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## The Comparison of Wage Structure of Korea and Japan

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This paper is to compare wage structure of Korea and Japan in terms of seniority pay system. Most large firms usually have incremental pay scales based on seniority. Particularly, it is widely recognized that Japanese firms have incremental wage scales with automatic progression by seniority.

There are a variety of theories and empirical research about why firms have seniority-based pay systems and what kind of effects they have on labor market. Seniority pay is to recoup the investment in training workforce by the firm(Becker, 1964) or to provide incentive to work and not to shirk(Lazear, 1981) or to prevent high turnover workers from applying(Salop and Salop, 1976).

The human capital model, in particular, links wage structure to job training and turnover pattern arguing that wage rises as seniority accumulates relative to other variables, which incurs training of workers within the firm and their consequent

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retention through permanent employment. The most popular explanation for the Japanese steeper age-wage profile(Nenko wage) is also the firm-specific human capital and on-the-job training hypothesis. Mincer and Higuchi(1988) apply this idea to the analysis of the difference in wage structure between the U.S. and Japan. They argue that firm-specific on-the-job training results in relatively steeper wage trajectories in Japan and that it is the basic proximate reason for the strong degree of worker's attachment to the firm in Japan. They also insist that the reason for the emphasis on firm-specific human capital formation in Japan is the rapid economic growth and technical progress. This argument is also found in other papers such as Hashimoto and Raisian(1985) and Collier and Knight(1985).

Korea also experienced rapid economic growth based on technical progress just as Japan. It is known that Korea also has steep wage profile no less than Japan's Nenko wage system. Korea, however, has taken very different form of job training system, which is different from the structured on-the-job training peculiar to Japan(Park and Lee, 1994). Life-time employment practice is not common in the blue collar workers of Korea. The steeper wage profiles seem to have little to do with low turnover rates as well as job training in Korea. The aspects and functions of seniority-based pay could be shaped differently in Korea.

This paper will investigate the difference in the causes and effects of seniority pay between Korea and Japan. Chapter I will present wage profiles in Korea and Japan and their relations with labor turnover. The analysis of wage equations of Korea and Japan in Chapter II will reconfirm the facts found in Chapter I. Chapter III will show the differences in the systems and functions of seniority pay between Korea and Japan in detail. Chapter IV will explain the causes of high returns to tenure and steeper tenure-wage profiles in Korea.

## I . Wage-Profile in Korea and Japan

Previous studies(Kim(1992), Park(1985), Ahn(1982), Koike(1981)) showed that the wage increase of Korea was more seniority-based than those of Japan. The

arguments in these studies, however, were based on the analyses of age-wage profiles rather than tenure-wage profiles using pre-1980 data except Kim(1992). This section presents tenure-wage profiles as well as age-wage profiles based on the data of 1990.

Before comparing wage profiles, some caveats should be kept in mind.

First, seniority pay can be defined in two senses — in a broad sense and in a narrow sense. Seniority pay in a broad sense can be defined as one in which wage rises as age or length of service increases (seniority wage profile). “Measure age or length of service along the horizontal line, and wage rates along the vertical line. If the slope of the line is upward, wages are increasing on the Nenko basis.” (Koike, 1981, p.55). It is in this broad sense that Koike(1996) argues that *pay for on-the-job training* based on job rotation is the primary reason for seniority wage profile in Japan. The seniority right in job assignments could cause seniority wage profile in the U.S in this sense. That is, even *pay-for-job* could occur seniority wage profile in a broad sense.

In a narrow sense of seniority pay, the wage level is determined by age or length of service not by job or skill. It is frequently argued that the seniority pay in this sense is unique to Japan. Therefore, whether a wage system is seniority-based or not in a narrow sense is decided not by the steepness of wage profile by age or length of service but the degree of wage determination by age or length of service. Seniority pay both in a broad sense and in a narrow sense will be examined in this paper through the comparisons of wage functions and wage systems as well as wage profiles in Korea and Japan.

Second, it is necessary to differentiate tenure from age. It is because the economic meanings of age and tenure are different. While tenure-wage profile is more related to on-the-job training or firm-specific human capital, age-wage profile reflects total experience or livelihood. This differentiation is fairly meaningful in comparing wage profiles between Korea and Japan.

Third, labor market trends have great effects on the shape of wage profile. According to the previous studies, however, the evolution of wage profiles was not much different between Korea and Japan.<sup>1)</sup>

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1) The Nenko wage profile in Japan became flatter since 1958 through mid-1970s, steeper again in the latter

Fourth, there is a time-gap in industrialization between Korea and Japan. Korea is a developing country still experiencing dramatic institutional changes with industrialization experience of only 30 years while Japan has industrialized for over 100 years and was already an economic power before World War II.

Comparing wage profiles of Korea and Japan in this paper is based on very reliable data sets — Basic Survey on Wage Structure(Chingin Kozo Kihon Chosa) for Japan and Occupational Wage Survey(Jigjong Imgum Siltae Chosa) for Korea. These two data are extremely similar in the coverage scope, method, and items of survey.

Both BSWS and OWS contain detailed and reliable information on contract earnings, bonus payments, tenure because they are from companies' wage ledgers. These two data sets are also sampled data. The OWS survey covers about 3,300 establishments selected by a stratified random sampling method from all establishments, except agriculture, forestry, hunting and fishing. In BSWS, 77,000 establishments are sampled at the sampling rates of around 1:10. Both of them exclude small workshops with less than 10 employees. Figure 1 to 6 are based on these data. The major facts which can be read from these figures are in what follows.

First, Figure 1 shows that the tenure profiles of Korea are steeper than those of Japan both in blue collar workers and in white collar workers. In particular, there is little difference in tenure profiles between blue collar workers and white collar workers in Korea. That is not the case for Japan.

Second, however, in Figure 2, the age profile of blue collar workers in Japan is steeper than that in Korea. This is partly because the tenure in older age group is longer in Japan than that in Korea as can be seen in Figure 5. This can be confirmed with the method of matching age and tenure of *hypothetical permanent workers* who join the firms at early 20's and continue his service at the same firm.<sup>2)</sup>

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part of 1970s and kept stable in the 1980s. The wage differentials by age in Korea were widened from 1967 to 1970, kept stable in the early 1970s, decreased from mid-1970 to 1980 and again a little increased in the early 1980s, but it declined a lot thereafter. (See Arai(1988), Ono(1987), Koike(1981), Kim(1989), Park(1985), Ahn(1982))

2) Koike calls these hypothetical workers as 'core production workers' They are defined as those workers who are working for the same firm with relatively continuous service from their mid-20s on. They are

Figure 3 presents that the wage profiles by age/tenure groups of permanent workers are extremely similar between Korea and Japan. Nonetheless, age factor is more important than tenure in Japan. It is the opposite in Korea.

Third, tenure profile of workers with higher possibilities of on-the-job training does not seem to be always steeper than that of other workers with lower possibilities of on-the-job training in Korea. That is not true for Japan. What can be seen in Figure 4, for example, is that even drivers in manufacturing companies of Korea, who have low possibilities of on-the-job training, have seniority wage profile as well. On the contrary, female workers usually do not have seniority wage profiles both in Korea and Japan.

Fourth, what can be read in Figure 2 is that the age profile of white collar workers is steeper in Korea than in Japan and there is a big difference in age-profiles between white-collar and blue collar in Korea. Even though the Korean blue collar workers have tenure-wage profile similar to that of white collar workers, they do not share the steep age-wage profile with white collar workers.

These findings indicate that the Korean male blue collar workers has seniority wage in the form of steeper tenure-wage profile. Conventional theories predict that the mobility of workers with steeper tenure-wage profiles is low. This prediction, however, does not work well in Korea. The quit rate of Korean manufacturing workers is almost twice as high as that of Japanese counterparts even in the large establishments as of 1990(See Table 1). The percentage of workers with more than 15 years of tenure is only 6.9 percent in male blue collar workers of Korean large companies while it is 57.8 percent in Japan in 1990. It is a big difference even though Korea has shorter experience of industrialization. It is already 26.5 percent in Japan as of 1965. Figure 5 also shows that the tenure by age profile of blue collar workers of Korean large companies is just below that of small companies' counterparts in Japan.

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likely to be precisely the workers who form the important workshop skills(Koike, 1996, p.111)

&lt;Table 1&gt; Monthly Quit Rate of Japan and Korea(Manufacturing)&gt;

Country/Year	Size of Employment				500-
	5-29	30-99	100-499		
			100-299	300-499	
Japan					
1990	1.8	1.6	1.3		1.2
1980	1.8	1.5	1.5		1.1
Korea					
1990	6.0	5.5	4.3	3.0	2.4
1980	6.4	6.9	6.2	5.5	4.5
Korea (Male Blue Collar)					
1990	7.4	7.1	5.1	3.2	1.8
1985	6.6	6.9	5.5	4.3	2.7
1980	7.4	7.8	6.6	5.6	4.2

Sources: Monthly Labor Review, Japanese Labor Ministry.  
Monthly Labor Review, Korean Labor Ministry.

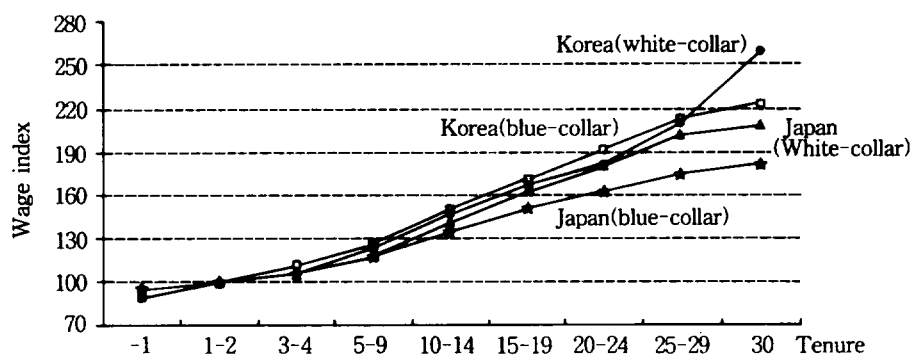
The practice of lifetime employment has not been usual for the blue collar male workers even in the large firms of Korea at least before the great labor struggle year 1987. For a long time, Korean manual workers who were not allowed to organize unions which can voice workers' own rights in the workshops used 'exit' device to express their dissatisfaction. Korean workers did not opt for job security at the cost of immediate high earnings.

One of the interesting findings in Table 1 is that the quit rate of blue collar male workers in the large establishments of Korea has dropped dramatically in the 1980s from 4.2 percent in 1980 to 1.8 percent in 1990. The Korean labor market for blue collar male workers becomes a kind of internal labour market in terms of employment stability and wage differentials between large establishments and small ones.<sup>3)</sup>

3) Firm size wage differentials have been widening since mid-1980s. The wage differentials of male blue collar workers in manufacturing industries between small firms and large ones is 100:120.8 in 1980 and 100:154.2 in 1990 and they are 100:103.3 and 100:122.5 when human capital variables are controlled(Jeong, 1992). The enterprise union system combined with payment abilities of the large firms contributes to

The labor market trends and labor unions' activities may be the explanatory factors for the drop of quit rate. Korea entered into the stage of labor shortage since mid-1980s, but labor shortage problem was more severe in small companies and it was not unusual for large companies to stop hiring new employees. In reality, the voice mechanism of new unionism and higher wages in the large firms rather than the labor shortage were the main factors to deter workers from quitting.<sup>4)</sup> The change of the wage profiles was not the reason for the drop of quit rate because the wage profiles became continuously flatter throughout the 1980s(See AF-1).<sup>5)</sup>

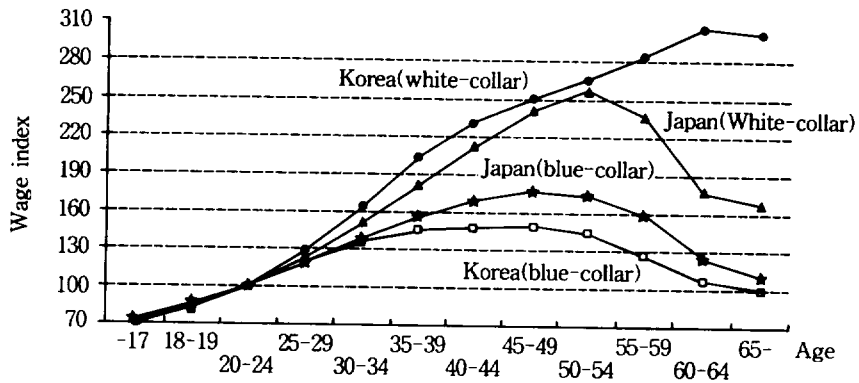
[Figure 1] Wage by Tenure(Manufacturing, male worker', 1990)



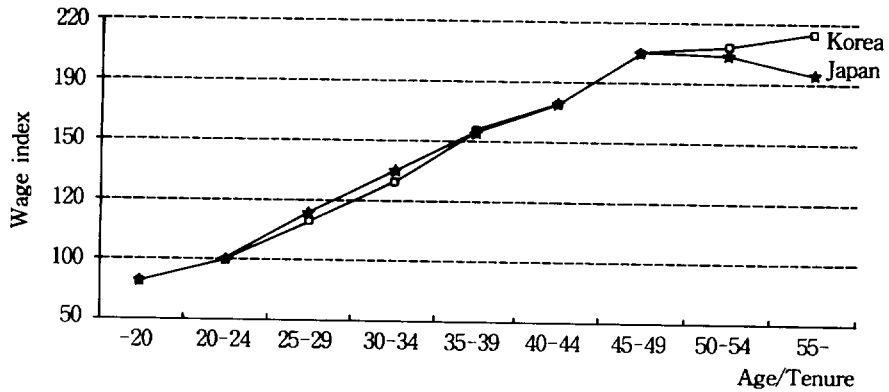
increasing wage differentials far greater.

- 4) The trends of yearly quit rate in one of the largest Korean companies are as follows. 12.7(1983), 14.5(1984), 14.0(1985), 22.8(1986), 15.9(1987), 4.5(1988), 2.8(1989), 2.8(1990). Union was organized in 1987 in this company.
- 5) The unionization since 1987 contributed to the flattening of tenure-wage profiles even though the union members demanded strengthening of seniority-based pay(Jeong, 1994). That is because the union leaders were composed of rank-and-file workers with low tenure and they demanded wage increases for all workers by the fixed-amount not by the fixed-rate. Even in case of fixed rate of wage increases, many unions demanded different rates of wage increases such as 'higher rates for lower wage workers and lower rates for higher wage workers'(pyramidal fixed-rate system)(Lee, 1994).

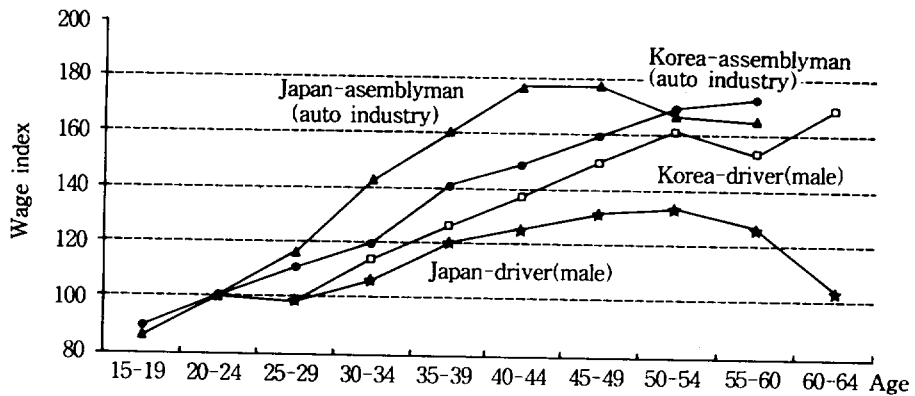
[Figure 2] Wage by Age(Manufacturing, male workers, 1990)



[Figure 3] Age' Tenure-Wage Profic of "Permanent Worker" (Manufacturing, large firm, male blue-collar, 1990)

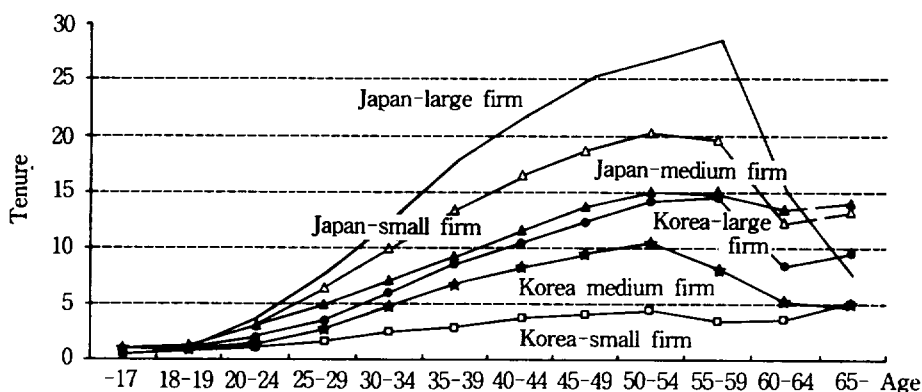


[Figure 4] Wage by Age, Occupation (Manufacturing, 1990)





[Figure 5] Average tenure by age, size  
(Manufacturing, male blue-collar, 1990)



These facts suggest that the mechanism of forming an internal labour market would be quite different from those of Japan and the U.S.. If kind of internal labor market is now being formed for the blue collar workers of Korean large companies, it is not due to the management's effort to prompt on-the-job training or firm-specific skill formation but due to the union's voice mechanism which could secure higher wages and employment stability. The internal labor market of Korea is not the one with job ladder and promotion scheme for hierarchical and bureaucratic control. It is not initiated by the management. "It is not the market capacity or supply or demand of labor but the power relations within the factory regimes which triggered the formation of the internal labor market system in the big corporation sectors. In response to the demands of the workers and changes in the power relations, managers were forced to introduce significant changes into the internal labor market system."(Park, 1995, p.278).

Contrary to the predictions of conventional theories, there exists a big discrepancy between wage structure and employment practices in Korea. The steeper tenure-wage profile does not reduce the labor mobility in Korea.

## II. Wage Functions in Korea and Japan

The comparison of wage functions may confirm those facts found in the above section. Following the method of Hashimoto and Raisian(1985), the general human capital wage regressions with variables of total experience and firm tenure were run for each of the two countries. The estimated wage equations is of the form,

$$\ln W = \alpha_0 + \alpha_1(\text{EXP}) + \alpha_2(\text{EXPSQ}) + \alpha_3(\text{TEN}) + \alpha_4(\text{TENSQ}) + \alpha_5(\text{E3}) + \alpha_6(\text{E4}) + \alpha_7(\text{E5}) + \alpha_8(\text{S2}) + \alpha_9(\text{S3}) + \varepsilon$$

$\ln W$  : logarithm of monthly earnings

Monthly earnings = monthly wages + yearly bonus/12

$\text{EXP}$  : total work experience (age - years of schooling - 6)

$\text{EXPSQ}$  : the square term of  $\text{EXP}$

$\text{TEN}$  : length of service(= tenure)

$\text{TENSQ}$  : the square term of  $\text{TEN}$

$\text{E3}, \text{E4}, \text{E5}$  : Schooling dummies

if high school graduate  $\text{E3}=1$ , else  $\text{E3}=0$

if junior collage graduate  $\text{E4}=1$ , else  $\text{E4}=0$

if collage graduate  $\text{E5}=1$ , else  $\text{E5}=0$

$\text{S2}, \text{S3}$  : Firm size dummies

$\text{S2}=1$  if  $100 \leq \text{firm size} < 1000$ ,  $\text{S2}=0$  else;

$\text{S3}=1$  if firm size  $\geq 1000$ ,  $\text{S3}=0$  else;

The data used to estimate the equation are the published Basic Survey of Wage Structure(1990) for Japan and micro-data of Occupational Wage Survey(1990) for Korea. The published Japanese data are cell means of earnings, bonus payments, years of tenure and age of workers cross-classified by firm size, education class, age class, and industry. The published data of OWS are not cross-classified just like

those of BSWS. We re-classified the OWS data according to the classification criteria of BSWS using its micro-data. The comparison for blue-collar workers is not possible because the published BSWS data do not provide information on classified cell means data for blue collar workers. Table 2 presents the estimated equations of Korea and Japan. Table 3 is the result of estimation based on the micro individual data of Korea.

<Table 2> OLS Regressions of Wages Equations in Japan and Kore using cell means data(male workers, 1990)

	Japan all size	Korea all size	Japan large firm	Korea large firm	Korea Blue-Collar	Korea White-Collar
Intercept	4.8815 (361.3)	12.3026 (594.7)	4.8431 (182.4)	12.5156 (500.6)	12.3026 (594.7)	12.3267 (574.8)
Experience	0.0269 (15.0)	0.0370 (13.8)	0.0491 ( 5.5)	0.0388 ( 7.5 )	0.0370 (13.8)	0.0526 (20.0)
Experience square	-0.0004 (-17.7)	-0.0007 (-14.3)	-0.0008 (-5.5)	-0.0005 (-6.3 )	-0.0007 (-14.3)	-0.0008 (-15.0)
Tenure	0.0475 (16.5)	0.0749 (12.5)	0.0281 ( 2.6)	0.0466 ( 4.8 )	0.0749 (12.5)	0.0347 (7.7)
Tenure square	-0.0005 (-7.2)	-0.0020 (-7.7)	-0.0002 (-0.9)	-0.0013 (-3.8 )	-0.0020 (-7.7)	-0.0007 (-4.6)
High School(Dummy)	0.1675 (19.6)	0.2492 (22.4)	0.1999 (10.3)	0.3005 (16.7 )	0.2492 (22.4)	0.2632 (19.3)
Junior College(Dummy)	0.3059 (19.9)	0.4601 (26.4)	0.3460 ( 9.8)	0.5002 (19.9 )	0.4601 (26.4)	0.4016 (25.6)
University(Dummy)	0.5039 (49.5)	0.8390 (60.4)	0.5843 (27.4)	0.8426 (39.4 )	0.8390 (60.4)	0.7142 (50.3)
Medium Firm(Dummy)	0.0012 (0.2)	0.0742 (6.4)			0.0742 (6.4)	0.1195 (9.6)
Large Firm(Dummy)	0.0696 (7.0)	0.1533 (10.7)			0.1533 (10.7)	0.2245 (15.6)
Adj R-sq	0.93	0.93	0.94	0.93	0.74	0.83
N	1,116	929	293	365	1,980	2,348

Notes: Figures in parentheses are t values. Dependent variable = log(monthly wage + yearly bonus/12).

Sources: Ministry of Labor(Japan), Occupational Wage Survey,  
Ministry of Labor(Japan), Basic Survey on Wage Structure.

<Table 3 > OLS Regressions of Wages Equations in Kore using individual micro data  
(male workers, 1990)

	All industries				Manufacturing(Blue collar worker)			
	all	small	medium	large	all	small	medium	large
Intercept	12.2194 (3949.5)	12.2242 (1702.7)	12.2474 (3258.4)	12.5006 (2787.6)	12.3278 (2861.4)	12.2853 (1280.0)	12.3542 (2509.2)	12.6275 (2049.8)
Experience	0.0408 (160.9)	0.0420 (65.9)	0.0461 (130.7)	0.0308 (66.3)	0.0312 (87.6)	0.0389 (44.0)	0.0353 (71.0)	0.0201 (31.3)
Experience square	-0.0007 (-136.6)	-0.0007 (-58.8)	-0.0008 (-112.2)	-0.0005 (-50.5)	-0.0006 (-83.2)	-0.0007 (-42.0)	-0.0007 (-67.1)	-0.0004 (-30.7)
Tenure	0.0641 (188.7)	0.0647 (67.3)	0.0661 (139.5)	0.0612 (107.4)	0.0710 (125.0)	0.0691 (29.8)	0.0761 (97.2)	0.0687 (75.8)
Tenure square	-0.0013 (-87.0)	-0.0013 (-30.3)	-0.0014 (-62.6)	-0.0012 (-49.7)	-0.0015 (-56.0)	-0.0021 (-13.9)	-0.0017 (-45.7)	-0.0013 (-30.9)
High School (Dummy)	0.2390 (141.2)	0.2342 (48.9)	0.2290 (99.0)	0.2524 (86.2)	0.1428 (66.1)	0.1083 (16.2)	0.1405 (47.0)	0.1433 (40.1)
Junior College (Dummy)	0.4636 (168.2)	0.4430 (55.0)	0.4730 (123.5)	0.4565 (101.6)	0.2813 (50.5)	0.1843 (8.3)	0.2889 (35.4)	0.2755 (34.2)
University (Dummy)	0.8386 (417.6)	0.7444 (121.5)	0.8850 (318.5)	0.7934 (236.5)	0.4011 (26.0)	0.0649 (1.2)	0.4117 (17.8)	0.4419 (19.9)
Medium Firm (Dummy)	0.0891 (48.0)				0.0769 (24.5)			
Large Firm (Dummy)	0.1775 (87.6)				0.1909 (57.6)			
Adj. R-sq	0.60	0.51	0.59	0.58	0.51	0.32	0.48	0.43
N	310,801	41,345	165,561	103,805	111,533	10,849	56,374	44,313

Notes: Figures in parentheses are t values. Dependent variable =  $\log(\text{monthly wage} + \text{yearly bonus}/12)$ .

Source: Minstry of Labor(Korea), Occupational Wage Survey, micro data.

First, the coefficients of total work experience and tenure are greater in Korean wage equation than in Japanese one, but the coefficients of square terms are also greater in Korean one. This implies that the Korean wage profile is steeper, but reaches its peak sooner than the Japanese one. The peak year of wage by tenure is 18.7 in Korea, 47.5 in Japan provided that the other terms are constant.

It is not good idea to, however, interpret the tenure coefficient directly as

firm-specific tenure effect on wages. The slopes of wage profiles change as one moves along each of the profiles and their comparisons between the two countries will be affected by the choice of the point on the profiles where such comparisons are made(Hashimoto and Raisian, 1985, p.730). So, the wage profile of *hypothetical permanent workers* should be estimated as in Hashimoto and Raisian(1985). As in the above section, *hypothetical permanent worker* is defined as those who enter the current firm immediately after completing schooling and stays with the firms until retires. Wages are estimated on the basis of the same level of tenure and work experience(tenure=experience). The entry-level wages are also based on zero years of tenure and general market experience. The wage differentials between the starting wage level and the wage level of workers with experience is also decomposed to find out the relative importance of tenure and total experience.<sup>6)</sup>

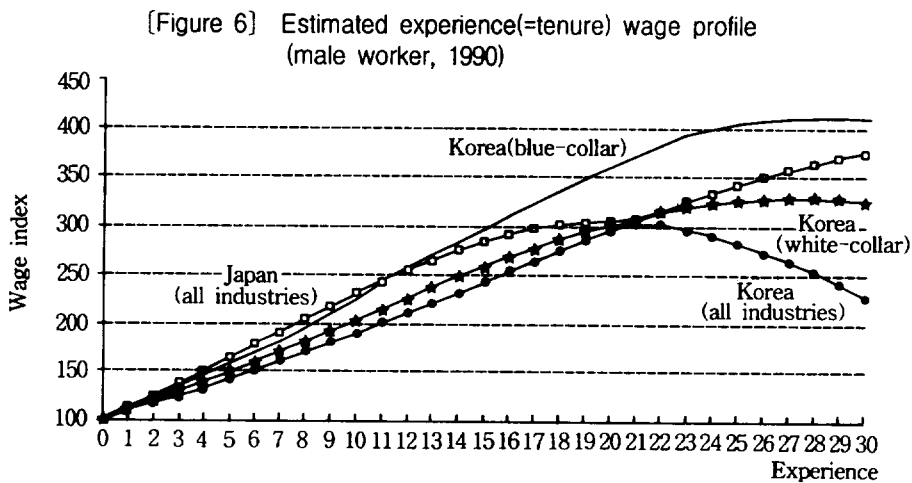


Figure 6 presents the estimated tenure-wage profiles of hypothetical permanent workers. The figure is designed on the basis of the starting wage=100. The estimated wage profile of hypothetical permanent workers in Korea is steeper in the earlier part of the career than in Japan, but declines after 18 years of work experience(=tenure). The Japanese wage profile increases continuously even through 30 years of work experience(=tenure). Table 4, moreover, shows that the contribution ratio of tenure to wage growth is also becoming bigger as work experience

6) Refer to Hashimoto and Raisian(1985) as for the method of decomposition.

increases in Japan, but it is not in Korea. This may reflect the fact that the Japanese workers have long career paths based on the firm-specific on-the-job training (*long-term competition* in Koike's terminology, Koike, 1987).

<Table 4> The contribution rate of tenure to wage growth

experience =tenure(year)	Japan	Korea	Korea(Manufacturing)	
	(all industries)	(all industries)	Blue-Collar	White-Collar
5	0.646	0.658	0.729	0.387
10	0.657	0.644	0.744	0.375
15	0.669	0.623	0.762	0.359
20	0.683	0.593	0.785	0.339
25	0.700	0.542	0.815	0.312
30	0.721	0.439	0.856	0.275

Notes : Calculated from Table 2. These figures represents the contribution of tenure to the differences between the current earnings and the starting pay due to total experience and tenure.

However, Figure 6 suggests that the Korean wage profile is steeper and more seniority-based than the Japanese one within the realistic lengths of service. In reality, the percentage of Korean workers with more than 20 years of tenure is not more than 2 percent. In particular, the blue collar workers in Korea have even steeper tenure-wage profiles and the contribution rate of tenure to wage growth for the Korean blue collar workers is larger as can be seen in Table 4.

Does the higher contribution of tenure to wage growth imply that Korean blue workers accumulate more firm-specific human capital? Kim(1992) pointed out that the component of firm-specific human capital(tenure) to wage growth was higher among manual workers than non-manual counterparts in Korea. Contrary to the general prediction, however, labor mobility was generally higher than among manual workers. This was a puzzling result in the light of human capital theory. This results did not give exclusive support to the human capital model in that the workers with higher specific human capital were more mobile between employers. But Kim(1992) did not proceed this topic.

Second, the other finding in the comparison of wage functions is that the coefficients of the educational level and the firm size variables are greater in Korea

than in Japan, which implies that Korea has greater educational wage differentials and firm size wage differentials. Greater educational wage differentials reflect the wage discrimination against blue collar workers. It is one reason for the adversarial industrial relations in Korea.

Third, as the result of the first and the second, the explanatory power of standard human capital wage equation is higher in Korea. The R-squares of the above wage equations have very little meaning because the data are 'cell means' data. R-squares of the wage equations based on individual data are available only for Korea(See Table 3). When the firm size variables are omitted, the R-square is 51 percent in the small firms and 58 percent in the large firms(See Table 3). Ono(1987) has done similar analysis with the micro-data of BSWs. The R-square of human capital wage equation with firm size variables and interactions of firm-size and human capital variables for blue collar male workers in Japan are around 43 percent(Ono, 1987, p.14). It is 47 percent in Korea(See AT-1).<sup>7)</sup>

Then, do higher explanatory power of human capital variables mean intensive human capital formation in Korea? Does the higher productivity of human capital formation is the main cause of wage increase in Korea. This will be dealt in section IV.

### III. Wage Systems in Korea and Japan

Steep wage-tenure profiles are not unusual in the western society as can be seen in Koike's analysis(1981, 1996). Topel(1991) also found that 10 years of tenure raise the wage of the typical male worker in the U.S. by over 25 percent allowing for unobservable biases. Each country, however, has different reason why wage rises as tenure increases. That is, each country has different wage system or wage determining process. In the U.S., seniority wage profiles could be found if higher

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7) Kim(1992) also indicates that the explanatory power of standard wage function in Korea is remarkably high as compared with the U.S. and the U.K.. It was around 30 percent in the U.S. and the U.K.(Mincer, 1974, Psacharopoulos and Layard, 1979).

paying jobs become vacant and then occupied by workers with higher seniority. In Korea and Japan, seniority wage systems are usually the results of the practices of yearly incremental pay increases in pay tables(Pay-up). As employees accumulate tenure, basic pay increases annually by some amount. This practice of annual increase is the basis of so-called Nenko compensation in Japan.

Wage increases in two ways, Pay-up and Base-up.<sup>8)</sup> Pay-up is yearly regular(sometimes irregular) incremental pay increase through up-grade(shokyu in Japan, seungkeub in Korea) in the pay table. It is a part of wage components which companies can manage. Pay-up is tied to seniority, age, life cycle needs and merit rating or personal appraisal. Base-up is a comprehensive revision of wage table i.e. across the board pay increment which is negotiated between the union and the management. The level of starting wage is predominantly determined by worker's level of formal education and sex with little weight to the job content.

Korea and Japan have differences in managing and running these pay tables even though they have very similar wage packages.

First, age and ability factors are more important in Japan, but seniority has predominant importance in Korea in determining up-grade for Pay-up or promotion.

There are two ways in which pay increments are determined-*single type wage scale* and *mixed-type wage scale*. Single type wage scale has only one wage scale which consists of only one item or several items. Mixed wage scale is the one with different type of wage scales.

In Japan, age, tenure, ability and other factors such as loyalty and absenteeism contribute to determining pay increments. In single-type wage scale, these factors are considered simultaneously while they are clearly divided in the mixed-type wage scale. In the mixed-type wage scale, pay tables are pre-fixed according to each factor which is a criterion for up-grade. In reality, the mixed-type wage scale is a wage system in which full-fledged form of *pay for ability* is introduced being combined with the existing seniority wage system in Japan.

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8) Korea and Japan have very similar wage packages. Monthly pay has three components-basic pay, allowances and overtime pay. They have also bonus and retirement pay as non-monthly salaries. Bonuses are paid two times a year in Japan, 4-6 times a year in Korea. Retirement pay still exists in Korea as legal payment even though national pension plan was introduced in 1992.



Table 7 presents an example of mixed-type wage scale of Japan. It can be found that pay for age, pay for seniority, pay for status<sup>9)</sup> are clearly divided in the mixed-type wage scale. Payment by age and tenure is automatically upgraded year by year. Status upgrade and status pay increment(*shokuno shikaku-kyu*) are determined by personal evaluation and merit rating. That is the reason why Koike(1996) argues that the seniority wage system means that wage rate is determined primarily by length of service, but partially by *merit-rating* although the basic rates are negotiated by local union. Endo(1994) also reports that in one firm he studied, the results of merit assessment could make a difference of up to 53 percent in the annual pay increase.<sup>10)</sup>

One thing found in Table 5 is that the mixed wage scale is more prevalent in Japan than in Korea and the ratio of mixed wage scale is higher in the large companies than in the small ones in Japan. The other is that *the type of wage based on work* records exceptionally high ratio in Korea, but it does not mean that *pay for job* is more prevalent in Korea. Korean companies usually adopt different pay tables according to sex, education or broadly classified occupations(for example, white collar, blue collar, laborer, etc.) as it can be seen in Table 6. The Ministry of Labor in Korea classifies this as *type of wage based on work*, but the reality is that it is not *pay for job*. On the contrary, it is close to *type of wage based on personal factors* in the sense that pay increments are determined according to tenure within the pay tables of each broadly classified occupations. That is, once the pay status are decided, up-grade is usually determined by seniority within the pay table. The central factor in determining the upgrade and promotions is seniority except for highly professional or managerial jobs. Even in the companies with personal

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9) Status grade(*Shokuno-shikaku*) is an employee's status within the firm, which in theory is determined by an employee's level of ability to perform his job. It does not refer to a specific position such as supervisor or foreman(Edno, 1994). The merit-based wage system in Japan is tied not to job characteristics but to qualifications of employees. i.e. not payment by job scheme but payment by ability scheme, not on the worth of the job a person performs, but on the worth of the person him/herself(Koike, 1991).

10) The yearly increment system, job-grade system, and merit ratings are believed to be unique to Japan and regarded as important features of Japan's seniority wage system. Japan is rather unique in that even unionized production workers are subjected to merit assessments conducted by supervisors(Koike 1988, 1996). Inter-worker competition for *satei*(personal appraisal) scores is the most important characteristic of Japanese internal labor market(Endo, 1994).

evaluation system, such factors as sincerity, loyalty, proper attitude were more important than job performance in evaluating personal performance. Returns to skill, ability(or license) or special service, if any, are paid in the form of allowances as a lump-sum.

The practice of individual performance evaluation does partly exist in the Korean companies before 1987. Some companies had discriminated against pay increments and bonus payments according to the merit-ratings. Cole(1971, p.71) also indicated that large Korean companies adopted one Japanese practice of having three levels of supervisors evaluate each worker's performance and graded it on three levels. The discriminative pay increments, however, has almost been disappeared particularly in the unionized sector since 1987. Korean blue collar workers showed strong dissatisfaction with the discriminative pay increase(in particular, discriminative bonus payment) and personal evaluation in 1987. That is because the personal evaluation and merit rating system were too arbitrarily and subjectively operated in most Korean manufacturing companies. It was not linked to skill formation or on-the-job training like in Japan. It was a kind of device to control blue collar workers. It was sometimes used to oppress active union members. Then, it became a vital issue in 1987 and perished. It was, and still is not common for management to run wage schemes in the direction of ability upgrade or skill formation. There is little incentives with which workers acquire skills in the Korean wage system.

The second difference in wage systems between Korea and Japan is that age is more important factor in Japan than in Korea in determining pay levels. Table 7 shows that in Japan, *pay for seniority* does not have important role in determining pay levels and pay increments while *pay for age* occupies a larger part of wage components and the amount of yearly increments by age is also greater. It is equally applied to all workers regardless of the color of collar. This contributes to keeping the educational wage differentials or occupational ones at low levels. This also implies that Japanese companies have a lot of consideration for the living cost issues of their workers, which has its origin in *Densan Wage Model* of post-war era in Japan.<sup>11)</sup>

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11) The Densan Wage Model, which the Electro-Power Industry Labor Union constructed on the notion of livelihood wage, was prevalent in Japanese labor unions in post-war era(Gordon, 1988, p.355). In the

&lt;Table 5&gt; Ratio of Enterprises by Type of Wage Scale and Size

	Japan(1989)				Korea(1989)		
	all	large	medium	small	all	large	small
single type wage system	85.0	52.0	80.0	88.0	98.6	97.7	99.4
wage based on work	14.4	4.8	9.2	16.7	52.7	52.7	53.6
pay for job	1.6	0.4	0.9	1.8	n.a.	n.a.	n.a.
pay for ability	2.3	1.9	2.3	2.3	n.a.	n.a.	n.a.
pay for job and ability	10.5	2.4	6.0	12.6	n.a.	n.a.	n.a.
wage based on personal factors	6.1	5.0	7.7	5.5	9.2	11.7	7.0
wage based on all factors	64.6	42.2	63.1	65.8	36.2	33.3	38.8
mixed wage system	15.0	48.0	20.0	12.0	1.4	2.3	0.6
worker-personal factors type	4.5	21.3	6.8	3.1	n.a.	n.a.	n.a.
work-all factors type	4.2	12.3	5.1	3.7	n.a.	n.a.	n.a.
personal-all factors type	4.9	8.7	6.6	4.1	n.a.	n.a.	n.a.
work-personal all factors type	1.3	5.6	1.6	1.1	n.a.	n.a.	n.a.

Notes : Korea : 30<=small company <299

300<=large company

Japan : 30<=small company <299

300<=medium sized company <999

1,000 <= large company

- 1) *Type of wage based on personal factor* means the wage scale under which basic wage is paid according to only such personal element as age, duration of service, and educational attainment.
- 2) *Type of wage based on work* means the wage scale under which basic wage is paid according to only such work element such as job contents or ability of duty.
- 3) *Type of wage based on all factor* means the wage scale under which basic wage is paid according to work and personal elements together.

Sources : Ministry of Labour(Japan), General Survey on Wages and Working Hours System Ministry of Labour(Korea), General Survey on Wages and Working Hours System.

Dansan Wage Model, *pay for livelihood* is 67 percent and *pay for work* is 20 percent, but *pay for tenure* is relatively low. There was a difference between blue collar and white collar in *pay for work*, but, no difference in *livelihood wage*. It contributed to abolishing the arbitrariness of employers in determining wage and reducing the traditional discrimination against blue collar workers. It was the next story that the Nenko wage system are used as a device to promote workers' on-the-job skill formation and induce their effort.

&lt;Table 6&gt; An Example of Pay Table in Company A of Korea

(1000 won)

Grade	White-Collar							Blue-Collar					
	W1(A)	W1(B)	W2(A)	W2(B)	W3	W4	W5	B1	B2(a)	B2(b)	B3	B4(a)	B4(b)
35					489			833	649	549	460	418	376
34					499			843	658	557	468	425	382
33					509			853	667	565	476	432	388
32					519			863	676	573	484	439	394
31					529			873	685	581	492	446	400
30				673	539	446	409	883	694	583	500	453	406
29				684	549	455	416	893	703	597	508	460	412
28				695	559	464	423	903	712	605	516	467	418
27				706	569	473	430	913	721	613	524	474	424
26				717	579	482	437	923	730	621	532	481	430
25			861	728	589	491	444	933	739	629	540	488	436
24			874	739	599	500	451	943	748	637	548	495	442
23			887	750	609	509	458	953	766	651	564	509	454
22			900	777	619	518	465	963	766	644	556	502	448
21			913	805	629	527	472	972	774	658	572	516	460
20	1,158	1,014	926	816	639	536	479	981	782	665	580	523	466
19	1,173	1,028	939	825	649	545	486	990	790	672	588	529	472
18	1,188	1,042	952	834	658	554	492	999	798	679	596	535	478
17	1,203	1,056	965	843	667	563	498	1,008	806	686	603	541	482
16	1,218	1,070	978	852	676	571	504	1,017	814	693	610	547	486
15	1,233	1,084	991	861	685	579	510	1,026	822	700	617	553	490
14	1,248	1,098	1,004	870	694	587	516	1,035	830	707	624	559	494
13	1,263	1,112	1,017	879	703	595	522	1,044	838	714	631	565	498
12	1,278	1,126	1,030	888	712	603	528	1,053	846	721	638	571	502
11	1,293	1,140	1,041	897	721	611	534	1,061	853	727	645	577	506
10	1,308	1,154	1,052	906	730	619	540	1,069	860	733	652	583	510
9	1,323	1,168	1,063	915	739	627	546	1,077	867	739	659	589	514
8	1,338	1,182	1,074	924	748	635	552	1,085	874	745	666	595	518
7	1,353	1,196	1,085	933	757	643	558	1,093	881	751	673	601	522
6	1,366	1,208	1,096	942	766	651	564	1,101	888	757	680	607	526
5	1,379	1,220	1,107	951	775	659	570	1,109	895	763	687	613	530
4	1,392	1,232	1,118	960	784	667	576	1,117	902	769	694	619	534
3	1,405	1,244	1,129	969	793	675	582	1,125	909	775	701	625	538
2	1,418	1,256	1,140	978	802	683	588	1,133	916	781	708	631	542
1	1,431	1,268	1,151	987	811	691	594	1,141	923	787	715	637	546
Difference between grade	13-15	12-14	11-13	9-11	9-10	8-9	6-7	8-10	7-9	6-8	7-8	6-7	4-6

Notes: 1) W1(A)=department chief director; W1(B)= vice chief director; W2(A)=section chief; W2(B)=a deputy section chief; W3=plain clerk(college); W4=plain clerk(junior college); W5=plain clerk(high school) B1=supervisor; B2(a)=foreman1; B2(b)=foreman2; B3=skilled worker; B4(a)=manual worker(male); B4(b)=manual worker(female);

2) Company A is an electronic company producing electronic switchboard and processing information-data with employees of 1,152.

Source: National Commission of Labor Union, *A survey on the revision of wage system*, 1994.

&lt;Table 7&gt; An Example of Pay Table in Company B of Japan(Mixed Wage-Scale)

Pay for Age		Pay for Tenure		Pay for Status							
Age		Tenure		Grade	1	2	3	4	5	6	7
15	53,700	1	500	1	44,800	50,700	6,180	76,100	89,700	117,800	16,330
16	54,600	2	1,000	2	45,400	51,400	6,260	77,000	90,900	119,300	16,510
17	55,500	3	1,500	3	46,000	52,100	6,340	77,900	92,100	120,800	16,690
18	56,400	4	2,000	4	46,600	52,800	6,420	78,800	93,300	122,300	16,870
19	57,300	5	2,500	5	47,200	53,500	6,500	79,700	94,500	123,800	17,050
20	58,200	6	3,000	6	47,800	54,200	6,580	80,600	95,700	125,300	17,230
21	59,100	7	3,500	7	48,400	54,900	6,660	81,500	96,900	126,800	17,410
22	60,000	8	4,000	8	49,000	55,600	6,740	82,400	98,100	128,300	17,590
23	61,400	9	4,500	9	49,600	56,300	6,820	83,300	99,300	129,800	17,770
24	62,800	10	5,000	10	50,200	57,000	6,900	84,200	100,500	131,300	17,950
25	64,200	11	5,500	11	50,800	57,700	6,980	85,100	101,700	132,800	18,130
26	65,600	12	6,000	12	51,400	58,400	7,060	86,000	102,900	134,300	18,310
27	67,000	13	6,500	13	52,000	59,100	7,140	86,900	104,100	135,800	18,490
28	68,400	14	7,000	14	52,600	59,800	7,220	87,800	105,300	137,300	18,670
29	70,200	15	7,500	15	53,200	60,500	7,300	88,700	106,500	138,800	18,850
30	72,000	16	8,000	16	53,800	61,200	7,380	89,600	107,700	140,300	19,030
31	73,800	17	8,500	17	54,400	61,900	7,460	90,500	108,900	141,800	19,210
32	75,600	18	9,000	18	55,000	62,600	7,540	91,400	110,100	143,300	19,390
33	77,400	19	9,500	19	55,600	63,300	7,620	92,300	111,300	144,800	19,570
34	79,200	20	10,000	20	56,200	64,000	7,700	93,200	112,500	146,300	19,750
35	81,000			21	56,800	64,700	7,780	94,100	113,700	147,800	19,930
36	82,300			22	57,400	65,400	7,860	95,000	114,900	149,300	20,110
37	84,900			23	58,000	66,100	7,940	95,900	116,100	150,800	20,290
39	86,200			24	58,600	66,800	8,020	96,800	117,300	152,300	20,470
40	87,500			25	59,200	67,500	8,100	97,700	118,500	153,800	20,650
41	88,500			26	59,800	68,200	8,180	98,600	119,700	155,300	20,830
42	89,500			27	60,400	68,900	8,260	99,500	120,900	156,800	21,010
43	90,500			28	61,000	69,600	8,340	100,400	122,100	158,300	21,190
44	91,500			29	61,600	70,300	8,420	101,300	123,300	159,800	21,370
45	92,500			30	62,200	71,000	8,500	102,200	124,500	161,300	21,550
(Difference between grade)											
900~1800	500	600	700	800	900	1,200	1,500	1,800			

Notes : Upgrade is stopped at 45 in Pay for Age, and at the length of service of 20 years in Pay for Tenure. An upper limit on each status is set and linked to up-status in Pay for ability. Up-grade and up-status in pay for ability is tied to satei(personal appraisal) on the ability.

Company B is a food processing company with employees of 862.

Source : Institute of Labor and Administration Research(Japan), *Survey On Regular Upgrade System*, 1984(In Japanese).

The Japanese management have kept the age proportion in large within the wage scheme even though they introduced pay for ability and merit rating systems widely after mid-1960s. They won't forgive the hard core of Japanese industrial relations which induce worker's attachment to the firm and promote workers' *company-oriented conscience*. That resulted in the golden mean of pay for ability and pay for age in Japanese wage system which became the core of Japanese wage system.

Age, of course, is also an important factor in Korea in that mid-hired employees could have higher grade(Hobong) on the pay table with age and work experience. This practice is more prevalent for white collar workers. However, age is not so systematically reflected in the pay tables as in Japan.

Third difference is that there are different and discriminative wage tables according to sex, education and broadly classified occupations in Korea while Japanese companies have only one pay table which is equally applied to both white collar and blue collar.

Koike(1988, 1996) argues that *the white collarization of blue collar workers* in Japan is due to the job rotation and the specific human capital formation. But, it should never be ignored that *the white collarization of blue collar workers* is also based on securing living cost for the blue collar workers and abolishing the discrimination against blue collar workers, which have their origins in the labor union activities and democratization of post-war era.<sup>12)</sup>

The story of Korea was quite different. The state was occupied by the military over 30 years, management's arbitrary and military-like control over blue collar workers prevailed in the Korean workshops. Living cost can not be secured in the institutional forms and it was impossible to disuse the discrimination against blue collar. Korean employers, of course, were also trying to create a strong impression of benevolence or paternalism toward employees by creating a variety of living cost allowances. But, it was not institutionalized in the wage scheme. The effort to win

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12) The democratization and labor movements in the post-war era contributed to the formation of Nenko system by securing living cost without discrimination against blue collar. The Japanese labor unions in the post World War II era tried to accomplish single pay table and promotion scheme(Gordon, 1988, p348). Endo(1994) also indicates that the Japanese workers' basic sense of social relations is the result of conflicts between labor, management, and government after World War II.

blue collar workers over to the company and bring them up as *industrial citizen* was not great in Korea.

What can be found in Japanese wage system is the management's effort to look for a golden mean of age and ability, living cost allowance and skill formation, cooperation and competition. The seniority wage profile in Japan is the result of the management's very careful and delicate handling of pay schedules. This well-balanced wage system has a positive effect on on-the-job training and it contributes to the cooperative industrial relations in Japan. On the contrary, the steeper tenure wage profiles and high explanatory power of personal factors in Korea reflect various kinds of discriminations and lack of well-organized wage management rather than firm-specific human capital formation or market mechanism.

#### IV. What is the reason for higher returns to tenure in Korea?

One of the major findings in the above sections is that seniority has a great power in determining the wage level and wage profile of the Korean blue collar workers. This is closely related to the finding that the explanatory power of human capital variables is very high. Based on these facts, some scholars argued that the Korean labor market was a perfect one dominated by competition in the classical sense, which contributed to the efficient resource allocation and high growth rates of Korean economy (Fields and Wan, 1989, Koo 1990). They insisted that Korean labor market had a complete market mechanism which was not interrupted by labor unions or other institutional factors.

However, there are many facts that the market mechanism fails to explain in the Korean labor market as it can be seen in the above section. The high R-square of standard human capital wage equations means the simplicity of wage determining process rather than market oriented wage determining process in Korea. That is, some wage determining factors explain greater part of wage distributions (simplified wage determining process) and the wage determining process is not greatly different

between occupations, skill grades(standardized wage determining process).

In this sense, Japan also has standardized wage determining process but not simplified one. The degree of standardization may be high when the need for cooperation between workers is great. Maintaining visible equity is very important to induce workers' dedication to their work. Workers can be free from the competition with their co-workers and share skills with them. Then, on-the-job training becomes a success story. This *horizontal cooperaton*(Aoki, 1986) may incur free rider problem. It was the 'not simplified' wage determining process in Japan that could solve the free rider problem which the standardization of wage determining process may cause. Combining seniority wage with bureaucratic hierarchy and selective promotion is the Japanese device for frustrating free riders. Japanese firms delicately organized work process and pay schedule to deter free rider problem. They depend on employees' competition to achieve higher status within the hierarchy of rank as a primary incentive device(Aoki, 1990, Leibenstein, 1987)

Amsden(1989, 1991) also pointed out that there was great need of information sharing and cooperation between work groups or between workers to fully utilize expensive imported technologies in Korea and that the relative high wages in the large firms of chemical and heavy industries promoted learning by doing in workshops. She argued that Korea followed Japanese production practices since Korea imported capital equipment and technology extensively from Japan and learning by doing in workshops was as important in Korea as in Japan.

However, this was not the full story of Korea. It makes no good sense to think that the employment practices were also imported from Japan. Life-time employment and seniority-merit wage system were the outcome of the conflicts between management and workers in Japan. Korean managers were aware of them but they chose not to(Bai and Form, 1986, p.122). There may be some other reasons for the simplification and standardization of wage determining processes in Korea.

First, the wage determining process is very simple in Korea in contrast with that of Japan. Korean managers just use *easily visible personal factors* as signals of wage determination. This indicates that the Korean companies were lacking in taylorism and bureaucracy. Some of the most modern plants in Korea did not have detailed forms of job analysis and well-organized wage tables. While taylorist and



fordist management systems have been practiced in some large scale assembly-line production facilities since late 1970s(Kim, 1988), but generally without the adequate supporting system such as job analysis and job evaluation(Park, 1994, p.49).

Under these circumstances of no objective standard for wage determination, easily visible personal factors, in particular, seniority might be good standards. In case it is very difficult to measure the productivity of workers and the degree of devotion to work and loyalty to the company, hiring workers on the basis of visible individual characteristics seems to be natural. While Japan has developed taylorism in their own way, Korean managers has ignored taylorism.<sup>13)</sup>

Second, simplification and standardization strategies together with the authoritarian management were devices for controlling workers and securing industrial peace in workshops. The Korean management were very concerned about the stability of their factory just as the state also has stressed *industrial peace* so much. Ryu(1994) also pointed out that the Korean state and managers were concerned with not merely having the 'right' wages(market clearing wages-low wages) but minimizing capital-labor conflicts to secure industrial peace(i.e. good investment climate).

The simplification and standardization strategies contributed to enhancing visible equity between workers and gave Korean managers easy way to control the production workers and induce their effort. The production workers were under the circumstances of low wages and long working hours for a long time and their voice was checked by the state. Therefore, the emphasis on stability and control in input market as well as the creation of new pressures to maintain employees' effort and loyalty was more important in Korea than in Japan. That is, stabilization of input factors and harmony of workshops were more important than learning by doing of blue-collar workers and efficiency of work organization to Korean managers.

The economic development of Korea was different from that of Japan even though both of two countries experienced rapid economic growth. Korean economy was continuously in pursuit of changing and upgrading industrial structure, establishing capital-intensive industries, sometimes overriding the objections of international

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13) This suggests that the inefficiency due to bureaucracy was not so great in Korea. Sometimes, this is regarded as one source of the competitiveness of Korean companies. But, it is not any more true because Korean companies become too big to manage without bureaucracy.

lending agencies. Korean large companies were interested in continual advancements into new businesses and uninterrupted large-scale new investments. Therefore, increasing efficiency within the existing plants through the reorganization of the workshops seemed not important to Korean managers. It was natural that industrial peace in workshops was more importantly demanded than skill formation of blue collar workers. It was contrasted with Japanese economy which has been devoted to strengthening the internal economic efficiencies of workshops after experiencing the economic democratization during the post-war era.

However, the authoritarian management and military-like control within the plants in Korea were resisted by the blue collar workers in 1987. The effectiveness and usefulness of the simplifications and standardization strategies also greatly decreased. Now, the Korean management are trying to introduce Japanese style of pay-for-ability and meriting system, but the unions won't accept it. There exists a kind of power vacuum in the Korean factory. Neither management nor union secure the full command of the factory. This weakens effectiveness of Korean factory system and competitiveness of Korean economy. These are, however, precisely the results of the existing Korean style of economic development and management. Treating blue-collar workers as industrial citizen not as one of production factors and democratizing the economic decision making processes are necessary for managers to win over unions and workers to the company.

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## &lt;AT-1&gt; Estimated Wage Equations of Korea and Japan using individual micro-data

	Japan	Korea
Constant	0.61151	6.27385*
SZ2	-0.11752	0.07418
SZ3	0.02995*	0.81549*
ED	0.00915	0.06909*
ED*SZ2	-0.00096*	0.00376
ED*SZ3	0.01043	0.02890*
TEN	0.00434	0.00211
TEN*SZ2	0.00828	0.01970*
TEN*SZ3	0.00995	0.03650*
TENSQ	0.00006	0.00051*
TENSQ*SZ2	-0.00006	0.00015
TENSQ*SZ3	-0.00019	-0.00080*
OE2	0.05078	0.06113*
OE2*SZ2	-0.04202	-0.04192*
OE2*SZ3	0.02125	-0.09325*
OE3	0.09221	0.10205*
OE3*SZ2	-0.06202	-0.04751*
OE3*SZ3	0.01159*	-0.10887*
OE4	0.14186	0.15920*
OE4*SZ2	-0.07373	-0.07769*
OE4*SZ3	-0.00910*	-0.13387*
OE5	0.21868	0.22376*
OE5*SZ2	-0.10667	-0.09957*
OE5*SZ3	-0.05106	-0.22685*
AGE	0.06255	0.05568*
AGE*SZ2	0.01252	-0.00367
AGE*SZ3	0.00568	-0.03213*
AGESQ	-0.00073	-0.00070*
AGESQ*SZ2	-0.00015	0.00003
AGESQ*SZ3	-0.00002*	0.00041*
R-square	0.43055	0.4833
Sample Size	213,013	40,805

Notes: SZ2 ... 1 for the firm with 100-999 employees, 0 otherwise  
 SZ3 ... 1 for the firm with 100-999 employees, 0 otherwise  
 ED ... 1 for graduates of high school and more, 0 otherwise  
 TEN ... years of tenure  
 OE ... occupational experience  
 OE2 ... 1 for 1-2 years experience, 0 otherwise  
 OE3 ... 1 for 3-4 years experience, 0 otherwise  
 OE4 ... 1 for 5-9 years experience, 0 otherwise  
 OE5 ... 1 for more than 10 years experience, 0 otherwise  
 AGF ... age  
 ED\*SZ2 ... interaction of ED and SZ2

\* means statistically significant at 1 percent level.

Sources: Japan: Ono(1987) p. 14. Korea: Occupational Wage Data 1990.

[AF-1] Trends of 'Age-Wage Profile' (Korea)  
 (Manufacturing, large establishment, male blue-collar)

