployed youth, women and senior citizens, would be the key to stimulating the economy in areas where there is a significant decline in the birth rate and rapid aging of the population. Therefore, in this paper, we introduce the term, “non-employment rate,” as an indicator of underutilized labor, including those who are wholly unemployed, and quantitatively grasp regional divergences after controlling the labor supply attributes.²

Here we look at the unemployment rates and non-employment rates in the unit of prefectures (there are 47 prefectures). The focus is on the cross-section

² For the purpose of this paper, non-employment rate is defined as the percentage of wholly unemployed people and those not in the labor force (those engaged solely in housework, study, or others) in the population aged fifteen and above.

comparison at the time of each survey rather than on the time-series change. The data from the *Population Census* of 1990 and 2000 are used for the analysis. Naturally, some reservation is called for in a static analysis that focuses on the unit of prefectures. In prefectures where large cities are located, the labor market is not necessarily divided in the unit of prefectures, and it is, therefore, preferable to take into consideration those who commute from region to region.³ At any rate, when we consider local governments' industrial policies and employment measures, the focus on the prefectures as administrative units has more than a small meaning.

The contents of this paper are as follows: In 2, we quantitatively measure regional divergences in unemployment rates when the effects of the labor market structure are removed, and examine the regional factors that create the controlled divergences. In 3, we measure the regional divergences in non-employment rates with the effects of demographic attributes removed, and analyze the relation between those divergences and the controlled regional divergences in unemployment rates. Lastly, in 4, we summarize the results of the analysis and state the policy implications obtained from the results.

2. Analysis of divergences in unemployment rates among prefectures

2.1 Effect of labor supply and demand attributes

Firstly, in measuring the divergences in unemployment rates among prefectures, we assume the following linear unemployment rate function:

$$u_i = \alpha_0 + \alpha_1 X_i + \alpha_2 D_i + \varepsilon_i \quad (1)$$

where u_i is the average unemployment rate of group i calculated from labor force statuses by prefecture of residence, gender, age group, and educational level; X_i is the group's labor supply and demand attributes (female dummy, age group dummies, schooling dummies, and composition of workers in difference major industrial divisions within the group); D_i is the prefecture of residence dummies; α_0 is the constant term; and ε_i is the error term.

The explanatory variables are as follows. For the age group, dummy

³ In recent years, an attempt has been made to define the area of a labor market ("area of urban employment") from the percentage of those who commute to and from different municipalities and to analyze the economic development of each urban area (Kanemoto and Tokuoka (2002)).

variables are used for the five age groups of 15-24, 25-34, 35-54, 55-64, and 65 and over. For the schooling dummies, there are four divisions: completed primary and junior high school, completed senior high school, completed junior college or technical college, and completed university or graduate school. For indicators of regional differences in the labor demand structure, we introduce the composition of workers in difference major industrial divisions of the workers in each group. More specifically, the ratio of workers in the manufacturing industry is used as an indicator of low turnover rate and tight labor situation in each industry, while the ratio of workers in the service industry and the ratio of workers in the wholesale, retail trade, and restaurant industries are used as a factor promoting high turnover rate and generating structural/frictional unemployment.⁴

The data used for the estimation are from the *Population Census* of 1990 and 2000, which allow for the calculation of unemployment rates by gender, age group, and schooling in each prefecture.⁵ Additionally, because the published statistics of the population censuses do not indicate the educational levels and employment statuses of those who are currently in school, we limit our sample to those who have completed school education.⁶

Through the estimation of the unemployment rate function of the formula (1) by the ordinary least squares method, the variations in the estimated coefficients of the prefecture dummies can be regarded as the extent of the

⁴ When we look at the correlation between the active opening rate by prefecture and age group in 1990 and 2000 on one hand and the composition of workers by industry on the other, there is a significant positive correlation between the ratio of the manufacturing industry and the effective job offer ratio for both years (0.516 in 1990 and 0.323 in 2000), but there is no significant correlation with the ratio of the service industry. With respect to the ratio of the wholesale, retail trade, and restaurant industries, there is positive correlation with the active opening rate; however, the turnover rate in each industry is high, and the net effect on raising or reducing the unemployment rate is not clear a priori. On the other hand, there is some criticism of discussing the effect of industrial structure when dealing with static regional divergences (Todate (1999)). In this paper, we limit ourselves to discussing the effect that the industrial structure, by way of the tightness of labor conditions and turnover rate in each industry, has on unemployment rates "by definition."

⁵ Therefore, the number of observations per survey year is 47 (prefectures)×2 (gender)×5 (age groups)×4 (educational levels) = 1,880.

⁶ The samples of those currently in school make up 1.4 percent and 1.6 percent of the whole in 1990 and 2000, respectively. By limiting the sample, the average unemployment rate of the nation increases slightly from 3.01 percent to 3.02 percent and from 4.72 percent to 4.80 percent in 1990 and 2000, respectively.

divergences in unemployment rates among the prefectures. Here we compare the difference among the case where all explanatory variables are used (Full-Control), the case where one of the variables is left out, and the case where only the prefecture dummies are used (No-Control). For the indicator of the variations in the estimated coefficients of the prefecture dummies, we use the standard deviation adjusted by the share of the labor force in each region (Weight Adjusted Standard Deviation: WASD).⁷ The results of the calculation are shown on Table 1.

Firstly, if we look at the WASD of No-Control, the figure in 2000 is 12.905 compared with 9.322 in 1990, which indicates that the regional divergences in unemployment rates widened in recent years. However, the results of Full-Control, where the effect of all labor supply and demand attributes are removed, show that it is 1.830 in 1990 and 0.571 in 2000, which indicates that the controlled regional divergences are substantially narrowed in both years (the rate of decline in the standard deviation is 80.4 percent in 1990 and 95.6 percent in 2000). Moreover, the results of Full-Control also show that the regional divergences in unemployment rates are smaller in recent years.

Table 1. Divergences in Unemployment Rates Among Prefectures (WASD)

Removed variables	1990	2000
Full-Control	1.830	0.571
Age	1.711	3.776
Gender	6.079	9.343
Schooling	7.024	9.022
Industry	9.344	12.940
No-Control	9.322	12.905

Note: For details about WASD (Weight Adjusted Standard Deviation), see the body text and footnote 7.

⁷ $WASD = \left[\sum_j (s_j \beta_j - \sum_j s_j \beta_j)^2 - \sum_j s_j \delta_j^2 \right]^{\frac{1}{2}}$. It is an indicator of divergences often used in the empirical analysis, of inter-industrial wage differentials. s_j is the weight of the labor force in prefecture j , β_j is the coefficient, and δ_j is the standard error. Similar to Krueger and Summers (1988), who analyzed inter-industrial wage differentials, the covariance term among the variables are not taken into consideration.

In addition, Table 1 also shows which variables have an influence on the regional divergences. In 1990, the standard deviation increases the most when the composition of workers in each industry is excluded from Full-Control, followed by schooling dummies, gender dummies, and age group dummies. In 2000, too, the effect of the industrial structure variable is the largest, but it is followed by gender, schooling, and age, in that order, as the effect of schooling attributes in reducing the measured regional divergences declines. This probably reflects the narrowing of divergences in unemployment rates among those of different educational levels in recent years. This is a result of the rising unemployment rates among educated workers who have graduated from universities and graduate schools.

2.2 Level of controlled divergences

The results of Table 1 indicate that much of the apparently observable divergences in unemployment rates are attributed to the regional differences in the labor market structure. It is also noteworthy that when factors related to the industrial structure are controlled, the regional divergences are substantially reduced. Against this backdrop, in this section we examine the levels of regional divergences in unemployment rates when gender, age, and schooling are controlled (Estimation 1) and when the composition of workers in each industry is added to the explanatory variables (Estimation 2). To normalize the estimated coefficients of regional dummies (based on Nagano Prefecture, which has the lowest unemployment rate) in Estimation 1 and 2, the difference with the average value weighted by the labor force in each prefecture is calculated as the regional divergences in unemployment rates.⁸ The results of the calculation are shown on Table 2.

Firstly, if we look at the divergences after removing the effect of the labor supply attributes (Estimation 1), the divergences in unemployment rates after the control are narrowed more, in comparison with the actual divergences, in rural areas where there is a relatively large number of groups with high

⁸ Here the regional divergences are expressed as $d_i = \hat{\beta}_i - \left(\sum_j s_j \hat{\beta}_j \right)$, where d_i is the divergences in unemployment rate of prefecture i and $\hat{\beta}_i$ is the estimated coefficient of the prefecture's regional dummies. The second term on the right-hand side is the average value of the regional dummy coefficient weighted by the labor force weight (s_j) of each prefecture.

unemployment rates, such as youths and those with less years of schooling. For example, the actual unemployment rate of Aomori Prefecture in 1990 is 1.46 points higher than the national average, but when the effect of gender, age, and schooling on increasing the unemployment rate (net) is controlled, the divergence is narrowed by about 0.3 points. In contrast, in Tokyo, Osaka and Fukuoka prefectures and their environs, while there are a large number of youths, there are also people with many years of schooling who tend to lower the unemployment rate. As a result, the divergences after the control are increased. In Tokyo Prefecture (1990), the divergence after the control increased to 0.25 point compared with the actual divergence of 0.10 point.

The results of Estimation 1 show that there are still many areas in which the divergence from the national average is 1 point or more. The results of Estimation 2 indicate the divergences in unemployment rates when the effect of the ratio of the manufacturing industry to lower unemployment rates and the effect of the ratio of the tertiary industry (the ratios of wholesale, retail trade and restaurant industries and of service industry) to raise unemployment rates are controlled. They show that, relatively speaking, unemployment rates after the control rise in areas where there are many workers in the manufacturing industry and fewer workers in the tertiary industry.

For example, the results for Aichi Prefecture (2000), where there is a concentration of automotive and other manufacturing firms and a sound demand for labor, indicate that the difference with the average unemployment rates after controlling the industrial structure is 0.39 point, whereas the difference is -0.90 point before the control. The difference of 1.29 points is considered to be the decrease in the unemployment rate brought about by the leaning towards the manufacturing industry. A similar trend is notable in the northern Kanto, Koshin and Tokai regions. In the Tohoku region, it is observable in Yamagata and Fukushima prefectures. In western Japan, it is evident in Shiga Prefecture, Chugoku region (excluding Shimane and Yamaguchi prefectures) and the Shikoku region (excluding Kochi Prefecture).

In contrast, in areas leaning heavily towards the tertiary industry such as wholesale, retail trade, and restaurant industries, the industrial structure has an effect to raise unemployment rates, and as a result the divergences after the control narrow. This trend is particularly notable in Okinawa Prefecture, where the ratio of workers in the manufacturing industry is the lowest in Japan and the ratio of workers in the service industry the highest. When the

Table 2. Divergences in Unemployment Rates Among Prefectures

	1990			2000			Changes in 10 years	
	Actual divergence	Estimation 1	Estimation 2	Actual divergence	Estimation 1	Estimation 2	Actual divergence	Estimation 2
Hokkaido Prefecture	0.62	0.47	-1.06	0.05	0.08	-1.42	-0.57	-0.36
Aomori Prefecture	1.46	1.11	0.29	0.66	0.56	-0.19	-0.80	-0.48
Iwate Prefecture	-0.39	-0.56	-0.37	-0.74	-0.78	-0.59	-0.35	-0.21
Miyagi Prefecture	-0.28	-0.31	-0.81	0.18	0.17	-0.67	0.46	0.15
Akita Prefecture	-0.30	-0.12	-0.22	-0.46	-0.33	-0.61	-0.15	-0.39
Yamagata Prefecture	-1.28	-1.20	-0.41	-1.43	-1.41	-0.33	-0.15	0.08
Fukushima Prefecture	-0.60	-0.68	0.08	-0.48	-0.56	0.35	0.12	0.27
Saitama Prefecture	-0.34	-0.12	0.67	-0.01	0.10	0.69	0.33	0.02
Chiba Prefecture	-0.35	-0.13	-0.12	-0.02	0.15	-0.45	0.33	-0.33
Tokyo Prefecture	0.10	0.25	-0.68	0.14	0.31	-1.13	0.04	-0.46
Kanagawa Prefecture	-0.03	0.32	0.33	0.11	0.33	-0.24	0.14	-0.57
Ibaraki Prefecture	-0.64	-0.71	0.27	-0.51	-0.57	0.62	0.13	0.35
Tochigi Prefecture	-0.76	-0.95	0.24	-0.64	-0.78	0.60	0.11	0.36
Gunma Prefecture	-0.56	-0.76	0.36	-0.64	-0.85	0.70	-0.08	0.35
Yamanashi Prefecture	-0.60	-0.65	0.80	-0.97	-0.98	0.64	-0.36	-0.16
Nagano Prefecture	-1.29	-1.39	0.28	-1.67	-1.93	0.11	-0.38	-0.17
Niigata Prefecture	-1.00	-1.13	-1.08	-0.91	-1.03	-0.77	0.09	0.31
Toyama Prefecture	-1.03	-1.03	-0.36	-1.32	-1.64	-0.36	-0.29	0.00
Ishikawa Prefecture	-0.76	-0.94	-1.06	-1.10	-1.22	-0.91	-0.34	0.15
Fukui Prefecture	-1.13	-1.34	-0.21	-1.69	-2.05	-0.61	-0.56	-0.40
Gifu Prefecture	-0.98	-1.25	-0.27	-1.03	-1.37	0.22	-0.05	0.49
Shizuoka Prefecture	-0.66	-0.89	0.09	-0.97	-1.28	0.38	-0.31	0.29
Aichi Prefecture	-0.55	-0.69	0.07	-0.70	-0.90	0.39	-0.15	0.32
Mie Prefecture	-0.42	-0.76	-0.07	-0.89	-1.17	0.02	-0.47	0.08
Shiga Prefecture	-0.86	-0.88	0.53	-1.08	-1.14	1.06	-0.22	0.53
Kyoto Prefecture	-0.15	-0.11	-0.27	0.22	0.37	0.29	0.37	0.56
Osaka Prefecture	1.24	1.27	0.88	2.34	2.29	1.93	1.11	1.05
Hyogo Prefecture	0.33	0.37	0.33	0.65	0.75	0.95	0.32	0.62
Nara Prefecture	-0.15	0.17	0.27	0.23	0.71	1.02	0.38	0.75
Wakayama Prefecture	0.41	-0.06	-0.22	0.20	0.03	-0.07	-0.21	0.15
Tottori Prefecture	-0.54	-0.51	0.15	-1.19	-1.57	-0.83	-0.65	-0.98
Shimane Prefecture	-1.07	-1.31	-1.18	-1.81	-2.22	-2.13	-0.74	-0.95
Okayama Prefecture	-0.08	-0.08	0.63	-0.40	-0.41	0.43	-0.32	-0.20
Hiroshima Prefecture	-0.46	-0.51	-0.25	-0.46	-0.47	-0.27	0.00	-0.02
Yamaguchi Prefecture	-0.18	-0.28	-0.26	-0.69	-0.78	-0.69	-0.52	-0.43
Tokushima Prefecture	0.87	0.82	1.21	0.15	0.16	0.80	-0.72	-0.41
Kagawa Prefecture	0.09	0.15	0.18	-0.02	-0.07	0.20	-0.10	0.02
Ehime Prefecture	0.64	0.50	0.86	0.25	0.22	0.61	-0.39	-0.25
Kochi Prefecture	1.74	1.26	0.12	0.57	0.31	-0.91	-1.17	-1.03
Fukuoka Prefecture	1.48	1.66	0.42	1.17	1.36	-0.05	-0.31	-0.47
Saga Prefecture	-0.26	-0.40	-0.59	-0.32	-0.26	-0.49	-0.07	0.10
Nagasaki Prefecture	0.48	0.23	-1.04	0.10	0.14	-1.23	-0.38	-0.19
Kumamoto Prefecture	0.17	0.19	-0.30	-0.32	-0.13	-0.69	-0.49	-0.40
Oita Prefecture	0.32	0.43	-0.02	-0.30	-0.23	-0.63	-0.62	-0.61
Miyazaki Prefecture	0.36	0.23	-0.29	0.24	0.28	-0.45	-0.12	-0.16
Kagoshima Prefecture	0.37	0.50	-0.03	0.16	0.22	-0.58	-0.21	-0.55
Okinawa Prefecture	4.73	4.04	1.58	4.71	4.12	1.43	-0.02	-0.15

Note: Divergences are differences with the national average that has been weighted by the labor force (unit: % point). The "Actual divergence" is the difference between the unemployment rate of each prefecture (excluding those in school) and the national average. In Estimation 1, the gender, age, and schooling dummies are controlled. In Estimation 2, the composition of workers in each industry is controlled in addition to the control of Estimation 1.

prefecture's relative leaning towards the tertiary industry is controlled, the difference with the national average is reduced to less than half. A similar trend can be observed in prefectures such as Hokkaido, Miyagi, Tokyo, Kyoto, Osaka, and Fukuoka, which have a large city within the prefecture and which are the major center for the surrounding prefectures. The industrial structure's effect on raising the unemployment rate can also be found in Aomori Prefecture, Kochi Prefecture, and all prefectures in the Kyushu region. By the definition of this analysis, the leaning towards the tertiary industry generates a structural/frictional type of unemployment as a result of the high average turnover rate. In these areas, reinforcement of the matching function through job placement and so on is considered to be one of the essential measures for lowering the regional unemployment rates.

2.3 Correlation with other regional attributes

We examined above how the regional divergences are considerably reduced when the labor supply and demand structure is controlled. In the approach adopted in this paper of taking into consideration only the regional dummies, however, regional factors cannot be elucidated in greater detail. In addition, as shown in Table 2, there are regions in which the divergences after the control widened during the period from 1990 to 2000, and there is a need to examine the causes.

Therefore, we examine the correlation between the controlled regional divergences and various regional attributes that have not yet been taken into consideration. The regional economic indicators we examine include (1) the difference between the growth of real gross prefectural product (per capita) of the last five years (log difference) and the growth of real gross domestic product (per capita) (% point); (2) the difference between the growth of industrial production in the last five years and the national average (% point); (3) the difference between the regional "real" minimum wages, which were revised in October last year, and the national average (log difference);⁹ (4) the

⁹ To obtain the real value of the regional minimum wages, regional difference indexes of consumer prices excluding imputed rent (national=100) from the Ministry of Internal Affairs and Communications' *National Survey of Prices* of 1987 and 1997 were used. There is, however, room for argument on to what extent regional minimum wages influence regional labor markets. In fact, according to Abe (2001), while positive correlation can be observed between regional minimum wages and

net migration rate of a year as percentage of the total population of a prefecture (% , weighted by population by prefecture); (5) comparison of the composition of workers by major industrial division of each prefecture and of the nation (specialization coefficient); and (6) the Hirshman-Herfindahl Index, which is an indicator of the degree of specialization of an industrial structure as compared with the national average.¹⁰

Because of limited space, we present below only the results of regional variables that had statistically significant correlation at the level of 5 percent with the regional divergences after the control.

Firstly, with respect to the difference with the growth of real per-capita GDP, the correlation coefficient of the regional real economic growth rate from 1995 to 2000 and the regional divergences in unemployment rates in 2000 is statistically significant at -0.2938. This shows that the regional difference in the contractions in demand during the latter half of the 1990s, when the Japanese economy faltered considerably, brought about divergences in unemployment rates of recent years.

The difference in regional real minimum wages also has significant positive correlation with the divergences in unemployment rates in 2000 (correlation coefficient of 0.5753). The minimum wages tend to be high in areas where large cities are located, but there is a possibility that the apparently observable unemployment rates in those areas may be high because of commuters from prefectures from the outside. Therefore, we calculated the regional divergences in unemployment rates separately by controlling gender,

the average wages of part-timers, the divergences between part-timers' wages and the minimum wages differed significantly among D-ranked prefectures with the lowest minimum wages. Therefore, we use minimum wages not as a variable that should be controlled by policy, but as an indicator representing regional divergences in average wages.

¹⁰ The specialization coefficient $f_{ij} = p_{ij} / p_i$, where p_{ij} is the composition of employees of industry i in prefecture j and p_i is the national average of the composition of industry i . The Hirshman-Herfindahl Index of $RS_j = \sum_j |p_{ij} - p_i|$ takes a value between 0 and 2. The higher the value, the more specialized the industrial structure of prefecture j in comparison to the national average. The lower the value (the closer to 0), the closer the industrial structure is to the national average. It has also been pointed out that areas with narrower industrial distribution or a higher degree of specialization are more likely to be affected by the demand shock within that industry, and therefore such areas have a greater risk of higher unemployment rates (Krugman (1993)).

age, and industrial structure, based on the data on the place of employment in 2000, and examine their relationship with the difference in regional real minimum wages. As a result, significant positive correlation can still be observed at the correlation coefficient of 0.5181.¹¹ Although the factors related to schooling are not controlled because of the limitations of data on place of employment, there is positive correlation between the controlled divergences in unemployment rates and the differences in real wages, even when the effect from commuters is taken into consideration.

With regard to specialization coefficient by industry, the more specialized an area is in the tertiary industry (less specialization in the primary industry), the higher the unemployment rate in comparison with the national average. This trend was particularly noticeable in 2000. On the other hand, with respect to the net migration rate of the last one year and the Hirshman-Herfindahl Index, which shows the relative trend of specialization of the industrial structure of a particular region, significant correlation with regional divergences in unemployment rates cannot be observed in both years.

Secondly, we examine the factors contributing to increasing or decreasing changes in the regional divergences of unemployment rates after the control from 1990 to 2000. The results show that there is a statistically significant negative correlation between differences in the real economic growth rates by region and the changes in the divergences in unemployment rates after the control from 1990 to 2000, with correlation coefficient of -0.3295. In particular, in Hyogo, Kyoto, and Osaka prefectures and other prefectures in the Kinki region where unemployment rates continue to be high, there was a fairly rapid decline in the regional economy during the 10-year period, and the divergences in unemployment rates after the control increased the most. With respect to changes in other indicators of regional economy during the same period, however, there is no significant correlation with the changes in the divergences in unemployment rates. The correlation with the differences in

¹¹ The place-of-employment-based unemployment rates are calculated based on the following formula: the number of wholly unemployed persons/ (the number of wholly unemployed persons + the number of workers in the place of employment). It should be noted that, because of the limitations imposed by the survey items of the population census, the estimated values are based on the somewhat strong assumption that “unemployed persons only engage in job search activities in the place of permanent residence.”

the growth of real minimum wages between 1989 and 1999 is negative and not significant, with the correlation coefficient of -0.0343. Therefore, it cannot be said that the rise in minimum wages by region during the 1990s contribute to expanding the regional divergences in unemployment rates. In Kinki region, where the unemployment rate after the control rises, the growth in real minimum wages during the 10-year period is smaller than the national average. Therefore, it can be interpreted that the region's ability to adjust wages in response to the rise in unemployment rate is weak, resulting in the significant positive correlation in 2000 as mentioned earlier.

The above indicates that the effect of regional attributes on regional divergences in unemployment rates after the control (estimated in the previous section) cannot be observed during boom periods. However, it also indicates that, during low growth periods, the regional divergences in real wage costs and regional differences in contractions in demand have increased regional divergences in unemployment rates in recent years.

3. Examination of divergences in non-employment rates

3.1 Divergences in non-employment rates when demographic attributes are considered

Table 3. Divergences in Non-Employment Rates Among Prefectures (WASD)

Removed variables	1990	2000
Full-Control	37.366	40.070
Age	37.101	39.814
Gender	37.242	39.994
Schooling	37.353	40.053
No-Control	(37.481)	(40.181)

Note: The WASD of No-Control is the reference values, since the null hypothesis that all regional dummy coefficients are 0 could not be rejected at the level of 1%.

In this section, we measure regional divergences in non-employment rates (among those aged 15 and over) by prefecture, gender, age, and schooling, using a similar method as with the unemployment rate function of the previous section and removing the effect of regional attributes on the regional divergences. Because the effect of the regional demand structure on the non-employment rates has not yet been explicitly determined (unlike in cases dealing with unemployment rates), only the demographic attributes of gender,

age, and schooling are controlled in examining the regional divergences. Again, because the published statistics of the population censuses do not indicate the educational levels and employment statuses of those who are currently in school, we limit our sample to those who have completed their school education. Consequently, it should be noted that, unlike in the case of generally used non-employment rates, the rates are at the lowest for the age group 15 to 24 because of the large number of students.¹²

Table 3 shows divergences in non-employment rates by prefecture, which are obtained by using a similar method used in the previous section. With respect to No-Control, however, no statistically significant regional divergences can be detected. For all variables of demographic attributes, the regional divergences increase after the control. From the estimated results, it is clear that the decrease in the non-employment rates resulting from controlling the demographic attributes is greater in rural areas (the opposite is true in urban areas), and that dispersion in regional divergences becomes greater in rural areas. In addition, with regard to the regional divergences in which all demographic attributes are controlled, the divergences tend to widen during the 10-year period, which is similar to the widening divergences in unemployment rates when the industrial structure is not controlled in the previous section.

3.2 Divergences in non-employment rates and demand-related factors

The differences in the conditions of the regional labor markets are obviously one of the factors affecting the divergences in non-employment rates after the control in 1990 and 2000 and the changes in the divergences during the period of 10 years. Therefore, we lastly examine the relation between the regional divergences of non-employment rates and unemployment rates.

The correlation coefficient of the regional divergences in unemployment rates, estimated based on Full-Control, (Estimation 2 in the previous section) and divergences in non-employment rates is 0.3840 and 0.4821 in 1990 and

¹² When students, who are not in the labor force, are excluded, the nation's average non-employment rate drops from 38.4 percent to 30.1 percent and from 40.2 percent to 33.0 percent in 1990 and 2000, respectively. However, while the non-employment rate in Okinawa Prefecture declines by about 4 percentage points, in other areas there is hardly any difference with the national average. Therefore, it is considered that the exclusion of students is not a major problem in the analysis of regional divergences in non-employment rates.

2000, respectively. Therefore, there is significant positive correlation between the two in both years, while this trend is more marked in 2000. As for the changes in 10 years, the correlation coefficient of the changes in the controlled unemployment rates and the changes in the controlled non-employment rates is 0.5442. This shows that in areas with high unemployment rates or in which unemployment rates rose during the 10-year period, there is a stronger tendency for people to give up searching for a job in the labor market (hereinafter called the “Discouraged Worker Effect”), and that this trend is also more marked in 2000.¹³

Considering that students are not covered by the non-employment rates used in this paper, it is clear that the Discouraged Worker Effect increases the number of those not in the labor force who are classified, by the definition of the *Population Census*, as “engaged in housework” or “others.” The latter, in particular, are considered as serious cases of nonparticipation in society and are reportedly increasing in recent years (Ministry of Health, Labor and Welfare (2004)). Kosugi (2004) defined those aged between 15 and 34 who are classified as “others” as the Japanese version of NEETs (Not in Education, Employment or Training), and discovered a positive correlation between youth unemployment rates and percentage of NEETs in the population in each region. In this paper, we follow Kosugi (2004)’s definition, calculate the percentage of those classified as “others” (hereinafter called the “NEETs”) among those not in the labor force in the age groups of (1) 15 to 34 years, (2) 35 to 54 years, and (3) 55 years and over in 1990 and 2000, and examine their relation to the controlled divergences in unemployment rates at each given time (Estimation 2).¹⁴ The results are shown on Table 4.

¹³ Because the non-employment rates cover those who are unemployed, the correlation between the unemployment rates and non-employment rates is naturally strong by definition. However, we separately examined the correlation involving the nonparticipation rates and found that the trend was unchanged. The positive correlation between regional divergences in nonparticipation rates and unemployment rates, controlled for gender, age, and schooling, became stronger from 0.3055 in 1990 to 0.4940 in 2000. Also the correlation coefficient of the changes during the 10-year period was 0.3319, which, although lower than in the case of the non-employment rates, shows significant positive correlation.

¹⁴ Kosugi (2004) defined the Japanese version of NEETs as those not in the labor force (1) who are 15 to 34 years of age, (2) who have completed their school education, and (3) who are neither engaged in housework nor attending school (statistically they are classified as “others” among those who are not in the labor force). In a

In 1990 (section (a) of Table 4), there is no significant correlation between the controlled divergences in unemployment rates and the percentage of NEETs among those not in the labor force in each age group. As we have seen above, the non-employment rates have positive correlation with unemployment rates, and the Discouraged Worker Effect resulted, in 1990, in evenly increasing those classified as “students or engaging in housework” and those classified as “others.” In 2000 (section (b)), however, there is a difference in the way that those between 15 and 34 and those 35 and over moved out of the labor force. Among those between 35 and 54 years of age, the regional unemployment conditions significantly added to the the weight of “housework and students.” On the other hand, among those aged between 15 and 34, the correlation coefficient, although not statistically significant, is positive, and it is suggested that among the youths, the percentage of NEETs is high in areas of high unemployment rates. As for changes during the 10-year period shown in section (c), it is also implied that an increase in the number of NEETs among youths is more prominent in areas where regional divergences in unemployment rates widen after the control.

Obviously, the increase in the percentage of NEETs among youths is affected not only by deterioration in the unemployment conditions, but also by the supply-side factors, such as changes in school education (increase in dropouts, changes in the way high schools provide career guidance) and changes in the behavior of households (assistance provided by parents). Nonetheless, when we consider the unemployment and nonparticipation of youths in Japan, we cannot ignore the results indicating that, in recent years, non-employment rates as well as the percentage of NEETs among youths are both high in areas with high unemployment rates.¹⁵

slight deviation from Kosugi (2004), we examine, for the analysis in this paper, how regional unemployment conditions led those in different age groups to leave the labor force.

¹⁵ In 2000, the correlation coefficient of divergences in non-employment rates, used in the previous section, and the percentage of NEETs is 0.5790 among those of 15 to 34 years, -0.2838 among those of 35 to 54 years, and -0.3275 among those of 55 years and over. (In 1999, it was -0.988 (not significant), -0.3600, and -0.2069, respectively.)

Table 4. Correlation between Divergences in Unemployment Rates and the Percentage of "Others" Among Those not in the Labor Force (i.e. Percentage of NEETs)

a. 1990

	Divergences in unemployment rates (Estimation 2)	Percentage of NEETs among those not in the labor force		
		Age 15-34	Age 35-54	Age 55 and over
Divergences in unemployment rates (Estimation 2)	1			
Percentage of NEETs among those not in the labor force	Age 15-34	-0.0769	1	
	Age 35-54	-0.1747	0.7572***	1
	Age 55 and over	0.0006	0.5173***	0.6364**

b. 2000

	Divergences in unemployment rates (Estimation 2)	Percentage of NEETs among those not in the labor force		
		Age 15-34	Age 35-54	Age 55 and over
Divergences in unemployment rates (Estimation 2)	1			
Percentage of NEETs among those not in the labor force	Age 15-34	0.1826	1	
	Age 35-54	-0.4082***	0.1363	1
	Age 55 and over	-0.0953	-0.0968	0.6505***

c. Change from 1990 to 2000

	Divergences in unemployment rates (Estimation 2)	Percentage of NEETs among those not in the labor force		
		Age 15-34	Age 35-54	Age 55 and over
Divergences in unemployment rates (Estimation 2)	1			
Percentage of NEETs among those not in the labor force	Age 15-34	0.1643	1	
	Age 35-54	-0.2294	0.5592***	1
	Age 55 and over	-0.0041	0.2130	0.1204

Note: *** and ** indicate statistical significance of 1% and 5%, respectively.

4. Summary and conclusion

In this paper, we measured the regional divergences in unemployment rates and non-employment rates in each prefecture by controlling demographic attributes such as gender and age and attributes related to the labor supply and demand, such as schooling and industrial structure. At the same time, we used basic methods to examine the factors that created such divergences. The results are summarized below.

- (1) The apparent regional divergences in unemployment rates tended to widen during the period from 1990 to 2000. However, when regional labor supply and demand attributes were controlled, the regional divergences were substantially narrowed in both years; they also showed a decline during the 10-year period. Regional differences in the industrial structure, in particular, explain much about the dispersion in the divergences among different prefectures.
- (2) While the controlled regional divergences in unemployment rates during the boom period in 1990 showed that the effect of regional attributes was generally controlled, it was implied, under the recession in 2000, that the divergences in unemployment rates increased as a result of the regional differences in real wage costs and in contractions in demand.
- (3) Divergences in non-employment rates among prefectures, with the effect of demographic attributes removed, had strong positive correlation with controlled divergences in unemployment rates, and it was observed that the Discouraged Worker Effect was more significant in areas with high unemployment rates or where unemployment rates rose during the 10-year period.
- (4) During the boom period in 1990, the Discouraged Worker Effect acted on those not in the labor force in general regardless of the categories of “students,” “engaging in housework,” or “others.” In 2000, however, it was implied that, relatively speaking, it increased the number of youths classified as “others.” This trend was also marked in areas where the controlled unemployment rates rose during the 10-year period. It was suggested that the number of youths who become NEETs is increasing more prominently in areas with deteriorating labor market conditions.

The results of the analysis of this paper that the regional divergences in unemployment rates are significantly narrowed when labor supply attributes

are controlled confirm that the regional unemployment issue in Japan arises, first of all, from the “regional characteristics” pertaining to the labor force and uneven regional distribution of industry. They also indicate that in addressing the regional employment issue, employment measures suited to the situation in each region are needed. Within the context of deregulation, local governments, including prefectural governments and municipalities, are promoting their own regional industry and employment policies, and the effectiveness of individual policies will need to be examined in the future through case studies.

On the other hand, the results of this paper also showed that real wage costs and a downturn in the regional economy resulted in raising unemployment rates in some areas. In Kinki region, in particular, where there is a rapid decline of the regional economy, comprehensive measures are needed through cooperation with the central government in promoting changes in the industrial structure. In addition, regional real minimum wages need also be examined (after verifying the extent of their effect on the regional labor markets) as one of the means of the central government’s regional labor market policy.

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Trends in Income Inequality: A Sociologist's Perspective

Sawako Shirahase

Department of Sociology, Tokyo University

1. Disparity and inequality

There have been many discussions recently about disparity. In these discussions, disparity and inequality are often not well distinguished. What is meant by inequality and disparity is not clear, and these concepts often overlap. Let us try to make a distinction between disparity and inequality. When considering disparities, we must first note that there are certain baselines and expectations to measure the degree of disparity (Sato 2005). When there is deviation from the baseline or expected value that has been set, the deviation is measured as the degree of inequality or injustice. This deviation refers to ranking, and it is the “difference in ranking” that can be described as “disparity”. The difference can be expressed by how far it is deviated from the standard value which is set to zero, and disparity indicates the gap between the actuality and the desirable state, such as the state of no differentiation. While it is most often considered that it is preferable that disparities be small, the problem is that how much differentiation we tolerate is ambiguous because the standard or expected value is not absolute. For example, we can ask whether what we are aiming for is a society in which there is no disparity and where everyone is the same. Of course, a situation that deviates greatly from the state of no disparity is not desirable. However, it is questionable whether a society with no differentiation exists in real life. It would be “unfair” if there were no wage differentials and those who performed better than others would receive the same reward as those who underperformed.

If each person is fairly assessed for his or her performance, the consequent gap in income can be regarded as fair. On the other hand, inequality based on unfair assessment and “unreasonable” factors unrelated to the person's ability should not be allowed. When income is not the result of fair assessment but of unreasonable factors, the gap in income is regarded as unfair and inequitable. This unfair evaluation plays an important part in the concept of inequality that goes beyond the concept of disparity. A certain benchmark is introduced into disparity, insofar as it is the “difference in ranking,” and a certain order is established based on social value. While disparity and inequality are very similar concepts, social norm and the concept of assessment are more strongly

reflected in inequality than in disparity. In other words, an absence of disparity may not always be desirable, and the degree to which income reflects the assessment of an individual's performance and ability determines how fair the income gap is.

Therefore, disparity is a concept with an emphasis on measurability, while inequality is a concept which is influenced by the social norm, and the issue of social justice is deeply involved in its definition. For the purpose of this study, let us define inequality as disparity with a stronger sense related to social norm. Inequality is about the demarcation of to what extent the "difference in ranking" is acceptable as social justice. It is a concept of distribution linked to social values.

2. Stratification structure as a background of inequality

Just as economists are concerned with wages and income, sociologists are concerned with occupation and the inequality issues have been discussed within the theoretical framework of stratification and class. This is because sociologists consider occupation as the most reliable proxy variable for expressing the quality of life, including lifestyles. This is based on the idea that the difference between a doctor and a road construction worker, for instance, is not only about the difference in income, but also about the difference in social prestige, employment security, and life chances.

Inequality is closely associated with the concepts of unreasonableness and inequality that goes beyond quantitative differences. Economic inequalities, as represented by income gaps, imply comprehensive differentiation in socio-economic advantage/disadvantage among individuals and households. Weber described "social class" as a broader concept of prestige and social status besides the possession of economic assets (Weber 1946). Inequality is comprehensive because it goes beyond the present possession of assets per se and includes the differences for future opportunities in life that people possess. It is a critical process that the amount of wealth includes the potential ability to cope with risks that people might face in the future. High educational attainment and high income have meaning in themselves, but what is more important is that they can potentially minimize uncertain risks that might occur in the future.

Another point that cannot be overlooked in considering stratification is that we should take into account not only individuals, but also households as a basic unit of consumption. In economics there exists the concept of

household economy; however, the central unit of analysis, based on economic reasoning, is the individual who is assumed as an economically rational actor. In sociology, we pay attention to families and communities which surround and interact with individuals. One of the unique features of sociology is that it considers not only the individual, but also the individual's relationship with others in the family, the household, the community, and the society. This is the reason why sociology has traditionally studied rural villages and families. With the advance of industrialization and urbanization, the function of rural villages to provide life security to family members no longer works well, and family size is becoming smaller. The declining family size partly derives from an increase in the number of people who choose not to marry or to marry late and in the number of divorces. At the same time, the functions of the family are also changing. An individual is not an abstract unit of analysis but perform particular roles in their life such as wife or husband, daughter or son, and mother or father. This understanding of the individual behavior placed within certain relational boundaries is called "roles", and certain expectations are attached to each role. Role expectation, for example, of "how a wife should behave" or "the duty of the eldest son," is derived from social norm that is applied to an individual's relation with others. Individuals make choices under the constraints of various role expectations in their life.

3. Inequality between classes and inequality within the class

Society is not in a state of uniform vacuum. People are stratified based on income, occupation, property, and so forth. In fact, the majority of people think that society is unfair. Discussions about inequality were revived in the late 1990s, and interest in disparity continues unabated to this day (cf. Tachibanaki 1998; Sato 2000; Ohtake 2005). What is behind this active revival of the discussions on inequality? What mechanism is there that makes people actually feel the existence of disparity and inequality? To answer these questions, we will briefly examine the trends in the stratification structure and economic gaps using the Social Stratification and Social Mobility National Survey¹ (hereafter, SSM Survey) data, which has been conducted every 10 years since 1955. The class categories were constructed based on occupation, employment status

¹ The author is grateful to the committee of the 2005 Social Stratification and Social Mobility National Survey Project for the use of the data.

(employers, self-employed, family workers, etc.), firm size, and managerial status of male respondents² at the time of the survey (Erikson, Goldthorpe and Portocarero, 1982).³

There are two major points of discussions in this analysis. One is the inequality between classes and the other is the inequality within the class. For example, the economic conditions of the farming class relative to other classes in the entire stratification structure refers to the first question of inequality between classes, whereas the economic gap within the same farming group refers to the second question of intra-class inequality. I would like to show what has and what has not changed in terms of inter-class and intra-class inequality.

A major change in the distribution of the stratification structure is represented by a substantial decrease in the farming class and an increase in the professional and managerial class. Whereas the farming class accounted for about 40 percent of the total in 1955, the corresponding figure in 1995 has dropped to 6 percent. On the other hand, the professional and managerial class, who made up about 10 percent of the total in 1955, became the largest class with 37 percent of the total by 1995. Now let us examine the inter-class inequality against this background of change in the stratification structure.

Table 1 shows the ratio of the mean household income (logarithmic value) of a particular class to mean household income (logarithmic value) of the total sample. Positive values indicate comparatively advantageous economic conditions in relation to the whole, whereas negative values indicate comparatively disadvantageous conditions. In 1955 the white-collar classes, comprising the professional and managerial class and the clerical and sales class, clearly enjoyed the economically advantageous positions in the stratification structure, but by 1965 the economic advantage of the clerical and sales class had declined considerably. This may be due to the decline in the overall wage level of the class resulting from the increased participation of the youth and women in the workforce. The relative economic advantage of the professional and managerial class also declined from 1955 to 1965, but it has

² Since only male respondents were included in the SSM surveys from 1955 to 1975, the analysis was restricted to men.

³ The six class categories in our analysis are (1) professional and managerial, (2) clerical and sales, (3) urban self-employed, (4) farm, (5) skilled manual, and (6) semi- and un-skilled manual (hereafter, unskilled manual).

Table 1: Change in Economic Inequality between Classes*

	1955	1965	1975	1985	1995
Professional and managerial	0.492	0.311	0.260	0.221	0.219
Clerical and Sales	0.405	0.050	0.189	-0.043	-0.204
Urban self-employed	0.035	0.120	0.078	0.081	0.117
Farmers	-0.249	-0.265	-0.156	-0.313	-0.166
Skilled manual	0.088	0.105	-0.120	-0.148	-0.344
Unskilled manual	-0.098	0.154	-0.159	-0.195	-0.287

* Average household income of class i (logarithmic value) – average household income of the total sample (logarithmic value)

Source: 1955 to 1995 SSM Surveys

Shirahase, Sawako. "'Mieru Kakusa' to 'Mienai Kakusa'" ("Visible inequality" and "Invisible inequality"), *Keizai Seminar* (Economic Seminar) August 2005, p.34, table 1.

stabilized since 1975.

The relative economic status of the skilled manual class is also on the decline. As with the clerical and sales class, the proportion of the youth in the skilled manual class increased, and this demographic change in the class membership structure causes a relative decrease in wages. In the unskilled manual class, the proportion of both youth and elderly aged 65 and over is high, and here two kinds of members at two different life stages coexist in the same class. From 1985 to 1995, the economic situation of the skilled manual, the unskilled manual, and the clerical and sales classes deteriorated relative to that of the professional and managerial class. It is probable that the economic gaps between the professional and managerial class on one hand and the clerical and sales and the two manual classes on the other widened as a result of the burst of the bubble economy and the stagnation in the labor market. The professional and managerial class remains the most economically advantaged class, even though the extent of their advantage changed.

What, then, happened regarding income inequality within the class? In Table 2, the household incomes of each class are divided into quintiles, and the ratios of the fourth quintile to the first quintile within each class from 1955 to 1995 are indicated. The greater the value, the wider the economic gap within the class. As for the professional and managerial class, the economic gap decreased until 1975, after which it widens. While the relative economic advantage of the professional and managerial class in terms of the mean household income has been relatively stable, the intra-class economic gap has been on the increase since 1975. This trend of a growing economic gap in

Table 2: Gap in the Household Income within the Class *

	1955	1965	1975	1985	1995
Professional and managerial	3.429	2.333	1.800	1.899	2.167
Clerical and Sales	3.429	2.564	2.667	2.400	2.250
Urban self-employed	3.200	3.175	2.368	3.000	2.600
Farmers	3.571	2.667	2.333	3.139	2.250
Skilled manual	3.200	2.793	2.200	2.000	2.667
Unskilled manual	2.000	2.429	2.000	2.400	2.222

* The fourth quantile/the first quantile. The value 1 indicates no disparity.

Source: 1955 to 1995 SSM Surveys

Shirahase, Sawako. "'Mieru Kakusa' to 'Mienai Kakusa'" ("Visible Inequality" and "Invisible"), *Keizai Seminar* (Economic Seminar) August 2005, p.34, table 2.

recent years suggests that not all those in the professional and managerial class can uniformly enjoy economic advantages.

As for the clerical and sales class, the intra-class gap has been narrowing consistently since 1955. For the skilled manual class, which also has a high proportion of the youth, as does the clerical and sales class, the intra-class gap declined from 1955 to 1985. On the other hand, the proportion of elderly is increasing among the self-employed and farming classes. In regards to the self-employed, the intra-class gap narrowed substantially between 1965 and 1975, after which it increased and decreased in a zigzag fashion. Among farmers, it grew considerably between 1975 and 1985, which was the period that coincided with the substantial increase in the proportion of the elderly farmers; however, the intra-class gap decreased in the following 10 years. As for the unskilled manual class, which has both the youth and the elderly in its workforce, the gap has been relatively stable, although small fluctuations in the extent of economic gap can be seen.

While the extents of income inequality within the class vary from class to class, there has been no major change in the pattern of the overall stratification structure since 1975. Inequality has always been a feature of Japanese society. There is no particular pattern in the change in the degree of economic inequality. Inequality did not suddenly emerge in Japanese society. In fact, Seiyama (2000) stated: "The emergence of the unequal society is only the retelling of the same old story." The pattern of change in economic inequality differs from class to class. In some the intra-class economic inequality consistently narrowed, but in others the changes are in a zigzag fashion and do not show

any particular pattern. There is also a complex association between inequality between classes and inequality within the class. This obscure and elusive pattern of change in economic inequality leads to confused perceptions about inequality among the public.

4. Economic Inequality within the Household

It is not easy to identify the causes of economic inequality. Aging of society is one of the important factors in explaining the recent expansion of income inequality. Ohtake (1994) was one of the researchers who pointed out the relation between demographic changes of aging and the increase in economic inequality using large-scale empirical data. Compared with other age groups, the extent of income inequality is greater among the households with elderly members (Genda 1994; Ohtake and Saito 1999; Shirahase 2002; Seike and Yamada 2003; Otake 2005), and for the elderly, the extent of economic inequality within the generation is greater than the one between generations (Iwamoto 2000; Otake 2005). The increase in the proportion of the elderly with a large extent of income inequality resulted in widening the overall economic gap of the whole society. However, aging is not the only one reason to explain the expansion of the extent of income inequality during recent years. In fact, more and more attention has recently been paid to economic disadvantage among the youth, and Genda (2002) claimed that the lifetime earnings young people is declining compared with that of the retired generation. It is obvious that the widening economic inequality among the youth is closely related to the increase in the number of the youth who are not in regular employment or who are unemployed (Ohta 2005; Higuchi 2004).

The focus on the different extents of income inequality among the youth and the elderly can help our examination of the detailed mechanism generating economic inequality. This study focuses on the household structure in order to explore complicated mechanism of income inequality. Inequality in our society is not formed on the basis of the neutral and abstract individuals. The household is the basic unit of people's consumption, and it is within the household where the dynamism among members who perform different family roles is found. In this study, I will examine the extent of income inequality, by taking into account multidimensional interactions among individuals, households and families, communities, and society. I attempt to identify where the extent of income inequality was expanded the most and which

aspect of society contributed the most to the recent increase in income inequality.

There have been active discussions about the validity of the household as a unit of the social security system and the stratification structure (Acker 1973 and 1980; Goldthorpe 1983 and 1984; Hara and Seiyama 1999; Mari Osawa 2002; Shakai Hoken Kenkyujo 2002; Shirahase 2004). In response to the increased entry of women into the labor market and the change in their lifestyles, there was a question about whether the conventional practice of treating the household as a unit of class analysis is appropriate. The position of married women used to be determined by the male head of the household under the assumption of uniformity of class position among household members. As long as the household is supported by a single earner (usually the husband) or it is run by a family business, there is not much of a problem. More importantly, it is implicitly assumed that all members of the household share the same social and economic status. However, when a wife gets a job and begins to work outside the home, and the kind of job the wife has differs from that of her husband, it casts doubt on the assumption of the uniformity of class position within the household. Of course, single-person household constitutes one kind of the household type, and I do not ignore its existence. In fact, one of the important changes in the household structure in recent years is the increase in single-person households.

In this study, household structure, such as the couple-only household and the nuclear-family household, is constructed based on the composition of the members in the household. The household is the place where individuals spend most of their time and around which their lives revolve. The core question of this study is how the change in the household structure is associated with the change in the extent of income inequality.

Moreover, household structures are not static but dynamic over the life course. For instance, a person may leave his or her parental home after graduating from college (a single-person household); may get married and live with a spouse (a couple-only household); and later the couple may have children (a nuclear-family household). This person will experience three different household types. Thus, changes in the household changes depend on the life course and the family stage. We cannot observe the change in the household type over the life course for the same individual using cross-sectional data, since the data captures the household type at one point of time in the life course. However, it is possible to investigate the effect of the household type

by taking into account the age of the household head as a proxy of the family stage.

The dataset used in this study is the Basic Survey of People's Living (Kokumin Seikatsu Kiso Chosa) conducted by the Ministry of Health, Labour and Welfare in 1986, 1995, and 2001.⁴ These data are one of the most accurate national surveys on income and are also valuable because of considerable sample size. It should be noted that the interval between three surveys are not even, but I would like to examine the changes from 1980s to the 21st century. Household income is the main variable analyzed in this study. Another important variable is the household structure, and it is divided into six categories: (1) single-person household, (2) couple-only household, (3) nuclear-family household (parents and unmarried child(ren)), (4) one-parent household (one parent and unmarried child(ren)), (5) three-generation household, and (6) other types of household (all types of households not included in (1) to (5)). In some analyses reported below, the one-parent household is included either in the nuclear-family household or three-generation household.

Figure 1 shows the changes in the distribution of the household structure since 1960, as well as the proportion of the elderly aged 65 and over, and the total fertility rate. Aging and the decline in the fertility rate accelerated from the latter half of the 1980s. In particular, the proportion of the elderly aged 65 and over rose sharply in the 1990s. These trends are accompanied by changes in the household structure. It is clear that from the 1980s, the proportion of single-person households and couple-only households increased, while that of nuclear-family households and other households including three-generation households decreased. Within the single-person household, however, the economic situation may vary depending on whether the head of the household is young in their 20s or elderly in their 70s.

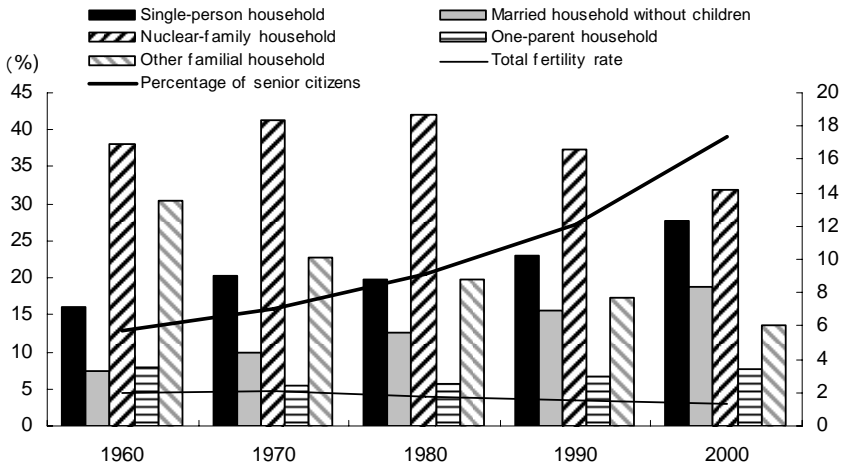
Figure 2 shows the distribution of the age of the household head and the Gini coefficient⁵ by year. From 1986 to 2001, the extent of income inequality

⁴ The analysis is part of the project, "International Comparative Study on Socio-economic Inequalities in an Aging Society with a Declining Fertility Rate" (2004-2005), funded by the Ministry of Health, Labour and Welfare's scientific research grants.

⁵
$$Gini = \left(\frac{2}{\mu n^2} \cdot \sum_k k W_k \right) - \frac{n+1}{n} = \frac{2 \operatorname{cov} \left(W_k, \frac{k}{n} \right)}{\mu} = \frac{\frac{2}{n} \sum_{k=1}^n (W_k - \mu) \cdot \left(\frac{k}{n} - \frac{1}{n^2} \sum_{k=1}^n k \right)}{\mu}$$

where W_k is the equivalent disposable income per person of household k and can be

Figure 1: Changes in the Distribution of Household Structures, the Proportion of the Aged and the Fertility Rate



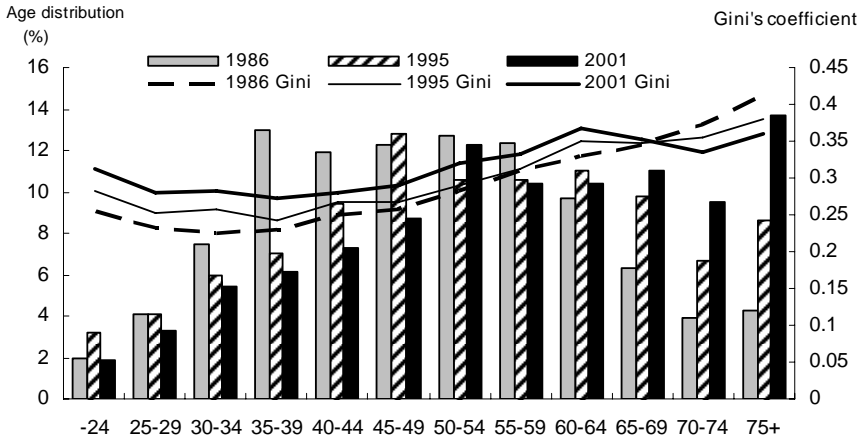
Source: Population Census

Shirahase, Sawako. "Fubyodo-ka Nippon no Nakami" (The Contents of the Increasing Extent of Income Inequality in Japan), Shirahase, Sawako (ed.) *Henkasuru Shakai no Fubyodo* (Inequality in a Changing Society), University of Tokyo Press, p.55, figure 1.

has expanded mostly in the age groups of 20s and 30s, while it has declined in the age groups of 65 and over. In examining the extent of income inequality, I focus on disposable income which is calculated by subtracting tax and social insurance payments from the total gross income. I use disposable income with the equivalent scale of elasticity 0.5. I assume that there is no difference in equivalence of elasticity between working adults and children or retired elderly. It is supposed that all household members share the economic well-being of the household almost equally. Since the basic unit of consumption is the household, I believe that this assumption is a reasonable one in contemporary capitalist society.

expressed as $W_k = D_k/S_k^\varepsilon$ (where D_k is the disposable income of household k , S_k is the number of persons in household k , while ε is called the equivalent elasticity and takes the value of 0.5 in this study); n is the total number of households; and μ is the mean disposable income.

Figure 2: Changes in the Distribution of the Age of the Household Head and Gini Coefficient



Source: Basic Survey of People's Living (each year)

Shirahase, Sawako. "Fubyodo-ka Nippon no Nakami" (The Contents of the Increasing Extent of Income Inequality in Japan), Shirahase, Sawako (ed.) *Henkasuru Shakai no Fubyodo* (Inequalities in a Changing Society), University of Tokyo Press, p.59, figure 2.

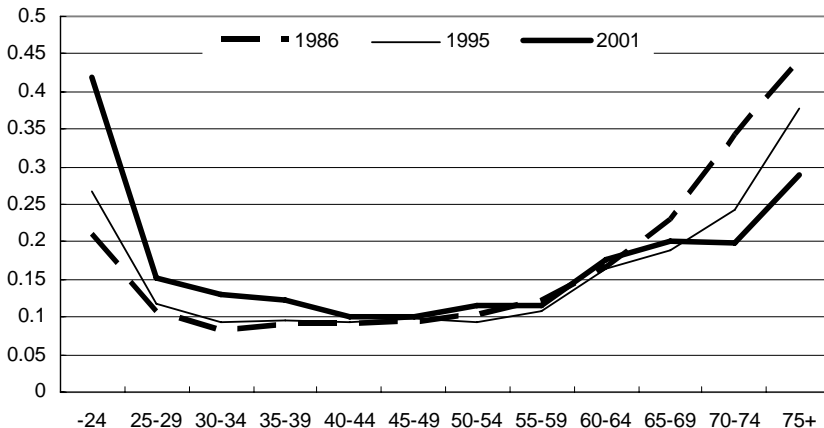
To broadly summarize the main findings in Figure 2, we can see that in recent years the economic gap is increasing among young households whose size is decreasing. However, as the number of the households with a young head is shrinking, associated with the declining fertility rate, their effect on the overall economic inequality is not as large as the effect of elderly households. On the other hand, the degree of inequality is declining among households with elderly heads, whose number is increasing. The economic gap widened among those of young heads, whose number is dropping, and declined among those with an elderly head whose number is on the increase. Changing number of the households by the age of the head and changing degree of income inequality, thus, are not consistent, and such inconsistency between the quantitative change (the number of the household) and qualitative change (the extent of income inequality) might have caused confusion in people's perception toward inequality. The tendency for young people to feel strongly that there is inequality and to anticipate further increase in the degree of economic inequality in the future (Ohtake 2005; Shirahase 2005a) is the

reflection of the reality in which the extent of income inequality is expanding among young people. Nevertheless, the rising pattern of Gini coefficient with age up to early 60s is still observed in 2001.

The decline of the extent of economic inequality from 1986 to 2001 among the elderly, however, does not simply imply that the economic status of the elderly as a whole has improved. If most elderly are in the low-income group, then, the extent of income inequality is small, but they are in a high economic risk group. In this study, those whose income is less than 50 percent of the median household income of the whole sample are considered as low-income households, which may be at high economic risk.

Figure 3 shows the proportion of low-income households by the age of the household head. From 1986 to 2001, the proportion of low-income households increased sharply among those aged 20s, while it decreased significantly among those aged 65 and over. Overall, the proportion of low income households by the age of the household head is U-shaped, and it is clear that low-income households are mainly found among young and elderly households. However, after the turn of the 21st century there has been a growing tendency

Figure 3: Proportion of Low-Income Households by the Age of the Household Head



Source: Basic Survey of People's Living (each year)
 Shirahase, Sawako. "Fubyodo-ka Nippon no Nakami" (The Contents of the Increasing Extent of Income Inequality in Japan), Shirahase, Sawako. (ed.) *Henkasuru Shakai no Fubyodo* (Inequality in a Changing Society), University of Tokyo Press, p.61, figure 3.

for the proportion of low-income households to increase among young households: among households with the head aged 24 and younger rose from 21 percent in 1986 to 42 percent in 2001. On the other hand, although the highest proportion of low-income households in 1986 was found among households whose head was aged 75 and over, its proportion fell substantially from 44 percent in 1986 to 29 percent in 2001. This decline in the proportion of low-income households among the elderly households is attributable in most part to improvement in the social security system including public pension. As already mentioned by many researchers (Genda 2002; Higuchi 2004; Kosugi 2005), the rise in the proportion of low-income households among young households is related to the increase in the number of the youths who are not in regular employment or who are unemployed.

Shirahase (2005b) attempted to analyze the change in inequality among the elderly aged 65 and over, by decomposing the overall inequality into the one within the household and the one between household types. According to the results, the extent of contribution of inequality between household types increased from 20.5 percent in 1986 to 23.3 percent in 1989, but it remained stable over the 1990s. The extent of contribution to the overall extent of income inequality of inequality within the household type is larger than that between household types. In addition, Shirahase (2002) showed that the degree of income inequality among households with elderly members declined from the mid-1980s to the late 1990s, and that the extent of income inequality by household type among those with elderly members were on the whole narrowing and converging. Therefore, because the changing patterns in the extent of income inequality and its magnitudes themselves are different by the household type, it is important to take into account other household types, such as single-person households and three-generation households, when examining income inequality.

By taking into account the age of the household head as an indicator of its family stage, Table 3 shows the changes in the degree of income inequality by the age of the household head and the household type.⁶ Among those heads

⁶ The degree of income inequality is high among “other types of households” in all age groups. The category of “other types of households,” which includes all households other than single-person households, couple-only households, nuclear-family households, and three-generation households, is the most heterogeneous category. Therefore,

Table 3: Changes in the Degree of Income Inequality by the Age of the Household Head and by Household Type

	20s			30s			40s		
	1986	1995	2001	1986	1995	2001	1986	1995	2001
Single-person hshld.	0.2148	0.2410	0.3054	0.2764	0.2600	0.2702	0.3461	0.3288	0.3512
Married hshld. w/o child	0.2109	0.2595	0.2637	0.2317	0.2301	0.2537	0.2744	0.3075	0.3100
Nuclear-family hshld.	0.2190	0.2157	0.2530	0.2188	0.2346	0.2647	0.2387	0.2652	0.2780
Three-generation hshld.	0.2104	0.2467	0.1912	0.2312	0.2376	0.2515	0.2870	0.2562	0.2817
Others	0.2443	0.3036	0.3744	0.3165	0.2941	0.3027	0.3042	0.3092	0.3439
	50s			60s			70s		
	1986	1995	2001	1986	1995	2001	1986	1995	2001
Single-person hshld.	0.4143	0.3984	0.4052	0.4215	0.4119	0.4309	0.3920	0.3826	0.3660
Married hshld. w/o child	0.3360	0.3243	0.3597	0.3847	0.3775	0.3711	0.4303	0.3549	0.3200
Nuclear-family hshld.	0.2882	0.2939	0.3215	0.3319	0.3462	0.3621	0.3714	0.3834	0.3269
Three-generation hshld.	0.2822	0.2878	0.2911	0.2877	0.2949	0.3161	0.2935	0.2930	0.3053
Others	0.3012	0.3308	0.3513	0.3279	0.3456	0.3490	0.4193	0.3490	0.3713

Note: The degree of inequality is indicated by Gini coefficient

Source: Basic Survey of People's Living (each year)

Shirahase, Sawako. *"Fubyodo-ka Nippon no Nakami"* (The Contents of Increasing extent of Income Inequality in Japan), Shirahase, Sawako. (ed.) *Henkasuru Shakai no Fubyodo* (Inequality in a Changing Society), University of Tokyo Press, p.63, table 2

aged in their 20s, the extent of income inequality is widening in all types of households except for the three-generation households. The high extent of income inequality among single-person households is particularly apparent. The change commonly found among the household heads in their 30s to 50s is the increase in the extent of income inequality among the nuclear-family households, and it is noteworthy that the extent of economic inequality has increased among the households with child(ren). It is part of the reason why the government started to build the social support to family with child(ren). Among the household heads in their 30s, the extent of income inequality increased among the couple-only households as well as among three-generation households. For those in their 40s, the extent of income inequality has been more or less stable over time, while the increase in the extent of income inequality among nuclear-family households cannot be overlooked.

When the elderly in their 60s are the head of the households, the extent of income inequality is increasing among the nuclear-family households and the three-generation households. Among the nuclear-family households headed

high degree of economic gaps within this category can be partly derived from high degree of heterogeneity within the category.

by the elderly in their 60s, unmarried adult children are often living with their parents, and they are the ones who are called “parasite singles.” The increase in the extent of income inequality among the households with “parasite single” suggests that not all of these households are necessarily rich. Some are rich, but others are not rich enough to provide support to adult children. On the other hand, an increase in the extent of income inequality can also be seen among three-generation households, in which the elderly used to be guaranteed a livelihood by living together with the younger generation. The three-generation household, which used to be a typical way of living for the elderly, decrease in number, while the extent of income inequality within the three-generation household has expanded. It appears that living in a three-generation household is no longer a safeguard against various risks in later life. As people reach the age of mandatory retirement in their 60s, some will choose to find another job while others choose to retire and become a pensioner. As a result, the differences in economic well-being grow larger depending on the working status. Therefore, at a time when the differences in working styles and lifestyles become most marked among those in their 60s, the degree of economic inequality becomes the highest among all age groups.

For those in their 70s and over, the the extent of income inequality is declining in almost all types of households. The Gini coefficient among the single-person households went from 0.3920 to 0.3660 and for the couple-only households decreased considerably from 0.4303 to 0.3200. The extent of income inequality among the nuclear-family households is also declining. The households with elderly members in their 70s and over used to be characterized as by high degree of inequality but the extent of inequality has clearly declined. In contrast, the extent of income inequality among the household headed by those in their early 60s has expanded. The improvement in income inequality among those aged 70 and over is largely derived from the maturity of the social security system.

5. Economic risk and household structure

The results of my analyses on income inequality taking into account the household structure revealed that the extent of income inequality declined and the share of the low-income households decreased among the households with elderly members. Despite the decline, the rate of low-income households remains higher than that of the young and middle-aged, and the number of the

elderly who face high economic risk is still high. However, it is obvious that the government can no longer maintain the same amount of social welfare services across-the-board toward the elderly as it used to do in the past. The increase in the extent of income inequality and the share of low-income households among the youth, particularly among young single-person households, became apparent. It is time to reconsider the current social security system which has been favoring the elderly in Japan. While it does not mean that the services aimed at the elderly should be automatically reduced, I would like to stress the need for the social security system corresponding to our coming society to be re-structured on the basis of a comprehensive design that takes into account the life paths of various individuals at different life stages.

The social security system in Japan developed mainly for the purpose of providing social services for the elderly. In addition to the elderly, it is necessary to offer support services to the younger generation with or without small children. From a demographic point of view, this implies a turnabout in the principle in allocating social capital focusing on the shrinking young population. The size of the elderly population will continue to increase. If we follow the majority rule, it would not be surprising if priority is given to the interests of the elderly. However, it is not realistic to keep expecting that the young working population, whose number is declining, will continue to support the elderly retired population, that are expanding in number. Therefore, how to build the consensus on the social support toward the shrinking population is an important issue, and greater efforts are thus required to obtain national consensus on public security.

It should be noticed that the validity of the “standard-type household model”, that was a cornerstone of the foundation of various social systems, is now declining. In fact, the standard type of households, such as the nuclear-family households and the three-generation households, decreased in number. Despite the change, the infrastructure to support those people who deviated from the standard model of living is not sufficient. Meanwhile, households other than the standard-type, such as single-person households, couple-only households, and one-parent households are increasing. At the same time, one-parent households and single-person households are at an economic disadvantage. The issue is further compounded by the gender gap. Women, particularly older women who live alone, and mothers in one-parent

households, face high economic risk (Shirahase 2006).

Although much has been said about the diversification of people's lifestyles, support for those who have taken a different path from the "standard" is still insufficient. In an aging society with the declining fertility rate, the question of how to support those who are outside the standard model and those who have made different choices from the majority will become increasingly important. The rule of majority decision is no longer suited to the principle of distribution in the aging society with the declining fertility rate. A new principle of distribution is needed to fully take into consideration the interests of the minorities. A major challenge in the design of this society is the breakup of the vested interests given to specific "standard models" and the redistribution of support to where it is really needed. In an aging society with a declining birthrate, diversified life security needs to be designed to make diverse lifestyles possible.

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Restructuring of the System for Determining Working Conditions in Japan¹

Shunichi Uemura

Research Director, the Japan Institute for Labour Policy and Training

1. Basic Views on the System for Determining Working Conditions

In developed countries, the basic concept of traditional labor laws concerning the determination of working conditions have generally been as follows: Firstly, the state stipulates minimum standards for working conditions. In the past, the state had regarded employers and employees as equal under civil laws and taken a neutral position, respecting contractual freedom. Eventually, however, this neutral stance by the state had led to miserable consequences for workers who had less bargaining ability. This is the reason why worker protection laws were born. Secondly, with regard to labor conditions above the minimum standards set by laws, collective labor relations laws were developed to provide the framework for the negotiation between trade union and employer. Under those laws labor unions are legally considered to be collective negotiators instead of individual workers who have less bargaining capabilities. Labor unions are permitted to implement measures of economic pressure so that they can secure bargaining strength. Special legal effect is given to collective agreements that are reached by means of collective bargaining. As a result, individual labor contracts can be deemed valid only within a frame of labor conditions that are prescribed by the nationally-established minimum labor standards and the collective agreement.

In Japan, correspondingly, the basic framework for the determination of working conditions, that worker protection laws stipulate minimum labor standards, and labor conditions that are more favorable than these standards are fixed by collective agreements². Any labor contract providing working

¹ This paper is based on the JILPT Research Report No. 56 “Shakai Keizai Kozo no Henka wo Fumaeta Rodo Joken Kettei System no Saikochiku (Restructuring of the System For Determining Working Conditions, Taking Into Consideration the Changes in the Social and Economic Structures).”

² Most Japanese labor unions are organized by enterprise, unlike those organized by industry as often seen in Europe and the U.S. Independent enterprise labor unions jointly form industrial organizations, and a group of these organization make up a national center. In terms of organizing labor unions, Japanese Trade Union Law takes the stance of free establishment, allowing workers to set up labor unions at their discretion without requiring any permission or application. Therefore, industry-specific labor unions typically seen in Europe and the U.S. can

conditions that do not meet the standard prescribed by laws³ collective agreements shall be void⁴.

2. Issues Surrounding the System For Determining Working Conditions

The labor legislation in our country faces a number of issues in the huge, universal trend of post-industrialization and economic globalization. Many significant papers and reports have already pointed out that Japan's labor law system is confronted with challenges such as: Changes in the industry structure (inclination towards the service industry); those in the labor force (increase in female workers and aging of personnel); rise in the number of white-collar workers; diversification of employment patterns (increase in part-timers and temporary workers); changes in workers' perceptions; individualization of personnel management in each enterprise; advancement in deregulations; decline in the unionization rate, and decrease in trade union members.

The system for determining working conditions is facing major problems with respect to its basic framework. Firstly, the organization rate of labor unions has been falling significantly. Just as has been seen in other developed countries, the unionization rate in Japan is also showing a steady trend to decline. The fall in the unionization rate and decrease in the number of trade union members is eroding the existence of labor unions that are one of the two relevant parties in determining working conditions through collective bargaining. As a result, the system of collectively determining labor conditions is shrinking. Secondly, conventional labor laws have long regarded workers as a mass that is equal and uniform nature. This is why worker protection laws considered

be organized in Japan. Yet in reality, Japanese labor unions have developed within individual enterprises in most cases. According to the "Basic Survey on Labor Unions" conducted by the labor ministry in 1997, among Japanese labor unions, 95.8% were enterprise union and 85.9% of union members belong to ones established within the corporations where they are hired. Although neither permission nor application is necessary to form a labor union, the Trade Union Law requires a labor union to meet certain criteria so that it can be recognized as a legitimate body under the said law (Article 2), and to have specific qualifications in order to be eligible to participate in the procedures provided in the Law and to be granted solutions (Article 5, Clause 1).

³ Labour Standards Law, Article 13. In Japan, there is a system that regulates work rules, which is not commonly found in labor acts in Europe and the U.S. It plays a role of standardizing and clarifying working conditions and maintaining discipline in the workplace. The Labour Standards Law states that an employer who continuously employs 10 or more workers shall draw up work rules covering certain items such as start and finish times (Article 89), and that labor contracts which stipulate working conditions inferior to the standards established by the rules of employment shall be invalid (Article 93). In drawing up or changing the rules of employment, the employer is obliged to hear opinions from the workers (Article 90).

⁴ Trade Union Law, Article 16.

workers, as a whole, to be the subject for protection that is inferior in negotiation capacity. In addition, when determining labor conditions more advantageous than minimum standards, it was understood that there would be no major problem with labor unions as collective negotiators discussing on behalf of the benefits of all workers, and that it would even be desirable to enhance bargaining capability by uniformly representing common interests of employees. Today, however, workers are diversifying and individualizing. The typical models dealt with by classic labor laws were blue-collar workers employed in factories, But today more than half of workers are white-collared, as a result of the shift of the industry structure from the secondary to the tertiary sector. It has been a common issue among developed countries, including Japan, to verify whether the models adopted in traditional labor laws are fully accommodating the changes in the images of workers. In addition, economic globalization is also urging employers to address various issues. The capital liberalization is forcing companies to review their methods of corporate governance, deeply affecting employment and labor-management relations. The developed countries are exposed not only to competitions among themselves, but also to those with developing nations, further fueling pressures to coordinate working conditions. Such changes in the environment surrounding employment and labor-management relations are requiring the labor legislation to deregulate, too.

The following sections will examine trends concerning Japanese labor unions and their responses towards diversity and complexity of today's enterprises and workers, and will give an overview of the directions to restructure the Japanese system for determining working conditions.

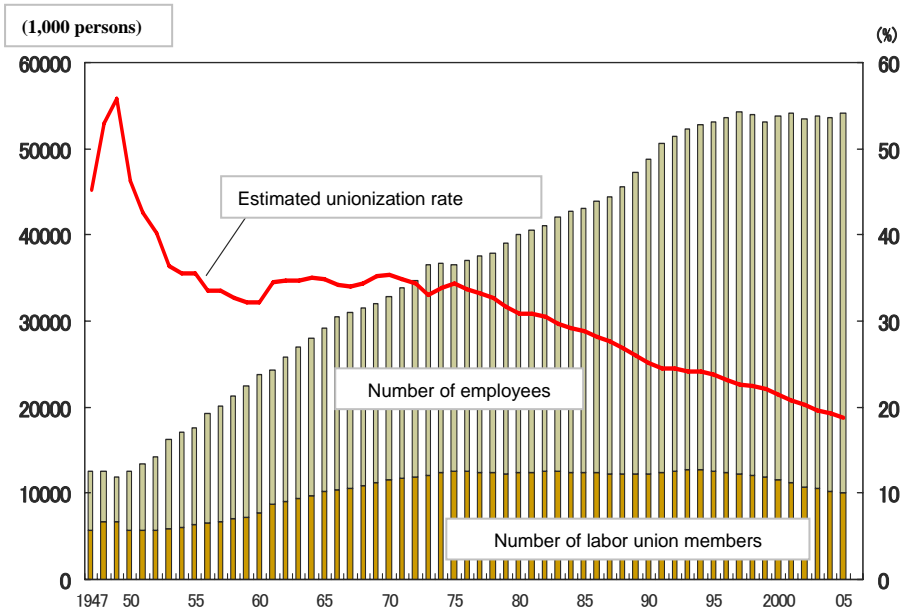
3. Trends Concerning Japanese Labor Unions

(1) Decline in the unionization rate and decrease in union members

Figure 1 shows the long-term trends of estimated unionization rate and union member numbers researched by the Ministry of Health, Labour and Welfare. After peaking at 55.8% in 1949, the unionization rate continued to decline until falling below 20% in 2003. It decreased further to 19.2% in 2004 and 18.7% in 2005, without showing any sign of recovery⁵. Not only the

⁵ With respect to causes that triggered decline in the unionization rate, there have already been many studies, which pointed out the following: (1) The shift from secondary to tertiary industry—where there are relatively few large-sized enterprises—is making unionization more difficult. (2) Changes in the employment structure, including the decrease in the number of

Figure 1: Changes in the estimated unionization rate and number of union members



Source: Ministry of Health, Labour and Welfare “Basic Survey on Labor Unions”

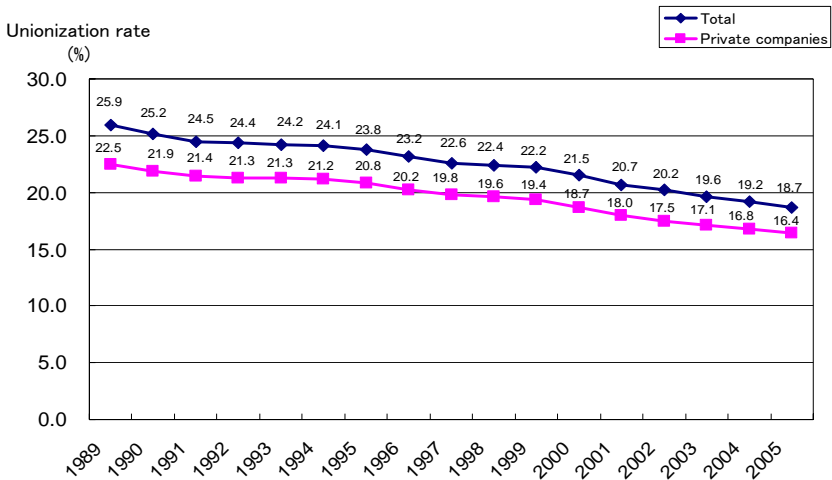
unionization rate but the number of union members is also experiencing an ongoing decline after reaching a peak of 12.70 million in 1994. It was 10.14 million in 2005—maintaining 10 million members by only a narrow margin. Private companies and public sectors do not share the same level of unionization rate. Figure 2 shows shifts in the estimated rate both among all types of organizations and among private enterprises. It is obvious that the line

workers of the secondary industry and increase in part-time workers, are the major scenarios against which the unionization rate fell. (3) Labor unions have failed to form in newly-established enterprises. (4) Activities to enroll union members have, not been very strong due to the union shop agreements, which automatically engage regular employees in union activities. Moreover, there is also the problem of interest conflicts in terms of employment security between regular and non-regular employees as well as resistance from the management side, concerning the range of membership. This indicates that the efforts to encourage workers to participate in labor unions are not enough at the individual enterprise union. Even industrial federations neither possess any sufficient system nor make satisfactory efforts. In summary, it can be said that the decrease both in union members and unionization rates is attributable to the failure of labor unions to carry out unionization activities, and their inability to address the changes in the surrounding environment including those in the industry and employment structure.

indicating the rates among private companies always runs below the total line. This is because that the rates among public sectors are generally high. In 2005, for example, public sectors had a unionization rate of 50.7%, while that among private enterprises was 16.4%.

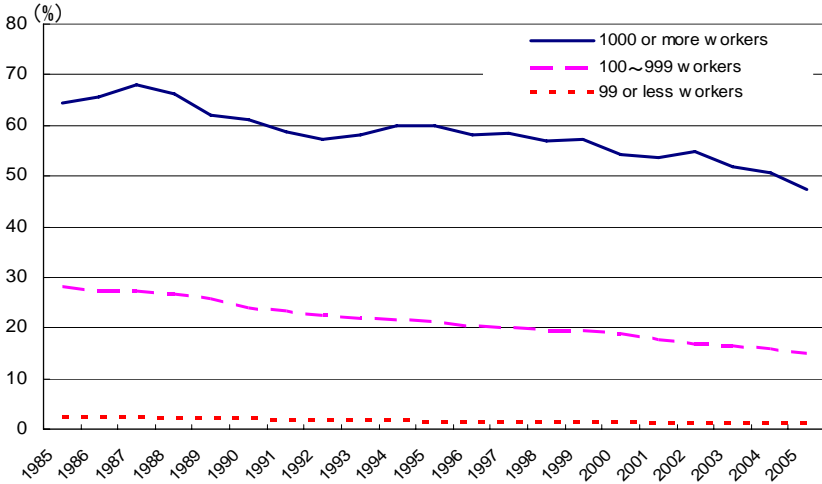
Figure 3 indicates shifts in the estimated unionization rate, and Figure 4 shows those in the estimated number of union members, both among private companies by corporate size. The unionization rate is high among large-sized companies, and low in small-sized companies. In 2005, it was 47.7% among companies with 1,000 or more employees, 15.0% among those with 100 or more but less than 1,000, and as low as 1.2% among those with 99 or less. Similarly, the number of union members drops as the company size grows smaller. It is apparent that situations regarding labor union organization vary significantly depending on the size of the corporation.

Figure 2: Shifts in the estimated unionization rate
(total and among private companies)



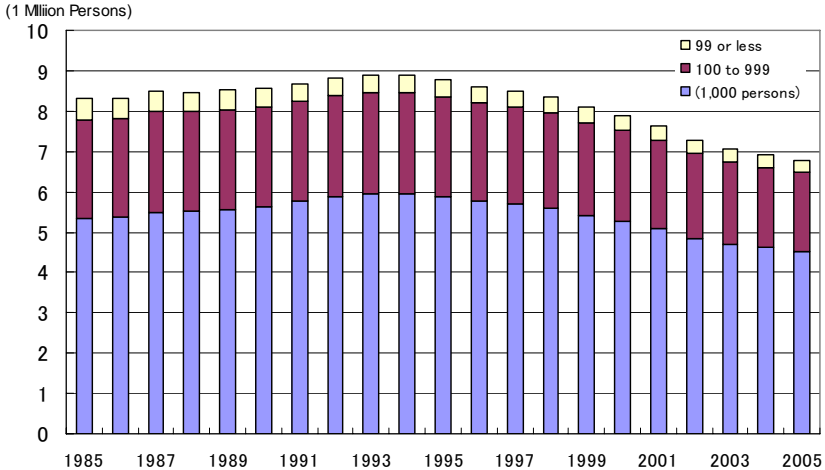
Source: Generated based on the Ministry of Health, Labour and Welfare “Basic Survey on Labor Unions”

Figure 3: Shifts in the unionization rate by company size
(among private companies)



Source: Generated based on the Ministry of Health, Labour and Welfare “Basic Survey on Labor Unions”

Figure 4: Shifts in the number of labor union members by company size
(among private corporations)



Source: Ministry of Health, Labour and Welfare “Basic Survey on Labor Unions”

Figure 5 was obtained by combining the number of employees in private enterprises and their estimated unionization rates in 2005, both by company size. Although the number of employees working for companies that employ 99 or less workers reached 25.31 million as a whole, accounting for more than 50% of total workers, the estimated unionization rate among them was 1.2%. The rate among companies with 100 or more but less than 1,000 employees, with a total of 13.05 million workers (slightly less than 30% of the entire mass of employees) was 15.0%, which is lower than the average estimated rate calculated among private corporations irrespective of size. In contrast, companies that have 1,000 or more workers indicated the rate of 47.7%, even though the total number of those who were hired by these large enterprises was 9.5 million, accounting for less than 20%. This figure tells us that the smaller a company is, the less significance a labor union has.

Figure 5: Number of employees and unionization rate among private companies by size (2005)

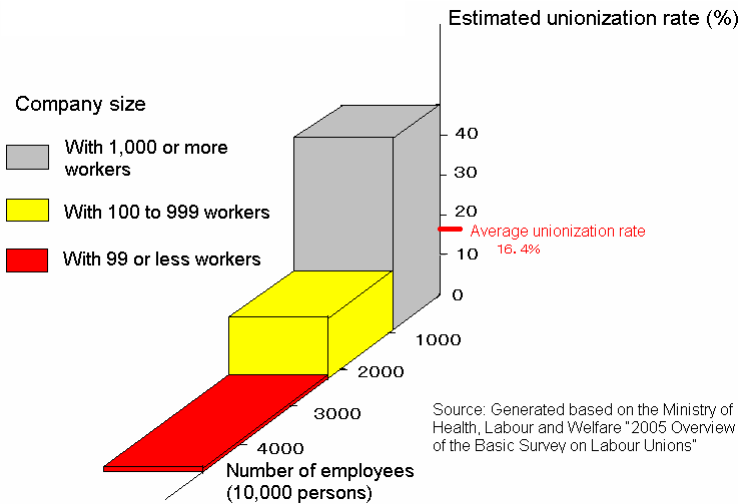
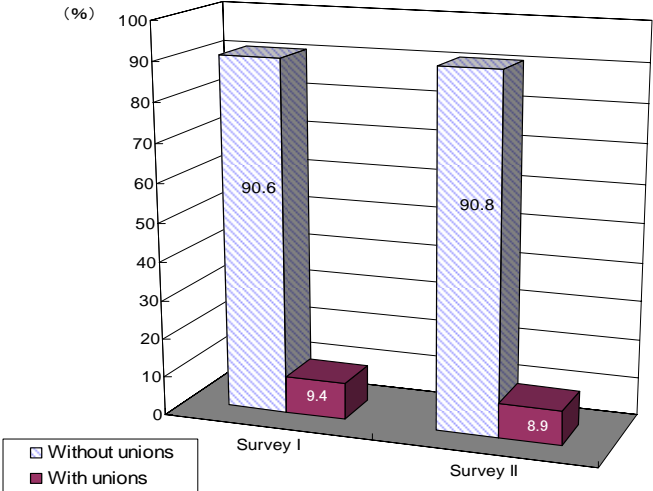


Figure 6 shows the ratio of the companies where trade union exists and the ration of the companies where trade union does not exist. Less than 10% of companies with 10 or more workers have a labor union, leaving more than 90% without any such institution. Based on the overall tendency of decrease in unionization rates, I have already pointed out the deterioration of the function

of collective negotiations for improving working conditions, which is one of the two pillars of the system for determining labor conditions. In addition to this, the functions of the collective system to determine working conditions have been remarkably weakened among small and medium-sized companies and micro enterprises. Moreover, it is revealed that this system is not functioning properly, as shown by the fact that more than 90% of companies with 10 or more employees do not have a labor union.

Figure 6: Existence or absence of labor unions at private companies (with 10 or more employees)



Note: Survey I: JILPT 2005 “Survey on the Framework of Employee Relations, Employment and Retirement”

Survey II: JILPT 2005 “Survey on the Establishment and Modification of Working Conditions and Human Resources Management”

(2) Effects of labor unions

Preceding studies have told us that, strictly speaking, after controlling other factors such as corporation size, it is not particularly easy to obtain wide agreement on the positive effects that labor unions have in terms of wages. Recently, however, there have been several studies that acknowledge such effects, at least partially. Furthermore, some recognize effects other than those related to wages. It has also been noted that there are effects to spread working conditions accepted in companies that have labor unions to those that do not.

In respect of working conditions, those achieved thanks to the existence of labor unions can improve overall standards by also affecting other companies without any union organization. Even so, some studies have realized that companies with labor unions enjoy an advantage in various aspects related to working conditions, including those associated with wages.

Again, according to previous research, it is also possible to say that labor unions have positive effects concerning employment security, although this has not been adequately confirmed yet. Negotiations between the labor unions and management may hamper particularly large-scaled employment adjustments to some extent, and their consultations sometimes serve as opportunities to seek more flexible employment adjustments or other alternative measures.

The existence of a labor union facilitates communication of thoughts and opinions from employees to employers. There are several systems established for the purpose of fostering labor-management communications, whose achievements have been recognized. The management sides also show a readiness to hear from labor unions.

Looking at actual cases where a major change in newly organizing a labor union was experienced, favorable responses can be heard from both the labor and management to acknowledge some improvements, comparing conditions before and after the union was established. The most notable area was in communications between employees and employers, as well as in working conditions. Following the establishment of a union, the management tends to better understand labor unions. In general, both labor and management positively rate the foundation of union organizations.

Based on the above observations, we can say that labor unions have certain effects upon workers in various ways. What actually matters are what kind of effects unions have on workers, if they can appeal to workers by making use of such positive effects, and if workers really find them attractive.

(3) Workers' perceptions on labor unions

The "Labor-management Communication Survey" performed by the Ministry of Health, Labour and Welfare in 2004 asked workers to what extent labor unions were necessary. In response, more than 60% of the subjects recognized the importance of unions, by choosing the options of either "Definitely necessary" or "Probably necessary." More than 80% of labor union members considered unions necessary. Even among non-union members,

almost half of them acknowledged the significance. This means that approximately 60 to 70% of workers thought that labor unions were required. Similarly, nearly half of part-timers also regarded unions as meaningful.

Ratio of workers depending on their views concerning the necessity of labor unions (unit: %)

	Definitely necessary (Labor unions are definitely necessary)	Probably necessary (Probably better to have a labor union)	Difficult to judge (Doesn't matter if there is or isn't a labor union)	Not necessary (Better not to have a labor union)
Total	26.9 (33.1)	36.1 (41.2)	25.2 (21.1)	11.7 (4.0)
Regular employees	28.4 (33.8)	36.1 (42.1)	24.5 (19.5)	11.0 (4.1)
Part-timers	10.6 (20.6)	36.2 (32.0)	33.4 (42.3)	19.8 (2.7)
Union members	43.7	40.7	13.1	2.5
Non-union members	14.9	32.8	33.9	18.4

Source: Ministry of Health, Labour and Welfare “Labor-management Communication Survey” (1999 and 2004)

Note: The questionnaire options and figures shown in the brackets were used in the 1999 survey.

Workers also showed high expectations of labor union activities. It is not just union members who have hopes for their influence upon companies with labor unions, as well as for their influence upon society as a whole. In particular, those who work in a workplace without any union yet desire to join union have great expectations. Workers employed by enterprises that do not have labor unions also expect the effects to improve working conditions, which can be implemented by the establishment of unions.

In particular, great expectations of labor unions are shown by those workers who express complaints and dissatisfaction with their companies, and who yet fail to communicate these feelings, and also by those who feel that workers' legal duties of workers are not necessarily respected.

As indicated in the table above, employees who work for companies that have labor unions think that working conditions and employment environment will be worse if unions dissolve, whereas those who work for companies without union organizations consider that establishment of unions will improve labor conditions.

Influences of labor union activities (multiple answers allowed / unit: %)

		Total	Without union	
			Desire to join	No desire to join
Influences on society as a whole	1) Workers' rights will be protected	73.8	81.4	62.7
	2) Working conditions will be improved	50.1	66.3	43.7
	3) Equal employment opportunities for both sexes will be enhanced	24.4	30.2	18.3
	- No influence can be expected	11.9	3.5	18.3
Influences on companies with labor unions	1) Welfare benefit systems and workplace environment will be improved	53.6	61.6	42.9
	2) Opinions from employees will be reflected in management practices	48.8	66.3	41.3
	3) Unfair personnel appraisals will be reduced	24.3	40.7	23.0
	- No influence can be expected	10.7	1.2	16.7
Influences on union members	1) Complaints from and dissatisfaction of members can be more easily communicated to the management	43.7	57.0	46.0
	2) Wage standards will be maintained or even improved	41.3	59.3	34.9
	3) Unfair inequality in working conditions will be reduced	34.3	54.7	32.5
	- No influence can be expected	10.8	0.0	15.9

Source: Japanese Trade Union Confederation Research Institute for Advancement of Living Standards (RENGO-RIALS) "Opinion/Awareness Survey on Labor Unions" (2003)

Changes upon establishment (dissolution) of labor unions (unit: %)

	Workers in companies with unions		Workers in companies without unions	
	Upon dissolution of unions		Upon establishment of unions	
	Improved	Deteriorated	Improved	Deteriorated
Wages	3.3	77.5	51.5	1.8
Conflicts between labor and management	8.5	62.8	33.1	22.4
Working hours	3.9	58.0	39.1	1.2
Welfare benefits	4.4	57.8	62.2	0.2
Information on corporate management	4.8	57.5	59.5	2.0
Health and safety/work environment	3.4	50.8	53.1	0.9
Operational procedures	6.2	40.1	36.4	6.2
Corporate management	11.4	36.7	37.3	6.5
Personal relationship at work	3.3	31.1	22.3	10.3

Source: Japanese Trade Union Confederation Research Institute for Advancement of Living Standards (RENGO-RIALS) (1992)

As observed above, although workers do think that labor unions are necessary and have hopes of them, this does not necessarily contribute to realizing unionization. What preceding studies have shown were images of labor unions in which they failed to fully live up to expectations from workers, to impress workers with their advantages, and to encourage workers to actively participate in their activities.

(5) Realities of labor union activities

a) General situations of labor unions

According to the “Basic Survey on Labor Unions” conducted by the Ministry of Health, Labour and Welfare in 2003, unions do not necessarily regard organization expansion as one of their major issues, saying unionization has already been sufficiently achieved. This is despite the fact that the number of union members decreased due to, for instance, the managements’ reluctance to hire regular employees, the ratio of union participants in the workplace fell, and financial conditions deteriorated. One of the reasons for the decline both in the unionization rate and ratio of union members in the workplace is thought to be that enrollment of part-time workers has not been sufficiently achieved. Unions are not, and will not be, according to their future policies, actively campaigning for unionization of part-timers⁶. Unions that do not enroll part-timers are not only reluctant to unionize them, but even seem to be cold towards them. Such unions do not go out of their way to consult with the management regarding working conditions for part-time employees.

This tendency to be unwilling to admit non-regular workers in general can be more widely observed among those who have concluded union shop agreements^{7,8}.

⁶ According to the “Basic Survey on Labor Unions” performed by the Ministry of Health, Labour and Welfare in 2003, the ratios of unions that admit part-timers, contract workers, and temporary workers turned out to be as low as 16.6%, 15.0%, and 6.1% respectively. In reality, fewer unions actually enroll non-regular employees. For example, no more than 10.9% of unions organized within companies that hire part-time workers admit members who work on a part-time basis. Furthermore, not many unions said that they were “making efforts to unionize” non-regular employees. Although part-timers are more popular targets of such unionization efforts compared to other non-regular workers, union organizations that are formed inside of enterprises with part-time workers and have actually admitted part-timers account for only 9.4%. Unions that “do not make particular attempts to enroll” non-regular workers are overwhelmingly large in number, reaching as high as 72.3% of those who do not admit part-timers.

⁷ The “Basic Survey on Labor Unions” conducted by the Ministry of Health, Labour and Welfare

In fact, the organization and finance of existing labor unions are supported by the union shop and check off agreements (even though still in difficult situations). Therefore, there seem to be no serious problem in maintaining their organizations for the time being with no change in current policies.

The relationship with the management has also shifted from collective bargaining to labor-management consultations⁹, the latter of which both labor and management sides intend to continue prioritizing in the future as well. Under such circumstances, collective labor-management disputes are decreasing in number. Despite being guaranteed by the Constitution, industrial disputes—which have never been given very much importance in the first place—are losing even more ground, and relevant know-how is fading away even in labor unions.

Although the number of collective labor-management disputes is on the decline, by no means does this indicate that there are less labor conflicts than before. Labor unions are still dealing with their individual labor problems. However, even in workplaces where unions and/or complaint handling bodies exist, most workers communicate their complaints and dissatisfaction to their supervisors; they rarely make such claims to labor unions or grievance organizations.

b) Factors for low union activity

When considering factors that lower labor union activities, especially unionization campaigns, we cannot avoid mentioning union shop agreements. It is true that union shop agreements do have advantages in terms of strengthening organization of labor unions and empowering negotiation capability against

in 2003 indicated that the ratio of unions with union shop agreements was 63.4%. It also showed the tendency that the ratio was especially high among large-sized enterprises; for instance, 77.4% among companies with 1,000 to 4,999 employees, while 52.8% among those with 30 to 99 workers.

⁸ According to the “Basic Survey on Labor Unions” (Ministry of Health, Labour and Welfare; 2003), fewer unions “with union shop agreements” answered that the number of members “increased” or “remained unchanged” than those “without union shop agreements.” Instead, 72.8% of unions “with union shop agreements” experienced a decrease in members. The Survey also showed that only 17.9% of unions “with union shop agreements” regarded organization expansion as one of their important issues, and that 80.9% “did not necessarily place significance” on this matter.

⁹ A labor-management consultation has no legal grounds. Broadly speaking, it can be considered as “a permanent body established between workers and the management (including employers federations) to consult between the two parties regarding matters associated with management, production, working conditions, welfare benefits, etc.”

employers, but they also have undeniable drawbacks for unions.

A wide range of data showing ineffectiveness of unionization campaigns carried out by labor unions with union shop agreements has already been presented above. This situation where many of the unionized enterprises have concluded such agreements allows most enterprise unions to automatically achieve unionization as far as regular employees are concerned, making their enrollment activities completely meaningless. Moreover, as they are committed only to regular workers due to the union shop system, they eventually continue excluding non-regular workers such as part-timers, leaving unionization of employees who work on a non-regular basis behind. What should be also noted is the influence on motivation of employees hired by companies without labor unions to newly establish one. Although those who work for companies that do not have any union organization, yet support the concept of unionization, expect improvement of wages and working conditions promoted by unions, such positive effects cannot be confirmed through activities of enterprise labor unions. This results in discouraging workers in companies without unions from forming their own organization. Enterprise unions, that are guaranteed to secure members by the union shop agreement and to have financial resources by the check off system, fail to recognize the common problem that the interest in organizing unions among workers in non-union companies is gradually fading. As a consequence, the unionization rate has been slowly but consistently declining.

It can also be pointed out that union shop agreements might reduce the vitality of labor unions. The union shop system doubtlessly contributes to maintaining the unionization rate in spite of complaints and indifference from members. However, labor unions' real energy falls far behind the level that can be expected from the figures appearing as unionization rates. Moreover, it is also possible to assume that the retaining of union shop agreements itself helps unions keep their bureaucratic nature and renders them inactive.

4. Responses towards diversity and complexity of enterprises and workers

Recently, for the purpose of making regulations concerning working hours more flexible¹⁰, a series of amendments of the Labour Standards Law have

¹⁰ In 1947 when the Labour Standards Law was first enacted, it stipulated that working hours in

been enforced. More precisely, the working-hours averaging system over the span of either three months or one week¹¹, the flextime system¹², and the discretionary work system for professionals and experts¹³ were introduced in 1987, under conditions of concluding labor-management agreements with majority representatives. This “labor-management agreements” refers to written arrangements either with a labor union organized by a majority of the workers at a workplace where such a labor union exists, or with a person representing a majority of the workers at a workplace where no such labor union exists¹⁴. In 1993, the applicable span of the working-hours averaging system was extended from three months to a maximum of one year, with a prerequisite of a labor-management agreement with a majority representative. Again, with the same prerequisite, the working-hours averaging system over the span of one month¹⁵ was also approved in 1998. In addition, the same year’s amendment adopted the discretionary work system for management planning workers¹⁶. It was decided that, upon introduction of this system, a unanimous decision would be required by a labor-management committee half of whose members are

principle should be restricted within eight hours per day and 48 hours per week. However its 1987 revision limited them to eight hours per day and 40 hours per week (Labour Standards Law; Article 32).

- ¹¹ The working-hours averaging system over the span of one week allows, based on labor-management agreements, retail enterprises, hotels and inns, and restaurants to flexibly set daily working hours on a weekly basis (Labour Standards Law; Article 32-5).
- ¹² The flextime system allows workers to determine the start and finish times on each working day so that their total working hours will not exceed the range fixed in advance for a certain duration of one month or less (“settlement period”) (Labour Standards Law; 32-3).
- ¹³ Under the discretionary work system, the working hours of a worker who is assigned to duties for which it is difficult for his or her employer to give concrete directives regarding the means of accomplishment and allocation of time due to the nature of the duties should be regarded as the number of hours agreed by both the labor and management, irrespective of his or her actual working hours. The discretionary work system for professionals and experts is applicable to those who engage in specific 19 types of technical operations, including designers and system engineers (Labour Standards Law; Article 38-3).
- ¹⁴ The 2003 amendment of Labour Standards Law stipulated in its enforcement regulations that a majority representative should be elected among workers who are not in the position of supervisor or manager by means of voting, show of hands, etc.
- ¹⁵ Based on the working-hours averaging system in the duration of one month, an employer can have his or her employees work in excess of the legally-binding working hours in specified days or weeks, as long as the average working hours per week over the course of a fixed period of no more than one month do not exceed 40 hours (Labour Standards Law; Article 32-2).
- ¹⁶ Discretionary work systems, are designed for workers who engage in duties of planning, drafting, researching and analyzing matters regarding business operations for which the employer does not give concrete directives regarding such decisions as the means of accomplishment and the allocation of time, since the nature of these duties is such that the methods for their proper accomplishment must be left largely to the discretion of the workers (Labour Standards Law; Article 38-4).

premise of concluding labor-management agreements with majority representatives of workers. Established in 1991, the Law permitted employers to refuse requests for child care leave from specific employees, as long as they have reached labor-management agreements with majority representatives of workers. Furthermore, its 1995 and 2004 amendments also allowed employers to refuse requests for family care leave and child nursing care leave from specific employees in the above-mentioned years respectively, again on condition that they have reached labor-management agreements with majority representatives of workers.

The revision of the Worker Dispatching Law in 2003 stipulated that a company supplied with dispatched workers should fix the term of contract in advance when it intends to hire dispatched workers for more than one year and up to three years. In that case, it has to inform the majority representative of workers of the desired term and ask for his or her opinions. This is based on the following idea: “As the term which can be considered temporary or tentative apparently varies depending on the situations of the company supplied with dispatched workers, it is appropriate for the employer of the hiring company to individually judge if the term can be actually considered temporary or tentative even when it exceeds one year, after listening to opinions from the majority representative of employees working in the same company.”

When the Law concerning Stabilization of Employment of Older Persons was revised in 2004 (enforced in April 2006), it was stated that, in cases where the employer fixes the retirement age at under 65 years old, he or she should conduct any one of the following measures, in order to secure stable employment for older workers until the age of 65: Raising the retirement age, introduction of a continuous employment system, or abolition of the retirement age. In relation to this rule, it was also stipulated that employers can be regarded as having implemented a continuous employment system when they have designated standards concerning older persons who are subject to the continuous employment system and introduced a system based on the said standards, under a written agreement concluded with majority representative. This is based on the following idea: “In respect of the continuous employment system, as it is sometimes said that a uniform legislation cannot always properly reflect each company’s management strategies and/or labor-management relationships, it is appropriate to allow companies that have

designated standards concerning employees who are subject to the continuous employment system under a labor-management agreement to introduce a system applicable to workers who meet the said standards, so that companies can flexibly respond according to their individual circumstances incorporating innovative approaches adopted by both the labor and management.”

Figure 7 contains legislations since 1987, which are associated with the majority representative system or labor-management committee. The majority representatives system stems from the original articles in the enactment of the Labour Standards Law in 1947. The Law obliged employers to conclude and report to the authority an agreement concerning overtime work and work on holidays with “a labor union organized by a majority of the workers at a workplace where such a labor union exists or with a person representing a majority of the workers at a workplace where no such labor union exists,” as well as to conduct hearings from the majority representatives of workers when work rules are newly set or modified. Afterwards, regarding this majority representative system, only some regulations were added in the 1952 revision of the Labour Standards Law and a few rules were newly established in other acts than the Labour Standards Law, until in 1987 when the Law was amended to introduce a flexible working hour system involving labor-management agreements with majority representatives of workers. Following this amendment, as observed in recent major legislation, it seems that the existence of the majority representative system is almost always taken for granted, which, one might think, could be in inverse proportion to the actual tendency of decline in the unionization rate and decrease in union members.

It can be assumed that the diversity and complexity surrounding corporations and workers will increase on. A major challenge is how to accommodate such diversity and complexity surrounding enterprises and workers, which go beyond conventional and uniform regulations, to worker protection laws that stipulate minimum standards for labor conditions. The institutions such as labor-management agreements with majority representatives and the labor-management committee, which are established specifically for that purpose, could have important implications as a framework to provide workers with opportunities to express their opinions, under the current situation where the presence of labor unions is weakening.

appointed by a majority representative of workers, and that decisions made by this committee can be substituted for labor-management agreements with majority representatives concerning working hours. In 2003, the range of enterprises applicable to the discretionary work system for management planning workers was expanded, and one of the requirements imposed on the said labor-management committee was also relaxed (from a unanimous consent to a four-fifths agreement).

As the background of making working hours more flexible, the uniform regulations cannot easily conform to, for instance, specificity of industries, circumstances of individual corporations, and diversification of workers as well as employment patterns. Introduction of flexible working hours makes it possible to ease rigid standards and to regulate with respect to real situations in companies and workplaces. What is worth noting is that, in order for a workplace to adopt a flexible working hour system, a labor-management agreement with a majority representative or a decision made in a labor-management committee is required. To put it differently, in the process of introducing a flexible working hour system to workplaces, labor-management agreements with majority representatives and labor-management committees, both of which are distinct from labor unions, has been introduced.

In an attempt to improve workplace conditions, including working hours, in order that they can give consideration to workers' health and lifestyles and conform to a diverse range of employment patterns, the "Special Measures Law on Improvement of the Setting of Working Hours, Etc." was enacted in 2005 (enforced in April 2006). This allows decisions reached in the "committee on improvement of working hours" to substitute for labor-management agreements with majority representatives concerning working hours and other similar arrangements. It was also stipulated that, in workplaces where the "committee on improvement of working hours does not exist", "the health committee" or "safety and health committee" established according to the Industrial Safety and Health Law can play the role of the said special committee, on condition that such committees satisfy certain requirements. One of these requirements is that at least half of the total committee members are appointed based on recommendations from majority representatives of workers, and that they are assigned to research and deliberate on issues regarding improvement on working hours, etc. and then to present their views to the employers.

The Child and Family Care Leave Law also relaxes uniform rules on the

Figure 7: Legislative movements since 1987, concerning the majority representative system, labor-management committee, etc.

1987	Revision of Labour Standards Law	Labor-management agreement on working hours averaging system Labor-management agreement on flextime system Labor-management agreement on discretionary work system for professionals and experts
1991	Establishment of Child Care Leave Law	Labor-management agreement
1992	Establishment of Shorter Working Hours Law	Shorter working hours promotion committee
1995	Revision of Child and Family Care Leave Law	Labor-management agreement
1998	Revision of Labour Standards Law	Labor-management agreement on working hours averaging system Labor-management committee on discretionary work system for management planning workers
2003	Revision of Labour Standards Law	Expansion of planning workers companies applicable to discretionary work system for management planning workers Relaxation of decision requirements in labor-management committees
	Revision of Shorter Working Hours Law	Relaxation of decision requirements in shorter working hours promotion committee
	Revision of Worker Dispatch Law	Hearing from majority representatives
2004	Revision of Law concerning Stabilization of Employment of Older Persons	Labor-management agreement
	Revision of Child and Family Care Leave Law	Labor-management agreement
2005	Revision of Shorter Working Hours Law	Committee on Improvement of Working Hours
	(Law on Improvement of Working Hours, Etc.)	Health committee in compliance with requirements

5. Summary of Issues and Reviewing Direction

(1) Decline in the unionization rate and decrease in the number of union labor members

The necessity of labor unions remains unchanged, and their positive effects cannot be denied. In the system of determining labor conditions, they have played a significant role in obtaining better working conditions than minimum standards through negotiations with the management. Their roles cannot be overlooked. Rather, expectations are still high for labor unions in the system of determining working conditions, and it is desired that they restore and expand their power of influence and use their energy to improve working conditions

exist.

(2) Responses towards diversity and complexity of enterprises, workers, etc.

It is also time for significant change for worker protection laws, which are one of the two major pillars of the system to determine working conditions. Traditional labor laws regarded workers as a collective mass, members of which share an equal and uniform nature. This means that they made uniform regulations, having mainly blue-collar workers as their targets. Today, however, the core of the industry has shifted from the secondary to the tertiary sector and many workers have obtained white-collar jobs. Moreover, employment patterns have diversified and human resources managements have been individualized. It is becoming more and more difficult for laws and regulations to establish a uniform set of standards that can cover every case and occasion, as industry types, job descriptions, employment and work styles, and personnel management methods all vary to a great extent. Even in such surroundings, it becomes important to set up appropriate criteria and to oblige employers to abide by them, by giving some flexibility to these criteria so that they can accommodate various circumstances of individual workplaces and workers through legitimate procedures.

Under the Labour Standards Law, flexible working hour systems, including the working-hour averaging system, flextime system, and discretionary work system have been already acknowledged, with a prerequisite of labor-management agreements with majority representatives or decisions by labor-management committees. In a similar manner, legislation that can conform to workplace situations and workers' realities after reflecting opinions from employees via specific processes is now expanding into other fields.

The modern labor laws —not only in the Labour Standards Law but also other acts— increasingly accept flexibility according to practical situations of workplaces and workers, under condition of concluding labor-management agreements with majority representatives of workers and obtaining decisions in labor-management committees. These laws require consensus from workers to lift uniform regulations. This, at the same time, could have great implications when it comes to designing a new system to reflect workers' thoughts in response to the decline in the unionization rate and decrease in the number of union members.

(3) Considerations towards small and medium-sized companies, micro enterprises, and non-regular workers

Although partially overlapping with the above-mentioned points, I would like to highlight once more the fact that the presence of labor unions is extremely weak among small and medium-sized companies and micro enterprises. This does not only mean that it is necessary to envisage the creation of a system to enable employees to express their opinions, which can also work in small and medium-sized companies and micro enterprises. On top of that, a decline in the functions of the collective system of determining working conditions—due to the decline in the unionization rate and decrease in union members—will lead to intensifying the importance of minimum standards fixed by worker protection laws, especially for the sake of employees who cannot expect maintenance and/or improvement of working conditions through such a collective system.

“Employment Strategy for the Future: A Rich and Vibrant Society Where Everyone Can Achieve Excellence and Play a Part in Its Development with Enthusiasm”¹

Koichi Fujii

Research Director, Employment Strategy Section, the Japan Institute for Labour Policy and Training

Atsuki Matsubuchi

Deputy Director, Statistical Information Analysis Department, the Japan Institute for Labour Policy and Training

Toshio Chiba

Senior Researcher, Employment Strategy Section, the Japan Institute for Labour Policy and Training

Introduction: The Purpose of the Study

How to cope with increasingly challenging employment problems has become a major policy agenda in many industrialized nations since the oil crisis. In 1994, the OECD (Organization for Economic Co-operation and Development) proposed a strategic policy aimed at job creation. The EU (European Union) has been formulating and advancing the European Employment Strategy since 1997. Now facing a major historical turning point, Japan also needs to start developing policy based on an employment strategy within a medium and long term timeframe. The Japan Institute for Labour Policy and Training (JILPT) has been undertaking a project called “Research on the Desirable Employment Strategy in Japan” as a part of its Project Research Program (the research period: October 2003 – March 2007). The “Employment Strategy Study Group” at JILPT² has been examining the problem of employment strategy in Japan since December 2004. This is a mid-term report concerning results of the project. We, JILPT researchers, have

¹ This paper is a summary of JILPT Research Report No.68 “*Korekara no Koyo Senrya ku: Dare mo ga Kagayaki Iyoku wo motte Kizuku Yutakade Katsuryoku no aru Shakai*” (*Employment Strategy of the Future: A Rich and Vibrant Society Where Everyone Can Achieve Excellence and Play a Part in Its Development with Enthusiasm*), published in Japanese in June 2006.

² Professor Masahiro Suzuki of Waseda University (Chair), Professor Yasuo Suwa of Hosei University (Deputy Chair), Professor Takao Komine of Hosei University, Professor Michio Higuchi of Keio University, Professor Ryuichiro Matsubara of the University of Tokyo, labor-management specialists, and government officials participated in the study group. Professor Hiroshi Yoshikawa of the University of Tokyo, Professor Katsuhito Iwai of the University of Tokyo, and Professor Masahiro Yamada of Tokyo Gakugei University also attended a meeting of the study group.

written this report on employment strategy based on results produced by the study group.

Part I: Analysis of the Employment Strategy in Japan

1. Analysis of Employment Strategy

Employment strategy aims to vitalize society by stimulating employment. It is formulated to achieve the following two objectives: 1) To ensure coordination among various related policies, including those not directly related to employment. 2) To establish guidelines ensuring effective policy implementation toward fulfillment of policy goals within a given timeframe. When devising an employment strategy, therefore, it becomes crucial to clearly outline policy objectives, which are set according to the strategy's basic principle, and policies necessary for fulfillment of these objectives. Moreover, policy implementation must be guaranteed at the same time.

The environment surrounding the Japanese socio-economic system is going through dramatic changes at present, and Japan faces various challenges in the area of employment as well. Furthermore, the country is expected to experience further dramatic changes in the future. Our analysis focuses on addressing how Japan might effectively meet these challenges in a medium-long term timeframe encompassing the next 10-to 20 years.

2. Purpose and Significance of Analyzing Employment Strategy

1) Cases from Other Nations

As for examples of preceding employment strategies, there are the Jobs Strategy formulated by the OECD in 1994 in order to cope with a structural change of the 1980-90s – chronic unemployment – through advancement of deregulation and a laissez faire approach and the European Union's European Employment Strategy which was formulated in 1997 with a principle of promoting social cohesion and integration through work. Since 1997, there have been indications that the OECD's employment strategy has begun shifting toward the direction advanced by the EU strategy; it has begun including "equity" as a principle which can coexist with "efficiency." This fact is highly significant for analysis of the employment strategy in Japan.³

³ OECD revised its employment strategy in 2006. EU put forth the "Employment Guidelines, 2005-2008" in 2005.

2) Significance of Formulating a Japanese Employment Strategy

There has been a shift in employment policy in Japan. Previously, economic growth continuing since the high-growth era and long-term employment had been the basic premise of Japanese employment policy. Policy had focused on maintenance and stabilization of growth and long-term employment and distribution of wealth. Especially since the 1997 financial crisis, employment policy has come to be based on a premise that available resources such as fiscal resources will be limited. As such policy agendas as fiscal retrenchment, deregulation, and decentralization are advanced, employment policy also has changed its direction toward an emphasis on job creation and efficiency in job mobility. The idea that cost reduction is the most important priority has come to be influential in recent years. On the other hand, however, there are those who call for reappraisal of the so-called Japanese employment practices while concerns about the future such as an increase in non-regular employment – particularly among young people – and a widening gap in economic opportunities appear to be intensifying.

In the future, we expect to see development of the following trends in the environment that surrounds the Japanese socio-economic system: 1) Acceleration of economic globalization and intensification of global competition (even in knowledge-intensive sectors) due to the proliferation of ICT around the world including developing nations 2) Full transition from industrial capitalism, which generates profits through mass production, to a capitalism of diversified knowledge, which generates profits through innovation in knowledge, technology, and skill 3) Increasing constraints upon available resources (such as government finance and labor supply source) due to the progress of declining birth rate, aging population, and population decline.

As these trends continue, human resources will become scarce, and it is likely that the importance of human resources as a source of added value and innovation will increase further more. There is a need for building a society where all individuals can accumulate human resources for generating greater value, work with enthusiasm, are included in society, and realize their full potential. In this regard, it is timely to consider and formulate an employment strategy which makes “people” (or accumulation and effective utilization of human resources), who will constitute the main engine of vitalization of society and economy in the future, its main focus.

In the future, society and economy will take structures that are qualitatively

different from those in the 20th century. For this reason, an approach of developing short-term measures within separate policy areas will not be able to ensure consistency in policy. Through formulation and implementation of an employment strategy, all related policies should be managed in an efficient, integrated, and streamlined fashion within a medium and long-term timeframe.

Part II: Objectives and Basic Direction of the Employment Strategy

1. Basic Principle and Objectives of the Employment Strategy

The basic principle of an employment strategy needs to address a method for vitalizing society and economy with its focus on “people.” This can be realized by allowing everyone to take an active part in society through work, acquire necessary skills anytime and put them to full use, and then transforming improvement of workers’ skills and motivation into improvement of productivity of society and economic growth. For realizing these objectives, it is important to prevent income gaps from widening too much and ensure that workers can enjoy qualitatively continuous employment so that they are able to stay healthy and develop necessary vocational skills.

In short, the aim of the employment strategy should be “To make the people the focus of every policy and to build a vibrant society where everyone is able to improve and realize their potential and participate while maintaining a sustainable livelihood” or, to put it more succinctly, to realize a “prosperous and vibrant society where everyone can achieve excellence and play a part in its development with enthusiasm.”

By emphasizing “participation”, the “quality of employment”, and “realization of talent”, which are key elements necessary for vitalizing society and economy, we have identified the following three headings as the chief strategic objectives toward realization of the principle outlined above:

- 1) To build a highly inclusive society where everyone can play a role in supporting it by fully realizing their professional talent (“creation of a highly inclusive society mainly through employment promotion”) and thereby vitalize and stabilize society and the economy**

In the future, it will be necessary to build a system for effectively utilizing and realizing individual talents while ensuring that certain groups will not be marginalized in the labor market and society. The key is to make sure that as many individuals as possible can get involved and sustain society through

work while leading their lives with a sense of fulfillment.

To this conclusion, it will be important to offer vocational skill development assistance with an aim of helping workers to make proper occupational choices according to their skill and motivation while improving the labor market mechanisms in tandem with such effort. Another important measure is stimulation of demand for labor through various means including promotion of business ventures. It is also important to enhance communications in society in order to encourage people to take part in society. Because Japan’s fiscal and human resources will come under increasing constraint, it will be extremely critical that each local community will take its own initiative in revitalizing itself and their economy.

2) To make people’s career and livelihood sustainable, improve their vocational skills and motivation, and establish work environments which transform improvement in skill and motivation of workers into increased overall productivity (“maintenance of the quality of employment and improvement of incentives to work”)

If we want to continue expanding the pool of high quality labor force and raising labor productivity, it will be important to ensure that all individuals can sustain their lives economically and professionally. It will also be important to improve their skills and motivation and build a system in which improvement of individual skills and talents can lead to improvement of overall productivity.

It is therefore crucial that, at every stage of their professional life, all workers can develop professional skills to respond to changes according to their overall life plan. They should be able to stay healthy, improve their level of happiness by maintaining a balance between work and personal life, and hence enjoy a sense of fulfillment of life overall. Moreover, it will be important to ensure that excessive socio-economic disparities will not lead to permanent social stratification or a decline in motivation to work and social participation among certain groups.

3) To ensure that individuals can fully develop their career at their own initiative while the risk of career termination becomes unavoidable in the rapidly changing world (“career development assistance based on the career rights concept”)

Based on the idea that companies should determine how they manage

human resources according to their business needs, vocational skill development in Japan has traditionally centered around corporate organizations. Such approach remains important, but a vocational skill development model focusing on realization of individual abilities is becoming increasingly important as the sectors that value individual creativity expand. There is a need to devise professional skill development policy that is in line with the current situation by combining public assistance, mutual assistance, and self-support in a balanced fashion (See Chart 1).

2. Creation of a Highly Inclusive Society through Promotion of Employment

1) What is a “Highly Inclusive Society”?

If the economy and society were to be vitalized, the number of those who support them must be increased. For stabilizing social and economic systems, likewise, it is important to facilitate smooth communications in society, let everyone become part of society in some way, through work or otherwise, and ensure that no one will be socially marginalized.

Encouraging social participation outside work and employment is a basis for establishing a society that is supported and participated in by people with different individual values and ideas. Such social participation can play an important role in vitalizing and stabilizing our society by fostering a sense of shared problems and mutual understanding while our society becomes more complex and economic competitions intensify as a result of globalization and the spread of ICT.

Facilitating communications in society is a basic condition for allowing each of the main actors – the central government, local government, businesses, labor unions, NPOs, and citizens – to take actions at its own initiative in dealing with the problem of employment.

2) Issues and Policy Direction toward Realization of a Highly Inclusive Society

We have identified the following objectives toward realization of a highly inclusive society: i) Promotion of social participation through work ii) Maintenance and creation of employment opportunities iii) Development of a safety net for employment and work iv) Achieving social participation by all and promoting social dialogues v) Employment strategy for local communities.

for workers. Nonetheless, looking at their current activities, we must admit that it is difficult to foresee their influence being recovered any time soon. On the contrary, it can be easily imagined that the decline in the unionization rate and decrease in the number of union members will be further exacerbated. It should also be noted that the presence of labor unions is extremely weak, particularly in small and medium-sized companies and micro enterprises.

Given these circumstances, it is possible, both theoretically and from the viewpoint of labor movements, to consider reinforcement of labor unions by reviewing labor-management relations laws with the aim of preventing the unionization rate and number of union members from falling. From what we can see in their actual situations, however, it would be difficult to achieve social consensus for such measures. The existing labor-management relations laws offer systems to help labor unions expand their power of influence, by, for instance, protecting labor unions' right to organize with the system to deter unfair labor practices and by granting general binding force to labor arrangements. In this light, the question is rather how can labor unions themselves regain and enhance their presence by making the most of the already-established labor-management relations acts.

The labor legislation in our country faces scores of issues, which urge us to examine restructuring of the system to determine labor conditions. These issues include, in particular, the two most important and vital challenges with respect to the basic framework of the system of determining labor conditions: One of them is the shrinking collective negotiation system to set up working conditions due to the decline in the unionization rate and decline in union members, and the other is development of individualization of personnel and labor management in private enterprises and diversification of employment patterns and workers.

We are forced to admit that it is difficult to expect labor unions to rapidly regain their power. In arguing the restructuring of the said system, it would be more practical to assume further decline in the unionization rate and decrease in union members to be the inevitable trend. When the overall system of determining working conditions is under review, we must pay close attention to labor unions' realities, and not their idealistic theories. In other words, we should now realize that it is time for us to give serious consideration to a new system to enable workers' voices to be reflected which should have as much practical influence as labor unions even in the case where trade unions do not

Chart 1 Employment Strategy for the Future: A Rich and Vibrant Society Where Everyone Can Achieve Excellence and Play a Part in Its Development with Enthusiasm

Major Future Changes in the Environment surrounding the Japanese Socio-economic System

- Rapid development and global dissemination of ICT& intensifying global competition in knowledge/technology-intensive sectors due to the progress of **economic globalization**
- Shift from industrial capitalism to a **capitalism of diversified knowledge** (→ Increased need for continuous innovation = Increased Importance of knowledge, technology, and skill)
- **Increased constraint on resources** such as supply of the work force and government finance due to overall population decline

Direction of Response to the Changes

- It is important to accumulate and effectively utilize human resources which will be an extremely important source of added value.
- It is important to encourage more people to become supporters of society, rather than its dependents, and ensure that no one will be excluded from society.
- It is important to ensure that people can develop skills and contribute to sustainability of society and economy as required skills become increasingly sophisticated.
- ◎ “People” should be the focus of all Japan’s policies since they are the most important source of economic vitality.

Formulation of Employment Strategy Based on a Medium-Long Range Timeframe

Basic Principle : To make “people” the focus of every policy and create a vibrant society where everyone can improve and fully realize their potential and participate while maintaining a sustainable livelihood

Policies for Realizing the Basic Principle of the Employment Strategy (Basic Policy Direction)

- 1 To build a highly inclusive society where everyone can be part of and play a role in building it by fully realizing their professional talent and thereby vitalize and stabilize society and the economy
- 2 To make people’s career and livelihood sustainable, improve their vocational skills and motivation, and establish work environments which will transform such improvement into increased productivity
- 3 To ensure that individuals can fully develop their career by their own initiative while the risk of career termination is becoming unavoidable in the rapidly changing world

[Three Pillars for Realizing the Principle of the Employment Strategy]

- * Enhancing (public) assistance for groups whose human resource development and utilization infrastructures are weak (those with no work experience and non-regular workers) is effective for the purpose of effective utilization of human resources.

i) Promotion of Social Participation through Work

In respect to those who are capable of working, it is essential that they can provide for themselves through work and participate in society as its supporters rather than dependents. In the coming age of the knowledge-intensive economy, we will have to be able to provide skill development opportunities to individuals according to their needs and secure as many employment opportunities as possible for those wishing to work according to their skills and motivation. Such a measure will be of significance as we face a declining birth rate, aging population, and full-scale population decline.

Making various institutions which can affect labor market behaviors (such as the tax and social security systems) conducive to promotion of employment is among the important specific measures for realizing the objective. It is also important to ensure that labor demand and supply are matched most effectively by strengthening the labor supply-demand adjustment mechanism as well as to improve vocational skill development systems (including skill evaluation systems) with an aim of fully utilizing people's potential and motivation.

In the future, we will need to put forth policy for promoting employment among young people, women and elderly who are relatively underrepresented in the labor market. The vocational development systems and labor demand-supply mechanism must now be enhanced in such a way that they can provide a social safety net fit for times of great change. With respect to disadvantaged groups who are willing to work such as the chronically unemployed and young people who have never been employed (the so-called NEET), there will be an increasing need for providing them with opportunities to develop practical vocational skills on the job by changing their attitudes toward work as well as inducing necessarily changes on the demand side (i.e. companies).

ii) Maintenance and Creation of Employment Opportunities

Economic competition continues to intensify while the cycle of technological innovation is getting shorter and shorter; corporate organizations are expected to have a shorter lifespan in the future. Securing employment opportunities including those created by promotion of business ventures will also be important for promoting social participation through work in such

environment. It is hoped that there will be a more proactive employment policy which emphasizes support for job opportunities outside conventional employment – those including independent business ventures – in addition to expanding employment opportunities offered by existing corporate organizations.

One needs to solve a number of problems such as how to acquire business management expertise, develop products, and develop and maintain human resources before starting a business venture. For this reason, public institutions including local government and research institutions such as universities need to provide appropriate assistance to those who wish to start their own business in cooperation with each other.

iii) Development of a Safety Net for Employment and Work

In order for everyone to be able to take part in society through work, there must be a basic mechanism for allowing anybody seeking employment to easily reach employment opportunities without any restrictions. In Japan in the past, based on the practice of long-term employment, the safety net was built around assistance for sustained employment at corporate organizations. From now on, it will be increasingly crucial to build a safety net primarily aimed at helping workers avoid unemployment even when they move within the labor market and minimize the duration of unemployment for those who became unemployed. Fostering stable employment particularly by reinforcing the external labor market and linking the external and internal labor markets together will be important.

Therefore, facilitating efficient use for human resources will be an extremely important task. Such effort will involve improvement of mechanisms for aiding the external labor market to function smoothly. This means that evaluation of professional skills should be effective; workers should be provided with appropriate vocational development opportunities when they move in the labor market and accurate information about the labor market. In tandem with these efforts, the labor supply-demand adjustment mechanism should also be reinforced. Special care should be taken to allow workers to improve their skills by moving in the labor market particularly when the external labor market is seen as an important safety net. With regard to disadvantaged groups such as young people without professional experience, the elderly, and those who have been unemployed

for a long period of time, special care is needed to make sure that employment of these groups can bring benefits to both the demand and supply sides.

Concerning the safety net in an “age of diversified knowledge and global economic competition,” it will be more important than ever before that the safety net’s mechanisms for enhancing the quality and effectively utilizing human resources (such as vocational skill development and evaluation) can realize their potential.

iv) Achieving Social Participation by All and Promoting Social Dialogues

Maintenance of social dialogues is the most basic element in a process of building consensus and fostering mutual understanding in society. Maintaining such dialogues is fundamental to promotion of various modes of social participation including participation through work; it is an indispensable element in successful management of social and economic systems.

The diversification of our social structure, including our attitudes toward work and employment, is expected to continue much further in the future. In order to keep society-functioning smoothly with stability in such an environment, it will be important to take special measures so as to facilitate effective dialogues among its constituents (government, localities, businesses, NPOs, and individual citizens) and allow them to form a collective problem consciousness. Social dialogues at all levels can provide a basis for stabilization of society and economy by helping society to collectively share concerns, raise awareness of each citizen, and facilitate cooperation in preventing social problems.

v) Employment Strategy for Local Communities

Because of the increasingly constrained central government finance and the advance of decentralization policy, redistribution of wealth from center to regions through public work programs in Japan has been reduced in recent years. This reduction is one factor negatively affecting economies and employment in regions with few industries that have a high capacity for employment absorption or are competitive. Particular attention should be paid to the fact that a lack of employment opportunities can potentially undermine the vitality of local communities in the long run and widen

economic and employment gaps among regions in the future.

Each community will have to play its role in advancing the goals of realizing a society in which everyone can enjoy a relaxing and affluent life and building vibrant local communities with their own unique characters. Also at local levels, therefore, it is necessary to put in place consistent medium and long-range policies with the three objectives below and advance vitalization of local communities with a focus on vitalization of lives of people. The three objectives are: 1) Maintaining sufficient (both qualitatively and quantitatively) employment opportunities and ensuring that workers are able to enjoy a relaxing and rich life so as to promote social participation through work and increase those who can support local communities 2) Putting local communities in charge of the task of vitalizing their economies 3) Building a foundation for a highly inclusive society by facilitating social dialogues in local communities.

Each local community will need to devise an employment strategy and take measures according to its local needs while maintaining consistency between their measures and the direction of national employment strategy toward the goal of developing a highly inclusive society through promotion of employment.

In order for a local employment strategy to take full effect, it must be accompanied by organized efforts for fulfillment of strategic goals and smooth implementation of related policies. For this reason, governor and other local leaders must exercise full leadership in devising a local employment strategy. Leaders must start devising specific strategic objectives and necessary measures after securing participation and cooperation of local stakeholders of all levels (labor unions, NPOs, local residents, government agencies, and research organizations) on the basis of the accurate correspondence of information between these bodies..

Part III: Maintenance of the Quality of Employment and Improvement of Incentives to Work

1. Need for Maintaining the Quality of Employment and Improving Incentives to Work

Companies need workers to generate higher capacities and increase their value for the purpose of responding to technological innovations and changes in industrial structures. Workers need to be able to respond to changes in

general attitudes toward work and find fulfillment.. It will be important to create work environments that can improve skills and motivation of workers by incorporating views of both companies and workers and enable workers to find fulfillment in their work. Realization of such environments can raise productivity of companies and in turn contribute to vitalization of the Japanese economy and society.

For the goal of maintaining the vitality of the Japanese economy and society in the face of population decline, it is important to; advance employment and social participation of those who are willing and able to work and raise productivity by expanding the labor pool, utilizing limited human resources efficiently, and bringing out and enhancing motivation and creative skills of individual workers.

Maintenance of the “quality of employment” (= development of a work environment conducive to improvement of motivation, satisfaction, and abilities of workers) and improvement of incentives to work (= enhancement of motivation and abilities of workers) are goals of labor policy. They enable society and economy to maintain their vitality and enjoy sustained growth. Individuals, companies, and government should take appropriate measures for realizing these two goals.

What Is the “Quality of Employment”?

Below are important indicators for showing that the quality of employment is at a high level:

(1) A sufficient number of employment opportunities are maintained (2) Basic and minimum work standards are met (3) Work conditions (wage, work hours, health and safety, and welfare), content of work, and human resources management are such that workers can fully utilize their motivation and skills according to such factors as their talent and life stage and find fulfillment in their work (4) The balance between work and personal life (work-life balance) is maintained (5) Workers can access vocational skill development opportunities and career development assistance appropriate for their level of motivation and performance (6) Workers can receive equal treatment and balanced treatment based on their motivation, skills, and performance, and choose different formats of work (choices over diverse work formats) (7) Workers can receive evaluation and treatment that are fair, transparent, and credible (8) There are

significant communications between management and workers as well as in workplace; labor-management relations are good.

It is also important that workers are able to find fulfillment in areas in life other than work (home, family, and local community) and value things other than work. The quality of life (improvement of living standards) is an important issue.

Productivity, Corporate Performance, and the Quality of Employment

Improving productivity is important also for the purpose of vitalizing the Japanese economy and society faced with the declining birth rate, aging population, and population decline. In increasing productivity, paying attention to improvement of Total Factor Productivity (TFP) is particularly important. Technological innovations, improvement of corporate structures and organizations of work, nurturing of talents responsible for technological innovation, and full realization of individual talents and skills are crucial for this purpose. A key is to create a “positive cycle of the quality of employment and productivity” in which the company improves motivation and skills of workers through employment management innovations and increase its productivity through development and proper assignment of human resources enhancing its corporate performance further and in turn its ability to make further human resource investments.

Companies that are active in skill development and employment management innovation tend to perform well and stay competitive; workers at such companies tend to be highly motivated and satisfied. Well-performing companies with high labor productivity tend to keep their workers highly motivated and happy and be active in making innovations in their employment systems, providing skill development, and introducing measures to provide a worker-friendly work environment. We can assume that improvement of worker motivation and corporate performance can affect each other positively. Moreover, companies that have a high level of female worker representation and are active in skill development of women tend to perform well. By utilizing appropriate treatment systems, skill development, and promotion schemes, companies can also raise the level of motivation and satisfaction among non-regular employees.

2. Maintenance of the Quality of Employment and Improvement of Incentives to Work: Issues and Policy Direction

Securing Diverse Work Format Options

ICT (Information Communication Technology) is becoming more wide spread, and the proportion of service industries in economy is increasing. There is a shift toward greater value products in industrial production while competitions among companies are intensifying. The proportion of women and elderly in the labor force is increasing. Employment needs of workers and companies are becoming increasingly individuated and diversified. Reflecting these above trends, “diversification of work formats” (diversification of forms of employment and work into which this study includes social participation in a very broad sense such as involvement in local community) and individuated treatment (individuated and diversified work assignments and wage/personnel systems, flexible work hours etc.) are progressing and will continue to do so in the future. It is important to build a social system in which diverse individuals can choose diverse work formats according to their abilities and motivation (society that guarantees diverse work formats).

For maintaining such diversity in work formats in substance, we will need to develop employment systems which reflect the desire of workers, accommodate movements between regular and non-regular employment (for example, a system that promotes non-regular employees to regular employees and employment formats that are halfway between non-regular and regular employment such as a regular employment scheme with shorter working hours), build social systems that do not discriminate between any particular work formats, develop flexible work hour schemes, and provide career development, treatment, and skill development opportunities appropriate for motivation, work formats, and duties of individual workers.

Concerning the problem of how to balance treatment of regular workers and non-regular workers, companies can raise the level of motivation among non-regular workers and bring out their full potential by maintaining a rational treatment system which takes into account employment status, motivation, abilities, performance, and contents of work of individual non-regular workers while paying attention to the balance between treatment for non-regular workers and regular workers. Such policy can enhance a consensus of both regular and non-regular workers and contribute to vitalization of companies.

Work formats that do not entail employment can contribute to agendas

such as flexible work styles that can suit different life stages, a better balance between work and family life, and vitalization of local communities. It is therefore important to improve work environments for those who engage in these types of work.

Clarification of Labor Contract Agreements

It is important to secure substantial equality between labor and management, determination of work conditions by consent, fairness in work conditions, and prevention and immediate resolution of labor disputes by clarifying labor contract agreements, whose purposes are to ensure that workers engage in work by consent and to prevent labor disputes. Moreover, it is important to build work environments in which workers can engage in work feeling satisfied and secure along with facilitating immediate resolution of labor disputes by creating a labor counsel system where the third party mediates disputes in a fair manner.

Foundations of Policy Management: Coordination of Policies and Measures for Improving Incentives to Work

Coordinating individual policies is crucial. Concerning labor, enhancing work incentives and preventing particular groups from suffering disadvantages in the labor market are important. The basic principle here is to build a system that is neutral to labor mobility and movements among different employment formats. Policy for encouraging those who are willing to work to participate in the labor market according to their abilities, including promotion of the shift from dependence on welfare to employment, is important. Policy for inducing companies to promote employment should also be considered. Safety net and equal opportunity measures are important for maintenance of the “quality of employment.” A trade-off relationship does not necessarily exist between improvement of labor or social security systems and improvement of employment or economic performance. In some cases, they can have positive impact on each other.

3. Need for Realization of a Professional Life Style in Which Work and Personal Life are Balanced.

Employment has come to take place under diverse conditions and more flexible work hour schemes. This is creating such problems as fatigue from

long work hours, increased stress, a decline in time spent for personal activities and education, disparity between regular and non-regular workers concerning treatment and employment opportunities, difficulty in maintaining a balance between work and personal life as well as between work and family, and a lack of skill development opportunities. The proportion of those who work over sixty hours per week is increasing particularly among male regular workers in their prime.

One concern is that workers have limited and rigid choices of work formats and that this is preventing them from realizing their full potential and limiting abilities of companies to generate greater value. For this reason, realizing a “balance between work and personal life” – freedom for each worker to combine work with non-work (family, community, and educational) activities in different ways in each phase of professional life and choose balanced work formats safely and fully informed – is important.

In the short term, companies might have to shoulder the costs of fostering such a balance between work and personal life, but it will create significant benefits. For workers, freedom to choose work formats which they feel content and secure with will allow them to allocate their time among work, personal activities, and skill development in a manner suited for their individual life stage. They will be able to increase their endurance both in their professional and personal life and reach their full potential in excellent physical and mental conditions. Companies can expect improvement in productivity from full realization of motivation and abilities of workers, and this in turn can contribute to vitalization of their organizations. For society as a whole, it will foster fulfilled family life, help vitalize local communities, contribute to continuous growth of society, and facilitate nurturing of future generations. Furthermore, it will help us in realizing a highly inclusive society in the face of a declining birthrate, aging population, and population decline. In order to realize a balance between work and personal life, workers must be able to have a range of choices concerning work hours and work location and receive fair treatment for each different work format. Moreover, workers, companies, and government must each work toward establishment of a system where workers can freely alternate between joining the workforce and receiving education or training at any stage in their life.

4. Need for Building a New Employment System

Employment policy at many companies still includes maintenance of long-term employment, and is popular also among workers. Companies are reviewing the seniority system and introducing performance-based wage and treatment systems. They are also seeking to link their human resource and business management strategies together more closely and advancing the use of external human resources. A number of companies are trying to combine long-term employment with performance-based human resource policies. Such companies tend to be performing well and have satisfied employees. The Japanese employment system has been created through efforts of both labor and management. The system seems to possess positive features that should be retained. It has positive characteristics such as stability of employment facilitated by the practice of long-term employment and effective human resource management. It fosters effective teamwork by promoting information sharing between labor and management and communications at the workplace. As the Japanese socio-economic system goes through transformation, it will become necessary to develop a new system which can accommodate diversity while incorporating the merits of the old one.

5. Problem of Disparities and Balanced Treatment

Also from the perspective of “employment strategy”, it is important to prevent deterioration of incentives to work by preventing perpetuation of disparities, fostering “equal opportunities”, and realizing a society where people are able to rebound from economic and professional failures. Furthermore, effective measures should be taken so that disparities will not widen too much. Perpetuation or excessive widening of socio-economic gaps can lead to a rise in social instability, a decline in motivation to work, and a decline in vitality of society and economy. Moreover, the existence of the middle class is critical to social stability.

We must be alert about such trends as expansion of the low-income class, widening of disparities among young people, and trans-generational replication of socio-economic disparities in which children inherit the same pattern of income and economic disparities from their parents through education and employment.

Important measures for responding to this problem include creation of a mechanism that enables people to take on a new challenge (and try again even

when they fail), prevention of expansion of the poor and reduction of their size, and development and maintenance of proper conditions for employment. For accomplishing these goals, improvement of the social security system, skill development, and safety net mechanisms including employment placement systems are important. Equal opportunities must be guaranteed. Fair treatment corresponding to different motivation levels and work formats (balanced treatment), fair performance evaluation systems, and the income redistribution policy are also important. Enhancement of the minimum wage system should also be considered as a part of the efforts in developing a safety net. Support for business ventures will also be needed. The key is to balance efficiency and equity. For individuals, improving vocational skills provides the best safety net; it is thus particularly important to provide and improve opportunities for vocational skill development. It is important to discuss how government, individuals, NGOs, and the school system should share and allocate different functions of the safety net, but the role of governmental efforts will be more critical than ever. Moreover, shift from reliance on welfare to employment should be advanced, and government, labor, and management need to promote social integration of the low-income class and groups that are disadvantaged in the labor market. It is important to create a society where worker performance is valued and rewarded in a variety of ways. It is also important to build a system which enables workers to choose diverse work formats that suit their needs.

In addition, it is important to boost demand and curb anxiety about the future by implementing appropriate macro economic measures for improving work environments and eliminating disparities.

Direction of Policy Responses

Employment opportunities with characteristics of both regular and non-regular employment, which are becoming more common among young people, and policy response to the expansion of the low-income class are already becoming urgent issues at this point in the face of the progress of diversification of employment.

There are four important measures for improving the “quality of employment” for non-regular workers: 1) Creation of a system which enables movements from one employment format to another within the same company as well as between different companies 2) Realization of balanced (and yet

rational) treatment for different employment formats 3) Commitment by society including corporations to career development of non-regular workers 4) Reassessing how work conditions for non-regular employees are determined and providing treatment which workers can be satisfied with.

In addition, it is important to shift people away from dependence on welfare to employment and improve the social security system. A society where even low-income class families can have a descent life, including education for their children, must be realized. It is important to prevent excessive disparities and expansion and perpetuation of disparities originating from family backgrounds. More robust housing, social welfare, and education policies aimed at the promotion of equal opportunities are necessary. So is reassessment of the redistributive mechanisms in the tax and social security systems.

Part IV: Career Development Assistance Based on the Concept of Career Rights

1 Career Development in the People-centered Era

One of the basic conditions for fully bringing out talents of workers is to allow each worker to work with a strong sense of motivation and satisfaction. For meeting this condition, it is important that workers can effectively develop and accumulate skills and professional experiences while checking their professional development against their personal values. In other words, what matters for individual workers is whether they have built a good career or not.

The present report defines “career” as a “chain of professional experiences, which involves the full range of a person’s life, and internal process through which the person assigns meanings to the experiences.” In other words, it defines the concept broadly as a “chain of professional experiences” instead of limiting it to vertical movement such as promotion.

Career occupies a large place in a person’s life. Formation of career can have an impact of how people view their lives. It is difficult to determine externally if someone is happy with his or her career, and the answer is really up to that individual. What is important is that people can find fulfillment in a process of tracing the history of their professional life and envisioning the future. Looking back, a person might feel a deep sense of satisfaction over how his or her career has developed up to that point despite having made some mistakes or realize that he or she has been able to grow through his or her

professional experiences. People can enhance their chance of self-realization by building a career that can elicit such emotions.

Usually, career is something that cannot be shaped only by individual motivations of workers. It is formed through a process of negotiation between motivations of workers and what their organizations or companies demand. Those who work within organizations develop their skills by considering needs of the organizations. Individuals can receive recognition as someone indispensable from their organizations and society and find their way toward self-realization through work only by interacting with them. The process of such interaction is probably becoming more important today when economic and social changes are taking place rapidly. In principle, regular workers engage in this process of interaction with corporations and organizations that hire them. However, non-regular workers tend to lead their professional life without even having any organization to interact with. Thus, it is necessary to pay special attention to the problem of non-regular employees.

2. Shift in the Location of Leadership over Career Development

Japanese companies, particularly large ones, used to maintain employment practices with such features as long-term employment and play a dominant role in stabilizing employment of their employees. However, the future of many companies now seem uncertain; they are faced with an increasingly complex external environment beset with such changes as the progress of globalization, technological innovations, and maturing of consumer culture; and these changes are taking place at rapid pace. In such an environment, having a continuous and seamless career path might become impossible in some cases. The key for individual workers is shifting from being employed by the same one company to steadily building up professional experiences. It is becoming increasingly crucial for workers to take responsibility for their own career instead of relying on their company

Although individuals need to take charge of their own career development, they cannot expect to develop their career through their individual efforts alone. For example, it will be difficult for individuals to secure time for self-motivation without outside help. The role of support provided by companies and society for self-managed career development is significant. Effective career development is likely to lead to improvement of corporate performance. In times of high labor mobility, it can also help workers raise their employability in the labor

market and move out of the umbrella of employment security offered by one single company. If multi-level support provided by companies and society can help workers with effective career development, it will become possible to reduce career losses and increase the number of those who can support society, and more and more individuals will be able to work with vigor and enjoyment.

3. Career Development Assistance Based on the Concept of Career Rights

In the past, workers relied on companies in developing their career while under the system of long-term employment. However, professionally demanded skills are constantly shifting. In order to generate innovations, organizations are beginning to value self-motivated workers. Thus, it is increasingly important for individuals to self-manage and shape their own career by balancing their needs against needs of companies and society.

The “career rights” concept is being advanced now to establish a basic principle and legal basis for promoting education and training which is based on a model where companies assist self-managed career development of individuals. According to the career rights concept, it would be difficult for companies to make unilateral decisions that might negatively affect career development potentials of workers (job assignments and rotations, for example). In such cases, they might need to secure consent from workers. It will be important to provide career development assistance centered on the career rights concept in order to ensure that each worker can work reach full motivation and potential in the face of dramatic changes in the work environment.

Existing circumstances and institutions – self-governance by labor and management most prominently – shape what actually constitute career rights. In reality, however, the career development model based on self-management – including its support mechanisms – has not been adequately developed. There is a serious concern about the challenge non-regular workers and young people with no professional experience face in accumulating vocational skills; these groups are facing a high risk of not being able to fully develop their career.

Taking these issues above into consideration, the basic policy direction should be to support self-managed individual career development through multi-level assistance provided by both companies and society. Effective career development can contribute to improvement of corporate performance. This in turn can bring energy to society and the economy.

As utilization of diverse human resources is likely to become an important

agenda in the future, an increasingly wide range of policy responses will develop regarding the problem of support for career development of non-regular workers and young people with no professional experience. The concept of career rights is particularly important for these groups with respect to a goal of developing their abilities to make a living. It is hoped that these groups and society will work together to advance their career development while paying attention to how policy resources should be allocated.

Conclusion: Toward Establishment of an Employment Strategy for the Future

In the present report, we have put forth the following as the basic principle for guiding the Japanese employment strategy: “To make people the focus of every policy and build a vibrant society where everyone is able to raise and realize their potential and participate while maintaining a sustainable livelihood.” We have identified three important pillars for realizing this principle: 1) Creation of a highly inclusive society mainly through promotion of employment 2) Maintenance of the quality of employment and enhancement of incentives to work 3) Career development assistance based on the concept of career rights. One common point can be made with respect to all of the three goals – public assistance for the disadvantaged groups in the labor market (non-regular workers and those with no work experience) is highly beneficial for fulfillment of these goals as well as the goal of efficient utilization of human resources.

As it is a “strategy”, an employment strategy requires establishment of strategic objectives followed up by through policy implementation and verification and assessment of policy implementation. Moreover, results of such assessment must be fed back into the policy and strategic objectives. We will need to address these issues more thoroughly in our future discussion. The present essay is a mid-term report; we plan to continue our research on the remaining issues and produce the final report of the Project Research during 2006.

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JILPT Research Activities

Plans of Research Projects in FY 2006

The JILPT is carrying out nine research projects during the period of three and a half years from October 2003 to March 2007. The plans of the research projects for fiscal year 2006 are as shown below.

- Geo-structural analysis of unemployment

In fiscal year 2006, we will investigate municipalities that had exceptional success in job creation, and clarify how the programs for industry and job creation were planned and implemented. Moreover, we will examine methods that could be used for stimulating regional communities that were not effective in industry and job creation. We will also work towards preparing the final report.

- Restructuring of the system determining working conditions

In fiscal year 2006, we will continue to investigate the functions and the state of labor unions and the labor-management consultation system. We will also work towards preparing the final report considering the research results we have so far obtained.

- Desirable employment strategy in Japan

In fiscal year 2006, we will examine the labor market structure, social background, and employment-related legal systems in the context of drawing up an employment strategy in our country, and advance research on related individual topics. We will also work towards preparing the final report considering the research results we have obtained.

- Environment containing employment and safety nets which would enable diverse working styles

In fiscal year 2006, we will, taking into consideration the research results we have so far obtained, examine the working environment that makes diverse working styles possible and the safety net provided by the application of labor-related laws. We will also work towards bringing together the results, taking into account the policy directions as well, and preparing the final report.

- Comprehensive analysis of corporate business strategies and personnel treatment systems, etc.

In fiscal year 2006, we will, based on the results obtained so far, work on preparing the final report, which will cover the future direction of Japanese

firms' human resource management and policy challenges.

- Desirable infrastructure development for the labor market regarding vocational ability development

In fiscal year 2006, we will advance research based on the research results we have obtained and work towards preparing the final report, which will cover the challenges in introducing an education and training system in the labor market and policy formation.

- Establishment of a social system which would harmonize private and occupational life

In fiscal year 2006, we will, based on the results we have so far obtained from our survey and research, prepare the final report that will include proposals on how employment, family life, regional communities, etc. should be in balancing one's work and private life and on the necessary employment policy.

- Development of an integrated occupational information database

In fiscal year 2006, we will make required improvements in the system and guidance algorithms for the actual operation and opening to the public of the second prototypes that will mainly be targeted to young, middle-aged, and senior citizens. In parallel, we will prepare occupational information data and a system for assisting the management of the database, and make them open to the public via the Internet.

- Support for the re-employment of middle-aged and older workers who have lost their jobs

In fiscal year 2006, we will, based on the results we have obtained so far, prepare the "Manual for Assisting in Self-Understanding" (provisional title), the Career Insight MC (mid career) system for the middle-aged and senior citizens, and the "Guide to Occupational Counseling" (provisional title), which will be useful in the practical affairs of providing occupational counseling to middle-aged and senior job seekers. Based on these results, we will summarize their interrelations and work towards preparing the final report.

Research Report

The findings of research activities undertaken by JILPT are compiled into Research Reports (in Japanese). Below is a list of the reports published from May to July 2006. The complete text in Japanese of these reports can be accessed from the JILPT website. We are currently working on uploading

abstracts of the reports in English on to the JILPT website as well.

- No. 61 *Human Resource Management of Today's Japanese Firms: Interim Report of the Research Project "Comprehensive Analysis of Firms' Management Strategies, Personnel Treatment Systems, Etc.,* (June 2006).
- No. 62 *Research on Night Work Performed by Young Workers in Various Countries: State of Labor by Children Actors, Etc.,* (June 2006).
- No. 63 *Employment Strategy of the Future: Prosperous and Energetic Society in which Everyone is Shining and Motivated,* (June 2006).
- No. 64 *Balancing Work with Family Life: Childcare and Nursing Care,* (May 2006)
- No. 65 *Research on the Current State of Regional Employment Creation,* (June 2006).
- No. 66 *Development of Tools, Etc. for Supporting the Reemployment of Middle-Aged and Senior Job Seekers: Interim Report of the Research Project "Research on Support for Reemployment of the Middle-Aged and Senior Citizens, Mostly White-Collar Workers, who have been Separated from Work",* (June 2006).

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