

Wage Inequality in Japan, 1979-2005

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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

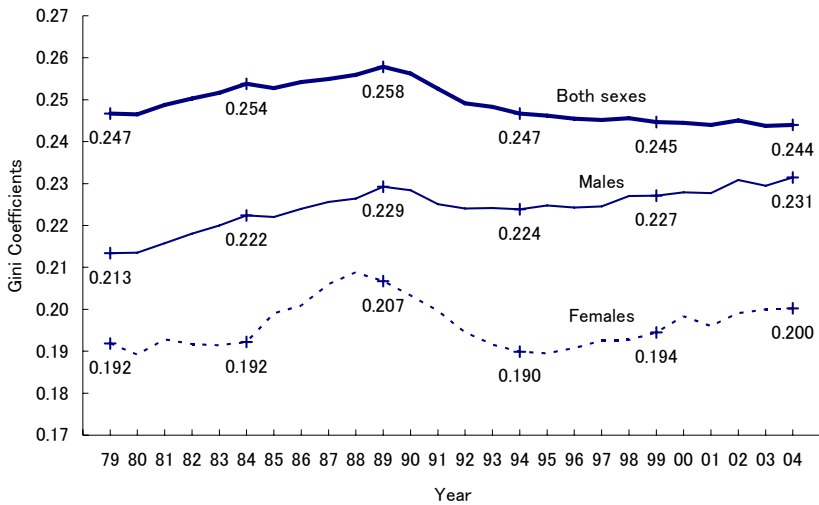
Wage Inequality Using the BSWs Data

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**

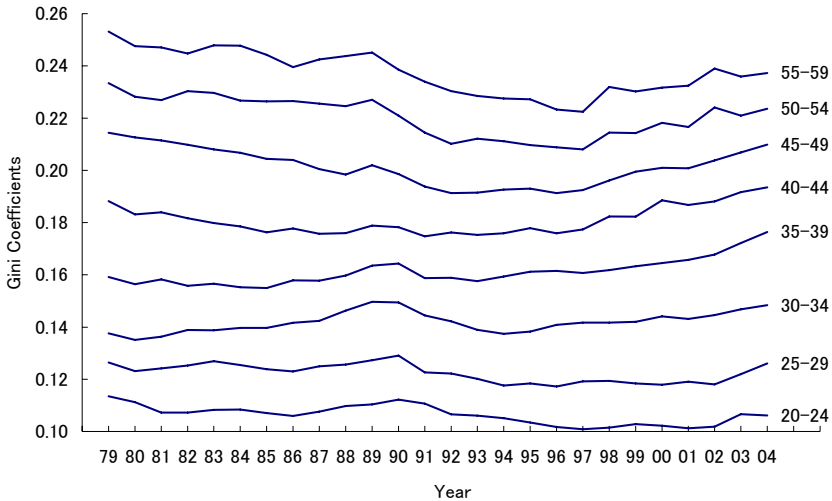


Source: Author’s calculations from the BSWs published data.

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	Δ VL	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	Δ VL	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.

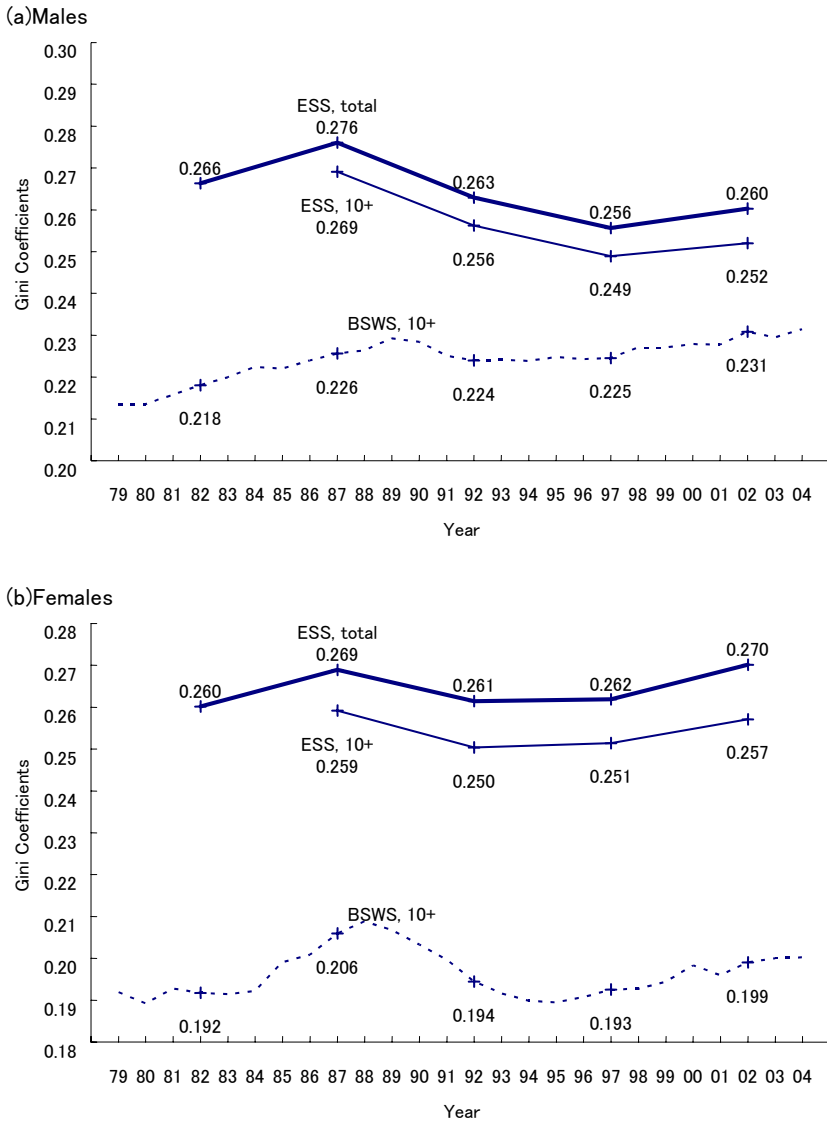
Wage Inequality Using the ESS Data

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

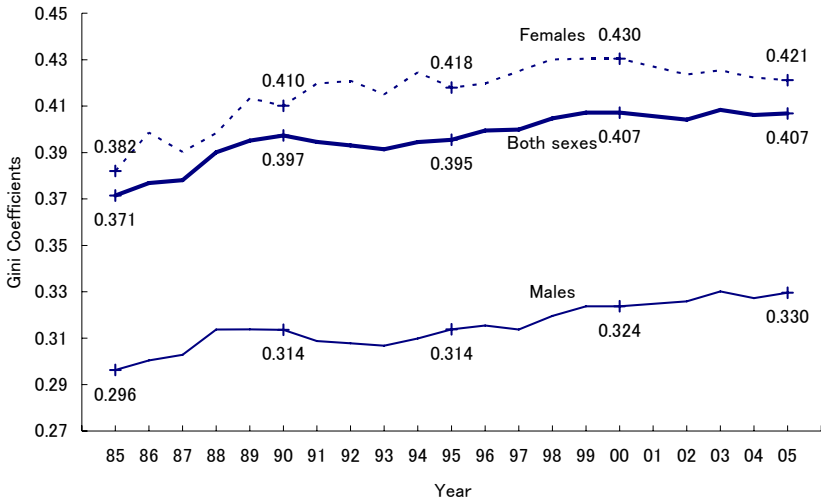
Wage Inequality Using the SSLFS Data

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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